

ARCHITECTURE IN CRISIS

Experiments with Participation and the challenge of More than Human Worlds

Micol Rispoli

PhD Coordinator:

Domenico Conte, Full Professor of History of Philosophy, Department of Humanities,
University of Naples Federico II.

Supervisor:

Paolo Giardiello, Full Professor of Interior and Exhibit Design, Department of
Architecture, University of Naples Federico II.

Supervisor at the Humboldt-Universität zu Berlin:

Tomás Sánchez Criado, Senior Researcher at the Chair of Urban Anthropology,
Institut für Europäische Ethnologie.



PhD programme in Philosophical Sciences, XXXIII cycle
Curriculum of Philosophy of Interior Architecture

Academic year 2019-2020

ARCHITECTURE IN CRISIS

Experiments with Participation and the challenge of More than Human Worlds

Micol Rispoli

Supervisors:

Prof. Paolo Giardiello, University of Naples Federico II.

Dr. Tomás Sánchez Criado, Humboldt-Universität zu Berlin.

External referees:

Nerea Calvillo, Associate Professor at the Centre for Interdisciplinary Methodologies,
University of Warwick.

Enrique Nieto Fernández, Associate Professor of Architectural Design,
University of Alicante.



PhD programme in Philosophical Sciences, XXXIII cycle
Curriculum of Philosophy of Interior Architecture

Academic year 2019-2020

Acknowledgements	11
Introduction	15
Chapter Outline	17
 Chapter I. Participation: opening up the <i>who</i> and the <i>how</i>	
Introduction	23
1. The architect's role: a growing restlessness	24
2. Participation and the 'common'	28
2.1. Italian countercultures of the 1960s and 1970s	28
2.1.1. New utopias and radical experiments	29
2.1.2. Giancarlo De Carlo: <i>An Architecture of Participation</i>	35
2.2. Interwoven glimpses into the past(s), present(s) and future(s)	38
2.2.1. Bringing contingency into the process	38
2.2.2. From Architecture to 'Spatial Agency'	43
2.2.3. Collections of experiences	45
3. A relationship between 'wholes' and 'parts'	53
4. Disruptive parts	55
4.1. Tackling architecture's gender-bias	55
4.2. The 'feminine' as the site of difference	59
Conclusion: uncommoning participation	67
REFERENCES (Chapter I)	69

Chapter II. The way in which architects are trained

Introduction	75
1. Expertise and Norms	77
1.1. The knowledge-power nexus	77
1.2. The planned city as the regulator of modern society	83
1.3. Great stories and Great Manifestos	87
2. The Architect in Western binary thought	94
3. The creation of the ‘architect-subject’	98
4. The role of architectural handbooks	100
5. ‘Normate templates’	106
Conclusion: heroes and ‘cures’	121
REFERENCES (Chapter II)	124

Chapter III. The ‘Things’ of architecture: STS and the more-than-human challenge

Introduction	131
1. STS and techno-science as social construction	134
2. Thinking the social otherwise: ANT and the political agency of non-humans	135
3. The sub-politics of design	144
4. The politics of ‘Things’	148
5. Behind the scenes of architectural practice	155
6. A renewed relationship between architecture and politics	165
6.1. The politics <i>within</i> architecture	165
6.2. Urban (Cosmo)politics	166
6.2.1. The challenge of ‘technical democracy’ in urban processes	169
6.3. A material perspective on participation. The political capacities of design	175
6.4. Design as <i>care</i> for neglected ‘Things’	182
Conclusion: re-thinking participation in more-than-human worlds	188
REFERENCES (Chapter III)	189

Chapter IV. Re-learning architecture with STS

Introduction	197
1. Beyond the ‘mapping of controversies’	198
2. Experiments within/through architectural interventions	201
2.1. Making the invisible visible	201
2.2. From solving to staging	215
2.3. Co-designing <i>with</i> more-than-humans	224
2.4. Transforming and playing with architecture’s own tools and aesthetics	228
3. Experiments within/through architectural education	230
3.1. Pedagogical models	230
3.2. Experiments at the University of Architecture in Alicante	234
3.3. Experiments at the Technical University of Munich	241
Conclusion: experimenting with participation in more-than-human worlds	251
REFERENCES (Chapter IV)	252

Chapter V. My own *voyage*. An attempt to re-learn architecture from neurodiversity

Introduction	259
1. Putting architecture in crisis. The ‘capacity contract’ of design practice	264
1.1. Neurodiversity as a conceptual operator	265
2. Why documentation matters	268
3. ‘Sensitising myself’ to my own practice	271
3.1. The making of a shared research tool	271
4. ‘Sensitising myself’ to bodily diversity	281
4.1. Discussing disability and accessible design	283
4.1.1. Inclusion as a domain of technical experts	290
4.1.2. A never-ending tension between universal and singular	292
4.1.3. Asserting and re-imagining disabled people’s political agency	296
4.1.3.1. <i>Nothing about Us without Us</i>	296
4.1.3.2. The antipsychiatry movement of the 1960s and 1970s: the Italian case	304
4.1.3.3. Inside the <i>Neurodiversity Movement</i>	311
4.1.3.4. The limits of self-advocacy	312
4.2. Architects and neurodiversity: a glimpse at the current and most common design responses	316
Non-concluding thoughts: beyond ‘distantism’	351
REFERENCES (Chapter V and the following part)	355

Proto-architectural operations for a neurodiverse spatial practice

371

Operation 1. Retraining the body of the architect (1)

Operation 2. Thinking from (singular) uses

Operation 3. Thinking from (multiple) singular uses

Operation 4. Retraining the body of the architect (2)

(Not)final remarks: *an Ode to the Guideline*

*References to page numbers in this part have been omitted intentionally.

Acknowledgements

This work is the provisional result of a long series of questions, studies, reflections and dialogues. It would not have been possible without the support, generosity and contribution of many.

I would like to thank Paolo Giardiello for trusting my project and encouraging my efforts, and for showing great openness towards a research path that is not usual in many schools of architecture. I am grateful to him for his valuable contributions, particularly on Italian architectural history. I would also like to thank him for the great sensitivity he showed during the hardest moments of my doctoral journey, in which his support was crucial.

I warmly thank Tomás Sánchez Criado, for sharing his lively curiosity with me and for offering to engage both in a joint experiment and in accompanying me, with care and dedication, in the development of this work. I thank him for having always sought a fully symmetrical dialogue and ways and spaces for collaboration, recognising also the value of difficulties and frictions, beyond any disciplinary or institutional framework; for encouraging me, also through his own experiences, to look at philosophical concepts as practical operators through which to produce concrete transformations; for pushing me to precision and clarity; for inviting me, in an open, patient, passionate and always careful way, to problematise, to recognise the limits and dangers of certain ways of knowing and operating, and to debunk versions of the world in which everything fits, pushing me to care for the possible and to learn from what does not fit, but exceeds.

My appreciation goes to Nerea Calvillo and Enrique Nieto for agreeing to review my work. I thank them for their careful reading, for the clarity with which they expressed their judgements, for their generous, constructive and meticulously articulated suggestions. I also thank them for their encouragement to make my voice heard more.

During this journey I have also had the good fortune to be a visiting PhD candidate at the *Stadtlabor for Multimodal Anthropology*, a research platform at the Institute for European Ethnology of Humboldt-Universität zu Berlin, and to participate in the thought-provoking meetings organised by its members.

In particular, besides Tomás, I would like to thank Ignacio Farías, for welcoming me with openness and curiosity, and Hannah Varga, for discussing with me some crucial questions of my research.

I am indebted to Moritz, Susanne, Julian and Dominik. I thank them infinitely for agreeing to accompany me in my exploration, and for opening me up to other ways of sensing and knowing.

I thank Patrick Bieler for his generous and extremely useful contribution. The walk we took together generated crucial reflections and questions for the whole research.

I thank Marco Paladines, dear friend met along the way, for participating in some of the meetings with Tomás and me; for the sensitivity, care and enthusiasm with which he listened to me and supported me, ever since our first walk in Kreuzberg.

I thank my beloved friend Francesca Zanotto, whose constant presence, since our first meeting and year of working together in Milan, is for me proof that hard times and obstacles can also bring wonderful things. I am grateful for her friendship and support, which I have always felt in both the happiest and the most difficult moments of this journey.

I thank Federico Cesareo, for his kind support and for the mutual exchange between us over these years.

I am deeply grateful to Blanca Callén and Ester Gisbert Alemany, for the generosity and openness with which they have listened to me and offered valuable suggestions.

I thank Alessandro Arienzo, for the genuine interest he showed in my research, for the care with which he has listened to me and for giving me the opportunity to contribute to one of his volumes.

Other professors have showed interest in my research and offered generous and valuable insights. I would like to thank, in particular, Laura Lieto, Giovanni Durbiano, Gioconda Cafiero, Luca Gaeta, Olivia Longo, Michelangelo Russo, Aurosa Alison and Andreu Arriola.

I thank Massimiliano Concilio, for the space for dialogue and mutual support that we managed to create during our doctoral journey.

I am grateful to Camillo Frattari, for his friendship, listening and incredible generosity.

During our common experience as visiting students at the *Stadtlabor*, I had the pleasure of meeting Aaron Taylor, to whom I am grateful for our lunchtime chats, his assistance in the piercing studio and all the good times we spent together discovering Berlin.

I thank Gabriella Berardinucci, for proof-reading many parts of this work; Mariateresa Giammetti and Alfonso Di Costanzo, for the generous and patient technical help they gave me during its final layout.

I am grateful to my dearest friends Nazareno, Roberta, Marco and Mafalda for always being by my side.

A special thank goes to all my family members for being, each in their own way, my safest place throughout this time.

I am grateful to my mother for always believing in me; for the strength, care, patience and love with which she has encouraged me to go forward.

I thank my sister for always nourishing our relationship with love, complicity, tenderness, joy and light-heartedness.

I thank Daniele, for supporting me with care, patience and love.

I thank Laurianne for the generosity, care and sensitivity with which she listened to my stories and turned them into drawings. I am grateful for our friendship and for having her in my family.

I thank Nana for all the love she gives me unconditionally.

I am grateful to my father for the invaluable help he gave me; for his great sensitivity, for the enthusiasm and genuine interest with which he followed the development of my project, and for giving me his strength to always stand against conformity and injustice. I thank my brother for creating a space for dialogue and sharing between us; for giving the example of how, in a context that is very often superficial or hostile, it is possible to keep questioning ourselves about what we offer and how to do it, with sensitivity, commitment and courage, always taking care of those that are usually put aside.

Introduction

This work recounts a complex path, at times distressing, in which I have tried to thoroughly question the reasons for my growing dissatisfaction with the scenario in which I have studied and in which I work as an architect.

Briefly, said scenario, characteristic of a still largely dominant architectural culture, gives the architect the role of ‘expert’, of ‘creative genius’, of a figure capable of providing optimal solutions for a generic ‘common good’, making use of his/her own disciplinary knowledge exclusively. The topic, then, is anything but new, and for many years critical reflection and alternative experiments on it have been emerging.

Despite the fact that I have always had a controversial relationship with architecture – before graduating I had already decided to change my course of study and enrol in a master in museum and contemporary art curatorship – it would be unfair of me not to admit that I too, in my brief professional experience, have felt the fascination with a role that allowed me, by myself, to mould the ideas and solutions that I had generated and watch them taking shape. Many times I have felt enthusiastic while seeing them materialising and many times I have turned a blind eye when the illusory initial perfection started to crumble, giving way to the recalcitrance of the materials, to the clients’ complaints, to the necessity for a too costly maintenance. The creative power that architectural practice offers is wonderful, and in many ways I still love it.

However, a growing uneasiness about the wide-spread conceit – of which I was myself a ‘happy victim’ – about the fact that it can be possible to solve problems without immersing oneself in the world from which they come, motivated me to question myself and find alternatives.

I began to reflect on how the figure of the architect and its presumption to control could be weakened by the gradual unveiling of a contingency made of different voices, necessities, and circumstances that are too often buried; and therefore, on the necessity of opening up design processes to the participation of other actors.

My dissatisfaction with the academic system in which I studied is linked to issues that go well beyond the mere field of architecture. During my research, among many others, I had the chance to read a beautiful work by sociologist and art curator Alessandra Pomarico¹, with which I particularly identify. To paraphrase her words, I am an educated white woman from the Global North of the world. I have always been curious about – and yearning for learning – as I believe that the role of culture is fundamental in a healthy society. In many respects I consider myself lucky, since so far I have had the possibility to keep asking myself questions and to keep questioning. However, I have seen many suffer and I have suffered myself because of an educational system

1 Cf. Pomarico, A. (2018) In The Cracks of Learning (Situating Us). Retrieved 9 December 2020, from <https://artseverywhere.ca/2016/12/14/cracks-learning-situating-us/>

that is way too often inclined to oppress, mistreat, discourage and deprive students of the ability or wish to imagine. Today education is mainly conceived in terms of 'knowledge production': an economic enterprise inscribed in a capitalistic vision. In this way, students are de-politicised and the academic journey follows entrepreneurial dynamics, in which education is seen as a 'product', as 'goods'.

In the Western history of educational institutions, the principles that shape pedagogy imply an inhomogeneous and asymmetrical relationship between those who 'know' and those who 'do not know'. This often entails an intrinsically violent approach that, beyond apparently 'good intentions', is aimed at 'moulding', 'instructing', and 'training pupils'. Foucault included schools – together with prisons and psychiatric hospitals – among the 'total institutions' organised to render bodies 'docile', and through which so many physical, psychological, emotional, cognitive and cultural traumas have been perpetuated. Today, by insisting on abilities, skills, standardised study and evaluation programs, academic institutions frequently tend to instruct students pushing them to accept social roles in an uncritical way, and to direct their choices towards the market. Besides, class, race, and gender prejudice continues, although often in a silent way, to deeply structure the way in which certain ways of acting are internalized and repeated later on. What appears today as a global crisis scenario, which affects both us and the planet, turns into a crisis of imagination too: we seem to be incapable of thinking, or even dreaming, of the possibility to live in a different way, forced to 'function' within a system that is incorporated into almost every aspect of our lives.

My process of constant questioning has not only seen me exploring with enthusiasm alternative design and pedagogical attempts; falling in love with my readings; passionately interacting with others who shared my concerns and sensitivity; spending months abroad looking for opportunities for further dialogue in fields other than architecture. As it shall appear more clearly in the final chapters of this thesis, my journey represents a much more radical operation. In fact, I have had the chance to 'expose myself', at times to de-construct myself, to question the way in which I used to work and the tools with which I used to do that, to be clear-eyed about educational models on which my knowledge was based. I have experienced firsthand what it could mean to study and practice architecture in a different way, learning 'to be affected' by other visions of the world.

In short, the questions that have inspired my work right from the start are: what is the background and what is the logic with which architecture traditionally works? How can the field of design be opened up to the participation of other actors, who could redefine and scale down the role of the architect? What does participating to architectural design really mean? And how can this lead to new possibilities for architectural practice itself?

How is it possible to think of forms of learning that may oppose the idea of principles as profit, competitiveness and exploitation?

Chapter Outline

It is against the backdrop of these questions that my work unfolds.

Specifically, **Chapter I** analyses how participation is currently one of the crucial issues in contemporary architecture and urban design's diverse scenario. An ever-increasing number of initiatives and public debates are trying to encourage considerations on the urgency of redefining the role of design, especially in relation to complex, contemporary crises. Analysing such a scenario has led me to ask myself a series of questions: who and which actors are involved in these practices? What does participating exactly mean? Participating in what? What is the logic, what are the assumptions and the ways in which participation is proposed, researched, practised? In this regard, this chapter focuses on the study of a series of reflections and experiences, both past and recent, which for me have constituted an initial attempt to answer the question of what it means to open up the field of design to the participation of other, different actors. Many professionals, scholars, activists and collectives have long been trying to create generous and viable alternatives to expertocratic models, shaped in particular by modernism, on which a certain dominant architectural culture is grounded.

Drawing on some reflections by Jacques Rancière, anthropologist Ignacio Fariás states that the core issue in participation is 'the relationship between parts and wholes'. Therefore, it is possible to recognise two different approaches: one involves the 'making of wholes', i.e. the attempt to integrate the parts so that they form part of a coherent and all-encompassing whole; the other implies the 'making of parts', that is, the multiple forms of contestation of existing wholes by hitherto submerged parts. While a 'inclusivist' type of logic can be associated to the first method, the second one is attributable to different attempts to break dominant architectural paradigms. This second group more openly marks a willingness to open the field of architecture to the many diversities, to different singular subjectivities. The aim of the second section of this chapter, therefore, is that of underlining the multiplicity of different actors and bodies that question general assumptions on how, for who and for what architects design.

Chapter II attempts to carry out a more accurate analysis of the disciplinary scenario in which architects are trained and operate, and against which the experiences mentioned in chapter I move. This analysis aims at showing how the particular expertise of architects produces and is produced itself by normative models that constitute actual power

technologies, or rather, – in Foucauldian terms – bio-power technologies. Foucault's analysis on the connection between knowledge and power is used as a lens to observe some stories of the 'Modern era': particularly, these stories are those that recur in the narratives at the basis of the pedagogical models adopted by most architecture schools of the Western world. Besides, the chapter highlights another much older question that is at the basis of such models, which concerns the binary oppositions specific to the tradition of Western thought, such as the nature/culture divide and other dualisms like thought/practice, design/construction, architect/builder. In architects' education certain pedagogical practices deploy procedures to ensure that students are absorbed in the dominating disciplinary paradigm. In this regard, a major role is played by architectural handbooks, which have contributed to the disciplinary construction of the architect as an expert technician, capable of operating on space through norms and standards. Furthermore, handbooks have conveyed a generic idea of user, or universal body. This idea, in particular, even though it was shaped according to different forms of logics and visions – has characterised Western traditions of architectural design since ancient times.

Chapter III dwells on the contribution that *Science and Technology Studies* (STS) might offer to reflect on the theme of participation in architecture, on the problem of knowledge and, in particular, expert knowledge. Such contribution consists in, first of all, suggesting a more-than-human perspective, able to complexify further the meaning of participation and the 'parts' involved, that is, reflecting on which and how many they are. Since the 1970s, a growing interest in social sciences for the study of science emerged, since a close connection between scientific knowledge and power has been observed. Social scientists and ethnographers, by analysing the work of scientists in their laboratories, have intended to demonstrate how scientific facts take shape, and the ways in which the 'expert authority' is constructed. One of the main issues introduced by these studies, and by the *Actor-Network-Theory* (ANT) in particular, is the political agency of non-humans, considered as active parts in the social reality. Binomials such as nature/culture, human/non-human, subject/object, which also belong to the modernist logic, are progressively questioned and treated as an effect, i.e. as a product of the purification of more complex relations. ANT, therefore, proposes a new vision, which adds – or restores – a material dimension to the social sphere. The concept of society is substituted, from this perspective, by multiple and heterogeneous networks. The metaphor of 'heterogeneous engineering' has been used to describe the operations that can bring together and discipline ideas, materials, procedures, tools, technology, and humans, and can assemble said heterogeneous entities into 'black boxes'.

Interestingly, with regard to the field of architecture, the metaphor of heterogeneous engineering was not just used to analyse artefacts and to understand how within them social norms are inscribed, but also to study designers' practices and the way in which they 'manufacture' social worlds.

Ethnographies conducted within architectural practices reveal how design is a socio-material practice and, therefore, mediated, and which is carried out through very specific devices and techniques.

By opening the 'black-boxes' of scientific facts, technological artefacts, and design practice itself, STS scholars have made the experts' cultural authority questionable, showing a commitment towards the democratisation of technical knowledge. This, then, relates once more to the main topic of this thesis, that is to say, participation in architecture.

Notably, the influence of pragmatist philosophy on ANT spurred a number of scholars and architects to reformulate the idea of participation by shifting the focus on its material dimension, always linked to specific 'issues'. Objects, devices and materials, not just human subjects, play a role in enacting particular ideals of citizenship and participation. Another aspect that takes on particular relevance, is Isabelle Stengers's invitation to continually foster situations that might destabilise the existing versions of the 'common world' – or, in our case, predefined versions of 'community', or of who and how participates in architectural design – so as to make new and unknown configurations possible. This turns out to be an ethical-political commitment to take into account all the heterogeneous entities – or 'parts' – that constitute the common world, without losing sight of potential victims. In this regard, María Puig de la Bellacasa's concept of 'matters of care' emphasises the necessity of taking into account neglected parts and issues.

Chapter IV examines the impact of STS on architectural practice. Particularly, its aim is that of offering a partial and temporary overview on the several and overlapping ways in which the conceptualisations and methods provided by STS are used experimentally – and are, in turn, transformed and extended – by architects to explore different ideas of architectural practice and its political dimension. By questioning the modernist pact of social utility, according to which they are responsible for the creation of solutions for the 'common good' by designing objects, technologies and spaces, a number of architects have re-conceived and re-learned their practice in many ways. STS contribution has indeed been crucial in revealing the more-than-human politics of design: from this perspective, design becomes a radically distributed practice and a less time-constrained and specified task, requiring to take into account the agency of both human and non-

human actors. Beyond the mere act of providing solutions and finished objects, the aim of design becomes to problematise and open up processes.

Following Latour and through the perspective of ANT, STS-trained anthropologist Albena Yaneva reformulated the architect's task as that of mapping controversies, which is to say, making every actor, connection and controversy involved in both artefacts and architectural practices visible. Notably, Yaneva elaborated and taught an educational programme called 'Mapping Controversies in Architecture' at the University of Manchester since 2008/2009. The course aimed at teaching students how to draw, map and visualize controversies rather than objects, and, therefore, the complex ecologies that hold together architectural, cultural, economic and political issues. Architects, in this perspective, become analysts of controversies, thus developing extensive knowledge 'about' design.

However, other experiments carried out by a number of architects attempt to adopt STS conceptual and analytical instrumentation 'within' architectural practice itself, with the goal of transforming it. Furthermore, an experimental agenda has unfolded in pedagogical spaces of architecture, whereby STS's anti-technocratic stance – its concern for the plurality of knowledge beyond those of experts, and the potential impact of neglected actors in the articulation of given socio-material assemblages – has particularly inspired relevant conceptual and practical explorations in design studio projects at the schools of Architecture in Alicante and Munich. Beyond architectural solutionism, these experimental briefs have revolved around particular more-than-human challenges, provoking a crisis in conventional methods and means of design and in the ways in which participation is usually understood, hence speculating what architectural practice might turn into, re-learning its ways from a variety of agents who are usually not taken into account.

Particularly, this chapter focuses on how the experiments of a series of architects, both in their practice and in pedagogical spaces, reformulate, in different ways, the meaning of participation in architecture.

Chapter V dwells on another experiment that is inscribed in this logic: Sánchez Criado and I, from October 2019 to March 2020, engaged in developing a joint auto-pedagogical programme with the aim to put myself in crisis, so that I could experimentally re-learn my own way of practicing architecture. As in Sánchez Criado's previous experiences at the Technical University of Munich – which are recounted in chapter IV – the idea revolved around creating the conditions for architecture to be challenged, i.e. to work with actors who could put its conventional contractual and collaborative/participatory ways of working in crisis.


A series of contingencies, such as Sánchez Criado's long experience with issues related to urban accessibility activism, and the interest and willingness to collaborate showed by my flatmate and her son, Moritz, a neurodivergent person, motivated us to undertake an experiment to explore what neurodiversity could teach architecture. To summarise, the whole process of my 'sensitization' and re-learning took place through three main interconnected operations: 'sensitising myself' to my own architectural practice, in order to distance myself from 'the discourse', and start to re-learn by reflecting from 'within' my 'material doings'. In this way I could develop an awareness to the modalities, tools and techniques with which I used to work and which I had learnt during my educational path; 'sensitising myself' to bodily diversity, thus going beyond the usual type of body around which the dominant architectural culture is founded; 'sensitising myself', thanks to my connection with Moritz, to other concepts of space, which are to be found beyond the traditional volumetric-Euclidean models.

The reason why the notion of neurodiversity seemed interesting for our research purposes is that, because of its focus on neural variability, it can act as a conceptual operator which allows to observe a great number of subjective phenomena that affect our way of conceiving space and its uses. In particular, neurodivergent people embody an interesting crisis, or deconstruction, of the architectural figure of the 'client' or of the 'participant', conceived as a Kantian subjectivity, able to express her/his own wishes and needs. Therefore, the notion of neurodiversity challenges the very premises on which participative design is founded, in the way in which it is commonly conceived, revealing, at the same time, different connections with the built environment, such as to require architects to confront non-Euclidean understandings of space.

The chapter titled *Proto-architectural operations for a neurodiverse spatial practice* has the shape of a notebook of sort, and reports the documentation of my entire, situated, re-learning experience with Moritz.

Thanks to the relationship with Moritz and some 'epistemic companions', I had the chance to question and re-think my knowledge. I questioned the architectural culture through which I was educated, and the tools with which I used to work, experimentally accessing a different way of sensing and knowing.

This chapter is not a conclusion. Rather, it is intended to signal an opening to new, unpredictable and unprecedented possibilities for architecture.



Participation: opening up the *who* and the *how*

Introduction

An ever-increasing number of initiatives and public debates, through well-known channels too, are trying to encourage considerations on the urgency of redefining the role of architecture and architects themselves, especially in relation to complex, contemporary crises. However, such concerns are by no means new. Attempts at formulating alternatives to expertocratic models, on which a certain dominant architectural culture is grounded, shaped in particular by modernism, are not only the current ones. This chapter focuses on the study of a series of reflections and experiences, both past and recent, which for me have constituted an initial attempt to understand what it means to open up the field of architecture, which is generally a domain of experts, to the participation of other, different actors.

In this scenario I asked myself a series of questions: who and which actors are involved in these practices? What does participating exactly mean? Participating in what? What is the logic, what are the assumptions and the ways in which participation is proposed, researched, practised?

Starting from some reflections by Jacques Rancière¹, anthropologist Ignacio Farías argues that the core issue in participation is ‘the relationship between parts and wholes’². In particular, Farías highlights a tension between two different approaches. One involves the ‘making of wholes’, i.e. the integration of a number of parts into a coherent and all-encompassing whole; the other implies the ‘making of parts’, and can be seen in the multiple forms of contestation of existing wholes by hitherto neglected parts. The first approach can be associated with a ‘inclusivist’ type of logic, belonging to a series of past and more recent participation considerations and practices, while the second one explicitly implies breaking dominant architectural paradigms. In other words, the latter more openly marks the need to open the field of architecture to the many diversities, to different singular subjectivities that invoke a redefinition of the normative frameworks within which architecture operates. In this sense, such approach carries on a radicalisation of the meaning of participation.

1 Cf. Rancière, J. (2015) *Dissensus: On Politics and Aesthetics*. London: Bloomsbury Publishing.

2 Cf. Farías, I. (2018) Parts and Traps for Making Futures. In *Making Futures Bauhaus+*. Available at: <https://www.making-futures.com/ignacio-farias-parts-and-traps-for-making-futures/>

1. The architect's role: a growing restlessness

Participation is hardly a new theme in architecture. Indeed, back in the 1960s and 1970s professionals, scholars and collectives already attempted to create generous and viable alternatives to an architectural culture based on the image of the architect as an expert and sole author.

However, particularly disruptive events, such as the economic crisis of 2008-2009, together with the progressive increase in social inequalities and the global environmental crisis, have determined a state of widespread uncertainty and have signalled even more the urgency of overcoming this paradigm. Architecture itself is going through a process of crisis: there are countless spaces, times and ways in which designers and academics reflect on their role and how it should be transformed in order to deal with this scenario. New practices, which have emerged and continue to emerge, by pointing out the limits of centralised, top-down approaches, aim at enabling people to regain their capacity for action and influence. Many of these initiatives transcend conventional definitions of architecture: “[p]rivileging activism, informality, and alterity over what is perceived as a dominant architectural culture (...), such practices expand design from the manipulation of form and material to the development of procedures and the creation of models of engagement”³. Such approaches are getting growing popularity also by means of very established institutional channels. In 2010 the *MoMA* exhibition *Small Scale, Big Change: New Architectures of Social Engagement* claimed novelty for a socially relevant form of architectural practice, displaying projects that included low-cost housing, school building, community facilities, access to public transportation, and the renovation of existing social housing⁴. The same year, the 12th Exhibition of the Venice Architecture Biennale⁵, curated by Kazuyo Sejima and titled *People meet in Architecture*, intended to be a chance to experience the manifold possibilities of architecture, as well as to account for its plurality of approaches. According to the curator: “[t]he twenty-first century has just started. Many radical changes are taking place. In such a rapid-changing context, can architecture clarify new values and a new lifestyle for the present?”⁶ In 2012, at the 13th edition of the Biennale, the U.S. Pavilion *Spontaneous Interventions: Design Actions for the Common Good*⁷ presented a variety of collective, temporary and spontaneous initiatives. In the same edition, the *Golden Lion* was assigned to *Urban-Think Tank* (U-

3 Cupers, K. (2014) Where Is the Social Project? *Journal of Architectural Education* 68(1): 6-8, p. 6.

4 Cf. Ibidem.

5 The Venice Architecture Biennale is one of the most famous architecture events in the world. More information on its history can be found at: <https://www.labiennale.org/en/history>

6 Excerpt of the ‘Manifesto Biennale 2010’. Retrieved 11 December 2020, from: <https://www.archdaily.com/73301/12th-international-architecture-exhibition-venice>

7 See: <http://www.spontaneousinterventions.org>

TT) for a project documenting the squatter community of *Torre David*⁸, in Caracas, Venezuela. In 2015 *Assemble*⁹, a London-based collective of architects, got awarded with the *Turner Prize* – very prestigious in the field of visual arts – for the refurbishment of the abandoned buildings of Cairns Street in Liverpool in collaboration with its residents. The very same year, *MoMA* in New York promoted the exhibition *Uneven Growth. Tactical Urbanism for Expanding Megacities*¹⁰, aimed to signal the potential changes in the roles of architects and urban designers towards the increasing inequality of current urban development. The notion of ‘tactical urbanism’ was presented as a robust interpretive frame for understanding a variety of emergent urban design experiments in contemporary megacities. Being grounded upon participatory democracy, not formally pre-programmed in advance or from above, it was presented as an alternative to both modernist-statist and neoliberal paradigms of urban intervention¹¹. In 2016 the *Pritzker Prize* was assigned to an housing project in Iquique, Chile, by Alejandro Aravena¹², which envisaged the unsanctioned, informal and gradual improvement of the houses by the local community. This widely known project has been, and still is, mentioned and displayed in plenty of exhibitions and publications all over the world, addressing the topic of an ‘engaged architecture’¹³. Aravena was also the curator of the 2016 Architecture Biennale, *Reporting from the Front*, whose core assumption was that design practice, being a discipline naturally carrying a ‘proactive’ view on reality, can offers effective solutions to pressing issues of contemporary age. The curators of the 16th Venice Architecture Biennale, Yvonne Farrell and Shelley McNamara, presented their theme – *Freespace* – as follows: “[it] describes a generosity of spirit and a sense of humanity at the core of architecture’s agenda, focusing on the quality of space itself. (...) Freespace can be a space for opportunity, a democratic space, un-programmed and free for uses not yet conceived. There is an exchange between people and buildings that happens, even if not intended or designed, so buildings themselves find ways of sharing and engaging with people over time, long after the architect has left the scene.”¹⁴

8 More information on this project is available at: <http://u-tt.com/project/torre-david/>

9 See: <https://assemblestudio.co.uk>

10 More information on this exhibition is available at: <https://uneven-growth.moma.org>

11 Cf. Brenner, N. (2016) ‘Is tactical urbanism an alternative to neoliberal urbanism?’. In N. Brenner, *Critique of Urbanization*. Basel: Bauwelt Fundamente Series, Birkhauser Verlag, pp. 128-146.

12 <http://www.elementalchile.cl/en/>

13 A number of scholars, mostly with a background in critical urban studies, have expressed some skepticism towards the effectiveness of these interventions. See, for instance: Brenner, N. (2016) ‘Is tactical urbanism an alternative to neoliberal urbanism?; Boano, C. and Vergara Perucich, F. (2016) Half-happy architecture. *Vicversa* (4): 58-81; Cupers, K. (2014) Where Is the Social Project?; Schneider, T. (2018) What If ... Or Toward a Progressive Understanding of Socially Engaged Architecture. In F. Karim (ed.) *Routledge Companion to Architecture and Social Engagement*, pp. 3-13. New York and London: Routledge.

14 Excerpt of the ‘Manifesto Biennale 2018’ written by the two curators. Retrieved 11 December 2020, from: <https://www.labiennale.org/en/architecture/2018/16th-international-architecture-exhibition>.

Other events have shown a growing interest in reformulating the role of architecture in relation to the urgencies of the global climate crisis. Since recent years, architects and urban planners have begun to question and formulate proposals in response to the era of the ‘broken planet’, also known as *Anthropocene*, *Capitalocene*, *Plantationocene*, *Chthulucene* or *Gynocene*¹⁵ [in-depth information box (from now on, i.b.) I. 1]. The ideology of progress and the promise of a better future inherent in modernity – and, particularly, in modernism in architecture and urban planning – was based on an attitude of disregarding or annihilating the existing. This has consequently led to the perpetuation of serious damage to the planet. *BioTallinn*, the Tallinn Architecture Biennale 2017, curated by Claudia Pasquero, was held under the idea of overcoming boundaries between natural and artificial realms: “rather than considering nature as a balanced system, that is perturbed and derailed by human action, *bioTallinn* assumes that there is no nature. (...) [it] explores the city as a territory of self-organization and co-evolution of multiple dynamical systems, including ecological systems, infrastructures and technological systems, social groups and political systems”¹⁶. In 2019, the XXII International Exhibition of *La Triennale di Milano*, curated by Paola Antonelli and titled *Broken Nature: Design Takes on Human Survival*, promoted the importance of creative practices in surveying and protecting our species’ bonds with the complex systems in the world. The same year, the exhibition *Critical Care. Architecture for a Broken Planet*, curated by Angelika Fitz and Elke Krasny, was held as an appeal for a caring architecture and urbanism to “contribute to repairing the future and keeping the planet and its inhabitants alive”¹⁷. The 17th Venice Biennale, curated by Hashim Sarkis and currently ongoing, is titled *How Will We Live Together?* to emphasize the need of a new ‘spatial contract’: “[i]n the context of widening political divides and growing economic inequalities, we call on architects to imagine spaces in which we can generously live together”¹⁸.

I could go on and on. Initiatives and public debates on the evolution and redefinition of the role of architecture are countless¹⁹. What about, for instance, all that keeps emerging in reaction to the covid-19 pandemic? This is, as we can see, a restless scenario, more and more dense with concern and agitation. Such a scenario constitutes the background for my questions about the meaning and implications of participation.

15 Cf. Fitz, A. and Krasny, E. (2019) *Critical Care: Architecture and Urbanism for a Broken Planet*. Cambridge, MA: MIT Press, p. 11.

16 Excerpt of the *Biotallinn*’s manifesto. Retrieved 11 December 2020, from: <https://2017.tab.ee/biotallinn/>

17 Excerpt of the exhibition’s brief. Retrieved 11 December 2020, from: <https://www.azw.at/en/event/critical-care-architektur-und-urbanismus-fuer-einen-planeten-in-der-krise/>

18 Excerpt of the ‘Manifesto Biennale 2020’ written by the curator. Retrieved 11 December 2020, from: <https://www.labiennale.org/en/architecture/2021/introduction-hashim-sarkis>. The 17th Venice Biennale was previously scheduled for 2020 and later postponed to 2021, due to the COVID-19 pandemic.

19 See also: Harriss, H., Hyde, R. and Marcaccio, R. (eds.) (2020) *Architects After Architecture: Alternative Pathways for Practice*. New York: Routledge.

i.b. I. 1 - The *Anthropocene* epoch

Many scholars have been debating on how to name this epoch¹. The main argument behind the term *Anthropocene*, popularized in 2000 by the atmospheric chemist and Nobel Prize winner Paul Crutzen together with Eugene F. Stoermer, is that our current geological epoch is dominated by human activity. Humans have irreversibly altered the planet, which is reacting with global climate upheavals. According to environmental communication designer Joanna Boehnert the *Anthropocene* “has been critiqued as uncritically importing Western rationality, imperialism and anthropocentrism”². The *Anthropocene* effectively might be ambiguous, as it obscures the fact that present-day catastrophic ecological disruptions are not caused by all human activity, but rather by very specific “‘activities’ of corporate industry”³. The term *Plantationocene* is described by ecofeminist philosopher and historian of science Donna Haraway as the “devastating transformation of diverse kinds of human-tended farms, pastures, and forests into extractive and enclosed plantations, relying on slave labor and other forms of exploited, alienated, and usually spatially transported labor”⁴. Haraway, in particular, refusing to label the current epoch either as Anthropocene – as it places human action at the center – or as *Capitalocene* – focused on the dynamics of the capitalist system – coined the term *Chthulucene*, that more aptly and fully describes a time in which the human and non-human are inextricably linked in ‘tentacular’ practices. Haraway in fact invites not to consider the man as a sole actor but rather as part of a holistic, hyper-connected system, in which the disappearance and suffering of every single element reverberates on the whole. As art historian T. J. Demos notes, there is also the *Gynocene* thesis, “implying a gender-equalized, feminist-led, anti-anthropos environmentalism, which locates human-caused geological violence as coextensive with patriarchal domination, linking ecocide and gynocide”⁵.

1 See, for instance: Boehnert, J. (2018) *Design, Ecology, Politics: Towards the Ecocene*. London: Bloomsbury; Haraway, D.J. (2015) Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin. *Environmental Humanities* 6: 159-165 (see also: Haraway, D.J. (2016) *Staying with the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press); Demos, T. J. (2017) *Against the Anthropocene: Visual Culture and Environment Today*. Berlin: Sternberg Press.

2 Boehnert, J. (2018) *Design, Ecology, Politics*, p. 10.

3 Demos, T.J. (2017) *Against the Anthropocene*, p. 18.

4 Haraway, D.J. (2015) Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin, p. 162.

5 Demos, T.J. (2017) *Against the Anthropocene*, p. 89. As Demos describes, the first usage of the term “Gynocene” online was (April 11, 2010) *Le forum TRANS—Rencontres transgenres—Transsexualité (s)*, <http://www.i-trans.net/forum-trans/viewtopic.php?f=3&t=11604&start=50&view=print>. It was later used by Pirici, A. and Raluca Voinea, R. (January 2015) Manifesto for the Gynecene—Sketch for a New Geological Era, *tranzit.ro*, <http://ro.tranzit.org/file/MANIFESTO-for-the-Gynecene.pdf>

2. Participation and the ‘common’

2.1. Italian countercultures of the 1960s and 1970s

Among the first significant participatory experiences I learnt about during my training were the Italian radical design and De Carlo ones.

The former, which came to international prominence with the famous exhibition *New Domestic Landscape*, curated by Emilio Ambasz at the *MoMA* in New York in 1972, did not have a significant following, probably because they were unequally opposed to the production and socio-economic system of the time. They represented a highly critical position towards the widespread way of conceiving architectural training and practice, and showed particular attention to forms of learning and development of skills, including craftsmanship.

In Italy, De Carlo’s name is linked like no other to the theme of participation. A resumption of discussion on his contribution can be found in the recent re-editions of *L’architettura della partecipazione*²⁰ and *La piramide rovesciata*²¹. I will discuss the former later. The latter, in 1968, represented a sharp criticism of the hegemonic structure of the Italian university, devoid of tension and demands from below and sustained by the principle of authority. De Carlo developed some central themes in the social role of architecture and in the training of architects – made, at that time, of predetermined answers, standards, models and other modernist formulas – which had a considerable international impact and made an important contribution to the *Team-X* [i.b. I. 2].

20 De Carlo, G. (2013) *Un’architettura della partecipazione*, S. Marini (ed.). Macerata: Quodlibet. De Carlo’s essay *An Architecture of Participation* was published in 1972 by the Royal Australian Institute of Architects and collected the reflections presented in a conference in Melbourne, the third in a cycle dedicated to the future of architecture and urbanism. The conference was opened by Jim M. Richards with *A Critic’s View*, followed by Peter Blake with *The New Forces*. The three essays are collected and translated into Italian in Richards, J. M., Blake, P. and De Carlo, G. (1973) *L’architettura degli anni Settanta*. Milano: Il Saggiatore.

21 De Pieri, F. (ed.) (2018) *Giancarlo De Carlo, La piramide rovesciata. Architettura oltre il ’68*. Macerata: Quodlibet.

The volume includes, in addition to the reprint of De Carlo, G. (1968) *La Piramide rovesciata*. Bari: De Donato, also that of two other essays: *Perché costruire edifici scolastici* – originally published as Id. (1969) *Why/How to Build School Buildings*. *Harvard Educational Review* 39(4): 12-35 – in which De Carlo also questions the spatial organisation and the necessity itself of school buildings – and Id. (1970) *Il pubblico dell’architettura* – published in Italian/English – *Parametro* 5: 4-13. To give an account of its relevance it is enough to quote the titles of some chapters: *The revolt and frustration of the school of architecture*; *The ambiguity of the architect’s role*; *The Modern Movement: Between commitment and uncommitment*; *Faith in ‘how’ and ignorance about ‘why’*; *Good reasons for the non credibility of architecture*; *Participation and scientific method*; *The discovery of the users’ needs*.

i.b. I. 2 - The Team X

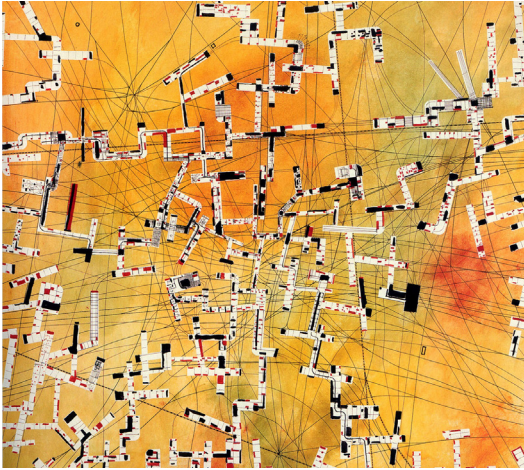
In 1953, a group of young architects were given the task of organising the tenth CIAM (*Congrès Internationaux d'Architecture Moderne*) in Dubrovnik in 1956 – hence the number X (10) in the name. Numerous architects were part of the team. A more stable group included Jacob B. Bakema, Giancarlo De Carlo, Georges Candilis, Aldo van Eyck, Peter and Alison Smithson, Shadrach Woods. In addition to them, also José A. Coderch, Ralph Erskine, Herman Hertzberger, Guillermo Jullian de la Fuente, Reima Pietilä were present on several occasions. Other architects were present at some of the meetings, including Christopher Alexander, Fumihiko Maki, Jean Prouvé, Kenzō Tange and James Stirling. Some of the points shared by the group were the need for greater consideration of people's actual social needs and the search for a relationship with the specific and historical conditions of different contexts, which is opposed to modernist ideology of erasure and *tabula rasa*.

2.1.1. New utopias and radical experiments

During the 1960s and 1970s some important experiences, which were critical of the dominant models of modernist design, drew attention to the themes of the relationship between (series) design-production and the user (as an individual), and the question of participation of the user in the design processes.

Indeed, those years witnessed a resurfacing of different kinds of utopian architecture in Europe. Some of them took the form of megastructures – adaptable, flexible, extensible – in the atmosphere of a widespread trust in technology and in the unlimited availability of energy resources, which was suddenly contradicted by the 1970s oil crisis. Other kinds, such as Constant Nieuwenhuys's 'nomadic' architecture, or Yona Friedman's 'mobile' one – that is to say, available to the inhabitants' autoregulation – although they shared with the first ones some of their views on megastructures, they were presented, more specifically, as alternatives, as social change tools.

Regarding the Italian experience, *Archigram*'s work, which is linked to the first group of these utopias, influenced – by polemical opposition – some of the first radical expressions. *Archigram*, which was formed at the *Architectural Association* in London in 1961, through the use of different means, such as radical comics, poems and statements, proposed the vision of a consumerist city, founded on resources which were considered unlimited. This vision pushed other groups to stand as antagonists in order to imagine



Constant Nieuwenhuys, *New Babylon*, an anti-capitalist city perceived and designed in 1959-74 as a future potentiality. Source: artwort.com



Yona Friedman, *Mobile Architecture*, *People's Architecture* exhibition, Maxxi, Rome, 2017. Source: floornature.com

a socially and politically committed architecture. In fact, the work by *Archizoom*²² – whose name was a direct reference to the title of *Archigram*'s number 4, that is, *ZOOM! Amazing Archigram* – represented an ironic response to *Archigram*'s consumerist and separation logic between architecture and politics, and inaugurated the *Anti-design* or *Radical Design* movement²³ in Italy with projects and essays that criticised modernism and explored flexible approaches to urban design. *Superstudio*²⁴ opposed mainstream architecture as well – accusing it to ignore and worsen environmental and social problems – and proposed polemic projects that imagined dystopian worlds. The *Strum* group²⁵ saw in architecture a means to participate in social and political protests, which reached their highest expression in 1968, through the organisation of seminars, and by handing out copies of the group's photo stories. One of the most relevant contributions made by these radical groups was that of moving beyond a vision of architecture that consisted in a static building, favouring an image of architecture conceived in terms of cultural critique, and political and social practice.

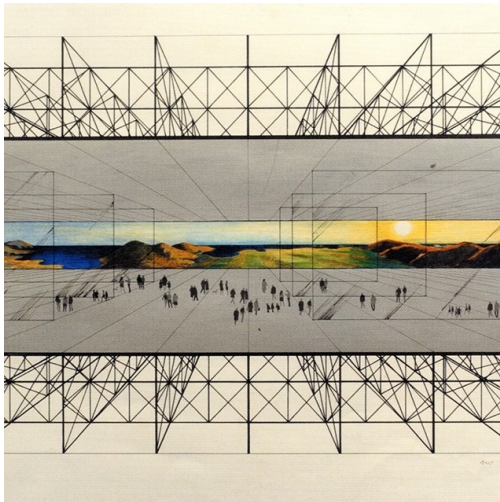
The exhibition *Italy: The New Domestic Landscape. Achievements and Problems of Italian Design* held at the *MoMA* in New York, celebrated the contribution of design to Italy's postwar

22 *Archizoom* was founded in Florence in 1966 by four architects, Andrea Branzi, Gilberto Corretti, Paolo Deganello, Massimo Morozzi and two designers, Dario Bartolini and Lucia Bartolini.

23 For an interesting critical discussion of the role of women in the work of Italian radicals, see Dellapiana, E. and Pesando, A. B. (2018) In front of and behind the Mirror. Women in Italian Radical Design, pp. 93-106. *Proceedings of the 3rd MoMoWo International Conference – Workshop, University of Oviedo*, 2-4 October 2017, Oviedo. Ljubljana: Založba ZRC.

24 *Superstudio* too was founded in Florence in 1966 by Adolfo Natalini and Cristiano Toraldo di Francia.

25 *Strum* was founded in 1971 in Turin by Giorgio Cerretti, Pietro Derossi, Carlo Gianmarco, Riccardo Rosso and Maurizio Vogliazzo.

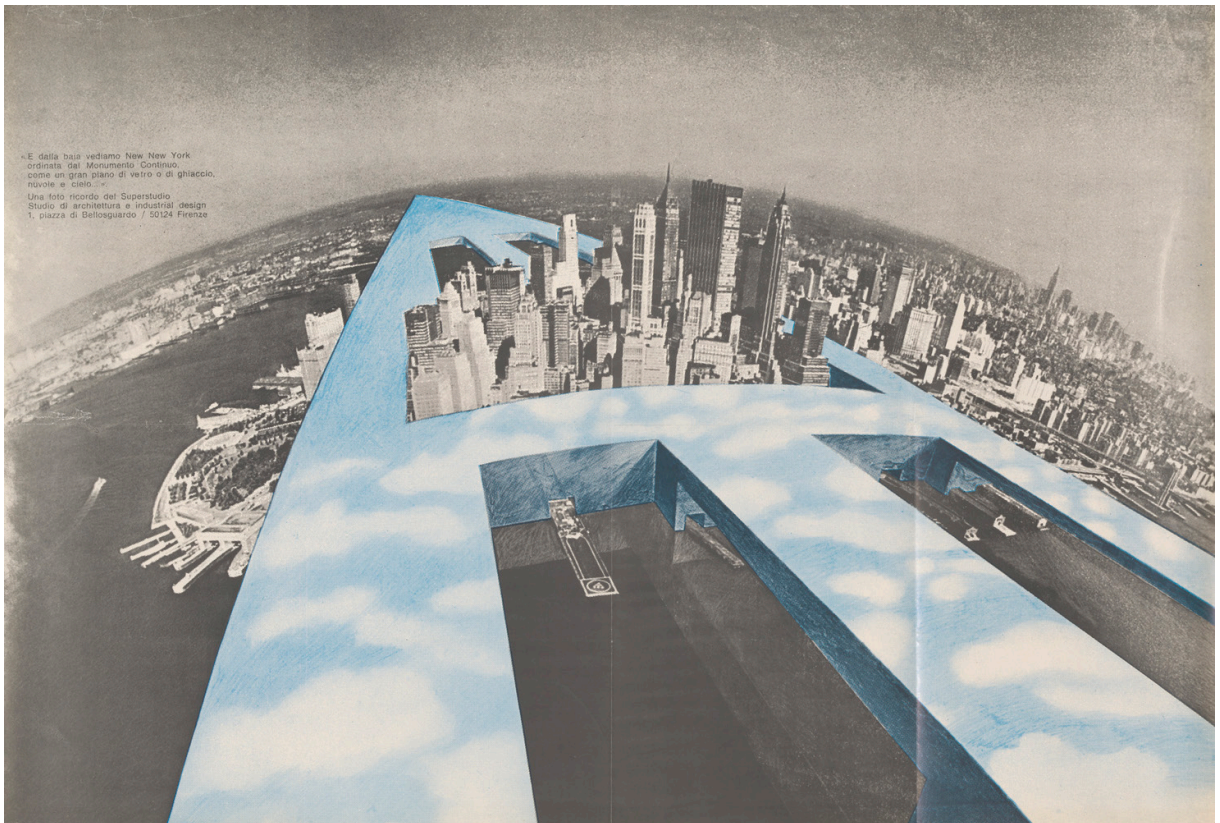


Archizoom, No-Stop City, c1970.
Source: architexturez.net



Strum, The Struggle for Housing, the first issue of a series of magazines published in 1972. Source: quaderns.coac.net

Superstudio, Il Monumento Continuo, New York, 1969. Source: attribune.com





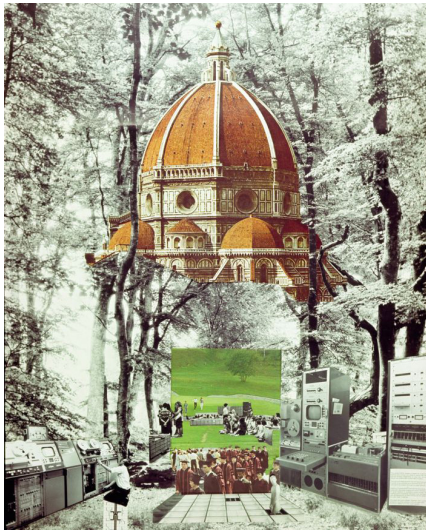
Installation view of the exhibition *Italy: The New Domestic Landscape*, MoMA, New York, May 26, 1972 - September 11, 1972. Source: moma.org

economic development and success in the international market. However, the exhibition displayed, at the same time, luxury goods designed by important Italian architects who worked in the dominant consumerist context and provided the imagination of a young generation with an extraordinary showcase. Therefore, in the same exhibition, critical cultural expressions towards the consumer society and the architects' role within it were opposed to the design of consumer goods.

Like many social utopias, such as those of Nieuwenhuys and Friedman, these radical types of experimentation were included in the framework of the critique of modernism, of its design practices and its educational paths. In fact, the relevance acquired by a renewed interest in forms of production that differed from industrial ones – based on standardisation – was not unimportant.

“*Gruppo 9999*’s²⁶ environment was premised on nature’s condition as a primitive and remote ‘other’ to technological modernity. (...) The turn to craft by Italy’s countercultural architects in the early 1970s was informed by a wider surge of interest in the handmade.

26 Gruppo 9999 was founded in 1967 by Florentine architects Giorgio Birelli, Carlo Calдини, Fabrizio Fiumi and Paolo Galli.



Gruppo 9999, project proposal, competition for the Nuova Università di Firenze.
Source: circolodeldesign.it



Cover of Mari, E. (1974) *Autoprogettazione?* Mantova: Corraini.

Riccardo Dalisi, *Architettura d'animazione*, Rione Traiano, Napoli (1971-75). Source: Archivio Dalisi, Napoli.



On the one hand, this period saw a growing popularity for do-it-yourself (DIY)²⁷.

Craft production appeared as a possible way to recapture individuality in a world made homogeneous by series production.

In 1974 Enzo Mari invited the public to build their own furniture by following a series of drawings published in a catalogue which was distributed for free²⁸. By allowing the users themselves to produce their own goods, he hoped that they would experiment a non-alienated production method, freed from its fetishist connection with commodities. The case of Riccardo Dalisi, the Neapolitan architect who, since 1971, led a series of experiences in one of the districts of Naples, Rione Traiano²⁹, was also significant. The interest of 'Arte Povera' in the public's participation and in the use of simple, common material, led Dalisi to encourage street kids to spontaneously produce furniture and structures with simple tools and material at hand. He perceived a greater creativity among 'the children of the lumpen proletariat' in comparison to his own architecture students. Their lack of inhibition, according to him, was attributed to the fact that these children had not experienced the stultifying effects of Italy's education system or the repressive rhythms of the assembly line. As part of the project, Dalisi kept a diary and took photographs to document the children's behaviour³⁰.

Another relevant experience was that of *Global Tools*³¹ that proposed to teach craftsmanship to stimulate and restore the atrophied creative abilities in contemporary society. In the second part of the 1970s the members of *Superstudio*, in their research course and project, *Extra-Urban Material Culture*, at the Department of Architecture of Florence, made use of anthropological techniques to examine and document the material and tools that belonged to Tuscan rural culture. Their open, militant opposition to the forms of modernist, standardised, consumerist and commercial design, proposed the return to a simpler and more spontaneous craftsmanship³².

27 Rossi, C. (2014) Crafting a design counterculture: the pastoral and the primitive in Italian radical design, 1972-1976. In G. Lees-Maffei and K. Fallan (eds.) *Made in Italy: Rethinking a Century of Italian Design*, pp. 145-160. Oxford, UK: Bloomsbury Academic, pp. 149-151. The do-it-yourself (DIY) culture is based on principles of self-management and self-production. It is an ethic born in reaction against a dominant society that considers culture in terms of a commercial enterprise.

28 My translation (A/N). Mari, E. (1974) *Autoprogettazione?* Mantova: Corraini.

29 Cf. Dalisi, R. (1975) *Guerriglieri della cultura e gioco dell'emarginazione*. In G. M. Accame e C. Guenzi (eds.), *Avanguardie e cultura popolare*, pp. 65-68. Bologna: Galleria d'Arte Moderna.

30 Cf. Rossi, C. (2014) Crafting a design counterculture, p. 152.

31 Goba Tools was founded in 1973. It was made up of leading architects of the Italian radical counterculture – including Dalisi himself, Andrea Branzi, Michele de Lucchi, Alessandro Mendini, Sottsass, Superstudio and Gruppo 9999.

32 Cf. Natalini, A., Netti, L., Poli, A., Toraldo di Francia, C. (1983) *Cultura materiale extraurbana*. Firenze: Alinea.

2.1.2. Giancarlo De Carlo: *An Architecture of Participation*

De Carlo's contribution³³ has developed since the second half of the 1950's and it represents an actively committed critique of some positions – or rather – the drift of modern design. Particularly, his critique focuses on those conditions that, on the one hand, have led to the exclusion of the very addressees of the project – society, citizens – and, on the other hand, have led architects to limit themselves – in an apparently neutral vision of technique – within specialised, aesthetic and self-referential positions. According to De Carlo, specialisation is a dangerously degenerative phenomenon because it severs the connection between the architects' field of activity and the external world. In the industrial age specialisation hasn't just become a means to rationalise production, but also a tool of social control.

Particularly relevant is his seminal text *An architecture of Participation*, that collects some among his most important reflections. De Carlo explicitly went against the trend of the dominant culture, and developed, since the beginning of the 1950's, a series of trials that represented an important critical rethinking of the architecture and the architectural practice of the Modern Movement³⁴.

What were the cornerstones and what was the condition of modern architecture that De Carlo confronted? It was a condition whose merits and initial goals he acknowledged, but, at the same time, he also shed light on its contradictions and drift through his sharp critique. De Carlo was active in the Italian anti-fascist resistance as well as the post-war Italian anarchist movement, remaining an anti-establishment figure critiquing both architectural practice and academia for their preoccupation with form and glossy images over the social and lived experience.

The critique of rationalist architecture

De Carlo developed a severe critique of rationalist thought starting from the role of the designer and the necessity for “translating design into a process, into an open work, capable of welcoming, listening and connecting with the city and the citizens’

33 Although his contribution seemed particularly important to me, also for its relevance in the Italian context, I am aware that De Carlo was not the only one to talk about participation in those years. We need only think of Alison and Peter Smithson, Cedric Price and Takis Zenetos, to name but a few. For a brief overview of their contributions and others sharing a similar perspective, see, for instance: Ratti, C. and Claudel, M. (2015) *Open Source Architecture*. London: Thames & Hudson. Originally published in Italy as Id. (2014) *Architettura Open Source. Verso una progettazione aperta*. Torino: Einaudi.

34 In the texts mentioned here ‘Modern Movement’ is always written in capital letters, and so it was reported in this chapter. We know that nowadays capital letters aren't just being ‘dropped’, but also that what seemed to be a unique, monolithic history has revealed itself – in the historiographical contributions that have been made over the years – to be made by many, different stories.

tensions”³⁵. The Modern Movement has made extremely scarce contributions, different from the expected ones,

“because the scientific content of the first approaches to the issue of the organisation of the physical space was rapidly absorbed by the labyrinths of schematizations and trapped by models that apparently grasped reality, but that, in effect, distorted it deeply (... by using) the same criteria that one would adopt when planning the production of a commodity. (...) [T]he Modern Movement has lost touch with, and even cognition of, the context in which it had meant to work. (...) This) required the direct participation of the protagonists, while the applied method imposed to exclude them and ignore their voice (...) There remained no other way except to take refuge either in art’s fiery arrogance or in technique’s cold neutrality; to surrender to the excitement of aesthetic research or to the tranquility of professional practice”³⁶.

While reflecting upon the so-called *Frankfurt kitchen*³⁷, De Carlo shows some of the main misunderstandings about the connection between shapes and context that the Modern Movement ran into. During the CIAM of Frankfurt in 1928 was presented a kitchen so well dimensioned and equipped that an omelette could have been cooked in as few movements as possible. This kitchen represented, in an exemplary manner, a more general attitude.

“In fact, many other Modern Movement architects had designed other parts of the accommodation applying the same criteria: the bathrooms, the bedrooms, the living rooms and the dining rooms. Afterwards, entire accommodations, entire buildings, and eventually entire neighborhoods were designed with the same criteria. The process was always the same: analyse all the different kinds of behaviour that can occur while performing a given function; eliminate all those kinds of behaviour that are deemed unnecessary; dimension the physical space where said function has to take place, adapting it specifically to those types of behaviour deemed necessary and therefore non-dispensable”³⁸.

35 My translation (A/N). Marini, S. (2013) *Introduzione. Scegliere la parte*. In De Carlo, G. *L’architettura della partecipazione*, p. 13.

36 My translation (A/N). De Carlo, G. (2013) *L’architettura della partecipazione*, pp. 56-57.

37 For an interesting perspective on the relationship between modernism and gender issues, with particular reference to the *Frankfurt Kitchen*, see: Henderson, S. R. (1996) *A Revolution in the Woman’s Sphere: Grete Lihotzky and the Frankfurt Kitchen*. In D. Coleman et al. (eds.) *Architecture and Feminism*. Princeton, NJ: Princeton Architectural Press), pp. 221-253. See also: Vossoughian, N. (Winter 2014) *Standardization Reconsidered: Normierung in and after Ernst Neufert’s Bauentwurfslehre (1936)*. *Grey Room* 54: 34-55; Hays, M. (1992) *Modernism and the Post-humanist Subject: The Architecture of Hannes Meyer and Ludwig Hilberseimer*. Cambridge, MA: The MIT Press.

38 My translation (A/N). Ibidem.

Following the example of the *Frankfurt kitchen*, De Carlo argues:

“first of all, it may be said that in order to select some kinds of human behaviour over others it is necessary to ‘tipify’ said behaviour. That is, we have to imagine a ‘man-type’ who performs actions that can be considered ‘typical’. (However) the ‘man-type’ does not belong to society, nor history: his perimeter doesn’t extend beyond the rotation of his limbs. His behaviour is a mere abstract description and has nothing to do with reality: it isn’t affected neither by contradictions, nor by conflicts because the circle, in which the actions of the ‘man-type’ are performed – is empty”³⁹.

In the same way are also treated some of the main collective facilities – schools, hospitals, theatres, shopping malls, traffic systems, etc. – where we find once more “the same armament of purposes, motives, strategies and tactics that is connected to the principle of specialisation. The Modern Movement appropriated that armament and couldn’t escape the dangers that came with it”⁴⁰. So, De Carlo unequivocally states to be against specialisation when it severs the connections between one’s own field and the external world: “everything has changed in the industrialised world since specialisation became not only a means to rationalise production, but also a tool of social control”⁴¹. The awareness of the risks of specialised practices emerges here. In fact, the consequence of this alienating scenario is “renouncing critique and dissent”⁴². The specialisation of physical space creates two fundamental effects: its subordination to production needs and, subsequently, to the power of those who govern production processes; its use as a means of technocratic control of social life.

A different vision of architectural design

People do not simply use architecture with a logic that can be codified and uniformed, but also following their desire for connections. De Carlo insists on the misunderstanding of the users’ desire, and especially on the clichés created by the Modern Movement about it, revealing what lies behind the simplifications that almost reduce man to an automaton that can be measured and standardized: a cog in a ‘machine-city’. Therefore, De Carlo never follows ‘given’ rules: the rule is to listen to the city, that is to say, to understand ‘how’ the city is experienced. He feels the necessity of taking a chance on his design work, to contribute to society’s cultural growth, in an architectural sense, so that society can be able to manage its own space of existence and co-existence, developing communal sharing. After all, this tension in the international scene also

39 My translation (A/N). Ibid. pp. 50-51.

40 My translation (A/N). Ibid. p. 52.

41 My translation (A/N). Ibidem.

42 My translation (A/N). Ibid. p. 53.



Giancarlo De Carlo, model of the Matteotti Village in Terni. Some photos of the participatory process.
Source: Archivio Progetti Iuav, Fondo Giorgio Casali.

drives other members of the *Team X* who, in their work, aimed at a collective methodology with a more complex approach to the built environment reality. From this perspective, De Carlo's design process was emblematic for the Matteotti neighbourhood in Terni (1969-1975). In that case, being the real users unknown in advance – indeed, the subsidised allocation of housing units, to this day, only occurs at the end of the construction – he addressed all the potential users, about 1800 workmen. Therefore, De Carlo organised an exhibition of projects that had already been completed in various countries, in order to immediately offer alternative models, that differed from the usual ones. This triggered – at times fierce – debates and discussions. In this way, little by little, both the real overall needs, which allowed to formulate hypotheses on the general configuration of the neighbourhood, and the specific needs, which fed the design of individual units, were defined jointly. However, being the actual addresses still unknown, these projects could only meet the needs that could be deduced exclusively by typifying those expressed by all of the potential tenants.

2.2. Interwoven glimpses into the past(s), present(s) and future(s)

2.2.1. Bringing contingency into the process

De Carlo had highlighted, also through the actual experimentation in his design practice, some cracks that had formed in the progressive utopia of Modern architecture, which had seen architecture and urban design as the most effective instruments for the creation

of a better, 'more rational' and 'more equal' world. More recently, some interesting reflections have been made by Peter Blundell Jones, Jeremy Till and Doina Petrescu in their book *Architecture and Participation*⁴³. According to them, architecture "needs to be understood within a broader framework than the surface of image, both in terms of engaging with context and in terms of engaging with all the senses, through time and experience of use"⁴⁴. A participatory approach therefore is "seen as a means of making architectural practice more relevant to, and more engaged with, the everyday world"⁴⁵. One of its implications is the significant downsizing of the role and expertise of architects, which is only one of the variables upon which, as Till will underlie later on, architecture 'depends'⁴⁶. "Modernization", the authors argue, "has meant the removal of people from decisions, as layers of bureaucracy and specialist procedures compell the experts to intervene between the user and the building. (...) A gap thus opens up between the world as built and the world as needed and desired"⁴⁷. To render the effects of this gap clear the authors mention the mass housing projects of the mid-twentieth century, when a standardised version of living and abstract notions of 'community' were imposed by a supposedly benevolent bureaucracy, whereas people had no chance to express their actual wishes and needs. Therefore, participation is meant to address this gap through involving the user from the early stages of the design process. Anyway, being fully aware that participation was hardly a new topic in itself, the authors had as their primary intention to re-evaluate its meaning, "given a European political context in which [...it] had become a buzzword, but with little thought given to what the word actually meant"⁴⁸.

Among many other contributions, the authors included another of Giancarlo De Carlo's key essays, that is *Architecture's Public*⁴⁹. Also in this text De Carlo strongly asserted that "participation needs to transform architectural planning from the authoritarian act which it has been up to now, into a process. This process begins with the discovery of the users' needs"⁵⁰. Francesco Careri and Lorenzo Romito, members of the Italian collective *Stalker*, also have a voice in the volume. In 2002, *Stalker* founded the research network *Osservatorio Nomade* (ON), which consists of architects, artists, activists and researchers working experimentally and engaging in actions to create self-organised

43 Blundell Jones, P., Petrescu, D. and Till, J. (eds.) (2005) *Architecture and Participation*. New York: Spon Press.

44 Ibid. p. xv.

45 Ibid. p. xvi.

46 Cf. Till, J. (2009) *Architecture Depends*. Cambridge, MA: MIT Press.

47 Blundell Jones, P., Petrescu, D. and Till, J. (eds.) (2005) *Architecture and Participation*, p. xiv.

48 Ibid. p. xiii.

49 De Carlo, G. (2005) Architecture's public, pp. 3-18. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*.

50 Ibid. p. 14.



In their work in Campo Boario, in Rome, *Stalker* created *Ararat*, a Kurd-refugee community center that also gathered diverse groups of urban citizens; Kurdistan imaginary map became a garden in the Campo's courtyard.
Source: Blundell Jones, P., Petrescu, D. and Till, J. (eds.) (2005) *Architecture and Participation*.

spaces and situations. As they argue, “Stalker is not a group: it is an interrelated open system, which is growing and emerging through its actions and through all the individuals that operate with (for and among) [it]. (...) [A] collective subject that engages in actions and research to catalyse creative motions in time and space, to produce self-organised places, environments and situations”⁵¹. The very characteristics of their work, as they state referring to their project in Campo Boario, in Rome, are “uncertainty, in-definiteness and the self-organisation”⁵². Their interest lied in trying to involve the inhabitants’ creativity and inventiveness to share places that emerged from a real melting pot of cultures, where the culture of architecture was only one of those at stake. The emphasis put on the necessity to build up “the right interactions and of asking the right questions” considering the power of “unsuccessful attempts, miscalculations or wrong approaches, but also unexpected and sometimes inexplicable successes”⁵³, clearly set their work in contrast with the modernist city’s faith in rationality, mechanical functionality and the abstract idea of users’ needs. Their approach resonates with the work of the *Situationist International* [i.b. I. 3], whose action was explicitly political and based on the same rejection of dominant power structures.

Jeremy Till, by first reflecting on the unchallenged vagueness with which the term participation is often used – even in manipulated and token processes –, points out

51 Careri, F., Romito, L. (2005) *Stalker and the big game of Campo Boario*, pp. 249-255. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*, p. 249. To know more about Stalker’s projects, see: <http://www.osservatorionomade.net>

52 Ibid. p. 254.

53 Ibidem.

i.b. 1. 3 - *The Situationist International*

The *Situationist International* (SI) – a political and artistic collective based in Paris and alive from the 1955 to the 1972 – operated in the context of the crises of the functional city and of the widespread critiques towards the modernist movement. The claims for different representations of the city and the society, more specifically of the individuals, have been at the basis of the group's ideas. Against the pre-determined and oppressive use of space, they praised the unexpected, claiming for individual freedom and emancipation. Guy Debord, one of the founding members, defined their approach – named 'psychogeography' – as "the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals"¹.

The production of different representations of the city by remapping it and the appropriation of its spaces while walking through them – an action named *dérive*, or *drift* – were political acts aimed to contest power interests. Pleasure and adventures were some of the defining features of the situationist thought, that opposed them to the modernist values of rationality and efficiency. Enthusiasm and playfulness were essential to make urban space more liberating, open and liveable. The enjoyment of inefficiency and the focus on the free time were very provocative and resulted in small-scale, ephemeral and often individual interventions, nevertheless part of a larger socio-political project, which was deliberately left undefined.

1 Cf. Debord, G. (September 1955) *Introduction to a Critique of Urban Geography*. Transl. K. Knabb. Paris: Les Lèvres Nues (6):23-27. The entire text is available at: <https://atrium.lib.uoguelph.ca/xmlui/bitstream/handle/10214/1798/3-Debord.pdf?sequence=1&isAllowed=y>

that it might rather represent “a catalyst for new ways of looking at architectural practice, exposing the limits of normative architectural methods”⁵⁴. Very often it works as ‘placation’, as a means to get the presumed support of the citizen user for actions that have already been determined by professional agents: the authority of the state is replaced by the one of architects, who, by creating a ‘feeling’ of participation, “sneak their expert values through the back door”⁵⁵ and increase their acceptability by a skeptical public. The expert knowledge of the architect and the tacit knowledge of the participant user remain on different levels, generating a power relation between them. Participation remains dominated by experts, who initiate the communication on their own terms, circumscribing the process through professionally coded drawings

54 Till, J. (2005) The negotiation of hope, pp. 19-40. In P. Blundell Jones, D. Petrescu and J. Till(eds.) *Architecture and Participation*, p. 36.

55 Ibid. p. 23.

and language, “which for the architect may be pregnant with possibilities, [but which] remain mute to the outsider”⁵⁶. According to Till, “[a]rchitects cling to a perfected model of practice, neatly and simplistically summarised in an idealised version of the Vitruvian triad – commodity, firmness and delight. Idealised commodity (solve the ‘problem’ of function in as efficient a manner as possible). Idealised firmness (advance on technical fronts as a sign of progress). Idealised delight (a polishing of forms in accordance with prevailing aesthetic sensibilities)”⁵⁷. Since ‘the reality of the contingent world’ inevitably upsets these idealized models and brings into play social and political issues – for instance, users very often betray plans of utility and hardly share architects’ obsession with refined details – architects do everything possible to delay this fateful moment of disappointment.

“Suspension of disbelief is a condition of design practice. One knows in one’s heart of hearts that the suspension cannot last, but the state is hypnotic whilst it does – those clean diagrams, those neatly scheduled packages of work that defy all construction practice, those empty photographs taken before the great unwashed (users, dirt, weather, change) move in. And when it all goes wrong afterwards, when reality truly does upset the ideals, one can always resort to the publication of a monograph to resuscitate and perpetuate the mythology of a perfected state of architectural production”⁵⁸.

What is needed, Till argues, is a form of participation that is ‘realistic enough’ to recognise imbalances of power and knowledge, and at the same time works with these imbalances so as to transform the expectations and futures of the participants. “[A] *transformative participation* as an active signal of its opposition to the passive nature of placatory participation”⁵⁹. This cannot be achieved neither through the disavowal of expert knowledge, nor by granting the non-expert easier access to the expert’s domain. Instead, this move demands a reformulation of expert knowledge in another mode: by challenging the very limits and constraints of specialist knowledge, that seeks to abstract and control users’ lives, architects should be open to “expose themselves to the uncertainty of what others may know”⁶⁰ and provide channels through which their knowledge might be articulated. According to Till, for participation to be truly transformative, architectural knowledge should not be applied as an abstraction from

56 Ibid. p. 35.

57 Ibid. p. 26.

58 Ibidem.

59 Ibid. p. 24.

60 Ibid. p. 28.

the outside, but developed ‘from within’⁶¹ the context of the given situation. The architect, therefore, should be an ‘expert-citizen’ as well as ‘citizen-expert’, becoming able to move between the world of experts and users, or an ‘organic intellectual’⁶². In this perspective, an alternative process is needed: where the ‘problem-solving’ approach tends to either abstract or exclude the political, privileging the expert over the user, design must be rather conceived as ‘sense-making’, which in planner John Forester’s words is “a matter of altering, respecting, acknowledging, and shaping people’s lived worlds”⁶³. A more empowering, relevant form of participatory practice could be achieved by bringing ‘contingency’ into the process – something that is usually banished in architectural culture – which means the acceptance of the political aspects of space, of users’ dissent, of different modes of communication and representation.

2.2.2. From Architecture to ‘Spatial Agency’

To better frame these perspectives, Till, together with Nishat Awan and Tatjana Schneider, coined the notion of *Spatial Agency*. In particular, this notion was used to give name to a project – which originally started as an online database⁶⁴ and then evolved in a publication⁶⁵ – that collects a number of rather heterogeneous ‘empowering practices’. These practices, the author argue, pertain to “a second history of architecture, one that moves sharply away from the figure of the architect as individual hero, and replaces it with a much more collaborative approach in which agents act with, and on behalf of, others”⁶⁶. Notably, the notion of agency⁶⁷ is traditionally held in social and political

61 Till refers here to Shotter, J. (1993) *Cultural Politics of Everyday Life: Social Constructionism, Rhetoric and Knowing of the Third Kind*. Toronto: University of Toronto Press. According to Shotter, the profession is traditionally predicated on ‘decontextualised’ knowledge. In response to this, he calls for a knowledge ‘from within’, a ‘developmental’ knowledge that adjusts to and grows out of the social.

62 Here the reference is to the notion coined by Antonio Gramsci. Cf. Hoare, Q. and Nowell Smith, G. (eds. and transl.) (1971) General Introduction. *Antonio Gramsci: Selections from the Prison Notebooks*. London: Lawrence & Wishart. According to Gramsci, intellectuals should not remain as eloquent outsiders but must become active participators in practical life.

63 Forester, J. (1985) Designing: Making sense together in practical conversations. *Journal of Architectural Education* 38 (3): 14-20.

See also Forester, J. (1989) Planning in the Face of Power. *Journal of The American Planning Association* 35(3): 27-47. Cited in Till, J. (2005) The negotiation of hope, p. 33.

64 The database is available at <http://www.spatialagency.net/>

65 Cf. Awan, N., Schneider, T. and Till, J. (2013) *Spatial Agency: Other Ways of Doing Architecture*. London: Routledge.

66 Excerpt from *Spatial Agency*’s presentation text. Retrieved 12 December 2020, from: <http://www.spatialagency.net/>

67 As also reported by the authors, other publications that have focused on the issue of ‘agency’ in architecture are: Cupers K. and Doucet, I. (eds.) (2009) *Agency in Architecture: Reframing Criticality in Theory and Practice*. *Footprint* (4): 1-6 and Kossak F., Petrescu, D., Schneider, T., Tyszczyk, R. and Walker, S. (eds.) (2009) *Agency: Working With Uncertain Architectures*. London: Routledge.

theory in opposition to ‘structure’, which is seen as the way society is organized. In this sense, agency is meant to signal the ability of the individual to act independently of society’s constraining structures. Furthermore, the authors explicitly avoided using the term ‘architecture’ – being, for them, too easily associated with the abstract idea of the isolated building – and replaced it with the word ‘spatial’⁶⁸. In particular, here they took as a reference the French Marxist philosopher Henri Lefebvre, and his book *The Production of Space*, of which a particularly famous phrase was: “(social) space is a (social) product”⁶⁹. What is most relevant of Lefebvre’s contribution, according to Till, Awan and Schneider, is that he takes the production of space away from the ‘field of expertise’ of specialists – most notably architects and planners –, and places it in a much broader social context. Lefebvre’s redefinition implies a different understanding of space, that appears relevant to the authors for a number of reasons:

“First is that production is a shared enterprise. Of course, professionals are involved in the process, but social space explicitly acknowledges the contribution of others, and with this dismisses the notion of expert authorship that the professions still cling to. Second, social space is dynamic space; its production continues over time and is not fixed to a single moment of completion. This dynamic inevitably shifts the focus of spatial attention away from the static objects of display that constitute the foreground of so much architectural production, and moves it onto the continuous cycle of spatial production, and to all the people and processes that go into it (...). Third, social space is intractably political space, in so much as people live out their lives in this space, and so one has to be continuously alert to the effects of that space on those lives”⁷⁰.

In architectural drawings and models, space is usually treated as ‘neutral’: in fact, “the architect focuses on a ‘slice’ of space cut from a larger whole, takes this portion of space as a ‘given’, and works on it using his ideas, technical skills and formal preferences”⁷¹.

68 The choice to use a more complex and general term like ‘spatial’, rather than architecture, has also been made by Melanie Dodd in a recent book. Following a similar logic, Dodd explores “forms of positive spatial action that can envisage and present alternatives of everyday life. These are not necessarily the built and architectural alternatives of twentieth-century modernism, but rather operational alternatives and systems by which we can reboot, shedding our habits and norms as a daily resistance of the status quo. (...) [These] spatial projects (...) involve diverse practice that embraces the political and the activist, but also the performative, the curatorial, the spatial, the architectural and the urban. They involve actors from various backgrounds who don’t always fit categories or align to professional disciplines, but who support action and engagement through forms of situated ‘spatial’ practice”. Dodd, M. (2020) *Spatial Practices, Modes of Action and Engagement with the City*. New York: Routledge, p. 1.

69 Lefebvre, H. (1991) *The Production of Space*. Oxford, UK – Cambridge, MA: Blackwell, p. 26. Originally published in France as Id. (1974) *La production de l’espace*. Paris: Éditions Anthropos.

70 Awan, N., Schneider, T. and Till, J. (2013) *Spatial Agency*, pp. 59-60.

71 Lefebvre, H. (1991) *The Production of Space*, p. 360.

Anyway, as Till had already pointed out, this neutrality is only apparent, as it disappears once the abstract model or drawing is brought down to the reality of space. According to the authors, the first limit of traditional architectural culture is that it treats buildings like 'objects' and tends to give priority to the aspects associated with their static properties: the visual, the technical, and the atemporal. The stress is usually put on aesthetics, style, form, technique, leaving behind those aspects that are more volatile: the processes of their production, their occupation over time, their temporality, their relation to society and nature. A loss of control, they argue, should not be seen as a threat to professional credibility, but as an inevitable condition that must be seen in a positive light: buildings and spaces are to be treated as part of a dynamic context of social and environmental networks. The second limit is that the stress put on the building as object contributes to the 'commodification of architecture'. Buildings enter too easily into the commodity dynamics of the marketplace: "progressive', 'innovative', 'efficient', 'iconic' or 'landmark' buildings are seen to have higher exchange value within this system, and it is thus that the signifiers of progress, innovation, efficiency and income generation have become the hallmarks of successful architects in times of fiscal growth. (...) Aligning architecture so closely to the control and values of the marketplace (...) also begs the question as what to do when the foundations of the market are undermined by its own excessive actions?"⁷² Starting from these assumptions, *Spatial Agency* sheds light on the need to prioritize values outside the ones of the economic market, namely those of social, environmental and ethical justice. The third limit lies in assuming that only architects are involved in the creative production of the built environment. The standard and commonly told histories of architecture focus almost exclusively on the guiding hand of the individual 'author', but in doing this they exclude the multiple voices and actions of others. In this sense, the way architects study and look at the contemporary city requires a profound reorientation: the production of space always belongs to a much wider range of actors, with a wide and diverse range of skills and intents⁷³.

2.2.3. Collections of experiences

On the basis of these considerations, the project collects and describes numerous and variegated international examples. Such experiences, both past – including, not by chance, those already mentioned in this chapter, namely those of De Carlo, Yona Friedman, the Italian radical groups and *Stalker* – and more recent, have sought or seek to counter normative structures, representing, therefore, 'other ways of doing architecture'. Many of these experiences take the form of collective spatial experiments, emphasizing

72 Awan, N., Schneider, T. and Till, J. (2013) *Spatial Agency*, p. 54.

73 Cf. Ibid.



Tinggård cohousing, Denmark. Photo: W. Sherlaw. Source: spatialagency.net



La Borda, housing cooperative model of grant of use. Source: miesarch.com

the agency of different actors.

Anyway, the criteria that the authors used to include different cases appear quite open. Among the various experiences – which they divide into examples of ‘appropriation’, ‘dissemination’, ‘empowerment’, ‘networking’ and ‘subversion’ – they include squatting practices, i.e. practices of appropriation and transformation of abandoned places, such as those related to the Italian *Centri Sociali*, which flourished⁷⁴ during the 1980s and 1990s. Mostly set up as self-organised spaces – and recursively closed down by the authorities – the *Centri Sociali* are run co-operatively and taken as a way to experiment with collective forms of decision making. Other experiences that the author mention are those of *co-housing*, whose earliest examples date back to the housing development movement that started in the late 1960s in Denmark, where they are called *Bofællesskaber* or ‘living communities’⁷⁵. Usually purpose built, cohousing neighbourhoods are self-managed through regular meetings usually operating a form of consensus decision

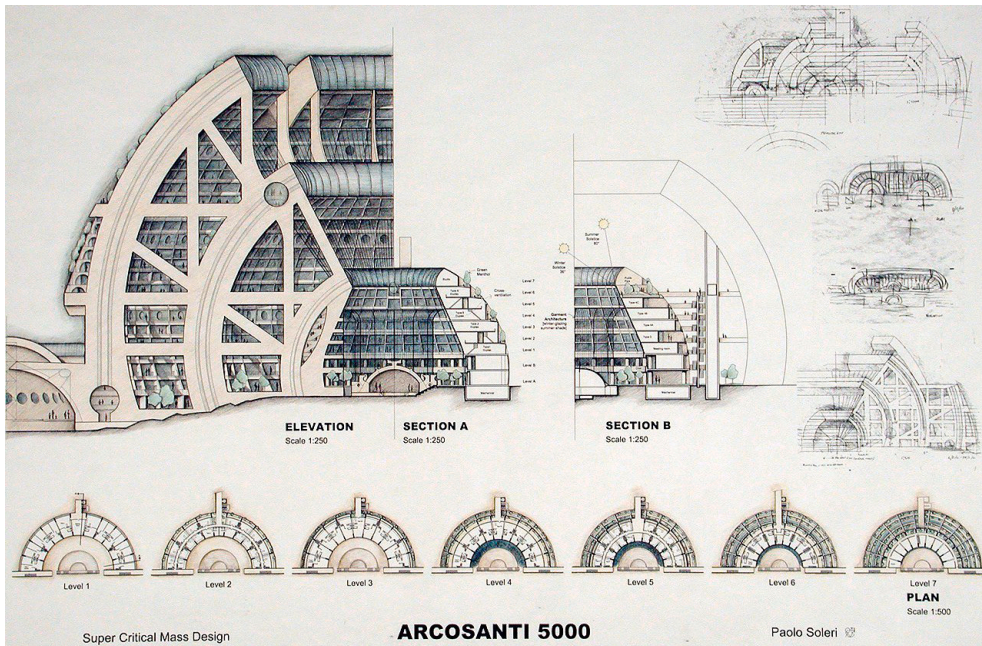
⁷⁴ See, for instance: *Centro Sociale Leoncavallo* in Milan: <https://leoncavallo.org> or TPO *Laboratorio di arte, cultura e politica* in Bologna: <http://www.tpo.bo.it>

⁷⁵ Some interesting accounts of co-housing projects in Denmark can be found here: Fromm, D. (1991) *Collaborative communities; cohousing, central living, and other new forms of housing with shared facilities*. New York: Van Nostrand Reinhold; Zahle, K. and Duelund Mortensen, P. (1992) Co-Housing in Denmark. *Open house international* 17(2): 56-65. To know more about co-housing at an international level, see: Cooper Marcus, C. (2000) Site planning, building design and a sense of community: an analysis of six cohousing schemes in Denmark, Sweden, and the Netherlands. *Journal of architectural and planning research* 17(2): 146-163; Fromm, D. (2000) American cohousing: the first five years. *Journal of architectural and planning research* 17(2): 94-109. A particularly interesting and ongoing example of co-housing project – not mentioned in *Spatial Agency* – is the one by *La Cooperativa La Borda* in collaboration with *Lacol arquitectura cooperativa*. More information can be found at: <http://www.laborda.coop/en/>



Christiania is an ecovillage built in the 1970s on the site of a former military barracks in Copenhagen as a direct response to the lack of affordable housing and social facilities. Photos: S. Alcázar and K. Lynam. Source: spatialagency.net

making. Residents own their private homes and share communal facilities. In addition to these there are also the *ecovillages*, intentional communities motivated by the desire to find a sustainable alternative to capitalist society. These communities often experiment in social organisation, through alternative education and social welfare systems, forms of consensus democracy, or alternative economies. A similar example are the *utopian communities* – or *counter communities* –, mostly developed in US during the 1960s. Many of these projects were usually developed under the guidance of a visionary architect, artist or activist and were looking for an alternative to socially and ecologically damaging lifestyles. Because of this, they adopted a DIY ethics. Quite known examples are *Arcoanti*, established in the middle of the Arizona desert by Italian architect Paolo Soleri in the 1970s, and *Drop City*, a short lived hippie community established in 1965 in southern Colorado by filmmaker Gene Bernofsky and art students JoAnn Bernofsky, Richard Kallweit and Clark Richert. *Guerrilla gardening* practices also find their place in the collection. The term was originally coined by Liz Christy, an artist working in New York in the 1970s, to give name to her idea of scattering plants seeds in empty spaces to fight the decline of public spaces. Christy's actions eventually led to the birth of a community garden in Manhattan and grew worldwide into community protest actions to preserve the created gardens against expansionist policies of development. The authors also include the work of the *Community Design Centers* (CDCs) in US, which emerged out of the civil rights movement and the women's liberation movement of the 1950s and 1960s, generally providing technical and design advice to communities who could otherwise not afford it. Some contemporary examples of CDCs, also affiliated



Paolo Soleri, *Arcosanti*, drawing. Source: www.archdaily.com. Italian architect Paolo Soleri had envisioned a village built in the middle of the Arizona desert, which could accommodate 5000 people. The project, which is still ongoing, follows Soleri's 'arcologies' – that are design principles at the crossroads of architecture and ecology – which advocate for dense, mixed-use, self-contained and economically self-sufficient communities thought to inhabit the planet with minimal environmental impact.



Drop City, an intentional and short lived hippie community established in 1965 in southern Colorado. Source: archive.boston.com Born out of the utopian dream of filmmaker Gene Bernofsky and art students JoAnn Bernofsky, Richard Kallweit and Clark Richert, *Drop City* was a reaction to mainstream, consumerist and individual lifestyles. The village consisted in a number of domes, built up as a DIY version of Buckminster Fuller's scientific method of geodesic design.

to an educational institution, are *Rural Studio*⁷⁶, *Design Corps*⁷⁷ and *The Center for Urban Pedagogy*⁷⁸. In CDCs, professionals deploy knowledge and skills that may not normally be required of them in a conventional architectural office, and make this knowledge and skills available to those who otherwise would not have access to it. This is also the case of the *Atelier-3/Rural Architecture Studio*⁷⁹, whose founder, Taiwanese architect Hsieh Ying-chun, and his co-workers, developed a model for ‘collaborative construction’ to help people rebuild their homes after devastating earthquakes in Taiwan (1999) and China (2008). Their low-key collaborative approach to architecture does not require for specialised tools or knowledge, making it possible for those with no prior knowledge to participate actively. Also the professional role of people such as Austrian architects Ottokar Uhl, Eilfried Huth, and John Habraken⁸⁰, shifted from being one of sole author to that of empowering others in enabling physical relations. Another example is the work of the 1960s Brazilian radicals *Arquitetura Nova*⁸¹. Architect Sérgio Ferro, one of the collective’s members, started with a critique of the profession’s obsession with design, and in particular the architectural drawing, which for him constituted a domain of abstracted expertise. *Arquitetura Nova* therefore turned their attention to the processes of construction of buildings, and to all the people involved in them. Similar attempts are seen in contemporary examples as diverse as *00:/*⁸² in the UK and Alejandro Aravena’s *Elemental* in Chile, both of whom, according to the authors, “are acutely aware of the need to understand and intervene in the micro-economics and social networks at stake in the design and production of any environment”⁸³. Spanish architect and activist Santiago Cirugeda⁸⁴, by engaging creatively with the regulatory framework, tries to open up possibilities for people to appropriate space. Madrid and Miami-based group *Ecosistema Urbano*⁸⁵ define their approach as ‘urban social design’, that is the design of environments, spaces and dynamics in order to improve self-organization of citizens, social interaction within communities and their relationship with the environment. Nowadays, experiences of this kind are exponentially growing in numbers. *Spatial Agency*’s was only one of several attempts to map such a diverse and evolving scenario.

76 See: <http://ruralstudio.org>

77 See: <https://designcorps.org>

78 See: <http://welcometocup.org>

79 See: <https://www.atelier3-ras.com/blank-12>

80 For further information, see: Huth E. and Orben, C. (1996) Unordentliche Ordnung [Interview]. *Architektur & Bauforum* 29: 41-45; Ottokar, U. et al. (2001) Die Architektur und Ich: Ottokar Uhl [Interview]. *Architektur & Bauforum* 2: 129-138; Habraken, J. : <https://www.habraken.com>

81 See: <https://www.northernarchitecture.us/modern-architecture/arquitetura-nova.html>.

82 See: <https://www.architecture00.net>

83 Awan, N., Schneider, T. and Till, J. (2013) *Spatial Agency*, p. 96.

84 See: <http://www.recetasurbanas.net/v3/index.php/es/>

85 See: <https://ecosistemaurbano.com>



Elemental, Alejandro Aravena, *Houses in Quinta Monroy*, Iquique, Tarapacá, Chile, 2003. Photo: C. Palma.
Source: artpil.com

Recetas Urbanas, Santiago Cirugeda, *La Carpa – Espacio Artístico*, 2011. The project has been funded through a variety of means: from agreements about the use of the lot, material donations, collective construction, a barter system, and the ‘Goteo’ crowdfunding social network. It was an example of how self-managed models and multiple funding modes can build cultural spaces without relying on public and government-run funding. Source: recetasurbanas.net



Ecosistema Urbano, Cuenca RED, Ecuador, 2015 - 2016.

In this project, *Ecosistema Urbano* developed a strategy of urban reactivation by sharing the process with local citizens. This collective negotiation with a diverse range of actors led them to propose a transformation of the mobility system for the benefit of pedestrians and soft mobility and, subsequently, the re-use – for a wide number of social activities – of the many urban voids previously used as parking lots. Source: ecosistemaurbano.com



Another interesting collection, for instance, resulted from the European-funded project ‘European Platform for Alternative Practice and Research on the City’ (PEPRAV), ran by the *atelier d’architecture autogérée*⁸⁶ (Paris), the School of Architecture – University of Sheffield, *Recyclart*⁸⁷ (Brussels) and *metroZones*⁸⁸ (Berlin), between 2006 and 2007. The platform, which also evolved in a book – *URBAN ACT. A handbook for alternative practices*⁸⁹ – formalised a collective critical inquiry into contemporary alternatives to architectural practice and research, and reinforced existing and potential collaborations between groups and individuals dealing with similar issues in different local contexts through a number of meetings and workshops.

Another more recent and interesting collection is contained in the book *Design as Democracy: Techniques for Collective Creativity*⁹⁰, edited by David de la Pena, Diane Jones Allen, Randolph T. Hester, Jeffrey Hou, Laura J. Lawson, and Marcia J. McNally. In particular, while also acknowledging the value of the contributions of the 1960s and 1970s, the authors point to the need to develop new techniques that are better suited to address contemporary and urgent needs of the community, achieve environmental justice and inspire long-term stewardship. The underlying assumption is that

“[f]or participatory design to be truly democratic it cannot remain a standardized public process. This task (...) challenges designers to seek meaningful, ethical, and effective ways to design with communities. It needs to move beyond conventional processes that are formulaic, closed, abstract, superficial, and monofunctional. Participatory design must become contextual, open, experiential, substantive, and holistic. (...) Innovative techniques can strengthen meaningful relationships between communities and designers, help revitalize participatory design as it breaks barriers to collective creativity, and open doors to possibilities that are yet unimagined”⁹¹.

Interestingly, in its aim to ‘reinvigorate’ democratic design, the book is thought as a cookbook, with recipes open to improvisation, adaptation, and being created anew. Each chapter collects a series of techniques around a particular theme or issue, from approaching the initial phases of a project, to getting to know a community, to provoking political change through strategic thinking. Each technique is followed by instructions and case stories from a wide range of contexts. *Technique 2.5*, for instance, namely

86 See: <https://www.urbantactics.org>

87 See: <http://www.recyclart.be/fr/agenda>

88 See: <https://www.metrozones.info>

89 For further information, see: <https://www.urbantactics.org/dissemination/urbanact-a-handbook-for-alternative-practice-aaa-peprav-2007/>

90 de la Pena et al. (eds.) (2018) *Design As Democracy: Techniques for Collective Creativity*. Washington, DC: Island Press.

91 Ibid. pp. 21-22.



This *carrito* was built by *Raons Públiques* in 2015 for the *Miró Foundation* to understand why residents of the neighborhood of Poble Sec felt disconnected from the museum, and to propose new social activities.



Kota Maruya used her technique to defuse growing conflict between potters in an historic village in Japan, and to find areas commonly valued that could serve as the framework for a tourist signage system.



Christian Dimmer and Yu Ohtani used the *Community Innovation Forum* in a declining Tokyo neighborhood to stimulate debate about the possibility of change through exchange with activists who had contributed to successful initiatives in other neighborhoods.



An example of *Place It* workshop. A team member presents the project to the entire group.
Source: de la Pena et al. (eds.) (2018) *Design As Democracy: Techniques for Collective Creativity*.

El Carrito: Rolling out the cart, is a mobile interactive meeting point that aims to catch people's attention in public spaces. Created by *Raons Públiques*⁹², a group of community urbanists in Barcelona, it is thought as a way to introduce a 'benign disturbance' into everyday space, allowing passerby to participate in various design and planning projects and thus creating new opportunities for exchange and debate. *Technique 4.1*, that is *Mapping the Common Living Sphere*, by Kota Maruya, is meant to help visualizing the common space that exists in the consciousness of people, thereby solidifying the unity

⁹² See: <https://raons.coop>

of the community. *Technique 4.4*, the *Community Innovation Forum*, by Christian Dimmer and Yu Ohtani, is a mobile workshop and exhibition aimed at initiating a dialogue in and between local communities confronted with significant socioeconomic, demographic, or environmental problems. *Technique 6.4*, *Place It workshop*, proposed by James Rojas, is a playful way to render the process of urban planning accessible to residents, inviting them to creatively design solutions by using found, everyday objects.

3. A relationship between ‘wholes’ and ‘parts’

In contrast to the consolidated paradigm, which sees the architect as the sole author capable of shaping the built space through his or her expertise, many of the practices illustrated so far – as well as the ways in which participation is generally understood and practised – aim to open up the design process and involve other actors, in order to create a ‘common ground’.

However, in spite of the initial and in many respects still lively interest for many of these experiences, my initial questions have become progressively more insistent, acquiring a more radical character: what exactly does ‘common’ mean? Who does it consist of? Are we sure that no one is excluded from it?

In particular, what prompted me to both formulate and explore these questions were some reflections of Rancière⁹³: in reflecting on the terms ‘police’ and ‘politics’, Rancière contrasts them in a radical way: “the police (...) [is] a form of intervention which prescribes what can be seen and what cannot be seen, what can be said and what cannot be said. And politics is constructed in relation to that prescription. Politics is (...) declared in the face of policing, defined as the law that prescribes what emerges and what is heard, what can be counted and what cannot be counted”⁹⁴. The first thus indicates a given order of coexistence, the clear determination of the practices of governing what

93 Rancière’s perspective, in particular, can be inscribed in the furrow of post-Marxist and ‘post-structuralist’ political theory. Rancière, in fact, distances himself from those visions of politics based on ‘structures’ or ‘foundations’ located outside of society and politics itself. Marxist economic determinism itself is, in this sense, structuralist: economic modes and relations of production determine the superstructural framework of politics and culture as ideology. Theorists of post-structuralist politics – among whom, besides Rancière, we can find Chantal Mouffe, Ernesto Laclau and Claude Lefort – point, instead, to the ambiguity of the very notion of politics: on the one hand, in fact, the term is used to refer to a certain type of government of collective life, of a more or less consensual and always contingent order; on the other hand, however, the same term is used to indicate the alteration of this order, the act of dissenting, the rupture that leads to the emergence of a new order. Cf. Rispoli, E. R. (2020) Il progetto come dis-ordine. I radicali italiani e la politica del dissenso, in E. Dellapiana, L. Gunetti, D. Scodeller (eds.) *Italia: design, politica e democrazia nel XX secolo*. Proceedings of the IV Conference AIS/Design Associazione Italiana Storici del Design, pp. 263-274. Torino: Politecnico di Torino, pp. 266-267.

94 Rancière, J. (1998) The Cause of the Other. *Parallax* 4(2): 25-33, pp. 28-29. See also: Rancière, J. (1999) *Disagreement: Politics and Philosophy*. Minneapolis, MN: Minnesota University Press.

is common, the ways of participating in them and the subjects who have the specific competence to handle them. The term ‘politics’ means the constant deconstruction of a given order, the continuous ‘emerging’ of new ‘encounter-clash’ environments and new political subjectivities. Interestingly, as Farías⁹⁵ also notes, Rancière’s contribution allows us to frame the central question of participation as a relationship between parts and wholes.

Allow me to elaborate on this. As Rancière further articulates in his book *The Politics of Aesthetics: The Distribution of the Sensible*⁹⁶, the citizen might be considered as the one who ‘has a part’ in governing and in being governed; before this, however, another distribution determines ‘who’ and ‘how’ she or he will have a part.

“A speaking being, according to Aristotle, is a political being. If a slave understands the language of its rulers, however, he does not ‘possess’ it. Plato states that artisans cannot be put in charge of the shared or common elements of the community because they do *not have the time* to devote themselves to anything other than their work. They cannot be *somewhere else* because *work will not wait*. (...) There is thus an ‘aesthetics’ at the core of politics that (...) can be understood in a Kantian sense (...) as the system of *a priori* forms determining what presents itself to sense experience. It is a delimitation of spaces and times, of the visible and the invisible, of speech and noise, that simultaneously determines the place and the stakes of politics as a form of experience”⁹⁷.

This is exactly what Rancière defines as ‘distribution of the sensible’: what is at stake here consists precisely in the maintenance or, conversely, in the alteration of this ‘distribution’ of spaces and times that determines “who can have a share in what is common to the community based on what they do and on the time and space in which this activity is performed”⁹⁸.

For Rancière, *politics* represents the logic of dissent, the questioning of a certain ‘order of the sensible’ on which said ‘communal’ distribution of spaces, times, modes, and functions of words and deeds depends. In this sense, *politics* constitutes the process of subjectivation, that is, of self-legitimation and vindication of one’s right to speak, of one’s ability to act autonomously. Groups or individuals dis-identify, that is, they become independent from the categories of identification that are applied within the

95 Cf. Farías, I. (2018) Parts and Traps for Making Futures, In *Making Futures Bauhaus+*.

96 Rancière, J. (2004) *The Politics of Aesthetics. The Distribution of the Sensible*, transl. Rockhill, G., London – New York: Continuum International Publishing Group. Originally published in France as Id. (2000) *Le partage du sensible: Esthétique et politique*. Paris: La Fabrique-Éditions.

97 Ibid. pp. 40-41.

98 Ibidem.

given political order and, by doing this, they generate a new type of subjectivity⁹⁹. Having said that participation revolves around the relationship between ‘parts’ and ‘wholes, as Farías notes, it is possible to recognise a certain tension between two different approaches: one involves the ‘making of wholes’, that is, practices that attempt to integrate parts, so that they participate of an emergent overarching whole; the other one involves the ‘making of parts’, that is, practices that contest existing wholes by pointing to parts that have not been taken into account. Although they both share a critical stance towards the expertocratic paradigm, while the first group can be associated with attempts – including some of those mentioned so far – oriented towards integration into an existing ‘common’, the second one includes a range of subjectivities or practices that challenge the very idea of preestablished ‘communities’ to which other parts should be assimilated¹⁰⁰.

To put it briefly, what I intend to highlight in the next section is how a series of ‘parts’, who are usually neglected or emergent ones, call into question the male, white, Western and able-bodied subjectivity around which architecture, and the very idea of ‘community’ and participation, tend to revolve. In other words, these ‘parts’ radicalise the meaning of participation, invoking a redefinition of the normative frameworks within which architecture operates and even a transformation of the tools and modalities of architectural practice itself.

Anyway, it should be pointed out that the cases mentioned so far, and some of the ones on which I will dwell below, are not always clearly attributable to the first or the second of these groups. Indeed, the boundaries between them are significantly blurred, and their paths are far from straight.

4. Disruptive parts

4.1. Tackling the profession’s gender-bias

A significant contribution in highlighting this disruptive ethos, i.e. in emphasising neglected parts and questioning the conventional and normative frameworks in which architecture operates and the very idea of the ‘common’, has been offered by feminist thought.

Generally speaking, despite the complex genealogy and the intrinsic multiplicity of – often even opposing – views within feminist philosophy, it is possible to affirm that its

⁹⁹ Many of the reflections made here on Rancière’s contribution have been prompted by the reading of: Rispoli, E. R. (2020) *Il progetto come dis-ordine*.

¹⁰⁰ A particularly relevant book that proposes further and more articulated reflections on participation and its various declinations is Kelty, C. M. (2019) *The participant: A century of participation in four stories*. Chicago, IL: Chicago University Press.

influence in architecture, the beginnings of which date back at least to the 1970s, has given rise to positions inspired by principles of 'equality' between women and men and others based, instead, on principles of 'difference'¹⁰¹.

During the 70s, Marxist feminist architects began to develop gendered critiques of architecture, exposing the limits of its inherently patriarchal system. This was at first inspired by an activist, political mood that aimed to remove barriers for women in the profession and, simultaneously, to expose and diminish gender discrimination in what was considered a 'man-made' built environment¹⁰². American feminist planner and historian Dolores Hayden, for instance, in her seminal book *The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods, and Cities*¹⁰³ described the visionary strategies of a group of nineteenth century American feminists who saw women's isolation within the domestic sphere as the primary reason for their unequal status in society. In the pursuit of economic independence and social equality, these women developed what Hayden termed 'material feminism'. Their proposals, such as housewives' co-operatives, new building types and communal kitchens, challenged two principles underlying industrial capitalism, namely the strict physical separation of household from public space and the economic one of the domestic from the political economy. In *Redesigning the American Dream*¹⁰⁴ Hayden drew attention to how the man-made built environment discriminates against women, with certain features such as inhospitable streets and sexist symbolism in advertising. She proposed replacing these sexist features with alternative and more equitable ones such as child-care facilities, safe houses and better public transport.

Matrix Feminist Design Co-operative, a London-based practice set up in 1980¹⁰⁵, explored both issues surrounding women and the built environment and the relationship between women and the architectural profession. According to them, as buildings and cities have been created by a dominant male gender, they are not neutral but expressive of social values and relations. Therefore, they were concerned with the 'making of space' by

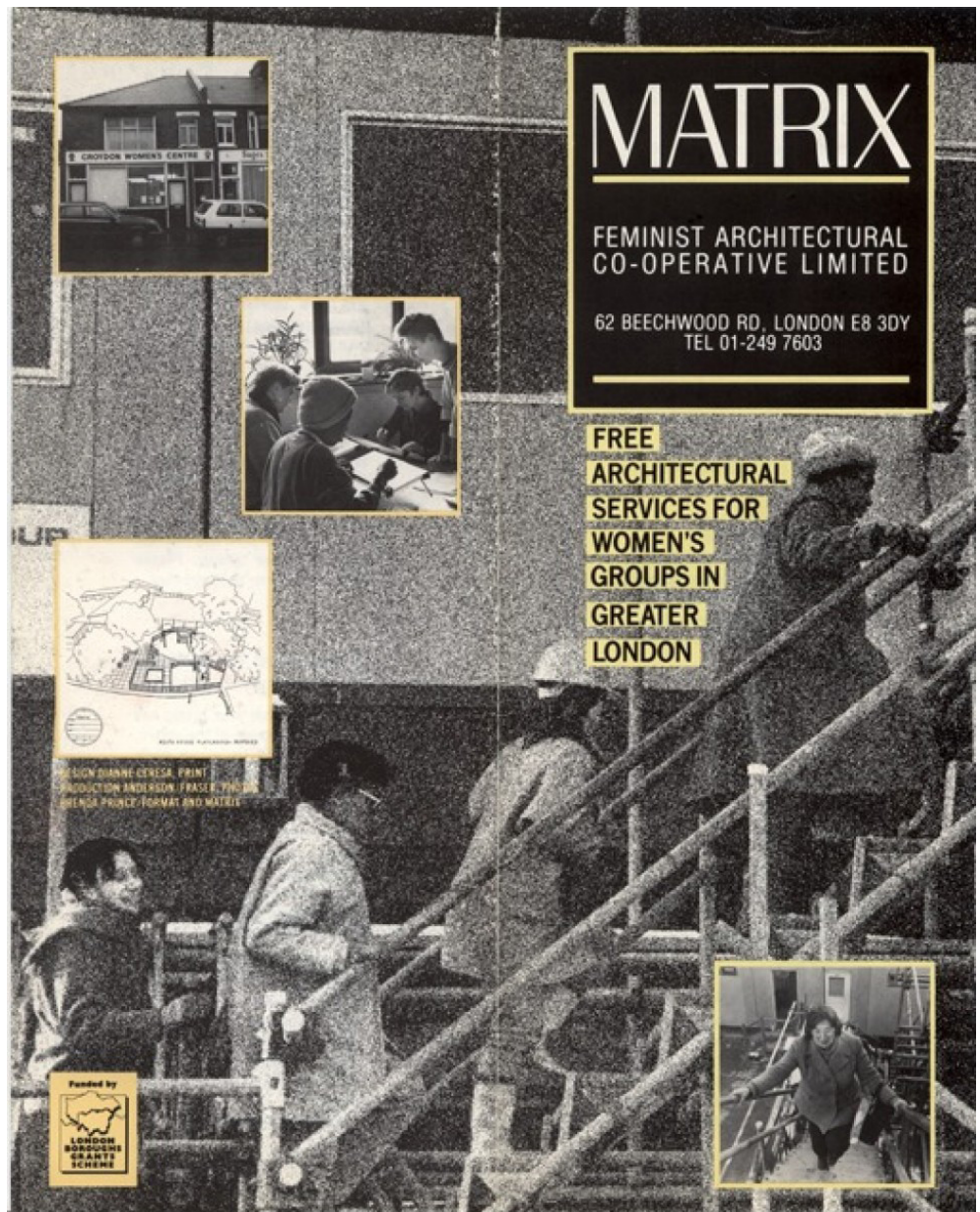
101 Cf. Rendell, J. (2012) Tendencies and Trajectories: Feminist Approaches in Architecture. In S. Cairns, G. Crysler, H. Heynen, G. Wright (eds.) *Architectural Theory Handbook*, pp. 85-97. London: Sage.

102 Cf.: Little, J., Peake, L. and Richardson, P. (eds.) (1988) *Women in Cities: Gender and the Urban Environment*. London: Macmillan; Roberts, M. (1991) *Living in Man-Made World: Gender Assumptions in Modern Housing Design*. London: Routledge.

103 Cf. Hayden, D. (1982) *The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods, and Cities*. Cambridge, MA: MIT Press.

104 Cf. Hayden, D. (1986) *Redesigning the American Dream*. New York: Norton. See also: <http://www.doloreshayden.com>

105 In the late 1970s and early 1980s in UK, political discussions and actions, especially carried out by the *New Architecture Movement* (NAM), resulted in the creation of a number of feminist organisations operating within the field of architecture, such as the *Feminist Design Collective* (1978). It was the first time in Britain that a politically-charged word such as 'feminist' was used to name an architectural practice. *Matrix Feminist Design Co-operative* was set up after the split of the *Collective* in 1980.



A leaflet describing the work of *Matrix*, for client organisations – front cover.
Source: spatialagency.net

women, arguing that “precisely because women are brought up differently in our society [they] have different experiences and needs in relation to the built environment which are rarely expressed”¹⁰⁶. In particular, *Matrix* advocated for a design process where users were directly involved, and architects, rather than imposing their ideas, acted as enablers, helping them realize their own spatial desires and needs¹⁰⁷.

Works by Lynne Walker¹⁰⁸ in the United Kingdom and Doris Cole¹⁰⁹, Susana Torre¹¹⁰ and Gwendolyn Wright¹¹¹ in the United States criticized the accepted and gendered architectural historiography of the time and contributed to the visibility of women’s historic participation in the built environment. Together with them, other feminists vindicated the history of everyday housing, low-key buildings, domestic, interior and textile design and other spaces or practices typically associated with women against the dominant male-made urban landscapes. American critic Karen Franck¹¹² advocated for an approach to architecture based upon ‘women’s ways of knowing’¹¹³, that reflect a different value system emphasizing qualities such as connectedness, inclusiveness, feelings, complexity, flexibility and an ethics of care (the notion of care, in particular, will be discussed further below). These concerns for exploring the relationship between architecture and gender also inspired a number of works in the 1990s, which expanded the field exploring issues related to sex, desire, space and masculinity¹¹⁴. Some authors developed sustained feminist critiques of the traditional male canon¹¹⁵,

106 Matrix (1984) *Making Space: Women and the Man-Made Environment*. London: Pluto Press, p. 7.

107 For a more detailed account of Matrix’s projects, see the chapter by Julia Dwyer and Anne Thorne, Evaluating Matrix: notes from inside the collective. In Petrescu (2007) *Altering Practices: Feminist Politics and Poetics of Space*. New York: Routledge.

108 Cf. Walker, L. (1984) *British Women in Architecture 1671–1951*. London: Sorello.

109 Cf. Cole, D. (1973) *From Tipi to Skyscraper: A History of Women in Architecture*. New York: G. Braziller.

110 Cf. Torre, S. (ed.) (1977) *Women in American Architecture: A Historic and Contemporary Perspective*. New York: Whitney Library of Design.

111 Cf. Wright, G. (1977) On the fringe of the profession: Women in American architecture. In S. Kostof (ed.) *The Architect: Chapters in the History of the Profession*, pp. 280–309. Oxford, UK: Oxford University Press.

112 Franck has cited the work of women architects such as Eileen Gray, Lilly Reich and Susana Torre’s projects such as *House of Meaning* <http://www.susanatorre.net/architecture-and-design/the-individual-and-the-collective/the-house-of-meanings/> and *Space as Matrix* as exemplary of this approach.

113 Cf. Franck, K. A. (1989) A feminist approach. In E. P. Berkeley (ed.), *Architecture: A Place for Women*, pp. 201–216. Washington, DC: Smithsonian Institution Press.

114 Cf.: Agrest, D., Conway, P. and Kanes Weisman, L. (eds.) (1996) *The Sex of Architecture*. New York: Abrams; Coleman, D., Danze, E. and Henderson C. (eds.) (1996) *Architecture and Feminism*. New York: Princeton Architectural Press; Colomina, B. (ed.) (1992) *Sexuality and Space*. New York: Princeton Architectural Press; Hughes, F. (ed.) (1996) *The Architect: Reconstructing Her Practice*. Cambridge, MA: MIT Press; McCorquodale, D., Ruedi, K. and Wigglesworth, S. (eds.) (1996) *Desiring Practices*. London: Black Dog; Sanders, J. (ed.) (1996) *Stud: Architectures of Masculinity*. New York: Princeton Architectural Press.

115 Cf. Agrest, D. (1993) *Architecture from Without: Theoretical Framings for a Critical Practice*. Cambridge, MA: MIT Press.

placing not only issues of gender¹¹⁶, but also of race and ethnicity at the heart of the architectural practice of masters such as Adolf Loos and Le Corbusier¹¹⁷.

4.2. The ‘feminine’ as the site of difference

Notably, since the 1990s the feminist debate has been progressively enriched by many different voices and positions [i.b. I. 4]. Very briefly, these contributions have fostered an expansion of the meaning attributed to the concept of ‘feminine’ beyond its biological understanding. Rather than referring to women in binary opposition to ‘men’, the meaning of ‘feminine’ has been extended to, and associated with, the ‘other’ as a site of ‘difference’. Such reflections have clearly offered new and interesting insights for architecture and further stimulated interest in questioning the normative conditions in which it operates. Particularly, works such as the volume *Altering Practices. Feminist Politics and Poetics of Space*¹¹⁸, edited by Doina Petrescu, were aimed precisely at covering the shift from feminist architectural practices of identity to practices of difference¹¹⁹. In discussing the ‘poetics and politics of the feminine’, the focus is on ‘the other’, and on an understanding of spatial practices aimed at changing, transforming or altering. As Petrescu and her colleagues point out, they “were no longer speaking of ‘woman’ and her spatial practice within a theory of dichotomy and a dream of unity, but more within a heterogeneous spectrum of the ‘feminine’ coming under a theory of ‘alterity’”¹²⁰.

116 I am aware of the existence of a much wider range of works – which have emerged and continue to emerge – collecting reflections on the relationship between architecture and gender. See, for instance: Henderson S. R. (1996) *A Revolution in the Woman’s Sphere: Grete Lihotzky and the Frankfurt Kitchen*; Rendell, J., Penner, B. and Borden, I. (eds.) (2000) *Gender Space Architecture: An Interdisciplinary Introduction*. London: Routledge; Brown L. (ed.) (2011) *Feminist Practices: Interdisciplinary Approaches to Women in Architecture*. Farnham, UK: Ashgate. More recently: Stratigakos, D. (2016) *Where Are the Women Architects?* Princeton, NJ and Oxford, UK: Princeton University Press in association with *Places Journal*; Dellapiana, E. and Pesando, A. B. (2018) In front of and behind the Mirror. Women in Italian Radical Design, pp. 93-106. Proceedings of the 3rd MoMoWo International Conference – Workshop, University of Oviedo, 2-4 October 2017, Oviedo. Ljubljana: Založba ZRC.

117 Cf.: Colomina, B. (1994) *Privacy and Publicity. Modern Architecture as Mass Media*. Cambridge, MA: MIT Press; Celik, Z. (1997) ‘Gendered spaces in colonial Algiers’ [1992]. In D. Agrest, P. Conway and L. Kanes Weisman (eds.) (1996) *The Sex of Architecture*, pp. 127-140. New York: Abrams; Wilson, M. (1996) Black bodies/white cities: Le Corbusier in Harlem. *ANY* 16: 35-39.

118 Petrescu, D. (ed.) (2007) *Altering Practices: Feminist Politics and Poetics of Space*. New York: Routledge, p. 3.

119 See also: Schalk, M., Mazé, R. and Kristiansson, T. (eds.) (2017) *Feminist Futures of Spatial Practice*, Baunach, D: AADR; Schalk, M. and Reisinger, K. (eds.) (2017) Styles of Queer Feminist Practices and Objects in Architecture. *Architecture and Culture*, Special Issue 5(3): 343-352; Reisinger, K. and Schalk, M. (eds.) (2017) Becoming a Feminist Architect. *Field: A Free Journal for Architecture* 7(1): 1-10; Frichot, H., Gabriellsson, C. and Runting, H. (eds.) (2017) *Architecture and Feminisms. Ecologies, Economies, Technologies*. London: Routledge.

120 Petrescu, D. (ed.) (2007) *Altering Practices: Feminist Politics and Poetics of Space*, p. xvii.

i.b. I. 4 - The 'feminine' from the 1990s onwards

In particular, from the 1990s onwards, critical contributions from lesbian and queer feminism and postcolonial black feminism have promoted profound rethinking of the issues underlying traditional feminist philosophy. Some thinkers, in fact, have declared the advent of a post-feminist thought, reformulating traditional philosophical paradigms, first and foremost that of subjectivity. This reformulation implied recognising the subject as a meeting place of multiple and mobile differences and identities, such as gender, sexual preference, race, social class and lifestyle differences, on which the various forms of power of a multi-faceted system of domination act simultaneously and transversally: not only sexist, but also capitalist, racist, homophobic ones, etc. In its desire to undermine the symbolic order on which this domination is based, the reflection on postfeminist subjectivity has therefore been translated into new 'subversive' representations: 'woman' is no longer found in binary opposition to 'man', and is substituted by 'nomadic subject'¹, 'queer'², 'eccentric'³, or 'cyborg'⁴. In short, such perspectives have challenged the claim, inherent in feminist thinking, to be able to speak, with a single voice, on behalf of all women. The notion of gender identity was criticised as essentialist, constructed along "culturally intelligible grids of an idealised and compulsory heterosexuality"⁵. The 'feminine', conceived not only in biological but also cultural terms, was therefore associated with the 'other', as the site of difference itself⁶. Difference and location became core concerns as these thinkers insisted that knowledge is always embodied, or 'situated', in persons, who differ in terms of class, race, culture and gender, and so one must always consider the 'standpoint' from which a certain story is told⁷. Notably, the question of difference has also been taken up and explored by postcolonial theorists. These theorists critically reflected on alternative ways of dealing with concepts such as black subjectivity, 'blackness', 'nativeness' or 'caribeanness'⁸.

1 Cf. Braidotti, R. (1994) *Nomadic Subjects*. New York: Columbia University Press.

2 Cf. Butler, J. (1993) *Bodies That Matter: On the Discursive Limits of Sex*. London: Routledge.

3 Cf. de Lauretis, T. (1990 Spring) Eccentric Subjects: Feminist Theory and Historical Consciousness. *Feminist Studies* 16(1):115-50.

4 Cf. Haraway, D. J. (1985 March-April) A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism for the 1980s. *Socialist Review* 80, 15(2): 65-107. This text was later re-published as Id. (1991) A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century in Id. *Simians, Cyborgs and Women: The Reinvention of Nature*, pp.149-181. New York: Routledge.

5 Butler, J. (1990) *Gender Trouble: Feminism and the Subversion of Identity*. London: Routledge, p. 137.

6 Rosi Braidotti (1994) notes how feminist philosophy was marked in the '80 by the opposition between the 'gender theorists' in the Anglo-American tradition and the 'sexual difference theorists' in the Continental tradition. Anglo-American feminists were focused on 'gender opposition' and sought a 'beyond gender subjectivity' that overcame sexual dualism. Continental and especially French feminists instead, such as Julia Kristeva, Hélène Cixous and Luce Irigaray contributed to the metaphorization of the 'feminine' as a sign of difference, in the critical attempt to redefine human subjectivity.

7 Cf.: Haraway, D. J. (1988) Situated knowledges: the science question in feminism and the privilege of partial perspective. *Feminist Studies* 14(3): 575-599; Harding, S. G. (1991) *Whose science? Whose knowledge?: thinking from women's lives*. Ithaca, NY: Cornell University Press; Harding, S. G. (2003) *The feminist standpoint theory reader: intellectual and political controversies*. New York: Routledge.

8 Cf.: bell hooks (1990a) Postmodern Blackness. *Postmodern Culture* 1(1); bell hooks (1990b) *Yearning: Race, Gender, and Cultural Politics*. Boston, MA: South End Press; Glissant, É. (1989) *Caribbean Discourse: Selected Essays*. Transl. J. M. Dash. Charlottesville, VA: UP of Virginia; Lokko, L. N. N. (ed.) (2000) *White Papers, Black Marks: Architecture, Race, Culture*. London: Athlone; Lethabo King, T. (2019) *The black shoals: offshore formations of black and native studies*. Durham, NC and London: Duke University Press.



Mierle Laderman Ukeles, *Hartford Wash: Washing/Tracks/Maintenance (Outside)*, 1973.

Source: Ponzio, C. (2020) Performing care work.



Scene from *Koolhaas Houselife*, 2008, directed by Ila Bêka and Louise Lemoine. Source: Mattern, S. (2018) Maintenance and Care.

Altering – or *Alterities*¹²¹ – refers “to *alter* – the Latin word for ‘other’ – more as a verb than a noun. They speak about making or becoming different, about change (...) [It] could mean ‘undermining’, ‘subverting’ received identities and authoritative rules, norms and tools and working out other shared meanings throughout their transformation” [i.b. I. 5].

Other interesting and more recent reflections and experiments have drawn on the feminist notion of care¹²², which has been taken as a politically and morally charged vocabulary to engage with emerging issues of social and environmental concern. In particular, many of them¹²³ are inspired by the version of care proposed by political

121 The volume was born out of a conference, *Alterities: Interdisciplinary and ‘Feminine’ Practices of Space (Altérités: Interdisciplinarité et Pratiques Féminines’ de L’Espace)* held in Paris in 1999. The event was co-organised by l’École d’Architecture Paris Villemin and l’École Nationale Supérieure des Beaux Arts and meant to bring together different genealogical lines within the feminist approach to architecture in the late 1990s.

122 Different currents of feminist thought, often disagreeing on the content and value to be given to it, have given a central role to the notion of care since the 1970s, ranging from the Marxist analysis of reproductive labor by Silvia Federici, to feminist moral inquiries by Carol Gilligan or the concept of maternalism by Nel Noddings and Sara Ruddick. Cf.: Federici, S. (1975) *Wages Against Housework*. Bristol, UK: Power of Women Collective and Falling Wall Press; Gilligan, C. (1982) *In a different voice*. Cambridge, MA - London: Harvard University Press; Noddings, N. (1986) *Caring. A Feminist Approach to Ethics and Moral Education*. Los Angeles, CA: University of California Press; Ruddick, S. (1990) *Maternal Thinking: Towards a Politics of Peace*. London: The Women’s Press Ltd.

123 The concept of ‘care’, or ‘maintenance’, has also inspired a number of works in the field of art: in the 1970s, for instance, Mierle Laderman Ukeles pioneered the genre of *Maintenance Art*, performing the mundanity of maintenance work, while granting it visibility and value within the civic realm. Cf. Mattern, S. (2018) Maintenance and Care, *Places Journal*, November. Available at <https://placesjournal.org/article/maintenance-and-care/> See also: Ponzio, C. (September 2020) Performing care work, *Maintenance/reproduction vs Development/production and the “phantom” caring body*. *NERO Editions*. Available at: <https://www.neroeditions.com/performing-care-work/>

i.b. I. 5 - Feminist architectural practices in(from) the 1990s (to the present)

In particular, such concerns underlie the work of *Taking Place*, one of the architectural feminist practice and research groups mentioned in Petrescu's volume. In trying to define what a specifically feminist spatial practice could be, *Taking Place* organised a number of events, from small gatherings to larger events hosted at institutions, also involving students. The events were thought as a forum in which to discuss ideas and projects, as well as a chance for temporary and provocative transformations of space: for instance, lectures and performances took place on staircases, in the WCs or in the courtyard, whereas main lecture spaces became cabaret or cooking areas. A similar approach is adopted by *muf*¹, a feminist spatial practice founded in 1994. *muf*'s working method, which is established out of a critique of the brief, is open-ended, process driven and experimental. It highlights the importance of exchange across art and architecture and the participation of users in the design process, which is not conceived as an activity that leads to the making of a building, but rather as the location of the work itself. They give emphasis to the specificities of each situation and often privilege a multiplicity of small, minor proposals to an overarching solution. The notion of practising 'otherwise' also relates to the political and poetic perspective taken by Petrescu in her *atelier d'architecture autogérée (aaa)*², or 'studio for self-managed architecture', run in Paris together with Constantin Petcou and other members. The *aaa* acts as platform for collaborative research and action on the city and define their projects as 'urban tactics', encouraging the participation of inhabitants at the self-management of disused urban spaces³.

1 See: <http://muf.co.uk>. See also: muf (2001) *This Is What We Do: A Muf Manual*. London: Ellipsis.

2 See: <https://www.urbantactics.org>

3 Cf.: Petrescu, D. (ed.) (2007) *Altering Practices: Feminist Politics and Poetics of Space*. New York: Routledge; Awan, N., Schneider, T. and Till, J. (2013) *Spatial agency: other ways of doing architecture*. London: Routledge.

theorist Joan Tronto, who has given it a distinctly political character. In Tronto's view, this concept, and the ethics associated with it, are capable of providing an alternative to traditional modes of ethical and political reflection [i.b. I. 6].

Recent initiatives and publications, such as the already mentioned exhibition *Critical Care. Architecture for a Broken Planet* and related book¹²⁴ (see section 1), the 2019 edition of the festival *URBANBATfest* in Spain¹²⁵, and the book *Urbanismo Feminista* by *Col·lectiu Punt 6*¹²⁶, draw upon this perspective. The critical reflections and situated architectural

124 Cf. Fitz, A. and Krasny, E. (2019) *Critical Care: Architecture and Urbanism for a Broken Planet*.

125 See: <http://8festival.urbanbat.org>

126 *Col·lectiu Punt 6* (2019) *Urbanismo Feminista: Por una Transformación Radical de los Espacios de Vida*. Barcelona, ES: Virus Editorial.



atelier d'architecture autogérée, ECObox project, Paris, 2001-2005. Source: arte-util.org
aaa organised a series of self-managed projects in the La Chapelle area, encouraging residents to get access to and critically transform temporary misused or underused spaces. The process begun by installing a temporary garden with recycled materials. The garden, called *ECObox*, has been progressively extended into a platform for urban criticism and creativity, curated by members of the *aaa*, residents and external collaborators.



Muf, Roots and Wings, Fazakerley, 2002. Source: muf.co.uk

practices that they collect seek to move against normative, ableist, sexist and exploitative models of capital market-oriented economies that have led to the current crisis. Particularly, the last two initiatives emphasise the need to produce urban spaces capable of ensuring conditions of liveability for multiple actors, multiple bodies, challenging generic assumptions about how, for whom and for what architects design. *Col·lectiu Punt 6*, for instance, argue that “[f]eminism is the revolution we need because it embodies real equality, recognising and assuming diversity; because it values care, recognising us as part of a species in a complex ecological system”¹²⁷. In this sense, a feminist urbanism involves a change of values so as “to put life at the centre and, for this, to recognise the diversity of the people and realities of which we are a part, incorporating the different needs and capacities to respond to real situations and people, and not to cold, universalising statistics. (...) [A]ll bodies are considered, without standardising any model”¹²⁸.

These reflections, therefore, help to highlight that architecture and urban design have traditionally operated according to a predefined and standardised idea of subject and community. In a far from neutral way, they actually respond to special interests, and render the diversity of experiences and needs invisible. By emphasising values such as efficiency and productivity, and by basing themselves on essentialist views of gender

127 Ibid. p. 12.

128 Ibid. p. 14.

i.b. I. 6 - Joan Tronto's view on care

According to Tronto, “[w]e will need to rethink our conceptions of human nature to shift from the dilemma of autonomy or dependency to a more sophisticated sense of human interdependence”¹. In *Toward a Feminist Theory of Caring* (1990)², together with Berenice Fisher, she defined care as follows: “On the most general level, we suggest that caring be viewed as a species activity that includes everything we do to maintain, continue, and repair our ‘world’ so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web”. Beyond an attention for people commonly seen as vulnerable, its meaning is extended to the whole complex of activities that make life possible and livable. The responsibility linked to care therefore consists in the recognition of the social interdependence and substantial vulnerability of individuals. In its political sense, it implies a commitment to concrete action. In addition to this initial definition, Tronto proposes to consider care as composed of four distinct phases, which are expressed in the notions of: *caring about*, *taking care of*, *care-giving* and *care-receiving*. The first phase, *caring about*, signals the recognition of a specific need for which precise care must be provided; the next step after this beginning consists in *taking care of*, that is, assuming in first person some responsibility for the specific need that has been identified; the phase of *care-giving* implies the direct satisfaction of the need in question; the last step, which closes the process of care, is *care-receiving*, where the person who has acted recognises that the recipient of care is actually benefiting from it. This step is crucial because it allows to understand if the care need has actually been satisfied.

1 Tronto, J.C. (1993) *Moral Boundaries. A Political Argument for an Ethics of Care*. New York and London: Routledge, p. 101.

2 Tronto, J. C. and Fisher, B. (1990) *Toward a Feminist Theory of Caring*. In E. Abel and M. Nelson (eds.) *Circles of Care*, pp. 36-54. New York: SUNY Press, p. 40.

and on Eurocentric, classist, abilist interpretations of reality, they tend to privilege the interests – and favour the profit – of a restricted group of actors. In this way, they have historically contributed to great social inequalities and to the harming of certain population groups, i.e. the many other bodies, or ‘parts’, that do not fit into these models, such as – to name but a few sociological variables – women, black people, the LGBT population, ethnic minorities, indigenous people, the elderly and disabled people.

In addition to historical contributions by the likes of Jane Jacobs¹²⁹, this concern to explore the ways in which the interests of minority groups have traditionally been excluded from architectural and urban design is expressed in recent works, such as

129 Cf. Jacobs, J. (1961) *The death and life of great American cities*. New York: Vintage Books.



White models performing domesticity in the house designed by Hugh Stubbins. Hedrich-Blessing Collection, Chicago History Museum.
 Photos and caption: Cheng, I., Davis II, C.L. and Wilson, M. O. (eds.) (2020) *Race and Modern Architecture*

*Race and Modern Architecture*¹³⁰, edited by Irene Cheng, Charles L. Davis II, Mabel O. Wilson, in which the authors reflect on the close link between race and modernism. Architecture, they argue, has historically been grounded in the hierarchies of racial difference¹³¹, that have permeated modernism's narrative of universalism and progress since the Enlightenment [i.b. I. 7]. Other authors such as Aimie Hamraie, Bess Williamson and Rob Imrie, whose contribution will be analysed in more detail in the following chapters, reflect on how disabled bodies have also been traditionally excluded from both architectural practice and historiography, and how "[d]isability narratives (...) provide the missing

130 Cf. Cheng, I., Davis II, C.L. and Wilson, M. O. (eds.) (2020) *Race and Modern Architecture. A Critical History from the Enlightenment to the Present*. Pittsburgh, PA: University of Pittsburgh Press. An overview of the book's content is available at: <https://www.raceandmodernarchitecture.com/>

131 Other interesting perspectives on the subject are offered by the BIPOC Centered design history courses, facilitated by *Polymode*. Launched in January of 2021, this series of classes revisits and rewrites the course of design history in a way that centers previously marginalized designers, cultural figures, and particularly Black, Indigenous, and People of Color (BIPOC) and Queer, Trans, People of Color (QTPOC). The classes are available at: <https://bipocdesignhistory.com>

i.b. l. 7 - US, the Covid-19 pandemic and urban spaces

An article recently written by Black planner and community organiser Destiny Thomas on *Citylab* is particularly relevant in reflecting on these issues in relation to the recent changes to urban spaces introduced in response to the covid-19 pandemic. As Thomas argues, the reduction of vehicular traffic in US provoked by the pandemic has been prompting transportation planners to introduce new bike lanes and networks of 'slow streets'. Anyway, as she notes, the 'quick-build' nature of these projects and the lack of process and participatory decision-making behind them might deepen inequity and mistrust in communities that have been disenfranchised and underserved for generations. In US, Black, Brown, Indigenous People, as well as trans people, are regularly policed, harassed, and killed in the built environment – as it recently happened to Ahmaud Arbery and George Floyd – and that violence could be even heightened in spaces where the main understanding of personal safety centers on vehicle traffic. Hence, prior to banning cars, laws should ban racial discrimination. "If we want to see streets filled with joy and true low-stress access to quality of life, we have to be willing to disrupt what has been the default mode in urban planning — one that centers whiteness and silences Black and Brown people and low-income communities"¹.

1 Thomas, D. (2020) 'Safe Streets' Are Not Safe for Black Lives. *Citylab*. Retrieved 15.06.2020 from <https://www.bloomberg.com/news/articles/2020-06-08/safe-streets-are-not-safe-for-black-lives>. For a similar reflection on the difficulties encountered by people with disabilities, see: Surico, J. (2020) When Street Design Leaves Some People Behind, *Citylab*. Retrived 3 September 2020 from https://www.bloomberg.com/news/articles/2020-08-13/do-bike-lanes-have-an-accessibility-problem?utm_medium=social&utm_content=citylab&utm_campaign=socialflow-organic&utm_source=twitter

fragments of an architectural history usually told from the perspectives of architects"¹³². Beyond a mere inclusion, which leads them to be considered as legitimate users – with particular interests and needs – several neglected or emerging parts pose or imply new challenges for architecture. Each of them, in questioning a given normative order – or 'partition of the sensible' –, brings with him or her and requires specific ways of designing and co-designing.

132 Williamson, B. (2019) *Accessible America: A History of Disability and Design*. New York: New York University Press, p. 7.

Conclusion: uncommoning participation

Participation in architecture, as we have seen, and in general architectural and urban design themselves, tend to be understood operationally starting from a predefined and generic idea of the user and of what is the ‘common’, the ‘common good’, or the so-called ‘common ground’.

This assumption implies that different ‘parts’ are ‘included’ in a given whole, according to a certain logic and worldview, excluding or cancelling multiple differences and even conflicting needs. Different actors, or ‘parts’, have no place in this ‘whole’, as the specific definition of the world they inhabit and embody remains outside. In other words, it does not fit into a pre-existing, standardised framework.

As anthropologists Mario Blaser e Marisol de la Cadena argue, “in these cases, commoning comes at the cost of subordinating one set of practices to the other through ‘same-ing’ – that is, an equivalence is proclaimed (and accepted) where a divergence is actually operative. The consequence is that dominant practices can eventually operate as if the subordinate ones were irrelevant to the constitution of the commons”¹³³.

What new challenges would open up for architecture if these neglected or emerging parts were taken into account in their singularity? How would the meaning of participation in architecture change?

In this regard, rather than understanding it as a practice of ‘commoning’, what seems interesting is to question the supposed ‘common ground’ on which participation is based, and to rethink it as a practice of ‘uncommoning’.

As the two anthropologists suggest:

“[u]ncommoning runs counter to this possibility [of subordinating one set of practices to the other], not simply by emphasising that practices taken as common are *different* (that is, the contrary of the same) but rather by stressing that they are *divergent*, (...). [This is a] positive divergence as they symbiotically come together – like in an ecological system – while also remaining distinct: what brings them together is an interest in common that is not the same interest. The point of uncommoning, then, is not to preclude the possibility of commoning but rather, whenever possible, to seek ways to base the latter on the more solid grounds of recognised productive divergences”¹³⁴.

In this perspective, in contrast to the idea that ‘taking part’ or ‘giving voice’ is something simple, pursuable through certain procedures and processes, the meaning of participation

133 Blaser, M. and de la Cadena, M. (2017) The Uncommons: An Introduction. *Anthropologica* 59 (2): 185-93, p. 190.

134 Ibid. pp. 190-191.

changes radically. By considering 'other' bodies and actors in their singularity, rather than attempting to 'include' them, architectural practice opens up to other 'uncommon' or 'unshared' forms, where certain models and modes of action are questioned, and where productively divergent ways of doing are invented, not considering difference as something which is already given. Participation, in this sense, rather than implying a simple 'relinquishing' of power by expert designers, can mean transforming processes and ways of operating; transforming one's view of the world; transforming one's tools and a certain notion of space; transforming a given idea of politics and society.

REFERENCES (Chapter I)

- Agrest, D. (1993) *Architecture from Without: Theoretical Framings for a Critical Practice*. Cambridge, MA: MIT Press.
- Agrest, D., Conway, P. and Kanes Weisman, L. (eds.) (1996) *The Sex of Architecture*. New York: Abrams.
- Awan, N., Schneider, T. and Till, J. (2013) *Spatial Agency: Other Ways of Doing Architecture*. London: Routledge.
- bell hooks, (1990a) Postmodern Blackness. *Postmodern Culture* 1(1).
- bell hooks (1990b) *Yearning: Race, Gender, and Cultural Politics*. Boston, MA: South End Press.
- Blaser, M. and de la Cadena, M. (2017) The uncommons: An introduction. *Anthropologica* 59(2): 185-193.
- Blundell Jones, P., Petrescu, D. and Till, J. (eds.) (2005) *Architecture and Participation*. New York: Spon Press.
- Boano, C. and Vergara Perucich, F. (2016) Half-happy architecture. *Viceversa* (4): 58-81.
- Boehnert, J. (2018) *Design, Ecology, Politics: Towards the Ecocene*. London: Bloomsbury.
- Braidotti, R. (1994) *Nomadic Subjects*. New York: Columbia University Press.
- Brenner, N. (2016) 'Is tactical urbanism an alternative to neoliberal urbanism?'. In N. Brenner, *Critique of Urbanization*. Basel: Bauwelt Fundamente Series, Birkhauser Verlag, pp. 128-146. Originally published in *POST: notes on modern and contemporary art*, MoMA, New York City, April 2015.
- Brown L. (ed.) (2011) *Feminist Practices: Interdisciplinary Approaches to Women in Architecture*. Farnham, UK: Ashgate.
- Butler, J. (1990) *Gender Trouble: Feminism and the Subversion of Identity*. London: Routledge.
- Butler, J. (1993) *Bodies That Matter: On the Discursive Limits of Sex*. London: Routledge.
- Rendell, J. (2012) Tendencies and Trajectories: Feminist Approaches in Architecture. In S. Cairns, G. Cryslar, H. Heynen, G. Wright (eds.) *Architectural Theory Handbook*, pp. 85-97. London: Sage.
- Careri, F., Romito, L. (2005) Stalker and the big game of Campo Boario. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*, pp. 249-255. New York: Spon Press.
- Celik, Z. (1997) 'Gendered spaces in colonial Algiers' [1992]. In D. Agrest, P. Conway and L. Kanes Weisman (eds.) (1996) *The Sex of Architecture*, pp. 127-140. New York: Abrams.
- Cheng, I., Davis II, C.L. and Wilson, M. O. (eds.) (2020) *Race and Modern Architecture. A Critical History from the Enlightenment to the Present*. Pittsburgh, PA: University of Pittsburgh Press.
- Cole, D. (1973) *From Tipi to Skyscraper: A History of Women in Architecture*. New York: G. Braziller.
- Coleman, D., Danze, E. and Henderson C. (eds.) (1996) *Architecture and Feminism*. New York: Princeton Architectural Press.

Col·lectiu Punt 6 (2019) *Urbanismo Feminista: Por una Transformación Radical de los Espacios de Vida*. Barcelona, ES: Virus Editorial.

Colomina, B. (ed.) (1992) *Sexuality and Space*. New York: Princeton Architectural Press.

Colomina, B. (1994) *Privacy and Publicity. Modern Architecture as Mass Media*. Cambridge, MA: MIT Press.

Cooper Marcus, C. (2000) Site planning, building design and a sense of community: an analysis of six cohousing schemes in Denmark, Sweden, and the Netherlands. *Journal of architectural and planning research* 17(2): 146-163.

Cupers K. and Doucet, I. (eds.) (2009), Agency in Architecture: Reframing Criticality in Theory and Practice. *Footprint*, (4): 1-6.

Cupers K. (2014) Where Is the Social Project? *Journal of Architectural Education* 68(1): 6-8.

Dalisi, R. (1975) Guerriiglieri della cultura e gioco dell'emarginazione. In G. M. Accame and C. Guenzi (eds.) *Avanguardia e cultura popolare*, pp. 65-70. Bologna: Galleria d'Arte Moderna.

Debord, G. (September 1955) *Introduction to a Critique of Urban Geography*. Transl. K. Knabb. Paris: Les Lèvres Nues (6): 23-27. The entire text is available at: <https://atrium.lib.uoguelph.ca/xmlui/bitstream/handle/10214/1798/3-Debord.pdf?sequence=1&isAllowed=y>

De Carlo, G. (1968) *La Piramide rovesciata*. Bari: De Donato.

De Carlo, G. (1969) Why/How to Build School Buildings. *Harvard Educational Review* 39(4): 12-35.

De Carlo, G. (1970) Il pubblico dell'architettura. *Parametro* (5): 4-13.

De Carlo, G. (2005) Architecture's public, pp. 3-18. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*.

De Carlo, G. (2013) *Un'architettura della partecipazione*, S. Marini (ed.). Macerata: Quodlibet.

Dellapiana, E. and Pesando, A. B. (2018) In front of and behind the Mirror. Women in Italian Radical Design, pp. 93-106. Proceedings of the 3rd MoMoWo International Conference – Workshop, University of Oviedo, 2-4 October 2017, Oviedo. Ljubljana: Založba ZRC.

de la Pena et al. (eds.) (2018) *Design As Democracy: Techniques for Collective Creativity*. Washington, DC: Island Press.

de Lauretis, T. (1990 Spring) Eccentric Subjects: Feminist Theory and Historical Consciousness. *Feminist Studies* 16 (1): 115-150.

Demos, T. J. (2017) *Against the Anthropocene: Visual Culture and Environment Today*. Berlin: Sternberg Press.

De Pieri F. (ed.) (2018) *Giancarlo De Carlo, La piramide rovesciata. Architettura oltre il '68*. Macerata: Quodlibet.

Dodd, M. (2020) *Spatial Practices, Modes of Action and Engagement with the City*. New York: Routledge

Dwyer, J. and Thorne, A. (2007) Evaluating Matrix: notes from inside the collective. In D. Petrescu (ed.) *Altering Practices: Feminist Politics and Poetics of Space*. New York: Routledge.

Fariás, I. (2018) Parts and Traps for Making Futures. In *Making Futures Bauhaus+*. Available at: <https://www.making-fu>

tures.com/ignacio-farias-parts-and-traps-for-making-futures/

Federici, S. (1975) *Wages Against Housework*. Bristol, UK: Power of Women Collective and Falling Wall Press.

Fitz, A. and Krasny, E. (2019) *Critical Care: Architecture and Urbanism for a Broken Planet*. Cambridge, MA: MIT Press.

Forester, J. (1985) Designing: Making sense together in practical conversations. *Journal of Architectural Education* 38(3): 14-20.

Forester, J. (1989) Planning in the Face of Power. *Journal of The American Planning Association* 35(3): 27-47.

Franck, K. A. (1989) A feminist approach. In E. P. Berkeley (ed.) *Architecture: A Place for Women*, pp. 201-216. Washington, DC: Smithsonian Institution Press.

Frichot, H., Gabrielsson, C. and Runting, H. (eds.) (2017) *Architecture and Feminisms. Ecologies, Economies, Technologies*. London: Routledge.

Fromm, D. (1991) *Collaborative communities; cohousing, central living, and other new forms of housing with shared facilities*. New York: Van Nostrand Reinhold.

Fromm, D. (2000) American cohousing: the first five years. *Journal of architectural and planning research* 17(2): 94-109.

Gilligan, C. (1982) *In a different voice*. Cambridge, MA - London: Harvard University Press.

Glissant, É. (1989) *Caribbean Discourse: Selected Essays*. Transl. J. M. Dash. Charlottesville, VA: UP of Virginia.

Haraway, D. J. (1985 March-April) A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism for the 1980s. *Socialist Review* 80, 15(2): 65-107. This text was later re-published as Id. (1991) A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century in Id. *Simians, Cyborgs and Women: The Reinvention of Nature*, pp.149-181. New York: Routledge.

Haraway, D. J. (1988) Situated knowledges: the science question in feminism and the privilege of partial perspective. *Feminist Studies* 14(3): 575-599.

Haraway, D. J. (2015) Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin. *Environmental Humanities* 6: 159-165.

Haraway, D. J. (2016) *Staying with the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press.

Harding, S. G. (1991) *Whose science? Whose knowledge?: thinking from women's lives*. Ithaca, NY: Cornell University Press.

Harding, S. G. (2003) *The feminist standpoint theory reader: intellectual and political controversies*. New York: Routledge.

Harriss H., Hyde R. and Marcaccio R. (eds.) (2020) *Architects After Architecture: Alternative Pathways for Practice*. New York: Routledge.

Hayden, D. (1982) *The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods, and Cities*. Cambridge, MA: MIT Press.

Hayden, D. (1986) *Redesigning the American Dream*. New York: Norton. See also: <http://www.doloreshayden.com>.

Hays, M. (1992) *Modernism and the Post-humanist Subject: The Architecture of Hannes Meyer and Ludwig Hilberseimer*. Cambridge, MA: The MIT Press.

- Henderson S. R. (1996) A Revolution in the Woman's Sphere: Grete Lihotzky and the Frankfurt Kitchen. In D. Coleman, E. Danze and C. Henderson (eds.) *Architecture and Feminism*, pp. 221-253. Princeton, NJ: Princeton Architectural Press.
- Hoare Q. and Nowell Smith, G. (eds. and transl.) (1971) *Selections from the Prison Notebooks of Antonio Gramsci*. London: Lawrence & Wishart.
- Hughes, F. (ed.) (1996) *The Architect: Reconstructing Her Practice*. Cambridge, MA: MIT Press.
- Huth E. and Orben, C. (1996) Unordentliche Ordnung [Interview]. *Architektur & Bauforum* 29: 41-45.
- Jacobs, J. (1961) *The death and life of great American cities*. New York: Vintage Books.
- Kelty, C. M. (2019) *The participant: A century of participation in four stories*. Chicago, IL: Chicago University Press.
- Kossak F., Petrescu, D., Schneider, T., Tyszczyk, R. and Walker, S. (eds.) (2009) *Agency: Working With Uncertain Architectures*. London: Routledge.
- Lefebvre, H. (1991) *The Production of Space*. Oxford, UK – Cambridge, MA: Blackwell. Originally published in France as Id. (1974) *La production de l'espace*. Paris: Éditions Anthropos.
- Lethabo King, T. (2019) *The black shoals: offshore formations of black and native studies*. Durham, NC and London: Duke University Press.
- Little, J., Peake, L. and Richardson, P. (eds.) (1988) *Women in Cities: Gender and the Urban Environment*. London: Macmillan.
- Lokko, L. N. N. (ed.) (2000) *White Papers, Black Marks: Architecture, Race, Culture*. London: Athlone.
- Mari, E. (1974) *Autoprogettazione?* Mantova: Corraini.
- Mattern, S. (November 2018) Maintenance and Care, *Places Journal*, November. Available at <https://placesjournal.org/article/maintenance-and-care/>
- Matrix (1984) *Making Space: Women and the Man-Made Environment*. London: Pluto Press.
- McCorquodale, D., Ruedi, K. and Wigglesworth, S. (eds.) (1996) *Desiring Practices*. London: Black Dog.
- muf (2001) *This Is What We Do: A Muf Manual*. London: Ellipsis.
- Natalini, A., Netti, L., Poli, A. and Toraldo di Francia, C. (1983) *Cultura materiale extraurbana*. Firenze: Alinea.
- Noddings, N. (1986) *Caring. A Feminist Approach to Ethics and Moral Education*. Los Angeles, CA: University of California Press.
- Ottokar, U. et al. (2001) Die Architektur und Ich: Ottokar Uhl [Interview]. *Architektur & Bauforum* 2: 129-138.
- Petrescu, D. (ed.) (2007) *Altering Practices: Feminist Politics and Poetics of Space*. New York: Routledge.
- Pirici, A. and Raluca Voinea, R. (January 2015) Manifesto for the Gynecene—Sketch for a New Geological Era, *tranzit.ro*, <http://ro.tranzit.org/file/MANIFESTO-for-the-Gynecene.pdf>.
- Ponzio, C. (September 2020) Performing care work, Maintenance/reproduction vs Development/production and the

'phantom' caring body, *NERO Editions*. Available at: <https://www.neroeditions.com/performing-care-work/>

Rancière, J. (1998) The Cause of the Other. *Parallax* 4(2): 25–33.

Rancière, J. (1999) *Disagreement: Politics and Philosophy*. Minneapolis, MN: Minnesota University Press.

Rancière, J. (2004) *The Politics of Aesthetics. The Distribution of the Sensible*, transl. Rockhill, G., London – New York: Continuum International Publishing Group. Ed. orig. Id. (2000) *Le partage du sensible: Esthétique et politique*. Paris: La Fabrique-Éditions.

Rancière, J. (2015) *Dissensus: On Politics and Aesthetics*. London: Bloomsbury Publishing.

Ratti, C. and Claudel, M. (2015) *Open Source Architecture*. London: Thames & Hudson. Originally published in Italy as Id. (2014) *Architettura Open Source. Verso una progettazione aperta*. Torino: Einaudi.

Reisinger, K. and Schalk, M. (eds.) (2017) Becoming a Feminist Architect. *Field: A Free Journal for Architecture* 7(1):1-10.

Rendell, J., Penner, B. and Borden, I. (eds.) (2000) *Gender Space Architecture: An Interdisciplinary Introduction*. London: Routledge.

Richards, J. M., Blake, P. and De Carlo, G. (1973) *L'architettura degli anni Settanta*. Milano: Il Saggiatore.

Rispoli, E. R. (2020) Il progetto come dis-ordine. I radical italiani e la politica del dissenso. In E. Dellapiana, L. Gunetti, D. Scodeller (eds.) *Italia: design, politica e democrazia nel XX secolo*. Proceedings of the IV Conference AIS/Design Associazione Italiana Storici del Design, pp. 263-274. Torino: Politecnico di Torino.

Roberts, M. (1991) *Living in Man-Made World: Gender Assumptions in Modern Housing Design*. London: Routledge.

Rossi, C. (2014) Crafting a design counterculture: the pastoral and the primitive in Italian radical design, 1972-1976. In G. Lees-Maffei and K. Fallan (eds.) *Made in Italy: Rethinking a Century of Italian Design*, pp. 145-160. Oxford, UK: Bloomsbury Academic.

Ruddick, S. (1990) *Maternal Thinking: Towards a Politics of Peace*. London: The Women's Press Ltd.

Sanders, J. (ed.) (1996) *Stud: Architectures of Masculinity*. New York: Princeton Architectural Press.

Schalk, M., Mazé, R. and Kristiansson, T. (eds.) (2017) *Feminist Futures of Spatial Practice*. Baunach, D.: AADR.

Schalk, M. and Reisinger, K. (eds.) (2017) Styles of Queer Feminist Practices and Objects in Architecture. *Architecture and Culture*, Special Issue 5(3): 343-352.

Schneider, T. (2018) What If ... Or Toward a Progressive Understanding of Socially Engaged Architecture. In F. Karim (ed.) *Routledge Companion to Architecture and Social Engagement*, pp. 3-13. New York and London: Routledge.

Shotter, J. (1993) *Cultural Politics of Everyday Life: Social Constructionism, Rhetoric and Knowing of the Third Kind*. Toronto: University of Toronto Press.

Stratigakos, D. (2016) *Where Are the Women Architects?* Princeton, NJ and Oxford, UK: Princeton University Press in association with *Places Journal*.

Surico, J. (2020) When Street Design Leaves Some People Behind, *Citylab*. Available at: https://www.bloomberg.com/news/articles/2020-08-13/do-bike-lanes-have-an-accessibility-problem?utm_medium=social&utm_content=ci

tylab&utm_campaign=socialflow-organic&utm_source=twitter

Till, J. (2009) *Architecture Depends*. Cambridge, MA: MIT Press.

Thomas, D. (2020) 'Safe Streets' Are Not Safe for Black Lives, *Citylab*. Available at: <https://www.bloomberg.com/news/articles/2020-06-08/-safe-streets-are-not-safe-for-black-lives>

Torre, S. (ed.) (1977) *Women in American Architecture: A Historic and Contemporary Perspective*. New York: Whitney Library of Design.

Tronto, J. C. and Fisher, B. (1990) Toward a Feminist Theory of Caring. In E. Abel E. and M. Nelson (eds.) *Circles of Care*, pp. 36-54. New York: SUNY Press.

Tronto, J.C. (1993) *Moral Boundaries. A Political Argument for an Ethics of Care*. New York and London: Routledge.

Vossoughian, N. (Winter 2014) Standardization Reconsidered: Normierung in and after Ernst Neufert's Bauentwurfslhre (1936). *Grey Room* 54: 34-55.

Walker, L. (1984) *British Women in Architecture 1671–1951*. London: Sorello.

Williamson, B. (2019) *Accessible America: A History of Disability and Design*. New York: New York University Press.

Wilson, M. (1996) Black bodies/white cities: Le Corbusier in Harlem. *ANY* 16: 35-39.

Wright, G. (1977) On the fringe of the profession: Women in American architecture. In S. Kostof (ed.) *The Architect: Chapters in the History of the Profession*, pp. 280-309. Oxford, UK: Oxford University Press.

Zahle, K. and Duelund Mortensen, P. (1992) Co-Housing in Denmark. *Open house international* 17(2): 56-65.



The way in which architects are trained

Introduction

This chapter focuses on the scenario that the various experiences described in the previous chapter, in different ways, oppose. Architecture, as we have seen, struggles to configure itself as a participatory practice, due to its genealogy as a modern discipline. More specifically, therefore, I have attempted to carry out a more accurate analysis of the way architects are trained and operate. This analysis aims at showing how the particular expertise of architects produces and is produced itself by normative models that constitute actual power technologies, or rather, – in Foucauldian terms – bio-power technologies. Foucault's analysis on the connection between knowledge and power is used as a lens to observe some stories of the 'Modern era': particularly, these stories are those that recur in the narratives at the basis of the pedagogical models adopted by most architecture schools of the Western world. Besides, the chapter highlights other much older questions that are at the basis of said models, which concern the binaries specific to the tradition of Western thought. One of them is the nature/culture divide, which determined the traditional *tabula-rasa* approach of modernist urban planning. Additionally, from the Renaissance onward, dualisms like 'thought'/'practice', design/construction, architect/builder form the ideological basis on which the specialised role of architects is founded, mostly connected to design aesthetic characteristics. In this respect, architects' education may be viewed as an essential part of the creation of the 'subject-architect'¹: certain pedagogical practices are configured as 'micro technologies of power', or mechanisms, to make sure that individuals are absorbed in the dominating disciplinary paradigm. In such practices, a major role is played by architectural handbooks, which provided and currently provide architecture students and professional designers with a systematic and encyclopedic framework of normative architectural knowledge. Such devices have contributed to the disciplinary construction of the architect as an expert technician, capable of operating on space through norms and standards. Indeed, their approach implies that the standardisation of the built environment can be based on the dimensional rationalisation of the human activities it holds, implying, therefore,

1 Cf. Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*. Oxford: Blackwell Publishing Ltd.; Webster, H. (2006) A Foucauldian look at the Design Jury. *Art, Design & Communication in Higher Education* 5(1):5-19.

an essential dimensional similarity between human beings².

As already mentioned in the previous chapter, architecture and urban design have traditionally operated according to a standardised idea of subject and community, excluding those who do not fit these models. Here, therefore, I will dwell more specifically on observing how this generic idea of the user, or universal body, has been used – even though it was shaped according to different logics and visions – in Western traditions of architectural design since ancient times.

2 Cf.: Emmons, P. and A. Mihalache, A. (2013) Architectural handbooks and the user experience, in K. Cupers, *Use Matters: An Alternative History of Architecture*, pp. 35-50. New York: Routledge; Hamraie, A. (2017) *Building Access: Universal Design and the Politics of Disability*. Minneapolis, MN: University of Minnesota Press; Williamson, B. (2019) *Accessible America: A history of disability and design*. New York: New York University Press.

1. Expertise and Norms

1.1. The knowledge-power nexus

The Enlightenment, the industrial revolution and the corresponding technical-scientific progress set the conditions for the link between knowledge and power to take on an unprecedented social dimension. Indeed, this link has strengthened along with confidence in the methods of the physical sciences, which were considered valid for solving social problems too. The role of experts, therefore, which placed these methods at the basis of planning, programming, control and regulatory practices, has increasingly asserted itself, in a potentially technocratic perspective.

The link between knowledge and power underlies the notion of *expertise*, which, as we shall see, produces and is in turn produced by normative models. Between the eighteenth and nineteenth centuries, there was a significant inclusion of experts in the machinery of political government. Governing increasingly came to mean using knowledge to shape, guide, and direct the conduct of others, such as groups of farmers or the crew of a ship, the employees of an office or a factory, the members of a household, the inhabitants of a territory, etc. The idea which took hold stated that, in order to govern, it is necessary to know the particular characteristics of the area over which the government is to be exercised: for example, in agriculture, geography, fertility, climate; in navigation, the rules of navigation and possible routes; in demography, the data relating to births, illnesses and deaths; in sociology, the classes, interests and conflicts; in economics, the laws of the market, supply and demand; in architecture and urban planning, the forms and techniques of construction and the models of settlement of populations in the territory. This knowledge, although only possessed by certain people – the experts – was to be considered ‘universally valid’. In all these cases “[g]overnment has both fostered and depended upon the vocation of ‘experts of truth’ and the functioning of their concepts of normality and pathology, danger and risk, social order and social control, and the judgements and devices which such concepts have inhabited”³. The norm, in this context, is what is “socially worthy, statistically average, scientifically healthy *and* personally desirable”⁴.

In this framework, knowledge determines the power to establish ‘normality’ as the correspondence to norms that experts develop and, through government practices, translate into laws. Experts can decide which of our behaviours are permissible: “[t]he notion of normality, the invention of the norm, is the linchpin of this mechanism”⁵,

3 Rose, N. (1999) *Powers of Freedom*. Cambridge, UK: Cambridge University Press, p. 30.

4 Ibid. p. 76.

5 Ibid. p. 75.

in which free individuals become governable – in different forms and with different effects – as ‘normal’ subjects.

However, we must bear in mind that the expert *status* does not derive purely and simply from the possession of certain knowledge. Indeed, knowledge is sometimes acquired ‘socially’ through one’s belonging to groups of experts. This can lead to particularly problematic situations, both in the sense that these groups make themselves *a priori* guarantors of the expertise of their members (an example might be the belonging to a ‘professional association’), and in the sense that, together, they can impose political programmes disguised as technical-scientific solutions⁶.

Beyond these risks, in order to grasp the complexity of the implications that underlie the knowledge-power nexus, it is also necessary to take into account the different ways and procedures in which knowledge is formed and developed. There is not ‘one’ science – and, in this case, ‘one’ idea of architecture – but different ‘epistemic cultures’⁷.

In order to explain this background more precisely, it is necessary to introduce some of the aspects of Michel Foucault’s fundamental contribution, which were developed in his reflections on biopower and on its capacity, through the knowledge-power nexus, to act upon human life.

Starting from the theoretical framework conceived by Foucault – of which below I report only a few, partial traits that I consider relevant for this thesis – I have tried to analyze the ways in which my training as an architect took place. More precisely, such critical re-reading has allowed me to reflect on design practices and pedagogical approaches – that are still widespread in architectural schools of the Western world – that emphasise an understanding of the architect as an expert author.

Biopower

For Foucault in concrete terms this power over life evolved in two basic forms.

“One of these poles (...) centered on the body as a machine: its disciplining, the optimization of its capabilities, the extortion of its forces, the parallel increase of its usefulness and its docility, its integration into systems of efficient and economic controls, all this was ensured

6 Cf. Collins, H. and Evans, R. (2017) *Rethinking Expertise*, Chicago, IL: University of Chicago Press. In this book, Collins and Evans present a repertoire of various forms of expertise in the contemporary world.

7 Cf. Knorr-Cetina, K. D. (1999) *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press. Sociologist Karin Knorr-Cetina’s analysis focuses on the practices that contribute to the fabrication of scientific knowledge and the ‘cultures’ to which these practices belong.

by the procedures of power that characterized the *disciplines*: an *anatomo-politics of the human body*. The second (...) focused on the species body, the body imbued with the mechanics of life and serving as the basis of the biological processes: propagation, births and mortality, the level of health, life expectancy and longevity, with all the conditions that can cause these to vary. Their supervision was effected through an entire series of interventions and *regulatory controls: a biopolitics of the population*"⁸.

The organisation of power over life has developed around these two poles. Unlike in the past, its "highest function was perhaps no longer to kill, but to invest life through and through"⁹. Based upon the knowledge-power nexus, technocracy operates through the 'norm', which is one (perhaps the principal) of these ways in which power invests life. In one of the 'Abnormal' lectures, referring to a book by Georges Canguilhem¹⁰, Foucault states:

"in this text (...) norm is not at all defined in terms of natural law, but by the disciplinary or coercive role that norm can exert in the contexts to which it is applied. Norm, consequently, bears in itself a claim of power. Norm is not a principle of intelligibility: it is an element on which a certain exercise of power is founded and legitimated. (...) It is always linked to a technique of intervention and transformation, a sort of normative project"¹¹.

Every form of social control rests on a form of knowledge, a regime of truth, that makes it possible. Biopower makes power-knowledge an agent of transformation of human life, one of the indispensable elements in the development of capitalism.

An anatomo-politics of the human body

In this technocratic view, according to Foucault, all disciplines aim at 'imposing a code of conduct', at making the individual body 'docile', at training it to make it productive, stronger, or simply obedient. Therefore, it is necessary to consider individuals as mere objects, on which automatisms can be inscribed, which are useful to achieve the maximum control and the best order possible. Exercise is the main mode of application

8 Foucault, M. (1978) *The History of Sexuality, Volume I: An Introduction* (translation of *La Volonté de savoir*). Transl. Hurley R. New York: Random House, Inc., p. 139. Originally published in France as Id. (1976) *La volonté de savoir. Histoire de la sexualité. I*. Paris: Gallimard.

9 Ibid. p. 183. It should be specified that biopower and biopolitics are not synonyms: the first term refers to political technology, methods and techniques that are specifically oriented towards the manipulation of man's life; the second one refers to the scope of research and the forms of rationality that preside over the functioning of biopowers.

10 Cf. Canguilhem, G. (1966) *Le normal et le pathologique*. Paris: Presses Universitaires de France.

11 My translation (A/N). Foucault, M. (1999) *Les anormaux. Cours au Collège de France. 1974-1975*. Paris: Gallimard-Seuil, pp. 45-46.

of disciplinary power. Bodies are continually solicited in order to obtain maximum useful force and minimum political resistance.

Disciplinary power cuts out space and marks time, and this is done in terms of ‘microphysics of power’: through small portions of space and short fractions of time, in order to deeply affect every detail of the human body. The techniques applied, inherited from the monastic tradition, are – first of all – seclusion, the space of a cell and a reticulum constituted by basic localisations, cut out within the cell. In addition to being divided in a physical space, individuals are also divided – in order to be differentiated – in an ideal space that establishes a hierarchy. Disciplinary time, split in the duration of individual operations, presides over production cycles. There mustn’t be any ‘downtime’, there must only be a ‘wholly-useful time’¹². The body is broken down into single acts. Each of its operations is classified to isolate their most useful parts, capable of summoning up the maximum strength in the shortest time. The aim is to maximise the efficiency of the process.

Foucault’s philosophy of power is a ‘philosophy of devices’. A device¹³ represents the fundamental theoretical connection that can explain the actual practices of power from the point of view of their real functioning. A device constitutes the configuration of power that can connect elements located on different levels: regulations, practices, surveillance systems, etc.¹⁴ According to Foucault, discipline attempts to train individuals to become the ‘cogs’ of a machine, able to ensure the stability of power relations. Disciplinary power is a sort of ‘mechanics of power’ aimed at extracting from the body the most of its useful force. Evidently, Foucault had one more text on his mind, the one by Canguilhem:

“with Frederick Taylor and the first technicians to make scientific studies of work-task movements, the human body was measured as if it functioned like a machine. If we see their aim as the elimination of all unnecessary movement and their view of output as being expressed only in terms of a certain number of mathematically determined factors, then rationalization was, for all intents and purposes, a mechanization of the body”¹⁵ [i.b. II. 1].

12 Cf. Foucault, M. (1975) *Surveiller et punir. Naissance de la prison*. Paris: Gallimard, p. 177.

13 The device, or *dispositif*, is a key concept in Foucault’s mode of analysis. Here is how he himself describes its meaning: “What I’m trying to pick out with this term [*dispositif*] is a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions – in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements”. Foucault, M. (1980) *Power/Knowledge*. New York: Vintage, p. 194.

14 Cf. Ibid. p. 239.

15 Canguilhem, G. (1992) *Machine and Organism*. Transl. by M. Cohen and R. Cherry. In J. Crary and S. Kwinter (eds.) *Incorporations*. New York: Zone Books, p. 63.

i.b. II. 1 - 'Taylorism'

Frederick Winslow Taylor (1856-1915), an American engineer and entrepreneur, was the initiator of research into methods of improving efficiency in production (hence the term 'Taylorism', which refers to the theory he developed)¹. As the geographer Edward Relph notes, Taylor was an individual somehow driven by a compulsion to reduce everything to its mechanical components and actions and then to rearrange them to maximise efficiency. He applied this attitude to industrial processes "by watching employees carrying out tasks, dividing these tasks into parts, timing each action, and devising better sequences of actions to achieve increased output"². The purpose of these workers' labour was to produce as much as possible in the shortest amount of time. Although Taylor was not solely responsible for changes in industrial management practices, he was certainly the figure who promoted the new approach most effectively. When, with the First World War, the demands of maximum production became paramount, many industry efficiency experts from industry were transferred to government departments. From then on, efficient management and centralised administration became essential goals of modern business and government³.

1 Cf. Taylor, F. W. (1911) *The principles of scientific management*. New York and London: Harper & Brothers.

2 Relph, E. C. (1987) *The Modern Urban Landscape: 1880 to the Present*. Baltimore, MD: Johns Hopkins University Press, p. 94.

3 Cf. Ibid, pp. 94-95.

A bio-politics of population

The political and economic necessity to control great masses of individuals, starting from the eighteenth century, has been conceived as the real objective of the government's action. It is in this way that the political problem of 'population' management arises. One of the great innovations in the techniques of power in the eighteenth century was

"[the] emergence of 'population' as an economic and political problem: population as wealth, population as manpower or labor capacity, population balanced between its own growth and the resources it commanded. Governments perceived that they were not dealing simply with subjects, or even with a 'people', but with a 'population', with its specific phenomena and its peculiar variables: birth and death rates, life expectancy, fertility, state of health, frequency of illnesses, patterns of diet and habitation"¹⁶.

16 Foucault, M. (1978) *The History of Sexuality*, p. 25.

This is directly linked with the development of statistic. When Adolphe Quetelet, (1796-1874), Belgian statistician, announced the new science of social physics in 1831, its central concept was what he called *l'homme moyen*, 'the average man'. This man would have not just an average height, weight, education, and length of life but also an average propensity to marry, commit suicide, or engage in criminal acts¹⁷. As Quetelet himself stated:

"The man I am considering is, in society, the analogue of the center of gravity within a body; he is the mean around which various social elements move. He is a fictional being for whom all things occur in accordance with the average expectations for the society in question. (...) This determination of the average man is not merely an idle pursuit; knowledge of social averages can serve an important purpose for the human and social sciences. The study of averages is a necessary precursor to any research into social physics, for it serves as the foundation of such study. (...) Only by taking [the average man] into account can we truly appreciate the phenomena of social equilibrium and movement"¹⁸.

Therefore, as Francois Ewald also notes, the 'average man' "is not an individual whose place in society is indeterminate or uncertain; rather, he is society itself as it sees itself objectified in the mirror of probability and statistic"¹⁹.

These are the premises on which modern urban planning was founded and its procedures developed. Power's objective is not constituted by single cases, but by the statistical average, the overall effects of a population that lives in a certain territory. The image of a 'risk society' takes shape, dotted with regulation devices which operate through the establishment of a regime of truth and the configuration of 'spaces' that are suitable to a well-ordered civilian life. By imposing a regime of truth, the power-knowledge operates in a way that renders individuals able to recognise themselves as acting subjects, as keepers of a freedom that is institutionally granted: it is the very knowledge-power regime established by liberalism. So, this regime presents itself as a body of government knowledge and practices, based on the creation of risk as the government's objective, controlled by a broad range of different kinds knowledge (medicine, geography, psychology, sociology, urbanism, etc.), capable of predicting –

17 Cf. Gigerenzer, G., Swijtink, Z., Porter, T., Daston, L., Beatty, J. and Kruger, L. (1989) *The Empire of Chance: How Probability Changed Science and Everyday Life*. Cambridge, UK: Cambridge University Press. Cited in M. Lampland and S. L. Star (eds.) (2009) *Standards and Their Stories: How Quantifying, Classifying and Formalizing Practices Shape Everyday Life*. Ithaca, NY: Cornell University Press.

18 Quetelet, A. (1835) *Sur l'Homme et le Développement de Ses Facultés; ou, Essai de Physique Sociale*, 2 vols. Paris: Hachette Livre Bnf. Cited in Ewald, F. (1990) Norms, Discipline, and the Law. *Representations* 30: 138-161, pp. 145.

19 Ewald, F. (1990) Norms, Discipline, and the Law, pp. 145-146.

through statistical calculation – the occurrence of different circumstances that could reduce life expectancy in various places and times. In this government mode, based on the creation of these technologies to prevent risk, freedom does not turn into previous data, but rather “is produced from one moment to the next, at every point”²⁰ on the basis of a series of very specific security assumptions, such as the principle of risk assessment.

Normation and normalisation

If on the one hand anatomo-politics literally produces and shapes subjectivity through its dealing with various ‘disciplinary devices’ (or ‘disciplinary apparatuses’), with notions, like that of normal body, and criteria, to connect different activity spheres or spaces, on the other hand, biopolitics, through ‘security devices’ (such as hygienist urban planning²¹) tries to regulate *miliens* or environments of different living populations. Both the great technologies that constitute biopower refer to norm, applying it, however, in very different ways. Under disciplinary power, Foucault writes, “there is an originally prescriptive character of the norm”²² in the sense that the norm determines what is normal. Subjects constitute themselves and are in turn constituted through techniques of power that presuppose the norm, construed as an ideal or, “optimal model”²³. With biopower, the norm is established from several ‘normals’ as represented specifically by ‘curves of normality’; statistical analysis, according to Foucault, constitutes a key technique for regulating and managing populations²⁴. “Foucault has marked a distinction between normalization, which he now attributes solely to biopower and describes as the process of establishing the norm from different normal curves, and the disciplinary process of bringing subjects into conformity with a pre-determined norm which he now refers to as, ‘normation’”²⁵.

1.2. The planned city as the regulator of modern society

Many authors followed the footsteps of Foucault in exploring the links between modern society and the ‘rationalities’ of rule. These links are widely present and debated in modern

20 Foucault, M. (1978) *The History of Sexuality*, p. 93.

21 Cf., among others, Zucconi, G. (1992) La cultura igienista nella formazione dell’urbanistica. In C. Bianchetti (ed.) *Città immaginata e città costruita. Forma empirismo e tecnica in Italia tra Otto e Novecento*. Milano: Franco Angeli.

22 Foucault, M. (2007) *Security, Territory, Population: Lectures at the Collège de France 1977-1978*. Transl. G. Burchell. New York: Palgrave, p. 57. Originally published in France as Id. (2004) *Sécurité, territoire, population. Cours au Collège de France 1977-1978*. Paris: Gallimard-Seuil.

23 Ibidem.

24 Cf. Taylor, D. (2009) Normativity and Normalization. *Foucault Studies* 7, September: 45-63, p. 50.

25 Ibidem.

architecture and urban planning. However, as Paul Rabinow states: “[t]he debates about modernity are endless: since it has no essence, and refers to so many diverse things, it seems futile – or simply part of the modernizing process – to worry extensively about abstract definitions. It would seem more heuristic and more ethnographic, to explore how the term has been understood and used by its self-proclaimed practitioners.”²⁶ Challenging the traditional debate about the Rational Model of planning, Rabinow shows that there is never *a* rationality, but always multiple types of rationality. They operate on the “fields of knowledge (hygienic, statistical, biological, geographic, and social); forms (architectural and urbanistic); social technologies of pacification (disciplinary and welfare); cities as social laboratories (royal, industrial, colonial, and socialist); new social spaces (liberal disciplinary spaces, agglomerations, and new towns)”²⁷. In each of these domains he describes the different constructions of norms and the search for appropriate forms to regulate what came to be known as modern society. Modern urbanism was born “at the end of the [nineteenth] century, when a form was invented that combined the normalization of the population with a regularization of spaces”²⁸ – that is, when planning produced not only spatial schemes but “normative projects for the ordering of the social milieu”²⁹. Social thinkers, reformers, architects, engineers and governors started to think about how to bring both norms and forms into a common frame so as to produce a healthy, efficient, and productive social order. Not by chance, Rabinow defines these figures as the “technicians of general ideas”, whose work lies in “the middle ground between high culture or science and ordinary life”³⁰.

The methods of modern urban planning were actually rooted in a number of events, such as the new scientific advancements, the great technical achievements and the measures invoked by hygienists to cope with the health deficiencies caused by industrial development. This, in particular, had caused the profound transformation of the distribution of population on the territory and the consequent exponential growth of cities, which brought unprecedented problems of congestion and healthiness to the fore. It became increasingly necessary for the conduct of each individual to conform to established patterns. The health of the individual was no longer a private matter, because he or she could spread the disease. Since an epidemic in one area could quickly infect the whole city, regardless of social class, remedies had to be decided by the public

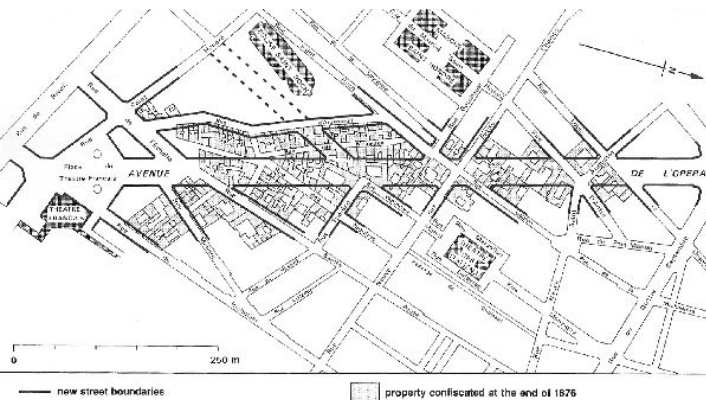
26 Rabinow, P. (1995) *French Modern: Norms and Forms of the Social Environment*. Chicago, IL: The University of Chicago Press, p. 9.

27 Ibidem.

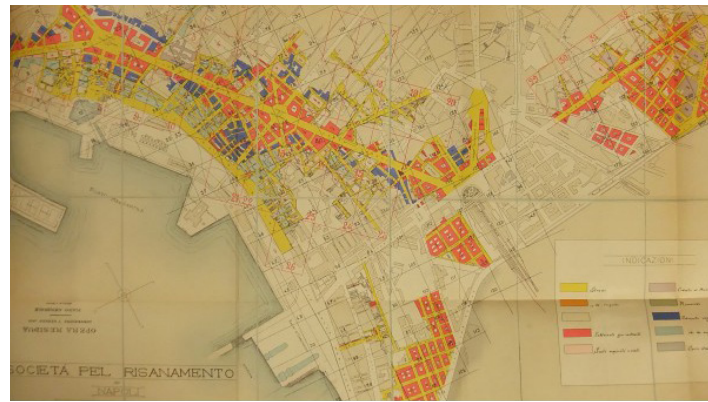
28 Ibid. p. 82.

29 Ibid. p. 76-77.

30 Ibid. p. 9. In his book Rabinow analyzes the specific forms of rationality that these figures embodied and articulated, and describe their efforts to fashion new fields of knowledge and technologies of social control, as well as new urban forms and social spaces.



Hausmann, G. E., design map for Paris (1853-1868), Avenue de l'Opéra. Source: cittasostenibili.it



Map of the Piano del Risanamento della Città di Napoli (1884-1896). *Il Rettifilo*. Source: Alisio, G. (1980) *Napoli e il risanamento. Recupero di una struttura urbana*. Napoli: Banco di Napoli.

authority. In a short time, the first sanitary laws evolved into increasingly complex regulations that affected every aspect of the city. In 1850, in France, a law authorised municipalities to appoint commissions – consisting of a doctor and an architect – whose task was to establish the measures that were necessary to repair unhealthy buildings. Some measures also included a series of expropriations for the rehabilitation of residential districts. The latter, in particular, took on the character of a true general urban planning instrument through which the public authority directly managed the transformation process of the city. In such a scenario, for instance, Haussmann, under the authority of Napoleon III, carried out the project of the reconstruction of Paris in the 1850s and 1860s, laying out its avenues, boulevards and major urban parks. The avenues cut through the congested medieval Latin Quarter, displacing many of the poor who lived there, and while they greatly improved traffic circulation and hygienic conditions in the city, they also permitted the rapid deployment of soldiers to repress possible uprisings [i.b. II. 2].

With the birth of the Welfare State, city planning progressively turned into an arm of “the scientific administration of modern life as a whole”³¹, and its task became that of shaping the environment according to functional criteria and normalized sociological categories. “The challenge was to invent new forms for society”³² and to develop norms on the basis of which one could implement and regulate these forms. This opened the era of technocratic planning: space began to be seen as an abstract “socio-technical environment (regulated) by committed specialists dedicated to the public good”³³. Architects, urbanists, and social scientists began to work together in order

31 Ibid. p. 344.

32 Ibid. p. 116.

33 Ibid. p. 320.

i.b. II. 2 - Italian experiences

Haussmann's experience soon crossed the borders of Paris and France. It would be impossible to list all the cities that took it as a model. Among the Italian examples there are the 'Firenze Capitale' scheme of 1864 and the 'Risanamento' (Restoration) of Naples, an urban intervention – which radically changed the face of numerous historic districts of the city – carried out after the cholera outbreak of 1884. This intervention was aimed at restoring and solving hygiene and health problems especially in areas that had been considered most responsible for the spread of cholera.

to produce and regulate an 'optimum social environment' – which they did, of course, in pursuance of efficiency, science, progress, and welfare. New modes of analysis and action crystallized into "the planned city as a regulator of modern society"³⁴.

"The most general value in the name of which modern normalizing efforts have been justified is the welfare of the population. The project of understanding and regulating population has a long history, but it received a new impetus in the nineteenth century when the control of population was linked with the modern understanding of society. This link was provided by the new science of biology. The metaphoric transfer of concepts from a newly emergent physiology – function, hierarchy, and norm – to the social realm presented many conceptual and practical challenges for those seeking to intervene in and improve society. The search for a spatial localization of functions in society, similar to that found in the body, was a particularly bedeviling, if fertile, problem."³⁵

As Robert Imrie and Emma Street note, referring extensively to Rabinow's reflections, the proliferation of building instruments and regulations from the late nineteenth century in Western countries, was part of the development of programs of building and design that were also oriented to, and influenced by, political agendas to generate jobs.

"The actions of architects and other building professionals were, and remain, closely intertwined with broader social and economic goals (of government) that placed a value on the commodification of the built environment. By the early part of the 20th century (...)

³⁴ Ibid. p. 12.

³⁵ Ibid. p. 10.

the belief in planning for social and economic outcomes, and predicting and controlling the course of events, was part of the justification for the intensification of statist controls. Such controls were particularly to the fore in relation to spatial development and (...) the actions of architects were entwined in (...) standards and codes that virtually dictate all aspects of urban development”³⁶.

1.3. Great stories and Great Manifestos

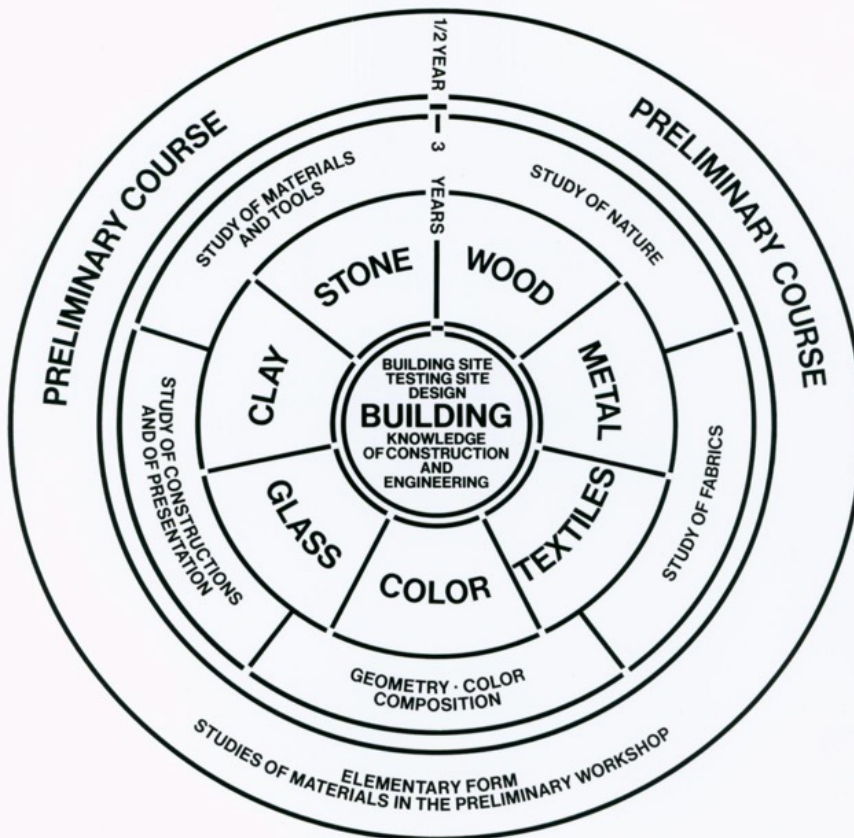
Between the two wars, in particular, a series of experiences have had such a profound impact on architectural practice that they have come to be regarded as true paradigms of the so-called ‘Modern Project’³⁷, which has often even been identified with them. These experiences have been conveyed over time by certain narratives that are still among the most dominant ones in the schools of architecture in the Western world. Told as historical experiences of ‘great schools’ and ‘great masters’, they have played and continue to play a real epistemic role in architects’ approach to design practice, contributing to consolidate a type of education characterised by specialisation. Below I will focus on the ones I consider particularly emblematic, although I am aware that this selection sets aside a much richer and complex scenario. I will try to highlight some of their controversial aspects.

The Bauhaus

Among the narratives that have contributed and still contribute most to the way architects are trained are those relating to the Bauhaus, which since the 1920s drew on all the strands of thought about modern design for mass production that had developed in the previous thirty years, and wove them together producing one of the prevailing approaches to design of the twentieth century. The appearance of buildings, chairs, fabrics, light fixtures, kitchens, desks, city skylines of angular sky scrapers, indeed almost anything that we might refer to as ‘modern’, probably owes something to the Bauhaus and its legacy. In his ‘Proclamation of the Weimar Bauhaus’ Walter Gropius declared: “Let us create a new guild of craftsmen, without the class distinction which raises an arrogant barrier between crafts man and artist! Together let us conceive and create the

36 Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*, pp. 51-56.

37 I am aware of the many ways and versions in which what is commonly known as ‘Modernity’ can be told, and of the plurality of stories that lie behind this term. An interesting reflection on this can be found in: Grenier, C. (2013) *Modernités Plurielles 1905-1970*. Catalogue of the exhibition *Modernités Plurielles 1905-1970* (Multiple Modernities), held from 2013 to 2015 at the *Musée National d’Art Moderne* (Centre Georges Pompidou), Paris. Paris: Éditions du Centre Pompidou. The exhibition’s stated objective was to move away from linear history to trace “a cartography of connections, of transfers, but also of resistance” lying behind what is commonly known as ‘Modernity’.



A reproduction of Gropius' original diagram of the Bauhaus curriculum (1920 ca). Source: uxplanet.org

new building of the future, which will embrace architecture and sculpture and painting in one unity and which will rise one day toward heaven from the hands of a million workers like the crystal symbol of a new faith"³⁸.

Gropius' passionate manifesto proposed a new conception of design and a new pedagogical program: students were to discover prototypical designs suitable for machines and for mass-produced goods. The simpler the lines and forms were, the better they were held to symbolise the modern machine world³⁹. This pedagogical

38 English translation: Wingler, H. M. (1978) *Bauhaus. Weimar, Dessau, Berlin, Chicago*. Cambridge, MA: MIT Press. Original German text: Gropius, W. (1919 April) *Programm des Staatlichen Bauhauses in Weimar* (pamphlet).

39 Cf. Relph, E. C. (1987) *The Modern Urban Landscape*, pp. 106-107.

model, which combined (in contrast to a traditional approach which, as we shall see below, is still largely dominant) thought and practice, craftsmanship and industry, design and construction, was one of the most important aspects of the Bauhaus' approach. However, this approach has gradually disappeared in almost all pedagogical practices. In architectural design, an attitude to uncritical replication of the typologies developed by the Bauhaus protagonists has prevailed. Gradually, these typologies became purely formal schemes to which the constructive aspects could be adapted at a later stage. The Bauhaus set the standard – understood as a model to which mass production could be conformed – and determined the main course of architectural design for the years to come. The school aimed at reducing architecture to a functional 'social service'. As regards to the housing and its implications in terms of urban planning, the starting point is the 'dimensioning' of the housing unit. Its value

"is not in proportion to the surface of the housing anymore, but to the number of beds which it contains, where a bed stands for the unit of measurement of all the housing needs (the space aliquot of the living/dining room, of the kitchen and of the bathroom) of a person. Once this dimensional aliquot is established, a distributive conformation is studied to guarantee optimal standards of sunshine hours, aeration, ventilation, etc. This distribution results in different building types: townhouses (...); multi-storey buildings; council flats (...) which will be the most used type because, although it is more expensive than multi-storey house type, given the greater number of stairs, it offers the advantage of units that have two opposite sides which are completely free and oriented, lit and ventilated in the best way. Once organised the housing units into a typological unit, the rationalist 'technique' conforms a building; more buildings, arranged in a way that guarantees a good orientation, optimal distances, the relationship with access roads and the other necessary infrastructures, form a neighbourhood; more neighbourhoods form the city"⁴⁰.

It is, as we can see, a strict application of the principles of industrial production. Design is functional to production and consumption for a generic, abstract user. In this approach, obviously, the specificities and differences of users are totally disregarded. A theme closely linked to the 'dimensioning' is the *Existenzminimum*. The most famous architects that revolved around Bauhaus essentially reduced each house part to a dimensioning that was suitable for the main housing functions, which are "supposed to be the same for all men, theoretically overlooking their social class, but it was actually done because of the necessity of answering in the best way to the most

40 My translation (A/N). De Fusco, R. (1974) *Storia dell'architettura contemporanea*. Roma-Bari: Laterza, pp. 253-254.

urgent requests of social housing”⁴¹. In this way they started a “process of building unification, standardisation and industrialization that was supposed to be the outlet of all the rationalist ‘technique’, that is, that of being the maximum social result obtained with the least economic effort”⁴². This ‘maximum social result’ was evidently achieved by excluding any difference in housing functions, since these were programmatically assumed to be ‘the same for all men’. In this way,

“‘Minimum house’ was outlined by the Congrès Internationaux d’Architecture Moderne (CIAM) in Frankfurt in 1929 to describe the possibilities of producing functional living spaces derived from standard measures relating to human biological and psychological needs. Bodily performance was translated into technical (design) criteria, or the minimum spaces required to facilitate efficient (bodily) functions (...) Henceforth, design was to ‘yield to what is common to all’ by the application of technical standards and the rational disposition of physical layout and function in dwellings”⁴³.

Maximum functionality and economy thus became the determinants of the norm in architectural design. There are at least three closely interconnected features of this perspective that should be highlighted: a reductionist idea of design that develops through abstract functional standards; the claim to know what ‘is common to everyone’; the exclusion of all ‘differences’, starting with the bodily one. If what is common to everyone can only be known through generalization, it means that the ‘common’ is represented by the prevailing, most recurrent needs: to put it another way, the needs of the ‘typical user’. Gropius didn’t fail to notice that, although the problem of minimum housing was the elemental minimum one of space, air, light, and warmth necessary to man, that is to say, “a minimum *vivendi* and not a *modus non moriendi* (...) the minimum itself changes according to local conditions, from the city to the countryside, and according to the type of landscape and climate. A certain cubic capacity of the house has a different meaning in life in a metropolis and in life in suburban neighbourhood, less densely populated”⁴⁴. However, despite this awareness, Bauhaus methods held on to a trade apparatus which later developed their potential in a taylorist way – especially in the production of expensive objects of use, though in series, maybe ‘branded’ by famous designers. These methods were adopted by capitalist economy to extract surplus value and did not correspond to the original social demands.

41 My translation (A/N). Ibid. p. 254.

42 My translation (A/N). Ibidem.

43 Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*, p. 57.

44 My translation (A/N). Gropius, W. I presupposti sociologici dell’alloggio minimo per la popolazione urbana. In C. Aymonino (ed.) (1971) *L’abitazione razionale: atti dei congressi 1929-1930 CIAM di Francoforte*, pp. 102-112. Padova: Marsilio, p. 108.

Le Corbusier

Not one architect or architecture student in the Western world is unfamiliar with Le Corbusier's work and theoretical perspectives. Generally considered to be one of the great architects of the twentieth century, his name keeps popping up in an incredible number of books, conferences, publications (at least in Italy), whether they deal with urban, architectural or interior design. Le Corbusier is everywhere, eternal and untouchable. During my training and beyond I have seldom encountered critical stances towards such omnipresence.

The principles underlying his early work were not unlike those which inspired Gropius, and he stated them in what is often presented as the most emblematic manifesto of the 'modern architect', namely *Vers une architecture* (1923):

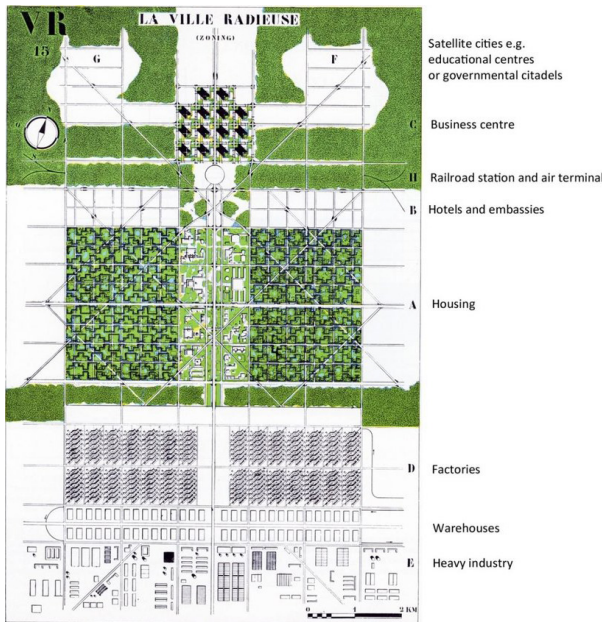
"If we eliminate from our hearts and minds all dead concepts in regard to the houses, and look at the question from a critical and objective point of view, we shall arrive at the 'House-Machine', the mass-production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful"⁴⁵.

The new architecture was, he argued, for a 'machine age'⁴⁶, and its elements could already be recognised in industrial products. The engineer's aesthetic, devoid of any style or custom in its search for efficient design solutions, was the preeminent one. Accordingly, his references included aircraft, automobiles and ocean-going liners, all engineered to serve specific purposes.

In the early 1920s Le Corbusier conceived the possibility to create a totally designed modern city, and for much of the rest of his life continued to draw up plans for great imaginary cities or for the radical reconstruction of existing ones. His 1925 *Voisin Plan* for Paris would have solved the problems of congestion in the city center simply by razing everything old to the ground and erecting a mix of low terraced apartments and 60-storey towers. The principles behind these grand plans were set out more in detail in the manifestos that he dedicated, in the 1920s, to his *Ville Radiense* (Radiant City). This ideal city would be created by removing everything old and replacing it with skyscrapers for offices and apartments, blocks of terrace apartments and a huge transportation

⁴⁵ Le Corbusier (1986) *Towards a New Architecture*. Trowbridge, UK: Butterworth Architecture, pp. 6-7. Originally published in France as Id. (1923) *Vers une architecture*. Paris: Cres.

⁴⁶ Anyway, not only have relatively few Le Corbusier-style machine-houses been built but even his prototype of development of modernist workers' houses at Pessac has undergone many changes and modifications. The free facades have been altered, awnings have been added, porches put over the doors, and windows have been blocked in. As a style far detached houses modernism, whether Le Corbusier's or anybody else's, has not received popular acclaim, and the machine-house has never been mass-produced.



Le Corbusier, *La Ville Radiuse*, general plan (1930). Source: researchgate.net



F. L. Wright, *Broadacre city*, plan (1935). Source: utopicus2013.blogspot.com

facility, with roads, highways, railways and an airport⁴⁷. *Broadacre*, the dream city of another ‘great master’, namely Frank Lloyd Wright, was conceived, unlike the high-rise, machine-dominated *Radiant* city, as a low-density, mostly low-rise development city. However, the starting assumptions were the same: like Le Corbusier’s city, *Broadacre* would totally replace the existing urban settings. Urban design, therefore, was understood as a practice aimed at producing a new state of the world, treating the pre-existence as a mere ‘blank slate’, or *tabula rasa*, on which to impose new ideas and forms. Both architects envisioned a world devoid of any historical, social and political constraints, in which their urban forms would magically solve the problems of modern urban civilization. In this sense, their projects were emblematic of a clearly technocratic approach. Their utopias, despite their relative differences, shared a vision that is linked to the exclusive expertise of the architect, who was able to design ‘alone’ the city of the future. Le Corbusier had an Enlightenment-like faith in the fact that everything depends

47 Not surprisingly, Le Corbusier found Haussmann approach enchanting: “My respect and admiration for Haussmann”, he declared, “A titanic achievement - hats off!”. Le Corbusier (1967) *The Radiant City*. London: Faber and Faber Ltd, pp. 209-211. Originally published in France as Id. (1933) *La Ville Radiuse*, (*Éléments d’une doctrine d’urbanisme pour l’équipement de la civilisation machiniste*), Collection de l’équipement de la civilisation machiniste. Boulogne-sur-Seine, FR: Édition de l’Architecture d’Aujourd’hui.

These ideas of Le Corbusier were transposed in a charter adopted in 1933 by CIAM, which proclaimed that “Housing should consist of high, widely spaced apartment blocks which would liberate the necessary land surfaces for recreation, community and parking purposes”. Cited in E. C. Relph (1987) *The Modern Urban Landscape*, p. 71.

on a rational formulation of problems and that, therefore, architecture has the ability to solve many of society's problems on its own. In this way, as regards to the theme of minimum housing, even if he starts from the German rationalists' social demands, Le Corbusier's reference decidedly highlights a phenomenon that is already common in industrial production, which is the standard.

"We must aim at the fixing of standards in order to face the problem of perfection. (...) Architecture operates in accordance with standards. Standards are a matter of logic, analysis and minute study; they are based on a problem which has been well 'stated'. A standard is definitely established by experiment.(...) The business of Architecture is to establish emotional relationships by means of raw materials. Architecture goes beyond utilitarian needs. Architecture is a plastic thing. The spirit of order, a unity of intention. The sense of relationships; architecture deals with quantities. Passion can create drama out of inert stone"⁴⁸.

Indeed, the premises of his position on this matter were made even more explicit in this other statement:

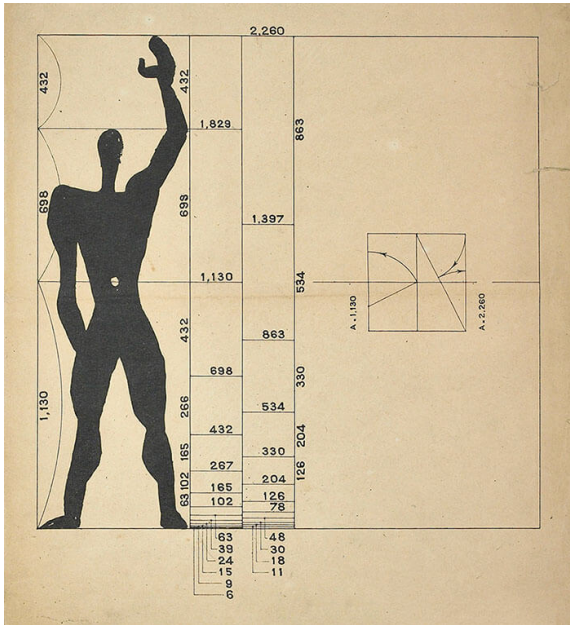
"All men have the same organism, the same functions. All men have the same needs. The social contract which has evolved through the ages fixes standardized classes, functions and needs producing standardized products. The house is a thing essential to man. Painting is a thing essential to man since it responds to needs of a spiritual order, determined by the standards of emotion"⁴⁹.

As he says, standards are the basis not only of functional but also of emotional homologation. That is to say, there is no room for whatever difference. "We must aim at the fixing of standards in order to face the problem of perfection": this statement was not put there by chance. Actually the entire system of proportions (regulatory plans) and measurement (the *Modulor*) referred to an ideal of perfection, or harmony, that has been conveyed since classical antiquity by the *Golden Ratio*. The *Modulor*, in particular, did not only provide dimensional standards, proportionate to human body parts. Le Corbusier believed that within this model, those parts, in turn, were also proportioned themselves through the Golden Ratio. In other words, the anthropometric system offered itself as the most capable one when it came to producing a harmonious architecture.

While I will dwell more extensively on the *Modulor* below (see section 5), I merely note here that it was applied at its best in the *Unité d'Habitation* of Marseille.

48 Le Corbusier (1986) *Towards a New Architecture*, pp. 4-5.

49 Ibid. p. 136.



Le Corbusier: *Le Modulor*. Source: Le Corbusier (1948) *Le Modulor*. Boulogne: Éditions de l'Architecture d'aujourd'hui.



Le Corbusier, *Unité d'habitation*, Marseille (1946-1952), section. Source: archweb.it

This building – which hosted an entire neighbourhood and basic equipment for 1600 inhabitants – was thought of as a ‘prototype’ of *grandeur conforme* in a serial development process: more neighbourhoods, and therefore more standard buildings were to form the city. From a dimensional point of view, the housing was rigorously dimensioned following the *Modulor*: their usable height between the floor and ceiling amounted to 226 cm exactly, that is, the height of the man with a lifted arm, as it is shown by his figure.

2. The Architect in Western binary thought

In general, the figure of the architect has also been shaped and stabilised by much older divides specific to the tradition of Western thought. As Elke Krasny points out⁵⁰, among these divides we find the one established between nature and culture (I will dwell on this also, and in more detail, in chapter III). Vitruvius, in an early chapter of his *The Ten Books of Architecture*, written in 30 BC⁵¹, first mentions imitation and learning from nature for the construction of shelters. Nature is portrayed as providing the materials and knowledge necessary for mankind:

50 Cf. Krasny, E. (2019) *Architecture and Care*. In A. Fitz and E. Krasny (eds) *Critical Care: Architecture and Urbanism for a Broken Planet*. Cambridge, MA: MIT Press.

51 Cf. Vitruvius (1960) *The Ten Books of Architecture*. New York: Dover Publications. Originally published in Italy as Marco Vitruvio Pollione (ca. 15 a. C.) *De Architectura*. Editio Princeps (1486-87) Roma: Eucharius Silber.

“The men of old were born like the wild beasts, in woods, caves, and groves, and lived on savage fare. As time went on, the thickly crowded trees in a certain place, tossed by storms and winds, and rubbing their branches against one another, caught fire, and so the inhabitants of the place were put to flight, being terrified by the furious flame. (...) [I]t was the discovery of fire that originally gave rise to the coming together of men, to the deliberative assembly, and to social intercourse. (...) [T]hey began (...) to construct shelters. Some made them of green boughs, others dug caves on mountain sides, and some, in imitation of the nests of swallows and the way they built, made places of refuge out of mud and twigs.”⁵²

In the book’s section titled the ‘Education of the Architect’, Vitruvius points out the difference between such shelters and true architecture. The architect should have been “skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens.”⁵³ Nature is excluded, it is no longer considered useful for the architect’s training. By shifting the art of building towards culture, the idea that living is part of nature is abandoned. This historical fracture has led to modern architecture being built through the *tabula rasa* logic, that, as we have already seen, was a mechanism oriented towards the total destruction of nature and all pre-existence and the imposition of certain forms that can be inhabited by man.

Another historical divide, which shaped the idea of the architect as the sole holder of the knowledge necessary for the design and production of the built environment is the one between architecture and construction and between the architect and the builder. As several authors have pointed out⁵⁴, the origins of this disjunction, between architecture as a conception of the aesthetic components of the built environment and the construction of buildings as the production of their material form, date back to the Renaissance. Before then, things were different. According to Vitruvius, for example, the architect was a figure capable of conjoining the technical with the artistic, and whose practice could not take place in abstraction from an understanding of the substance of building and construction. Again in the same book mentioned above, he emphasised the importance of architecture students acquiring competence in both the theoretical aspects of practice and the technical ones of construction. For Vitruvius,

52 Ibid. pp. 98-99.

53 Ibid. pp. 30-31.

54 Including, for instance: Roth, L. (1993) *Understanding Architecture: Its Elements, History, and Meaning*. New York: The Perseus Books Group; Habraken, N. J. (2005) *Palladio's Children*, Abingdon, UK: Taylor & Francis; Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*; Ingold, T. (2012) *Making: Anthropology, Archaeology, Art and Architecture*. New York: Routledge; Krasny, E. (2019) *Architecture and Care*.

architects' knowledge "is the child of practice and theory. Practice is the continuous and regular exercise of employment where manual work is done according to the design of a drawing". He suggested that "architects who have aimed at acquiring manual skill without scholarship have never been able to reach a position of authority to correspond to their pains, while those who relied only upon theories and scholarship were obviously hunting the shadow, not the substance". Thus, for him, pedagogic experiences had to be grounded in both the theory and practice of design, or, as he wrote, "those who have a thorough knowledge of both, like men armed at all points, have the sooner attained their object and carried authority with them"⁵⁵. From the early fifteenth century the modern architect, or the "artist-architect"⁵⁶, began to appear, claiming the superiority of architecture over building or construction. Leon Battista Alberti, in particular, in his treatise *De re aedificatoria. On the Art of Building in Ten Books*, published for the first time in 1485, was one of the first authors to make a clear distinction between craftsmanship and architecture. This fully translated into binary oppositions between learned skill/creative genius and dependence/autonomy. At the beginning of his treatise, Alberti introduces the autonomous architect-genius as follows:

"For it is not a Carpenter or a Joiner that I thus rank with the greatest Masters (...) the manual Operator being no more than an Instrument to the Architect. Him I call an Architect, who, by sure and wonderful Art and Method, is able, both with Thought and Invention, to devise, and, with Execution, to complete all those Works, which (...) can, with the greatest Beauty, be adapted to the Uses of Mankind: Such must be the Architect."⁵⁷

The schism between thought and practice, architecture and building, as British anthropologist Tim Ingold notes, contributed to the improvement of an understanding of design in hylomorphic terms, where shapes are designed in an abstract space, as 'mind's work', and only after that they are imposed on matter, as 'hands' work'⁵⁸. Besides Alberti, as Habraken notes⁵⁹, other highly influential architects such as Andrea Palladio (1508-1580), contributed to the emergence of the tradition that came to represent buildings as abstract models separated from their context. Palladio's drawings, he argues,

55 Vitruvius (1960) *The Ten Books of Architecture*, pp. 29-30.

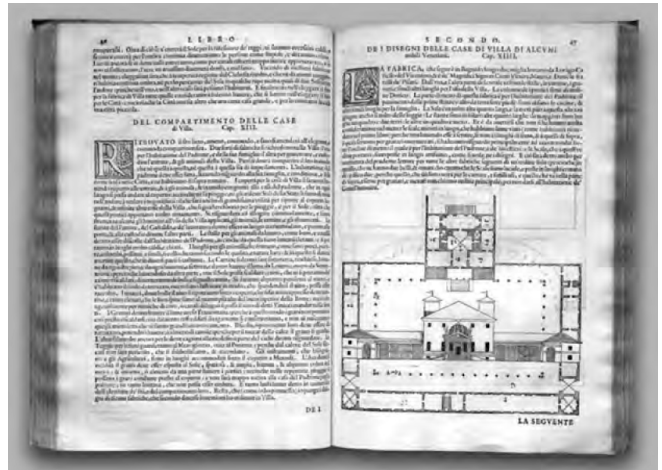
56 Roth, L. (1993) *Understanding Architecture*, p. 111.

57 Alberti, L. B. (1755) *The Architecture of Leon Battista Alberti in Ten Books*. Transl. by J. Leoni. London: Printed by Edward Owen, p. 3. Originally published in Italy as Id. (1485) *De Re Aedificatoria*. Firenze: Nicolò Di Lorenzo.

58 Ingold, T. (2012) *Making*, pp. 20-21. As he states, "In the literature, the theory is known as hylomorphism, from the Greek hyle (matter) and morphe (form). Whenever we read that in the making of artefacts, practitioners impose forms internal to the mind upon a material world 'out there', hylomorphism is at work".

59 Habraken, N. J. (2005) *Palladio's Children*, p. 9.

Palladio, A., *Villa Pisani*. The figure depicts a typical representation of buildings by Palladio in his book *I Quattro Libri dell'Architettura* (*The Four Books of Architecture*), 1540. Photo and caption: Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*.



while beautiful artistic creations, were symptomatic of architects' increasingly distanced relationships with the wider social, institutional and political contexts of design and construction processes. The emphasis on form rather than place and context contributed to strengthening the idea of the architect as someone with superior artistic and creative skills. Along these lines, as Imrie and Street also point out, subsequent generations of architects came to represent their buildings as 'stand-alone' objects, to illustrate and emphasise form and style. The representation of architecture has been reduced to Cartesian coordinates, or geometric points between different parts of a building⁶⁰. As already seen in chapter I, still today architects tend to focus on form and style, thus severing ties with 'contingency'⁶¹, propagating a vision of their work as operating with few constraint or control on their design activities.

The establishment of this autonomous realm⁶² and of the emphasis on aesthetic-formal aspects in architectural education can be traced back to the *Académie Royale d'Architecture*, founded in 1671 in France, which, later on, in 1793, became the *Ecole des Beaux Arts*. Rabinow notes that the *Ecole* articulated the problem of producing good design "in terms of solving a compositional problem harmoniously. This meant applying the given principles to a specific building; social, cultural, and geographic

60 Cf. Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*, pp. 9-12.

61 Cf. Till, J. (2005) The negotiation of hope. In P. Blundell Jones D. Petrescu and J. Till (eds.) *Architecture and Participation*, pp. 19-40. New York: Spon Press; Till, J. (2009) *Architecture Depends*. Cambridge, MA: MIT Press; Awan, N., Schneider, T. and Till, J. (2013) *Spatial agency: other ways of doing architecture*.

62 This attitude, as also noted by Till (2009) was also reported by architectural critic Reyner Banham. In his famous article 'A Black Box: The Secret Profession of Architecture' Banham criticises the profession for its retreat into a rarefied and self-referential world. See: Banham, R. (1996) A Black Box: The Secret Profession of Architecture. In M. Banham, P. Barker, S. Lyall, C. Price (eds.) (1999) *A Critic Writes. Selected Essays by Reyner Banham*, pp. 292-299. Berkeley, Los Angeles, CA and London: University of California Press.

considerations were by definition beyond the scope of the problem.”⁶³ According to him, trainee architects were modelled on their masters or tutors. The reinforcement of the distinction between artist-architect and craftsman-builder, set in motion by the *Ecole*, was part of the professionalisation of architecture in the nineteenth century, when much of the institutional infrastructure regulating the education and training of architects was created. Other important institutions, such as the RIBA, founded in 1834, the Architectural Association of London in 1847, and the AIA, founded in 1857, followed suit. Apart from a few exceptions – including the Bauhaus, which, as analysed above, ended up betraying the very principles on which it was founded – this approach has remained prevalent and still characterises most schools of architecture today. As Till argues:

“The constitution and aesthetics of the manners, mannerisms, and taste may have changed over the ages, but they still define a particular set of internalized customs in the architecture studio. (...) The cult of genius, the unquestioned authority of the *patron*, the emphasis on form, the prescriptive pedagogy, the absurd rituals, the particular socialization, and the internal mores are all alive and kicking in architecture schools. (...) While the product might have moved from classical plans to algorithmic-driven blobs, the underlying principles remain unscathed, most of all the overriding autonomy of the process. (...) While the École des Beaux-Arts promoted a single version of truth under the rule of Enlightenment reason, today’s ateliers are more plural but nonetheless retain the principle that the tutor in some way holds the keys to success, and in order to obtain them the student must follow the rules.”⁶⁴

3. The creation of the ‘architect-subject’

As Imrie and Street note⁶⁵, following Webster⁶⁶, architects’ education can be understood as part of the creation of the ‘architect-subject’, in which pedagogical practices deploy

63 Rabinow, P. (1995) *French Modern*, p. 53.

64 Till, J. (2009) *Architecture Depends*, pp. 12-14. Le Corbusier himself, Till notes, strongly criticised the logic behind the Ecole des Beaux Arts, particularly in *When the Cathedrals Were White*, an account of his trip to the United States in 1935. According to him, the Ecole “is the seat of a most disconcerting paradox, since under the ferule of extremely conservative methods, everything is good will, hard work, faith”. Le Corbusier (1947) *When the Cathedrals Were White: A Journey to the Country of Timid People*, transl. by F. Hyslop. London: Routledge, pp. 115-116. Originally published in France as Id. (1937) *Quand les cathédrales étaient blanches*. Paris: Plon.

65 Cf. Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*.

66 Cf. Webster, H. (2006) A Foucauldian look at the Design Jury. See also: Webster, H. (2005) The Architectural Review: ritual, acculturation and reproduction in architectural education. *Arts and Humanities in Higher Education* 4(3): 265-282.

what Foucault termed ‘micro-technologies of power’ to control and train individuals towards dominant disciplinary paradigms. Till, for his part, compares the architects to a tribe, which, like others “assume[s] particular rituals and certain codes, both visual and linguistic. [The architects] often dress according to type and use a specific language. (...) [T]he undertaking of socialization into the tribe starts in the school studio. (...) [B]y the end of the course, the students are fully assimilated into the social mores of the architectural world”⁶⁷. Till also provides some feeling for this by describing an experience he had during his first week in architectural school, where he and his colleagues “had been issued a shopping list (...) and this included 0.25mm and 0.35mm Rapidograph pens. These were soon put into use in a precedent study exercise, in which each of us had to trace a complete set of drawings of some piece of iconic architecture. This was boot camp pedagogy; by slavishly copying the masters the hope must have been that some of their aura would be transferred to us innocents”⁶⁸. The iconic building in question, for Till, was by Mies van der Rohe. The same thing happened to me with a piece of architecture by Adolf Loos, if I’m not mistaken. I too was given a shopping list, and an indication of the shops in the historic centre of Naples where I could buy sheets of different dimensions, a geometry set and pencils of different hardness grades. In the light of these considerations, I can’t help but think about how many habits and attitudes architects – and I include myself – usually acquire during their training: beyond the worship of ‘starchitects’ and their buildings, we could include the (dangerous) presumption of finding oneself virtuously halfway between a technician and an artist, the imperative of visiting biennials and their bookshops, the predilection for black or Pantone clothes and accessories, a taste for certain eyeglass frames. Sometimes I even think that my own way of taking photographs has been somehow influenced by the orthogonal grids of Autocad.

Together with the dominant narratives mentioned above, which are focused on ‘great examples’, also the architecture studio has become one of the key tools for normalising trainees – which means to regulate and achieve their own conformity with the established rules – in the values of the architectural profession, with its emphasis on the production of buildings as art objects abstracted from their social context or environment. “Briefs for buildings are set in the ‘real’ world on ‘real’ sites, empirical data are collected, engineers are sometimes spoken to, and famous architects are brought in to review the work. But these activities really do nothing to disturb the artificiality of the whole process. A linear route from problem to solution is instigated, unaffected by external forces”⁶⁹.

67 Till, J. (2009) *Architecture Depends*, pp. 17-18.

68 Ibid. p. xi.

69 Ibid. p. 14.

According to many authors⁷⁰, one of the most emblematic ‘micro-technologies of power’ is design jury or ‘crit’, which emerged as a practice of examination, by experts, who would collectively judge the students’ worth and induct them into the architectural community. Till, again, brilliantly describes the dynamics at work within these situations. I myself, both when I was a student and during my experience as a tutor in design studios, I’ve often experienced the design crit with discomfort and frustration at times. As Till notes, it

“is a strange act of tribal initiation that is played out in schools around the world. (...) The word alone, crit, is a stab of negativity. The crit places into a pressure cooker a combination of potentially explosive ingredients: students catatonic with tiredness and fear, tutors (mainly male) charged on power and adrenaline, and an adversarial arena in which actions are as much about showing of as they are about education”⁷¹.

4. The role of architectural handbooks

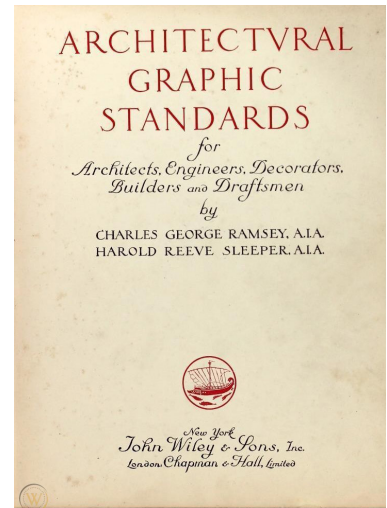
Among other numerous microtechnologies, or devices, that contribute to the ‘subjectification of architects’, an important role is played by architectural handbooks, which over the course of the twentieth century played a crucial role in centralizing and homogenizing the production of architectural knowledge. Although in some schools or countries they are now less in use than formerly, it is important to recognise how they have anticipated and thus contributed to the rapid assimilation of digital design and its many software applications such as Computer-Aided Design (CAD), Building-Information Modelling (BIM), and others alike, which reduce the architectural drawing to a series of algorithmic protocols. In other words, handbooks have contributed to the disciplinary construction of the architect as a technical expert, providing students and professionals with a systematic and encyclopaedic framework of normative architectural knowledge. As Paul Emmons and Andreea Mihalache note⁷², architectural handbooks appeared for the first time in the 1930s and 1940s, under the influence of

70 Cf.: Anthony, K. (1991) *Design Juries on Trial: The Renaissance of the Design Studio*. New York: Van Nostrand Reinhold; Moore, K. (2001) The scientist, the social activist, the practitioner and the cleric: pedagogical exploration towards a pedagogy of practice. *Journal of Architectural and Planning Research* 18(1): 59-79; Webster, H. (2006) A Foucauldian look at the Design Jury; Webster, H. (2005) The Architectural Review: ritual, acculturation and reproduction in architectural education; Webster, H. (2007) The Analytics of Power – Re-presenting the design jury, *Journal of Architectural Education* 60(3): 21-27; Till, J. (2009) *Architecture Depends*; Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*.

71 Till, J. (2009) *Architecture Depends*, p. 8.

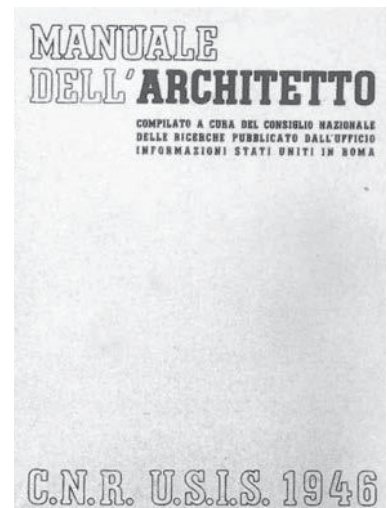
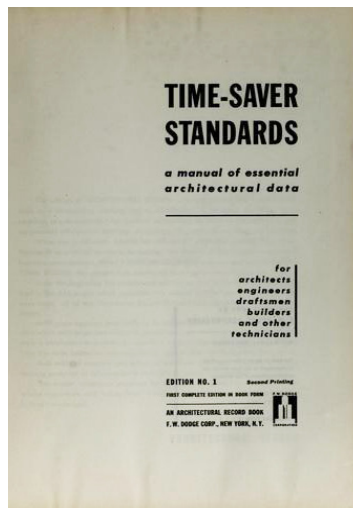
72 Cf. Emmons, P. and Mihalache, A. (2013) Architectural handbooks and the user experience.

(on the left)
Neufert, E. (1936)
Bauentwurfslehre.
Berlin: Bauwelt-Verlag. Source: Vossoughian, N. (Winter 2014) *Standardization Reconsidered*.



(on the right)
Ramsey, C. G., Sleeper, H. R. (1932)
Architectural Graphic Standards, 1st ed.
New York: John Wiley & Sons. Source: worthpoint.com

(on the left)
Architectural Record (1946) *Time-Saver Standards*. New York: F. E. Dodge. Source: openlibrary.org



(on the right)
Ridolfi, M. (1946) *Il Manuale dell'Architetto*.
Published by CNR.

scientific management's ideology, whose separation of planning from production, as we have seen, was naturally appealing to architecture. Ernst Neufert's *Bauentwurfslehre*⁷³, first published in 1936, is still in print after thirty-eight editions and translations into several languages, including English as *Architects' Data*⁷⁴; Charles Ramsey and

73 Cf. Neufert, E. (1936) *Bauentwurfslehre: Grundlagen, Normen und Vorschriften über Anlage, Bau, Gestaltung, Raumbedarf, Raumbeziehungen*. Berlin: Bauwelt-Verlag.

74 In Italy, after World War II, Neufert's handbook – published under the title *Enciclopedia Pratica per Progettare e Costruire* – acquired great relevance, paving the way for *Il Manuale dell'Architetto* (1946) edited by Mario Ridolfi and published by the CNR. *Il Manuale dell'Architetto* contains a wealth of information – together with graphic and numerical tables – on building elements, economic management and safety of construction sites, and different architectural styles. At the end of the twentieth century, Bruno Zevi edited the *Nuovo manuale dell'architetto* (1997). Zevi's son Luca published the *Nuovissimo manuale dell'architetto* in 2003.

Harold Sleeper's *Architectural Graphic Standards* (AGS)⁷⁵ has been reported selling over one million copies before the end of the twentieth century; *Time-Saver Standards* (TSS)⁷⁶ was published in its first edition in 1946 and went into several re-issues. In line with Taylorist logic, the handbooks were informed by principles such as standardization, productivity and efficiency. The centrality of standardization is also made explicit in their titles: *Graphic Standards*, *Time-Saver Standards* and in the subtitle of *Bauentwurfslehre: Grundlagen, Normen und Vorschriften*, namely 'Fundamentals', 'Standards' and 'Requirements'. The internal organisation of the books reflects this logic too. *Time-Saver Standards*, for instance, "described its material as 'carefully edited reference data' and its presentation with 'a minimum of verbiage' where 'diagrams, drawings or tables will give condensed, accurate information'", eliciting feelings of rationality and efficiency⁷⁷. Neufert, who studied at the Bauhaus in 1919, emphasized the similarity between his handbook and the building process and

"organized all building types to parallel user's lives from birth to death, beginning with the house (where births took place), then schools, and ending with the crematorium. All the interiors were bookended between two kinds of exteriors: the garden at the outset (perhaps the Garden of Eden as the origin of humanity?) and finally the cemetery. In this way, the handbooks demonstrate that the entirety of human life can be functionalized and standardized"⁷⁸.

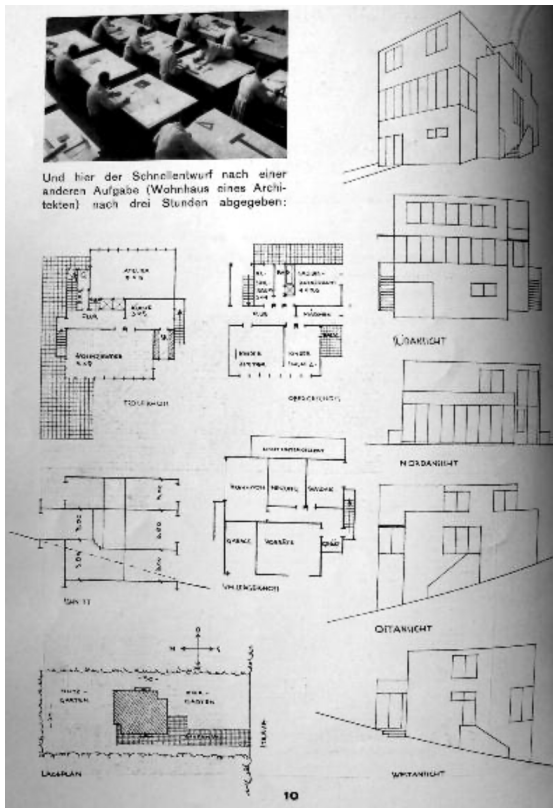
As architectural historian Nader Vossoughian notes, Ernst Neufert served as an instructor at the *Staatliche Bauhochschule* in Weimar, which was founded 1926. The mission of the *Bauhochschule* resembled that of the Dessau Bauhaus to the extent that it aimed to unite the arts and industry. Neufert termed his own course *Schnellentwerfen* or 'rapid design', which involved training students in visualizing and solving any given architectural problem quickly and efficiently. Furthermore, from 1938 to 1941 he was headed the Neufert Department (*Abteilung Neufert*) in the General Construction Management Department (*Generalbauleitung*) of the office of Albert Speer, Hitler's *Generalbauinspektor für die Reichshauptstadt* (GBI). At that time, Hitler wanted to transform Berlin into a world capital and a temple to Nazi power. Speer was in charge of coordinating this effort and saw in Neufert a useful ally who could contribute to a quick and efficient

75 Cf. Ramsey, C. G. and Sleeper, H. R. (1932) *Architectural Graphic Standards*, 1st ed. New York: John Wiley & Sons.

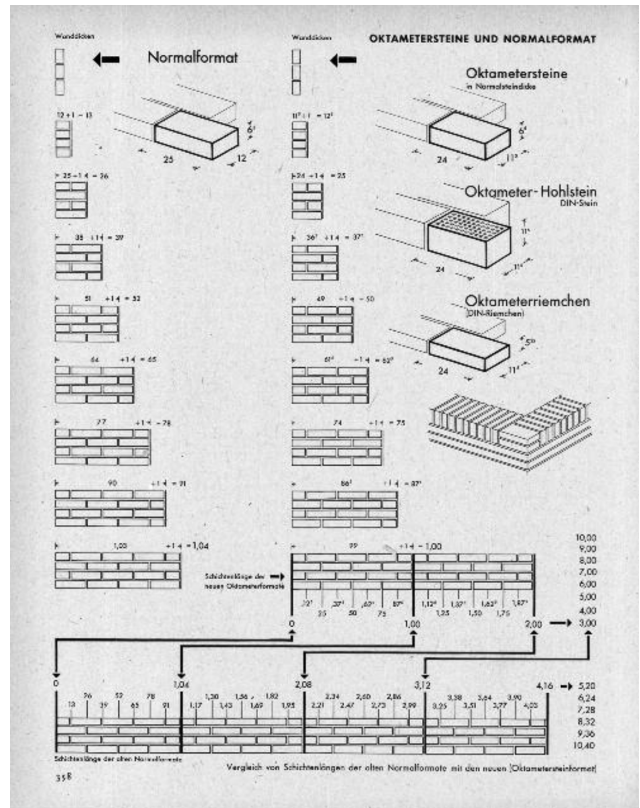
76 Cf. *Time-Saver Standards: A Manual of Essential Architectural Data* (1946). New York: F. W. Dodge Corporation.

77 Emmons, P. and Mihalache, A. (2013) *Architectural handbooks and the user experience*, p. 39.

78 Ibid. p. 38.



Werner Graff, ed. *Staatliche Bauhochschule Weimar*, 1929. Example of student work from Neufert's *Schnellentwerfen* course; on the upper-left corner of the page, students at work. Photo and caption: Vossoughian, N. (Winter 2014) Standardization Reconsidered.

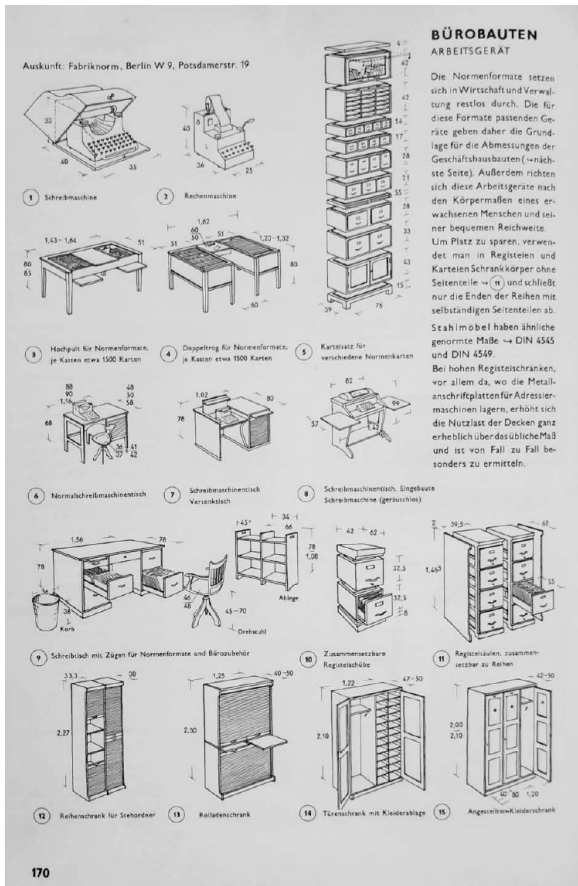


Ernst Neufert. *Bauordnungslehre*, 1943. 'Octametric Bricks [Okta-metersteine] and Standard Format.' Photo and caption: Vossoughian, N. (Winter 2014) Standardization Reconsidered.

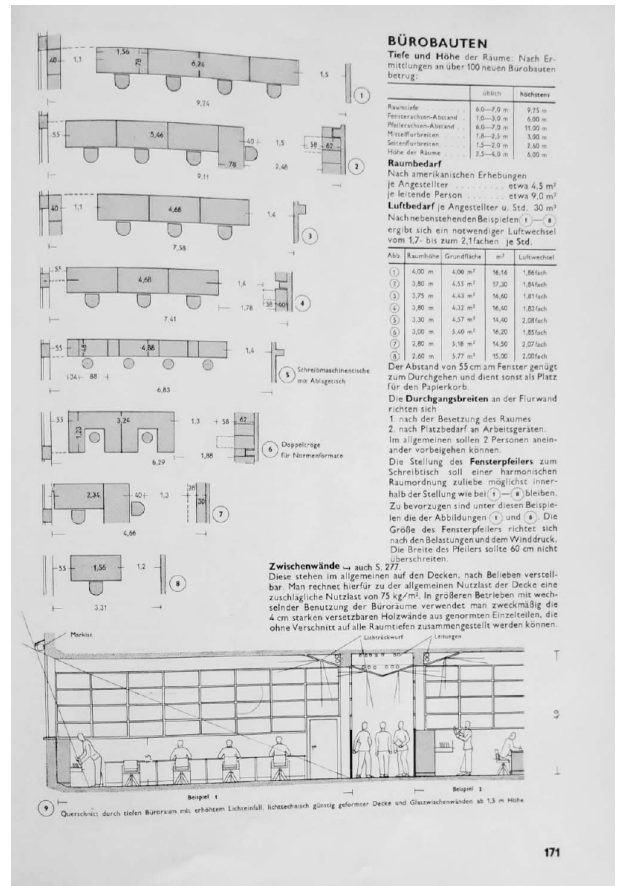
renovation of the city⁷⁹. Notably, the first set of standards discussed in the first edition of the *Bauentwurfslehre* were paper standards, which Neufert defines as an essential and operative knowledge for the architect: “standard [paper] formats constitute the basis for the dimensions of furniture used for writing and record keeping. These are also constitutive of the dimensions of spaces. (...) Exact knowledge of standard [paper] formats (=DIN formats) is (...) important for the builder”⁸⁰. Later in the book,

79 For further information about both Neufert's teaching philosophy and his link with the Third Reich, see: Vossoughian, N. (2015) From A4 Paper to the Octametric Brick: Ernst Neufert and the Geopolitics of Standardisation in Nazi Germany, *Journal of Architecture* 20(4): 675-698; Speer, A. (1970) *Inside the Third Reich*, transl. by Winston, R. and C., with introduction by E. Davidson. New York: The MacMillan Company; Vossoughian, N. (Winter 2014) Standardization Reconsidered: Normierung in and after Ernst Neufert's *Bauentwurfslehre*. *Grey Room*, 54(54):34-55.

80 Neufert, E. (1936) *Bauentwurfslehre*, p. 12.



Standard-dimensioned furnishings by *Fabriknorm*, as presented in the pages of Neufert's *Bauentwurfslehre*. Photo and caption: Vossoughian, N. (2015) From A4 Paper to the Octametric Brick.



From standard-dimensioned furnishings to standard-dimensioned spaces. Neufert's *Bauentwurfslehre*. Photo and caption: Vossoughian, N. (2015) From A4 Paper to the Octametric Brick.

Neufert suggests that some of the same principles behind standard-format paper could be applied to the construction industry, theorizing what Vossoughian terms the 'standard-format brick':

"the A0 paper format is one square meter in area. Similarly, Neufert takes as his departure point the idea that all bricks ought to have dimensions that are multiples of one meter—they needed to conform to what he calls the 'Octametric System'. As Jean-Louis Cohen notes, this system suggests 'a complete world based on norms derived from the subdivision of the meter into eight basic modules of 12.5 centimeters, whence the notion of the 'octametric' norm'. Neufert's bricks have a length of twenty-four centimeters and a width of eleven-and-

one-half centimeters (with one centimeter allotted for joint thickness along each axis)”⁸¹.

The Octametric System had multiple functions, ranging from the reduction of fabrication costs to the acceleration of the design and construction process. Speed and efficiency were stressed in every detail of the *Bauentwurfslehre*:

“Headings are arranged asymmetrically and in boldface print to facilitate quick referencing. Abbreviations and acronyms are included wherever possible to economize the use of space. Individual drawings are numbered sequentially in the interest of guiding the reader’s eye, as well as assuring narrative coherence. Words are interspersed with pictorial signs in order to reduce sentence lengths and hence also accelerate the transmission of meaning. Illustrations resemble comic book – style caricatures, probably to make reading less taxing. Plans and elevations are of uniform dimensions (...), which facilitates comparative analysis. Column widths are short, which minimizes eye movement. Graphic conventions (...) are kept constant, assuring consistency. Human figures are included in many of the drawings to communicate scale and proportion. The drawings are all monochromatic, thus easing the reading of line weights. The entire text appears in a sans serif font, which, according to the prevailing wisdom of the time, was supposed to improve legibility. (...) Its coverage of building types is encyclopedic, which simplifies the research process. (...) Its contents are classified typologically, which eases the task of translating program into form. Its comments about individual buildings tend to be analytical rather than descriptive, which reduces the interpretive responsibilities of the reader. It advises use of the Golden Section, which eases determination of a building’s proper scale and proportion. It offers dimensional standards for organic and inorganic matter alike—for people as well as for vacuum cleaners—which permits the architect to design multiple buildings for many people simultaneously”⁸².

Notably, even rooms were organized according to binary categories, such as private/public, female/male⁸³, domestic/professional, so as to simplify the task of programming space. From a disciplinary perspective, therefore, handbooks perform the task of providing information to standardise and optimise the building process, characterising design as a problem-solving practice.

81 Vossoughian, N. (Winter 2014) *Standardization Reconsidered*, pp. 46-47. Vossoughian quotes Jean-Louis Cohen’s (2001) *Architecture in Uniform: Designing and Building for the Second World War*. Paris: Editions Hazan and the Canadian Centre for Architecture, p. 310.

82 Ibid. pp. 42-43.

83 Vossoughian notes how Neufert casts the *Frankfurt Kitchen* as an exemplary cooking space, thus reproducing the sexual bias at the core of the *New Frankfurt’s* agendas. “Both privilege patriarchy by actively desocializing, mechanizing, and ultimately isolating female labor. They also cast the family as the atomic ‘unit’ of the domestic sphere, with the mother cast as the invisible ‘engine’ of the interior and the father as the face of its exterior” (Ibid. p. 44). The sexual politics of the *Bauentwurfslehre* is also discussed in: Dorhofer, K. (1999) *Der ‘mannliche’ Blick in der Bauentwurfslehre*. In W. Prigge (ed.) *Ernst Neufert: Normierte Baukultur im 20. Jahrhundert*, pp. 159-167. Dessau-Roßlau, D: Edition Bauhaus.

5. 'Normate templates'

In the final part of the previous chapter, we saw how architecture and urban design – both in their usual modes of operation and, very often, when they attempt to open up to the participation of other actors – are based on a standardised idea of user and community, excluding various 'parts' whose specific definition of the world – that they inhabit and embody – does not fit this framework.

A number of authors, in fact, suggest that he or she has been often reduced to a generic type or even ignored in Western architectural theories and practices⁸⁴. As Imrie points out⁸⁵, a series of studies indicate that schools of architecture devote little or no time to issues concerning the human body. The drawings themselves, a fundamental tool for architecture, often do not represent it at all⁸⁶. According to Tschumi⁸⁷, this absence could be attributable to a desire to preserve the nature of the project as a purely aesthetic endeavour. The highly stylized figures that architects place in their drawings are often stripped of features that are expressive of anything but a very general human shape. The human body is mostly used as a means of signaling the buildings' scale or to give clients a sense of spatial proportion⁸⁸. As Imrie notes, for most architects, this body is presocial, fixed, and beyond culture. It is characterised by a corporeality that revolves around a singular sex, and generally fails to acknowledge ethnic, gender, or physical differences⁸⁹. If we pay attention to the best-known representations of the architectural user, we cannot help but notice this. Bodily diversity has been hardly taken into account, while there is a widespread tendency among architects to design according to technical and dimensional standards that revolve around what Hamraie calls a 'normate

84 Cf.: Marble, S. (1988) *Architecture and Body*. New York: Rizzels; Ellis, R. and Cuff, D. (1989) *Architects' People*. Oxford, UK: Oxford University Press; Tschumi, B. (1996) *Architecture and Disjunction*. Cambridge, MA: MIT Press; Imrie, R. (2003) Architects' Conceptions of the Human Body. *Environment and Planning D: Society and Space* 21(1): 47-65; Hamraie, A. (2017) *Building Access: Universal Design and the Politics of Disability*. Minneapolis, MN: University of Minnesota Press.

85 Cf. Imrie, R. (2003) Architects' Conceptions of the Human Body.

86 This also applies to photographs of buildings. See, for instance, Jeremy Till's chapter 'Out of Time' (pp. 77-92) in Id. (2009) *Architecture Depends*. Or, in the case of renders, there are online databases from which it is possible to download a number of generic or 'readymade' people devoid of context and representative of a set of social behaviours.

87 Cf. Tschumi, B. (1996) *Architecture and Disjunction*.

88 Cf. Frascari, M. (1987 Autumn) The Body and Architecture in the Drawings of Carlo Scarpa. *RES: Anthropology and Aesthetics* 14: 123-142. Particularly, Frascari refers to Robert Venturi's scale figures as "biped balloons with pointed feet and floating heads" (p. 124). See also: Bloomer, K. and Moore, C. (1977) *Body, Memory, and Architecture*. New Haven, CT: Yale University Press; Borden, I. (1998) Body architecture: skateboarding and the creation of super-architectural space. In J. Hill (ed.) *Occupying Architecture: Between the Architect and the User*, pp. 195-216. London: Routledge; Vidler, A. (1994) *The Architectural Uncanny: Essays in the Modern Unhomely*. Cambridge, MA: MIT Press.

89 Cf. Imrie, R. (2003) Architects' Conceptions of the Human Body, p. 62.

template⁹⁰. In general, a generic and universal representation of the body has been part – even though it was shaped according to different logics and visions – of Western traditions of architectural design since ancient times.

In the first century BC, Vitruvius⁹¹, referring to Protagoras' dictum that 'man is the measure of all things', outlined an ideal body as a reference for a certain idea of beauty in architecture⁹². The scale and proportion of this ideal were the embodiment of God⁹³. Hence, it was conceived as a perfect microcosm inside a circle, with his head, arms and legs creating a perfect square, canonizing a template for the measure of the built world⁹⁴. For Vitruvius, the human body was important only insofar that it provided the dimensions for deriving architectural style and form⁹⁵. Anyway, this generated a twofold process: its proportions materialized a certain kind of architecture and "buildings likewise materialized the existence of certain *bodies*—presumably white, masculine, nondisabled citizens—as the most likely inhabitant of public space."⁹⁶

Vitruvius' ideas reappeared in the Renaissance: Alberti, for instance, noted that: "beauty is that reasoned harmony of all the parts within the body, so that nothing can be added, taken away or altered, but for the worse"⁹⁷. In 1490, Leonardo Da Vinci, while maintaining Vitruvius's interest in the body as an instrument of measurement, gave it a transcendent appearance⁹⁸. His 'Vitruvian Man', which he depicted as a white, masculine, young, muscled, and standing body, with long hair and his arms and legs extended in space, soon became a shared iconography for both medicine and architecture.

90 Cf. Hamraie, A. (2017) *Building Access*. See also: Colomina, B. (ed.) (1992) *Sexuality and Space*. New York: Princeton Architectural Press; Grosz, E. (1992) Bodies-cities, in Colomina, B. (ed.) (1992) *Sexuality and Space*, pp. 241-254; Grosz, E. (1994) *Volatile Bodies: Towards a Corporeal Feminism*. Bloomington, IN: Indiana University Press; Irigaray, L. (1993) *An Ethics of Sexual Difference*. Ithaca, NY: Cornell University Press; Scott, G. (1914) *The Architecture of Humanism: A Study in the History of Taste*. London: Architectural Press; Vidler, A. (1999) *The Architectural Uncanny*; Williamson, B. (2019) *Accessible America*.

91 Cf. Vitruvius (1960) *The Ten Books of Architecture*.

92 Cf. de Solà-Morales, I. (1997) 'Absent bodies'. In C. Davidson (ed.) *Anybody*, pp 16-25. Cambridge, MA: MIT Press. See also Hamraie, A. (2017) *Building Access*.

93 Cf. Vidler, A. (1999) *The Architectural Uncanny*.

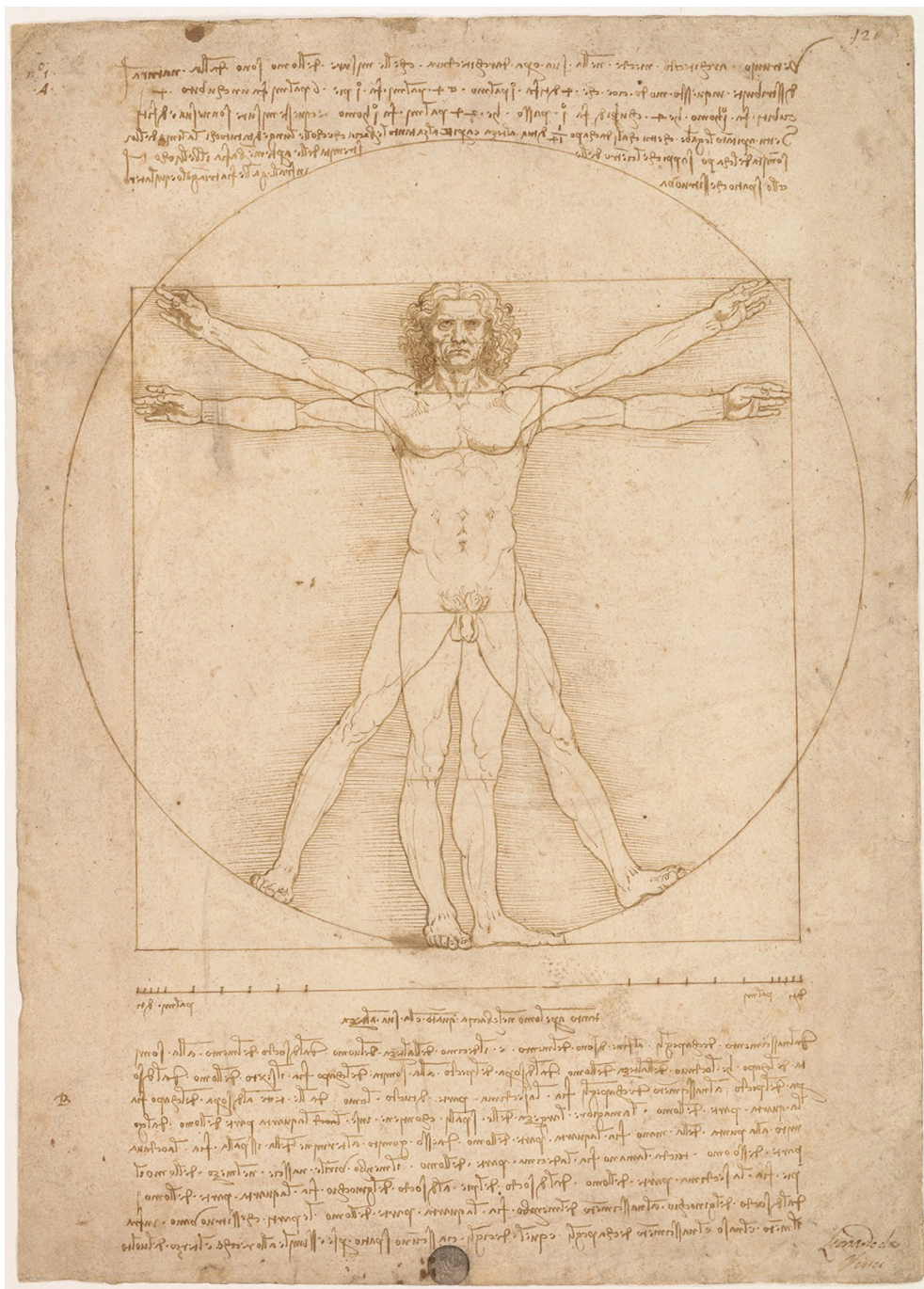
94 See also: Wittkower, R. (1971) *Architectural Principles in the Age of Humanism*. New York: W. W. Norton; Padovan, R. (1999) *Proportion: Science, Philosophy, Architecture*. New York: Taylor & Francis.

95 Cf. Ellis, R. and Cuff, D. (1989) *Architects' People*.

96 Hamraie, A. (2017) *Building Access*, p. 21.

97 Alberti, L. B. (1988) *De re aedificatoria: On the Art of Building in Ten Books*. Transl. by J. Rykwert. Cambridge, MA: MIT Press, p. 3. Originally published in Italy as Id. (1485) *De Re Aedificatoria*. Firenze: Nicolò Di Lorenzo.

98 See also: Lester T. (2012) *Da Vinci's Ghost: Genius, Obsession, and How Leonardo Created the World in His Own Image*. New York: Free Press.



Leonardo da Vinci, *Vitruvian man* (1490 ca)

In the nineteenth century, however, in the wake of positivist perspectives and with the birth of statistics, the scientific value of da Vinci's *Vitruvian Man* was questioned and his mathematical proportions were criticized as mere myth and abstraction⁹⁹. Statistical data, as we have seen at the beginning of this chapter, began to be commonly seen as guarantors of validity and reliability within the domain of architecture. Nevertheless, these ideal representations were reproduced by statisticians, physical anthropologists and eugenicists in the new material culture of anthropometry, in the attempt to collect

ANTHROPOMETRICAL CHART

Ob. The four numbers in the columns A.A.A.A. refer to the systematic table of measurements and indicate the exact place on the chart where the measurement was to be taken. The heights taken from the ground are written above the line, the distances taken from the vertex, from the trachea and from the shoulder are written below the line. The maximum distance or breadth are written above the line and the circumference below the line. For the

MANUAL OF ANTHROPOMETRY.

HEAD, TRUNK AND LOWER LIMBS

WEIGHT

GENERAL

STRENGTH

UPPER LIMB

LOWER LIMB

FOOT

REMARKS

Notes at which observations are made.
Note. Write the name of the person or the reference numbers at the beginning or above each tracing.

Roberts, C., anthropometrical chart, *Manual of Anthropometry* (1878).
 Source: Hamraie, A. (2017) *Building Access*.

population data for statistical calculation. Initially conceived as a new racial science, anthropometry made it possible to establish averages – or norms –, as well as standard deviations from them. In fact, it sought to provide comparative evidence of the supposed ‘a-normality’ of nonwhite, disabled or poor people. The *Vitruvian Man* was, in short, rendered “calculable, legible, a standard against which difference could be measured, and (...) [an] evidence of the supposed moral and aesthetic truths of

99 Cf.: McEwen, I. K. (2003) *Vitruvius: Writing the Body of Architecture*. Cambridge, MA: MIT Press; Wetmore Story, W. (1864) *Proportions of the Human Figure, According to the Canon, for Practical Use*. London: Chapman and Hall.

normate bodies”¹⁰⁰.

In the twentieth century, Modernist architects resumed classical repertoires of geometric harmony and beauty through the new language of positivism, emphasizing an objective view of good design as premised upon the standardization of production. Notably, behind Modernist standards, as disability theorist Tobin Siebers highlights, lied the “ideology of ability”, which she defines as the societal “preference for able-bodiedness”¹⁰¹. For Le Corbusier, as we have already seen, the standard was “necessary for order in human effort. (...) [It] is established on sure bases, not capriciously but with the surety of something intentional and of a logic controlled by analysis and experiment. All men have the same organism, the same functions. All men have the same needs”¹⁰². According to Colomina, Le Corbusier conceived of the body as a “surrogate machine in an industrial age”¹⁰³. Indeed, the architect’s own words reveal that the body was considered as a type reducible to specific, mechanical parts: “If our spirits vary, our skeletons are alike, our muscles are in the same places and perform the same functions: dimensions and mechanism are thus fixed (...) human limb objects are in accord with our sense of harmony in that they are in accord with our bodies”¹⁰⁴. According to him, all human needs were similar, or, as he noted: “These needs are type, that is to say they are the same for all of us (...) since nature is indifferent, inhuman (extra human), and inclement, we are all born natural and with insufficient armour”¹⁰⁵. Le Corbusier’s *Modulor* came to substitute the *Vitruvian Man* in conflating classical and scientific conceptions of the body and establishing the measures and characteristics of the architectural user. He believed the standard to be based upon “sure truths and emotions of a superior mathematical order”¹⁰⁶: on the one hand, the expression ‘superior mathematical order’ might involve a claim to scientific rationality, while on the other hand, it was also an ideal and poetic form of beauty and harmony¹⁰⁷. In deterministic terms, Le Corbusier

100 Hamraie, A. (2017) *Building Access*, p. 23. See also: Hammonds, E. and Herzig, R. (2008) *The Nature of Difference: Sciences of Race in the United States from Jefferson to Genomics*. Cambridge, MA: MIT Press; Kevles, D. (1985) *In the Name of Eugenics: Genetics and the Uses of Human Heredity*. Berkeley, CA: University of California Press; Gould, S. (1981) *The Mismeasure of Man*. New York: W. W. Norton; Sekula, A. (1986 Winter) The Body and the Archive. *October* 39 (Winter): 3-64.

101 Siebers, T. (2008) *Disability Theory*. Ann Arbor, MI: University of Michigan Press, p. 8.

102 Le Corbusier (1986) *Towards a New Architecture*, pp. 135-136. Originally published in France as Id. (1923) *Vers une architecture*. Paris: Cres.

103 Colomina, B. (1994) *Privacy and Publicity: Modern Architecture as Mass Media*. Cambridge, MA: MIT Press, p. 136.

104 Le Corbusier (1925) *The Decorative Art of Today*. London: Architectural Press, p. 76.

105 Ibid. p. 72.

106 Le Corbusier (1986) *Towards a New Architecture*, p. 221.

107 Cf.: Imrie, R. (1999) The body, disability and Le Corbusier’s conception of the Radiant environment. In R. Butler and H. Parr (eds.) (1999) *Mind and Body Spaces: Geographies of Disability, Illness and Impairment*, pp 25-45. London and New York: Routledge; Hamraie, A. (2017) *Building Access*.

i.b. II. 3 - *Ville Radieuse* and the metaphor of a 'good body'

Imrie also signals that Le Corbusier's conceptions of the body were linked to his architecture and to wider conceptions of urban planning. Interestingly, Le Corbusier used medical metaphors linked to the body to signal problematic issues of contemporary urbanism. For instance, regarding his *Ville Radieuse*, he stated: "Our cities are too old; they are crumbling away; they are uninhabitable; they are full of lurking disease; it is impossible to move around in them anymore; traffic has reached its ceiling and the reign of speed is leading to total immobility"¹.

Early twentieth-century urban planning had been responsible for its deformed appearance, which was analogous to a broken and maimed body. As he put it: "The world is sick. A readjustment has become necessary. Readjustment? No, that is too tame. It is the possibility of a great adventure that lies before mankind: the building of a whole new world...because there is no time to be lost"².

The architect, according to him, had the task of overturning the socio-environmental decay of the city, and providing it with health, youth, cleanliness and vigour. In other words, the city had to be given a 'good body', which implicitly discredited elderly or disabled ones. He conceived his *Ville Radieuse* as "the city of light that will dispel the miasmas of anxiety now darkening our lives"³.

1 Le Corbusier (1967) *The Radiant City*. London: Faber and Faber Ltd, p. 94.

2 Ibid. p. 92.

3 Ibid. p. 94.

thought that the abstraction of bodily essence was crucial in establishing standardized systems of measurements to be used in the design of the built environment. As Imrie notes¹⁰⁸, "[i]n rejecting the individual sentient-object, Le Corbusier conceived of a world where the (standardised) measurements of the body would be critical in giving shape to the objects, decorations, and materials of everyday (human) use. For Le Corbusier, everything external to the body is but an extension of the body, or what he termed human-limb objects" [i.b. II. 3].

To assert their authority and the validity of their social, aesthetic and industrial projects, modernist architects appealed to the 'scientificity' of the normate template. As Hamraie notes, referring to what Foucault called 'games of truth', this was part of the logic according to which describing something as science gives it the power and authority of

108 Imrie, R. (1999) The body, disability and Le Corbusier's conception of the Radiant environment, p. 33.

i.b. II. 4 - Disability and eugenics

As Hamraie points out¹, a number of disability design historians have reported how the social project of eugenics, whose purpose was to eliminate what were considered defective bodies, affected the nature of spatial inhabitation. Christina Cogdell notes that eugenicists' goals of facilitating and accelerating human evolution were in many ways metaphorically comparable to industrial processes of assembly-line manufacture. "Streamlining, of both man and machine, promised to pare away all protuberances that hindered cultural and evolutionary progress by bringing both into line"². In the early twentieth-century in US, nonnormate bodies were segregated from public space by 'ugly laws', and 'feeble-mindedness' was measured according to an individual's ability to cope with urban environments³.

1 Cf. Hamraie, A. (2017) *Building Access*.

2 Cogdell, C. (Winter 2013) Products or Bodies? Streamline Design and Eugenics as Applied Biology. *Design Issues* 19(1): 36-53, p. 48.

3 Cf. Schweik, S. M. (2010) *The Ugly Laws: Disability in Public*. New York: New York University Press. See also: Kevles, D. (1985) *In the Name of Eugenics*; Mitchell, D. and Snyder S. (2006) *Cultural Locations of Disability*, Chicago, IL: University of Chicago Press; Cogdell, C. (2010) *Eugenic Design: Streamlining America in the 1930s*. Philadelphia, PA: University of Pennsylvania Press.

supposed truth and objectivity. The image of a universal white, male, nondisabled body continued to represent the default, obscuring any kind of deviation from it [i.b. II. 4]. In particular, a crucial role in rendering normate bodies legible to architects was played precisely by architectural handbooks. Indeed, "orthographic drawings [offered by these books] both defined and prescribed the typical features of built environments. Alongside standard doorways or roofs, depictions of the standard inhabitant, decorated with notations of measurement and size, staged the legibility of normate spatial users". In line with the modernist perspective, the representation of normate bodies has been generated by the merging together of classical canons with contemporary scientific standards.

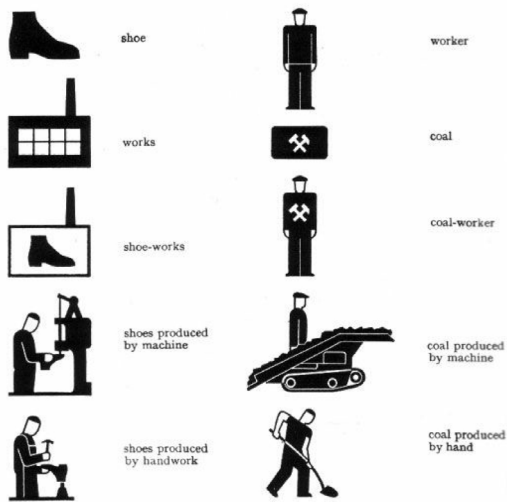
From the third edition of *Architectural Graphic Standards* (1941)¹⁰⁹, a series of black-and-white drawings realized by artist Ernest Irving Freese and titled *The Dimensions of the Human Figure* were included in the final part of the handbook. Showing numerical dimensions, these figures had the aim to provide a useful reference

109 Ramsey, C.G. and Sleeper, H.R. (1941) *Architectural Graphic Standards*, 3rd ed. New York: John Wiley & Sons.

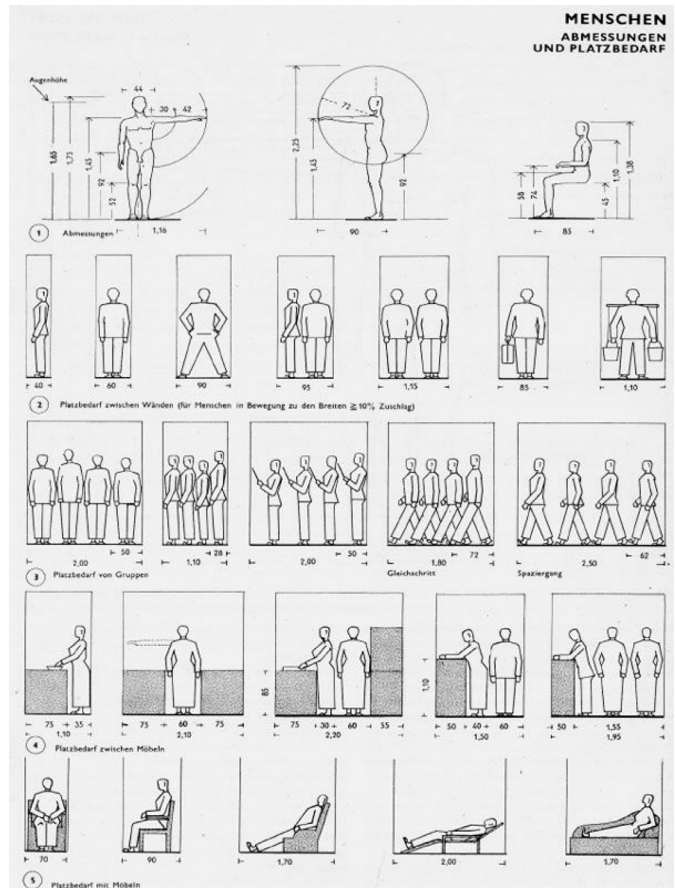
This collection of 18 diagrams illustrates various human body measurements and postures, with dimensions provided in feet and inches. The diagrams are arranged in three rows and six columns.

- Row 1:**
 - Diagram 1: Standing male figure, side view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 2: Standing male figure, front view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 3: Standing male figure, front view with arms extended. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 4: Standing male figure, side view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 5: Standing male figure, side view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 6: Standing male figure, side view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
- Row 2:**
 - Diagram 7: Standing male figure, side view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 8: Standing male figure, side view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 9: Crouching male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 10: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 11: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 12: Standing male figure, side view. Measurements: 5'8" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
- Row 3:**
 - Diagram 13: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 14: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 15: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 16: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 17: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).
 - Diagram 18: Sitting male figure. Measurements: 1'10" (height), 1'10" (head), 1'10" (torso), 1'10" (leg), 1'10" (foot).

Freese, E. I., *The Dimensions of the Human Figure*, *American Architect and Architecture* 145 (July 1934): 57–60.
Source: Hamraie, A. (2017) *Building Access*.



(left) ISOTYPE techniques for putting signs together; (right) ISOTYPE examples of 'root idea and addition' and 'guide picture'. Both from Neurath, O., International Picture Language (1936), pictures 17 and 18. Photo and caption: Emmons, P. and A. Mihalache, A. (2013) *Architectural handbooks and the user experience*.



to average spatial dimensions to architects, adding a “hint of scientificity”¹¹⁰ to da Vinci’s unmarked *Vitruvian Man*. Anyway, scientificity here was merely fictional – indeed, these numerical values did not match any anthropometric data available at the time¹¹¹ –, an aesthetic element with a persuasive function, that consisted in giving architecture the appearance of standardization and order. Freese’s human figures and their neutrality were reminiscent of harmonic and ideal representations. Represented like the industrial products that they would use, these figures are highly abstracted into straight lines with arcs and dimensioned from centerlines¹¹². They “stand, sit, and crawl using two arms and two legs; their dark shade does not appear legible as a racial category; their gender is largely unannounced”¹¹³. Interestingly, to make the female inhabitant legible, a single, high-heeled shoe was depicted next to one normate figure. As architectural critic Lance Hosey notes, what appears to be an act of benign differentiation actually constituted a marginal gain in diversity that simply reinforced the standard¹¹⁴.

An exception to Modernist generalization and normalization procedures came from the field of ‘ergonomics’, which combined the evidence-based research on ‘human factors’, proper to the military field, with the aesthetic and functional practices of industrial design. This transformation in the field of industrial design, as we shall see, soon had an impact on architecture.

At the beginning of the twentieth century, the U.S. military employed industrial designers to design machines, vehicles, and uniforms, by providing them with great collections of anthropometric data about male soldiers’ bodies. Drawing from this, renowned American industrial designer Henry Dreyfuss continued to operate in this capacity also after the World War II, asserting that statistics on human bodies was a crucial tool for developing appealing and functional products. By using the terms ‘human factors’ and ‘human engineering’, Dreyfuss outlined a philosophy of “fitting the machine to the

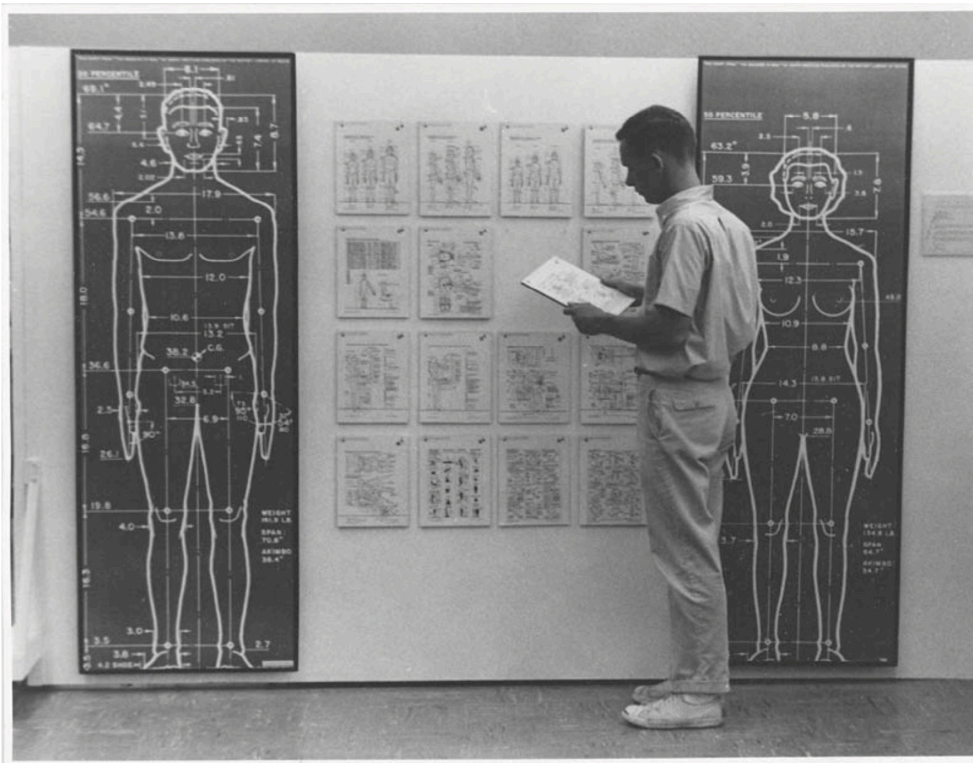
110 Hamraie, A. (2017) *Building Access*, p. 27.

111 This has been signaled by architectural historians such as Hyungmin Pai in his book (2002) *The Portfolio and the Diagram: Architecture, Discourse, and Modernity in America*. Cambridge, MA: MIT Press. See also: P. Emmons, A. Mihalache, *Architectural handbooks and the user experience*, pp. 43-44.

112 Emmons and Mihalache (2013) note that these figures, or silhouettes, remind of Viennese sociologist Otto Neurath’s *ISOTYPE* symbol for ‘man’, which were intentionally minimal, flat and devoid of any inner life or individual character to emphasize factuality. Neurath explained that “the sign man has not to give the idea of a special person with the name XY, but to be representative of the animal *man*”. Neurath, O. (1973) *From Vienna Method to ISO-TYPE*. In M. Neurath and R. Cohen (eds.) *Empiricism and Sociology*. Boston: Reidel, p. 217.

113 Hamraie, A. (2017) *Building Access*, p. 30.

114 Cf. Hosey, L. (2006) Hidden Lines: Gender, Race, and the Body in Graphic Standards. *Journal of Architectural Education* 55(2): 101-112, p. 105.



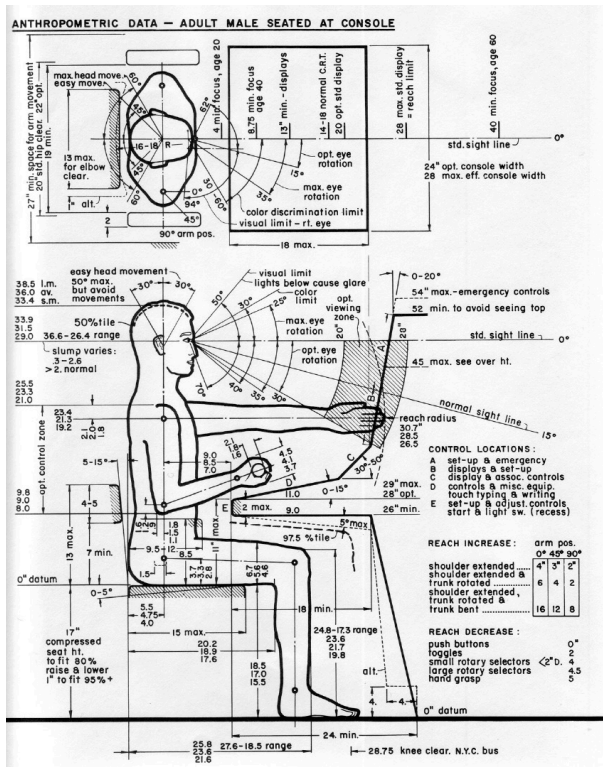
Real and imagined bodies: researcher Alvin Tilley stands before life-sized drawings of Joe and Josephine (ca. 1973). Photo and caption: Hamraie, A. (2017) *Building Access*.

man rather than the man to the machine”¹¹⁵. In *Designing for People*¹¹⁶, he also included charts depicting Joe and Josephine, two anthropometric drawings of a man and a woman. Unlike Le Corbusier’s *Modulor* and other systems that selected a single set of measurements, the dimensional data attached to these figures indicated upper and lower percentiles, in addition to the average. These charts became so popular that soon after were published as lifesize wall charts in the *The Measure of Man*¹¹⁷, a portfolio-style packet of dimensional drawings. Compared to the modernist, standardization-oriented approach, Dreyfuss’ ‘human engineering’, forming the foundation of user-centered design, emphasized the dynamic and different nature of design users. Joe and Josephine,

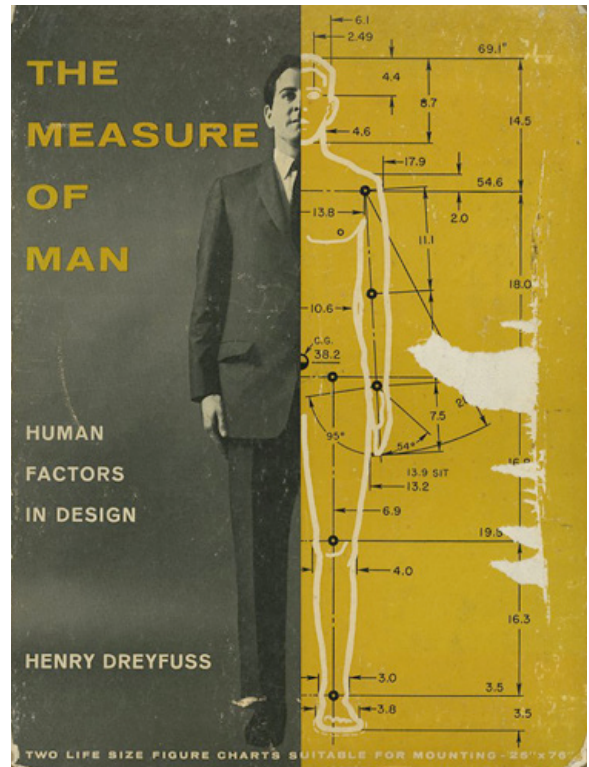
115 Lupton, E., Lambert T. and Carpentier, T. (2014) *Beautiful Users: Designing for People*. New York: Princeton Architectural Press, p. 24. The book accompanied the exhibition *Beautiful Users* at Cooper Hewitt, Smithsonian Design Museum (2014-2015). Further info at: <https://collection.cooperhewitt.org/exhibitions/51669015/>

116 Cf. Dreyfuss, H. (1955) *Designing for People*. New York: Simon & Schuster.

117 Cf. Dreyfuss, H. (1960) *The Measure of Man: Human Factors in Design* 1st ed. New York: Whitney Library of Design.



Dreyfuss, E. 'Anthropometric Data' chart, 1960. Dreyfuss charted his male character 'Joe' as an outlined figure seated at a desk. Dozens of numerical annotations surrounded the figure with measurements of height, reach, visual field, and work surface. From Dreyfuss, H. (1960) *The Measure of Man*, 1st ed. New York: Whitney Library of Design. Photo and caption: Williamson, B. (2019) *Accessible America: A history of disability and design*.



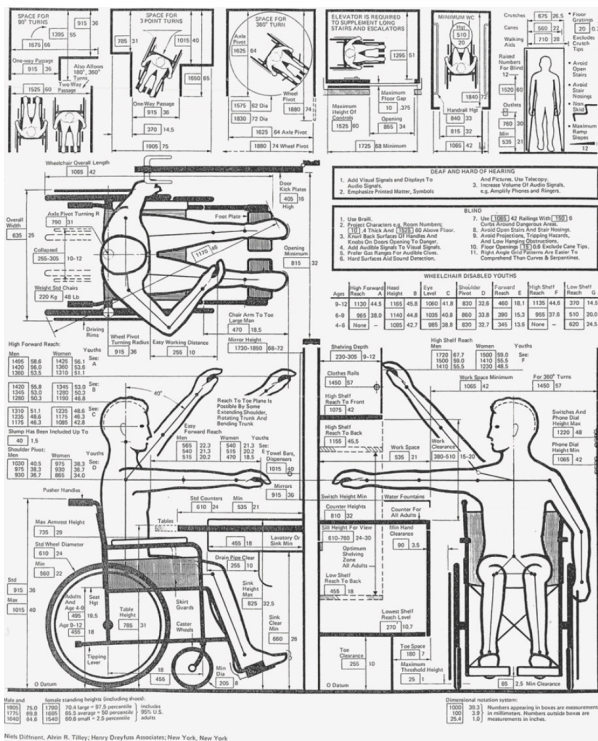
Dreyfuss, H. (1960) *The Measure of Man*. 1st ed. New York: Whitney Library of Design. Book cover.
Source: modernism101.com

he wrote, “are not very romantic-looking, staring coldly at the world, with figures and measurements buzzing around them like flies, but they are very dear to us. They remind us that everything we design is used by people, and that people come in many sizes and have varying physical attributes”¹¹⁸. Although in his day some cognitive disorders had not yet been biomedically categorized, he also pointed out that Joe and Josephine had “numerous allergies, inhibitions, and obsessions. They react strongly to touch that is uncomfortable or unnatural; they are disturbed by glaring or insufficient light and by offensive coloring; they are sensitive to noise, and they shrink from disagreeable odor”¹¹⁹.

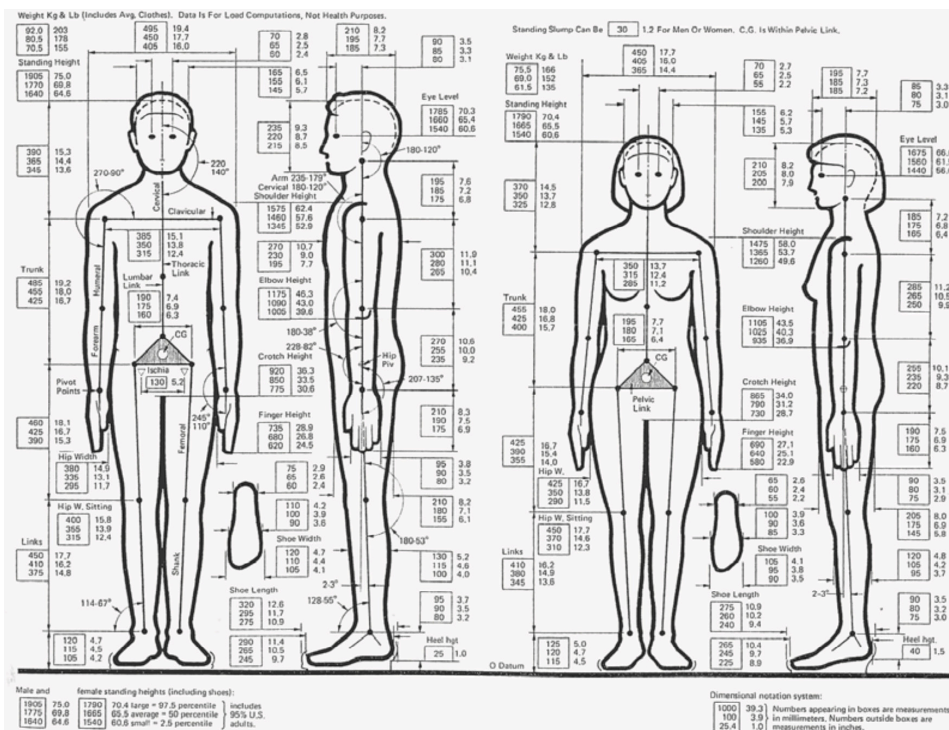
Between mid-1970s and the 1980s, a new generation of designers would follow Dreyfuss in experimenting new ways of designing for people in their variation, rather than

118 Dreyfuss, H. (1955) *Designing for People*, p. 45.

119 Ibid. p. 37.



Anthropometric figures representing disability often depict a wheelchair user and, to a lesser extent, figures using canes or crutches. Ramsey, C. G. and Sleeper, H. R. (1981) *Architectural Graphic Standards*, 7th ed., New York: Wiley.
Photo and caption: Hamraie, A. (2017) *Building Access*.



resorting to Modernist standardized abstractions. Starting from 1974, Niels Diffrient, Alvin Tilley e Joan Bardagjy from the Henry Dreyfuss Associates published a revision and expansion of Dreyfuss' *The Measure of Man*, which included a series of portfolios titled *Humanscale*¹²⁰ displaying anthropometric data on a range of newly legible figures, such as women, children, elders, wheelchair users and a person using crutches. Although they were initially conceived for industrial designers, these new charts began to cross into the realm of architecture. In general, as mentioned above, architecture welcomed these new contributions from the field of industrial design. In particular, the beginning of the 1980s saw the emergence of legal requirements for accessible architectural design (we shall see more on this in chapter V), which increased the urgency for a more inclusive knowledge base for architects.

An updated version of *Humanscale*¹²¹, therefore, appeared in the seventh edition of *Architectural Graphic Standards* (1981)¹²², where it substituted Freese's dimensional figures of the universal man and feminine shoe. Some texts included in the charts also offered some loose suggestions for designing for blind, deaf, and hard-of-hearing people.

These examples therefore seemed to hint at the existence of a wider range of bodies than the traditional, standardised representations of the architectural user. In other words, templates seemed to acquire a greater degree of 'flexibility'. Another designer, Victor Papanek, moved in a similar direction. In his famous book *Design for the Real World*¹²³, Papanek sought to promote a more responsible design activity beyond commercial logics, emphasizing those areas that were usually overlooked: 'the poor', 'the Third World', 'the retarded', 'the elderly', 'the handicapped', 'the disabled', and 'the disadvantaged'. In *Design for Human Scale*¹²⁴ he included a calculation of the number of users for whom objects such as counters, cabinets and shelves were unreachable to indicate how mainstream designers held limiting views of target users as affluent, able-bodied, Western consumers. However, these attempts, while showing greater sensitivity to possible and varied differences between users, remained on an abstract and generic level, failing to take into the specificity and irreducibility of singular bodies. For instance, according to design historian Bess Williamson, *Humanscale* replicated "some of the contradictions of the Dreyfuss originals, which embraced a diversity of human

120 Cf. Diffrient, N., Tilley, A. R. and Bardagjy, J. C. (1974) *Humanscale 1/2/3: A Portfolio of Information*. Cambridge, MA.: MIT Press.

121 Cf. Diffrient, N., Tilley, A. R. and Bardagjy, J. C. (1981) *Humanscale 4/5/6: A Portfolio of Information*. Cambridge, MA.: MIT Press.

122 Cf. Ramsey, C. G. and Sleeper, H. R. (1981) *Architectural Graphic Standards*, 7th ed. New York: Wiley.

123 Cf. Papanek, V. J. (1972) *Design for the Real World: Human Ecology and Social Change*. New York: Pantheon.

124 Cf. Papanek, V. J. (1983) *Design for Human Scale*. New York: Van Nostrand Reinhold.

bodies while also summarizing them through a visual presentation of a normative figure of a single, seemingly unblemished male body”¹²⁵. As also Ellen Lupton points out:

“The authors (...) acknowledged that the diagrams account for variations in height but not weight: in their ‘fleshy areas’, populations feature broader individual differences than they exhibit in their height. The limb dimensions are averages; actual measurements vary from individual to individual. The goal in creating a standard system of measure – even an inclusive one like *Humanscale* – constantly comes up against human particularity”¹²⁶.

125 Williamson, B. (2019) *Accessible America*, p. 159.

126 Lupton, E., Lambert T. and Carpentier, T. (2014) *Beautiful Users*, p. 29.

Conclusion: Heroes and ‘cures’

In this chapter I have attempted to highlight some recurring issues that characterise both the ways in which architects are trained and the logics through which they approach their practice. A number of aspects, such as the worship of past and contemporary ‘great myths’, the historical divides between nature/culture and architecture/construction, the use of particular technical devices, the focus on efficiency and formal-aesthetic qualities, the lack of attention to contingency and differences, the use of ‘standard templates’, the absence of any stimulus for self-criticism, contribute to the stabilisation of a certain disciplinary paradigm, centred on the expert author.

In spite of numerous attempts to move against it – which I tried to partially account for in chapter I – still today, the prevailing approach to design is solutionist and self-referential, oriented towards providing optimal ‘cures’ from above and in the abstract, while little attention is generally paid to their effects. It is interesting to note, for instance, as Giovanna Borasi and Mirko Zardini point out in their *Imperfect Health: The Medicalization of Architecture*¹²⁷, that the tendency to provide design ‘solutions’ is often still based on a purely medical rhetoric, in line with the hygienic paradigm of nineteenth century urban planning and the centralised, rationalist logic behind modernist design. As we have observed, modern architecture is a discipline – characterised by a high legal component – connected to the question of ‘social medicine’, which, for Foucault, represents the paradigm of liberal governmentality invented in the XIX century¹²⁸. In most cases, when approaching, for example, questions of climate urgency and more generally the health of the population, “design disciplines prefer to rely on an abstracted, scientific notion of health, and very literally adopt concepts such as ‘population’, ‘community’, ‘citizen’, ‘nature’, ‘green’, ‘development’, ‘city’ and ‘body’ into a professionalized, disciplinary discourse”. What still prevails is “[a]n absolute confidence in the ability to provide perfect solutions”¹²⁹, and an attitude towards generalisation, simplification, abstraction and the elimination of differences and specificities. Nature, or ‘green’, is often thought of as an element to be used and manipulated to ‘heal’ the man-made environment.

“Today, green is thought of as a diffuse and continuous salve-like surface application, a new skin of vegetation that replaces or envelops exposed (man made) surfaces and especially

127 Cf. Borasi G. and Zardini, M. (2012) *Imperfect Health: The Medicalization of Architecture*. Baden, CH: Lars Muller Publishers.

128 Cf. Foucault, M. (2001) The birth of social medicine. In P. Rabinow (ed.) *The Essential Works of Michel Foucault 1954–1984. Power* 3, pp. 134-156. New York: The New Press.

Online version available at: http://lchc.ucsd.edu/cogn_150/Readings/foucault/social_medicine/foucault_birth.pdf

129 Borasi G. and Zardini, M. (2012) *Imperfect Health: The Medicalization of Architecture*, pp. 16-17.

buildings. Facades and roofs are re-naturalized by the application of a thin epidermal layer of plants, selected to increase bio-diversity. (...) Facades become adaptive, even reactive - able to not only reflect changes in the surrounding environment but also interact with it, assuming a restorative role by drawing off airborne particles and dust and at the same time producing a new aesthetic. (...) And green does not stop at a building's surface: It also penetrates the interior, to give the impression of living everywhere with nature."¹³⁰

A number of profit-oriented design proposals that respond to the current COVID-19 pandemic, labelled by Kate Wagner as "coronagriffs"¹³¹, are also emblematic, such as plexiglass shields suspended above dining areas and foot-triggered crosswalk buttons that completely ignore the needs of people such as wheelchair users. I might add an all-Italian case: the 'Primula' (Primrose), the name architect Stefano Boeri gave to his project for the temporary pavilions to vaccinate Italians, designed together with the slogan "Italy is reborn with a flower". The image of the primrose, Boeri declares, was chosen to "create an architecture that would convey a symbol of serenity and regeneration. If this virus has locked us up in hospitals and homes, the vaccine will bring us back into contact with life and the nature that surrounds us. Getting vaccinated will be an act of civic responsibility, love for others and the rediscovery of life"¹³². The hero-architect, therefore, is once again able to summon the masses and ensure the 'common good', through technical and artistic skills. The unbearable rhetoric of "Italian beauty that will save us all"¹³³ is accompanied by a description filled with attractive terms: "Cloaked in a durable, water-resistant skin made from a range of different recyclable and biodegradable materials, the timber-framed pavilions will rest atop prefabricated wooden bases and, naturally, be simple to assemble and disassemble to allow for multiple relocations. Each pavilion will be topped with a photovoltaic array so each can operate self-sufficiently off the grid"¹³⁴. However, the flower is mainly visible from above, as also evidenced by

130 Ibid. pp. 18-19.

131 Wagner, K. (2020) Coronagrifting: A Design Phenomenon. *McMansion Hell*. Retrieved 20 December 2020 from: <https://mcmansionhell.com/post/618938984050147328/coronagrifting-a-design-phenomenon?fbclid=IwAR0HvyPIdQqrQx8VPT1vjVv11EBWKGJQkrFvf4q7UU0WhqkLwhrjGijj0>

132 Excerpt from Hickman, M. (2020) Flower Power. Stefano Boeri reveals a pavilion and marketing campaign to get Italians excited about COVID-19 vaccination. *The Architect's Newspaper*. Retrieved 20 December 2020 from: <https://www.archpaper.com/2020/12/stefano-boeri-reveals-a-pavilion-and-marketing-campaign-to-get-italians-excited-covid-19-vaccination/>

133 My translation (A/N). Excerpt from Bernardi, V. (2020) Perché non avevamo bisogno della primula di Stefano Boeri, *CieloTerraDesign*. Retrieved 20 December 2020 from <http://www.cieloterradesign.com/stefano-boeri-primula-vaccinazione-covid19/>

134 Excerpt from Hickman, M. (2020) Flower Power. Stefano Boeri reveals a pavilion and marketing campaign to get Italians excited about COVID-19 vaccination.

its promotional video¹³⁵, and the pavilion appears to be detached from both the context and its users.

In these scenarios, therefore, architectural practice appears to be still strongly oriented towards providing solutions in the abstract, according to a standardised idea of the user. In many cases, architects show no willingness to question themselves, nor do they seem interested in truly inquiring into the specific needs of singular situations and bodies. They are mostly convinced that their expertise contributes to a presumed 'social utility' of architecture, which, like other modernist disciplines, claims its role in the 'scientific' governance of society. In this vision, the 'common good' is identified as a technical issue and objective, with all the technocratic risks that this entails.

135 The video can be found here: <https://gazzettadelsud.it/video/cronaca/2020/12/13/covid-sara-un-fiore-il-simbolo-della-campagna-dei-vaccini-video-d2a0cdfc-e373-4770-983b-80d248fe02cf/>

REFERENCES (Chapter II)

- Alberti, L. B. (1755) *The Architecture of Leon Battista Alberti in Ten Books*. Transl. by J. Leoni. London: Printed by Edward Owen. Originally published in Italy as Id. (1485) *De Re Aedificatoria*. Firenze: Nicolò Di Lorenzo.
- Alberti, L. B. (1988) *De re aedificatoria: On the Art of Building in Ten Books*. Transl. by J. Rykwert. Cambridge, MA: MIT Press. Originally published in Italy as Id. (1485) *De Re Aedificatoria*. Firenze: Nicolò Di Lorenzo.
- Anthony, K. (1991) *Design Juries on Trial: The Renaissance of the Design Studio*. New York: Van Nostrand Reinhold.
- Awan, N., Schneider, T. and Till, J. (2013) *Spatial agency: other ways of doing architecture*. London: Routledge.
- Aymonino, C. (ed.) (1971) *L'abitazione razionale: atti dei congressi 1929 -1930 CIAM di Francoforte*. Padova: Marsilio.
- Banham, R. (1996) A Black Box: The Secret Profession of Architecture. In M. Banham, P. Barker, S. Lyall, C. Price (eds.) (1999) *A Critic Writes. Selected Essays by Reyner Banham*, pp. 292-299. Berkeley, Los Angeles, CA and London: University of California Press.
- Bernardi, V. (2020) Perché non avevamo bisogno della primula di Stefano Boeri, *CieloTerraDesign*. Retrieved 20 December 2020 from <http://www.cieloterradesign.com/stefano-boeri-primula-vaccinazione-covid19/>
- Bloomer, K. and Moore, C. (1977) *Body, Memory, and Architecture*. New Haven, CT: Yale University Press.
- Borasi G. and Zardini, M. (eds.) (2012) *Imperfect Health: The Medicalization of Architecture*. Baden, CH: Lars Muller Publishers.
- Borden, I. (1998) Body architecture: skateboarding and the creation of super-architectural space. In J. Hill (ed.) *Occupying Architecture: Between the Architect and the User*, pp. 195-216. London: Routledge.
- Canguilhem, G. (1966) *Le normal et le pathologique*. Paris: Presses Universitaires de France.
- Canguilhem, G. (1992) Machine and Organism. Transl. by M. Cohen and R. Cherry. In J. Crary and S. Kwinter (eds.) *Incorporations*. New York: Zone Books.
- Cogdell, C. (2010) *Eugenic Design: Streamlining America in the 1930s*. Philadelphia, PA: University of Pennsylvania Press.
- Cogdell, C. (Winter 2013) Products or Bodies? Streamline Design and Eugenics as Applied Biology. *Design Issues*, 19(1): 36-53.
- Cohen, J-L. (2011) *Architecture in Uniform: Designing and Building for the Second World War*. Paris: Editions Hazan and the Canadian Centre for Architecture.
- Collins, H. and Evans, R. (2017) *Rethinking Expertise*, Chicago, IL: University of Chicago Press.
- Colomina, B. (1994) *Privacy and Publicity: Modern Architecture as Mass Media*. Cambridge, MA: MIT Press.
- Colomina, B. (ed.) (1992) *Sexuality and Space*. New York: Princeton Architectural Press.
- De Fusco, R. (1974) *Storia dell'architettura contemporanea*. Roma-Bari: Laterza.

- de Solà-Morales, I. (1997) Absent bodies. In Davidson, C. (ed.) *Anybody*, pp. 16-25. Cambridge, MA: MIT Press.
- Diffrient, N., Tilley, A. R. and Bardagjy, J. C. (1974) *Humanscale 1/2/3: A Portfolio of Information*. Cambridge, MA.: MIT Press
- Diffrient, N., Tilley, A. R. and Bardagjy, J. C. (1981) *Humanscale 4/5/6: A Portfolio of Information*. Cambridge, MA.: MIT Press.
- Dreyfuss, H. (1955) *Designing for People*. New York: Simon & Schuster.
- Dreyfuss, H. (1960) *The Measure of Man: Human Factors in Design* 1st ed. New York: Whitney Library of Design.
- Dorhofer, K. (1999) Der ‘mannliche’ Blick in der Bauentwurfslehre. In W. Prigge (ed.) *Ernst Neufert: Normierte Baukultur im 20. Jahrhundert*, pp. 159-167. Dessau-Roßlau, D: Edition Bauhaus.
- Ellis, R. and Cuff, D. (1989) *Architects’ People*. Oxford, UK: Oxford University Press.
- Emmons, P. and Mihalache, A. (2013) Architectural handbooks and the user experience. In K. Cupers, *Use Matters: An Alternative History of Architecture*, pp. 35-50. New York: Routledge.
- Ewald, F. (1990) Norms, Discipline, and the Law. *Representations* 30: 138-161.
- Fitz, A. and Krasny, E. (2019) *Critical Care: Architecture and Urbanism for a Broken Planet*. Cambridge, MA: MIT Press.
- Foucault, M. (1975) *Surveiller et punir. Naissance de la prison*. Paris: Gallimard.
- Foucault, M. (1978) *The History of Sexuality, Volume I: An Introduction* (translation of *La Volonté de savoir*). Transl. Hurley R. New York: Random House, Inc. Originally published in France as Id. (1976) *La volonté de savoir. Histoire de la sexualité. I*. Paris: Gallimard.
- Foucault, M. (1980) *Power/Knowledge*. New York: Vintage.
- Foucault, M. (1999) *Les anormaux. Cours au Collège de France. 1974-1975*. Paris: Gallimard-Seuil.
- Foucault, M. (2001) The birth of social medicine. In P. Rabinow (ed.) *The Essential Works of Michel Foucault 1954–1984. Power* 3, pp. 134-156. New York: The New Press.
- Foucault, M. (2007) *Security, Territory, Population: Lectures at the Collège de France 1977-1978*. Transl. G. Burchell. New York: Palgrave. Originally published in France as Id. (2004) *Sécurité, territoire, population. Cours au Collège de France 1977-1978*. Paris: Gallimard-Seuil.
- Fascari, M. (1987 Autumn) The Body and Architecture in the Drawings of Carlo Scarpa. *RES: Anthropology and Aesthetics* 14: 123-142.
- Gigerenzer, G., Swijtink, Z., Porter, T., Daston, L., Beatty, J. and Kruger, L. (1989) *The Empire of Chance: How Probability Changed Science and Everyday Life*. Cambridge, UK: Cambridge University Press.
- Gould, S. (1981) *The Mismeasure of Man*. New York: W. W. Norton.
- Grenier, C. (2013) *Modernités Plurielles 1905-1970*. Catalogue of the exhibition *Modernités Plurielles 1905-1970* (Multiple Modernities), held from 2013 to 2015 at the Musée National d’Art Moderne (Centre Georges Pompi-

dou), Paris. Paris: Éditions du Centre Pompidou.

Grosz, E. (1992) Bodies-cities, in Colomina, B. (ed.) *Sexuality and Space*, pp. 241-254. New York: Princeton Architectural Press.

Grosz, E. (1994) *Volatile Bodies: Towards a Corporeal Feminism*. Bloomington, IN: Indiana University Press.

Habraken, N. J. (2005) *Palladio's Children*, Abingdon, UK: Taylor & Francis.

Hamraie, A. (2017) *Building Access: Universal Design and the Politics of Disability*. Minneapolis, MN: University of Minnesota Press.

Hammonds, E. and Herzig, R. (2008) *The Nature of Difference: Sciences of Race in the United States from Jefferson to Genomics*. Cambridge, MA: MIT Press.

Hickman, M. (2020) Flower Power. Stefano Boeri reveals a pavilion and marketing campaign to get Italians excited about COVID-19 vaccination. *The Architect's Newspaper*. Retrieved 20 December 2020 from: <https://www.archpaper.com/2020/12/stefano-boeri-reveals-a-pavilion-and-marketing-campaign-to-get-italians-excited-covid-19-vaccination/>

Hosey, L. (2006) Hidden Lines: Gender, Race, and the Body in Graphic Standards. *Journal of Architectural Education* 55(2): 101-112.

Imrie, R. and Street, E. (2011) *Architectural Design and Regulation*. Oxford: Blackwell Publishing Ltd.

Imrie, R. (2003) Architects' Conceptions of the Human Body. *Environment and Planning D: Society and Space* 21(1): 47-65.

Imrie, R. (1999) The body, disability and Le Corbusier's conception of the Radiant environment, in R. Butler and H. Parr (eds.) *Mind and Body Spaces: Geographies of Disability, Illness and Impairment*, pp. 25-45. London and New York: Routledge.

Ingold, T. (2012) *Making: Anthropology, Archaeology, Art and Architecture*. New York: Routledge.

Irigaray, L. (1993) *An Ethics of Sexual Difference*. Ithaca, NY: Cornell University Press.

Kevles, D. (1985) *In the Name of Eugenics: Genetics and the Uses of Human Heredity*. Berkeley, CA: University of California Press.

Knorr-Cetina, K. D. (1999) *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.

Krasny, E. (2019) Architecture and Care. In A. Fitz and E. Krasny (eds.) *Critical Care: Architecture and Urbanism for a Broken Planet*. Cambridge, MA: MIT Press.

Lampland, M. and Star, S. L. (eds.) (2009) *Standards and Their Stories: How Quantifying, Classifying and Formalizing Practices Shape Everyday Life*. Ithaca, NY: Cornell University Press.

Le Corbusier (1925) *The Decorative Art of Today*. London: Architectural Press.

Le Corbusier (1947) *When the Cathedrals Were White: A Journey to the Country of Timid People*, transl. by F. Hyslop. London: Routledge. Originally published in France as Id. (1937) *Quand le cathédrales étaient blanches*. Paris: Plon.

Le Corbusier (1967) *The Radiant City*. London: Faber and Faber Ltd. Originally published in France as Id. (1933) *La Ville Radiense, (Éléments d'une doctrine d'urbanisme pour l'équipement de la civilisation machiniste)*, Collection de l'équipement de la civilisation machiniste. Boulogne-sur-Seine, FR: Édition de l'Architecture d'Aujourd'hui.

Le Corbusier (1986) *Towards a New Architecture*. Trowbridge, UK: Butterworth Architecture. Originally published in France as Id. (1923) *Vers une architecture*. Paris: Cres.

Lester T. (2012) *Da Vinci's Ghost: Genius, Obsession, and How Leonardo Created the World in His Own Image*. New York: Free Press.

Lupton, E., Lambert T. and Carpentier, T. (2014) *Beautiful Users: Designing for People*, New York: Princeton Architectural Press.

McEwen, I. K. (2003) *Vitruvius: Writing the Body of Architecture*. Cambridge, MA: MIT Press.

Marble, S. (1988) *Architecture and Body*. New York: Rizzels.

Mitchell, D. and Snyder S. (2006) *Cultural Locations of Disability*, Chicago, IL: University of Chicago Press.

Moore, K. (2001), The scientist, the social activist, the practitioner and the cleric: pedagogical exploration towards a pedagogy of practice. *Journal of Architectural and Planning Research* 18(1): 59-79.

Neufert, E. (1936) *Bauentwurfslehre: Grundlagen, Normen und Vorschriften über Anlage, Bau, Gestaltung, Raumbedarf, Raumbeziehungen*. Berlin: Bauwelt-Verlag.

Neurath, O. (1973) From Vienna Method to ISO-TYPE in M. Neurath M. and R. Cohen (eds.) *Empiricism and Sociology*. Boston: Reidel.

Padovan, R. (1999) *Proportion: Science, Philosophy, Architecture*. New York: Taylor & Francis.

Pai, H. (2002) *The Portfolio and the Diagram: Architecture, Discourse, and Modernity in America*. Cambridge, MA: MIT Press.

Papanek, V. J. (1972) *Design for the Real World: Human Ecology and Social Change*. New York: Pantheon.

Papanek, V. J. (1983) *Design for Human Scale*. New York: Van Nostrand Reinhold.

Quetelet, A. (1835) *Sur l'Homme et le Développement de Ses Facultés; ou, Essai de Physique Sociale*, 2 vols. Paris: Hachette Livre Bnf.

Rabinow, P. (1995) *French Modern: Norms and Forms of the Social Environment*. Chicago, IL: The University of Chicago Press.

Ramsey, C. G. and Sleeper, H. R. (1932) *Architectural Graphic Standards*. 1st ed. New York: John Wiley & Sons.

Ramsey, C. G. and Sleeper, H. R. (1941) *Architectural Graphic Standards*, 3rd ed. New York: John Wiley & Sons.

Ramsey, C. G. and Sleeper, H. R. (1981) *Architectural Graphic Standards*, 7th ed. New York: Wiley.

Relph, E. C. (1987) *The Modern Urban Landscape: 1880 to the Present*. Baltimore, MD: Johns Hopkins University Press.

Ridolfi, M. (ed.) (1946) *Il Manuale dell'Architetto*. Roma: published by the C.N.R.-U.S.I.S.

- Rose, N. (1999) *Powers of Freedom*. Cambridge, UK: Cambridge University Press.
- Roth, L. (1993) *Understanding Architecture: Its Elements, History, and Meaning*. New York: The Perseus Books Group.
- Schweik, S. M. (2010) *The Ugly Laws: Disability in Public*. New York: New York University Press.
- Scott, G. (1914) *The Architecture of Humanism: A Study in the History of Taste*. London: Architectural Press.
- Sekula, A. (1986) The Body and the Archive. *October* 39 (Winter): 3-64.
- Speer, A. (1970) *Inside the Third Reich*, transl. by Winston, R. and C., with introduction by E. Davidson. New York: The MacMillan Company.
- Siebers, T. (2008) *Disability Theory*. Ann Arbor, MI: University of Michigan Press.
- Taylor, F. W. (1911) *The principles of scientific management*. New York and London: Harper & Brothers.
- Taylor, D. (2009) Normativity and Normalization. *Foucault Studies* 7, September: 45-63.
- Tschumi, B. (1996) *Architecture and Disjunction*. Cambridge, MA: MIT Press.
- Till, J. (2005) The negotiation of hope, in P. Blundell Jones, D. Petrescu and J. Till (eds) *Architecture and Participation*, pp. 19-40. New York: Spon Press.
- Till, J. (2009) *Architecture Depends*. Cambridge, MA: MIT Press.
- Time-Saver Standards: A Manual of Essential Architectural Data* (1946) New York: F. W. Dodge Corporation.
- Vidler, A. (1994) *The Architectural Uncanny: Essays in the Modern Unhomely*. Cambridge, MA: MIT Press.
- Vitruvius (1960) *The Ten Books of Architecture*. New York: Dover Publications. Originally published in Italy as Marco Vitruvio Pollione (ca. 15 a. C.) *De Architectura*. Editio Princeps (1486-87) Roma: Eucharius Silber.
- Vossoughian, N. (2015) From A4 Paper to the Octametric Brick: Ernst Neufert and the Geopolitics of Standardisation in Nazi Germany. *Journal of Architecture* 20(4): 675-698.
- Vossoughian, N. (Winter 2014) Standardization Reconsidered: Normierung in and after Ernst Neufert's Bauentwurf-lehre. *Grey Room*, 54(54): 34-55.
- Wagner, K. (2020) Coronagrifting: A Design Phenomenon. *McMansion Hell*. Retrieved 20 December 2020 from: <https://mcmansionhell.com/post/618938984050147328/coronagrifting-a-design-phenomenon?fbclid=IwAR0HvyPIdQqrQx8VPT1vjVv11EBWKGJQkrFvf4q7UU0WhqkLwhriJGijj0>
- Webster, H. (2005) The Architectural Review: ritual, acculturation and reproduction in architectural education. *Arts and Humanities in Higher Education* 4(3): 265-282.
- Webster, H. (2006) A Foucauldian look at the Design Jury. *Art, Design & Communication in Higher Education* 5(1):5-19.
- Webster, H. (2007) The Analytics of Power – Re-presenting the design jury. *Journal of Architectural Education* 60(3): 21-27.

Wetmore Story, W. (1864) *Proportions of the Human Figure, According to the Canon, for Practical Use*. London: Chapman and Hall.

Williamson, B. (2019) *Accessible America: A history of disability and design*. New York: New York University Press.

Wingler, H. M. (1978) *Bauhaus. Weimar, Dessau, Berlin, Chicago*. Cambridge, MA: MIT Press. Original German text: Gropius, W. (1919 April) *Programm des Staatlichen Bauhauses in Weimar* (pamphlet).

Wittkower, R. (1971) *Architectural Principles in the Age of Humanism*. New York: W. W. Norton.

Zevi, B. (ed.) (1996) *Nuovo manuale dell'architetto*. Roma: Mancosu.

Zevi, L. (ed.) (2003) *Nuovissimo manuale dell'architetto*. Roma: Mancosu.

Zucconi, G. (1992) La cultura igienista nella formazione dell'urbanistica. In C. Bianchetti (ed.) *Città immaginata e città costruita. Forma empirismo e tecnica in Italia tra Otto e Novecento*. Milano: Franco Angeli.



The 'Things' of architecture: STS and the more-than-human challenge

Introduction

This chapter dwells on the contribution that the reflections of *Science and Technology Studies* (STS) might offer to reflect on the theme of participation in architecture, on the problem of knowledge and, in particular, expert knowledge. Indeed, such contribution consists in, first of all, suggesting a more-than-human perspective, able to complexify further the meaning of participation and the 'parts' involved, that is, reflecting on which and how many they are.

The field of STS emerged in the 1970s to investigate the close link between scientific knowledge and power. By analysing the work of scientists in their laboratories, social scientists and ethnographers sought to demonstrate how scientific facts take shape and the ways in which 'expert authority' is constructed. One of the most relevant issues introduced by these studies, and by the *Actor-Network Theory* (ANT) in particular, is the political agency of non-humans, considered as active parties in the social reality. Binomials such as nature/culture, human/non-human, subject/object, which also belong to modernist logic, are progressively questioned and treated as an effect, i.e. as a product of the purification of more complex relations. ANT, therefore, proposes a new vision, which adds – or restores – a material dimension to the social sphere. Particularly relevant to this view has been the notion of 'heterogeneous engineering', formulated in opposition to the current principles of the social sciences: according to ANT scholars, in fact, it was necessary to go beyond an exclusively human vision of social reality and to rather focus on its constitutive socio-material dimension. The concept of society is thus substituted, from this perspective, by multiple and heterogeneous networks. The metaphor of 'heterogeneous engineering' has been used, indeed, to describe the operations that can bring together and discipline ideas, materials, procedures, tools, technology, and humans, and can assemble said heterogeneous entities into 'black boxes'.

However, early ANT survey methods were later criticised for their focus on the centrality of engineers and designers and on their ability to inscribe certain types of behaviour and users through material artefacts design. Starting from these considerations, STS and ANT authors have begun to reflect on other forms, not implicit, of thinking about the relationship between design and politics. Indeed, the aim was to move from accounts

of the 'sub-political' capacity of design, to others focused on its capacity to render – hidden – connections and controversies explicit, public, and debatable. In particular, there was a shift from the analysis of 'scripts' to the politicisation of 'things', and thus from politics to 'cosmopolitics'.

Interestingly, with regard to the field of architecture, the metaphor of heterogeneous engineering was not just used to analyse artefacts and to understand how within them social norms are inscribed, but also to study designers' practices and the way in which they 'manufacture' social worlds. Design, just like scientific work, is viewed as the heterogeneous engineering of the networks in which people and things 'perform' through a series of mediators. Such studies reveal how design is a socio-material practice and, therefore, mediated, and which is carried out through very specific devices and techniques.

By opening the 'black-boxes' of scientific facts, technological artefacts, and design practice itself, STS scholars have made the experts' cultural authority questionable, showing a commitment towards the democratisation of technical knowledge. In particular, in response to growing uncertainties and controversies emerged around scientific and technological issues, some scholars have stressed the need to foster new forms of 'co-production' of knowledge, overcoming the division between experts and lay people. This, then, relates once more to the main topic of this thesis, that is to say, participation in architecture. At this point, we need to ask ourselves again: what does democratisation, or participation, mean? Which, and how many, are the involved 'parts'? The influence of pragmatist philosophy on ANT and related material-semiotic approaches spurred a number of scholars and designers to reformulate the idea of participation by shifting the focus from proceduralist methods, with already defined groups, to others that are inherently more experimental and processual, based on engagement with 'publics' on specific controversial 'issues'. In particular, such perspective invites us to focus on the material dimension of participation. In other words, objects, devices and materials, not just human subjects, play a role in enacting particular ideals of citizenship and participation. In this light, thus, participation, rather than an activity oriented towards an abstract ideal of the 'common good', becomes an 'infrastructuring' process, consisting of diverse and situated actions of tinkering and alteration in search of more democratic arrangements.

Another aspect that takes on particular relevance, beyond the idea of the 'composition' of the 'common world' – or the 'cosmos' –, is Isabelle Stengers's invitation to continually foster situations that might destabilise its existing versions – or, in our case, predefined versions of 'community', or of who and how participates in architectural design – so

as to make new and unknown configurations possible¹. This turns out to be an ethical-political commitment to take into account all the heterogeneous entities – or ‘parts’ – that constitute the common world, without losing sight of potential victims. In this regard, María Puig de la Bellacasa’s concept of ‘matters of care’², adding a more-than-human dimension to the feminist perspectives presented in chapter I, emphasises the necessity of taking into account neglected parts and issues. In other words, it invites us to actively engage in challenging accepted ‘truths’ and dominant paradigms, giving voice to those human and non-human actors who have different capacities and may not be able to express, in the same way, their concern and need for care.

1 Cf. Stengers, I. (2005) The cosmopolitical proposal. In B. Latour and P. Weibel (eds.) *Making things public: atmospheres of democracy*, pp. 994-1003. Cambridge, MA – Karlsruhe, D: MIT Press – zKM/Center for Art and Media in Karlsruhe.

2 Cf. Puig de la Bellacasa, M. (2017) *Matters of Care: Speculative Ethics for a More Than Human World*. Minneapolis, MN: University Press.

1. STS and techno-science as social construction

Foucault's contribution, as we have seen in chapter II, had been crucial in revealing the connection between knowledge and power. Although not unaware of the existence of a much more complex network of influences, suffice it to say here, for the interest of this thesis, that, among others, Foucault's reflections have strongly contributed to the development of an interest of social sciences in the study of science, where a close association between scientific knowledge and power was discerned. The field of study known as *Science and Technology Studies* (STS) was born precisely for inquiring the extensive power of science and technology in contemporary society.

In a nutshell, the field investigates how scientific facts are socially constructed and black-boxed³, thus making the cultural authority of techno-science contestable. Particularly, in the attempt to understand how the power of science works, a group of ethnographers and social scientists in the 1970s entered the laboratories to directly observe practical, day-to-day activities of scientists. As sociologist Jonathan Murdoch put it: “[w]ithin the ethnographies, scientists are shown to be using a variety of means to bring nature ‘into being’ in the laboratory just as Foucault had shown the human sciences bringing particular conceptions of ‘man’ into being within prisons and asylums”⁴.

Bruno Latour, himself pioneer in the so-called ‘laboratory studies’⁵, together with Steve Woolgar announced their intention to study scientists as follows:

“Since the turn of the century, scores of men and women have penetrated deep forests, lived in hostile climates, and weathered hostility, boredom, and disease in order to gather the remnants of so-called primitive societies. By contrast to the frequency of these anthropological excursions, relatively few attempts have been made to penetrate the intimacy of life among tribes which are much nearer at hand. This is perhaps surprising in view of the reception and importance attached to their product in modern civilised societies: we

3 Cf. Latour, B. (1987) *Science in Action*. Cambridge, MA.: Harvard University Press. As Latour explains, the ‘black box’ is a concept drawn from cybernetics: it refers to a device that gives certain outputs as a result of certain inputs, but whose inner workings are complex and unknown. One need not understand what is inside a ‘black box’ for it to perform its function.

4 Murdoch, J. (2006) *Post-structuralist geography: a guide to relational space*. London, Thousand Oaks, CA, New Delhi: Sage Publications, p. 59. Notably, Murdoch draws on philosopher Ian Hacking: Hacking, I. (1986) Making up people. In T. Heller, M. Sosna and D. Wellberry (eds) *Reconstructing Individualism: Autonomy, Individuality, and the Self in Western Thought*, pp. 222-236. Stanford, CA: Stanford University Press.

5 See also: Knorr-Cetina, K. (1981) *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science*. Oxford, UK: Pergamon Press; Lynch, M. (1985) *Art and Artifact in Laboratory Science: A Study of Shop Work and Shop Talk in a Research Laboratory*. London: Routledge and Kegan Paul; Collins, H. (1985) *Natural Order: Replication and Induction in Scientific Practice*. London: Sage Publications; Traweek, S. (1988) *Beamtimes and Lifetimes: The World of High Energy Physicists*. Cambridge, MA: Harvard University Press.

refer, of course, to tribes of scientists and to their production of science”⁶.

Thanks to these studies, scientific knowledge became a legitimate subject of sociological investigation: science could be analysed from a sociological perspective, and the dynamics within the laboratories could be explained by notions such as power, interest, norm, gender and class. The ethnographies carried out by these scholars have revealed how the construction, not only of data but of the phenomena themselves, is framed by skills, cultures and routine negotiations in the laboratory. In doing so, they aimed to shed light on the contingent and uncertain dimension of science, inadvertently or deliberately hidden when scientific facts and theories are transferred to society.

2. Thinking the social otherwise: the ANT and the political agency of non-humans

A particularly interesting field of research in STS⁷ is known as *Actor-Network Theory* (ANT), an influential perspective developed by Latour together with Michel Callon and John Law⁸. What prompted these scholars to embark on this direction was the will to extend their research beyond the confined space of the laboratory to its implications on the world at large. In particular, they began to insert the ‘material’ in the picture, thereby signalling a crucial shift from an account of technoscience as a (socially) constructed enterprise to one that focuses on the role of technoscience itself – and on its materiality – in the construction of society.

In short, these social scientists sought to demonstrate how science exerts its power by controlling and manipulating elements, both human and nonhuman, in ways that allow scientific facts to be built and then disseminated beyond the centres of scientific practice. ANT therefore offers an original and far-reaching re-conceptualisation of agency involving non-humans [i.b. III. 1] in the construction of the world and society,

6 Latour, B. and Woolgar, S. (1986) *Laboratory Life: The Construction of Scientific Facts*. Princeton, NJ: Princeton University Press, p. 17.

7 It is no easy to account for the numerous research programmes in STS. Anyway, a full-blown survey of this multidisciplinary field – that has so strongly contributed to shaping new perspectives in sociology, philosophy, science and technology – is beyond the scope of this investigation. For useful accounts of STS see: Yearley, S. (2005) *Making Sense of Science: Understanding the Social Study of Science*. London: Sage Publications; Sismondo, S. (2004) *An introduction to science and technology studies*. Oxford, UK: Blackwell Publishing Ltd.

8 This group of sociologists was working at the ‘Centre de Sociologie de l’Innovation’ of the École Nationale Supérieure des Mines de Paris. Among their earlier works there are: Callon, M. (1986a) Some elements in a sociology of translation. In J. Law (ed.) *Power, Action, Belief: A New Sociology of Knowledge*, pp. 196–223. London: Routledge and Kegan Paul; Latour, B. (1987) *Science in Action*; Latour, B. (1988) *The Pasteurization of France*. Cambridge, MA: Harvard University Press; Law, J. (1987) Technology, closure and heterogeneous engineering: the case of the Portuguese expansion. In W.E. Bijker, T.P. Hughes and T.J. Pinch (eds.) *The Social Construction of Technological Systems, New Directions in the Sociology and History of Technology*, pp. 111–134. Cambridge, MA: The MIT Press.

i.b. III. 1 - The term 'nonhuman'

Notably, the term 'non-human' is used to replace 'object' and to broaden its scope. Some years after his first contribution to ANT, Latour defined it as a "concept that has meaning only in the difference between the pair 'human-nonhuman' and the subject-object dichotomy (...). The pair human-nonhuman is not a way to 'overcome' the subject-object distinction, but a way to bypass it entirely"¹. In using these two terms, in fact, Latour seeks to avoid the restricted roles for subjects and objects that traditionally see objects as passive things for human subjects to use: his aim is to recognize the active role of nonhumans which is often forgotten or denied.

1 Latour, B. (1999) *Pandora's Hope. Essays on the Reality of Science Studies*. Cambridge, MA; London, UK: Harvard University Press, p. 308.

challenging the sovereignty of human action. From then on, genes, particles, scientific equipment and research papers would be placed on the same level as social interests, power and rhetoric in accounts of knowledge production and dissemination. Indeed, the division between science and society was seen as part of a broader modernist division between nature and society, objects and subjects, science and politics, which, according to these researchers, was in need of a major overhaul. In particular, according to them, this division has always been fictitious: it is no coincidence that Latour stated that 'we have never been modern' (to know more about this important argument, see [\[i.b. III. 2\]](#)).

Heterogeneous engineering

Therefore, one of the pillars of ANT is the consideration of knowledge as a social product – consisting of a network of heterogeneous components – rather than the product of a generic scientific method. In the analysis of the relationship between the laboratory and its external environment attention was given to the ways and means whereby laboratories draw entities in from the outside, transform them in various ways, and then export them back to the world in the form of scientific facts. In the following, I will attempt to give an incomplete account of these studies and then focus on how they have proved relevant to thinking about the field of architecture, both in terms of its material products and artefacts and its very design practices.

In his famous book *Science in Action*⁹ – and then in *The Pasteurization of France*¹⁰ –

9 Cf. Latour, B. (1987) *Science in Action*.

10 Cf. Latour, B. (1988) *The Pasteurization of France*.

Latour approached the task of accounting for how laboratories gain their power in the world through the use of a case study, which was scientist Louis Pasteur's work in his laboratory in the *École Normale Supérieure* in Paris in 1881. Here Latour shows that power consists in the ability to bind together actors located outside the laboratory into networks that allow scientific facts and artefacts to travel far and wide. Scientists like Pasteur, to be successful, must have the capability to use 'mediators', to 'translate interests'. To become great and powerful, they must be able to build networks and to enrol heterogeneous allies – made of differing entities and resources –, which make networks function correctly. In this exercise of 'translation' nonhumans play a crucial role, for they become 'delegates' and thus transfer rationalities of rule from the centre out to the network.

In other words, in order to deal with the world outside the laboratory, scientists create a number of 'inscriptions', which are "the photos, maps, graphs, diagrams, films, acoustic or electric recordings, direct visual observations noted in a laboratory logbook, illustrations, 3-D models, sound spectrums, ultrasound pictures, or X-rays as arranged and filtered by means of geometric techniques"¹¹. Their work consists in "setting up experiments so that the entities they are studying can be made 'to write' in the form of these inscriptions, and then of combining, comparing, and interpreting them. Through these successive *translations* researchers end up able to make statements about the entities under experimentation"¹². As Latour declares:

"I was struck, in a study of a biology laboratory, by the way in which many aspects of laboratory practice could be ordered by looking not at the scientists' brains (I was forbidden access!), at the cognitive structures (nothing special), nor at the paradigms (the same for thirty years), but at the transformation of rats and chemicals into paper (...). [T]heir end result, no matter the field, was always a small window through which one could read a very few signs from a rather poor repertoire (diagrams, blots, bands, columns)"¹³.

To produce inscriptions scientists use instruments, or 'inscription devices', which are the interface between them and the real world, or, in Latour and Woolgar's words, "any item of apparatus or particular configuration of such items which can transform a material substance into a figure or a diagram which is directly usable by one of the members of the office space"¹⁴. Inscriptions, therefore, constitute particular versions of knowledge, being all the types of transformations through which entities outside the lab

11 Callon, M. (2001) Actor-Network Theory. In N. J. Smelser and P. B. Baltes (eds.) *International Encyclopedia of the Social & Behavioral Sciences*, pp. 62-66. Oxford, UK: Elsevier, p. 62.

12 Ibidem.

13 Latour, B. (1990) Drawing things together. In M. Lynch and S. Woolgar (eds.) *Representation in Scientific Practice*, pp. 19-68. Cambridge, MA: The MIT Press, p. 22.

14 Latour, B. and Woolgar, S. (1986) *Laboratory Life: The Construction of Scientific Facts*, p. 51.

i.b. III. 2 - *We Have Never Been Modern*

In *We Have Never Been Modern*¹, Latour starts an investigation that he will develop more fully in the 2000s. Basically, he begins to wonder why people continue to divide reality into two distinct realms, human-society-politics and non-human-nature-science, when everything we see and read demonstrates their inextricable intertwining. Even a quick glance at the newspaper shows that “[a]ll of culture and all of nature get churned up again every day”². Indeed:

“On page four of my daily newspaper, I learn that the measurements taken above the Antarctic are not good this year: the hole in the ozone layer is growing ominously larger. Reading on, I turn from upper-atmosphere chemists to Chief Executive Officers of Atochem and Monsanto, companies that are modifying their assembly lines in order to replace the innocent chlorofluorocarbons, accused of crimes against the ecosphere. A few paragraphs later, I come across heads of state of major industrialized countries who are getting involved with chemistry, refrigerators, aerosols and inert gases. But at the end of the article, I discover that the meteorologists don’t agree with the chemists; they’re talking about cyclical fluctuations unrelated to human activity. So now the industrialists don’t know what to do. The heads of state are also holding back. Should we wait? Is it already too late? Toward the bottom of the page, Third World countries and ecologists add their grain of salt and talk about international treaties, moratoriums, the rights of future generations, and the right to development. (...) On page eight, there is a story about computers and chips controlled by the Japanese; on page nine, about the right to keep frozen embryos; on page ten, about a forest burning, its columns of smoke carrying off rare species that some naturalists would like to protect; on page eleven, there are whales wearing collars fitted with radio tracking devices; also on page eleven, there is a slag heap in northern France, a symbol of the exploitation of workers, that has just been classified an ecological preserve because of the rare flora it has been fostering! On page twelve, the Pope, French bishops, Monsanto, the Fallopian tubes, and Texas fundamentalists gather in a strange cohort around a single contraceptive”³.

As evident as this proliferation of hybrids or ‘quasi-objects’ is, the separation of nature from science, and knowledge of things from human society and politics, stubbornly continues. And yet, “[t]he smallest AIDS virus takes you from sex to the unconscious, then to Africa, tissue cultures, DNA and San Francisco, but the analysts, thinkers, journalists and decision-makers will slice the delicate network traced by the virus for you into tidy compartments where you will find only science, only economy, only social phenomena, only local news, only sentiment, only sex”⁴. Indeed, the ‘modern constitution’ – Latour’s name for the tacitly agreed divisions between humans and non-humans, politics and science, power and knowledge – prevails in our collective imagination. As he argues, we have managed to do one thing and say the opposite,

1 Cf. Latour, B. (1993) *We Have Never Been Modern*. Cambridge, MA: Harvard University Press.

2 Ibid. p. 2.

3 Ibid. pp. 1-2.

4 Ibid. p. 2.



i.e. to separate a set of practices which “by ‘translation’, creates mixtures between entirely new types of beings, hybrids of nature and culture” from another which, “by ‘purification’, creates two entirely distinct ontological zones: that of human beings on the one hand; that of nonhumans on the other”⁵. It is precisely our stubborn attitude to separation, says Latour, that has made it possible for such proliferation to continue unabated. “Without the first set, the practices of purification would be fruitless or pointless. Without the second, the work of translation would be slowed down, limited, or even ruled out”⁶. Indeed, “the modern Constitution allows the expanded proliferation of the hybrids whose existence, whose very possibility, it denies” by refusing to conceptualize them as such⁷. According to Latour, the time has come to welcome what ANT has discovered and “stop having been modern” and become “retrospectively aware that the two sets of practices have always already been at work in the historical period that is ending”⁸. He also points out how this proliferation of hybrids has occurred in the absence of a public life capable of tracking and composing our socio-technical imbroglios. We need a new, ‘non-Modern Constitution’, Latour argues, to manage the proliferation of hybrids in a more deliberate, responsible and traceable way: “we are going to have to slow down, reorient and regulate the proliferation of monsters by representing their existence officially. Will a different democracy become necessary? A democracy extended to things?”⁹. Right here he introduces for the first time his famous conceptual metaphor of a ‘Parliament of Things’, where hybrids become public things and their translations and mediations are revealed: “We want the meticulous sorting of quasi-objects to become possible—no longer unofficially and under the table, but officially and in broad daylight. In this desire to bring to light, to incorporate into language, to make public, we continue to identify with the intuition of the Enlightenment”¹⁰.

5 Ibid. pp. 10-11.

6 Ibid. p. 11.

7 Ibid. p. 34.

8 Ibid. p. 11.

9 Ibid. p. 12.

10 Ibid. p. 142.

are materialized into something ‘legible’ and amenable for scientists to use. Also called by Latour ‘immutable mobiles’¹⁵, they have to keep their ‘form’ intact – and thus be ‘immutable’ – despite being in motion – that’s why ‘mobiles’ –, allowing the compilation and recombination of results. In other words, their work has to do with the rendering of what is complex and not-yet-fixed, stable and immutable and therefore possible to circulate in forms of formulae or visual representations. Thinking of a map, as Latour explains¹⁶, helps us to understand this process: the map, in fact, is an inscription that translates space into diagrammatic form, thereby reducing spatial relations to a single

15 Cf. Latour, B. (1987) *Science in Action*; Latour, B. (1990) Drawing things together.

16 Cf. Latour, B. (1990) Drawing things together.

– and, therefore, legible and governable – sheet of paper. The map is mobile, while the land is not, and at the same time is immutable, while, using Latour’s example, the drawing on the sand of a native man is not. By drawing a map on paper, it is possible to carry the remote land back to the center – i.e. the laboratory – even if the real one remains at its own place¹⁷.

ANT researchers, therefore, aimed at ‘tracing’ the circulation of such inscriptions, which both shape and are created by a particular version of knowledge (to say it in other words, scientists produce them and, at the same time, are conditioned by their world-creating effects). An example of the complexity of such tracing is offered by Callon:

“The map drawn up by a geologist, based on readings in the field; the photos used to follow the trajectories identified by detectors in a particle accelerator; the multicolored strips stacked on a chromatograph; the tables of social mobility drawn up by sociologists; the articles and books written by researchers: all these circulate from one laboratory to the next, from the research center to the production unit, and from the laboratory to the expert committee which passes it on to a policy maker. When a researcher receives an article written by a colleague, it is the genes, particles, and proteins manipulated by that colleague in her or his own laboratory that are present on the researcher’s desk in the form of tables, diagrams, and statements based on the inscriptions provided by instruments. Similarly, when political decision makers read a report that asserts that diesel exhaust fumes are responsible for urban pollution and global warming, they have before them the vehicles and atmospheric layers that cause that warming”¹⁸.

The peculiar interest of ANT in following the various entities that participate in the production of ‘facts’, in turn, mobilises a spatial vocabulary: what it reveals, indeed, is that space itself is ‘produced’ by different associations. Therefore, it is topological rather than unique, absolute, just like it was in the Euclidean conception. In particular, in early ANT studies, inscriptions are seen to circulate in space and time in stable networks [i.b. III. 3]. These networks have a ‘socio-technical’ nature¹⁹, since the inscriptions connect humans with the things their statements refer to – such as cells,

17 Latour also uses other examples. For instance, recalling William Mills Ivins’s words, he mentions linear perspective, “[b]ecause of its logical recognition of internal invariances through all the transformations produced by changes in spatial location” (Ivins, 1973: 9). In perspective, Latour writes, “no matter from what distance and angle an object is seen, it is always possible to transfer it—to translate it—and to obtain the same object at a different size as seen from another position”. In this sense, it “creates ‘optical consistency,’ or, in simpler terms, a regular avenue through space”. Ibid. p. 27; Ivins, W. M. (1973) *On the Rationalization of Sight*. New York: Da Capo Press.

18 Callon, M. (2001) Actor-Network Theory, pp. 62-63.

19 Cf. Callon, M. (1986b) The Sociology of an Actor-Network: The Case of the Electric Vehicle. In M. Callon, J. Law and A. Rip (eds.) *Mapping the Dynamics of Science and Technology: Sociology of Science in the real World*. London: MacMillan Press.

i.b. III. 3 - Spatial metaphors and the distribution of agency in *Actor Network Theory*

Notably, the spatial analysis proposed by ANT scholars focuses on the ways in which knowledge is distributed among the different actors. What interests them, and pushes them to use the conceptual tools of topological-spatial analysis, is not so much a characterisation of space, as a reflection on the spatiality – or spatial distribution – of knowledge. It is important to know that the spatial metaphor of the network has been criticized by a number of scholars – mostly feminist thinkers – for having the tendency to colonize all domains in a way that no space remains outside the network itself. Also, these authors have complained that actor-network theory has focused too much its attention on the network builder rather than on other entities potentially excluded from network relations. To put it in Haraway's words: "How is visibility possible? For whom, by whom, and of whom? What remains invisible, to whom, and why? For those peoples who are excluded from the visualizing apparatuses of the disciplinary regimes of modern power-knowledge networks, the *averted gaze* can be as deadly as the all-seeing panopticon that surveys the subjects of the biopolitical state"¹.

Moreover, another interesting criticism was made by Strathern, who pointed out that these scholars had not taken into account the role of procedures, such as legal ones, that prevent the propagation of networks (as in the case of patents or intellectual property). Indeed, Strathern notes how the circulation of knowledge is also regulated by many legal forms that prevent such expansions, or diffusions, and/or allow the rich proliferation of others. In other words, the circulation of knowledge can be – through legal procedures – limited or prevented, as, for instance, in the case of reserved know-how, copyrights, patents², or be liberalised too much (obviously not without specific economic interests) as in the case of many websites' 'cookies'³.

In response to such criticisms, other understandings of space have been introduced besides the network one. Notably, a particularly relevant contribution in connecting the developments in ANT to spatial metaphors has been offered by STS scholars Annemarie Mol and John Law⁴.

1 Haraway, D. J. (1997) *Modest Witness @ Second Millennium: FemaleMan Meets Oncomouse*. London: Routledge, p. 202. See also: Lee, N. and Brown, S. (1994) Otherness and the actor network: the undiscovered continent. *American Behavioural Scientist* 37(6): 772-790; Star, S. L. (1991) Power, Technologies and the Phenomenology of Conventions: On Being Allergic to Onions. In J. Law (ed.) *A Sociology of Monsters: Essays on Power, Technology and Domination*, pp. 26-56. London: Routledge.

2 Cf. Strathern, M. (1996) Cutting the Network. *Journal of the Royal Anthropological Institute* N.S. (2): 517-535.

3 During the pandemic of Covid 19, this has been particularly noticeable with regard to the acquisition of vaccine formulas. From the legal point of view at contractual level, the legislation provides for many forms of protection (arbitration, confidentiality and exclusivity clauses) which are often chosen by the negotiating party with the strongest claim. This makes it difficult to win a case with the big pharmaceutical companies.

4 Cf. Law, J. and Mol, A. (2001) Situating technoscience: an inquiry into spatialities. *Environment and Planning D: Society and Space* 19(5): 609-621.



Regions and networks: Euclidean space and network space

STS and particularly ANT have localised science and technology, which were previously seen as universal, in specific places – laboratories – and in networks that connect them. This, as we have seen, led to the notion of the ‘immutable mobile’, that is what moves through regional space while retaining its form. In this way, then, ‘the global’ was understood as a network for the invariant transport of information, scientific discoveries, technological artefacts. In this network space – a second spatial metaphor coexisting with the first, that is the Euclidean one – the focus is on building an ever-widening network to let ‘immutable mobiles’ circulate. As seen above, this topology has been accused to be ‘panoptic’, technocratic, for it draws attention to the centrality of an actor and his ability to manage his ‘followers’.

Fluid space

A third metaphor, related to a fluid form of spatiality, is the case of the *Zimbabwe bush pump*, which in an earlier text written by Mol together with Marianne de Laet was used to signal a distribution of agency in which the centrality of an ‘author’ is substituted by a more fluid, a-centric and democratic arrangement. The *Zimbabwe bush pump* “spreads far and wide in Zimbabwe. (...) It is a *mutable mobile* (...) that moves to so many places in rural Zimbabwe and that moves (...) precisely because it is not an invariant shape either in network or in Euclidean space.(...) It is a way of encouraging collective action by village dwellers. And then again, it is active in constituting Zimbabwe as a nation to which the villages and the villagers belong”. Notably, “[t]he ‘inventor’ of the bush pump (...) has not sought to impose the rigidities of a patent. He is not bothered when those who install and use the pump introduce alterations. (...) The pump, he says, does not belong to him. His idea is that it was invented by many, and in many different locations. This means that it goes on growing, changing, adapting, and working in places where it would never work if its relations were held stable, as in a network”⁵.

Fire space

A fourth metaphor is that of ‘fire’. “Topologically (...) in fire space a shape achieves constancy in a relation between presence and absence (...) Thus fire becomes a spatial formation alongside (and in interference with) Euclidean, network, and fluid spaces. To say that there is a fire topology is to say that *there are stable shapes created in patterns of relations of conjoined alterity*”⁶. Mol and Law give the example of a physical and mathematical formula. In fact, such a formula is generally the result of a whole series of interactions and conditions that determine

5 Ibid. pp. 613-615. Cf. also de Laet, M., Mol, A. (2000) The Zimbabwe bush pump: mechanics of a fluid technology. *Social Studies of Science* 30: 225-263. See also: Mol, A. and Law, J. (1994) Regions, networks and fluids: anaemia and social topology. *Social Studies of Science* 24(4): 641-671; Law, J. and Hetherington, K. (1998) *Materialities, spatialities, globalities*, published by the Centre for Science Studies, Lancaster University at <http://www.comp.lancs.ac.uk/sociology/papers/law-hetherington-materialities-spatialities-globalities.pdf>; Mol, A. and Law, J. (2002) Complexities: an introduction. In J. Law and A. Mol (eds.), *Complexities: Social Studies of Knowledge Practice*, pp. 1-22. Durham, NC: Duke University Press.

6 Law, J. and Mol, A. (2001) Situating technoscience, p. 616.



it and which no longer appear after it has been developed: its validity depends on what is no longer present. In this sense, it is a 'mutable immobile'.

Interestingly, the authors, to summarize and put together these different topological conceptions and spatialisations of knowledge, take the example of their own paper: "(...) this text is local. As we write it, it is in this personal computer. It is just here and nowhere else. *Immutably immobile*. But if you are reading it then it has moved to another location. (...) If the words you are reading are more or less the same then it has been transported through a network as an *immutable mobile*. (...). But then again, maybe, at the same time, it has become fluid. Some words have changed. It has been edited. While the circumstances in which it is read in which you are reading it, also mean that it has been, however subtly, reconfigured in that reading. The same but also different. Which means that it is, in addition, a *mutable mobile*. And finally? (...) All of these and heaven knows what else are included in a paper like this, are present in it, but also absent from it. A paper, then, this paper, exists within the space of fire – the space of conjoined alterity [on which it depends]. Which means, finally, that it is also a *mutable immobile*. It is four things, located in four spaces: region, network, fluid, and fire"⁷.

7 Ibid. pp. 616-620. A further interesting use of ANT spatial metaphors can be found in: Moreira, T. (February 2004) Surgical monads: a social topology of the operating room. *Environment and Planning D: Society and Space* 22(1): 53-69.

particles, animals and so on – and with the instruments that make them possible – such as microscopes, computers, etc. Actions always take place within networks.

This account of the production and dissemination of scientific facts also served ANT scholars to analyse technology. Indeed, in his account of the process of development of an electric vehicle in France in the 1970s, Callon coined the expression 'sociologist engineers'²⁰, showing that engineers were simultaneously addressing social and technical issues. To put it in his words, "[e]ngineers construct hypotheses and forms of argument that pull these participants in the field of sociological analysis. Whether they want or not, they are transformed into sociologists, or what I call engineer-sociologists"²¹. John Law, for his part, termed this process 'heterogeneous engineering'²², and suggested that large-scale technological innovations like the electric vehicle "can be seen as (...) *network[s]* of juxtaposed components"²³. To give another example, Law mentioned the empirical

20 Cf. Callon, M. (1987) Society in the Making: The Study of Technology as a Tool For Sociological Analysis. In W. Bijker, T. Hughes and T. Pinch (eds.) *The Social Construction of Technological Systems*. Cambridge, MA: MIT Press.

21 Ibid. p. 84.

22 Cf. Law, J. (1987) Technology, closure and heterogeneous engineering: the case of the Portuguese expansion.

23 Ibid. p. 113.

case of the Portuguese expansion in the sixteenth century, and, more precisely, the reconstruction of the navigational context undertaken by them in order to secure the mobility and durability of their vessels. In this endeavour, he writes, the Portuguese had to construct “a network of artifacts and skills for converting the stars from irrelevant points of light in the night sky into formidable allies in the struggle to master the Atlantic”²⁴. Techno-science, therefore, according to these accounts, is a matter of ‘acting in concert’²⁵. Scientific facts are seen as resulting from heterogeneous networks whose components are made to act as if they were in agreement, and artefacts as heterogeneous networks of components made to act together so as to achieve a particular consistent effect. From this perspective, thus, the concept of society is substituted by multiple and heterogeneous associations.

3. The sub-politics of design

During the 1980s and until the end of the 1990s, therefore, ANT scholars were engaged in analysing the ways agency is distributed among any entity partaking in different processes. According to them, where social sciences had dwelt for too long on the disciplinary manufacturing of ‘docile’ and thus manageable human bodies, engineers and designers would have been able to understand, more than others, the constitutive socio-material dimension of the social, that is, the irreducible relations between technical and social elements.

Notably, in a very influential text²⁶, Madeleine Akrich highlighted how designers, in defining the characteristics of their objects, produce a sort of prediction of the world inside which they will be placed and of the users themselves who will use them:

“From some time sociologists of technology have argued that when technologists define the characteristics of their objects, they necessarily make hypotheses about the entities that make up the world into which the object is to be inserted. Designers thus define actors with specific tastes, competences, motives, aspirations, political prejudices, and the rest, and

24 Ibid. p. 124.

25 Another interesting example is Latour’s semi-fictional account of *Aramis*, a failed technological project of an innovative public transportation system developed in France between 1972 and 1987. Here Latour reveals the complex universe of cooperating human and nonhuman actors that lie behind the development of a transportation system: at the same time relations between materials and definitions of users are composed. Cf. Latour, B. (1996) *Aramis or the Love of Technology*. Cambridge, MA: Harvard University Press.

26 Akrich, M. (1992) The De-scription of Technical Objects. In W. Bijker and J. Law (eds.) *Shaping Technology/Building Society: Studies in Sociotechnical Change*, pp. 205-224. Cambridge, MA: MIT Press. See also: Akrich, M. (1987) Comment decrire les objets techniques? *Technique et culture* 9: 49-64; Akrich, M. (1989) La construction d’un systeme socio-technique. Esquisse pour une anthropologie des techniques. *Anthropologie et Societes* 13(2): 31-54; Akrich, M. (1991) L’analyse socio-technique. In D. Vinck (ed.) *La gestion de la recherche*. Bruxelles: De Boeck.

they assume that morality, technology, science, and economy will evolve in particular ways. A large part of the work of innovators is that of ‘inscribing’ this vision of (or prediction about) the world in the technical content of the new object. I will call the end product of this work a ‘script’ or a ‘scenario’”²⁷.

Objects, in other words, make subjects. Once the artefact is put into use, she argues, the user begins the work of ‘de-description’, i.e. the recovery of a coherent programme of action from the object. Similarly, Latour, in analysing a number of technical objects – such as seat belts, door hinges and keys –, explored “how artifacts can be deliberately designed to both replace human action and constrain and shape the actions of other humans” and how “technologies that are so commonplace that we don’t even think about them can shape the decisions we make, the effects our actions have, and the way we move through the world”²⁸. In particular, one of his most widely known discussions is about speed bumps²⁹. According to Latour, these objects arose as a result of the impossibility of relying on the individual will of drivers to control their speed in the presence of risk zones such as schools. Speed bumps solve this problem by allowing the ‘translation’ of a collective moral demand, such as “slow down so as not to endanger students,” into a self-interested demand, like “I should slow down and protect my car’s suspension”. ‘Civilisation’ and the ‘public good’ are materially inscribed into asphalt: “[t]he driver,” he writes, “modifies his behavior through the mediation of the speed bump: he falls back from morality to force”³⁰.

In short, what these scholars aimed to demonstrate is that material artefacts play a crucial role in mediating human relations, even in prescribing morality, ethics and politics. Hence, as Latour stressed:

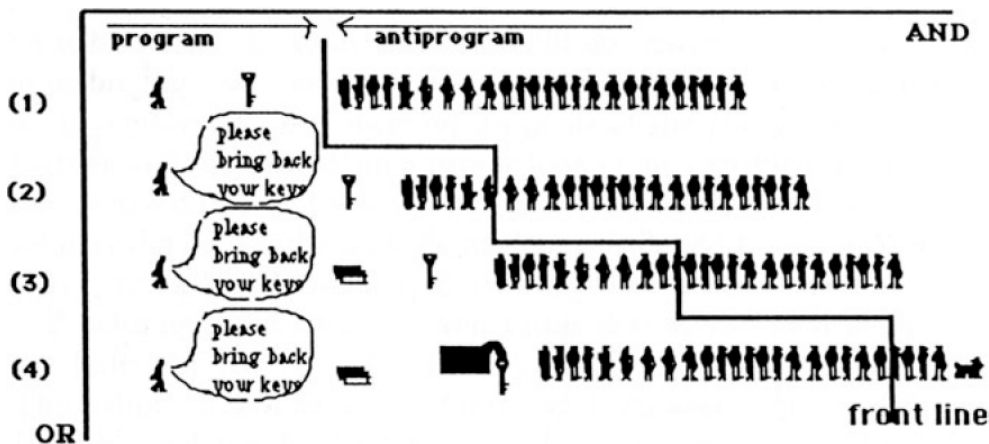
“[S]ociety itself is to be rethought from top to bottom once we add to it the facts and the artifacts that make up large sections of our social ties. What appears in the place of the two ghosts—society and technology—is not simply a hybrid object, a little bit of efficiency and a little bit of sociologizing, but a *sui generis* object: the collective thing, the trajectory of

27 Ibid. pp. 207-208.

28 Latour, B. (1992) Where are the missing masses? The sociology of a few mundane artefacts. In W. Bijker and J. Law (eds.) *Shaping Technology/Building Society: Studies in Sociotechnical Change*, pp. 225-259. Cambridge, MA: MIT Press. Republication in the reader D. G. Johnson and J. M. Wetmore (eds.) (2008) *Technology and Society, Building Our Sociotechnical Future*, pp. 151-180. Cambridge, MA: MIT Press, p. 151. See also: Latour, B. (2000) The Berlin Key or How to Do Things with Words. In P. Graves-Brown (ed.), *Matter, Materiality and Modern Culture*. London: Routledge.

29 Cf. Latour, B. (1999) *Pandora's Hope: Essays on the Reality of Science Studies*. Cited in: F. Domínguez Rubio, U. Fogué (2015) *Unfolding the Political Capacities of Design*. In A. Yaneva and A. Zaera-Polo (eds.) *What Is Cosmopolitical Design? Design, Nature and the Built Environment*. Burlington, VT: Ashgate.

30 Ibid. p. 186.



“The hotel manager successively adds keys, oral notices, written notices, and finally weights; each time he thus modifies the attitude of some part of the ‘hotel customers’ group while he extends the syntagmatic assemblage of elements”.

Photo and caption: Latour, B. (1992) Where are the missing masses, sociology of a few mundane artefacts. In W. Bijker and J. Law (eds.) *Shaping Technology/Building Society: Studies in Sociotechnical Change*. Cambridge, MA: MIT Press, pp. 225-259. Republication in the reader D. G. Johnson and J. M. Wetmore (eds.) (2008) *Technology and Society, Building Our Sociotechnical Future*. Cambridge, Mass: MIT Press, pp. 151-180, p. 175.

the front line between programs and anti-programs. It is too full of humans to look like the technology of old, but it is too full of nonhumans to look like the social theory of the past. The missing masses are in our traditional social theories, not in the supposedly cold, efficient, and inhuman technologies”³¹.

STS-trained anthropologist Albena Yaneva – whose relevant contribution in applying an ANT perspective to architecture will be further explored below – in one of her texts offered other useful examples for understanding how technical objects take part in ‘enacting the social’. Referring for instance to the staircase and the lift inside her university building in Manchester³², Yaneva highlighted that these objects hold different ‘scripts’, or ‘visions’, of the world: the staircase and the elevator offer two ways of reaching the auditorium of the university at two different speeds; they both have particular features or elements – such as handrail or the elevator’s buttons or floor indicators – which afford particular actions; the wide surface of the staircase makes her lean upon it in conversation with colleagues, while the elevator makes her anxious or bothered by the presence of other people.

“We cannot understand how a society works without appreciating how design shapes, conditions, facilitates and makes possible everyday sociality. (...) [T]he objects from my

31 Latour, B. (1992) Where are the missing masses?, pp. 174-175.

32 Cf. Yaneva, A. (2009) Making the Social Hold: Towards an Actor-Network Theory of Design. *Design and Culture* 1(3): 273-288.

university mornings (my key, the door lock of the resource room, the elevator buttons, the staircase handle, the conference room arrangement) do not stand for social forces and divisions, nor do they symbolically represent the university's order, hierarchy or divisions of labor; rather, they *perform the social* as we use them, and connect us in a new way with fellow colleagues, students and university administrators. We remain linked by using the same objects, by facing the same functional problems, by committing the same ergonomic mistakes"³³.

However, although the concepts of 'heterogeneous engineering' and 'script' have been extremely generative within the STS literature, they also became the subject of a rather strong criticism. Indeed, despite their attention to the contingencies of design and use, they were merely methodological tools within the framework of a semiotics extended to non-humans. As Latour himself stated: "in order to understand domination we have to turn away from an exclusive concern with social relations and weave them into a fabric that includes non-human actants, actants that offer the possibility of holding society together as a durable whole"³⁴. Assuming that technology has the capacity to make society last, these accounts left in place an overrationalized figure of the designer as a powerful creator. Indeed, a number of authors have criticised the notion of heterogeneous engineering, or network topology, for its emphasis on the network constructor – such as Pasteur in his laboratory – and his ability to control and govern multiple heterogeneous entities (for a more detailed account of this critique, see i. b. III. 3). In this way, therefore, these accounts appeared neutral towards the 'sub-politics' of design³⁵, or what, as we shall see below, STS-informed sociologist Fernando Domínguez Rubio and architect Miguel Fogué termed the 'enfolding'³⁶ capacity of design. That is, the way design materially contributes to the construction of certain hegemonies. Furthermore, they overestimated the ways and extent to which definitions of users and use can be previously defined and inscribed into an artifact.

STS-trained anthropologist Lucy Suchman, for instance, opposing Akrich's argument that "like a film script, technical objects define a framework of action together with the actors and the space in which they are supposed to act"³⁷, noted that "there is no stable designer/user 'point of view' nor are imaginaries of the user or settings of use inscribed in anything like a complete or coherent form in the object. (...) The 'user' is,

33 Ibid. p. 280.

34 Latour, B. (1991) Technology is society made durable. In J. Law (ed.) *Sociology of Monsters. Essays on Power, Technology and Domination*, pp. 103-131. London: Routledge, p. 103.

35 Cf. Marres, N. and Lezaun, J. (2011) Materials and Devices of the Public: An Introduction. *Economy and Society* 40(4): 489-509.

36 Cf. Domínguez Rubio, F. and Fogué, U. (2015) *Unfolding the Political Capacities of Design*. We will return to their interesting use of this argument in the field of architecture in section 6.

37 Akrich, M. (1992) The De-scription of Technical Objects, p. 209.

in other words, more vaguely figured, the object more deeply ambiguous”³⁸. In response to such criticism, ANT scholars begun to go beyond the mere ‘de-description’ of technical objects and how political programmes are inscribed into them and to speculate on ways to make such politics public, explicit, and contestable.

4. The Politics of ‘Things’

Latour, for his part, in accepting these criticisms, from the 2000s onwards came to formulate a different and peculiar version of politics, which shifted his interest from the analysis of ‘scripts’ to the conceptualisation of ‘things’.

With a bit of self-criticism, he noted:

“we were so busy renewing some of the features of scientific practice that we took off the shelf whatever political theory we had. The result is that politics was expanded to the point of becoming coextensive to contemporary societies insofar as theses include fragments of science and pieces of technology. Since by now ‘everything is political’, the adjective ‘political’ suffers the same fate as the adjective ‘social’: in being extending everywhere they have both become meaningless”³⁹.

Indeed, in previous ANT agendas, he acknowledges, the debunking of science had been pursued by extending

“the *same* habits of thought that had been developed in parliaments and on streets to each and every one of those far-fetched new sites [i.e. laboratories]. The (...) solution was to say ‘everything is political’ but without explaining how the checks and balances of democracy could be extended and made efficient in those exotic domains—hence the accusation of having ended up in some forms of depolitization”⁴⁰.

In particular, Latour explicitly refers to the accusation of the political theorist Langdon Winner, who had famously declared that “although the social constructivists have opened the black box and shown a colorful array of social actors, processes, and images therein, the box they reveal is still a remarkably hollow one”⁴¹. More precisely, Winner had accused STS scholars of pursuing purely academic goals “carefully sanitized of

38 Suchman, L. (2006) *Human-Machine Reconfigurations. Plans and Situated Actions*. Cambridge, MA: Cambridge University Press, pp. 192-193.

39 Latour, B. (2007b) Turning around politics: A note on Gerard de Vries’ paper. *Social Studies of Science* 37(5): 811-820, p. 811.

40 Ibid. p. 813.

41 Cf. Winner, L. (1993) Upon Opening the Black Box and Finding it Empty: Social Constructivism and the Philosophy of Technology. *Science, Technology & Human Values* 18: 362-378, pp. 374-375.

any critical standpoint” regarding technology as a political choice. Unlike figures like Marxists, Heideggerians and other figures such as political sociologists Jacques Ellul or Lewis Mumford, they do “not explore or in any way call into question the basic commitments and projects of modern technological society”⁴². In other words, what was evident, according to Winner, was the “total disregard” of these studies, “for the social consequences of technical choice”, i.e. “for the texture of human communities, for qualities of everyday living, and for the broader distribution of power in society”⁴³. Therefore, starting from these considerations, Latour wondered: “what if the definition of politics were to be reshaped as deeply as the definition of science has been by STS? Not simply expanded or shrunk but entirely *redistributed*?”⁴⁴ Notably, Latour’s contribution to political thinking in the 2000s has been significantly informed by the work of the American philosopher from the early twentieth-century John Dewey, whose reflections were introduced to him by his doctoral student Noortje Marres⁴⁵. In particular, Marres drew on Dewey’s arguments on the formation of publics in democratic societies⁴⁶ to argue that political action always revolves around problems, or ‘issues’ of interest (hence her famous motto: ‘no issue, no public’). What distinguishes this from a technocratic approach is the fact that objects can engage people with such intensity of concern and commitment that expert governance becomes meaningless. As she notes: “to articulate a public affair is to demonstrate for a given issue that, first, existing institutions are not sufficiently equipped to deal with it, and, second, that it requires the involvement of political outsiders for adequately defining and addressing it”⁴⁷. Latour enthusiastically welcomed Marres’ contribution and her attention to Dewey in particular⁴⁸, although her influence became more evident and more explicitly declared from the introduction to the *Making Things Public* exhibition catalogue (discussed further below) onwards. Following her insights, Latour affirmed the need to abandon our old habits of thought and to focus on the incredible power of objects to gather concerned

42 Ibid. p. 375.

43 Ibid. p. 368.

44 Ibid. p. 813.

45 See: Marres, N. (2005) *No Issue, No Public: Democratic Deficits After the Displacement of Politics*. Doctoral Dissertation, Universiteit van Amsterdam. Amsterdam: Ipskamp Printpartners; Marres, N. (2007) The Issues Deserve More Credit: Pragmatist Contributions to the Study of Public Involvement in Controversy. *Social Studies of Science* 37(5): 759-780.

46 Cf. Dewey, J. (1927) *The Public and Its Problems*. New York: Henry Holt and Company.

47 Marres, N. (2007) The Issues Deserve More Credit, p. 772.

48 Cf.: Latour, B. (2004a) *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA: Harvard University Press; Latour, B. (2004c) Whose Cosmos, Which Cosmopolitics: Comments on the Peace Terms of Ulrich Beck. *Common Knowledge* 10(3): 450-462; Latour, B. (2005a) From Realpolitik to Dingpolitik or How to Make things Public. In B. Latour and P. Weibel (eds.) *Making Things Public: Atmospheres of Democracy*. Cambridge, MA: MIT Press; Latour, B. (2007b) Turning around politics: A note on Gerard de Vries’ paper.

publics around them. As he noted: “[o]bjects—taken as so many issues—bind all of us in ways that map out a public space profoundly different from what is usually recognized under the label of ‘the political’”⁴⁹. “Whatever the term one wishes to use—object, thing, gathering, concern”, he insisted later, “the key move is to make all definitions of politics turn around the issues instead of having the issues enter into a ready-made political sphere to be dealt with. First define how things turn the public into a problem, and only then try to render more precise what is political, which procedures should be put into place, how the various assemblies can reach closure, and so on”⁵⁰.

This perspective departs radically from the earlier ANT scholarship, according to which the mediation of non-human actors has a ‘stabilising’ effect on society. The influence of Dewey’s thought has largely modified this vision, emphasising instead things as agents that put society into motion. The public is not an already formed set of people whose opinions and interests can be recorded and monitored. Rather, it is plural, and the features of each public depend on the issues or things around which they gather. “The mistake we made, the mistake I made,” Latour acknowledged, “was to believe that there was no efficient way to criticize matters of fact except by moving away from them and directing one’s attention toward the conditions that made them possible. But this meant accepting much too uncritically what matters of fact were”⁵¹. Shortly afterwards, he insisted: “[f]or too long objects have been wrongly portrayed as matters-of-fact. This is unfair to them, unfair to science, unfair to objectivity, unfair to experience. They are much more interesting, variegated, uncertain, complicated, far reaching, heterogeneous, risky, historical, local, material and networky than the pathetic version offered for too long by philosophers”⁵².

How should we then consider objects? Hence his expression ‘matters of concern’⁵³, which came exactly as an alternative to modernist and objectified ‘matters of fact’. Particularly, this turn towards things as ‘matters of concern’ is part of Latour’s broader attempt to redefine the basic categories that have characterised modernity, a project that, as we have seen, he systematically set out for the first time in *We Have Never Been Modern* (see i. b. III. 2), resumed in *Pandora’s hope*⁵⁴ and then greatly emphasised in *Politics*

49 Latour, B. (2005a) From Realpolitik to Dingpolitik or How to Make things Public, p. 5.

50 Latour, B. (2007b) Turning around politics, p. 815.

51 Latour, B. (2004b) Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern. *Critical Inquiry* 30: 225-248, pp. 231-232.

52 Latour, B. (2005a) From Realpolitik to Dingpolitik or How to Make things Public, pp. 9-10.

53 Cf. Latour, B. (2004a) *Politics of Nature*; Latour, B. (2004b) Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern, pp. 231-232; Latour, B. (2005b) What is the style of matters of concern? Spinoza Lectures delivered at the University of Amsterdam. Amsterdam: Van Gorcum; Latour, B. (2007a) *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford, UK: Oxford University Press; Latour, B. (2018) *Down to Earth: Politics in the New Climatic Regime*. Cambridge, UK: Polity Press, p. 113.

54 Cf. Latour, B. (1999) *Pandora’s Hope*.

of *Nature*⁵⁵, a book meant largely as an intervention in contemporary debates about ecological crisis. According to Latour, pressing and highly urgent issues that have been coming to the fore unveiled the connections that we have failed to take into account and prompt us to reopen debate on our identity and relation to nature. By posing the question “How many are we?”⁵⁶, he urged to dissolve the distinction between nature and culture entirely and to extend the realm of democracy from humans to non-humans, which are inextricably linked to them into ever changing collectives. More precisely, Latour constructs, in the book, the metaphor of a new Constitution – completely different from the modern one, based on the ‘division’ of beings, knowledge, cultures, etc. – founded on the ‘coexistence’ of humans and non-humans in a single large collective, which has the task of bringing together the growing multiplicity of their associations. This collective is open and ever-expanding, always open to new requests for entry from other beings.

We thus move on to a new form of collaboration between humans and non-humans, where the latter are no longer understood as mute and passive objects, but as new entities with uncertain edges, which become social actors in their own right. The book’s central notion is a new democratic procedure that Latour calls ‘political ecology’, which expresses the reorientation of his perspective on the relations between nature, science and politics. Very importantly, political ecology “does not shift attention from the human pole to the pole of nature” like conventional ecological discourses do⁵⁷. Rather, “it shifts from *certainty* about the production of risk-free objects (...) to *uncertainty* about the relations whose unintended consequences threaten to disrupt all orderings, all plans, all impacts”⁵⁸.

Notably, Latour’s reflections in the 2000s have been influenced by the work of another philosopher from the early twentieth-century, namely Alfred North Whitehead, and in particular by the British philosopher’s critique of what he called the ‘bifurcation of nature’ – on which, in short, the subject/object distinction is based – that has permeated the philosophical tradition. According to Whitehead, natural phenomena could not be seen as objects, but rather as processes or ‘actual occasions’. As Latour remarks, Whitehead “considered matters of fact to be a very poor rendering of what is given in experience and something that muddles entirely the question, What is there? with the question, How do we know it?” It is precisely this processual idea of reality that inspired

55 Cf. Latour, B. (2004a) *Politics of Nature*.

56 Ibid. p. 8.

57 Indeed, Latour was critical of the ecological movement itself, as it had developed up to that time, for it maintained the modernist idea of a ‘unique’, ‘global’ and ‘purified’ Nature. “Thus we have every right”, he stated “to speak of a growing divorce between its burgeoning practice and its theory about that practice.” Latour, B. (2004a) *Politics of Nature*, p. 19. Not surprisingly, however, in more recent years he appreciated the slogan that an environmental group – the French Zadists – uses for its own protests and demands: “We are not defending nature, we are nature defending itself”. Latour, B. (2018) *Down to Earth*, p. 113.

58 Latour, B. (2004a) *Politics of Nature*, p. 25.

Latour's idea "to get *closer* to [matters of fact] or, more exactly, to see through them"⁵⁹ into the multiple relations of 'matters of concern'.

In other words, matters-of-concerns provide a conceptual tool to unveil the long-diminished complexity which constitutes the world: we live in heterogeneous and conflictive 'gatherings', 'things'. Not by chance, for the notion of 'thing' Latour draws on Heidegger's understanding of the word *Ding*, whose ancient etymology is connected to the governing assembly of ancient Nordic and Saxon societies, where people and nonhumans used to gather together to discuss about worries and concerns. However, Latour is critical of the sharp distinction that the German philosopher made between it and the 'object' (*Gegenstand*)⁶⁰:

"(...) all his [Heidegger's] writing aims to make as sharp a distinction as possible between, on the one hand, objects, *Gegenstand*, and, on the other, the celebrated *Thing*. The handmade jug can be a thing, while the industrially made can of Coke remains an object. While the latter is abandoned to the empty mastery of science and technology, only the former, cradled in the respectful idiom of art, craftsmanship, and poetry, could deploy and gather its rich set of connections. (...) Why not try to portray it with the same enthusiasm, engagement, and complexity as the Heideggerian jug? Heidegger's mistake is not to have treated the jug too well, but to have traced a dichotomy between *Gegenstand* and *Thing* that was justified by nothing except the crassest of prejudices"⁶¹.

For Latour, "[a] thing is, in one sense, an object out there and, in another sense, an *issue* very much *in* there, at any rate, a *gathering*"⁶². On these bases, he formulated the notion of *Dingpolitik*, namely the 'politics of things' and suggested it to be the principle of an 'object-oriented democracy': a form of participation which – in contrast to the human-centred *Realpolitik* – revolves around 'things'. Notably, the notion first appeared in Latour's introduction to *Making Things Public: Atmospheres of Democracy*⁶³, the catalogue of an exhibition with the same title – which he co-curated with Peter Weibel – that sought to redefine politics as operating in the realm of 'things'. The basic idea was that politics is not just an arena, a profession or a system, but a concern for things, brought

59 Latour, B. (2004b) *Why Has Critique Run Out of Steam?*, p. 244. See also: Whitehead, A. N. (1920) *The Concept of Nature*. Cambridge: Cambridge University Press; Whitehead, A. N. (1933) *Adventures in Ideas*. New York: Free Press; Whitehead, A. N. (1978) *Process and Reality* (Gifford Lectures Delivered in the University of Edinburgh During the Session 1927-28). New York: Free Press; Stengers, I. (2002) *Penser avec Whitehead: Une libre et sauvage création de concepts*. Paris: Seuil.

60 Here Latour refers to: Heidegger, M. (1967) *What Is a Thing?* transl. W. B. Barton, Jr. and V. Deutsch. Chicago: Henry Regnery Company. Originally published as Id. (1962) *Die Frage nach dem Ding*. Tübingen, D: Max Niemeyer.

61 Latour, B. (2004b) *Why Has Critique Run Out of Steam?*, pp. 233-234.

62 Ibid. p. 233.

63 Cf. Latour, B. (2005a) *From Realpolitik to Dingpolitik or How to Make things Public*.

to the attention of the public, in a fluid and plural conception of the latter. More than a hundred writers, artists, researchers, architects and philosophers participated in the exhibition, rethinking what it means to make and render things public. What emerged is that there are multiple assemblies, which are not political in the usual sense, that gather a public around things: workshops, assembly lines, courts, bureaucratic institutions, supermarkets, shopping malls, churches, and natural resources such as rivers and climates. Democracy is no longer sought in the official sphere of professional politics, but in the new atmospheric conditions, i.e. technologies, interfaces, platforms, networks and mediations.

In a nutshell, then, Latour's radical redefinition of politics consists in learning to 'see through' matters of fact into the highly articulated and complex matters of concern, or 'things', that complicate and slow down any hasty composition of our hybrid collective. According to him, we should try to focus on what agitates, troubles, complicates and provokes speech⁶⁴, in contrast to what the modernist attitude has always urged us to do, i.e. to cancel out complexity and dissenting voices.

Particularly, the main challenge *Dingpolitik* faces is that what Isabelle Stengers named as 'Cosmopolitics'⁶⁵, which literally means the 'politics of the cosmos'⁶⁶. Cosmopolitics is a continuous negotiation, a practice of coexistence in which all the living beings and non-living entities – to which we usually refer as 'resources' – participate. In Stengers' words: "[i]n cosmopolitics, cosmos refers to the unknown constituted by these multiple divergent worlds and to the articulation of which they could eventually be capable"⁶⁷. Or, as Latour points out speaking for her, "[t]he presence of *cosmos* in *cosmopolitics* resists the tendency of politics to mean the give-and-take in an exclusive human club. The presence of *politics* in *cosmopolitics* resists the tendency of *cosmos* to mean a finite list of entities that must be taken into account. *Cosmos* protects against the premature closure of *politics*, and *politics* against the premature closure of *cosmos*"⁶⁸.

64 Cf. Latour, B. (2004a) *Politics of Nature*, p. 103.

65 Cf. Stengers, I. (1997) *Cosmopolitiques*, 7 vols., Paris: La Découverte.

66 The notion of cosmopolitics may be said to bring together a number of important insights from ANT, feminist studies, Amerindian anthropology (e.g. Viveiros de Castro, E. (1998) Les pronoms cosmologiques et le perspectivisme amérindien. In E. Alliez (ed.) *Gilles Deleuze. Une vie philosophique*, pp. 449-461. Paris: Les Empêcheurs de penser en rond, Synthélabo; Viveiros de Castro, E. (2004) Exchanging perspectives: The transformation of objects into subjects in Amerindian ontologies. *Common Knowledge* 10(3): 463-484) and post-Deleuzian philosophy (e.g. DeLanda, M. (2006) *A New Philosophy of Society Assemblage Theory and Social Complexity*. London – New York: Continuum), to name just a few, all differently challenging the nature-culture distinction and emphasizing the multiple material and technical entanglements shaping the human and the natural.

67 Stengers, I. (2005) The cosmopolitical proposal, p. 995.

68 Latour, B. (2004c) Whose Cosmos, Which Cosmopolitics: Comments on the Peace Terms of Ulrich Beck, p. 454.

Anyway, as both Stengers and Latour note, a clear distinction needs to be made between cosmopolitics and ‘cosmopolitanism’, the latter referring to the Kantian idea of the possible unification of all people – only humans, who have different perspectives on the world – through universal laws. Cosmopolitics rather refers to the politics of a ‘cosmos’, which includes all the many natural and material entities usually “ignored or ridiculed by humans” that make them act⁶⁹. Stengers and Latour locate the problem with ‘cosmopolitanism’ in its assumption of an already unified and fixed ‘cosmos’, a single world, when we actually inhabit a ‘pluriverse’. Importantly, this ontological multiplicity does not simply claim the role of non-humans, but also the different and multiple ways of ‘being human’.

Rather than figuring the common world as already given, the project of cosmopolitics reformulates it in its possible result and thus invites to “slow down reasoning and create an opportunity to arouse a slightly different awareness of the problems and situations mobilizing us”⁷⁰. Or, to put it in Latour’s words, the common world doesn’t exist as a principle, which means that it has to “be slowly *com-posed*”⁷¹. However, as discussed further below, although both Latour and Stengers’ versions of cosmopolitics entail destabilizing existent propositions of the cosmos, Latour has followed a slightly different route to thinking about its configurations. He, in fact, starting from his ‘symmetrical’ perspective, which puts every actor, human and non-human, on the same level, thinks in terms of ‘composition’. This implies convening all the actors involved in a given ‘thing’ without asking what distinct capacities the different actors have or what conditions they need to enter into this relationship.

Stengers, on the contrary, invites us to take into account potential asymmetries, and thus not to lose sight of potential ‘victims’, i.e. actors who might remain hidden due to their different conditions or that are systematically misrepresented by others.

As we will see in more detail in the next sections, the transfer of the reformulation of politics, which took place in STS, to the field of architecture, offers an important contribution to further reflection on the problems underlying modernist design practices. Indeed, we could say that modern architecture is based on the notion of ‘matter of fact’. What distinguishes it is an approach aimed at purification, simplification, generalisation and, therefore, standardisation. As we have seen in chapter II, the design activity of architects – and, with it, the dominant pedagogical models – aims at the expert production of black-boxes, that are supposedly objective and indisputable solutions. Complexity, disagreements, different needs, multiple – not only human – ontologies, are simply ignored. A reconsideration of the political dimension of architecture, on the

69 Ibid. p. 457.

70 Stengers, I. (2005) The cosmopolitical proposal, p. 994.

71 Latour, B. (2004c) Whose Cosmos, Which Cosmopolitics, p. 457.

other hand, implies taking into account the different – and always emerging – relations, mediations, dependencies, controversies and potential exclusions that characterise both its objects and its practice.

5. Behind the scenes of architectural practice

In the past decades STS, and in particular *Actor-Network Theory*, gained critical acclaim among scholars in the fields of design and architecture studies. This interest was triggered by a programmatic article written by Michel Callon⁷², who first argued for the importance of ANT as a methodological perspective to deepen our understanding of architecture by focusing on the materiality of design as a world of negotiations, instruments and strategies of visualization. Callon's work was crucial in originating a new strand of pragmatist-inspired studies on the practice of 'heterogeneous engineering' conducted in architects' studios and the role of nonhuman participants in the process, such as: models⁷³, renderings⁷⁴, city plans⁷⁵, urban artifacts⁷⁶, computer simulations⁷⁷, or maps⁷⁸. All these studies shared a renewed attention to architecture as an on-going process of composing collectives of humans and nonhumans, rather than an accomplishment of human doing and mastery over inert matter⁷⁹. Hence, several

72 Cf. Callon, M. (1996) Le Travail de la Conception en Architecture. *Situations, Les Cahiers de la Recherche Architecturale* 37(1): 25-35.

73 Cf.: Yaneva, A. (2005) Scaling Up and Down: Extraction Trials in Architectural Design. *Social Studies of Science* 35(6): 867-894; Yaneva, A. (2009) *Made by the Office for Metropolitan Architecture: An Ethnography of Design*. Rotterdam, NL: 010 Publishers.

74 Cf.: Houdart, S. (2008) Copying, cutting and pasting social spheres: Computer designers' participation in architectural projects. *Science Studies: An Interdisciplinary Journal of Science and Technology*. 21(1), pp. 47-64; Houdart, S. and Minato, C. (2009) *Kuma Kengo. An unconventional Monograph*. Paris: Editions Donner Lieu; Houdart, S. (2016) Architecture in the wild: The studio overflowed. In Farias, I. and Wilkie, A. (eds.) *Studio studies: operations, topologies and displacements*. London - New York: Routledge.

75 Cf. Zitouni, B. (2010) *Agglomérer. Une anatomie de l'extension Bruxelloise (1828-1915)*. Bruxelles: Brussels University Press.

76 Cf. Doucet, I. (2012) Making a city with words: Understanding Brussels through its urban heroes and villains. *City, Culture and Society (CCS)* 3(2): 105-116; Doucet, I. (2015) *The Practice Turn in Architecture: Brussels after 1968*. Farnham, UK: Ashgate.

77 Cf. Loukissas, Y. (2012) *Co-Designers: Cultures of Computer Simulation in Architecture*. London and New York: Routledge.

78 Cf. Nadai, A. and Labussière, O. (2013) Playing with the line, channelling multiplicity: Wind power planning in the Narbonnaise (Aude, France). *Environment and Planning D: Society and Space* 31(1): 116-139.

79 In order to better understand the distinction between the ANT's work on science and that in the designers' studio it is necessary to underline that while scientific laboratories are considered as 'centres of calculation', what is at stake in the studio is 'synthesis'. Since the 1990s, in fact, the ANT has begun to shift its focus towards other practices and dynamics, which have forced it to adapt or transform its narrative. In particular, where in the laboratory the focus is on 'truth', what is at stake in architecture is the composition of a sociomaterial form. Cf. Wilkie, A. and Mike M. (2015) The Design Studio as a Centre of Synthesis. In I. Farias and A. Wilkie (eds.) *Studio Studies: Operations, Topologies & Displacements*, pp. 25-39. London: Routledge.

scholars engaged in a pathbreaking search that was aimed at unpacking the different material registers and flows of nonhuman entities involved in the making of buildings, cities and urban infrastructures.

The starting assumption was that architecture cannot be reduced to a static frame of symbolic meaning, to be addressed by theories and ideologies. To put it in Yaneva's words: "ANT allows reporting what architects, designers, engineers and dwellers *do* – their daily routines, individual moves and collective groupings – in spite of their interests and theories, thus constantly prioritizing the pragmatic content of actions, not of discourses (...) because they make possible the existence of numerous objects, buildings and artefacts, instruments and theories that constitute architecture and the built environment"⁸⁰. In this sense, traditional topographical – or Euclidian – representations of space were considered insufficient to account for the complexity of architectural processes. As Yaneva and Latour write in their essay *Give Me a Gun and I Will Make All Buildings Move*, these representations are "our own way of knowing and manipulating buildings" – which render them 'desperately static', impeding to grasp their movements, 'flights', and transformations. In short, Euclidean space is a poor medium for capturing the way humans and things do get by in the world. "Where do you place the angry clients and their sometimes conflicting demands? Where do you insert the legal and city planning constraints? Where do you locate the budgeting and the different budget options? Where do you put the logistics of the many successive trades? Where do you situate the subtle evaluation of skilled versus unskilled practitioners?"⁸¹. Given the fact that geometrical patterns are based on the physical, rather than the social aspects of the city, fluxes, movements and social interactions are simply not taken into account and removed from view.

These ethnographic studies shared an interest in the 'ecology' of the practice of design. As we have seen, 'ecology' means in this context an alternative to what Latour describes as modernization, thought to account for all the entities of human and nonhuman collective life. Drawing on ANT as a mode of overcoming dichotomies such as nature/culture, subject/object, materiality/meaning, describing the 'ecology of practice' here means tracing the roles, routines, actions and mediations of all participants in design, such as skills, habits, designers' equipment, clients, regulations, models, images, buildings and urban landscapes: in other words, it means tracing the socio-material context of architectural practices. Again, ANT's notion of 'translation', or 'delegation', enables us

80 Yaneva, A. (2017) *Five Ways to Make Architecture Political: An Introduction to the Politics of Design Practice*. London: Bloomsbury Publishing PLC, p. 8.

81 Yaneva, A., Latour, B. and Geiser, R. (eds.) (2008) Give me a Gun and I will Make All Buildings Move: An ANT's View of Architecture. In Geiser, R. (ed.) *Explorations in Architecture: Teaching, Design, Research*, pp. 80-89. Basel, CH: Verlag Ag., p. 81. According to Yaneva and Latour, phenomenological understandings of space are also problematic, for "in order to avoid reducing humans to things" they reduce "*things to drawings*", reproducing "the usual split between subjective and objective dimensions". Ibid. pp. 82-83.

to understand what is at stake here: from this perspective, humans – in this case more precisely designers, or architects – delegate, or translate, their work to nonhumans – design objects, environments and devices. Therefore, designers’ actions are bounded by technologies that affect how and what they do, and shape particular notions of space. This trend, which could be termed as ‘ethnographic turn in architecture’, is the outcome of a series of related processes, such as the growing realization of architecture as a social practice and the social nature of the outcomes of its production, and the growing recognition of the collective nature of design⁸². Although the use of ethnographic methods in architecture is hardly a new topic in itself, by re-describing the practices of design from a socio-material perspective, this ANT-inspired method helps circumventing: i) a social constructivist agenda which treats architectural form as a social and cultural symbol (‘society’ is a separate domain of reality that ‘explains’ architecture)⁸³; ii) traditional sociological approaches that rely solely on social contextualization of the working environment of architectural firms⁸⁴; and iii) anthropology-informed approaches that treat all products of architectural design as socially constructed through negotiations among all – human – participants in design processes⁸⁵. ANT-inspired architectural ethnographies, which Yaneva terms ‘new ethnographies’⁸⁶, follow the ‘the symmetric anthropology’ advocated by Latour⁸⁷: rather than focusing on a particular agent, they account for the performances of all the entire collectives of humans and nonhumans⁸⁸, “undivided attention to words and the gestural and non-verbal language”⁸⁹. Because of their relevance to this thesis, below I will focus on some emblematic and founding works of this approach.

Inside OMA

Starting from 2002, Yaneva engaged in a two years participant observation in Rem Koolhaas’s studio, namely the *Office for Metropolitan Architecture* in Rotterdam (OMA).

82 Cf. Yaneva, A. (2017) *Five Ways to Make Architecture Political*, p. 45.

83 Cf. Yaneva, A. (2012) *Mapping Controversies in Architecture*. London: Ashgate. In chapter 2 (‘On the Boundary Between Architecture/Society’) Yaneva criticises both Pierre Bourdieu and his analysis of the Berber house of Kabyle in Algeria, and Anthony King and his study of the bungalow in India. Both authors, according to her, treat society and architecture as two separate words. Cf. Bourdieu, P. (1971) *The Berber House*. In M. Douglas (ed.) *Rules and Meanings: An Anthropology of Everyday Knowledge*, pp. 98-110. Harmondsworth, UK: Penguin Books; King, A. D. (1984) *The Bungalow: The Production of a Global Culture*. London: Routledge & Kegan Paul.

84 Cf. Blau, J. R. (1984) *Architects and Firms: A Sociological Perspective on Architectural Practice*. Cambridge, MA: MIT Press.

85 Cf. Cuff, D. (1992) *Architecture: The Story of Practice*. Cambridge, MA: MIT Press.

86 Yaneva, A. (2017) *Five Ways to Make Architecture Political*, p. 45.

87 Latour, B. (1993) *We Have Never Been Modern*, p. 92.

88 However, they focus – probably due to disciplinary traditions common to many countries – on a version of architecture specifically related to ‘making buildings’.

89 Yaneva, A. (2017) *Five Ways to Make Architecture Political*, p. 45.

In line with STS and ANT's study and critique of modern scientific practice, she carried out a pragmatist re-description of the socio-material dimensions of design in Koolhaas's practice. Just like Latour in the 1970s followed scientists at work to understand the production of scientific facts, she decided to follow architects' daily routines. Her interest lied precisely in studying their activities and beliefs, "their cultures, their exoticism, their strange obsession with time, novelty and innovation; their enigmatic attachments to models, sketches and drawing software; and the extraordinary inconsistency in how they define themselves and their practices"⁹⁰. To fully understand OMA's architectural approach, Yaneva put aside existing official interpretations in the architectural scholarship, which tend to rely on abstract notions such as society, culture and creativity, and focused on following the designers in the studio, watching their daily actions, their mistakes and the way they make sense of their world-building activities. Rather than referring back to wider frameworks such as 'Surrealism or the Modernist Movement', she aimed to offer a view of the architectural office from the inside, in order to recount the heterogeneous elements that architecture links together. This led her to state, for instance, that "design is a trivial, banal, mundane experience"⁹¹ revolving around a number of minor gestures such as retouching images, scaling and rescaling models, visiting a building site, negotiating with other professionals and clients, dealing with urban regulations and so on. Or that, unlike what happens in other offices, where the design process revolves around a conceptual sketch or drawing made by the 'master' architect – such as Zaha Hadid or Frank Gehry – "at the oma [it] often begins with collective experimentation at the table of models" and the design of a building or an urban concepts emerges "as a relational effect of a whole network"⁹². In Yaneva's account, foam models play a crucial role at OMA. Far from reflecting visions, ideas and imaginaries of single minds, they are 'things', contested sites, gatherings of human and nonhumans concerns that ultimately confer a particular shape to the building. Architects' actions and movements are inextricably linked to the emergence of a certain shape, as well as their thoughts to the visual and tactile experience of making the model. As seen with scientists at work in their laboratories, designers delegate to the foam the power to enfold, and the material in turn responds and starts dominating the model-maker, so that "the 'knowing architect' loses mastery over the building he is striving to understand"⁹³. Every action and movement they make with their instrumental and technical equipment – Autocad, the foam-cutter, the drawing board and so on – "shapes the perceptive matter of a building-to-be, as a movement, as a new disposition"⁹⁴.

90 Ibid. p. 41.

91 Yaneva, A. (2009) *Made by the Office for Metropolitan Architecture*, p. 25.

92 Ibid. p. 11.

93 Ibid. p. 58.

94 Ibid. p. 59.



The Whitney team working on the spatial arrangement of the building with their models. Source: Yaneva, A. (2005) *Scaling Up and Down*.

Yaneva observed how architects think of the building by modelling, cutting foam and paper and using various scoping techniques. In her account of the work of ‘Whitney team’ – a group of OMA architects engaged in the design of the extension of the Whitney Museum of American Art in New York – the *NEW* Whitney –, she noted how a distinctive trait of the architectural practice is ‘knowing through scaling’ for “[t]he tiny material operations of ‘scaling up’, ‘jumping the scale’, ‘rescaling’ and ‘going down in scale’ enable architects to think of the building and to gain new knowledge about it”⁹⁵. Models are depicted to be important tools for shared cognition as “architects discuss concerns about scoping and rescaling the models; they ‘lend’ their bodies to many visual instruments, which enable them to see and experience the internal space, ‘guided’ by the inner logic of the foam constructions, and ‘influenced’ by many previous choices”⁹⁶. At the same time, other issues such as client demand, site specificity, city politics, technical requirements, regulations and users’ expectation ‘constrain’ them and thus determine the shape of the models and the nature of a certain design solution. Models, renderings, images and all the objects that designers fabricate to visualize and give shape to their works fabricate them back as they receive autonomy that the designers do not have. They talk back to their creators and transcend them. Therefore, if one traces how they are fabricated, negotiated and how they circulate it is possible “to follow simultaneously the co-production of design reality and the designers as professionals”⁹⁷.

Inside Kengo Kuma’s office

For her part, anthropologist Sophie Houdart, in her ethnographic work in the office of Kengo Kuma⁹⁸, also focused on the meetings between architects, engineers and

95 Yaneva, A. (2005) *Scaling Up and Down*, p. 870.

96 Ibid. p. 871.

97 Ibidem.

98 Cf. Houdart, S. and Minato, C. (2009) *Kuma Kengo. An unconventional Monograph*.



Kuma Kengo & Associates (KKAA), renderings. Proposal for the Japan's *World Expo 2005 Beyond Development: Rediscovering Nature's Wisdom*. Source: Houdart, S. (2008) Copying, cutting and pasting social spheres.

clients. Particularly, together with Minato, Houdart showed how architects, “with set designers’ awareness”, through concept boards, perspective drawings (commonly known as architectural ‘renderings’), and models, transform the space of the meeting into a ‘visual medium’ that allows negotiation⁹⁹. As she argues, it is precisely the coordination of these devices that allows participants to discuss with each other, despite their respective differences. The role of models is emphasised in order to reflect on issues such as formal proportions, location of the building or materials.

Interestingly, she also followed architects and computer designers in the creation and use of renderings. As she notes, these drawings are crucial tools in the architectural process for they constitute the moment in which architects introduce in their more abstract graphic products all the non-architectural elements, such as potential users, trees and greenery, skies, cars, sunlight and more intangible things such as atmosphere. For this reason, “they make a whole world come alive”¹⁰⁰ and act to convince a multiple audience – in particular the clients – of the project feasibility. To put it in her words, “[t]hese drawings provide architects and designers with an opportunity to redefine the nature of beings and act on the peculiarity of their relationships, and constitute an interesting support to consider the projection of new cosmologies, anticipating the cohabitation of such diverse things as human beings, buildings, roads, trees, skies, cars and their respective ways of existing”¹⁰¹.

As Houdart observes, these virtual images feature as ‘cosmologies in the making’, as architects, while designing, digitalizing, inserting different elements, cutting and pasting images, manipulate social spheres and give birth to new ones.

In her account, architects in Kuma’s office, in order to compose their virtual images and make a new universe come alive, resort to ‘ready-made’ people and other elements from

⁹⁹ Ibid. pp. 121-122.

¹⁰⁰ Houdart, S. (2008) Copying, cutting and pasting social spheres, p. 47.

¹⁰¹ Ibidem.

catalogues – which she defines as ‘cosmologies’ or lists of ‘things’ – available on the web. There is no ontological difference between things, which are all devoid of context and meant to emphasize an ‘effect of reality’ when imported to the images. In particular, Houdart engaged in an ethnographic account of the development of a proposal for the Japan’s World Expo 2005 *Beyond Development: Rediscovering Nature’s Wisdom*, whose basic idea was to take advantage of the geographical conditions of a forest in order to invite the world to develop new relationships with nature for the century to come. As she notes, since the project was supposed to stage an utopia, the renderings produced by the architects played a crucial part in this process. Not by chance, the first step in the shaping of Expo 2005 was an *in situ* visualisation, meant not to cut the land as architects usually do by making site plans, but to rather keep the original landscape. According to Kuma, in fact, this was meant to generate “‘an anti-architectural expression’ aimed at ‘erasing’ architecture itself (...), dissolving it or making it as invisible as possible”¹⁰². The utopian dimension of this world was further emphasized by another image showing people walking in the forest, which seemed to abolish hierarchy among beings and “to promise, once again, not to pollute nature with buildings or pavilions, but move into the 21st century without the modernist cortege of objects and imageries”¹⁰³.

Design Technics: historical continuities

The connection between architectural tools, or technics, and the user is also analysed in the recently published book *Design Technics. Archaeologies of Architectural Practice*¹⁰⁴, which brings together a series of contributions that trace the genealogies of certain techniques used by architects, through a series of investigations into the historical conditions that made them possible. These are contributions that “propose a more capacious meaning for the term *technics*, which is used here to denote a constellation of interrelated practical, artifactual, and procedural material conditions”¹⁰⁵.

Specifically, different authors analyse this relationship between architects and technics – “rendering, modeling, scanning, equipping, specifying, positioning, and – last but not least – repeating”¹⁰⁶ – in some of their current work practices from a historical perspective.

In particular, Celik Alexander, in her introductory essay – *Architecture and Technics*¹⁰⁷ – insists on the role that habit plays in shaping who we are. Looking at the

102 Ibid. p. 57. Cf. Kuma, K. (1997) Digital Gardening. *Space Design Monthly Journal of Art and Architecture* 398: 6-132.

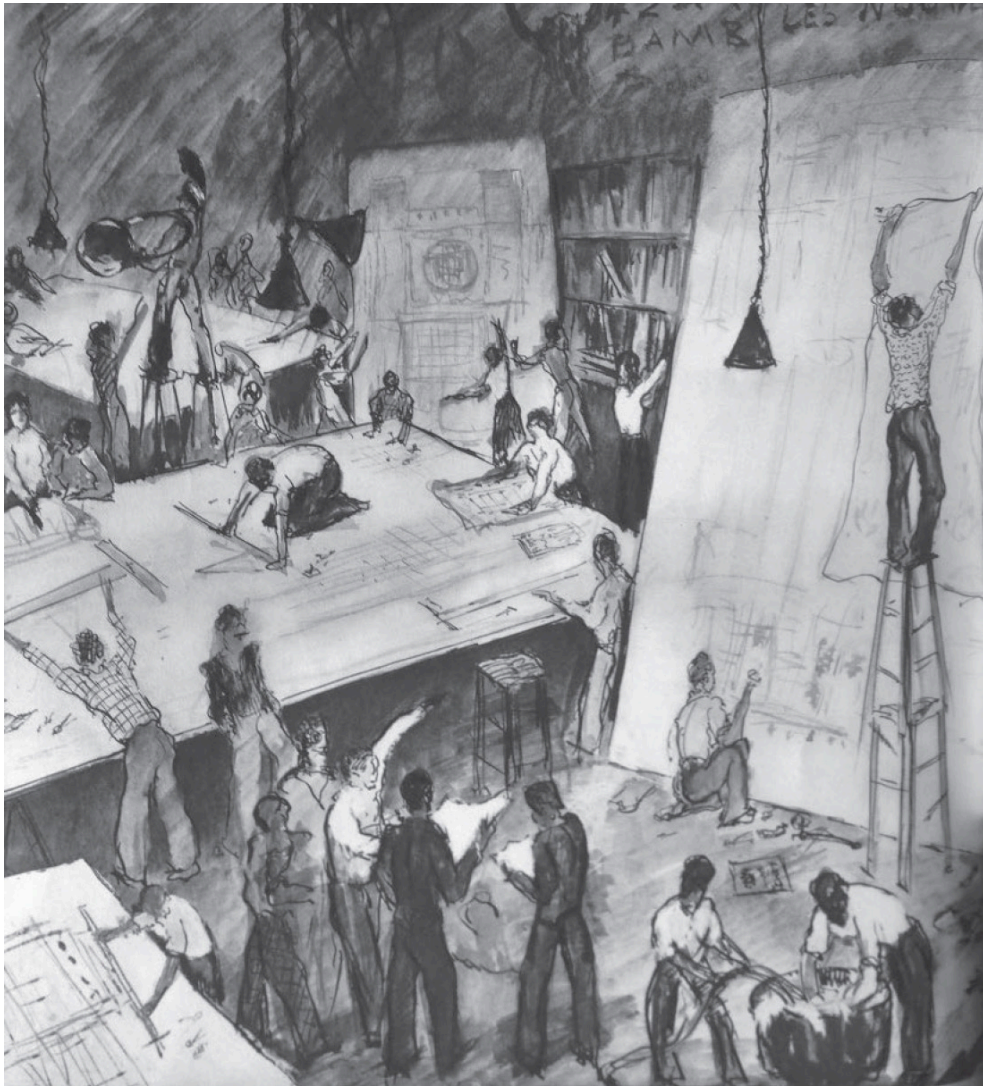
103 Ibid. p. 58.

104 Cf. Celik Alexander, Z. and May, J. (eds.) (2020) *Design Technics. Archaeologies of Architectural Practice*. Minneapolis, MN–London: University of Minnesota Press.

105 Ibid. p. ix.

106 Ibid. p. x.

107 Cf. Celik Alexander, Z. (2020) *Introduction: Architecture and Technics*. In Z. Celik Alexander and J. May (eds.) *Design Technics*, pp. ix-xxiii.



Claude Hertenberger, *L'Atelier*, 1937. École Nationale Supérieure des Beaux-Arts (Paris: La Grande Masse, 1937).

"The apparent visual cohesion that emanated from the Beaux-Arts rendering, and the social distinction bestowed upon its author, actually relied on a strictly hierarchical division of graphic labor. (...) In the professional ateliers, every final drawing was rendered not by a single author but by an entire cohort of rendering hands, each working on separate portions of a single extensive surface". Photo and caption: Allais, L. (2020) *Rendering*, in Z. Celik Alexander and J. May (eds.) *Design Technics* pp. 4-33, p. 18-19.

historical trajectories that the book proposes, Celik Alexander underlines that “the human appears not simply as the master of material conditions but rather as a figure who owes its very existence to those material conditions. This way of thinking upsets the long-standing trope of defining artifactual technologies as an extension of the human body (...) and to Marshall McLuhan’s formulation¹⁰⁸ that media are extensions of the human sensorium. By this logic, the hand does not precede the instrument that it holds but is dialectically reconfigured by it”¹⁰⁹.

The essays in the book “insist not on historical breaks and paradigm shifts, as so much literature on the technical developments of the last few decades tends to do, but rather on historical continuities”¹¹⁰. They make it possible to place techniques and tools in a perspective – in addition to the ethnographic perspective we have seen in the work of Yaneva and Houdart – that shows their persistence, their role and the hierarchical relationships that they historically determine in the production of architecture.

Among others, Lucia Allais’ contribution appears to be particularly interesting. In her essay *Rendering: On Experience and Experiments*¹¹¹ Allais shows – starting from the *École des Beaux Arts* until very current times – the persistence of the same way of addressing the theme of ‘rendering’. In fact, both then and now, the architect’s experience is almost always substituted by the work delegated to drafters. Besides, in the computer graphics industry ‘rendering’ time is often established with the aim of maximizing the show and, therefore, the client’s approval and the professional’s earnings. “What this archaeology of rendering teaches us is to be attuned not to interactivity but rather *interpassivity*: our willingness to let others do the experiencing for us”¹¹².

Time and again, the various essays remarks, these technics end up stabilizing the highly unstable category of the human.

These studies, therefore, show that tools and techniques play a constitutive role in the cognitive activities of architects and have real world-making effects, i.e. they produce different social and material effects. As seen through the eyes of Yaneva and Houdart, architects in Rem Koolhaas’s office think through cutting foam and scale models; in Kengo Kuma’s practice they think through computer renderings or models.

Such accounts, therefore, contribute to the reflection on what architects and their productions are. Far from preceding or simply controlling them, architects are made and remade through the different techniques they use. In this light, the master

108 Cf. McLuhan, M. (1964) *Understanding Media: Extensions of Man*. New York: McGraw-Hill.

109 Celik Alexander, Z. (2020) *Introduction: Architecture and Technics*, p. xi.

110 Ibid. p. xviii.

111 Cf. Allais, L. (2020) *Rendering*. In Z. Celik Alexander and J. May (eds.) *Design Technics*, pp. 4-33.

112 Ibid, p. 33. Here Allais explicitly refers to the reflections of Slavoj Žižek: cf. Žižek, S. (2006) *The Interpassive Subject: Lacan Turns a Prayer Wheel*. In Id. (2006) *How to Read Lacan*, pp. 23-39. New York: W. W. Norton.

architect doesn't appear as the powerful creator, the 'genius', as portrayed in books and monographies produced by critics. Designing, Yaneva argues, is not about 'projecting', and thus producing and throwing forward a new design idea. Rather, a careful observation of 'architecture in the making' sheds light upon the different yet rarely recounted settings across which design is distributed¹¹³.

Along the same lines, buildings-to-be reveal themselves to be 'things', contested gatherings of heterogeneous and contradictory issues. As she writes in her contribution to Latour's *Making Things Public* exhibition catalogue, "a building comes from many requirements, issues, claims, considerations and potentials. (...) The building is an assembly of assemblages, pluralistically constituted, genuinely additive, marked by manyness. The building is a 'multiverse'"¹¹⁴.

Similar reflections are contained in a recent issue of the Italian magazine *Ardeth*¹¹⁵, entitled 'Bottega' – of which Yaneva herself is guest editor – which emphasises the relevance of thinking 'from' the design activity of architects. Various architects who have contributed to the magazine have thus found themselves in the dual position of observed objects and researchers. Indeed, this collection of essays "is dedicated to the bottega of architectural design, and it aims at investigating the factual work of architects, starting from the tangible dimension of material production to the larger implication of practice"¹¹⁶.

As the editorial board observes, in his 2010 *Cogitamus. Six lettres sur les humanités scientifiques*, Latour defines as a 'laboratory' the model of actions that marks scientific production, by distinguishing three settings within it: the *atelier* ('bottega'), the *bureau* and the *Académie*. The bottega is the place of direct experimentation; the office (*bureau*) is the place where exchanges with the world take place through the development of intellectual technologies; finally, the academia represents the order of institutional legitimation.

"In analogous terms, the 'laboratory of the project of architecture' might be a place for the production of tools and experiments, just as the bottega is; production of intellectual technologies, of extremely specialized representational codes, of evaluation measures, of writings, just as the office is; finally, the place for the production of institutional objects that, if legitimized on the one hand by academia and by legal procedures, once endorsed by authorities are, on the other, a constitutive part of urban governance. Thus, this issue might have been titled 'from *bottega* to laboratory' and perhaps 'to world'"¹¹⁷.

113 Cf. Yaneva, A. (2017) *Five Ways to Make Architecture Political*.

114 Yaneva, A. (2005) A Building Is a "Multiverse". In B. Latour and P. Weibl (eds.) *Making Things Public: Atmospheres of Democracy*. Cambridge, MA: MIT Press, p. 535.

115 Cf. *Ardeth*, 02 (Spring 2018) BOTTEGA: *Ecology of Design Practice*. Available at: <http://www.ardeth.eu>

116 Frassoldati, F. et al. (2018) Around the Bottega. *Ardeth* 02: 5-8, p. 5.

117 Ibid. pp. 5-6.

6. A renewed relationship between architecture and politics

What does this different perspective imply, which brings mediations and processes into play, when thinking about, or rather, rethinking the politics of architecture? What does it imply about participation, its devices and modalities?

In this section I will focus specifically on observing how a number of scholars in the field of STS, and ANT in particular, have attempted to answer, in different ways, these questions, generating new, different versions of the political dimension of architecture and the urban¹¹⁸.

6.1. The politics *within* architecture

In short, following Latour, Yaneva argues that politics is not foundational, which means that it is no longer to be found in external factors such as class divisions, economic constraints or market forces. Instead, it can be explored and generated at the level of architectural practice, and seen as integral to many features of planning, building, construction and renovation processes. “It *emerges* and can be witnessed as we trace the transformation of objects, sites, urban publics and the multiple realities of a city”¹¹⁹. Besides, politics doesn’t lie in artifacts themselves, “but in the way it acts and connects to other objects and people in a related way”, and in “the many unpredictable alliances that all (...) [its] protagonists with variable ontologies and disagreeing voices can shape together while moving according to different times and spaces”¹²⁰. Hence, politics and architecture are co-produced at the level of practice.

Drawing on the Latourian notions of ‘matters of concern’ and ‘composition’, Yaneva’s idea on how to reformulate the relationship between architecture and politics revolves around the mapping of controversies¹²¹, which entails the mapping and visibilisation of all the heterogeneous actors, connections and controversies involved in both artefacts and architectural practices [i.b. III. 4] (we will return to this argument and, more specifically, on its use in pedagogical spaces of architecture in chapter IV).

118 In the next chapter, however, more specifically dedicated to examining the impact of STS and the ANT in architectural practice, we will see how a number of architects have experimentally transformed their own design practice in unprecedented ways.

119 Yaneva, A. (2017) *Five Ways to Make Architecture Political*, p. 6.

120 Ibid. p. 4.

121 Cf. Yaneva, A. (2012) *Mapping Controversies in Architecture*.

i.b. III. 4 - Robert Moses' bridges in Long Island and their politics

Particularly, according to Yaneva, the classical parable of the relation between architecture and politics – best represented by Foucault's analysis of Jeremy Bentham's panopticon prison – that sees politics mainly relying in architecture's power to control, must give way to other and more complex perspectives. To further articulate this perspective she also criticized the influential analysis of urban planner Robert Moses' bridges in Long Island, New York, by Langdon Winner¹. In Winner's account, the fact that these overpasses are considerably low was actually planned by Moses to achieve a particular social effect: while car-owning white people of upper classes would have been able to pass freely under the bridges, poor people – mostly black people –, who normally used public transport, were kept off the roads because buses were too tall to get through them. What this provoked was a limited access to Jones Beach, Moses' famous public park, resulting in a form of gentrification. According to Yaneva, however, the political dimension of the bridges is narrated by Winner in a "very anaemic version", where politics is reduced "to racial politics, and the complexity of the bridge to its height". The bridge, she points out, is a "much more complex material and social artefact"². Notably, on the basis of these considerations, Yaneva celebrated the documentary *Misleading Innocence: Tracing what a bridge can do*, produced by Francesco Garutti at the Canadian Centre of Architecture in 2014. Indeed, in line with the debate between social constructivists and ANT scholars raised by Langdon Winner's publication, the film aimed to portray the socio-material complexity of Moses's bridges³.

1 Cf. Winner, L. (1980). Do artifacts have politics? *Daedalus* 109(1): 121-136.

2 Yaneva, A. (2017) *Five Ways to Make Architecture Political*, p. 2.

3 The documentary can be watched here: https://www.youtube.com/watch?v=0u6zYcci_5w

6.2. Urban (Cosmo)politics

In addition to this focus on architectural artefacts and practices, other scholars have productively used the reflections of STS and the ANT to investigate the urban dimension and its processes¹²². Indeed, in recent years an interest has emerged among urban studies scholars to move beyond conventional understandings of the city and

122 Anyway, a full-blown overview of the multiple and productive impacts of STS on the understanding of the city and its construction is beyond the interest of this thesis. Here, I will only dwell on some of the interesting insights that ANT and 'assemblage thinking' have offered in this field of study. For a more comprehensive survey of these issues, see: Fariás, I. and Bender, T. (eds.) (2009) *Urban Assemblages. How Actor-Network Theory changes urban studies*. New York: Routledge; Fariás, I. and Blok, A. (2016) *Urban Cosmopolitics. Agencements, assemblages, atmospheres*. New York: Routledge.

i.b. III. 5 - The notion of 'urban assemblages'

As Fariás and Thomas Bender note¹, the notion of 'urban assemblages' emerged as a conceptual tool to portray the city as a multiple object and to convey a sense of its multiple implementations. The term 'assemblage', in fact, is meant to provide a concrete and graspable image of how the city is brought into being in assemblies of heterogeneous actors. It is a rather imprecise translation of Deleuze and Guattari's notion of *agencement*², a quite common term in French for denoting the arrangement or assembly of different elements. Philosopher Manuel DeLanda used the concept to critically explore the complexity of society and explicitly proposed to examine cities as "assemblages of people, networks, organisations, as well as a variety of infrastructural components, from buildings and roads to conduits for flows of matter and energy"³. Since then, assemblage thinking has been adopted in various fields as a theoretical and methodological framework to explore socio-spatial complexities.

1 Cf. Fariás, I. and Bender, T. (eds.) (2009) *Urban Assemblages. How Actor-Network Theory changes urban studies*. New York: Routledge.

2 Cf. Deleuze, G. and Guattari, F. (1981) Rhizome. *Ideology and Consciousness* 8: 49-71.

3 DeLanda, M. (2006) *A New Philosophy of Society: Assemblage Theory and Social Complexity*. London - New York: Continuum, p. 5.

explore relational, symmetrical and flat perspectives to inquire its phenomena and transformations¹²³. Urban politics itself, as explored through the ANT and 'assemblage thinking' [i.b. III. 5], is no longer just about humans and their discourses, but about 'things', complex interweavings of contested issues.

According to geographers Ash Amin and Nigel Thrift¹²⁴, the city's boundaries have become too permeable and stretched, both geographically and socially, for it to be theorized as a whole. Not unlike objects and buildings, the city itself, rather than as 'one' unified entity, began to be seen as "an amalgam of often disjointed processes and social heterogeneity, a place of near and far connections, a concatenation of rhythms; always edging in new directions"¹²⁵ or as "a multiplicity of processes of becoming, affixing sociotechnical networks, hybrid collectives and alternative topologies (...) a difficult and decentred object"¹²⁶. Against any reductive or essentialist reading, the urban began to be analysed "into the intermesh between flesh and stone, humans and non-humans,

123 Cf. Fariás, I. and Bender, T. (eds.) (2009) *Urban Assemblages*.

124 Cf. Amin, A. and Thrift, N. (2002) *Cities. Reimagining the Urban*. Cambridge, Oxford, UK: Polity.

125 Ibid. p. 8.

126 Fariás, I. and Bender, T. (eds.) (2009) *Urban Assemblages*. p. 2.

fixtures and flows, emotions and practices”¹²⁷.

Notably, highlighting the limits of Marxist critical urban study, mostly emerged in the 70’, Farías¹²⁸ stressed how the ANT perspective, with its ‘fervent anti-structuralist position’, proposes an ‘engagement’ with the world and research and therefore an empirical investigation into the ontological status of cities. Where critical urban studies look at the city as a ‘spatial formation’, ‘economic unit’ or ‘cultural formation’, ANT-informed inquiries use the lens of radical relationality, generalized symmetry, and association. Indeed, the ‘rather dated paradigm’ offered by Marxist-inspired project of critical urbanism is seen as entailing various risks: “the risk of taking meta-narratives of structural change for an explanation of urban life; the risk of losing sight of the actual complex and multiple cities we live in; the risk of disconnection from contemporary theoretical developments in social sciences”¹²⁹. ANT’s contribution to urban studies, instead, lies exactly in providing a sensibility towards the active role that non-human actors play in the assemblage of the world and promoting “a more open and explorative form of engagement with the world; in a word, inquiry, not critique”¹³⁰. In this sense, the logic of capitalism – that critical urban studies use to frame any urban process – is not simply ignored or passively accepted. Rather, it is explored from ‘within’, as a concrete process, or a ‘form of life’, in its multiple forces shaping the city.

Notably, urban space itself has become an interesting subject of investigation through the lens of cosmopolitics, which reveals how multiple urban worlds are constantly “in the process of being subtly transformed, destabilized, decentred, questioned, criticized or even destroyed”¹³¹. In the same way as for urban assemblages, the function of cosmopolitics is not merely descriptive or critical – hence, theoretical and ideological, from ‘above’ – but actively committed to inquire from ‘within’. In other words, a cosmopolitical perspective on the city prompts an inquiry into the ways in which multiple assemblages “come to be articulated and co-ordinated in and across specific urban sites” and to therefore explore new ways of “articulating and reassembling urban co-existence”¹³².

127 Amin, A. and Thrift, N. (2002) *Cities. Reimagining the Urban*, p. 9.

128 Cf. Farías, I. (2009) Introduction: decentering the object of urban studies. In I. Farías and T. Bender (eds.) *Urban Assemblages*, 1-24; Farías, I. (2011) The politics of urban assemblages. *CITY* 15(3-4): 365-374; Farías, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies: Introduction. *CITY* 20(4): 539-548.

129 Farías, I. (2009) Introduction, p. 1.

130 Farías, I. (2011) The politics of urban assemblages, p. 366.

131 Farías, I. and Blok, A. (2016) Urban Cosmopolitics, p. 2.

132 Ibid. pp. 2-3.

6.2.1. The challenge of ‘technical democracy’ in urban processes

Therefore, in this new look at the city, seen as fragmentary and vital, made up of changing assemblages, which articulate and re-articulate, it is necessary to experiment with new forms of democratic participation, compared to traditional representative democracy. In other words, political forms that do not delegate choices only to experts, without involving all interested parties.

In this regard, an important contribution, which goes far beyond the field of urban studies, has been offered by Callon, together with his colleagues Pierre Lascoumes and Yannick Barthe, through their programme of ‘technical democracy’¹³³. These scholars, in fact, sought to outline a concept of ‘dialogical democracy’ in contrast to what they call ‘delegative democracy’, this latter corresponding to contemporary liberal modes of government [i.b. III. 6]. The core concept of such programme is that of ‘hybrid forums’, that are spaces where boundaries of expertise are removed and lay participation is included in knowledge production and validation. In a world characterized by growing uncertainties and controversies around scientific and technological issues, Callon and his collaborators argue, new open spaces are needed for debate and collective experimentation. “Science and technology cannot be managed by the political institutions currently available to us [...] They must be enriched, expanded, extended, and improved so as to bring about what some call technical democracy, or more precisely in order to make our democracies more able to absorb the debates and controversies aroused by science and technology”¹³⁴.

In the quest for technical democracy, collective experimentation is necessary precisely because the socio-technical world is thought of as inherently immanent and indeterminate, leaving no room for finite decisions, but rather requiring an ongoing process of new knowledge, voices, events and revisions. In the face of such an uncertain scenario, collective experimentation becomes both a scientific and an ethical-political practice, or rather, an integrated techno-political mode and an ethos of democratisation¹³⁵. Liberal modes of government, in fact, are based on two divides: one between scientists – confined in laboratories – and the rest of society, and one between political representatives – in parliaments – and citizens. These divides produce particular forms of ‘delegation’. As they observe, “[t]he definition of the common world, in which each is called upon to live and means to find their place, cannot be left to spokespersons who are no longer in tune with the moving reality of the *demos*”¹³⁶.

133 Cf. Callon, M., Lascoumes, P. and Barthe, Y. (2009) *Acting in an Uncertain World: An Essay on Technical Democracy*. Cambridge, MA: MIT Press.

134 Ibid. p. 9.

135 Cf. Fariás, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies: Introduction.

136 Callon, M., Lascoumes, P. and Barthe, Y. (2009) *Acting in an Uncertain World*, p. 118.

i.b. III. 6 - Participation in techno-scientific controversies

As well as Latour, Callon and his collaborators question the role of experts and technicians when faced with situations of uncertainty. However, unlike Latour's philosophical and metaphysical approach, their language sounds more pedagogical and familiar to political theorists.

It might be useful to take a few steps back and outline the genesis of such political projects. The idea of the democratisation of techno-science is, in fact, a broadly discussed issue in STS, and expresses a long-standing ethical-political commitment by scholars in the field. As we saw at the beginning of this chapter, the field of STS, starting with the critique of technocracy in the 1960s and 1970s, has been constituted as an interrogation of the various ways in which expert authority is constructed in the field of science and technology. A direct consequence of these studies was the concrete interest and commitment of STS researchers in promoting lay participation in the production and validation of knowledge. Indeed, their aim was to redistribute and expand the boundaries of what is considered legitimate knowledge and techno-scientific authority¹. Technoscience, these authors claimed, is abandoning its socially detached position and is now recognized as increasingly more embedded in society at large. In particular, these concerns got a momentum in the late 1990s and early 2000s, when "a crisis of confidence vis-à-vis science and technology" has become markedly evident. Interestingly, the social constructivist approach in STS resulted in a challenge to the conventional distinction between scientific experts and non-experts. Indeed, in a seminal article written in 1999, Callon notes that, in the face of the numerous unexpected and negative effects of science and technology in relation to issues concerning the environment, public health or food safety, non-specialists took "a rational decision not to trust the researchers and engineers who are unable to deal with the risks endangering society as a whole. Modern societies thus enter into the age of suspicion because the political and economic institutions guaranteeing the validity and legitimacy of science have been found to be in the wrong"². In the attempt to understand this crisis, Callon focused on the possible modes of participation by non-specialists in scientific and technological debates and distinguished three different models. Particularly, he proposed to move the critical analysis of the lay/expert divide beyond the 'public education model' (or Model

1 Cf. Fariás, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies: Introduction. See also: Simsondo, S. (2004) *An introduction to science and technology studies*. Oxford, UK: Blackwell Publishing Ltd.

2 Callon, M. (1999) The Role of Lay People in the Production and Dissemination of Scientific Knowledge. *Science Technology & Society* 4: 81- 94, pp. 81-82. See also: Beck, U. (1992) *Risk Society: Towards New Modernity*. London: Sage Publications (quoted by Callon).



1), and also beyond the public engagement³ (Model 2, or more precisely, the 'public debate model'). Instead, Callon emphasised the role of lay people in the co-production of scientific knowledge (Model 3). "In Model 1 the priority is on the education of a scientifically illiterate public. In Model 2 the right to discussion comes first because lay people have knowledge and competencies which enhance and complete those of scientists and specialists. Yet, beyond their differences, these two models share a common obsession: that of demarcation. [They] deny lay people any competence for participating in the production of the only knowledge of any value: that which warrants the term 'scientific'. In Model 1 the exclusion is total; in Model 2 it is negotiated, but in both cases the fear is that laboratories will be taken up by hordes of non-specialists"⁴. Hence, Callon's model 3, based on the co-participation of lay-people in the production of knowledge, breaks with existing patterns and normal scientific practices. In particular, Callon builds his argument around the cases of groups of patients suffering from so-called 'orphan diseases', who, ignored by institutional medicine, organised themselves to claim their existence. In short, such groups realised that the only way to assert their voice was to participate in the production of scientific knowledge. For that reason, they engaged in researching and identifying diseases, actively participated in DNA collection and evaluated the clinical developments following certain treatments. As Callon notes, "[k]nowledge, from the most universal and general (e.g., on genes) to the most specific (e.g., the art and ways of dealing with a tracheotomy patient) is appropriated, discussed, and adapted by a hybrid collective composed of patients and specialists"⁵.

3 With Model 1 or the 'public education model' Callon is referring to PUS (or the 'public understanding of science'), a term that emerged in the 1980's in critical debates in STS over the power of expertise. This dominant approach has been based on what Brian Wynne labelled the 'deficit model' of the public, a conceptual staple in STS scholarship on these questions. As he writes, "publics are usually seen as unreflexive cultural dupes who are tradition-bound and incapable of critical reflection upon epistemic issues and their own relationship to knowledge" (Wynne, B. (1993) Public uptake of science: a case for institutional reflexivity. *Public Understanding of Science* 2(4): 321-337, p. 325). With the so called 'participatory turn' in the late 1990s and early 2000s, PUS was substituted by a less scientists PES, or 'public engagement with science' (what Callon terms Model 2). In short, this model was based on a commitment to the valorization of lay knowledge and to the consequent struggle for its greater participation in the technoscientific domain. The expression 'participatory turn' was coined by Scheila Jasanoff: Cf. Jasanoff S. (2003) Technologies of humility: Citizen participation in governing science. *Minerva*, 41(3): 223-244.

4 Callon, M. (1999) The Role of Lay People in the Production and Dissemination of Scientific Knowledge, p. 89.

5 Ibid. pp. 90-91.

Hybrid forums “demonstrate in practice (...) a desire for public debate, a demand that groups which are ignored, excluded, and often reduced to silence, or whose voice is disqualified, have the right to express themselves, to be heard, to be listened to, and to take part in the discussion”¹³⁷. They not only include the knowledge of a multiplicity of actors independently of their institutional roles, but are spaces in which the identity of the actors is reformulated and hybridised. In other words, such hybrid forums are thought of to facilitate processes in which what counts as knowledge or expertise is opened up for discussion and re-definition.

As regards urban processes, such issues have been more specifically discussed in a special number of the journal *CITY*¹³⁸ in 2016. In particular, in their introductory text¹³⁹, Farías and Blok highlight the reasons why the democratization of technoscientific expertise is particularly relevant in the city. Drawing on the *Invisible Committee*’s 2014 manifesto¹⁴⁰, in reflecting on the current situation, the authors point out that power, rather than residing in the modern institutions of representative democracy and the market economy, “has become logistic. It resides in the large socio-technical systems of energy transmission networks, transportation and digital highways, food cooling chains and supermarkets, sewage systems, software, data platforms and so on”¹⁴¹.

Therefore, this diagnosis brings to the forefront the need to establish lasting forms of collaboration between experts and lay people in the urban environment. The very parameters of revolutionary practice should change and no longer aim at the institutional framework of society, but at its infrastructural configuration. To be truly such, revolutionaries should therefore “hack existing infrastructures, (...) block their operation, but also, and most importantly, (...) design and configure alternative

137 Ibidem.

138 Cf. *CITY*, 20 (4 August 2016).

139 Farías, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies. Introduction. Anyway, Farías and Blok see McFarlane’s notion of ‘urban learning forums’ and analysis of participatory budgeting in Porto Alegre as an important precedent. See: McFarlane, C. (2011) *Learning the City: Knowledge and Translocal Assemblage*. Oxford, UK: Wiley-Blackwell. Moreover, as they note, other authors have taken Callon et al.’s notion to explore issues of public participation in urban planning. See: Metzger, J. (2011) Dispatches from a Time Capsule? Moving the ANT, Normativity and Democracy Discussion Ten Years Down the Road: An Intervention in the Boelens-Rydin-Webb Debate. *Planning Theory* 10 (3): 288-295; Evans, J. and Karvonen, A. (2014) ‘Give Me a Laboratory and I Will Lower Your Carbon Footprint!’—Urban Laboratories and the Governance of Low-Carbon Futures. *International Journal of Urban and Regional Research* 38(2): 413-430.

140 Cf. The Invisible Committee (2014) *To Our Friends*. Cambridge, MA: MIT Press. The *Invisible Committee*, an anonymous thought collective spanning European radical left movements, published its new manifesto in 2014. Picking up from the 2007 French-language release of *The Coming Insurrection* – The Invisible Committee (2007) *L’insurrection Qui Vient*. Paris: Editions La Fabrique – which anticipated the spirit of many of the revolts happening in North Africa, Europe and the Americas, *To Our Friends* explores the avenues of revolutionary action today. Cf. Farías, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies, p. 539.

141 Farías, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies, p. 540.

infrastructures”¹⁴². In other words, the figure of the revolutionary – even in the urban environment itself – can be equated with the hacker¹⁴³, who, knowing that power resides in software infrastructures, develops new open forms of technical collaboration (such as fab-labs, hack-labs and so on).

In such a scenario, Henri’s Lefebvre’s notion of a ‘right to the city’¹⁴⁴ comes to be replaced by what anthropologist Corsín Jiménez calls the ‘right to infrastructure’¹⁴⁵. Indeed, where Lefebvre’s notion has been embraced by many post-Marxist theory-informed urban social movements as the revolutionary right to an all-encompassing and universally just city, a ‘right to infrastructure’ rather entails the right for engaging in the experimental ‘tinkering’ and in rearranging the fragmentary, unstable and always emerging socio-technical assemblages composing the urban. Particularly, these rearrangements, or prototypes, are always ‘in beta’, i.e. they remain open to further transformation (hence, the notion of ‘open source’ urbanism).

Both Corsín Jiménez and Farías and Blok note that a number of contemporary grass-roots revolutionary collectives and urban social movements, such as various occupation movements that have emerged in recent years in urban centres all over the world, seem to be moving in this very direction¹⁴⁶. Far from being programmatic, some of these initiatives (discussed further below)¹⁴⁷ take the form of experiments aimed at arranging alternative and more democratic urban techno-political infrastructures.

Particularly, also drawing on some of Marres’s arguments¹⁴⁸, the editors and contributors to this issue of the journal move away from the political programme of technical democracy proposed by Callon et al., with the aim of contributing to trace an expansion of its registers. Marres, in fact, had been critical of the procedural nature of the model of public involvement in politics outlined by Callon et al., as well as of the one initially

142 Ibidem.

143 Farías and Blok here refer to: Coleman, E. G. (2013) *Coding Freedom. The Ethics and Aesthetics of Hacking*. Princeton, NJ: Princeton University Press.

144 Cf. Lefebvre, H. (1996) The right to the city. In E. Kofman and E. Lebas (eds.) *Writings on Cities*, pp. 147–159. Oxford, UK: Blackwell.

145 Cf. Corsín Jiménez, A. (2014) The Right to Infrastructure: A Prototype for Open-source Urbanism. *Environment and Planning D: Society and Space* 32: 342–362. See also: Corsín Jiménez, A. (2013) Introduction: The prototype – More than many and less than one. *Journal of Cultural Economy* 7(4): 1–18.

146 See also: Corsín Jiménez, A. and Estalella, A. (2013) The Atmospheric Person: Value, Experiment, and ‘making neighbors’ in Madrid’s Popular Assemblies. *HAU: Journal of Ethnographic Theory* 3(2): 119–139.

147 Some examples include the popular assemblies of the 15M movement and Zuloark’s initiative at *El Campo de la Cebada* in Madrid, which I will discuss in the section 6.3.

148 Cf. Marres, N. (2007) The Issues Deserve More Credit: Pragmatist Contributions to the Study of Public Involvement in Controversy. *Social Studies of Science* 37(5): 759–780.

proposed by Latour in *Politics of Nature*¹⁴⁹. According to her, in fact, these models tend to favour a not well-discussed democratic ideal, applied as a procedure irrespective of the topic at hand. As she writes:

“When [Latour and Callon and their colleagues] describe democratic processes in terms of ‘the composition of the common world’, they commit themselves to a republican conception of democracy: they adopt a sociologized and ontologized notion of the common good. The problem is that, by drawing upon this ideal, the French sociologists do not sufficiently account for the fact that particular, contingent entities that science and technology introduce into the world differ in crucial respects from the abstract, general entity – the common good – celebrated in classic and modern republican theories”¹⁵⁰.

In other words, Callon and his colleagues’ hybrid forums and Latour’s non-modern Constitution – or ‘Parliament of Things’ –, despite their respective attempts to move away from ordinary assemblies or traditional institutions, still appear to be rather orderly spaces for dialogue, oriented towards a shared search for the ‘common good’. Hybrid forums, in particular, are based on procedural criteria identifying a ‘good’ hybrid form, defined “in terms of its degree of dialogism, that is to say, in terms of its greater or lesser ability to facilitate and organize an intense, open, high-quality public debate”¹⁵¹. Rather, Marres considers it necessary to analyse what forms of the political and democracy might emerge in relation to specific techno-scientific ‘issues’¹⁵². The political, in other words, is unlikely to take the clear, stable and legible form of Callon et al.’s hybrid forums.

It is necessary to “acknowledge not only antagonisms between interests or concerns, but also antagonisms between the material, physical and technical associations that come together in issues”¹⁵³. Shifting our gaze to the urban means that the terms of the relationship between experts and citizens are not only the result of social struggles, rather, as Marres’ argument invites us to recognise, they are also mediated by the materiality and technicality of the various objects of contestation. And this is why it

149 A note here may be useful: both Callon et al. and Latour’s books were originally published in French at the turn of the 2000s, when Latour’s political thinking had not yet been influenced by Marres’ arguments. Latour, B. (1999) *Politiques de la nature. Comment faire entrer les sciences en démocratie*. Paris: Éd. La Découverte; Callon, M., Lascoumes, P. and Barthe, Y. (2001) *Agir dans un monde incertain. Essai sur la démocratie technique*. Paris: Seuil.

150 Marres, N. (2007) *The Issues Deserve More Credit*, p. 764.

151 Callon, M., Lascoumes, P. and Barthe, Y. (2009) *Acting in an Uncertain World*, p. 178.

152 Not surprisingly, Latour herself later stated, following her insights: “‘political’ is not an adjective that defines a profession, a sphere, an activity, a calling, a site, or a procedure, but it is what qualifies a *type of situation*”. In Dewey’s work, “we find a Copernican Revolution of radical proportions: to finally make publics turn around topics that generate a public around them instead of trying to define politics *in the absence of* any issue”. Latour, B. (2007b) *Turning around politics*, p. 814-815.

153 Marres, N. (2007) *The Issues Deserve More Credit*, p. 773.

is necessary to “recognize the recalcitrance, contingency and indeterminacy of urban materialities, and the way this shapes and conditions urban-political conflict”¹⁵⁴.

Starting from this perspective, both the editors and contributors to this issue of *CITY* reformulate and replace the notion of ‘technical democracy’ with what they call ‘fragile’, ‘evental’ and ‘temporary’ democratisation. Rather than conceiving it as a prescriptive project, seeking to overcome once for all the divide between experts and lay people by means of stable and iterative dialogue procedures, these scholars emphasise the ‘open-ended’, ‘unfinished’ nature of what they call ‘moments of democratization’, resulting from specific disruptive actions in always emerging assemblages. Participation, in this light, does not mean following a predefined, legible and stable scheme that can guarantee the achievement of a ‘common good’. Instead, it consists of minor and situated actions of tinkering and infrastructural alteration, focused on the political materiality of the urban¹⁵⁵. Democracy, in fact, is understood “as a real ‘infra-structure’: an ongoing and deepening search, reinvention, and reappropriation (...) of the radical and receding sources of political conviviality”¹⁵⁶.

6.3. A material perspective on participation. The political capacities of design

The vision of a ‘distinctively and irreducibly’ material politics is further emphasized by Marres in another text co-written with Javier Lezaun. As the authors stress, “[t]he idea that language is the central vehicle of politics (...) is so deeply ingrained in our preconceptions of the political that it is almost impossible to imagine a public, particularly a democratic one, not constituted primarily by acts of discursive deliberation”¹⁵⁷. Material perspectives, instead, challenge this vision, revealing that participation “is rather performed (...) in settings and through objects that do not belong to a distinct sphere of action, but rather co-articulate public political activity with other domains of everyday practice”¹⁵⁸. For this reason, they invite to pay attention to “how objects, devices, settings and materials, not just subjects, acquire explicit political capacities, capacities that are themselves the object of public struggle and contestation, and serve

154 Fariás, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies, p. 545.

155 This is particularly evident in the contribution by Tomás Sánchez Criado and Marco Cereceda Otárola. The essay is dedicated to the analysis of two cases in which ‘documentation interfaces’ can help to understand particular forms of techno-scientific democratisation, paying attention to the materiality of urban accessibility issues. Cf. Sánchez Criado, T. and Cereceda Otárola, M. (2016) Urban accessibility issues. Techno-scientific democratizations at the documentation interface. *CITY* 20(4): 619-636.

156 Corsín Jiménez, A. (2014) The Right to Infrastructure, p. 357.

157 Marres, N. and Lezaun, J. (2011) Materials and Devices of the Public: An Introduction, p. 492.

158 Ibid. p. 496.

to enact distinctive ideals of citizenship and participation”¹⁵⁹.

Particularly, Marres and Lezaun declare their interest in going beyond “the idiom of ‘sub-political’ or ‘constitutive’ materiality”, i.e. beyond post-Foucauldian perspectives which focus on matter as ‘latent’ force that silently partake in the constitution of political subjects and forms¹⁶⁰, considering it more productive to focus on “how material things, technologies and settings themselves become invested with more or less *explicit* political and moral capacities”¹⁶¹.

This argument was taken up and applied to the field of architectural design by Domínguez Rubio and Fogué, who reflected precisely on the shift from ‘sub-political’ modes of design – which they refer to as its ‘enfolding capacity’ – to modes of practising design as a form of cosmopolitics – or, in their terms, ‘the unfolding capacity of design’. If conceived in terms of its capacity to ‘enfold’ the political

“[d]esign (...) emerges as a *sui generis* form of ‘material politics,’ that is, as a form of doing politics through things, which offers the possibility, or at least the promise, of rendering power tacit, invisible and therefore unchallengeable by controlling that vast ‘sub-political’ world of physical and technological elements that silently shape our actions and thoughts, but which typically remain outside the sphere of formal politics and institutions”¹⁶².

As the authors note, urban and architectural design provide many examples of how such enfolding capabilities allow for the articulation of different political agendas. The development of the modern city itself (as we have seen in Chapter II) was based on this logic. Following social historian Patrick Joyce’s arguments¹⁶³, for instance, Domínguez Rubio and Fogué mention the work of nineteenth-century reformers such as Haussmann and Cerdà, who considered their project of a new urban form, made up of wide streets, parks and a hidden system of underground infrastructures, as a way of

159 Ibid. p. 491.

160 As we saw in section 3, such a ‘sub-political’ understanding had also permeated the analytical strategy of the STS prior to the 2000s. Here, as the Latourian analysis of speed bumps (1999) shows, for example, materiality is not simply considered to operate latently and tacitly, but in virtually sub-legal ways.

161 Marres, N. and Lezaun, J. (2011) *Materials and Devices of the Public: An Introduction*, p. 495.

162 Domínguez Rubio, F. and Fogué, U. (2015) *Unfolding the Political Capacities of Design*, p. 144. Burlington (VT): Ashgate. See also: Domínguez Rubio, F. and U. Fogué (2017) *Desplegando las capacidades políticas del diseño*. *Revista Diseña*, no. 11.

163 Together with other scholars, Patrick Joyce yielded new insights into the nature of liberal governance by linking a socio-material perspective to Foucauldian studies of governmentality. According to Joyce, a focus on the very history of how cities have been constructed and transformed and, more precisely, on the history of ‘humble’ things – statistical charts, maps, water closets and streetlights, to take a few of his examples – can enable us to gain a sense of liberalism as a ‘material’ phenomenon. Understanding the state and governmentality in relation to these techniques, Joyce explains, “means that different sorts of knowledge, competency and agency are, as it were, ‘engineered’ into material objects and the material world”. Joyce, P. (2003) *The Rule of Freedom: Liberalism and the Modern City*. London - New York: Verso, p. 41.

defining a new model of citizenship based on principles such as security, morality and free movement. Other examples include Ebenezer Howard's *Garden Cities* in Britain, which sought to optimise citizens' relations with nature, and the – already extensively discussed (see chapter II) – *Ville Radiense* of Le Corbusier, in whose form he sought to inscribe the principles of rationality and productivity.

Drawing on Marres and Lezaun argument, in opposition to this way of conceiving the relationship between architecture and politics, the authors reflect on the 'unfolding' – or cosmopolitical – capacity of design, that is its capacity "to extend, interrogate and speculate about the kinds of things, sites, and bodies that constitute the cosmos of the political"¹⁶⁴. Design, from such perspective, is seen as a way to destabilise existing versions of the 'cosmos' and to "propose" new kinds of bodies, entities, and sites *as political*"¹⁶⁵. In other words, they focus on how design, through the creation of specific material configurations, is able to articulate and enable distinctive modes of public participation. In order to provide concrete examples of this 'unfolding' capacity, Domínguez Rubio and Fogué describe a series of participatory design attempts on which both Corsín Jiménez and Farías & Blok also dwelled to articulate their notions of the 'right to infrastructure' and 'fragile democratization'. These include, for example, *el Campo de la Cebada*, a place born in 2010 in Madrid. In this project, the Spanish architectural collective *Zuloark* worked together with activists and residents of *La Latina* neighbourhood to appropriate an area that had remained empty after the burst of Spain's real-estate bubble, with the aim of transforming it into a cultural and political hub. The idea was to create an 'under-defined space', furnished with a set of open-source, mobile urban furniture which would enable various configurations. Since then, *el Campo* has been re-interpreted and used in multiple ways, such as an educational space hosting workshops and seminars, an open-air summer university, a political site for local associations, a sport and cultural facility and a urban garden. Therefore, as Corsín Jiménez would say, the political value of this place lies in its being 'in beta'¹⁶⁶, namely a 'space for possibilities', that can be endlessly re-interpreted, transformed and adapted. In this sense, "*el Campo* emerges as a powerful urban machine, a city-making machine in which it is possible to explore, imagine, and experiment with other ways of being in the city, other forms of building urban communities, other forms of creating material and emotional attachments, and also other forms of political participation"¹⁶⁷. Other examples include the 'occupy' movements, such as the popular assemblies of Madrid's *May 15 movement* and other similar initiatives across the world. According to the authors,

164 Domínguez Rubio, F. and Fogué, U. (2015) *Unfolding the Political Capacities of Design* p. 159.

165 Ibid. p. 148.

166 Cf. Corsín Jiménez, A. (2013) Introduction: The prototype.

167 Domínguez Rubio, F. and Fogué, U. (2015) *Unfolding the Political Capacities of Design*, p. 151.



Zuloark, *El Campo de la Cebada*, 2010. Source: plataformaarquitectura.cl

Design ‘processes’

Interestingly, these ‘issue-oriented’ and material perspectives on participation have also been welcomed by the designer Pelle Ehn and his colleagues Erling Bjorgvinsson and Per-Anders Hillgren¹⁶⁹.

Where Domínguez Rubio and Fogue’s analysis focuses more on the political capacities of design ‘objects’, i.e. particular architectures and material arrangements, the focus here shifts more specifically to design ‘processes’.

Particularly, Ehn and his colleagues, who have long been active in the field of Scandinavian participatory design¹⁷⁰, have turned to STS to rethink its conventional methods and principles. As they note, since recent years participatory design has welcomed ‘design thinking’ approaches – or ‘design for social innovation’¹⁷¹ – which, beyond the ‘economic bottom line’, is focused on creating the conditions for long-term collaborations between designers, citizens, researchers and even municipalities, rather than on the production of marketable objects¹⁷².

Here, Marres’ position on controversial ‘issues’ and the related Latourian notion of ‘Thing’ became conceptual tools for Ehn and his collaborators to reconfigure the role of the designer and rethink participation in design processes. As they put it, they sought “to move from designing ‘things’ (objects) to designing Things (socio-material assemblies)”¹⁷³. In particular, the designers proposed a ‘thinging’ approach, that consists in moving from ‘projecting’ to one of ‘infrastructuring’ design activities. In other words, rather than focusing on ‘projects’, which implies that the activities of design are temporally circumscribed, ‘infrastructuring’ here means setting up a stage whilst designing and for the aftermath, when design activities have ended.

Their reflection is worthy of extensive quotation:

“Rather than thinking of a project as a design Thing consisting of the four phases of analysis, design, construction, and implementation, a Thing approach would see this as a

169 Anyway, given my focus on architecture, a thorough analysis of the fruitful encounters between STS and the field of design is beyond the scope of this thesis. For an interesting overview see: Varga, H. (2018) On Design and Making with sts. *Diseña* (12): 30-51.

170 Notably, Participatory Design has quite a long tradition in Scandinavian countries, and its origins date back to the 1960s. In short, it emerged as a result of the introduction of new technologies in the workplace, and its basic idea was that those who were affected by the design’s result should have a say and thus participate in the design of workplaces. For further information, see: Asaro, P. M. (2000) Transforming Society by Transforming Technology: The Science and Politics of Participatory Design. *Accounting, Management and Information Technologies* 10(4): 257-290.

171 See, for instance: Murray, R., Caulier-Grice, J. and Mulgan, G. (2010) *The Open Book of Social Innovation*. London: The Young Foundation; Jégou, F. and Manzini, E. (2008) *Collaborative Services: Social Innovation and Design for Sustainability*. Milano: Poli Design.

172 Cf. Bjorgvinsson, E., Ehn, P. and Hillgren, P.-A. (2012) Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues* 28(3): 101-116.

173 Ibid. p. 102.

collective of humans and non-humans and might rather look to the performative ‘staging’ of it. (...) [W]e could then consider these questions: *How do we construct the initial object of design for a project? How do we align the participants around a shared, though problematic or even controversial, object of concern? How do we set the stage for a design Thing? As work proceeds, how can the involved practices be made reportable* (e.g., fieldwork, ethnographies, direct participation)? *How can the object of design be made manipulatable*, enrolling the participating non-human actors represented in forms that can be experienced (e.g., sketches, models, prototypes, and games)? *How are the objects of design and matters of concern made into public Things and opened to controversies among participants, both in the project and outside it* (e.g., negotiations, workshops, exhibitions, public debate)?”¹⁷⁴

This approach, they note, also implies a shift from ‘use-before-use’ – which means ‘knowing who users are before designing for them’ – to ‘design-after-design’, that is, design doesn’t end when designers present a closed product, but continues unfolding. In such a scenario, the role of the designer changes radically: in the ‘thing’, understood as a more-than-human assembly, rather than creating useful products and services, the designer participates only temporarily, helping to continue or create other collaborations¹⁷⁵. As they write, also quoting Bernard Tschumi,

“[a]n infrastructuring strategy, (...) must deliberately design indeterminacy and incompleteness into the infrastructure, leaving unoccupied slots and space free for unanticipated events and performances yet to be. Such strategies for opening up controversial Things serve as a kind of ‘event architecture,’ where the focus is on designing ‘architecture-events’ rather than ‘architecture-objects’”¹⁷⁶.

Unlike the solutionist approach, the open-endedness of a ‘thing’ and the absence of predetermined sets of partners, does not imply the use of once-and-for-all procedures, but requires dealing with emerging uncertainties and conflicting interests. It is no coincidence that, drawing also on Chantal Mouffe’s argument¹⁷⁷, Ehn and his colleagues speak of ‘agonistic participatory design’: it is about “building agonistic thinging

¹⁷⁴ Ibid. p. 104.

¹⁷⁵ An example of how these designers enact participation in ‘things’ can be drawn from their involvement in the Malmö’s *Living Labs* project, which started in 2007 as a collaborative platform to explore how to enhance the city’s subcultures with new media. Here, the designers describe their role as the one of conducting continuous match-making processes. Their main task, in fact, was to develop different constellations aligning humans, environments, objects and devices, such as an art and performance centre and a grassroots hip-hop community with an interaction design company. In short, they created an infrastructure in the present for a ‘thing’ that might be continued and even transformed in the future.

¹⁷⁶ Ibid. p. 108. Cf. Tschumi, B. (1994) *Event Cities (Praxis)*. Cambridge, MA: MIT Press.

¹⁷⁷ Cf. Mouffe, C. (1993) *The return of the political*. London: Verso; Mouffe, C. (2000) *The democratic paradox*. London: Verso.

practices ‘on the go’, rather than through predefined constitutions and constellations or assemblies”, where what drives enquiry and which stakeholders would join the exploration depend on the socio-material issue at stake¹⁷⁸.

Ehn and his collaborators, therefore, also emphasise the role of non-humans in participatory practices. Design devices, in the form of prototypes, mock-ups, design games, models, and sketches come into play, they are ‘participants’ to all intents and purposes. Hence, where in the conventional design work “a strong focus is placed on ‘representations’ of the object of design (...) as gradually more refined descriptions of the designed object-to-be (...) [t]he suggestion here instead is to focus on these devices as material ‘presenters’ of the evolving object of design supporting communication or participation in the design process”¹⁷⁹. Each of these non-human elements is a political element, it has ‘powers of engagement’¹⁸⁰, and can thus become an element of participatory transformation of the process, allowing it to be opened up to other actors and issues.

6.4. Design as *care* for neglected ‘Things’

Further interesting insights for rearticulating the relationship between architecture and politics, and reformulating the meaning of participation, are offered by some of the reflections that emerged from the encounter of STS with the feminist ethics of care (the latter has already been mentioned in chapter I, section 4.2).

In the previous sections we have seen how Marres was critical of both Callon et al. and Latour’s models of democratic politics, for their emphasis on discourse and the summoning of articulate publics. This critique, in many ways, resonates with a broader critical debate in STS, which targets the ‘compositional’ approach underlying Latour’s *Dingpolitik* and the ‘dialogical democracy’ of Callon and his colleagues.

Particularly, for Latour, as already mentioned in section 4, in contrast to the meaning Stengers attaches to cosmopolitics, the only requirement for ‘things’ to be part of the political task of building a common world is that they be matter of concerns, issues that gather a public. The entities at stake in a matter of concern are, in fact, already clearly visible and readable. They just gather together.

Unlike this view, Stengers takes on a more radical task: in proposing to destabilise, or disrupt, existent propositions of the cosmos, she aims to enable situations in which the unknown, “that which does not have, cannot have or does not want to have a

178 Bjorgvinsson, E., P. Ehn, P. and Hillgren, P.-A. (2012) Agonistic participatory design: working with marginalised social movements. *CoDesign* 8(2-3): 127-144, p. 141.

179 Ibid. p. 106.

180 Marres, N. and Lezaun, J. (2011) Materials and Devices of the Public: An Introduction, p. 495. See also: Marres, N. (2009) Testing powers of engagement: Green living experiments, the ontological turn and the undoability of involvement. *European Journal of Social Theory* 12(1): 117-33.

political voice”¹⁸¹ may become visible, problematic: in a word, political. In her rendering, therefore, cosmopolitics entails an ethico-political commitment not to lose sight of potential victims. As feminist STS philosopher María Puig de la Bellacasa notes, “for Stengers, this triggers not only processes of inclusion/exclusion but a more *cosmic* concern, a hesitation, a permanent question that challenges the collective by always having as open an unknown: *How many are ‘we’?*”¹⁸²

Particularly, drawing on Stengers’ reflections, Puig de la Bellacasa offers a powerful corrective or prolongation to Latourian matters of concerns, that is what she terms ‘matters of care’. At the center of this notion is the recognition that

“in strongly stratified technoscientific worlds ‘erased’ concerns do not just become visible by following the articulated and assembled concerns and participants composing a thing. Generating caring might mean counting in participants and issues that have not managed or are not likely to succeed, or even do not want to voice their concerns, or whose voices are less or not perceptible—as agencies of a politics that remains ‘imperceptible’”¹⁸³.

Already in the final sections of chapter I, we have seen how the ethics of care invites us to consider the entities that have been left out, those that are not usually considered or suffer from inequalities. Or, in other words, those that are left out because their specific version of the world does not fit the normative idea of the ‘common’. In the STS perspective, feminist thinking about care is enriched with a more-than-human dimension.

Here, Puig de la Bellacasa develops her argument from Latour’s notion of ‘matter of concern’, and points out that care doesn’t replace the meaning of concern – which already denotes trouble, worry and thoughtfulness about an issue [i.b. III. 7] – but rather brings something else: “[o]ne can make oneself concerned, but ‘to care’ contains a notion of *doing* that concern lacks. This is because understanding caring as something we do materializes it as an ethically and politically charged practice (...). In this vision, to care joins together an affective state, a material vital doing, and an ethico-political obligation”¹⁸⁴. In other words, care entails an active commitment to give voice to “those who can be harmed by an assemblage but might be unable to voice their concern and need for care—for example, trees and flowers, babies in prams whose noses stroll at the level of SUV’s exhaust pipes, or whose voice is less heard—cyclists, older people”¹⁸⁵.

Notably, in this perspective, in addition to this more-than-human emphasis, thanks to

181 Stengers, I. (2005) The cosmopolitical proposal, p. 3.

182 Puig de la Bellacasa, M. (2017) *Matters of Care*, pp. 46-47.

183 Ibid. p. 57.

184 Ibid. p. 42.

185 Ibid. p. 52.

i.b. III. 7 - What 'concern' stands for

In a paper from 2004¹ Latour tried to contrast the disempowering effects of constructivist critique, which result in taking the staging of facts as matters of concern as an excuse – or a weapon – to weaken their reality. Latour, in fact, bearing in mind that the 'virus of critique' is capable of turning the insight that fact are constructed into "conspiracy theories (and) mad mixtures of knee-jerk disbelief"², emphasised that 'concern' is intended as something which "adds reality to matters of fact"³ rather than subtracting it. "The critic is not the one who debunks, but the one who assembles. (...) [I]f something is constructed, then it means it is fragile and thus in great need of care and caution. I am aware that to get at the heart of this argument one would have to renew also what it means to be a constructivist, but I have said enough to indicate the direction of critique, not *away* but *toward* the gathering, the Thing"⁴. The purpose of exposing how things are assembled and constructed, Latour argues, is not to debunk matters of fact, nor is it to weaken their reality with critical suspicion about the "beliefs, powers, and illusions"⁵ they might convey. It is rather to stage all the concerns that lie behind matters of fact and hold them together, in a way to enrich their constitutive reality.

1 Cf. Latour, B. (2004b) Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern. *Critical Inquiry* 30: 225-248.

2 Ibid. p. 230.

3 Ibid. p. 232.

4 Ibid. p. 246.

5 Ibid. p. 232.

the influence of Stengers' philosophical thinking, care also acquires another value. To care, in fact, does not imply resorting to clear-cut assumptions of what a livable and caring world could be, nor to ready-made formulas. Rather, it is seen as a speculative practice: by including such 'neglected' knowledge, care is understood as the opening to the multiple ontology of the world and the activation of other possible worlds.

While the next chapter will be more specifically focused on showing how some architects have productively used both the notion of 'matters of care' and, more generally, the rich conceptual repertoire offered by STS, to experimentally transform architectural practice, here I will focus, as a first example, on how this notion of care has underpinned the activity of the Spanish activist collective *En torno a la silla* (ETS)¹⁸⁶.

186 *En torno a la silla* (ETS), which in English means 'around the wheelchair', was mostly active in Barcelona between 2012 and 2016. The birth of the collective took place during the 15M movement in Spain. ETS' blog is available at: <https://entornoalasilla.wordpress.com>

STS-trained anthropologist Tomás Sánchez Criado, in fact, in his ethnographic account of the work of ETS, of which he himself was a member, tells how this speculative meaning was summed up in the expression ‘joint problem making’¹⁸⁷. Particularly, this experience, moving beyond those ‘placatory’ forms of participatory design that were criticized by Till¹⁸⁸, saw users and designers radically transforming their roles and sharing their knowledge for a collective material exploration of a wheelchair, in search of alternatives to market solutions. The central concern was that conventional market care technologies, such as technical aids, commonly embody the designer’s expertise, without paying attention to users’ real and individual needs. As Antonio – the collective’s member who was in need of a new wheelchair – notes, “for the most part you have to merely test what others have thought might be good for you, not the other way round”¹⁸⁹. ETS members were hosted, between 2012 and 2013, by *Medialab-Prado Madrid’s Funcionamientos* workshops, revolving around the idea of rethinking accessibility in urban space and technical aids through open design practices. Their task was to design three small objects for Antonio’s wheelchair – an armrest/briefcase, a folding table and a portable ramp – so as to compose a freely licensed kit that might favour both the user, not seen as an individual to be included neither treated as an object, and his ‘friends’: the idea was, in fact, to enable new alliances through collective experiments aimed at hacking and rearranging social and technical scripts.

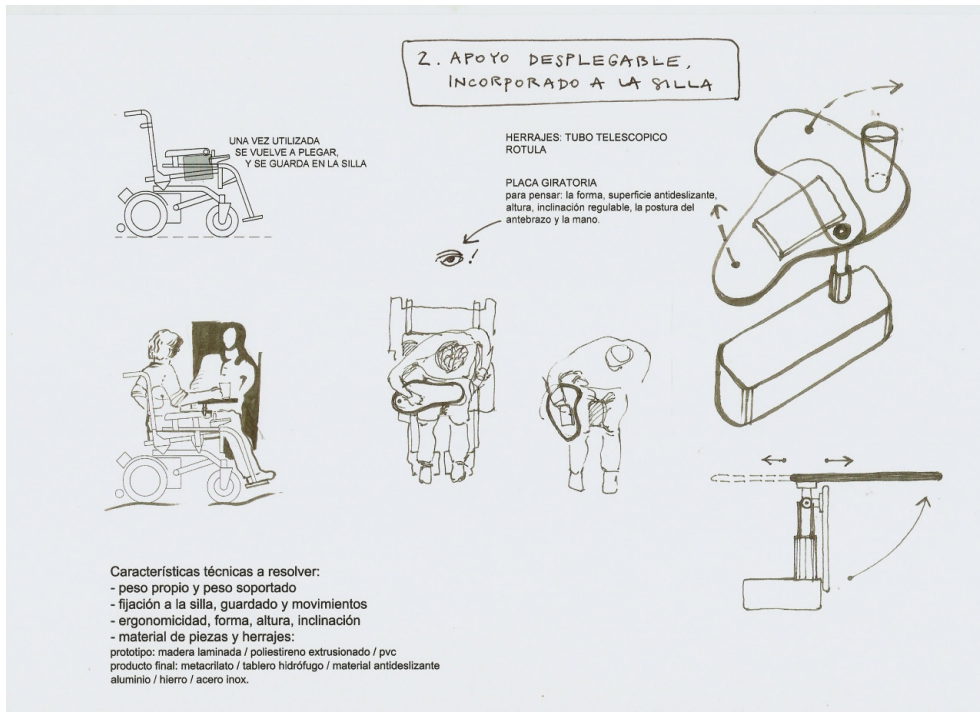
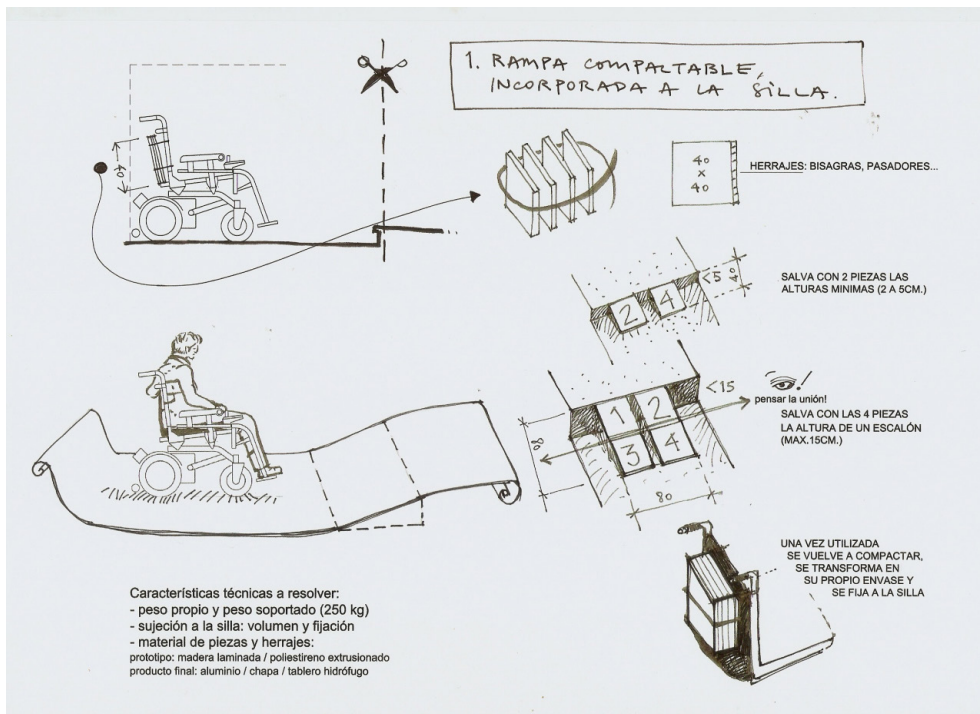
Particularly, great emphasis was put in the opening of the whole process through documentation. The aim, in fact, was to produce records – including technical details and different design attempts – which might be useful for subsequent steps of the process itself and to operate in an open-access logic, in order to inspire others to start similar projects. Interestingly, as Sánchez Criado writes, in this joint experiment the meaning of care was understood as the production of what Mol defines ‘the good in practice’¹⁹⁰. Namely, it was “shaped in different modes of experimenting and *tinkering* with how we might live better together”¹⁹¹.

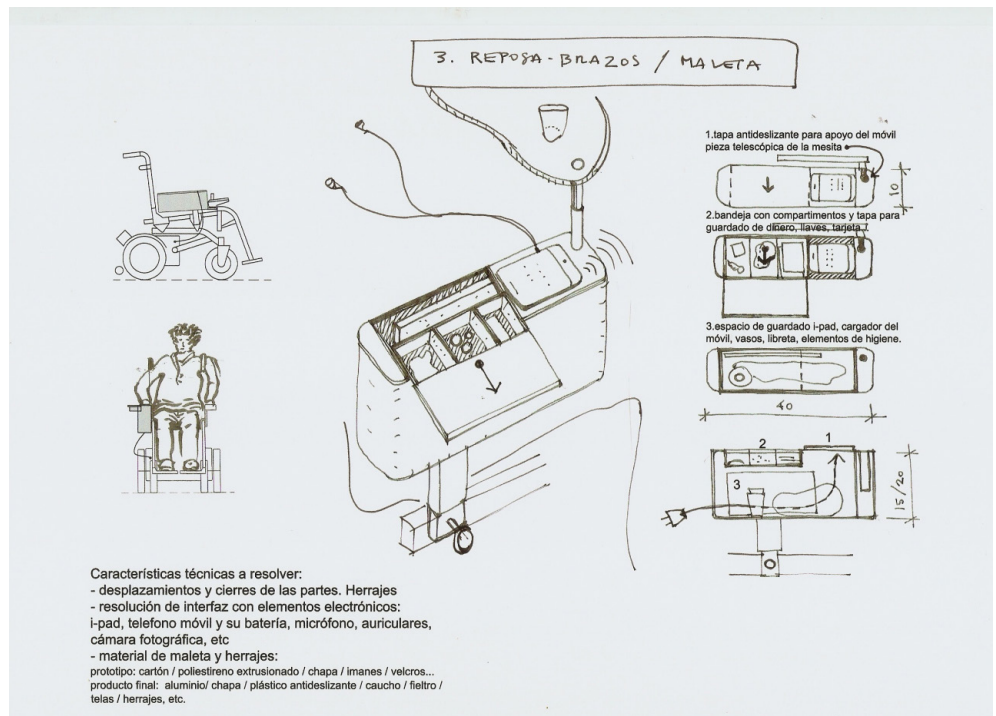
187 Cf. Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?: En torno a la silla and the ‘Joint Problem-Making’ of Technical Aids. In C. Bates, R. Imrie and K. Kullman (eds.) *Care and Design: Bodies, Buildings, Cities*, pp. 198-218. Oxford, UK: Wiley. See also: Sánchez Criado, T., Rodríguez-Giralt, I. and Mencaroni, A. (2016) Care in the (critical) making. Open prototyping, or the radicalisation of independent-living politics. *ALTER- European Journal of Disability* 10(1): 24-39; Sánchez Criado, T. (2018) Functional Diversity as a Politics of Design? *Diseña* (11): 148-159; Sánchez Criado, T. (2019) Technologies of friendship: Accessibility politics in the ‘how to’ mode. *The Sociological Review Monographs* 67(2): 408-427.
 188 Cf. Till, J. (2005) The negotiation of hope. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*, pp. 19-40. New York: Spon Press.

189 Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?, p. 200.

190 Cf. Mol, A., Moser, I. and Pols, J. (2010) Care: putting practice into theory. In A. Mol, I. Moser and J. Pols (eds.) *Care in Practice. On Tinkering in Clinics, Homes and Farms*, pp. 7-25. Bielefeld, D: Transcript.

191 Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?, p. 213.





ETS, original design sketches. Source: entornoalasilla.wordpress.com

Furthermore, it represented a way of intervening in the expert-driven practices so as to include those who are usually neglected due to particular techno-scientific agreements, such as, for example, wheelchair users, who have to cope with the standardisation and commoditisation of technical aids¹⁹².

Alida, the architect of the collective, recognized how this experience had allowed her to “join a political space”¹⁹³, where she wasn’t the only one at managing the process and making decisions as the ‘good’ or ‘hero’ architect willing to help, thus considering the user as someone who would merely accept or help her to improve previously designed solutions. Without abandoning her technical knowledge, she took part in an engaged and shared experimental material rearrangement, willing not only to problematize and find alternatives to standardized and commodified objects, but also to provide open access to its findings.

192 Cf. Martin, A., Myers, N. and Viseu, A. (2015) The politics of care in technoscience. *Social Studies of Science*, 45(5): 625-641.

193 Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?, p. 211.

Conclusion: Re-thinking participation in more-than-human worlds

What, then, does STS offer as a contribution to the reflection on the meaning of architecture and its political dimension, and, in particular, on participation?

A substantial difference with the participatory attempts examined in Chapter I lies, as we have seen, in the more radical problematization of the notion of expertise, and, in particular, the question of expert knowledge. By bringing into play the socio-materiality of architectural practice, and thus a more-than-human perspective, the emphasis is placed on mediations and processes. What acquires relevance is the active political role of non-humans and their knowledge (and world)-making effects.

Particularly, as Marres and Lezaun argue: “a materially sensitive account of public participation entails a particular project of political and moral expansion: to consider the role of material objects in the organization of publics implies a move ‘beyond the human’, a broadening of the range of entities that ought to be considered relevant to the fabric of political communities”¹⁹⁴.

This perspective implies recognising that democratisation cannot take place through stable and generalisable discursive procedures aimed at the construction and closure of a ‘common’. Rather, it is closely linked to – and conditioned by – the materiality and technicality of specific issues. In recognising this immanence and contingency, democratisation is an inherently more experimental process, in which the ‘common’ is contested and recomposed in ways that are always partial and open. In other words, rather than involving the use of ready-made formulas, it consists of speculative, punctual and situated actions of tinkering and infrastructural alteration.

Furthermore, it is relevant to note that, usually, following its intention to give voice, the participatory project implies and reclaims the ‘agency’ of other people. However, what happens when there is no voice, or rather, when there isn’t a voice that may be identified with a type of normative subjectivity that a user is supposed to have? What happens if we find ourselves relating with those neglected entities who, to use Puig de la Bellacasa’s words again, “might be unable to voice their concern and need for care—for example, trees and flowers, babies in prams whose noses stroll at the level of SUV’s exhaust pipes, or whose voice is less heard—cyclists, older people”¹⁹⁵? That is, the numerous – human and non-human – ‘parts’ that do not utter ‘I want’, ‘I need’, ‘I wish’, and are therefore beyond modern Kantian – volitive, aspirational – subjectivity?

The various and specific ways in which these issues impact on architectural practice and contribute to the radicalization of the very idea of participation will be the subject of the following chapters.

194 Marres, N. and Lezaun, J. (2011) *Materials and Devices of the Public: An Introduction*, p. 493.

195 Puig de la Bellacasa, M. (2017) *Matters of Care*, p. 52.

REFERENCES (Chapter III)

- Akrich, M. (1987) Comment décrire les objets techniques? *Technique et culture* 9: 49-64.
- Akrich, M. (1989) La construction d'un système socio-technique. Esquisse pour une anthropologie des techniques. *Anthropologie et Sociétés* 13(2): 31-54.
- Akrich, M. (1991) L'analyse socio-technique. In D. Vinck (ed.) *La gestion de la recherche*. Bruxelles: De Boeck.
- Akrich, M. (1992) The De-scription of Technical Objects. In W. Bijker and J. Law (eds.) *Shaping Technology/Building Society: Studies in Sociotechnical Change*, pp. 205-224. Cambridge, MA: MIT Press.
- Ardeth*, 02 (Spring 2018) BOTTEGA: *Ecology of Design Practice*.
- Amin, A. and Thrift, N. (2002) *Cities. Reimagining the Urban*. Cambridge, Oxford, UK: Polity.
- Asaro, P. M. (2000) Transforming Society by Transforming Technology: The Science and Politics of Participatory Design. *Accounting, Management and Information Technologies* 10(4): 257-290.
- Beck, U. (1992) *Risk Society: Towards New Modernity*. London: Sage Publications.
- Bjorgvinsson, E., Ehn, P. and Hillgren, P.-A. (2012) Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues* 28(3): 101-116.
- Bjorgvinsson, E., P. Ehn, P. and Hillgren, P.-A. (2012): Agonistic participatory design: working with marginalised social movements. *CoDesign* 8(2-3): 127-144.
- Blau, J. R. (1984) *Architects and Firms: A Sociological Perspective on Architectural Practice*. Cambridge, MA: MIT Press.
- Bourdieu, P. (1971) The Berber House. In Douglas, M. (ed.) *Rules and Meanings: the Anthropology of Everyday Knowledge*, pp. 98-110. Harmondsworth, UK: Penguin Books.
- Callon, M. (1986a) Some elements in a sociology of translation. In J. Law (ed.), *Power, Action, Belief: A New Sociology of Knowledge*. London: Routledge and Kegan Paul, pp. 196-223.
- Callon, M. (1986b) The Sociology of an Actor-Network: The Case of the Electric Vehicle. In M. Callon, J. Law and A. Rip (eds.) *Mapping the Dynamics of Science and Technology: Sociology of Science in the real World*. London: MacMillan Press.
- Callon, M. (1987) Society in the Making: The Study of Technology as a Tool For Sociological Analysis. In W. Bijker, T. Hughes and T. Pinch (eds.) *The Social Construction of Technological Systems*. Cambridge, MA: MIT Press.
- Callon, M. (1996) Le Travail de la Conception en Architecture. *Situations, Les Cahiers de la Recherche Architecturale* 37(1): 25-35.
- Callon, M. (1999) The Role of Lay People in the Production and Dissemination of Scientific Knowledge. *Science Technology & Society* 4: 81-94.
- Callon, M. (2001) Actor-Network Theory. In N. J. Smelser and P. B. Baltes (eds.) *International Encyclopedia of the Social & Behavioral Sciences*, pp. 62-66. Oxford, UK: Elsevier.

- Callon, M., Lascoumes, P. and Barthe, Y. (2009) *Acting in an Uncertain World: An Essay on Technical Democracy*. Cambridge, MA: MIT Press. Originally published as Callon, M., Lascoumes, P. and Barthe, Y. (2001) *Agir dans un monde incertain. Essai sur la démocratie technique*. Paris: Seuil.
- Celik Alexander, Z. and May, J. (eds.) (2020) *Design Technics. Archaeologies of Architectural Practice*. Minneapolis, MN–London: University of Minnesota Press.
- Collins, H. (1985) *Natural Order: Replication and Induction in Scientific Practice*. London: Sage Publications.
- Coleman, E. G. (2013) *Coding Freedom. The Ethics and Aesthetics of Hacking*. Princeton, NJ: Princeton University Press.
- Corsín Jiménez, A. (2013) Introduction: The prototype – More than many and less than one. *Journal of Cultural Economy* 7(4): 1-18.
- Corsín Jiménez, A. and Estalella, A. (2013) The Atmospheric Person: Value, Experiment, and ‘making neighbors’ in Madrid’s Popular Assemblies. *HAU: Journal of Ethnographic Theory* 3(2): 119-139.
- Corsín Jiménez, A. (2014) The Right to Infrastructure: A Prototype for Open-source Urbanism. *Environment and Planning D: Society and Space* 32: 342-362.
- Cuff, D. (1992) *Architecture: The Story of Practice*. Cambridge, MA: MIT Press.
- de Laet, M. and Mol, A. (2000) The Zimbabwe bush pump: mechanics of a fluid technology. *Social Studies of Science* 30: 225-263.
- DeLanda, M. (2006) *A New Philosophy of Society Assemblage Theory and Social Complexity*. London - New York: Continuum.
- Deleuze, G. and Guattari, F. (1981) Rhizome. *Ideology and Consciousness* 6: 49-71.
- Dewey, J. (1927) *The Public and Its Problems*. New York: Henry Holt and Company.
- Domínguez Rubio, F. and Fogué, U. (2015) *Unfolding the Political Capacities of Design*, in A. Yaneva, A. Zaera-Polo (eds.) *What Is Cosmopolitical Design? Design, Nature and the Built Environment*, pp. 143-160. Burlington (VT): Ashgate.
- Domínguez Rubio, F. and U. Fogué (2017) Desplegando las capacidades políticas del diseno. *Revista Diseña*, no. 11.
- Doucet, I. (2012) Making a city with words: Understanding Brussels through its urban heroes and villains. *City, Culture and Society (CCS)* 3(2): 105-116.
- Doucet, I. (2015) *The Practice Turn in Architecture: Brussels after 1968*. Farnham, UK: Ashgate.
- Evans, J. and Karvonen, A. (2014) ‘Give Me a Laboratory and I Will Lower Your Carbon Footprint!’—Urban Laboratories and the Governance of Low-Carbon Futures. *International Journal of Urban and Regional Research* 38(2): 413-430.
- Fariás, I. and Bender, T. (2009) *Urban Assemblages. How Actor-Network Theory changes urban studies*. New York: Routledge.
- Fariás, I. (2011) The politics of urban assemblages. *CITY* 15(3-4): 365-374.
- Fariás, I. and Blok, A. (2016) Technical democracy as a challenge to urban studies: Introduction. *CITY* 20(4): 539-548.
- Fariás, I. and Blok, A. (2016) *Urban Cosmopolitics. Agencements, assemblies, atmospheres*. New York: Routledge.

- Felt, U. and Fochler, M. (2010) Machineries for Making Publics: Inscribing and Describing Publics in Public Engagement. *Minerva* 48(3): 219-238.
- Frassoldati, F. et al. (2018) Around the Bottega. *Ardeth* 02: 5-8.
- Hacking, I. (1986) Making up people. In T. Heller, M. Sosna and D. Wellberry (eds.) *Reconstructing Individualism: Autonomy, Individuality, and the Self in Western Thought*, pp. 222-236. Stanford, CA: Stanford University Press.
- Haraway, D. J. (1997) *Modest Witness @ Second Millennium: FemaleMan Meets Oncomouse*. London: Routledge.
- Heidegger, M. (1967) *What Is a Thing?* transl. W. B. Barton, Jr. and V. Deutsch. Chicago: Henry Regnery Company. Originally published as Id. (1962) *Die Frage nach dem Ding*. Tübingen, D: Max Niemeyer.
- Houdart, S. (2008) Copying, cutting and pasting social spheres: Computer designers' participation in architectural projects. *Science Studies: An Interdisciplinary Journal of Science and Technology* 21(1): 47-64.
- Houdart, S. and Minato, C. (2009) *Kuma Kengo. An unconventional Monograph*. Paris: Editions Donner Lieu.
- Houdart, S. (2016) Architecture in the wild: The studio overflowed. In Farias, I. and Wilkie, A. (eds.) *Studio studies: operations, topologies and displacements*. London - New York: Routledge.
- Ivins, W. M. Jr. (1973) *On the Rationalization of Sight*. New York: Da Capo Press.
- Jasanoff, S. (2003) Technologies of humility: Citizen participation in governing science. *Minerva* 41(3): 223-244.
- Jégou, F. and Manzini, E. (2008) *Collaborative Services: Social Innovation and Design for Sustainability*. Milano: Poli Design.
- Joyce, P. (2003) *The Rule of Freedom: Liberalism and the Modern City*. London - New York: Verso.
- King, A. D. (1984) *The Bungalow: The Production of a Global Culture*. London: Routledge & Kegan Paul.
- Knorr-Cetina, K. (1981) *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science*. Oxford, UK: Pergamon Press.
- Kuma, K. (1997) Digital Gardening. *Space Design Monthly Journal of Art and Architecture* 398: 6-132.
- Latour, B. and Woolgar, S. (1986) *Laboratory Life: The Construction of Scientific Facts*. Princeton, NJ: Princeton University Press.
- Latour, B. (1987) *Science in Action*. Cambridge, MA: Harvard University Press.
- Latour, B. (1988) *The Pasteurization of France*. Cambridge, MA: Harvard University Press.
- Latour, B. (1990) Drawing things together. In M. Lynch and S. Woolgar (eds.) *Representation in Scientific Practice*, pp. 19-68. Cambridge, MA: The MIT Press.
- Latour, B. (1991) Technology is society made durable. In J. Law (ed.) *Sociology of Monsters. Essays on Power, Technology and Domination*, pp. 103-131. London: Routledge.
- Latour, B. (1992) Where are the missing masses? The sociology of a few mundane artefacts. In W. Bijker and J. Law (eds.) *Shaping Technology/Building Society: Studies in Sociotechnical Change*, pp. 225-259. Cambridge, MA: MIT Press. Republication in the reader D. G. Johnson and J. M. Wetmore (eds.) (2008) *Technology and Society, Building Our Sociotechnical*

Future, pp. 151-180. Cambridge, MA: MIT Press.

Latour, B. (1993) *We Have Never Been Modern*. Cambridge, MA: Harvard University Press.

Latour, B. (1996) *Aramis or the Love of Technology*. Cambridge, MA: Harvard University Press.

Latour, B. (1999) *Pandora's Hope. Essays on the Reality of Science Studies*. Cambridge, MA - London: Harvard University Press.

Latour, B. (1999) *Politiques de la nature. Comment faire entrer les sciences en démocratie*. Paris: Éd. La Découverte.

Latour, B. (2000) The Berlin Key or How to Do Things with Words. In P. Graves-Brown (ed.) *Matter, Materiality and Modern Culture*. London: Routledge.

Latour, B. (2004a) *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA: Harvard University Press.

Latour, B. (2004b) Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern. *Critical Inquiry* 30: 225-248.

Latour, B. (2004c) Whose Cosmos, Which Cosmopolitics: Comments on the Peace Terms of Ulrich Beck. *Common Knowledge* 10(3): 450-462.

Latour, B. (2005a) From Realpolitik to Dingpolitik or How to Make things Public. In B. Latour and P. Weibl (eds.) *Making Things Public: Atmospheres of Democracy*. Cambridge, MA: MIT Press.

Latour, B. (2005b) What is the style of matters of concern? Spinoza Lectures delivered at the University of Amsterdam. Amsterdam: Van Gorcum.

Latour, B. (2007a) *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford, UK: Oxford University Press.

Latour, B. (2007b) Turning around politics: A note on Gerard de Vries' paper. *Social Studies of Science* 37(5): 811-820.

Latour, B. (2018) *Down to Earth: Politics in the New Climatic Regime*. Cambridge, UK: Polity Press.

Law, J. (1987) Technology, closure and heterogeneous engineering: the case of the Portuguese expansion. In W. E. Bijker, T. P. Hughes and T. J. Pinch (eds.) *The Social Construction of Technological Systems, New Directions in the Sociology and History of Technology*, pp. 111-134. Cambridge, MA: The MIT Press.

Law, J. and Hetherington, K. (1998) *Materialities, spatialities, globalities*, published by the Centre for Science Studies, Lancaster University at <http://www.comp.lancs.ac.uk/sociology/papers/law-hetherington-materialities-spatialities-globalities.pdf>

Law, J. and Mol, A. (2001) Situating technoscience: an inquiry into spatialities. *Environment and Planning D: Society and Space* 19(5): 609-621.

Lee, N. and Brown, S. (1994) Otherness and the actor network: the undiscovered continent. *American Behavioural Scientist* 37(6): 772-790.

Lefebvre, H. (1996) The right to the city. In E. Kofman and E. Lebas (eds.) *Writings on Cities*, pp. 147-159. Oxford, UK: Blackwell.

Loukissas, Y. (2012) *Co-Designers: Cultures of Computer Simulation in Architecture*. London and New York: Routledge.

- Lynch, M. (1985) *Art and Artifact in Laboratory Science: A Study of Shop Work and Shop Talk in a Research Laboratory*. London: Routledge and Kegan Paul.
- Marres, N. (2005) *No Issue, No Public: Democratic Deficits After the Displacement of Politics*. Doctoral Dissertation, Universiteit van Amsterdam. Amsterdam: Ipskamp Printpartners.
- Marres, N. (2007) The Issues Deserve More Credit: Pragmatist Contributions to the Study of Public Involvement in Controversy. *Social Studies of Science* 37(5): 759-780.
- Marres, N. (2009) Testing powers of engagement: Green living experiments, the ontological turn and the undoability of involvement. *European Journal of Social Theory* 12(1): 117-33.
- Marres, N. and Lezaun, J. (2011) Materials and Devices of the Public: An Introduction. *Economy and Society* 40(4): 489-509.
- Martin, A., Myers, N. and Viseu, A. (2015) The politics of care in technoscience. *Social Studies of Science* 45(5): 625-641.
- McFarlane, C. (2011) *Learning the City: Knowledge and Translocal Assemblage*. Oxford, UK: Wiley-Blackwell.
- McLuhan, M. (1964) *Understanding Media: Extensions of Man*. New York: McGraw-Hill.
- Merkx, F. (2008) *Organizing Responsibilities for Novelities in Medical Genetics: Dynamics and Productivity of Mutual Positioning in Hybrid Forums*. PhD Thesis. Twente, NL: University of Twente.
- Metzger, J. (2011) Dispatches from a Time Capsule? Moving the ANT, Normativity and Democracy Discussion Ten Years Down the Road: An Intervention in the Boelens-Rydin-Webb Debate. *Planning Theory* 10 (3): 288-295.
- Mol, A. and Law, J. (1994) Regions, networks and fluids: anaemia and social topology. *Social Studies of Science*, 24(4): 641-671.
- Mol, A. and Law, J. (2002) Complexities: an introduction. In J. Law and A. Mol (eds.) *Complexities: Social Studies of Knowledge Practice*, pp. 1-22. Durham, NC: Duke University Press.
- Mol, A., Moser, I. and Pols, J. (2010) Care: putting practice into theory. In A. Mol, I. Moser and J. Pols (eds.) *Care in Practice. On Tinkering in Clinics, Homes and Farms*, pp. 7-25. Bielefeld, D: Transcript.
- Moreira, T. (February 2004) Surgical monads: a social topology of the operating room. *Environment and Planning D: Society and Space* 22(1): 53-69.
- Mouffe, C. (1993) *The return of the political*. London: Verso.
- Mouffe, C. (2000) *The democratic paradox*. London: Verso.
- Murdoch, J. (2006) *Post-structuralist geography: a guide to relational space*. London, Thousand Oaks, CA, Nw Delhi: Sage Publications.
- Murray, R., Caulier-Grice, J. and Mulgan, G. (2010) *The Open Book of Social Innovation*. London: The Young Foundation.
- Nadai, A. and Labussière, O. (2013) Playing with the line, channelling multiplicity: Wind power planning in the Narbonnaise (Aude, France). *Environment and Planning D: Society and Space* 31(1): 116-139.
- Puig de la Bellacasa, M. (2017) *Matters of Care: Speculative Ethics for a More Than Human World*. Minneapolis, MN:

University Press.

Sánchez Criado, T. and Cereceda Otárola, M. (2016) Urban accessibility issues. Techno-scientific democratizations at the documentation interface, *CITY* 20(4): 619-636.

Sánchez Criado, T., Rodríguez-Giralt, I. and Mencaroni, A. (2016) Care in the (critical) making. Open prototyping, or the radicalisation of independent-living politics. *ALTER - European Journal of Disability* 10(1): 24-39.

Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?: En torno a la silla and the “Joint Problem-Making” of Technical Aids. In C. Bates, R. Imrie and K. Kullman (eds.) *Care and Design: Bodies, Buildings, Cities*, pp. 198-218. Oxford, UK: Wiley.

Sánchez Criado, T. (2018) Functional Diversity as a Politics of Design? *Diseña*, (11): 148-159.

Sánchez Criado, T. (2019) Technologies of friendship: Accessibility politics in the ‘how to’ mode. *The Sociological Review Monographs* 67(2): 408-427.

Sismondo, S. (2004) *An introduction to science and technology studies*. Oxford, UK: Blackwell Publishing Ltd.

Star, S. L. (1991) Power, Technologies and the Phenomenology of Conventions: On Being Allergic to Onions. In J. Law (ed.) *A Sociology of Monsters: Essays on Power, Technology and Domination*, pp. 26-56. London: Routledge.

Stengers, I. (1997) *Cosmopolitiques*, 7 vols., Paris: La Découverte.

Stengers, I. (2002) *Penser avec Whitehead: Une libre et sauvage création de concepts*. Paris: Seuil.

Stengers, I. (2005) The cosmopolitical proposal. In B. Latour and P. Weibel (eds.) *Making things public: atmospheres of democracy*, pp. 994-1003. Cambridge, MA - Karlsruhe, D: MIT Press - zKM/Center for Art and Media in Karlsruhe.

Strathern, M. (1996) Cutting the Network. *Journal of the Royal Anthropological Institute* N.S. (2): 517-535.

Suchman, L. (2006) *Human-Machine Reconfigurations. Plans and Situated Actions*. Cambridge, MA: Cambridge University Press.

The Invisible Committee (2007) *L'insurrection Qui Vient*. Paris: Editions La Fabrique.

The Invisible Committee (2014) *To Our Friends*. Cambridge, MA: MIT Press.

Till, J. (2005) The negotiation of hope. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*, pp. 19-40. New York: Spon Press.

Tschumi, B. (1994) *Event-Cities*. Cambridge, MA: MIT Press.

Traweek, S. (1988) *Beamtimes and Lifetimes: The World of High Energy Physicists*. Cambridge, MA: Harvard University Press.

Varga, H. (2018) On Design and Making with sts. *Diseña* (12): 30-51.

Viveiros de Castro, E. (1998) Les pronoms cosmologiques et le perspectivisme amérindien. In E. Alliez (ed.) *Gilles Deleuze. Une vie philosophique*, pp. 449-461. Paris: Les Empêcheurs de penser en rond, Synthélabo.

Viveiros de Castro, E. (2004) Exchanging perspectives: The transformation of objects into subjects in Amerindian ontologies. *Common Knowledge* 10(3): 463-484.

- Whitehead, A. N. (1920) *The Concept of Nature*. Cambridge, UK: Cambridge University Press.
- Whitehead, A. N. (1933) *Adventures in Ideas. Adventures in Ideas*. New York: Free Press.
- Whitehead, A. N. (1978) *Process and Reality* (Gifford Lectures Delivered in the University of Edinburgh During the Session 1927-28). New York: Free Press.
- Wilkie, A. and Mike M. (2015) The Design Studio as a Centre of Synthesis. In I. Fariás and A. Wilkie (eds.) *Studio Studies: Operations, Topologies & Displacements*, pp. 25–39. London: Routledge.
- Wynne, B. (1993) Public uptake of science: a case for institutional reflexivity. *Public Understanding of Science* 2(4): 321-337.
- Winner, L. (1980) Do artifacts have politics? *Daedalus* 109(1): 121-136.
- Winner, L. (1993) Upon Opening the Black Box and Finding it Empty: Social Constructivism and the Philosophy of Technology. *Science, Technology & Human Values* 18: 362-378.
- Yaneva, A. (2005) Scaling Up and Down: Extraction Trials in Architectural Design. *Social Studies of Science* 35(6): 867-894.
- Yaneva, A. (2005) A Building Is a “Multiverse”. In B. Latour and P. Weibl (eds.) *Making Things Public: Atmospheres of Democracy*. Cambridge, MA: MIT Press.
- Yaneva, A., Latour, B. and Geiser, R. (eds.) (2008) Give me a Gun and I will Make All Buildings Move: An ANT’s View of Architecture. In R. Geiser (ed.) *Explorations in Architecture: Teaching, Design, Research*, pp. 80-89. Basel, CH: Birkhauser Verlag Ag.
- Yaneva, A. (2009) Making the Social Hold: Towards an Actor-Network Theory of Design. *Design and Culture* 1(3): 273-288.
- Yaneva, A. (2009) *Made by the Office for Metropolitan Architecture: An Ethnography of Design*. Rotterdam, NL: 010 Publishers.
- Yaneva, A. (2012) *Mapping Controversies in Architecture*. London: Ashgate.
- Yaneva, A. and Zaera-Polo, A. (eds.) (2015) *What Is Cosmopolitical Design? Design, Nature and the Built Environment*. Burlington, VT: Ashgate.
- Yaneva, A. (2017) *Five Ways to Make Architecture Political: An Introduction to the Politics of Design Practice*. London: Bloomsbury Publishing PLC.
- Yearley, S. (2005) *Making Sense of Science: Understanding the Social Study of Science*. London: Sage Publications.
- Zitouni, B. (2010) *Agglomérer. Une anatomie de l’extension Bruxelloise (1828–1915)*. Bruxelles: Brussels University Press.
- Žižek, S. (2006) The Interpassive Subject: Lacan Turns a Prayer Wheel. In Id. *How to Read Lacan*, pp. 23-39. New York: W. W. Norton.

IV

Re-learning architecture with STS

Introduction

In the last decades a number of architects have been increasingly captivated by STS's conceptual and descriptive attentiveness to material processes and their politics. By moving further beyond the modernist pact of social utility, which see them as responsible of creating solutions for the public good by designing objects, technologies and spaces, they have been experimenting design approaches both inspired by and extending STS's conceptual repertoire¹. In fact, looking at the social as a never stable process of composition of heterogeneous collectives turns design into a radically distributed practice and a less time-constrained and specified task, requiring to take into account the agency of both human and non-human actors. In other words, as we shall see, beyond the mere act of providing solutions and finished objects, design turns into an agent of problematisation and process-opening.

Anyway, the ways in which the concepts, notions and methods provided by STS are being experimentally used, and, in turn, transformed and extended, by architects to re-learn – and thus to articulate different ideas of – architectural practice and its political dimension are multiple, overlapping and ever-changing [i.b. IV. 1].

This chapter aims to provide a partial and open overview. More specifically, I will focus on looking at the different ways in which the more-than-human challenge has been and is being taken up and addressed in architecture and in which the role traditionally attributed to architects is transformed.

¹ Besides the field of architecture, this intersection and experimental agenda can also be found in the practice of a number of designers. As already mentioned in chapter III, an interesting survey can be found in: Varga, H. M. (2018) On Design and Making with sts. *Diseña* (12): 30-51.

i.b. IV. 1 - STS and design disciplines: a mutual influence

It is important to point out that the relationship between STS and the various design disciplines has not been unidirectional, triggering also a redefinition of social and cultural theory: whereas before social scientists and anthropologists would merely consider design as a research object and thus provide designers with more accurate information about potential or actual users, STS scholars have turned them into interlocutors and begun to experiment with their methodological inventiveness¹.

¹ See, for instance: Marres, N., Guggenheim, M. and Wilkie, A. (2018) *Inventing the social*. Manchester, UK: Matter-ing Press; Sánchez Criado, T. and Estalella, A. (2018) Introduction: Experimental Collaborations. In A. Estalella and T. Sánchez Criado (eds.) *Experimental Collaborations: Ethnography through Fieldwork Devices*, pp. 1-30. New York: Berghahn.

1. Beyond the ‘mapping of controversies’

Before I focus on these experiments – and in order to underline their innovative impact – it may be useful to retrace and expand Yaneva’s redefinition of architectural practice, which was discussed in the previous chapter. Indeed, we have seen how Yaneva, by following Latour’s steps and through the perspective of ANT, reformulated the architect’s task as that of mapping controversies, which is to say, making every actor, connection and controversy involved in both artefacts and architectural practices visible. Notably, drawing inspiration from the ANT educational version developed by Latour, who aims at educating students to the exploration and mapping of contemporary socio-technical issues [i.b. IV. 2], Yaneva also elaborated and taught her own educational programme called ‘Mapping Controversies in Architecture’ at the University of Manchester since 2008/2009². Paraphrasing her words, the course aimed at teaching students how to draw, map, visualize controversies rather than objects, and, therefore, the complex ecologies that hold together architectural, cultural, economic and political issues. Moving against traditional approaches of critical architectural theory – which, still grounded in divides such as society/architecture, nature/culture, reality/rationality, “consisted in *unveiling* the hidden mechanisms (...) *behind*” architecture and “held the concept of society to

² See chapters: ‘Visualizing Controversies, Tracing Networks’ and ‘Mapping Controversies’ in Yaneva, A (2012) *Mapping Controversies in Architecture*. London: Ashgate Publishing. The course is presented on web-based platforms, namely: <http://www.mappingcontroversies.co.uk>, or <http://www.msa.ac.uk/mac>.

i.b. IV. 2 - The cartography of controversies

The cartography of controversies was developed by Latour as a didactic version of ANT at the *École des Mines* in Paris, and then adopted and developed as a full research method in several European and American universities. The aim of this programme is precisely to provide students with a set of techniques to explore and visualize issues, that is, the complexity of collective existence. STS-trained sociologist Tommaso Venturini, in particular, examines the potential of digital technologies to render such complexity visible. Indeed, the controversy-website has been developed as a multilayered toolkit to trace and aggregate information on public debates¹.

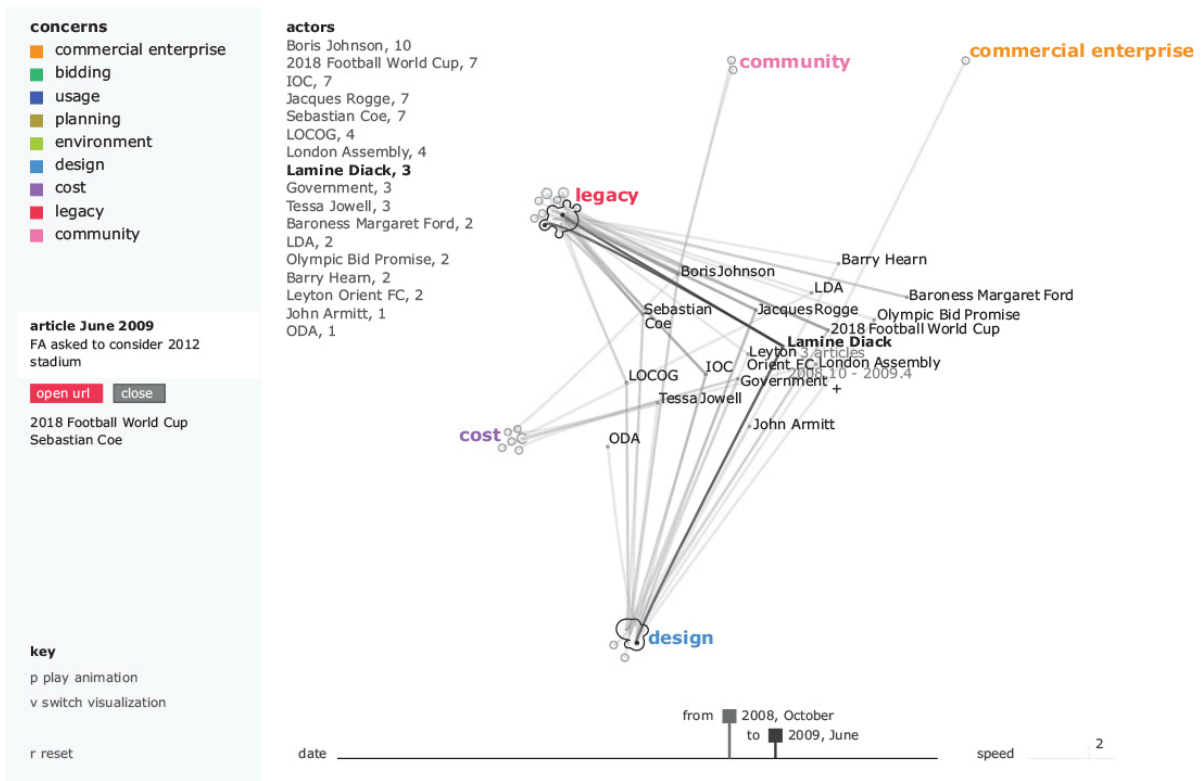
1 Cf.: Venturini, T. (2010) Diving in magma: How to explore controversies with actor-network theory. *Public Understanding of Science* 19(3): 258-273; Venturini, T. (2012) Building on faults: How to represent controversies with digital methods. *Public Understanding of Science* 21(7): 796-812. A manual on this method has recently been published by *The Sciences Po Medialab* (<https://medialab.sciencespo.fr>) of which Latour is the director. See: Seurat, C. and Tari, T. (2021) *Controverses mode d'emploi*. Paris: Les Presses de Sciences Po.

be fixed”³ – the course was inspired by her already mentioned pragmatist mode of engaging with architecture. As she writes, “[f]ollow how architecture *happens*, watch how matter acts, witness how actors attribute meaning to their actions, track design processes as they unfold (...) and you will witness buildings that are not made by powerful minds; that are not meant to symbolize, but architecture that emerges as it traces many intricate relationships with slate, steel, glass, with materials and technologies”⁴. Further stressing on the urge to abandon – poor and abstract – Euclidean renderings of space, which see buildings as static objects, she describes ANT-based controversy mapping techniques as based on the vision of buildings as ‘things’, contested spaces, which result from protracted processes involving multiple concerns. Rather than merely relying on external concerns, this approach follows architectural projects ‘in the making’ and studies the performative activities of buildings in their active use. Particularly, to further articulate her teaching philosophy, Yaneva discussed the insurmountable differences between an STS-based pedagogical approach to design and the studio-based one, primarily proposed by philosopher and urban planning professor Donald Schon⁵. In contrast to Schon’s reflective studio-based approach (discussed further in section 2.2.1) which involves the production of situations to learn what it means to design, thus for ‘learning

3 Ibid. pp. 41-42.

4 Ibid. p. 44.

5 Cf.: Schon, D. (1983) *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books; Schon, D. (1985) *The Design Studio: An Exploration of its Traditions and Potentials*. London: RIBA Publications.



Simulation of the London 2012 Olympic Stadium controversy.
Photo and caption: Yaneva, A., 2012, *Mapping Controversies in Architecture*.

to design', Yaneva argues that a controversy-based approach rather implies situations of 'learning *about* design', which is a "an out-of-the-studio (...) mode of questioning the multifarious connections of architecture, society, economics, culture and politics"⁶. According to her, by mapping controversies students become 'surfing practitioners', capable of collecting huge amounts of heterogeneous data about a project, such as "design precedents, image retrieval, actors' statements, archival materials, government papers and data about the architects in charge"⁷. In turn, this acquired knowledge would raise students' awareness "about *what design does* – what kind of effects it can trigger, how it can affect the observer, divide communities and provoke disagreements"⁸. For instance, in the mapping undertaken to collect the controversies surrounding a proposed expansion of London's Heathrow Airport, her students: "immerse themselves in complex datasets that allow them to reflect not only on the design of the third runway and the sixth terminal to Heathrow Airport but on all those issues design is related to. How will the new terminal affect climate change? How many surrounding homes will

6 Yaneva, A. (2012) *Mapping Controversies in Architecture*, p. 68.

7 Ibid. p. 71.

8 Ibid. p. 70.

the expanded airport destroy? How will the new design affect the residents of Sipson? Will the campaigns against Heathrow's expansion change any of the design plans?"⁹ Particularly, according to Yaneva, architectural techniques such as parametric modelling and post-parametric computational tools would allow students "to remain *in* the world of the controversy while also having an overview of it"¹⁰ and simultaneously present a space where controversies are not static objects but moving and changing networks of heterogeneous actors.

This approach, however, somehow implies a kind of activity that seems to have to be undertaken outside of – and independently from – the actual field of architecture. Architects become analysts of controversies, thus developing extensive knowledge 'about' design. But what remains of architecture's design capability? And what can architecture offer, from its own field, to STS?

The experiments I will report on below rather attempt to adopt STS conceptual and analytical instrumentation "*within* and *through*"¹¹ architectural practice itself.

Focusing both on the design experiences of a series of architects (section 2.1), and on particular pedagogical experiences carried out at the schools of Architecture in Alicante and Munich (section 2.2), I will show how both have implied and imply a transformation, or a re-learning, of architectural practice.

Particularly, in the first section, I will attempt to attribute a labile definition of the operations at play in the work of different architects, and of the different ways in which the more-than-human dimension is embraced and reveals its impact on their design practice. However, by reading my account, it will become clear that these operations often coexist and overlap.

2. Experiments within/through architectural interventions

2.1. Making the invisible visible

As we observed in Chapter III, architecture has the habit of simplifying, purifying, generalising. To use a Latourian expression, it tends to operate according to the notion of 'matter of fact'.

In other words, the design activity aims at the production of black-boxes, cutting out complexities, disagreements, multiple – not only human – ontologies. The experiments I report below aim, in different ways, to make the socio-political dimension of

⁹ Ibid. pp. 69-70.

¹⁰ Ibid. p. 100.

¹¹ Fariás, I. and Sánchez Criado, T. (eds.) (2018a) Re-Learning Design: Pedagogical Experiments with STS in Design Studio Courses. *Diseña* (12): 14-29, p. 27.

architecture visible, that is, the multiple relationships, mediations, dependencies and hidden controversies, in order to allow the redistribution of agency and knowledge.

In many of their works, the Madrid/New York based practice *Office for Political Innovation*¹² seem to be particularly concerned with the staging of the multifarious more-than-human agencies that gather to compose the architectural ‘thing’. In this sense, the Latourian notions of *Dingpolitik* and cosmopolitics seem to become an inspiration to reconfigure architectural politics and practice. Particularly, Andrés Jaque, architect and founder of the *Office*, argues that his aim is to find ways to escape conventional approaches to design practice “based on the idea that there is first a phase of design, followed by one of realization, ending with one of occupation and use” and to replace them “by a successive-attempts-based design process”¹³. The role of architectural design, for him, “is to intervene in existing situations, to be able to read and mobilize the critical mass that is already embedded in its materiality, and reenact it in a way that power can be reduced, redistributed, or dissented through building”¹⁴.

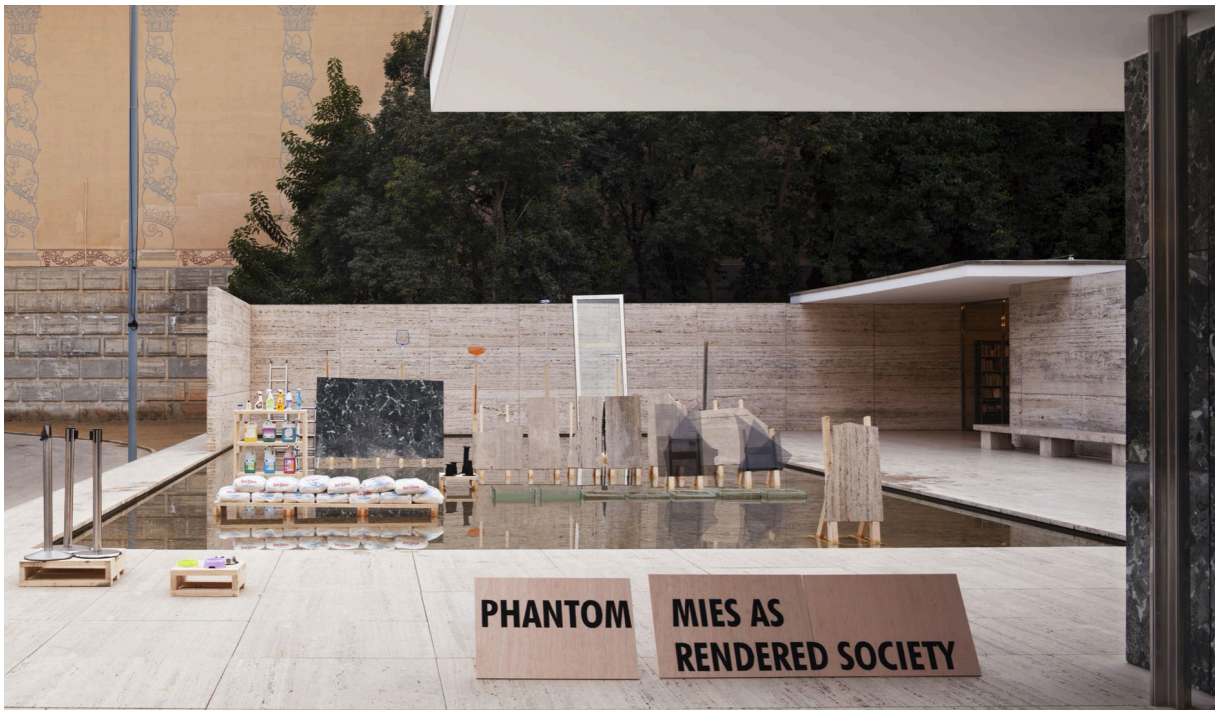
PHANTOM. Mies as Rendered society (2013)¹⁵, is an intervention at the *Barcelona Pavilion* based on a two-year ethnography carried out to unfold the role played by the so-far-unnoticed basement included in the 1986 reconstruction. When the 1929 *German National Pavilion* was reconstructed in Barcelona, the team in charge of the project – architects Cristian Cirici, Fernando Ramos and Ignasi de Solà-Morales – also built a large basement to facilitate control, maintenance and service. However, the access to the basement was purposely made difficult to avoid its potential future use as an exhibition space where visitors could get to know more about the original *Pavilion*, its reconstruction and Mies himself. The aim was to preserve the ‘original experience’ of the building and its autonomy from any kind of socio-political contingency, which implied the omission of all the things that might subvert this illusion. As Jaque narrates, these hidden items such as broken travertine slabs, faded velvet curtains, and broken sheets of glass “are the architectural equivalents of the eponymous picture in Oscar Wilde’s *Portrait of Dorian Gray*. In the eyes of the people in charge of maintaining the building, it is as though the dilapidated pieces of velvet, glass or travertine, by virtue of having once been part of the *Pavilion*’s material substance, somehow magically retain the structure’s soul: in other words, the essence of Mies

12 See: <https://officeforpoliticalinnovation.com>

13 Yaneva, A. (2015) An Interview with Andrés Jaque, Office for Political Innovation, in A. Yaneva and A. Zaera-Polo (eds.) *What Is Cosmopolitical Design? Design, Nature and the Built Environment*, pp. 57-77. Burlington, VT: Ashgate, p. 58.

14 Jaque, A. (2018) Rearticulating the Social. Retrieved 16 October 2020, from <https://www.e-flux.com/architecture/positions/280206/rearticulating-the-social/>

15 See: <https://officeforpoliticalinnovation.com/work/phantom-mies-as-rendered-society/>





Office for Political Innovation, PHANTOM. Mies as Rendered Society, Barcelona, (2012 - 2013). Source: officeforpoliticalinnovation.com

van der Rohe's critical programme"¹⁶. The space also hides everything that is needed to understand the Pavilion's broader and controversial socio-political context, such as the flags of Barcelona, Catalonia, Europe, Germany, and Spain, props and equipment for events, and the kitchen where the Pavilion's staff has lunch. As Jaque notes, "there is much to be learnt from the role architecture plays in making parts of daily life visible or invisible, calculable or non-calculable, prestigious or non-prestigious, accounted or unaccounted for"¹⁷. For the upper floor to seem metaphysical, the basement needs to accommodate the Pavilion's 'phantom public' – a notion coined by Walter Lippmann to indicate the different overlooked actors that need to be included in politics¹⁸ –, the very same expression that Mies, in 1955, declared to have been the origin of his architectural insight. The two stories of the building, therefore, reflect two competing notions of politics: the well-lit upper floor revives foundational concepts of the political, while the

16 Jaque, A. (2015) Mies in the Basement. The Ordinary Confronts the Exceptional in the Barcelona Pavilions. *Thresholds* (43): 120-278, p. 124. See also: Jaque, A. (2018) Outing Mies' Basement: Designs to Recompose the Barcelona Pavilion's Societies. In N. Marres, M. Guggenheim and A. Wilkie *Inventing the social*, pp. 149-172. Manchester, UK: Mattering Press.

17 Ibid. p. 277.

18 Cf. Lippman, W. (1925) *The Phantom Public*. New York: Harcourt, Brace.

dark lower one embodies its mundane version, made of contracts, agreements, disputes that lie behind the Pavilion's construction. Drawing on this analysis, *PHANTOM. Mies as Rendered society* was meant to rearticulate these two spheres and create space for debate and thought on controversial issues. In other words, whereas the focus is usually put on style and authors enunciations and the ordinary is removed from view, this new act of composition – or 'living re-construction' – was meant to highlight the role of all the heterogeneous and conflictive elements partaking in design processes and their presumed outputs. Mies' Pavilion is thus rendered as a 'thing', a contested site to be made public. In a later account, Jaque told about Niebla, a cat who spent most of her life inside the Pavilion's basement. Niebla took part in another cosmopolitical project: her role was to kill rats that could potentially enter the building. She was named this way – Niebla in English means 'fog' – because of her eyes: the darkness of the space had caused her irreversible damage to the sight, which in turn gave her a peculiar 'foggy' look. Niebla entered the Pavilion's space to modify a certain ecosystem, and the Pavilion itself transformed her¹⁹.

12 Actions to Make Peter Eisenman Transparent (2004)²⁰ carries out a similar operation. The project consisted in a series of actions meant to allow the population of Santiago de Compostela and its visitors to gain access to understanding and discussing the construction process of Peter Eisenman's *Ciudad de Cultura* (later inaugurated in 2011). As all architects in the Western world know very well, Eisenman has always been one of the biggest advocates for the autonomy of architecture, considering design practice as detached from social engagements and politics in general. In contrast to this, this intervention meant to render the construction process 'politically transparent'²¹. Some of the actions were meant to allow people visiting the building site as it were a sort of public park: a free bus line connecting the site to the different areas of the city, stations with restrooms and vending machines, guided tours and the celebration of open houses. Some others consisted in giving the equipment of different construction companies a different color code, so as to make them easily identifiable by the public; allowing people to leave opinions, which, together with the different tasks executed and time schedules of the construction process, were rendered public both inside the building site and throughout the city through the installation of LED screens; balloons to show the amount of money already spent; stickers on every truck arriving or leaving the building site to indicate the origin, destination and transported material. The idea was to demonstrate

19 Cf. Jaque, A. (2019) *Mies y la gata niebla: Ensayos sobre arquitectura y cosmopolítica*. Barcelona: Puente Editores.

20 See: <https://officeforpoliticalinnovation.com/work/12-actions-to-make-peter-eisenman-transparent/>

21 Cf. Jaque, A. (2018) Rearticulating the Social.



Office for Political Innovation, *12 Actions to Make Peter Eisenman Transparent*, Cidade da Cultura, Santiago de Compostela (2004).
Source: officeforpoliticalinnovation.com

how the construction process is socially connected and hence to provide the public open space to discuss the multifarious issues emerging from it. Again, where the role of design is traditionally understood as the production of buildings as 'black boxes', here, on the contrary, it is considered to be their opening, that is the revelation of the socio-political dimension of architecture, so as to allow the re-distribution of agency and knowledge.

COSMO MoMA PS1 (2015)²², which was winner of the 2015 *Young Architects Program*, also moves in this direction. Designed as a movable artifact, its aim was to make New York's so-far hidden urbanism visible. What came out is an assemblage of ecosystems based on advanced environmental design, engineered to filter and purify 3,000 gallons of water by eliminating suspended particles and nitrates, balancing PH, and increasing the level of dissolved oxygen. *COSMO* works as both an offline and an online prototype. Indeed, its aim is to trigger awareness, giving people the chance to follow the processing of water in the device and access the insights needed to easily

22 Retrieved 16 October 2020, from: <https://officeforpoliticalinnovation.com/work/cosmo-moma-ps1/>



Office for Political Innovation, COSMO MoMA PS1, New York (2015). Source: officeforpoliticalinnovation.com



reproduce it and have drinking water. It was also conceived as a pleasant and climatically comfortable garden meant to gather people together, and at the same time as an art installation: as a result of a complex biochemical design, its stretched-out plastic mesh glows automatically whenever its water has been purified.

This concern for unveiling the invisible acquires an even more radical and speculative [i.b. IV. 3] nuance in the work of Nerea Calvillo, architect and researcher, who investigates the material, technological, political and social dimensions of environmental pollution. Founder of the Madrid/London based architecture office *C+ Arquitectas*²³

²³ See: <https://cmasarquitectas.net>

i.b. IV. 3 - Design and 'speculation'

As far as the fields of architecture or design are concerned, it seems opportune to provide a more detailed argumentation on the concept of 'speculation'. Indeed, it branches out from a tradition that is not exclusively related to the field of STS and is adopted in slightly different ways by different authors and designers. Dunne and Raby, for instance, by means of what they call 'Speculative Design', intend to generate 'puzzling objects' that create conditions of suspension of a certain way of understanding things. Artifacts, therefore, that are 'disturbing', that do not work in the forms considered appropriate, but open up problems, as opposed to industrial design, whose logic is instead that of designing for feasibility¹. This approach is complemented, for example, by what Matt Ratto calls 'Critical Making'² – where the idea is to encourage designers' critical thinking in their material doings – and what Carl DiSalvo calls 'Adversarial Design'³ – where the intention is that of using the means and forms of design to challenge beliefs, values, and what is considered to be fact. In general, what these approaches have in common is the idea of moving from 'problem-solving' to 'problem making', i.e. the design of objects that open up problems. However, in STS, inspired by these ideas but also by Whitehead's pragmatist philosophy and its impact on Stengers' thought, the notion of speculation is not only meant to think about objects and what they trigger. Rather, as has already been widely discussed in the previous chapter, it represents a way of characterising the investigations themselves: that is, the process of opening up to the possibilities that different ways of doing and undoing imply, and in general to the manifold ontology of the world and its various possibilities. In the field of design, an interesting attempt to broaden Dunne y Raby's meaning of 'speculative design' by incorporating STS's own reflections is that of Alex Wilkie⁴.

1 Cf. Dunne, A. and Raby F. (2013) *Speculative Everything: Design, Fiction, and Social Dreaming*. Cambridge, MA: MIT Press.

2 Cf. Ratto, M. (2011) Critical Making: Conceptual and Material Studies in Technology and Social Life. *The Information Society* 27(4): 252-260.

3 Cf. DiSalvo, C. (2015) *Adversarial Design*. Cambridge, MA: MIT Press.

4 Cf. Wilkie, A., Savransky, M. and Rosengarten, M. (eds.) (2017) *Speculative Research: The Lure of Possible Futures*. London: Routledge. Other works operating in this perspective are, for example: Sengers, P. and Gaver, W. (2006) Staying open to interpretation: Engaging multiple meanings in design and evaluation. In *Dis '06: Proceedings of the 6th Conference on Designing Interactive Systems, University Park*, pp. 99-108. New York: ACM Press; Gaver, W., Boucher, A., Law, A., Pennington, S., Bowers, J., Beaver, J., Humble, J., Kerridge, T., Villar, N., and Wilkie, A. (2008) Threshold devices: looking out from the home. In *Proceedings of the 26th Annual SIGCHI Conference on Human Factors in Computing Systems, Florence, Italy*, pp. 1429-1438. New York: ACM Press.

and the collaborative visualisation project *In the Air*²⁴, Calvillo focuses on issues such as notions of toxicity, digital infrastructures of environmental monitoring, DIY and collaborative forms of production, smart cities, and feminist approaches to sensing the environment. “One of the challenges that architecture has is understanding that it does not only deal with the interiors of the buildings, we actually also deal with what happens outside. I think what is very important is to think globally”²⁵.

The project *Yellow Dust DIY Sensing Infrastructure* (2017)²⁶, installed at the Seoul Biennale of Architecture and Urbanism 2017, aimed at facilitating new modes of sensing data, by building what she and anthropologist Emma Garnett define ‘data intimacies’²⁷. The premise that generated this work was a reflection on the modalities generally adopted by governments and institutions to monitor the level of air pollution and establish the courses of action for environmental health. The visibility of the collected data concerning the different polluting particles is commonly conceived as crucial to the management of the citizens’ health, and it is made possible through increasingly sophisticated applications and other forms of information. However, as Calvillo states, it does not seem to be at all clear how these adopted methods actually manage to raise awareness among citizens and make sure that they adopt a more responsible behaviour in order to limit air pollution. “In a similar manner to climate change, numbers become too abstract and detached from reality for people engage with them in meaningful ways”²⁸. In such a scenario, *Yellow Dust* is a temporary urban installation, built to measure, make visible and partly remedy to fine dust pollution (PM 2.5) through a cloud of water vapour. Indeed, PM 2.5 particles represent the main and most controversial pollutant in Seoul because of *Hwangsae* (which means ‘Yellow Dust’ in Korean), clouds of fine sand that originate in the Gobi desert and the northern areas of China. In spring these yellow clouds cover the city of Seoul making air unbreathable. *Yellow Dust*, in order to make this phenomenon visible, produced a colourful water vapour fog, whose density varied according to the concentration of polluting particles present in the air.

Interestingly, in another article, Garnett talks about the ‘elemental ambiguity’²⁹ of atmospheric particulate matter and the consequent difficulty in estimating its levels of

24 *In the Air* is a visualization project which aims to make visible the microscopic and invisible agents of Madrid’s air (gases, particles, pollen, diseases, etc), to see how they perform, react and interact with the rest of the city. For more information, see: <http://intheair.es/index.html>

25 Excerpt from an interview with Calvillo filmed within the *Innovation* lecture series, organized by Barcelona Building Construmat, May 2017. Available at: <https://www.youtube.com/watch?v=I7Ff29FxeFM>

26 See: <http://yellowdust.intheair.es>

27 Cf. Calvillo, N. and Garnett, E. (2019) Data intimacies: Building infrastructures for intensified embodied encounters with air pollution. *The Sociological Review Monographs* 67(2): 340-356.

28 Calvillo, N. (2018) Particular sensitivities. *e-flux Architecture*. Retrieved 29 October 2020, from <https://www.e-flux.com/architecture/accumulation/217054/particular-sensibilities/>

29 Cf. Garnett, E. (2018) The elemental ambiguity of PM2.5. *Toxic News*. Retrieved 29 October 2020, from: <https://toxicnews.org/2018/09/03/the-elemental-ambiguity-of-pm2-5/>





C+Arquitectas/In The Air, Yellow Dust DIY Sensing Infrastructure, Seoul Biennale of Architecture and Urbanism (2017). Source: cmasarquitectas.net / Calvillo, N. (2018) Particular sensitivities.

toxicity. Comprised of particles of different sizes, PM 2.5 includes ash and dust emitted by anthropogenic and non-anthropogenic processes and gas-particle conversion. It has diverse sources and its chemical composition is always shifting, hence its particles cannot be individuated or materially defined in any simple or deterministic way. Although, as already mentioned, numerical measurements are important, they “cannot alone tell us all we need to know about air pollution, or indeed inform an effective response without the consideration of other things, people and processes”³⁰. *Yellow Dust*, therefore, represented an attempt to problematise, and open what we commonly call ‘air pollution’ to speculation.

Particularly, while the data produced by technical and scientific approaches are usually considered capable of ensuring, through their visibility, an immediate social, political, and environmental change, this installation meant to allow an actual physical interaction with these. The questions that guided this project were: “as numerical data only make sense for certain cultural practices (scientists, for instance), what if, instead of seeing the data produced by the sensors, we feel them? Would this change the ways in which we know and relate to air pollution, and open up new practices?”³¹. The purpose, then, was that of favouring a public space that would allow an affective and embodied experience of pollution, a physical interaction with it, in much more radical ways than those provided by the mere act of viewing and interpreting numerical values. To quote the words of Calvillo and Garnett – who carried out an ethnographic study of the experience and observed, with her, people’s numerous reactions to the installation – *Yellow Dust* “made sense of the data and made data sensible”³², encouraging a form of collective physical survey. Producing an actual radical translation of data into a sensitive form, so that they could penetrate the skin, the installation meant to activate “different ‘categories’ of knowledge, such as touch and feeling”³³, favouring a close encounter with them, which could stimulate, in a potentially more effective way, forms of collective commitment to pollution prevention. The installation, then, rather than simply making the problem (polluted air) visible through the fog – and therefore ‘public’ – meant to place people ‘within’ that very problem, like Donna Haraway would say³⁴, and establish a direct contact between pollution and bodies. “[M]olecular intimacy is shared between bodies, things and the climate: humans, benches, insects, particles, gases, bricks, wind, machines”³⁵. In this regard, the ethnographic observations made during the time of the installation focused on the various ways in which the visitors related to it and on

30 Ibidem.

31 Calvillo, N. and Garnett, E. (2019) Data intimacies, p. 341.

32 Ibidem.

33 Ibid. p. 342.

34 Cf. Haraway, D. J. (2016) *Staying with the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press.

35 Calvillo, N. and Garnett, E. (2019) Data intimacies, p. 343.

the different reactions that derived from them. Particularly, one of the purposes of *Yellow Dust* was that of questioning media's conventional narratives, that often portray *Hwangsa* as an invasion by the states of China and Mongolia, and the social prejudice aroused by them. The exhibition panels of the installation, in fact, connected the data acquired by sensors with people's body and with the emission sources present in Seoul itself, such as in well-known restaurants and local steam rooms, revealing how the supposed 'alterity' of the origins of pollution was fake. The basic idea, then, was that the collective construction of the problem allowed other modalities of political and environmental action. Like the authors, inspired by Stengers, state: "different entanglements emerge by including things, feelings, processes presumed to be 'outside' of science (and, perhaps, the making of 'good data')"³⁶. The production of 'molecular familiarity' with the data aimed, then, at changing the very conditions through which environmental justice can be pursued. Through a "structural reversal", that is the act of making invisible infrastructures visible, *Yellow Dust* encouraged to "think with care,' or focus on what has been neglected or forgotten, left out through choices, histories, or policies"³⁷. As a cosmopolitical and speculative operation, it aimed at opening black boxes and reveal the invisible, in order to rearticulate what emerged from it in ways that may allow other possible narratives and modalities of action.

Among many other projects, the issue of raising environmental awareness by unveiling hidden agencies and issues has been addressed also in *Las Respiradoras (The Breathers, 2018)*³⁸, an installation that was developed for the *Voices of the GPS*, an experimental exhibition at the *CentroCentro* in Madrid where architects and choreographers collaborated to produce experimental and reflective works around cars. The idea was to stimulate reflection on breathing, taking the traffic jam – a disturbing yet evocative situation – as a reference. The traffic jam, the architects argue, is a space where breathing, that is usually taken for granted as an automatic bodily function, comes to the fore. The air inside the car gets saturated after awhile, and when we open the car windows we breathe the warm and toxic air emitted by the exhaustion pipes. In sum, *Las Respiradoras* was an installation meant to invite to breathe together, throughout a social choreography, so as to generate a collective awareness of urgent environmental and political issues.

³⁶ Ibid. p. 351.

³⁷ Calvillo, N. (2018) Particular sensitivities. e-flux Architecture.

³⁸ Retrieved 29 October 2020, from: <https://cmasarquitectas.net/projects/las-respiradoras-the-breathers/>



C+Arquitectas, *Las Respiradoras*, CentroCentro, Madrid (2018). Source: cmasarquitectas.net

2.2. From solving to staging

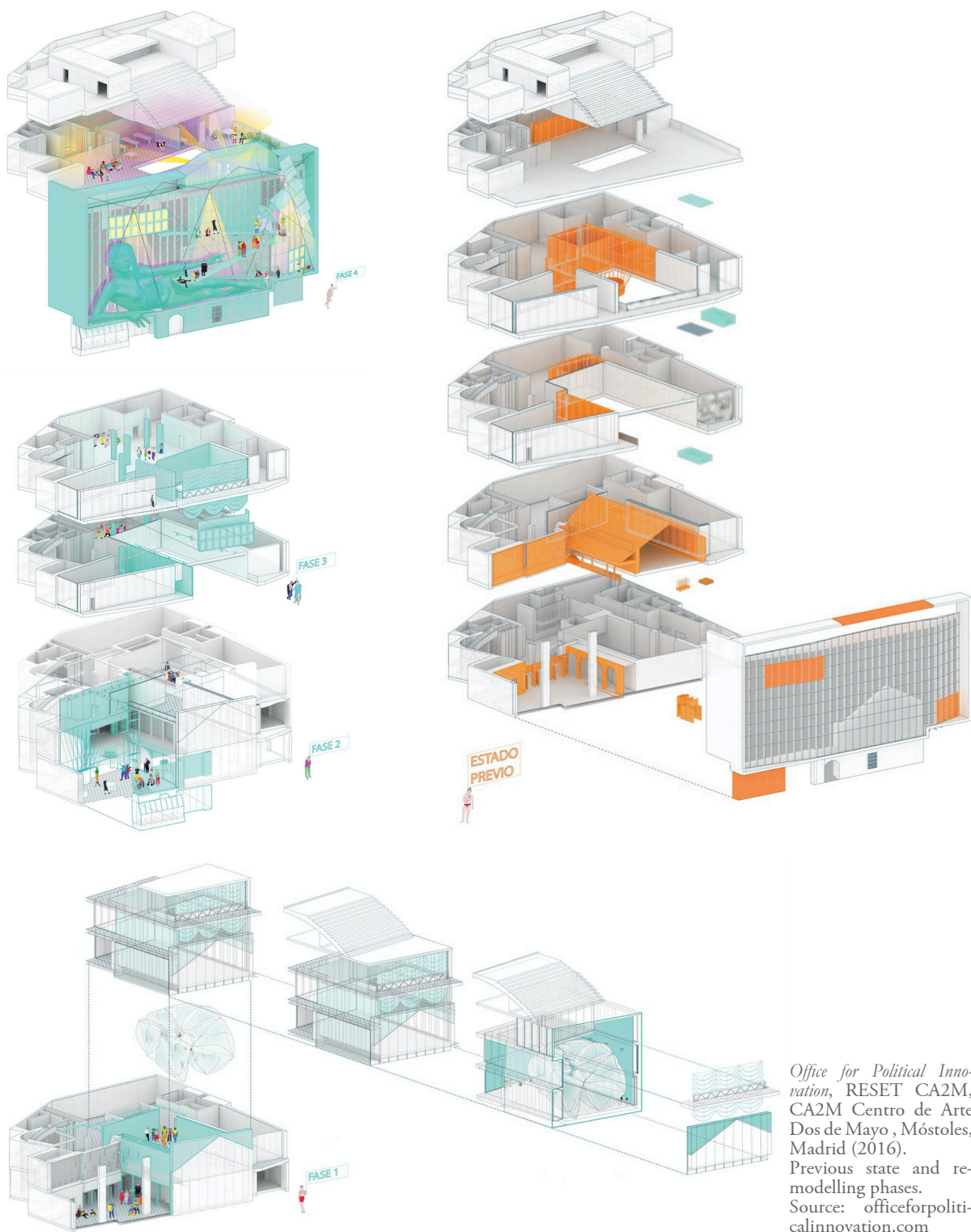
Where many times the aim of architectural design is to produce finished objects in an expertocratic and solutionist logic, some experiments rather aim to open up, or ‘stage’ processes and generate questions, in order to channel a wider network of actors and encourage possibilities for participation, debate and problematisation.

RESET CA2M (2016)³⁹, a project by the *Office for Political Innovation*, started in response to an invite to renovate the *CA2M Centro de Arte Dos de Mayo* (Móstoles, Madrid). Rather than demolishing the old building and constructing a new one from scratch, the idea was that the museum should be remodelled in order not to endanger the social and cultural capital that it had gained during the years (indeed, people from the surrounding neighbourhood used to gather inside its spaces for activities such as watching movies). Furthermore, against the idea that architecture should produce finished projects, the *Office for Political Innovation* designed a protocol and master plan to start a slow remodelling of the building while at the same time keeping it open, so as to allow the public to observe and also participate in the process. “There was no intention of having any imposed aesthetics or style, or even to be original. We didn’t want to propose anything new. What we did was capture the voices that were around, within, and external to the museum, and inscribed them into the building itself”⁴⁰.

In this context, the operations consisted in: removing a number of internal divisions to create a large and triple-height space to host gatherings and multiple activities in the

39 See: <https://officeforpoliticalinnovation.com/work/reset-ca2m-integral-transformation-of-centro-de-arte-2-de-mayo/>

40 Jaque, A. (2018) *Reararticulating the Social*. Retrieved 16 October 2020, from <https://www.e-flux.com/architecture/positions/280206/rearticulating-the-social/>



Office for Political Innovation, RESET CA2M, CA2M Centro de Arte Dos de Mayo, Móstoles, Madrid (2016). Previous state and remodelling phases. Source: officeforpoliticalinnovation.com

center of the building; removing flags so as to make the building more accessible and welcoming – Móstoles is a residential, working-class district in the outskirts of Madrid and is inhabited by many people who come from African or South American countries; removing the guards to make the space ‘unwatched’, ‘a living room that is open to the street’, where a number of people who lack residence permits – and, as a consequence, also phone contracts – can access the building and use its open WiFi. The building itself and its transformation, made of slow, sequential steps, became an exhibition, in order to create possibilities for each step to be experienced, discussed and implemented by a broader network of affected actors.

The *JF-Kit House* (2012-2013)⁴¹ was designed by the Madrid-based architecture firm *Elii*⁴², initially built for the *Paysage in Progress* exposition of Brussels in 2012, and later rebuilt in 2013 for the *Forum of Asian Art Curators* in Guangzhou. The *Jane Fonda house*, to mention its full name, was designed as a prototype of a ‘house of the future’, with a very different idea, though, from those traditionally conceived to present desirable models for the future, like the *Pavillon de l’Esprit Nouveau* by Le Corbusier (1922), the *House of the Future* by Jacobsen (1929) and the one by Alison+Peter Smithson (1955-56). In contrast to these models, the aim of the *JF-Kit House* is not that of disclosing what the future holds, nor that of suggesting particular technical solutions, but rather, it draws its inspiration from some ‘houses of the future’ from comedies and sci-fi films, like the one from the film *Electric House* by Buster Keaton of 1922. Just like these models, which, instead of representing solutions to possible future problems, mean to radicalize in an ironic way the potential and limits of technological promises, the *JF-Kit House* was designed to test, in an ironic way, and question the hegemonic models of sustainability and ecological architecture. Therefore, it proposes a radical future scenario of sustainability where citizens are bound to provide for their own domestic energy needs through physical activity. For daily activities, like turning on the light, cooking, watching TV, different levels of physical activity are required, which are registered on exercise schedules and can be done either individually or collectively. Essentially, the aim of the house is that of questioning those models that have seen sustainability merely as a technological problem to be solved through innovative and efficient devices and architectures, highlighting the aspects that they have overlooked. The idea, in fact, is that of showing how sustainability also represents a cultural and political problem, which, apart from technological solutions, would require an open and shared debate on necessary practices and ways of coexistence in order to secure such

41 Retrieved 30 October 2020, from: <http://elii.es/en/portfolio/jf-kithouse-gz-2/>; cf. Domínguez Rubio, F. and Fogué, U. (2015) *Unfolding the Political Capacities of Design*. In A. Yaneva and A. Zaera-Polo (eds.) *What Is Cosmopolitical Design? Design, Nature and the Built Environment*. Burlington, VT: Ashgate.

42 See: <http://elii.es>

sustainable future scenarios. Among the questions behind this project we can find: “what kinds of bodies and new practices are imagined to fulfill the promises of these sustainable futures? (...) What kinds of transformation of domestic spaces and rituals do these sustainable models demand? Which bodies and practices are excluded from participating in those sustainable futures and their promises? And how can design bring together different entities and actors?”⁴³ Rather than giving answers to these questions and, therefore, offer itself as a device to solve problems through technical and professional knowledge, the *JF-Kit House* means to enact them, make them evident and public. In this sense, the architectural design isn’t limited to building construction, but constructs questions and controversy, it generates opportunities for open debate. “[I]ts political value lies in its ability to unfold a fictional scenario that operates as a polemic playfield in which sustainability emerges (...) as political problem requiring a new system of co-habitation, a new cosmopolitical regime which requires the production not only of new technologies but also of new bodies, a new set of cultural practices, and a new set of connections and attachments between all these elements”⁴⁴.

43 Ibid. p. 158.

44 Ibidem.



*Elii, JF-Kit House, CIVA
- Centre International pour
la Ville, l'Architecture et le
Paysage (2012). Source:
elii.es*

Mesa del Castillo, M.,
Martínez, J., Ruiz, J. C.,
Olla Gitana, Sala Verónicas,
Murcia, Spain (2014-
2015).

Photo of one of the din-
ners. Source: Mesa del
Castillo, M. (2018) *Olla
Gitana*.



Olla Gitana (2014-2015) was a transdisciplinary project carried out by architect Miguel Mesa del Castillo together with Jorge Martínez (communication) and Juan Carlos Ruiz (gastronomy). The Ministry of Culture and Tourism of the Region of Murcia, in Spain, had launched a project with the aim to elaborate a cartography that would make the creative capital of the region visible. In response to this, Mesa del Castillo and the others proposed an unprecedented way of tracing the territory and composing a cartography, with the aim to take into account the realities that are usually not seen as being part of the creative landscape of the region. In other words, *Olla Gitana* was meant to create a cartography of creativity which does not only belong to architects and designers. The project in fact involved the organization of a series of 24 dinners (also streamed online via youtube) for groups of 8 people with variegated socio-cultural backgrounds, gathered inside the Sala Verónicas in Murcia to freely discuss about different issues. The dining-table – as well as architecture –, in such experiment was seen as a socio-technical object, a ‘Parliament of Things’, an arena for discussion and political negotiation, around which different issues and heterogeneous participants gather⁴⁵. Furthermore, it constituted a way of ‘staging’ the description of the region’s territory: rather than simplifying and ‘flattening’ it into a drawing or a two-dimensional map, it aimed to provide an ‘embodied’ representation of this territory, also generating spaces of encounter and dialogue to appreciate it.

45 Cf. Mesa del Castillo Clavel, M. (2018) *Olla Gitana*. Un Experimento de Arquitectura Para Instituciones Ligeras. *Imafrontera* 25: 173-190. Available at: <https://revistas.um.es/imafrontera/article/view/357561/256471>

In the architectural visions of modernity, innovation was entrusted to experts, who produced models of the objects of study in their laboratories far from society. Instead – as the authors observe – “dining rooms encourage us to think of architecture as part of a permanently laboratoryised world and not as a place of application of what has already been tested, guaranteed, patented and standardised, as the manuals have taught us”⁴⁶. In this project, architecture as a physical, defined object is only part of the assemblage of many other entities “connected in heterogeneous and unstable performative ecologies”⁴⁷ that depend on changing contingencies. *Olla Gitana* can only be conceived in its unfolding, as an event: “what matters (...) is not only the phenomenological question, or the sensory experience assisted by different technologies: biochemical, acoustic, architectural, etc., but the coexistence of multiple cosmograms, in the sense attributed to such concept by Stengers, that is, of different ways of articulating entities and relations accepted as pacts of a common world”⁴⁸.

CLIMAVORE (2015-ongoing)⁴⁹ is long-term site-specific project started in 2015 by *Cooking Sections*⁵⁰ (Daniel Fernández Pascual & Alon Schwabe), a research-based practice exploring the spatial and territorial implications of food. *CLIMAVORE* sets out to envision seasons of production and consumption of food that react to climate change. In contrast to the obsolete Eurocentric seasonal model, it rethinks the construction of spaces and infrastructures focusing on how climate alterations offer a new set of clues to adapt our diet to them. In this sense, *CLIMAVORE* is not only about the origin of ingredients, but also about their agency in providing spatial and infrastructural responses to man-induced climate changes. Framing our diet within a globally financialised landscape, and challenging large-scale agribusiness groups dictating what is to be produced and consumed, the notion of *CLIMAVORE* critically unfolds and questions the geopolitical implications behind the making of climate alterations and the pressures they enforce on humans and nonhumans alike. In particular, *CLIMAVORE: On Tidal Zones* explores the environmental effects of aquaculture and reacts to the changing shores of Portree, Isle of Skye. Each day at low tide the installation emerges above the sea and functions as a dining table for humans, with free tastings of recipes featuring ocean cleaners: seaweeds, oysters, clams and mussels. At high tide, the installation works as an underwater oyster table. The installation has been realized in collaboration with local stakeholders, residents, politicians and researchers. Over breakfast, lunch, or dinner (according to the tides), performative meals featured a

46 My translation (A/N). Ibid. p. 188.

47 My translation (A/N). Ibidem.

48 My translation (A/N). Ibid. p. 190. Cf. Stengers, I. (2010) *Cosmopolitics*. Vol. 1. Minneapolis, MN: Univ. Of Minnesota Press.

49 Retrieved 1 November 2020, from: <https://www.climavore.org/about/>

50 See: <http://www.cooking-sections.com>

series of *CLIMAVORE* ingredients that respond to – and ‘stage’ – the environmental challenges of Scottish waters. The project also engaged with 10 local restaurants that removed farmed salmon off their menu and introduced a *CLIMAVORE* dish instead. The long-term project aims to look at *CLIMAVORE* forms of eating that address environmental regeneration and promote more responsive aqua-cultures in an era of man-induced environmental transformations⁵¹.



Cooking Sections,
CLIMAVORE:
On Tidal Zones, Isle of
Skye (2017-ongoing).
Source: climavore.org

Along similar lines there is *The Empire Remains Shop* (2016)⁵², in which the food is used to trace new postcolonial geographies. ‘Empire shops’ were first developed – yet never opened – in London in the 1920s to teach the British to consume foodstuff from the colonies and overseas territories. *Cooking Sections’* intervention speculates on the possibility and implications of selling back the remains of the British Empire in London today. The public installation took first place in London in the fall of 2016, consisting of a critical program of discussions, performances, dinners, installations, and screenings hosted at n. 91–93 Baker Street.

51 Retrieved 1 November 2020, from: <http://cooking-sections.com/CLIMAVORE-On-Tidal-Zones>

52 Retrieved 1 November 2020, from: <http://www.cooking-sections.com/The-Empire-Remains-Shop>



Cooking Sections, The Empire Remains Shop, Delfina Foundation offsite exhibition (2016).
Source: delfinafoundation.com. Photo: Tim Bowditch.

Cooking Sections, The Empire Remains Shop, book cover (2018).
Source: e-flux.com

17. EXPENSES

Each party shall pay and bear its own legal and other costs incurred in connection with the preparation and execution of this Heads of Agreement and the Agreement.

18. COUNTERPARTS

This Heads of Agreement may be executed in any number of counterparts. All counterparts will be taken to constitute one instrument.

"Empire shops" were first developed in London in the 1920s to teach the British to consume foodstuffs from the colonies and overseas territories. Although none of the stores ever opened, they were intended to make previously unfamiliar produce and products—sultanas from Australia, oranges from Palestine, cloves from Zanzibar and rum from Jamaica—available in the British Isles. The

THE EMPIRE REMAINS SHOP

COOKING SECTIONS

FRANCHISE HEADS OF AGREEMENT

PARTIES

1. Cooking Sections, a partnership in the names of Alon Schwabe and Daniel Fernández Pascual of 191 Southwark Park Road, London SE16 3TX, United Kingdom (UKR 06064 47360), trading as The Empire Remains Shop.

2. [Other party to insert their details here]

BACKGROUND

A. The Franchisor has, as a result of the expenditure of time, skill, effort, and money, developed and owns a unique and distinctive System relating to the establishment and operation of The Empire Remains Shop.

B. The parties intend to enter into an agreement allowing the Franchisee the right to establish and operate an Empire Remains Shop and license to use the System.

Signed, sealed, and delivered by Franchisor in the presence of:

Witness Signature

Print Name

Daniel Fernández Pascual Alon Schwabe

Signed for and on behalf of the Franchisee by a duly authorized person in the presence of:

Witness Signature Signature of Authorized Person on Behalf of Franchisee

Print Name Print Name

THE EMPIRE REMAINS SHOP

COOKING SECTIONS

FRANCHISE HEADS OF AGREEMENT

PARTIES

1. Cooking Sections, a partnership in the names of Alon Schwabe and Daniel Fernández Pascual of 191 Southwark Park Road, London SE16 3TX, United Kingdom (UKR 06064 47360), trading as The Empire Remains Shop.

2. [Other party to insert their details here]

BACKGROUND

A. The Franchisor has, as a result of the expenditure of time, skill, effort, and money, developed and owns a unique and distinctive System relating to the establishment and operation of The Empire Remains Shop.

B. The parties intend to enter into an agreement allowing the Franchisee the right to establish and operate an Empire Remains Shop and license to use the System.

THE EMPIRE REMAINS SHOP

COOKING SECTIONS

FRANCHISE HEADS OF AGREEMENT

PARTIES

1. Cooking Sections, a partnership in the names of Alon Schwabe and Daniel Fernández Pascual of 191 Southwark Park Road, London SE16 3TX, United Kingdom (UKR 06064 47360), trading as The Empire Remains Shop.

2. [Other party to insert their details here]

BACKGROUND

A. The Franchisor has, as a result of the expenditure of time, skill, effort, and money, developed and owns a unique and distinctive System relating to the establishment and operation of The Empire Remains Shop.

B. The parties intend to enter into an agreement allowing the Franchisee the right to establish and operate an Empire Remains Shop and license to use the System.

Structured as a franchise agreement, *The Empire Remains Shop* book resulting from it lays out some of the landscapes, imaginaries, economies, and aesthetics that future iterations of the Shop would need to address in order to think through political counterstructures for a better distributed, hyper-globalised world.



Husos, Urbanismos de remesas. Viviendas (re)productivas de la dispersión. Book and folding model. Published by Caniche Editorial (2017). Source: newgenerationsweb.com

Urbanismos de remesas. Viviendas (re)productivas de la dispersión (2017)⁵³, by the Colombian-Spanish office of architecture and urbanism *Husos*⁵⁴, is an ongoing research project in book form about the urban operations financed by ‘remesas’ – ‘remittances’ in English –, that are small amount of money that migrants workers send together with other goods to relatives in their home countries. These forms of urbanism, according to *Husos*, are not marginal realities, but advanced laboratories for alternative ways of city-making. In this sense, their investigation aims to explore some of the many – so far disregarded – political issues related to the capitalist market system, such as the life of many people who are forced to abandon their countries, the consequent crisis of care in the global South, and new forms of belonging and evictions activated by international real estate operations. Interestingly, also this project constitutes a way of ‘staging’ research processes. Indeed, designed as a ‘foto-realovela’ – a rereading of the classic Latin American transverse photo story magazine –, also including a paper model, a sectional drawing and a report, *Urbanismos de remesas* is intended to be an instrument of communication with multiple uses and users, enabling new forms of dialogue with the different communities involved.

53 The online version of the book is available at: https://issuu.com/husosarch/docs/issuu_urb_remesas_verti

54 See: <http://www.husos.info>

2.3. Co-designing *with* more-than-humans

Rather than conceiving the architectural project as an operation aimed at creating a certain form through the control and instrumental use of more-than-human elements, here the project is thought of as a cosmopolitan experiment, in which one designs *with* such more-than-human entities in order to speculate on possible, more careful and productive forms of coexistence.

The installation *The Polivagina of Fan Riots*, or *Polivagina* (2014)⁵⁵, designed by C+ Arquitectas for the art event Fan Riots at the SOS4.8 music festival in Murcia, was another interesting exploration on how to take atmospheric agents such as air and helium seriously in architecture, as primary construction materials. More specifically, the project drew on the invisibility and dynamism of such more-than-human elements to destabilise architectural practice, requiring a transformation of methods, techniques, materials and forms of organisation. In fact, the basic idea – which also emerged through a critical dialogue with the reflections of the German philosopher Peter Sloterdijk⁵⁶, – was, once again, that “taking air into account in architecture shifts attention beyond boundaries, such as walls and roofs, to what is in between them, working with humidity, pressure, smell, toxicity and breath”⁵⁷. However, distancing itself from Sloterdijk’s more general metaphorical reading of architecture as an enclosure, *Polivagina* uses his notion of ‘air design’ to think of architecture “not simply as creating envelopes for climate control, but as involving the actual design of atmospheres where the air is not only a conditioner of well-being but also a material for the construction of certain modes of sociality”⁵⁸.

55 Cf. Calvillo, N. (2018) *Inviting Atmospheres to the Architecture Table*, pp. 41-64. In N. Marres, M. Guggenheim and A. Wilkie (2018) *Inventing the social*. Manchester: Mattering Press. See also: <https://cma-sarquitectas.net/projects/polivagina/>

56 Peter Sloterdijk, in his ‘spherology’, and particularly in the volume on foams, extends sociality beyond human interactions. Sociality, like a foam, includes humans, non-humans and the atmosphere that brings them together. With regard to architecture, however, he translates this perspective in a too literal way: architecture becomes a foam, a set of spheres: variable containers from the micro to the macro scale, from housing and its parts to the city. In Sloterdijk’s view, architectural objects have definite and stable forms and the atmospheres they create have no place. Moreover, he has little appreciation of the fact that they, in their design and construction, generate socialities. Cf.: Calvillo, N. (2018) *Inviting Atmospheres to the Architecture Table*, p. 43; Sloterdijk, P. (2016) *Foams: Spheres Volume III: Plural Spherology*. Los Angeles: Semiotext(e). Originally published as Id. (2004) *Sphären III - Schäume, Plurale Sphärologie*. Frankfurt am Main, D: Suhrkamp. Italian transl. Id. (2015) *Sfere III. Schiume*. Milano: Raffaello Cortina.

For a more extensive survey of Sloterdijk’s ‘spherology’, see also: Id. (1998) *Sphären I - Blasen, Mikrosphärologie*. Frankfurt am Main, D: Suhrkamp. Italian transl. Id. (2009) *Sfere I. Bolle*. Roma: Meltemi; Id. (1999) *Sphären 2: Globen*. Frankfurt am Main, D: Suhrkamp. Italian transl. Id. (2014) *Sfere II. Globi*. Milano: Raffaello Cortina.

57 Calvillo, N. (2018) *Inviting Atmospheres to the Architecture Table*, p. 43.

58 Ibid. p. 44.

More specifically, *Polivagina* represented both an intellectual challenge and a response to the contingent situation, i.e. the demands of the curator, the existing building, the building regulations and the climate. These demands included, for example, the transformation of a seven-hundred-square-metre space without touching it; the need to use this space for art installations, performances and panel discussions; to manage a limited budget and operate – both for set-up and dismantling – in an extremely limited time frame; and to attract a wide audience, including those who, in a festival, are not necessarily interested in art. Therefore, rather than bringing together and responding to these conditions by providing a lightweight structure or some sort of inflatable – the costs of which exceeded the budget – the idea was to summon helium, a common atmospheric element renowned for its lightness, as a guest, and to contain it in ordinary elements, namely polyamide balloons, creating a membrane of inflated micro-units. The decision to use elements so uncommon to traditional architecture obviously added a high level of complexity to the operation. *C+ Arquitectas* and the students who took part in the construction of the installation⁵⁹ had to gather stories, experiences and expertise on the use of helium from fields outside of the architectural one, for example by calling in experienced designers in the field of staging and decoration or drawing on mundane experiences such as birthday parties; and test a series of prototypes at home, trying to experimentally explore – and tune in – the dynamic properties of helium – a very light element with a very strong lifting capacity – and the effects of its combination with air, which is heavier than it.

In particular, during the operation, the hierarchies between designers and manufacturers dissolved, as there were no experts, and all the people involved gradually acquired knowledge, skills and experience through the process itself. This led to a redefinition of what control means in design, as participants had to deal with uncertainty and also accept failure as part of the process.

In other words, design, rather than an operation, aimed at creating a certain form, was rather conceived as an experimental and “queer”⁶⁰ process, or a “cosmopolitical experiment”⁶¹. As Calvillo writes, “we in fact co-designed *with* helium and air, by letting them speak as ‘we’ collectively adapted to one another”⁶², thus giving rise to a “temporary co-habitation with more-than-humans”⁶³. In this sense, the operation aimed to explore how ways of engaging with more-than-humans could exist in architecture that differ from control and domestication, and instead activate processes of “mutual training”⁶⁴.

59 Also architect and professor Mesa del Castillo and a group of students from the University of Architecture of Alicante took part in the experiment.

60 Ibid. p. 60.

61 Ibid. p. 54.

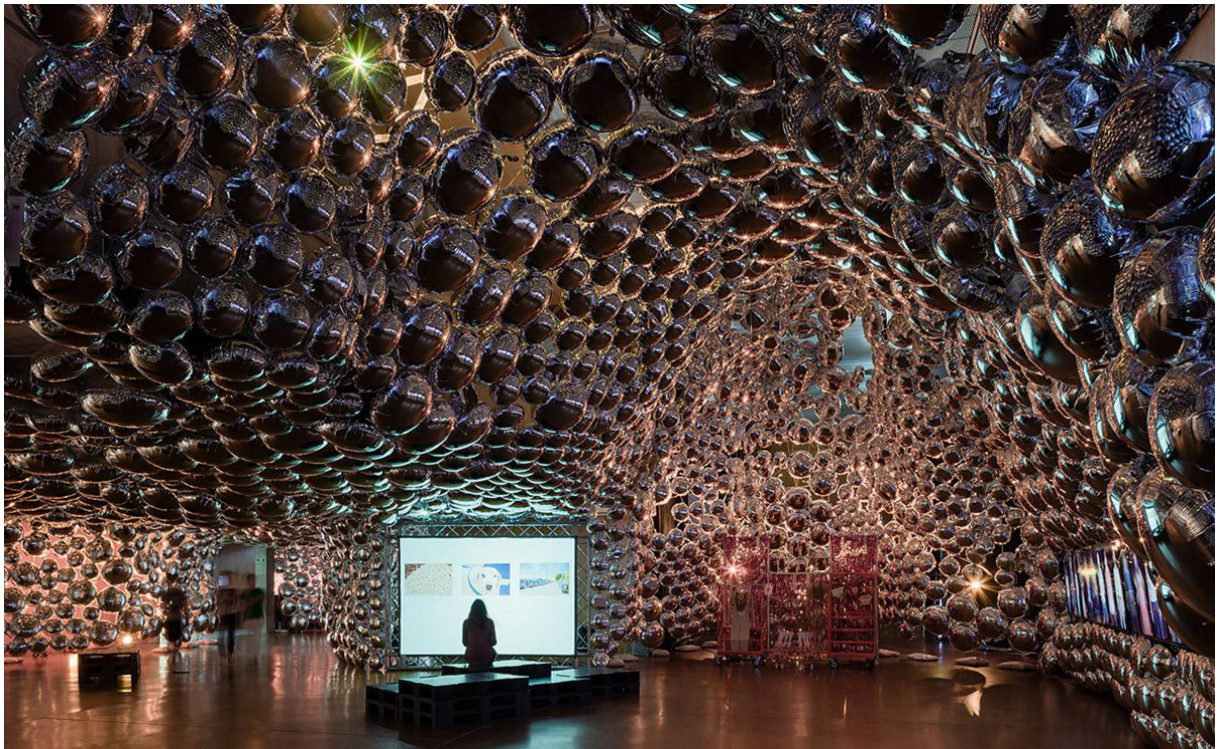
62 Ibid. p. 50.

63 Ibid. p. 60.

64 Ibidem.



C+ Arquitectas, The Polivagina of Van Riots, Murcia, Spain (2014).
Source: cmasarquitectas.net





Interestingly, human bodies had to ‘learn to be affected’⁶⁵ by gases to become mediators, or “experimental instruments trained to measure, for instance, how much a 45 cm balloon lifts depending on its shape”⁶⁶, and to cope with the sudden changes or disintegration of the installation due to the unpredictable behaviour of helium, its elevating force, its resistance to being confined and its general recalcitrance⁶⁷. As Calvillo notes, following anthropologist Kathleen Stewart, *Polivagina* has therefore favoured the production of socialities that can be defined as ‘atmospheric attunements’⁶⁸.

Also the other materiality at stake, namely the ball – understood as a “device for making atmospheric things”⁶⁹ – and, more specifically, its polyamide, facilitated particular and unexpected types of attunements. Its silver reflective finish, for example, “multiplied

65 Cf. Latour, B. (2004b) How to Talk about the Body? The Normative Dimension of Science Studies. *Body & Society* 10(2-3): 205-229. Latour’s interesting argument will be explored below (see section 2.2.3, i.b. 6).

66 Ibid. p. 51.

67 See also: Tironi, M., Calvillo, N. (2016) Water and Air: Territories, Tactics and the Elemental Textility of Urban Cosmopolitics. In I. Fariás and A. Blok (eds.) *Urban Cosmopolitics*. London, pp. 207-224. New York: Routledge.

68 Cf. Stewart, K. (2011) Atmospheric Attunements, *Environment and Urban Planning D: Society and Space*, 29: 445-453.

69 Calvillo, N. (2018) Inviting Atmospheres to the Architecture Table, pp. 55-56. Cf. McCormack, D. P. (2015) Devices for Doing Atmospheric Things. In P. Vanni (ed.) *Non-Representational Methodologies*, pp. 89-111. London, New York: Routledge.

like a kaleidoscope throughout the space. It diffused its limits, reflected light, hid furtive hugs and distorted smiling faces; it multiplied Michael Jackson's fans to infinity, reminded someone of Warhol's Factory and made us desire Warhol's Silver Clouds"⁷⁰. In addition, also other unexpected atmospheric attunements emerged: "people feeling the joy of a surprise gift, sharing the balloons as a collective treat among their friends, and creatively transforming them into hats, t-shirts or masks. Some people even took them home, expanding the physical network of the festival to domestic spaces"⁷¹.

2.4. Transforming and playing with architecture's own tools and aesthetics

In revealing that the tools, techniques and aesthetics with which architecture operates have performative effects – that is, they create a certain kind of knowledge and therefore certain 'worlds' – STS can offer an interesting stimulus to experimentally 'play' with them, distort their use, generate interruptions and transformations.

Superpower of Ten (2013-2016)⁷², by the *Office for Political Innovation*, is a large-scale public performance that took place for the first time at the Lisbon Architecture Triennial 2013 and was later re-proposed at the Chicago Architecture Biennial (2015), the Jumex Museum in Ciudad de México (2016) and the ZKM Karlsruhe (2016). The performance is based on the reinterpretation of *Powers of Ten: A Film Dealing with the Relative Size of Things in the Universe and the Effects of Adding Another Zero*, a famous movie directed by Ray and Charles Eames in 1977, which consisted in an exploration of daily life at different scales, from a human cell to the outer edges of the Milky Way⁷³. Yet the selective framing and narrative of the movie, which is centred on an heterosexual couple having a picnic on Chicago's lakefront, presents a linear progression of scenes and images in which abrupt jumps of scale between different elements – bodies, molecules, planets, societies and technologies – and their interactions appear apolitical and devoid of any kind of friction. Here *Office for Political Innovation* re-enacts the movie's narrative in an alternative and more political way, rendering conflicts and a much broader series of historical events visible. In this context, new characters come on stage together with the picnickers, such as the polio virus, scientists, the sausage machine and an animal right protester, the human DNA, the transgender pioneer Flawless Sabrina, Kodak's 'Shirley Card' and many others heterogeneous actors that lay outside the film's apolitical frame. Furthermore, this provocative intervention, playing with the size of things in

⁷⁰ Ibid. p. 56.

⁷¹ Ibid. pp. 57-58.

⁷² Retrieved 16 October 2020: <https://officeforpoliticalinnovation.com/work/superpowers-of-ten/>

⁷³ Ray and Charles Eames' movie is available at: <https://www.youtube.com/watch?v=0fKBhvDjuy0>

[illegible]

229

3. Experiments within/through architectural education

As mentioned above, this experimental ethos has also been the basis of a series of pedagogical experiences at the intersection of architecture, STS and anthropology at the University of Architecture of Alicante and the Technical University of Munich. Although I am aware of the existence of a much richer and interesting scenario of experiences inscribed in this logic, particularly in Alicante [i.b. IV. 4], I will dwell on some examples thoroughly described in the issue n. 12 of the Chilean design journal *Diseña*⁷⁴, specifically dedicated to exploring this theme. Interestingly, as the STS-informed anthropologists Ignacio Farías and Tomás Sánchez Criado state in the introductory text of the journal's issue, such experiments, unlike Yaneva (see section 1), reconsider the importance of the design studio, enhancing its strong socio-political potential. In Schon's own words, they emphasise that the design studio is a space with great potential, since, with respect to modern educational practices, it entails "a throwback to an earlier mode of education and an earlier epistemology of practice"⁷⁵, containing "the seeds of a different model of learning that is based on "the maker's reflective conversation with his [or hers] materials"⁷⁶. In short, whereas Yaneva proposed an approach in which students 'learn *about* design' by means of multidirectional inquiries into the actors and implications of building designs, by vindicating the value of a studio-based approach the experiments examined here, in line with the experiences analysed above, are "attempts and experiments for 're-learning design' [by] making STS and anthropology work *within* and *through* the design studio practice"⁷⁷. In particular, these attempts were aimed at using concepts such as 'network', 'care', 'socio-technical systems', 'technical democracy' or 'cosmopolitics' to stimulate other ways of practicing architecture that go beyond the expertocratic idea of providing black-boxed solutions.

3.1. Pedagogical models

At this point it is useful to delve deeper into both Schon's pedagogical approach and other educational models that inspired these experiences. In the 1980s, the philosopher and urban planner founded a new revolutionary epistemology of practice with the notion of 'reflection-in-action', whereby designers can become aware of their implicit knowledge and learn from their experience. In other words, for him 'reflection-in-

74 Cf. Editorial *Diseña* 12 (2018) Re-learning Design: Pedagogical Experiments with STS in Design Studio Courses. The index can be found here: <http://ojs.uc.cl/index.php/Disena/issue/view/3>

75 Schon, D. (1985) *The Design Studio: An Exploration of its Traditions and Potentials*. London: RIBA Publications, p. 5.

76 Ibid. p. 31.

77 Farías, I. and Sánchez Criado, T. (eds.) (2018a) Re-Learning Design: Pedagogical Experiments with STS in Design Studio Courses, p. 27.

i.b. IV. 4 - The University of Alicante and other radical pedagogies

In particular, the Projects Area of the University of Alicante is an important place of pedagogical innovation at the intersection of architecture and STS. Notably, Farías and Sánchez Criado's courses at the Technical University of Munich and the experience I will recount in the following chapters were strongly inspired by the experimental ethos underpinning the Alicante school. As also acknowledged by the professors of this school mentioned in this section, since 1997 Professor José María Torres Nadal has stimulated and strengthened teacher experimentation, free from the usual forms of authority and academic hierarchy¹.

Torres Nadal offers a rich and enthusiastic picture of the Alicante school of architecture, together with his idea of architecture and of 'arquitectos ecologizantes' ('ecologizing architects')².

However, as also Farías and Sánchez Criado note³, it seems opportune to point out that the socio-political importance of design pedagogy, that these experiences claim, is hardly a new topic in itself. In fact, there is a rather wide-ranging and international set of forms of radical pedagogy, such as the examples collected by architectural historian Beatriz Colomina in the exhibition and web archive *Radical Pedagogies*⁴ and in a volume edited by Daisy Froud and Harriett Harriss⁵.

1 Cf. Calvillo, N. and Mesa del Castillo, M. (2018) Tender Infrastructures: Designing With Care, or Contributions to 'Matters of Care' in Architecture. *Diseña* (12): 172–195; Gisbert Alemany, E. (2018) Learning Design with Social Insects: The ant, the spider, and the wasp. *Diseña* (12): 256–283.

2 Cf. Torres Nadal, J. M. (2019) *Arquitectura In-Dependiente: Análisis pormenorizado del giro que las cuatro fuerzas ecologizantes*. Alicante, ES: Colección Denise Scott Brown. See also: Nieto Fernández, E. (2012) *¡...Prescindible organizado!: agenda docente para una formulación afectiva y disidente del proyecto arquitectónico*, PhD thesis.

3 Cf. Farías, I. and Sánchez Criado, T. (eds.) (2018a) *Re-Learning Design: Pedagogical Experiments with STS in Design Studio Courses*.

4 Cf. Colomina, B., Choi, E., González gálan, I., and Meister, A.-M. (2012, September 28). *Radical Pedagogies in Architectural Education*. Retrieved 3 November 2020, from <https://www.architectural-review.com/today/radical-pedagogies-in-architectural-education>

5 Cf. Froud, D. and Harriss, H. (2015) *Radical Pedagogies: Architectural Education and the British Tradition*. London: RIBA Publishing.

action' was at the core of 'professional artistry' – or 'skillful practice' –, a concept thought to challenge the 'technical-rationality' demanded by dominant paradigms. In his words: "The reflective practitioner allows himself [or herself] to experience surprise, puzzlement, or confusion in a situation which he [or her] finds uncertain or unique. (...) He [or her] carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation"⁷⁸. Each move that students make are experiments, for they can potentially create other problems

78 Schon, D. (1983) *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books, p. 68.

that need to be understood and solved. Against the scientific, linear ways of teaching and learning, which understand education as the mere transmission of professional knowledge, the design studio approach allows both students and teachers to ‘learn by doing’, by confronting themselves with uncertainty, complex and challenging situations. Therefore, the design studio is understood as a space in which certain emancipatory and democratising educational models developed during the twentieth century resonate, such as those of John Dewey⁷⁹, Paulo Freire or Jacques Rancière. In particular, as the authors state, the disciplinary transgressions implemented in these experiments are reminiscent of Rancière’s *The Ignorant Schoolmaster*⁸⁰, whose radical-democratic principle consisted in eliciting students’ intelligence and avoiding asymmetrical relations between them and the teachers. In this sense, not only the students, but also the teachers themselves are faced with situations of uncertainty, not knowing what the eventual results of the work will be. Paraphrasing Sánchez Criado⁸¹, this perspective also relates to Michel Serres’s understanding of the word pedagogy, etymologically meaning ‘the voyage of children’. According to Serres, the word ‘pedagogue’ initially designated the slave who would walk a noble child to school: leaving their home, children became ‘exposed’. “Learning launches wandering (...) Depart. Go out. Allow yourself to be seduced one day. Become many, brave the outside world, split off somewhere else. (...) For there is no learning with out exposure, often dangerous, to the other. I will never again know what I am, where I am, from where I’m from, where I’m going, through where to pass”⁸². As we shall see, in some of these experiences there is a clear reference to a more contemporary educational approach, that is, that of the British anthropologist Tim Ingold. In line with the others that have been already mentioned, he believes that it would be wrong to think of learning as a transmission, following application, of an already-built corpus of information, and reclaims the importance of learning by doing. As we have already seen in chapter II, in his book *Making: Anthropology, Archaeology, Art and Architecture*⁸³, in analysing the way in which architectural practice is traditionally understood, Ingold discusses the schism between the figure of the architect and that of the builder. Particularly, Ingold dwells on the figure of Alberti, who, in his treatise

79 Cf. Dewey, J. (1897) My Pedagogic Creed. *The School Journal* 54: 77-80 and Freire, P. (2000) *Pedagogy of the Oppressed* (30th Anniversary Edition). New York: Continuum.

80 Cf. Rancière, J. (1991) *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*. Stanford, CA: Stanford University Press.

81 Cf. Sánchez Criado, T. (2021) Anthropology as a careful design practice? *Zeitschrift für Ethnologie* 145 (2020, 1): 47-70.

82 Serres, M. (1997) *The Troubadour of Knowledge*. Ann Arbor, MI: The University of Michigan Press, p. 8.

83 Cf. Ingold, T. (2013) *Making: Anthropology, Archaeology, Art and Architecture*. London and New York: Routledge.

*On the Art of Building in Ten Books*⁸⁴, actually made a significant contribution to the process that has led to the professionalisation of architecture as a discipline exclusively dedicated to design as opposed to implementation. This represents a return to – and a contribution to the improvement of – an understanding of design in hylomorphic terms, where shapes are designed in an abstract space, as ‘mind’s work’, and only after that, they are imposed on matter, as ‘hands’ work’. In opposition to this model, Ingold claims the relevance of the anthropological method of ‘participant observation’: “Only because we are of the world, only because we are fellow travellers along with the beings and things that command our attention, can we observe them. There is no contradiction, then, between participation and observation; rather, the one depends on the other”⁸⁵. This means, in the words of Karen Barad, that “We do not obtain knowledge by standing outside the world; we know because ‘we’ are of the world. We are part of the world in its differential becoming”⁸⁶. True knowledge, according to Ingold, cannot be achieved by extracting ‘data’ from the world, but by establishing a connection based on a ‘correspondence’ with it. Particularly, in material culture – and therefore in architectural culture – attention is focused, in a predominant way, on finished objects, and on their social consequences, but “[w]hat is lost (...) is the creativity of the productive processes that bring the artefacts themselves into being: on the one hand in the generative currents of the materials of which they are made; on the other in the sensory awareness of practitioners. Thus processes of making appear swallowed up in objects made”⁸⁷. In this sense, architecture, through the anthropological method of participant observation, can be thought of

“as a discipline that shares with art and anthropology a concern to explore the creative processes that give rise to the environments we inhabit, and the ways we perceive them. Taken as the practice of such a discipline, architecture is not so much about as by means of buildings. It is, in short, an architecture of inquiry. Included in it are questions concerning the generation of form, the energetics of force and flow, the properties of materials, the weave and texture of surfaces, the atmospheres of volumes, and the dynamics of activity and of rest, of making lines and making place. To answer every one of these questions entails a way of knowing from the inside”⁸⁸.

84 Cf. Alberti, L. B. (1755) *The Architecture of Leon Battista Alberti in Ten Books*, trans. J. Leoni. London: Printed by Edward Owen. Originally published in Italy as Id. (1485) *De Re Aedificatoria*. Firenze: Nicolò Di Lorenzo.

85 Ingold, T. (2013) *Making*, p. 5.

86 Barad, K. M. (2007) *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, NC: Duke University Press, p. 185.

87 Ingold, T. (2013) *Making*, p. 7.

88 Ibid. p. 10.

3.2. Experiments at the University of Architecture in Alicante

Exploring and experimenting with ‘matters of care’ in design studio courses

Tender Infrastructures, the design studios courses developed between 2010 and 2013 by Nerea Calvillo and Miguel Mesa del Castillo⁸⁹ aimed to address architectural design – and design teaching – as a field of speculation on the concept of care as politically conceived by Fisher and Tronto⁹⁰ and Puig de la Bellacasa⁹¹. Particularly, one of the initial ideas was that of substituting the notion of building with the one of ‘infrastructural ecosystems’, so as to highlight the complex socio-material ecology of urban space. This way, the condition of ‘users’ of architecture – which usually includes standardized or stereotyped figures who are supposed to have equivalent needs and whose culture is also more or less idealized – is extended to certain ecosystems, endangered species or marginalized communities. The idea, in short, was to consider infrastructures as ‘matters of care’, and design as a careful and situated intervention aimed at detecting and giving visibility to entities that risked being left out by knowledge production practices. Indeed, they explored a question put forth by Puig de la Bellacasa:

“What happens if, in our case, we think of infrastructures not as *matters of concern*, but as *matters of care*? That is, what happens if we ‘intervene in the articulation of ethically and politically demanding issues’?⁹² And, as a consequence, what implications does this ‘intervention’ have for the design studio? So, what does it mean to think about the design studio with care?”⁹³

What Calvillo and Mesa del Castillo were interested in was questioning the resolving technological agendas that usually underlie design, and rather understanding it as a ‘speculative machine’, where speculation, in the sense that Stengers attributes to it, aims at unveiling different possibilities and ethical and political alternatives⁹⁴. In this sense, design has been understood as a necessarily situated practice and as a relational ontology, in which things are constituted by their relationships rather than by their intrinsic qualities⁹⁵.

89 Cf. Calvillo, N. and Mesa del Castillo, M. (2018) *Tender Infrastructures*.

90 Cf. Tronto, J. C. and Fisher, B. (1990) *Toward a Feminist Theory of Caring*. In E. K. Abel and M. K. Nelson (eds.) *Circles of Care: Work and Identity in Women's Lives*. Albany, NY: State University of New York Press, pp. 36-54.

91 Cf. Puig de la Bellacasa, M. (2011) *Matters of Care in Technoscience: Assembling Neglected Things*. *Social Studies of Science*, 41(1): 85-106; Puig de la Bellacasa, M. (2017) *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis, MN: University of Minnesota Press.

92 Puig de la Bellacasa, M. (2011) *Matters of Care in Technoscience: Assembling Neglected Things*, p. 94.

93 Calvillo, N. and Mesa del Castillo, M. (2018) *Tender Infrastructures*, pp. 176-177.

94 Cf. Stengers, I. (2010) *Cosmopolitics*. Vol. 1. Minneapolis, MN: University of Minnesota Press.

95 Cf. Barad, K. M. (2007) *Meeting the Universe Halfway*; Haraway, D. (1988) *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective*. *Feminist Studies* 14(3): 575-599.

The first phase of the working plan that students had to follow involved the visualization of relationships, conflicts and distributions of power among the actants of the socio-material ecosystem, with special attention to ‘neglected’ entities. As a final task, students, rather than the production of buildings located in specific social, urban and landscape contexts, were asked to intervene through the installation of a digital or analog architectural prosthesis, or speculative machine, in order to redistribute agencies. Particularly, during the course, materials commonly neglected by ‘conventional’ architecture were used, whereas buildings are usually constructed ex-novo in concrete, brick or steel. Such ephemeral materialities included DIY technologies and household materials. In addition, the use of other analysis tools and techniques from other disciplines and non-academic areas, such as interviews and video DJ mash-ups, was also envisaged.

Interestingly, as the professors note, the concepts of care and speculation, in their implying an epistemological shift, also required the production of new design tools. Therefore, the proposed work formats were aimed at constituting relational machines: the first format, namely a graphic map, or relational map, should not only have made it possible to describe a project and identify its actors, as in the case of diagrams, but also to speculate on it; the second one, namely the speculative prosthesis, in their multiple versions in progress, both in analogue and digital form, rather than a final solution, should have constituted a political device which, once installed, would multiply the options and articulate conflicting coexistences without neutralising them. Going beyond the ‘mapping of controversies’, the aim of the experiments was, in Puig de la Bellacasa’s words, “not only to expose or reveal invisible labors of care, but also to generate care”⁹⁶. One of the final proposals, aimed at caring for a small tangerine orchard in Denia, was a coordination prototype supporting the distribution of fruit to schools, work centres and small businesses or associations. In this way, an affective ‘tender infrastructure’, which brings together people with different interests – such as the owner and the distributors – was designed, in order to maintain the garden. Each interested consumer could have chosen, via a web platform or a visit to the orchard, a tree to which to make a financial contribution, thus ensuring its care. In turn, he/she would be informed about the state of health of the tree through weekly reports sent by the farmer by e-mail. Another proposal, revolving around the Thermomix and the network of women associated with it, was a speculative machine meant to unveil different agencies and recompose the relationships between the market, the users, domestic spaces and health food. It was “a product distribution system directly connected to the market, and an urban screen in which it is possible to consult the recipes and the price of the products needed to make them, the contents of which are updated every day”⁹⁷.

96 Puig de la Bellacasa, M. (2011) *Matters of Care in Technoscience*, p. 94.

97 Calvillo, N. and Mesa del Castillo, M. (2018) *Tender Infrastructures*, p. 188.

In open contrast to the broad descriptions of ANT as a tool for teaching and learning design are also the design studios – again at the University of Alicante – of Ester Gisbert Alemany⁹⁸. As she writes, “[i]f the role of an ANT is only supposed to describe, how could an architect, whose job is to make proposals, follow ANT? The disenchantment I was feeling was the realization that I did not want to become a social researcher but rather to learn to design socially”⁹⁹. Some of her courses have, in fact, put these reflections into practice and expanded upon them, using a particular expedient: starting from the assumption that architecture students are not used to relating to academic writing and reading, they have been offered some evocative images that would make it easier to discuss these concepts in the classroom. Gisbert Alemany defines these images as ‘social insects’: to the Latourian ANT – presented as a real ant, as Latour’s insistence on following the tracks recalls the attitude of this particular insect – two other insects were added, also derived from anthropological and philosophical concepts, namely Ingold’s SPIDER – which stands for ‘Skilled Practice involves developmentally Embodied Responsiveness’¹⁰⁰ – and the WASP of design theorist and architect Lars Spuyborek¹⁰¹ – which Gisbert Alemany interprets as ‘Weaved Abstractions of Mutual Shaping Practices’¹⁰².

Unlike Latour’s approach, Ingold proposes a researcher who behaves like a spider, stressing the perceptual character of the research, which is, in itself, a way of developing skills in making and perceiving further. The student, according to this perspective, should not devote himself or herself to tracking like an ANT, but to developing his/her abilities, to build his/her own threads of contact with the world like a SPIDER. The ANT, says Gisbert Alemany, has made a crucial contribution to the understanding of how architecture is inextricably linked to a wide range of contemporary issues and urgencies. It has transformed the very idea of what a design object is: from this perspective, a single project is distributed throughout a network of heterogeneous elements and is, therefore, unpredictable. Reflecting on these multiple connections means that it is no longer possible to design in the same way as before, just like a centipede – in an example given by Ingold –, which can no longer walk naturally and smoothly if it starts to ‘think intelligently’ about the coordination of its hundreds of legs. The ANT approach therefore, on the one hand, in its push to think too much,

98 Cf. Gisbert Alemany, E. (2018) *Learning Design with Social Insects*. See also: Gisbert Alemany, E. (2017) *Variations on the Line of the ‘Costa Blanca’*. Thesis MRes in Social Anthropology University of Aberdeen (Supervisor: Tim Ingold). Available at: https://www.academia.edu/35920659/Variations_on_the_Line_of_the_Costa_Blanca_Thesis_MRes_in_Social_Anthropology_University_of_Aberdeen

99 Gisbert Alemany, E. (2018) *Learning Design with Social Insects*, p. 260.

100 Ingold, T. (2011) *Being Alive: Essays on Movement, Knowledge and Description*. London and New York: Routledge, p. 94.

101 Cf. Spuybroek, L. (2016) *The Sympathy of Things: Ruskin and the Ecology of Design*. London: Bloomsbury.

102 Gisbert Alemany, E. (2018) *Learning Design with Social Insects*, p. 282.

risks causing a paralysis, instead of encouraging designers to come up with new ways of designing.

Starting from this reflection, Gisbert Alemany in her design studios proposed what she calls ‘Experiments with the profession’¹⁰³, with the aim of encouraging students to operate progressive transformations of architectural practice and its tools. In her own words: “instead of taking the building as the thing that needs to be put in movement¹⁰⁴ (...) we take the practice itself”¹⁰⁵. The student, therefore, through this approach “is forced to reflect on the tools of design he uses and on what these tools are *doing* to his own practice in that concrete architectural experiment”¹⁰⁶.

In particular, the Architecture Design Studio course held in 2014-15 and in 2016-17, which was set around the themes of migration of lifestyles in the Mediterranean and the processes of urbanisation that have resulted, followed exactly these lines. In fact, it was aimed at exploring how students can broaden their sensitivity and their ‘tools of the trade’ by learning both from the migrants themselves and from the things and places with which they have built a new life. The final phase of the whole experience, therefore, involved the design and presentation of a ‘kit’ of tools and skills that the students had acquired in their experience of re-learning and transformation of their practice. The first year of the course focused on learning the skills of migrant tourists, i.e. people who had come to the coast of south-eastern Spain and then settled there permanently. Without any predetermined brief, the experience was aimed at having students learn the ways of experiencing space of these migrants, co-creating with themselves tools and prostheses that could enable this learning. Here, too, the pedagogical approach moves away from traditional asymmetrical methods. Gisbert Alemany defines this alternative perspective by citing the reflections of a number of authors, such as Henri Lefebvre’s notion of architecture as a method of imagination rather than a disciplinary restriction¹⁰⁷; Masschelein and Simons’ discussion of education, according to which schools should not be thought of as productive spaces but as ‘free time’, in which assumed practices are suspended and profaned¹⁰⁸; and Ingold’s perspective, which defines education as opposed to traditional training through stable practices. Learning occurs by participating in a community of practice, which “is held together through

103 More information about these studio courses is available at: <http://experimentosconeloficio.arsa.org>

104 Cf. Yaneva, A., Latour, B. and Geiser, R. (eds.) (2008) Give me a Gun and I will Make All Buildings Move: An ANT’s View of Architecture. In R. Geiser (ed.) *Explorations in Architecture: Teaching, Design, Research*, pp. 80-89. Basel, CH: Birkhauser Verlag, p. 80.

105 Gisbert Alemany, E. (2018) Learning Design with Social Insects, p. 263.

106 Ibidem.

107 Cf. Lefebvre, H. (2014) *Toward an Architecture of Enjoyment*. Minneapolis, MN: University of Minnesota Press.

108 Cf. Masschelein, J. and Simons, M. (2013) *In Defence of the School: A Public Issue*. Leuven, BE: Education, Culture & Society Publishers.

variation, not by similarity”¹⁰⁹.

In particular, the whole experience was based on the anthropological method of participant observation, which, as we have seen, Ingold describes as an ‘art of inquiry’¹¹⁰, whose purpose goes beyond representation or description and encourages to learn from the people or things the anthropologist is working with. Amongst various things, students were required “to immerse themselves in the flows and changing mediums which their hosts enjoyed (sea breezes, undulatory movement of waves, etc.) and build tools that would allow them to learn”¹¹¹; or to capture the migrants’ ‘task-scape’¹¹², by recording on video the different movements of people and things in their landscape, and then, editing it as a short piece in which they found and remixed the different rhythms of life and the correspondences between these agents. Afterwards, the students started to draw all the places inhabited by the migrants – who were called their ‘hosts’ – trying at the same time to redesign them in order to enhance their life desires. A series of operations, such as the construction of small models reproducing the patterned habits of their hosts, and the reproduction of these patterns ad infinitum by placing the models in a mirror box, allowed the students to produce short evocative graphic stories of an immersion in the world, in which the central character could move and look around. “In these drawings, the mountains, flows, building materials, plants, animals and people drawn before formed the taskscape in which these quotidian stories can happen”¹¹³. In this way, therefore, graphic representation evolved from a means of description into a tool capable of proposing alternative life scenarios. A subsequent phase involved a direct immersion into the landscape, in order to understand its constantly changing material nature. This experience, in particular, was aimed at producing what architect Alberto Altés Arlandis, drawing on the work of Donna Haraway and Karen Barad, calls ‘intravention’¹¹⁴. In short, an ‘intraventive approach’ required from students “an engaged understanding of the relations of things, materials, and people within a [design] situation (...), as well as improvisational and speculative skills”¹¹⁵.

Where previously students and teachers had worked together with their hosts, in this phase they worked to understand the coastline that attracts all these migrants and

109 Ingold, T. (2017) *Anthropology and/as Education*. London and New York: Routledge, pp. 4-6.

110 Cf. Ingold, T. (2013) *Making*.

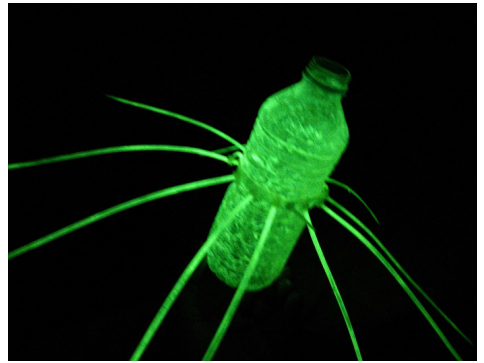
111 Gisbert Alemany, E. (2018) *Learning Design with Social Insects*, p. 270.

112 ‘Task-scape’ is an expression used by Ingold to indicate how landscape can be understood as a continuous and never stable production by the activities of the people and things that inhabit it. In his attempts to bring landscape back to life, Ingold explains that we do not live in an abstract flat plane furnished by things, but in a ‘weather world’ in which we breathe in and out the forces of nature. Cf. Ingold, T. (2000) *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London and New York: Routledge; Ingold, T. (2011) *Being Alive: Essays on Movement, Knowledge and Description*. London and New York: Routledge.

113 Gisbert Alemany, E. (2018) *Learning Design with Social Insects*, p. 273.

114 Cf. Altés Arlandis, A. and Lieberman, O. (2013) *Intravention, Durations, Effects: Notes of Expansive Sites and Relational Architectures*. Baunach, D: Spurbuch.

115 Ibid. p. 116.



Some of the students' 'intraventions' (2016). Source: experimentosconeloficio.arsa.org

tourists. Among the ‘intraventions’ collectively produced on the coast were tools and playful installations that allowed them to perceptually and actively immerse themselves in these environments, such as objects that allowed them to understand the shapes and erosion of the cliffs, the undulation, the rhythm and height of the waves. Rather than understanding design as a hylomorphic operation, students learned to “intervene in worldly processes that are already going on”¹¹⁶. They “felt their design abilities grow in time with their dwelling abilities just as every inhabitant’s abilities grow, so they came to inhabit while designing”¹¹⁷.

Design as patterning

Besides these experiments in direct perception, the subsequent steps were aimed at exploring more operational modes. Also in this case, the starting assumption was to overcome the idea of architecture as a design of objects or products, and of urbanism as an external imposition of a master plan on the territory, and to allow a more embodied experience. The main references here were the reflections of the design theorist and architect Lars Spuybroek, and especially his concept of the ‘sympathy of things’. Spuybroek also uses another useful image which could be shared with the students: philosopher Henri Bergson’s wasp (WASP), an *Ammophila* capable of paralysing a caterpillar by stinging it in its nine nerve centres. As he explains, the wasp does not generate an external representation of the caterpillar in order to understand it. As in a dance between the two, it follows its shape, patterns, key points and lines¹¹⁸.

Therefore, following this evocative image, students had to make models of coastal landscapes with material tools, as fashion pattern designers do directly on the bodies of their models. In this way they were able to abstract their own repertoire of figures and configurations. Then, they experimented with them with – digital or analogical – parametric tools with which, adding up the variational repetition of patterns, they made new proposals for the landscape. Interestingly, as Gisbert Alemany writes, they “could feel what the material and the coast were doing to themselves as designers, expanding their abilities to relate to broader scales by *sympathy*, which means, in Spuybroek’s briefest definition, ‘what things feel when they shape each other’”¹¹⁹. The ever-changing coastal landscape was therefore understood as a force to be formally responded to by creating design tools that could expand to match its variability. Just like the wasp, the idea was for students to develop the ability to absorb and carry forms beyond a direct encounter with them.

116 Ingold, T. (2013) *Making*, p. 21.

117 Gisbert Alemany, E. (2018) *Learning Design with Social Insects*, p. 276.

118 Cf. Spuybroek, L. (2016) *The Sympathy of Things*, pp. 117-130.

119 Gisbert Alemany, E. (2018) *Learning Design with Social Insects*, p. 279; Spuybroek, L. (2016) *The Sympathy of Things*, p. xvii.

3.3. Experiments at the Technical University of Munich

Experiments for learning to be affected

Between 2015 and 2017, Ignacio Farías and Tomás Sánchez Criado held a series of studio project courses¹²⁰ at the Department of Architecture of the Technical University of Munich. Their starting assumption was that “a programmatic redefinition of design not only entails *unlearning* how to practice, but also a commitment to re-educate future designers”¹²¹. Their experiments, revolving around particular more-than-human challenges, were aimed at exploring the meaning and prospects of technical democracy for the education of future architects. Particularly, in contrast to the idea of Callon, Lascoumes and Barthe¹²², Farías and Sánchez Criado signaled “the need to move from the ‘expertization of laypersons’ (...) to a ‘re-sensitization of experts’”¹²³. A series of public debates that they held in 2016 – under the name of *Partizipatorium* – which focused on concrete projects that could re-signify participation in architectural and urbanism practice, had the following premise:

“Democratization of technical decision making does not simply require citizens or lay people to become experts. More importantly, it needs professional experts in the private and public sector to become aware of the limits of their own expertise, to open themselves to other forms of sensing, knowing and valuing and ultimately, why not, to be trained differently. The relevance of these propositions for our teaching practice then became evident. We realized that the classroom, and, hence the training of future design professionals, was a largely unattended but critical aspect of the project of ‘technical democracy’”¹²⁴.

In this light, they promoted technical democracy through challenging classroom briefs and situations, in order to collectively explore alternative modes of practicing architecture¹²⁵. To this end, besides drawing inspiration from Rancière’s radical-democratic approach, they chose to avoid conventional teaching methods relying on

120 Cf. Farías, I. and Sánchez Criado, T. (2018b) Co-laborations, Entrapments, Intraventions: Pedagogical Approaches to Technical Democracy in Architectural Design. *Diseña* (12): 228-255.

121 Farías, I. and Sánchez Criado, T. (eds.) (2018a) Re-Learning Design: Pedagogical Experiments with STS in Design Studio Courses. *Diseña* (12): 14-29, p. 19.

122 Cf. Callon, M., Lascoumes, P. and Barthe, Y. (2011) *Acting in an Uncertain World: An Essay on Technical Democracy*. Cambridge, MA: Mit Press.

123 Farías, I. and Sánchez Criado, T. (2018b) Co-laborations, Entrapments, Intraventions, p. 236.

124 Ibid. pp. 235-236.

125 The idea of the sensitization, or ‘re-sensitization of experts’ relates to the Foucauldian concept of ‘problematization’. See: Foucault, M. (1990) *The History of Sexuality*, Vol. 2: The Use of Pleasure, chapter 1 ‘The Moral Problematization of Pleasures’, pp. 68-172. Translation by R. Hurley. New York: Vintage Books. Originally published in France as Id. (1984) *L’Usage des plaisirs*. Paris: Éditions Gallimard. More specifically, it stems from the previous experience of Sánchez Criado, as a member of the activist collective *En torno a la silla* (see chapter III, section 6.4).

discursive concepts and readings to rather use more ‘experiential modes’. Challenging collective learning situations were created in which both the teachers and the students could all become sensitized to what might mean to enact design practices in a different way.

More specifically, the core aim of the studio courses was to put the students’ modes of design and understanding of participation in crisis – hence their umbrella name *Design in Crisis* – through a series of experiences which could allow them, as Sánchez Criado remarks, quoting Latour, to ‘learn to be affected’ – “meaning ‘effectuated’, moved, put into motion by other entities, humans or non-humans” [i.b. IV. 5]. This was meant, in fact, to undermine hegemonic forms of expertise and, interestingly, to “explicitly block or undo the particular ‘responsiveness’ of architectural modes of reasoning” proper to a ‘humanitarian’ approach to design practice¹²⁶. Rather than finding a solution, students were asked to articulate the problem accurately: thus, opening up the design process as a careful speculation aimed at shedding light on “what/who was potentially being left aside or behind in the design process”¹²⁷. Basically, according to the teachers, this crisis could be generated through oxymoronic and paradoxical situations¹²⁸. Indeed, the courses were intended to generate obstructions or difficulties which might force reflection and bring out different possibilities for practising architecture.

In other words, it may be said that, while Ehn – as observed in chapter III – against the solutionist and closed approach of ‘use-before-use’, promotes ‘design after design’¹²⁹ – which remains open and extends itself beyond the design phase – what these experiments were intended to activate was a sort of ‘design before design’. If ‘infrastructuring’ the modalities of participatory design is what interests Ehn, it may be said that what is at issue here is the ‘infrastructuring of this infrastructuring’, that is, the creation of its possibility conditions through the design of an awareness-building process.

126 Sánchez Criado, T. (2021) Anthropology as a careful design practice?, p. 67.

127 Ibid. p. 62.

128 The main source of inspiration for this oxymoronic method was Lars von Trier’s film *The Five Obstructions*. In the film, the director meets his friend and teacher Jørgen Leth, and asks him to shoot five variations on one of his old hits from the past, *Det perfekte menneske* (1967): for each of these variations von Trier imposes obstructions, strict rules, generating increasing difficulty.

129 Cf. Björgvinsson, E., Ehn, P. and Hillgren, P.-A. (2012) Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues* 28(3): 101-116.

i.b. IV. 5 - 'Becoming affected'

As Latour describes in a wonderful paper from 2004¹, drawing on the work of Isabelle Stengers and Vinciane Despret, to learn to have a body requires inventing devices to articulate different experiences. Taking as an example the training of 'noses' for the perfume industry through the use of *malettes à odeurs* (odour kits), Latour explains how "[s]tarting with a dumb nose unable to differentiate much more than 'sweet' and 'fetid' odours, one ends up rather quickly becoming a 'nose' (*un nez*), that is, someone able to discriminate more and more subtle differences and able to tell them apart from one another, even when they are masked by or mixed with others"². By means of the kit and this operation, the teacher makes his or her initially indifferent pupils attentive to increasingly subtle differences between the chemicals he or she has assembled. More specifically, "He has not simply moved the trainees from inattention to attention, (...). He has taught them to be affected, that is effected by the influence of the chemicals which, before the session, bombarded their nostrils to no avail"³. Importantly, as stressed by Latour, to become affected "the mediation of an artificially created set-up" is necessary, in fact "[t]he pupil needs the one-week session and the kit; the professor benefits from his life-long expertise and the 2000-person test; the organic chemists are equipped with their chromatographs; the industrial chemical engineers possess their plants"⁴. Sensitisation to ever greater layers of differences is what he calls 'articulation'. As Latour notes, "a subject only becomes interesting, deep, profound, worthwhile when it resonates with others, is effected, moved, put into motion by new entities whose differences are registered in new and unexpected ways"⁵. As we have seen, from an ANT-inspired perspective, knowledge is not already given, but is mediated by specific 'devices', which establish a certain type of limits and at the same time the possibility of asking a certain type of question. Knowing 'in an interesting way' implies exposing oneself to a risk which, in the sense of Despret and Stengers, is the one of having "the questions you were raising requalified by the entities put to the test"⁶, which requires us to rethink and reshape our methods and approaches. Indeed, the relevant issue that Despret emphasises is that different devices – not necessarily made up of big things, but also of small gestures or approaches, such as not relating to an animal as if it were inferior or using vague anthropomorphic ideas⁷ – allow interesting questions to be asked and generate opportunities to articulate and open up knowledge to other versions. In the specific case of architecture, the questions would therefore be: what happens to architectural design if, besides ensuring that it includes a variety of human

1 Cf. Latour, B. (2004d) How to Talk about the Body? The Normative Dimension of Science Studies. *Body & Society* 10(2-3): 205-229.

2 Ibid. pp. 206-207.

3 Ibidem.

4 Ibid. p. 209.

5 Ibid. p. 210.

6 Ibid. p. 216.

7 Cf. Despret, V. (2016) *What Would Animals Say If We Asked the Right Questions?* Minneapolis, MN: University of Minnesota Press.



and non-human actors who are usually not taken into account, we open it up to experimental re-learnings from them? What would it become if architects accepted to take on risks and learn to be affected, moved, touched by what matters for other beings? What would different users of architecture say if asked the right questions?

In short, Despret empirically and convincingly challenges shared scientific beliefs about the 'natural' world, animals and animal behaviour. In her investigation of the relationships between humans and animals – and of the differences between animals in relation to specific situations – Despret questions both scientists and animal breeders or owners. The latter establish relationships with animals by asking them questions that enable experiential knowledge. If this approach were taken seriously by academic professionals, Despret says, it would allow them to open up the definitions of animal behaviour in ethology and primatology to multiple versions. These versions, in turn, would perhaps allow other investigative devices to be put in place to relate to animals and gain more nuanced knowledge about them. In an Arendtian sense, Despret trains her whole being, not just his imagination, “to go visiting”. As Donna Haraway explains, speaking for her: “Visiting is not an easy practice; it demands the ability to find others actively interesting, even or especially others most people already claim to know all too completely, to ask questions that one’s interlocutors truly find interesting, to cultivate the wild virtue of curiosity, to retune one’s ability to sense and respond – and to do all this politely! What is this sort of politeness? It sounds more than a little risky. Curiosity always leads its practitioners a bit too far off the path, and that way lie stories”⁸. Or, as Despret herself states: “I am interested in the problem: how to pin-point what we know, how to state our practices in a way that I know will make them exist, make them change, in a way that offers them a possibility likely to be of interest to us”⁹.

8 Haraway, D. J. (2015) A CURIOUS PRACTICE. *Angelaki*, 20(2): 5-14, pp. 5-6.

9 Despret, V. (2004) *Our Emotional Makeup: Ethnopsychology and Selfhood*. Trans. Marjolijn de Jager. New York: Other, p. 21.

Design in Crisis 1: Re-designing Emergency Design

The approach used by the two anthropologists in the studio course *Design in Crisis 1: Re-designing Emergency Design*, inspired by Corsín Jiménez’ notion of *entrapment*¹³⁰, was aimed at ‘entrapping’ students, and luring them into different ways of thinking and practicing architecture.

“Setting ‘traps’ required us to try and think and act like them, blending ourselves into their

130 Cf. Corsín Jiménez, A. (2018) Spider Web Anthropologies: Ecologies, Infrastructures, Entanglements. In M. de la Cadena and M. Blaser (eds.) *A World of Many Worlds*, pp. 53-82. Durham, NC: Duke University Press.

environments, using their language and offering courses that, at first sight, fulfilled their expectations of a professional practice, based on a clear-cut distinction between Architecture and Society (...). However, half way through, the situation would turn strange, confronting them with idiotic objections to their practice, and with requests to do something completely different”¹³¹.

The assigned task was to design an architectural solution to address the Syrian refugee crisis in Germany. After having developed a first version of a solution, students were expected to get in touch and do research about those directly affected. Anyway, once they began to interview real people, set up discussion fora, consult public administrations and officials, teachers put in crisis not just their previous design solutions, but also the very premises of their humanitarian approach to design practice. The teachers in fact were not interested at all in conventional architectural solutions, and stimulated students to experiment many inventive methods for mapping the issue directly engaging with people. Thus learning and knowing the crisis became possible only by accepting “the embodied, partial and non-representative nature of this knowledge”¹³². Their final project was a prototype for an information-giving and collecting booth equipped with an app to be placed in key urban sites for the refugees. Reflecting on how their architectural practice had changed, they observed that they “went from designing a thing based on our own presumptions to actually designing the process to gather information and stating facts, (...) directly including the actors involved”¹³³.

Design in Crisis 2: Coming to Our Senses

Drawing inspiration from Sánchez Criado’s experience with accessibility activists – in particular with the *Bayerische Blinden-und Sehbehindertenbund* (BBSB)¹³⁴ – the studio course *Design in Crisis 2: Coming to Our Senses*¹³⁵, sought to radically challenge the exclusionary effects of ocular-centric practices and techniques of architectural design. Following the example of Gisbert Alemany, this course was based on an intraventive approach. The idea, in fact, was to find an even more radical way to prevent students from resorting to their creative skills and conventional tools to attain a solution: “to achieve this we needed not to operate as teachers creating the context or the mere setting of the design practice, as we had been attempting in previous courses, but to do so from the inside”¹³⁶.

131 Fariás, I. and Sánchez Criado, T. (2018b) Co-laborations, Entrapments, Intraventions, p. 240.

132 Ibid. pp. 243-244.

133 Ibid. p. 244 (Final student report, February 2017).

134 BBSB is the Bavarian association for the blind and partially sighted, whose political work advocates “for ‘their’ inclusion, the fulfilment of existing regulations, and participation in newer ones”. Sánchez Criado, T. (2021) *Anthropology as a careful design practice?*, p. 53.

135 The students’ documentation of the course and their project is available at: <https://designincrisis.wixsite.com/designincrisis2017>

136 Fariás, I. and Sánchez Criado, T. (2018b) Co-laborations, Entrapments, Intraventions, p. 246.



The BBSB delegation tests different aspects of Pasing's Marienplatz new shared street. Left: Melanie Egerer tests the tactile differentiation of the podotactile pavement. Centre and Right: BBSB interns use different tools to test the colour contrast between the podotactile pavement and the regular pavement. Photos and caption: Sánchez Criado, T. (2021) *Anthropology as a careful design practice?*, p. 55.



One of the students' attempts to translate the smells of a street into a three-dimensional model.
Source:
designincrisis.wixsite.com

In this light, the assigned task was not to design something “for the blind”¹³⁷ – neither students were asked to empathically “act as if they were blind”¹³⁸, a conventional approach in accessibility awareness which, as will be further discussed in chapter V (section 4.2), is strongly criticised for it tends to exaggerate the effects of

137 Sánchez Criado, T. (2021) *Anthropology as a careful design practice?*, p. 63.

138 Ibid. p. 61.

‘impairment’¹³⁹. Rather, blindness was treated as a method, taken to put students’ ocularcentric practices and techniques into crisis. In the first phase of the course some sensory explorations were carried out to explore multi-sensory understandings of space and “learn not to see”¹⁴⁰. Among these there were blindfolded walks, after which students were required to represent their path in non-euclidian ways, and collective records of the smells of a street, that were later transposed into three-dimensional models. The final task involved prototyping a toolkit for a blind architect [i.b. IV. 6], which could train students to practice architecture multi-sensorially. Hence, to be sensitized to what experiencing space as diverse kinds of bodies might mean. Great emphasis was also put on the documentation of the whole process to allow students to take moments of self-reflexivity on the different issues they encountered and the choices they made. In short, the aim of the experiment was to let students

139 Cf. Kullman, K. (2016) Prototyping Bodies: A Post-Phenomenology of Wearable Simulations. *Design Studies* 47 (November): 73–90.

140 Sánchez Criado, T. (2021) Anthropology as a careful design practice?, p. 58.

i.b. IV. 6 - Where the idea of the ‘toolkit’ comes from

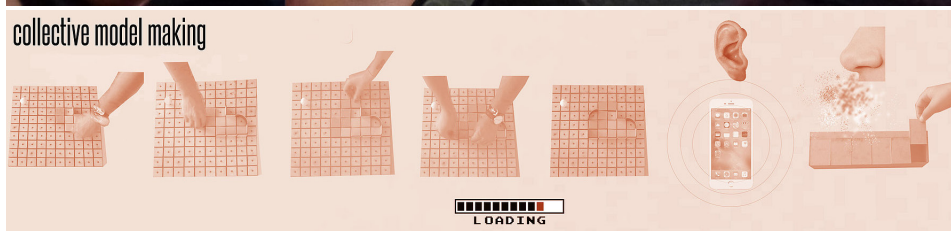
The idea of the toolkit was borrowed from some *activist* interventions¹. Artist Sara Kanouse’s ‘Post-Naturalist Field Kit’, for instance, draws on the legacy of twentieth century avantgarde movements like *Situationism* (see note 6 in chapter I) and *Fluxus*, as well as on contemporary projects promoting spatial exploration and other multidisciplinary methods developed at the intersections of art, architecture and urbanism. “A Post-Naturalist Field Kit is an art project that updates the figure of the naturalist for the exploration of post-natural urban landscapes. The project includes artifacts for exploring environmental issues in the city – from specimen jars to do-it-yourself air quality monitors and lead contamination tests – along with activity cards that refuse to draw lines between social, economic, and environmental issues. (...) [I]t offers tools for the embodied exploration of urban social ecologies”².

1 Cf: Bauch, N. and Scott, E. E. (2012) The Los Angeles Urban Rangers: Actualizing Geographic Thought. *Cultural Geographies* 19(3): 401-409; Kanouse, S. (2011) A Post-Naturalist Field Kit: Tools for the Embodied Exploration of Social Ecologies. In S. Caquard, L. Vaughan and W. Cartwright (eds.) *Mapping Environmental Issues in the City: Arts and Cartography Cross Perspectives*, pp. 160-177. Berlin: Springer; Zeiger, M. (2011) The Interventionist’s Toolkit: 1. *Places Journal* 6. Retrieved from <https://placesjournal.org/series/interventionists-toolkit/?cn-reloaded=1>

2 Kanouse, S. (2011) A Post-Naturalist Field Kit, p. 160.



The students of *Design in Crisis 2* testing the ManualCAD (above); Promotional material for the *ManualCAD* created by the students, showing different potential multi-sensorial uses (below). Photos and caption: Sánchez Criado, T. (2021) *Anthropology as a careful design practice?*, p. 65.



“become sensitive through experience to what it means to inhabit space as diverse kinds of bodies”¹⁴¹, being accessibility training in pedagogical programs quite uncommon or overlooked. The toolkit itself, in fact, whose final version was named *ManualCad*, wasn’t meant to provide a solution, but rather to function as a re-learning device to encourage awareness on different, potentially excluded forms of knowledge.

Design in Crisis 3: Sensing like an Animal

The aim of the third and final course¹⁴² in the *Design in Crisis* series was to invite students to approach animals as epistemic partners in order to rethink architectural practice, thus taking their abilities seriously in attempts at ‘designing with’ (rather than ‘for’ or ‘from’ them).

The first part of the course, like the previous one, revolved around a series of sensory experiments, designed to allow students to understand and interact with the urban

¹⁴¹ Ibid. p. 59.

¹⁴² The students’ documentation of the course and their project, as well as their presentation, is available at: <https://thedesignincrisis.wixsite.com/designincrisis> and <https://riverbiodiversity.wixsite.com/union>

landscape 'like an animal' (in particular, the urban animals chosen as 'guides' were ants, dogs and beavers). Importantly, rather than attempting to simulate or replace the animal experience with that of the architect, the aim was to enable students to 'learn by doing' alternative forms of spatial practice.

In a following phase, the third animal studied, i.e. the beaver, was chosen to formulate the course brief, as it had recently been reintroduced to the Isar river basin in Munich and welcomed as a 'biodiversity expert', for its ability to intervene and materially build hospitable spaces for numerous other species. The brief called for the students to work on a late proposal for the public competition that took place in 2003 for the renaturation of the Isar river basin. Specifically, in this project they were to work 'with the beavers', so as to imagine a more-than-human or multi-species design practice. Following a series of discussions and misunderstandings, given the complexity of the oxymoronic brief and the objective difficulty of working with such an ontologically 'distant' partner, the brief was reworded to require the students to consider the beavers as clients, and in particular to design a contract authorising them to design on their behalf. This contract, however, rather than being a written document, could have been an object that established a material link between the various parties, humans and beavers. In formulating this request, the two anthropologists were inspired by Serres' reflections in his book *The Natural Contract*¹⁴³, in which the philosopher investigates the material origins of the word contract focusing on the Egyptian figure of the *harpedonaptai*, i.e. royal officials that after the ascents of the Nile, visited the flooded lands and, with some ropes of cord, marked the territory and re-established the relations of property.

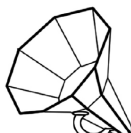
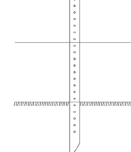
At that point, the course began to revolve around the design of a toolkit, i.e. a series of material devices that could function as a contract. Specifically, the devices designed by the students included: a beaver suit, designed to get close to the beavers and understand how they relate to the environment, and a colleague suit (along with other 'negotiation' tools), designed to collaborate with them in the construction of a dam. In particular, during the design of these devices, what became apparent to both professors and students was that such a co-design 'contract' could in itself represent their late proposal for the Isar renaturation competition. Therefore, the final part of the course was devoted to prototyping the procedures and institutional context for this project-contract: namely a set of protocols on how to use each of the tools, and the design of the *River Biodiversity Union*, the co-management institution set up to ensure the implementation of this multispecies collaboration and co-design plan¹⁴⁴.

143 Cf. Serres, M. (1995) *The Natural Contract*. E. MacArthur and W. Paulson (eds.) Ann Arbor, MI: The University of Michigan Press, pp. 51-55. Originally published in France as Id. (1990) *Le contract Naturel*. Paris: Éditions Francois Bourin.

144 Cf. Fariás, I., Sánchez Criado, T. and Remter, F., How would animals and architects co-design if we built the right contract? (Forthcoming) book chapter for *Design for more-than-human futures*.



Co-worker suit (left) and beaver experience suit (right). Photos and caption: Farías, I., Sánchez Criado, T. and Remter, F., How would animals and architects co-design if we built the right contract?, p. 5.

<h1>PROTOCOL N° 1</h1> <h2>SOUND</h2>	
<p>This document comprises the functions, design and terms of use of the Sound Tube and becomes effective if signed by the River Biodiversity Union and approved by the beavers over a period of two weeks.</p>	
<p>§1 Function</p> <ol style="list-style-type: none"> enhancing the sound of flowing water suggesting possible dam location 	
<p>§2 Design</p> <ol style="list-style-type: none"> Tube with 8 cm diameter Length: 2 m Thickness: 5 mm Holes: every 5 cm along tube on 3 sides, diameter: 5 mm Possible materials: reused/recycled timber and metal sharpened end Min-max sound volume: 55-65 Db Any additions on top of the tube need to be detachable Distance between two tubes: 1,5 m 	
<p>§3 Terms of Use</p> <ol style="list-style-type: none"> Placed and maintained by employees of the River Diversity Union Location: <ol style="list-style-type: none"> In a calm environment with little human presence At a narrow part of the river Nearby beaver food and resources In an area where an extension of the river width does not intervene with essential human structures Instructions: <ol style="list-style-type: none"> Use suit according to PROTOCOL N°3 Detach add-ons if applicable Use the hammer to put the tube in the ground When fixed, attach add-ons if applicable The River Diversity Union is responsible for the removal of the tubes 	<p>Beavers agree legally by:</p> <p>Starting the construction of the dam near the Sound Tubes within a period of two weeks</p> <div style="border: 1px solid black; width: 60px; height: 55px; margin: 0 auto;"></div> <p style="text-align: center;">stamp here</p>
<p>Agreed and accepted:</p> <p>River Biodiversity Union</p> <p>By: _____</p> <p style="text-align: center;">An Authorized Signer</p> <p>Federal I.D. Number: _____</p> <p>Date: _____</p>	<p>Beavers disagree legally by:</p> <p>Not starting the construction of the dam near the Sound Tubes within a period of two weeks</p> <div style="border: 1px solid black; width: 60px; height: 55px; margin: 0 auto;"></div> <p style="text-align: center;">stamp here</p>

First protocol. Source: designincrisis.wixsite.com.
 The other protocols can be found here:
<https://45d6c820-55c0-421b-8a7f-2b58f56d5dac.filesusr.com/>

Conclusion: experimenting with participation in more-than-human worlds

While the aim of Chapter III was to show – and reflect on – the extent of the reflexive contribution offered by STS and their look at architecture and the urban, in this chapter I have attempted to offer a partial and varied picture of the different ways in which the more-than-human challenge that such studies introduce has been experimentally addressed in architecture.

In particular, here my aim was to analyse how, rather than focusing on mapping and visualising controversies in both objects and design practice – thus taking up Latour's invitation, echoed by Yaneva – a number of architects, both in their own practice and in pedagogical spaces, have translated, expanded and articulated the rich conceptual repertoire of STS through different experiments.

More specifically, this chapter has attempted to show how these experiments reformulate, in different ways, the meaning of participation.

The opening up to a more-than-human dimension does not only imply a reconsideration of the non-human – going beyond traditional understandings that see it as a stable, controllable and manipulable 'material' – but a re-learning, that is, a more radical exploration of other ways of understanding space and the architectural profession itself. As we have seen, the experimental ways in which participation is reformulated are manifold. A different understanding of it here involves, for example, speculative operations that attempt to 'make visible the invisible', i.e. to bring to light the multiple relationships, mediations, conflicts and ontologies usually hidden or neglected in both objects and architectural practice; to replace the solutionist logic, whose goal is the expert production of finished objects, with the openness and staging of the process, in order to generate questions and debates; to design with entities usually considered stable and governable; to reflect critically on the epistemic value of the tools with which architecture operates and to explore new uses and alterations; deconstructing the standardised or stereotyped image of the user; identifying and giving visibility to usually neglected entities, be they non-human or those who are often violently excluded from the category of 'human'; transforming and expanding one's 'tools of the trade', learning from direct and situated relationships with other actors and places; creating 'design before design' processes, i.e. situations in which it is possible to question accepted truths and 'learn to be affected' by other, heterogeneous forms of sensing and knowing.

REFERENCES (Chapter IV)

- Alberti, L. B. (1755) *The Architecture of Leon Battista Alberti in Ten Books*. Transl. J. Leoni. London: Printed by Edward Owen. Originally published in Italy as Id. (1485) *De Re Aedificatoria*. Firenze: Nicolò Di Lorenzo.
- Altés Arlandis, A. and Lieberman, O. (2013) *Intravention, Durations, Effects: Notes of Expansive Sites and Relational Architectures*. Baunach, D: Spurbuch.
- Bauch, N. and Scott, E. E. (2012) The Los Angeles Urban Rangers: Actualizing Geographic Thought. *Cultural Geographies* 19(3): 401-409.
- Barad, K. M. (2007) *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, NC: Duke University Press.
- Bjorgvinsson, E., Ehn, P. and Hillgren, P-A. (2012) Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues* 28(3): 101-116.
- Callon, M., Lascoumes, P. and Barthe, Y. (2011) *Acting in an Uncertain World: An Essay on Technical Democracy*. Cambridge, MA: Mit Press.
- Calvillo, N. and Mesa del Castillo, M. (2018) Tender Infrastructures: Designing With Care, or Contributions to ‘Matters of Care’ in Architecture. *Diseña* 12: 172-195.
- Calvillo, N. (2018) Inviting Atmospheres to the Architecture Table, pp. 41-64. In N. Marres, M. Guggenheim and A. Wilkie (2018) *Inventing the social*. Manchester: Mattering Press.
- Calvillo, N. (2018) Particular sensitivities. e-flux Architecture. Available at: <https://www.e-flux.com/architecture/accumulation/217054/particular-sensibilities/>
- Calvillo, N. and Garnett, E. (2019) Data intimacies: Building infrastructures for intensified embodied encounters with air pollution. *The Sociological Review Monographs* 67(2): 340-356.
- Colomina, B., Choi, E., González Gálan, I., and Meister, A.-M. (2012, September 28) Radical Pedagogies in Architectural Education. Available at: <https://www.architectural-review.com/today/radical-pedagogies-in-architectural-education>
- Corsín Jiménez, A. (2018) Spider Web Anthropologies: Ecologies, Infrastructures, Entanglements. In M. de la Cadena and M. Blaser (eds.) *A World of Many Worlds*, pp. 53-82. Durham, NC: Duke University Press.
- Despret, V. (2004) *Our Emotional Makeup: Ethnopsychology and Selfhood*. Trans. M. de Jager. New York: Other.
- Despret, V. (2016) *What Would Animals Say If We Asked the Right Questions?* Minneapolis, MN: University of Minnesota Press.
- Dewey, J. (1897) My Pedagogic Creed. *The School Journal* 54: 77-80.
- DiSalvo, C. (2015) *Adversarial Design*. Cambridge, MA: MIT Press.
- Domínguez Rubio, F. and Fogué, U. (2015) *Unfolding the Political Capacities of Design*. In A. Yaneva, A. Zaera-Polo (eds.) *What Is Cosmopolitical Design? Design, Nature and the Built Environment*. Burlington, VT: Ashgate.

- Dunne, A. and Raby F. (2013) *Speculative Everything: Design, Fiction, and Social Dreaming*. Cambridge, MA: MIT Press.
- Editorial *Diseña* 12 (2018): Re-learning Design: Pedagogical Experiments with STS in Design Studio Courses. The index can be found here: <http://ojs.uc.cl/index.php/Disena/issue/view/3>
- Fariás, I. and Sánchez Criado, T. (eds.) (2018a) Re-Learning Design: Pedagogical Experiments with STS in Design Studio Courses. *Diseña* (12): 14-29.
- Fariás, I. and Sánchez Criado, T. (2018b) Co-laborations, Entrapments, Intraventions: Pedagogical Approaches to Technical Democracy in Architectural Design. *Diseña* (12): 228-255.
- Fariás, I., Sánchez Criado, T. and Remter, F., How would animals and architects co-design if we built the right contract? (Forthcoming) book chapter for *Design for more-than-human futures*.
- Foucault, M. (1990) *The History of Sexuality*, Vol. 2: The Use of Pleasure, chapter 1 'The Moral Problematization of Pleasures', pp. 68-172. Translation by R. Hurley. New York: Vintage Books. Originally published in France as Id. (1984) *L'Usage des plaisirs*. Paris: Éditions Gallimard.
- Freire, P. (2000) *Pedagogy of the Oppressed* (30th Anniversary Edition). New York: Continuum.
- Froud, D. and Harriss, H. (2015) *Radical Pedagogies: Architectural Education and the British Tradition*. London: RIBA Publishing.
- Garnett, E. (2018) The elemental ambiguity of PM2.5. Toxic News. Available at: <https://toxicnews.org/2018/09/03/the-elemental-ambiguity-of-pm2-5/>
- Gaver, W., Boucher, A., Law, A., Pennington, S., Bowers, J., Beaver, J., Humble, J., Kerridge, T., Villar, N. and Wilkie, A. (2008) Threshold devices: looking out from the home. In *Proceedings of the 26th Annual SIGCHI Conference on Human Factors in Computing Systems, Florence, Italy*, pp. 1429-1438. New York: ACM Press.
- Gisbert Alemany, E. (2017) Variations on the Line of the 'Costa Blanca'. Thesis MRes in Social Anthropology University of Aberdeen (Supervisor: Tim Ingold). Available at: https://www.academia.edu/35920659/Variations_on_the_Line_of_the_Costa_Blanca_Thesis_MRes_in_Social_Anthropology_University_of_Aberdeen
- Gisbert Alemany, E. (2018) Learning Design with Social Insects: The ant, the spider, and the wasp. *Diseña* (12): 256-283.
- Haraway, D. (1988) Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies* 14(3): 575-599.
- Haraway, D. (2015) A CURIOUS PRACTICE. *Angelaki* 20(2): 5-14.
- Haraway, D. (2016) *Staying with the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press.
- Ingold, T. (2000) *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London and New York: Routledge.
- Ingold, T. (2011) *Being Alive: Essays on Movement, Knowledge and Description*. London and New York: Routledge.
- Ingold, T. (2013) *Making: Anthropology, Archaeology, Art and Architecture*. London and New York: Routledge.

- Ingold, T. (2017) *Anthropology and/as Education*. London and New York: Routledge.
- Jaque, A. (2015) Mies in the Basement. The Ordinary Confronts the Exceptional in the Barcelona Pavilions. *Thresholds* (43): 120-278.
- Jaque, A. (2018) Outing Mies' Basement: Designs to Recompose the Barcelona Pavilion's Societies. In N. Marres, M. Guggenheim and A. Wilkie *Inventing the social*, pp. 149-172. Manchester, UK: Mattering Press.
- Jaque, A. (2018) Rearticulating the Social. Available at: <https://www.e-flux.com/architecture/positions/280206/rearticulating-the-social/>
- Jaque, A. (2019) *Mies y la gata niebla: Ensayos sobre arquitectura y cosmopolítica*. Barcelona: Puente Editores.
- Kanouse, S. (2011) A Post-Naturalist Field Kit: Tools for the Embodied Exploration of Social Ecologies. In S. Caquard, L. Vaughan and W. Cartwright (eds.) *Mapping Environmental Issues in the City: Arts and Cartography Cross Perspectives*, pp. 160-177. Berlin: Springer.
- Kullman, K. (2016) Prototyping Bodies: A Post-Phenomenology of Wearable Simulations. *Design Studies* 47 (November): 73-90.
- Latour, B. (2004d) How to Talk about the Body? The Normative Dimension of Science Studies. *Body & Society* 10(2-3): 205-229.
- Lefebvre, H. (2014) *Toward an Architecture of Enjoyment*. Minneapolis, MN: University of Minnesota Press.
- Lippman, W. (1925) *The Phantom Public*. New York: Harcourt, Brace.
- McCormack, D. P. (2015) Devices for Doing Atmospheric Things. In P. Vanni (ed.) *Non-Representational Methodologies*, pp. 89-111. London, New York: Routledge.
- Mesa del Castillo Clavel, M. (2018) Olla Gitana. Un Experimento de Arquitectura Para Instituciones Ligeras. *Imafronte* 25: 173-190. Available at: <https://revistas.um.es/imafronte/article/view/357561/256471>
- Marres, N., Guggenheim, M. and Wilkie, A. (2018) *Inventing the social*. Manchester, UK: Mattering Press.
- Masschelein, J. and Simons, M. (2013) *In Defence of the School: A Public Issue*. Leuven, BE: E-ducation, Culture & Society Publishers.
- Nieto Fernández, E. (2012) *¡...Prescindible organizado!: agenda docente para una formulación afectiva y disidente del proyecto arquitectónico*, PhD thesis. Available at: https://pdfs.semanticscholar.org/47e5/13bcb74a22016f9210c55e31043fa4e0ffe6.pdf?_ga=2.151648633.1333399415.1618498076-934877794.1618498076
- Puig de la Bellacasa, M. (2011) Matters of Care in Technoscience: Assembling Neglected Things. *Social Studies of Science* 41(1): 85-106.
- Puig de la Bellacasa, M. (2017) *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis, MN: University of Minnesota Press.
- Rancière, J. (1991) *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*. Stanford, CA: Stanford University Press.
- Ratto, M. (2011) Critical Making: Conceptual and Material Studies in Technology and Social Life. *The Information Society*

27(4): 252-260.

Sánchez Criado, T. and Estalella, A. (2018) Introduction: Experimental Collaborations. In A. Estalella and T. Sánchez Criado (eds.) *Experimental Collaborations: Ethnography through Fieldwork Devices*, pp. 1-30. New York: Berghahn.

Sánchez Criado, T. (2021) Anthropology as a careful design practice? *Zeitschrift für Ethnologie* 145 (2020, 1): 47-70.

Sengers, P. and Gaver, W. (2006) Staying open to interpretation: Engaging multiple meanings in design and evaluation. In *Dis '06: Proceedings of the 6th Conference on Designing Interactive Systems, University Park*, pp. 99-108. New York: ACM Press.

Seurat, C. and Tari, T. (2021) *Controverses mode d'emploi*. Paris: Les Presses de Sciences Po.

Schon, D. (1983) *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.

Schon, D. (1985). *The Design Studio: An Exploration of its Traditions and Potentials*. London: RIBA Publications.

Serres, M. (1995) *The Natural Contract*. E. MacArthur and W. Paulson (eds.). Ann Arbor, MI: The University of Michigan Press. Originally published in France as Id. (1990) *Le contrat naturel*. Paris: Éditions Francois Bourin.

Serres, M. (1997) *The Troubadour of Knowledge*. Ann Arbor, MI: The University of Michigan Press.

Sloterdijk, P. (1998) *Sphären I - Blasen, Mikrosphärologie*. Frankfurt am Main, D: Suhrkamp. Italian transl. Id. (2009) *Sfere I. Bolle*. Roma: Meltemi.

Sloterdijk, P. (1999) *Sphären 2: Globen*. Frankfurt am Main, D: Suhrkamp. Italian transl. Id. (2014) *Sfere II. Globi*. Milano: Raffaello Cortina.

Sloterdijk, P. (2016) *Foams: Spheres Volume III: Plural Spherology*. Los Angeles: Semiotext(e). Originally published as Id. (2004) *Sphären III - Schäume, Plurale Sphärologie*. Frankfurt am Main, D: Suhrkamp. Italian transl. Id. (2015) *Sfere III. Schiume*. Milano: Raffaello Cortina.

Spuybroek, L. (2016) *The Sympathy of Things: Ruskin and the Ecology of Design*. London: Bloomsbury.

Stengers, I. (2010) *Cosmopolitics*. Vol. 1. Minneapolis, MN: University of Minnesota Press.

Stewart, K. (2011) Atmospheric Attunements, *Environment and Urban Planning D: Society and Space*, 29: 445-453.

Tironi, M. and Calvillo, N. (2016) Water and Air: Territories, Tactics and the Elemental Textility of Urban Cosmopolitics. In I. Farías and A. Blok (eds.) *Urban Cosmopolitics*. London, pp. 207-224. New York: Routledge.

Torres Nadal, J. M. (2019) *Arquitectura In-Dependiente: Análisis pormenorizado del giro que las cuatro fuerzas ecologizantes*. Alicante, ES: Colección Denise Scott Brown.

Tronto, J. C. and Fisher, B. (1990) Toward a Feminist Theory of Caring. In E. K. Abel and M. K. Nelson (eds.) *Circles of Care: Work and Identity in Women's Lives*. Albany, NY: State University of New York Press.

Varga, H. M. (2018) On Design and Making with sts. *Diseña* (12): 30-51.

Venturini, T. (2010) Diving in magma: How to explore controversies with actor-network theory. *Public Understanding of Science* 19(3): 258-273.

Venturini, T. (2012) Building on faults: How to represent controversies with digital methods. *Public Understanding of Science* 21(7): 796-812.

Wilkie, A., Savransky, M. and Rosengarten, M. (eds.) (2017) *Speculative Research: The Lure of Possible Futures*. London: Routledge.

Yaneva, A., Latour, B. and Geiser, R. (eds.) (2008) Give me a Gun and I will Make All Buildings Move: An ANT's View of Architecture. In R. Geiser (ed.) *Explorations in Architecture: Teaching, Design, Research*, pp. 80-89. Basel, CH: Birkhauser Verlag.

Yaneva, A. (2012) *Mapping Controversies in Architecture*. London: Ashgate Publishing.

Yaneva, A. (2015) An Interview with Andrés Jaque, Office for Political Innovation. In A. Yaneva, A. Zaera-Polo (eds.) *What Is Cosmopolitical Design? Design, Nature and the Built Environment*, pp. 57-77. Burlington, VT: Ashgate.

Zeiger, M. (2011) The Interventionist's Toolkit: 1. *Places Journal* 6. Available at: <https://placesjournal.org/series/interventionists-toolkit/?cn-reloaded=1>

As I stated in the introduction to this thesis, my research work emerged from a desire to investigate in depth the reasons for my dissatisfaction with the scenario in which I was trained and in which I find myself working as an architect.

The first four chapters were an attempt to give form and depth to my critical argumentation. Various authors and conceptual repertoires have accompanied me in my better defining the contours of what I wanted to problematise: namely, what it really means to participate, who sets the rules, who and what is excluded; what is usually understood by the term 'common'; the knowledge-power nexus; the limits of expertise and the related technocratic risks; the tendency of architects to generalisation and solutionism; the idea of autonomy and the possibility of governing and shaping nature as inert matter; the prejudices inherent in training models and the 'normative templates' to which architects learn to refer.

The contribution offered by STS, in particular, has been fundamental to an even deeper understanding of the problem of knowledge, revealing the active and performative political role of non-humans, the material nature of participation, the problems and risks inherent in the attitude of dichotomous thinking, the dangers of hasty closures of the 'cosmos' - or the 'common' - and the many more-than-human entities that, by choice or condition, are neglected.

Various design and pedagogical experiments have offered me interesting food for thought to imagine new and multiple alternative possibilities to practice architecture, to open up design processes and to understand participation. The philosophical reflections of STS become tools which allow us to question dominant paradigms and re-learn architecture, opening it up to more speculative and careful versions.

In particular, all this has prompted me to reflect again and more deeply on my own architectural practice, and to ask myself how and into what I would like to transform it.

The last part of this thesis, therefore, as I have already mentioned in the introduction, will recount a process of crisis I underwent myself, in an attempt to re-learn architecture from neurodiversity.

V

My own *voyage*. An attempt to re-learn architecture from neurodiversity

Introduction

This chapter covers the beginning of an experience, or rather a particular journey – in the sense that Serres gives to the term¹ – which I myself have undertaken. It all began when, motivated by my interest in the experimental agendas examined in chapter IV, and particularly in Sánchez Criado and Farías’s pedagogical experiences in Munich, I got in touch with them to undertake a doctoral research visit at the *Stadtlabor for Multimodal Anthropology*, a research platform at the Institute for European Ethnology of Humboldt-Universität zu Berlin. My purpose was, in a way, to ‘expose myself’, to move beyond the readings and concepts which I had studied with great interest. In particular, my initial goal was that of taking part in, and documenting, other teaching explorations of the two anthropologists, in order to understand them in a more direct way, which the mere reading of their account couldn’t allow. Later on, I found out that these pedagogical experiences with architecture students had only been limited to the period of time in which they were working in Munich, and in Berlin they had gone back to teaching mostly social scientists. After the presentation of my research work at the WS 2019/20 kick-off session of the *Stadtlabor* (28 October 2019), a joint debate with the lab’s team drew attention to the centrality of STS-inspired theoretical agendas and my interest in more-than-human approaches to design (much of what is shown in Chapter IV). They were particularly intrigued by how I was translating this into my work as an architect, and in that conversation I realised that I had never tried to make these concepts affect my own way of practicing architecture. It was then that Sánchez Criado invited me to go beyond the ‘search for answers’ in the mere analysis of experiments carried out by others and, as Deleuze would say², start searching for my own practical questions. In other words, he encouraged me to try to bridge the gap between discourse and practice, radically exposing myself to start ‘knowing from the inside’³ of my own

1 See chapter IV, section 2.2.1. Cf. Serres, M. (1997) *The Troubadour of Knowledge*. Ann Arbor, MI: The University of Michigan Press.

2 In his dialogue with Claire Parnet, Deleuze stated: “It is very hard to ‘explain oneself’ in an interview, a dialogue, a conversation. Most of the time, when someone asks me a question, even one which relates to me, I see that, strictly, I don’t have anything to say. Questions are invented, like anything else. If you aren’t allowed to invent your questions, with elements from all over the place, from never mind where, if people ‘pose’ them to you, you haven’t much to say. The art of constructing a problem is very important: you invent a problem, a problem-position, before finding a solution. None of this happens in an interview, a conversation, a discussion”. Deleuze, G. and Parnet, C. (2007) *Dialogues II*. New York: Columbia University Press, p. 1. Originally published in France as *Iid*. (1977) *Dialogues*. Paris: Flammarion.

3 Cf. Ingold, T. (2013) *Making: Anthropology, Archaeology, Art and Architecture*. New York: Routledge.

understandings of architectural practice and sensitise myself, or ‘to become affected’⁴ by more-than-human worlds, so as to attempt to experimentally re-learn what being an architect might be as a result.

“I would be happy to help you through the creation of a pedagogical situation’ (like Rancière’s Ignorant Schoolmaster would do: in fact, during the entire teaching process in Munich I thought of myself as an ignorant architect). From this type of situation we learn that if concepts have something to teach us they must be seen as tactical operators that exert palpable, perceptible and existential effects on the practical way in which we connect with the world. Only then, maybe, we will be able to imagine what designing in a different way, for ever-specific problems, could mean.” (excerpt from an e-mail I received from Sánchez Criado, 29 October 2019)

Whereas my acquired abstract and discursive knowledge offered me a sense of “security, predictability and freedom from risk”, the idea, to put it in Ingold’s words, was to allow my knowledge to “grow from direct, practical and observational engagements with the people and things”⁵ around me. After many discussions, we agreed to undertake a self-experiment in which, with his assistance, I could undergo a similar sort of experience to the ones of the *Design in crisis* courses: rather than teaching me what I should do, he would be acting again as a teacher of something he didn’t know⁶ and only using the asymmetric position of being ‘the pedagogue’ to help me start a journey abandoning the secure place of expertise and creating a space to sensitise myself to be another kind of practitioner of architecture: as in Sánchez Criado’s previous experiences, the idea revolved around creating the conditions for architecture to be challenged, i.e. to work with actors who could put its conventional contractual and collaborative/participatory ways of working in crisis.

However, there was a main difference here: this was not a course in a Master’s programme of Architecture. We were not in a formal pedagogic space with the felt obligation to obtain some credits by students. This was relevant not just because we wouldn’t have the institutional backing of a department and access to fablabs or plotters and materials to prototype with. In our case, the topic also needed to be discussed and the commitment needed to be explicit and mutually accepted, something that should lead to a process of shared-knowledge production, a joint exploration, or a path “of intellectual growth and discovery without predetermined outcomes or fixed end-points”⁷.

In other words, in our search for a critical ‘brief’ we had to search for an ‘attainable domain of experimentation’ both on a thematic level and in terms of concrete and feasible experience. Hence, a negotiation ensued, searching for a topic in which Sánchez

4 Cf. Latour, B. (2004d) How to Talk about the Body? The Normative Dimension of Science Studies. *Body & Society* 10(2-3): 205-29.

5 Ingold, T. (2017) *Anthropology and/as Education*. London: Routledge, p. x.

6 Cf. Rancière, J. (1991) *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*. Stanford, CA: Stanford University Press.

7 Ingold, T. (2017) *Anthropology and/as Education*, p. ix.

Criado's ignorance would be productive for that common exploration: that is, as opposed to the experiments by Jacotot recounted by Rancière, a practice whose relative degree of ignorance could grant some feasibility to the experiment.

As already seen in the final sections of chapters III and IV, Sánchez Criado has a long experience in the field of urban accessibility activism, so he offered to share with me his concern for issues he had always wanted to know more about related to bodily diversity and its impact in architecture. At the time, I was living together in Berlin with a family with a neurodivergent member, Moritz, and we discussed whether they might be interested engaging, in whatever way, in exploring what that might do to architectural practice, something that both him and I showed an interest in knowing more. As a result, these contingencies motivated us to undertake a joint experiment exploring how could neurodiversity teach us to put architecture in crisis (the difference between the terms 'neurodiversity' and 'neurodivergent' will be discussed in section 4.1.2.3).

In particular, our experience, which lasted for about five months – from November 2019 to March 2020 – was defined by a succession of different and intertwined operations – and reflections, concerning said operations – which were quite complex. With the aim of ensuring here a greater argumentative clarity, I will use a particular narrative device: I will try to provide an account of the entire process focusing on its most relevant effects of 'sensitisation'. In short, the process of my crisis and my re-learning consisted of three main interconnected operations:

1. 'sensitising myself' to my own architectural practice, in order to distance myself from 'the discourse', and start to re-learn by reflecting from *within* my 'material doings'. In this way I could develop an awareness to the modalities, tools and techniques with which I used to work and which I had learnt during my educational path.
2. 'sensitising myself' to bodily diversity [i.b. V. 1], thus going beyond the usual type of body on which the dominant architectural culture is founded. A critical study and debate on the more general theme of accessibility in architecture and its problematic aspects and an analysis of design attempts in the fields of Down syndrome, Autism, Dementia and other intellectual or development disabilities (or, for want a better term, neurodiversity), contributed to assembling the critical background for approaching a singular and situated experience with Moritz.
3. 'sensitising myself', thanks to my connection with Moritz, to other concepts of space, which are to be found beyond the traditional volumetric-Euclidean models.

Before I begin to discuss our exploration, I will dwell on illustrating more thoroughly the reflections and assumptions on which, in our case, the design of a crisis for architectural practice was based, and the reasons why we considered the term neurodiversity to be an useful conceptual operator to work with. Moreover, I will explain the role and relevance that the documentation of the entire process acquired.

i.b. V. 1 - The body beyond Cartesian dualism

The expression 'sensitising myself to bodily diversity' could be replaced by: 'sensitising myself to the complex ecologies of the bodymind'. Mind and body are not considered as separate entities. In this regard, a more accurate clarification and argumentation is needed. The adjective 'bodily', in fact, is understood here in a broader sense than its purely physical or physiological meaning, and more in its being 'embodied'. In order to make this perspective more accessible, below I will try to retrace, in a brief and incomplete way, some fundamental reflexive contributions on this topic¹.

Natural and human sciences, as noted in the previous chapters, have traditionally reproduced, in various ways, a series of divisions. Among such divisions is that between mind and body, often recognised as 'Cartesian dualism'. The mind is usually linked to what makes 'cognitive' processes possible, i.e. thinking, arguing, reflecting, and so on. These activities are considered to be separated from the processes, mostly seen as 'involuntary', that take place within the body, such as breathing and digestion. In this perspective, the mind is the seat of thought, and is subject to voluntary control, while the body is a collection of fixed and involuntary physiological processes. Many different attempts to negate this dualism have historically emerged and continue to emerge. The rich and renowned philosophical tradition known as phenomenology², for example, works on the concept of the 'sentient body'. In this view, the body is not separated from the mind as in Cartesian traditions: the body is a 'thinking' body that perceives its environment through lived and felt experience. Perception is an entirely 'embodied' experience³.

Drawing also on such reflections, some authors, such as, for example, Simon J. Williams and Gillian Bendelow⁴, look at the body as a biologically and socially 'unfinished' entity, which is not static or fixed, thus offering a reformulation of the biology or materiality of the body in non-reductionist terms. In this perspective, there is no such thing as a 'natural' body, but a materiality willing to influence and be

1 My overview briefly summarises a much richer and interesting analysis made by Lisa Blackman in her book *The Body: The Key Concepts*, in which she highlights and analyses debates about the body and its centrality in current sociological, psychological, cultural and feminist thinking. Cf. Blackman, L. (2008) *The Body: The Key Concepts*. London: Routledge.

2 See, for instance: Husserl, E. (1913-1914) *Ideen zur einer reinen Phänomenologie und Phänomenologischen Philosophie*. Halle a. d. S., D: Max Niemeyer Verlag; Italian transl. Id. (1950) *Idee per una fenomenologia pura e una filosofia fenomenologica*. Torino: Einaudi.

3 The works that have investigated the relationship between architecture and phenomenology, as the architecture audience knows well, are countless. Among them are, for example: Norberg-Schulz, C. (1980) *Genius Loci: Towards a Phenomenology of Architecture*. New York: Rizzoli; Pallasmaa, J. (1995) *The Eyes of the Skin: Architecture and the Senses*. Chichester, UK: John Wiley & Sons; Pallasmaa, J. (2009) *The Thinking Hand: Existential and Embodied Wisdom in Architecture*. Chichester, UK: John Wiley & Sons; Pallasmaa, J. (2011) *The Embodied Image: Imagination and Imagery in Architecture*. Chichester, UK: John Wiley & Sons; Zumthor, P. (2006) *Atmospheres: Architectural Environments – Surrounding Objects*. Basel, CH, Boston, US and Berlin: Birkhäuser Verlag. An intertwined analysis of these and other views on the subject can be found in: Borch, C. (ed.) (2014) *Architectural Atmospheres. On the Experience and Politics of Architecture*. Basel, CH: Birkhauser Architecture.

A significant contribution to phenomenology in Italy was made by Enzo Paci. See: Paci, E. (1961) *Tempo e verità nella fenomenologia di Husserl*. Bari: Laterza. Furthermore, Paci long collaborated with Ernesto N. Rogers, the architect who more than any other had an impact on Italian architectural culture after World War II.

4 Cf. Williams, S. J. and Bendelow, G. (1998) *The Lived Body: Sociological Themes, Embodied Issues*. London and New York: Routledge.



influenced.

However, as some authors note, in the context of STS and ANT especially, phenomenological approaches tend to focus exclusively on the human subject and its 'intentionality'. In particular, by questioning the idea of the 'natural body' through the concept of 'social influence', the split between the 'subject' and the 'social' (as an abstract entity) is reproduced. In the light of ANT, therefore, this perspective is replaced by a more intrinsically complex and relational one, which looks at the body as an interface that is never singular and always linked to, and 'enacted' by, practices, entities – both human and non-human – and wider processes. The focus, then, rather than being on the intentionality and lived experience of the human subject, shifts to practices and the multiple and heterogeneous entities that enable the actualization of a certain body⁵.

In addition to Latour's example of the novice perfumers' body (see chapter IV, i.b. IV 6) – which presents the body as an interface that determines itself as it learns to be influenced by more and more elements – the two scholars who have developed and explored this perspective in depth are John Law and Anne-Marie Mol. Specifically, in their work on hypoglycaemia, Law and Mol state that "as part of our daily practices, we also do (our) bodies. In practice we enact them"⁶. They suggest shifting the focus from what hypoglycaemia is to how it is 'done', performed or enacted. In such a view, the body is literally brought into being through specific practices and relational arrangements. In this regard, another interesting expression used by Mol is that of the 'multiple body'⁷: the body is not confined in itself, but always extends and links itself to other entities, human and non-human, to practices, techniques, technologies and objects that produce different and specific ways of 'enacting' what it means to be human. The body is no longer understood as a substance, or a finite and stable entity, but it is explored as a process, that is, in its being produced by complex and more-than-human ecologies.

This idea of radical relationality, and therefore the cancellation of understandings of the body based on singularity and separation, is also at the basis of the work on the body by Vinciane Despret⁸. The Belgian philosopher proposes the concept of 'becoming', or 'becoming together', which cancels the distinction between the self and the other, between the human and the non-human (in her case between humans and animals).

5 The branch of study that emerged from this intertwining of phenomenology and ANT is known as 'post-phenomenology'. Particularly, among the numerous works that have announced and explored this perspective and its spatial implications are, for example: Thrift, N. (2008) *Non-representational theory: space, politics, affect*. London: Routledge; Lea, J. (2009) Post-phenomenology/post-phenomenological geographies. In R. Kitchin and N. Thrift (eds.) *International encyclopaedia of human geography*, pp. 373-378. Oxford, UK: Elsevier; Bryant, L. (2014) *Onto-cartography: an ontology of machines and media*. Edinburgh, UK: Edinburgh University Press; Ash, J. and Simpson, P. (2019) Postphenomenology and method: Styles for thinking the (non) human. *GeoHumanities* 5(1): 139-156; McCormack, D.P. (2017) The circumstances of post-phenomenological life worlds. *Transactions of the Institute of British Geographers* 42(1): 2-13; Engelmann, S. and McCormack, D.P. (2018) Sensing atmospheres. In C. Lury, R. Fensham, A. Heller-Nicholas, S. Lammes, A. Last, M. Michael and E. Uprichard (eds.) *Routledge Handbook of Interdisciplinary Research Methods*. London: Routledge, pp. 187-193; McCormack, D.P. (2018) *Atmospheric Things: On the Allure of Elemental Envelopment*. Durham, NC: Duke University Press; Harris, A. (2020) *A Sensory Education*. London: Routledge.

6 Mol, A. and Law, J. (2004) Embodied Action, Enacted Bodies: The Example of Hypoglycaemia. *Body and Society* 10(2-3): 43-62, p. 45.

7 Cf. Mol, A. (2002) *The Body Multiple: Ontology in Medical Practice*. London and New York: Duke University Press.

8 Cf. Despret, V. (2004) The Body We Care for: Figures of Anthro-zoo-genesis. *Body and Society* 10(2-3): 111-134.

1. Putting architecture in crisis. The capacity contract of design practice

Our experimentation, as I have stated earlier, revolved again around the aim of challenging the ways and means through which architecture traditionally operates, and the meaning that is commonly given to participation. To put it in other words, how can architecture operate, both in individual professional encounters and in forms of participatory practice, with subjects that are commonly not considered as such? How to consider what these actors bring to architecture and to the transformation of its practices (i.e., not only in terms of social relevance or ethical or humanitarian implication)?

As we have already seen in chapter III's conclusion, participation in architecture commonly implies and reclaims the 'agency', and thus the voice, of other people. This was a question that proved to be particularly puzzling for our exploration, for we wanted to pay attention to those who tend to be discriminated or neglected by what political scientist Stacy C. Simplican calls 'the capacity contract'⁸: a series of linguistic, cognitive, intellectual and mental conditions of legibility for a subject to be treated as a citizen, a person with rights and obligations. To put it in her words: "[d]emocracy entails that we imagine that the most important political duties are cognitive tasks, such as reasoning, reflection, judgment, and deliberation. For political decisions to be legitimate, we expect people to reason sufficiently about themselves, the world around them, and the political futures they desire"⁹. As also historian James Berger points out¹⁰, referring to Simplican's reflections, this directly refers to a central feature of Enlightenment social contract theory, from Locke¹¹ to – more recently – John Rawls¹², according to which having political agency implies displaying or being readable as having rational and linguistic capabilities, expressing one's thoughts, wishes and desires in a normative way so as to be able to enter, in legal terms, into a contract.

In short, our idea of a complex brief emerged precisely from these observations. Rather than sanctioning this 'capacity contract' – which is at the source of many processes of

8 Cf. Simplican, S. C. (2015) *The Capacity Contract. Intellectual Disability and the Question of Citizenship*. Minneapolis, MN: University of Minnesota Press.

9 Ibid. p. 3.

10 Cf. Berger, J. (2019) Rethink: Agency, theory and politics in disability studies. In K. Ellis, R. Garland-Thomson, M. Kent and R. Robertson (eds.) *Manifestos for the Future of Critical Disability Studies* pp. 209-216. London: Routledge, p. 212.

11 See, for instance: Locke, J. (1979) *An Essay Concerning Human Understanding*, P. H. Nidditch (ed.). Oxford, UK: Oxford University Press. Originally published as Id. (1690) *An Essay Concerning Human Understanding*. London: Thomas Baffet; Locke, J. (2004) *The Two Treatises of Government*, P. Laslett (ed.). Cambridge, UK: Cambridge University Press. Originally published as Id. (1689) *The Two Treatises of Government*. London: Awnsham Churchill.

12 See, for instance: Rawls, J. ([1967] 1999) Distributive Justice. In S. Freeman (ed.) *Collected Papers*, pp. 130-153. Cambridge, MA: Harvard University Press; Rawls, J. (2005) *Political Liberalism*. New York: Columbia University Press.

disablement, reading certain bodies as unable to express their wishes or desires – we wanted to follow Simplican’s inspiration, whose work attempts to explore what other meanings, practices and contours of the political, and of disability rights activism might be imagined in the close vicinity of those subjects. Indeed, “[p]eople with intellectual and developmental disabilities subvert (...) idealized cognitive expectations as well as the fictive political subject from which they emerge”¹³.

In particular, Simplican argues that political agency should be extended to include activities such as humor and dancing, that “challenge compulsory capacity and enact democratic capacity contracts”¹⁴. According to her, dance is “an expression of a life well lived” and “a tool of disruption – a momentary suspension of norms and a critique of compulsory capacity”¹⁵. Simplican’s position is in contrast with Berger’s, who, instead, writes that dance “does not confront power; it does not create alliances that have power. And its disruptive, transgressive potential is limited, if it exists at all. Those without effective language will not have political power nor agency. There is no way to finesse this”¹⁶. As he argues, “[t]here is no shame in being spoken for if you cannot speak”¹⁷ and the only useful way to create a socio-political place for those unable to practice political agency is to reflect on the responsibilities of those who speak and care for them.

Translating this into an architectural problem, we wanted to consider how neurodivergent subjects might entail a particularly productive crisis, or deconstruction, of the architectural figure of the ‘client’, or the ‘participant’, as well as the means and ends of architectural practice. For this, a further exploration and discussion of neurodiversity might be needed.

1.1. Neurodiversity as a conceptual operator

Neurodiversity is a positive self-representational vocabulary invented by autistic activists¹⁸ as opposed to the term ‘neurotypicality’, associated with the hegemonic idea of the human mind. Anyway, whereas I will briefly dwell of its socio-political framework in a following section (see section 4.1.3.3), here I will attempt to clarify the conceptual value we attributed to it in the specific context of our experience. Indeed,

13 Simplican, S. C. (2015) *The Capacity Contract*, p. 3.

14 Ibid. p. 121.

15 Ibid. p. 130.

16 Berger, J. (2019) *Rethink: Agency, theory and politics in disability studies*, p. 212.

17 Ibidem.

18 More specifically, it was used for the first time in 1999 by Judy Singer, an Australian social scientist, herself autistic, as a reaction to the medical model of disability. Cf. Singer, J. (1999) ‘Why Can’t You Be Normal for Once in Your Life?’ From a ‘Problem with No Name’ to the Emergence of a New Category of Difference. In M. Corker and S. French (eds.) *Disability Discourse*, pp. 59-67. Buckingham, UK: Open University Press.

neurodiversity became for us the driver of an exploration and, instead of having a closed-down definition of it, we drew on philosopher Erin Manning's use of the term as a category of flight and movement, rather than identity and stasis. To put it in her words:

"(...) while I am certain that neurological difference is a formative effect in the variation designated by the term *neurodiversity*, my interest is in *the diversity in diversity*, locating the neurotypical not as the measure of an individual diametrically opposed to the neurodiverse but as the (unspoken) baseline of existence. I see neurotypicality as akin to structural racism—as the infusion of white supremacy in the governing definition of what counts as human. The assumption that neurotypicality is the neutral ground from which difference asserts itself (an assumption everywhere supported by the neuroscientific literature) suggests that there is still an urgent conversation to be had about how the human, and knowledge as a defining category of the human, is organized and deployed in the image of neurotypicality"¹⁹.

Or, as she stated in a previous book: "[n]eurodiversity is the path I choose (...) to explore insurgent life. (...) I take [it] as a platform for political change that fundamentally alters how life is defined, and valued"²⁰. In short, because of its focus on neural variability, this vocabulary appeared interesting to us in suggesting the productivity of considering a plurality of ways of being, and a multiplicity of modes of perception and subjectivity opening up more liveable spaces and political exploration beyond the Kantian neurotypical hegemony. Indeed, again in Manning's words, "[n]eurodiversity's power is to feel the blur, the ambiguity, the fugitivity"²¹. This concept, by revealing different connections with the built environment, for us represented an interesting conceptual operator thanks to which we could reconsider the conventional notions of space, and the traditional modalities and tools through which architecture operates.

In an STS context, this can be read in some ways as an attempt to design with an 'idiotic methodology'²². Allow me to elaborate. STS draw on the etymological roots of the term 'idiot'. Its original meaning, in Ancient Greek, was 'private person', thus indicating

19 Manning, E. (2020) *For a Pragmatics of the Useless*. Durham (NC): Duke University Press, p. 2. Later in her book, Manning writes: "I use the adjective neurodiverse—to remind us that we need a concept for a diversity in diversity that isn't measured by the standard of typicality. A diversity in diversity is one that senses fully and differentially, that lives and participates in a world still defining itself according to measures not yet in place. It includes populations historically excluded from the matrix of the human. It includes modes of life-living that exceed the human, that feel the more-than-human world not as other but as with, in the being of relation". Ibid. p. 263.

20 Manning, E. (2016) *The Minor Gesture*. Durham (NC): Duke University Press, p. 5.

21 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 6.

22 Cf. Michael, M. (2012) De-signing the object of sociology: toward an 'idiotic' methodology. *The Sociological Review* 60(1suppl.): 166-183.

an individual who would not participate in public affairs. Subsequently, these studies accepted the more radical emphasis placed on the term by Deleuze and Guattari, who conceived the ‘idiot’ as a conceptual persona that “wants to turn the absurd into the highest power of thought – in other words, to create”²³.

More recently, in her *Cosmopolitical proposal*, drawing from the very use of Deleuze and Guattari’s term, Stengers characterised the ‘idiot’ as a figure who “resists the consensual way in which the situation is presented and in which emergencies mobilize thought or action”²⁴. To put it another way, the ‘idiot’ is someone whose responses are nonsensical in the context of reality as it is usually understood, and thus forces us to think and proceed more carefully and slowly. As Stengers writes: “the idiot can neither reply nor discuss the issue (...) [the idiot] does not know (...) the idiot demands that we slow down, that we don’t consider ourselves authorized to believe we possess the meaning of what we know”²⁵.

In line with the observations made in Chapter III, then, this character quite stubbornly questions a particular cosmopolitical event and the way it is consensually understood, encouraging the inclusion of other voices and interpretations, preventing the closure and stabilization of the ‘cosmos’ while evoking its opening to multiple and diverse possibilities²⁶.

This perspective is exactly what STS-trained sociologist Mike Michael refers to in outlining the contours of what he calls ‘idiotic methodology’. Particularly interested in exploring the implications of taking such an approach for the conceptual and practical actions of social scientific research, Michael notes how this methodology is at the basis of the so-called ‘speculative design’ (see also Chapter IV, i.b. IV 3), that is, a particular field of design, which, rather than focusing on the development of instrumental and utilitarian devices, is interested in producing (probes and prototypes) “that enable playfulness and exploration (...). [T]he aim is to throw up the peculiar, the unexpected, the troublesome, the incommensurable”²⁷. Idiotic objects afford “an opportunity to engage in a process of (...) ‘inventive problem making’”²⁸, namely, they “[occasion] a radical rethinking of the events in which they emerged”²⁹. In short, then, an idiotic

23 Deleuze, G. and Guattari, F. (1994) *What is Philosophy?* London: Verso, p. 62. Originally published in France as *Id.* (1991) *Qu’est-ce que la philosophie?* Paris: Éditions de Minuit Paris.

24 Stengers, I. (2005) The cosmopolitical proposal. In B. Latour and P. Weibel (eds.) *Making things public: atmospheres of democracy*, pp. 994-1003. Cambridge, MA - Karlsruhe: MIT Press - zkM/Center for Art and Media in Karlsruhe, p. 994.

25 Ibid. p. 995.

26 For a more complete analysis of the characterisation of the term ‘idiot’ in STS, see: Michael, M. (2013) The idiot. *Informática Na Educação: Teoria & Prática* 16(1): 71-82.

27 Michael, M. (2012) De-signing the object of sociology: toward an ‘idiotic’ methodology, p. 173.

28 Ibid. p. 171. Here Michael quotes Fraser, M. (2010) Facts, ethics and event. In C. Bruun Jensen and K. Rodje (eds.) *Deleuzian Intersections in Science, Technology and Anthropology*, pp. 57-82. New York: Berghahn Press.

29 Ibidem.

methodology implies the design of objects or situations that force one to slow down, to problematise, to explore possible alternatives to the way a reality is usually and consensually understood.

However, it is necessary to underline that the term ‘idiot’, which in STS is used metaphorically and instrumentally, can be problematic in itself. In fact, the meaning commonly attributed to it is extremely abilist: it is known that it has long been and still is used to indicate autistic people or ‘madmen’, who are supposedly idiots because they get lost in their own idioms (their own singular, incomprehensible expressions)³⁰.

For this reason, rather than as ‘idiotic methodology’, we used neurodiversity as a method. That is, the question around which our experimentation revolved was: what would we learn in the proximity of those subjects who have traditionally been treated as idiots?

The aim, therefore, was for me to transform myself into a ‘neurodiverse apprentice’.

As we shall see later on, by approximating myself to Moritz, I could question and rethink my knowledge. I could question the architectural culture within which I was educated and the tools which I used to operate, and experimentally access new possibilities of understanding space. In other words, neurodiversity has been seen as a way of producing an ‘intravention’ (see chapter IV), that is, an experimental operation that aims at bringing, to the core of, or *inside*, architectural practice, space concepts that question its conventional and normative models. My connection with Moritz was not an instrumental one, aimed, therefore, at collecting information about him to design a certain type of object ‘for’ him, which ‘suited’ him. My approaching him allowed me to re-learn architecture and speculate on what a neurodiverse form of spatial design might be.

2. Why documentation matters

Throughout our exploration, Sánchez Criado particularly encouraged me to act like an ‘ethnographer of sorts’, insistently asking me to produce records of all our progressive steps and learning outcomes. Indeed, besides sharing with me his knowledge in the field of urban accessibility activism, he also invited me to develop a particular concern for documentation, due to its importance in open design processes and for its role in helping to think ‘from the error’ and generate processes of ‘joint problem-making’³¹,

30 On this argument, see, for instance: Yergeau, M. (2018) *Authoring Autism: On Rhetoric and Neurological Queerness*. Durham, NC: Duke University Press.

31 Cf.: Sánchez Criado, T. (2019) Technologies of friendship: Accessibility politics in the ‘how to’ mode. *The Sociological Review Monographs* 67(2): 408-427; Sánchez Criado, T. and Estalella, A. (2018) Introduction: Experimental Collaborations. In A. Estalella and T. Sánchez Criado (eds.) *Experimental Collaborations: Ethnography through Fieldwork Devices*, pp. 1-30. New York: Berghahn; Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?: En torno a la silla and the “Joint Problem-Making” of Technical Aids. In C. Bates, R. Imrie and K. Kullman (eds.) *Care and Design: Bodies, Buildings, Cities*, pp. 198-218. Oxford, UK: Wiley.

something that, as I have already mentioned in chapter III (see section 6.4), he had learned from the free culture in Spain, with the Medialab-Prado centre of Madrid in the lead, and, more specifically, in *En torno a la silla*. Moreover, such concerns had been at the core of the *Design in Crisis* courses themselves.

As we have seen in various passages of this thesis (particularly in chapter II), a common attitude among designers – and among ‘experts’ in general – which is fundamentally linked to a certain modernist culture, is that of working from a solutionist perspective. This logic implies that the entire design process, activated by a particular brief, gets reduced to a final ‘form-giving idea’, which takes the shape of sketches, drawings, renders and plastic models. In other words, it can be said to be an expert re-organisation of the world. Usually, then, there is no trace left of the complex series of steps, problems and choices which make the elaboration and representation of this idea possible. After all, in most cases, the disclosure of the process is perceived as antithetical to the idea of the architect as author and creative genius, capable, through his/her expertise, to provide answers and guarantee the quality of the solution that he/she creates. From this point of view, as we have seen in chapter III, STS, and especially ANT, have made an important contribution, as they perform – and encourage – the descriptive narration of the socio-material dimension of the project.

Many ANT-inspired scholars have analysed the processes through which scientific facts are created, that is, scientists’ peculiar ability to convert heterogeneous elements into tables, graphs, and catalogues that can be easily transported, expanded and replicated. Others, like Yaneva and Houdart, have described the processes and relationships between human and non-human actors that contribute to the formation of the figures of architects and ‘stararchitects’. These studies, in particular, have revealed in this way how techniques and tools can influence the thoughts and approach of architects, and how they actually possess subject-making and world-making abilities.

In our case, since this was an experimental operation which involved myself, the ethnographic focus also acquired a self-reflective quality. In fact, the documentation of the entire process, which includes mistakes, uncertainties and doubts, besides representing a powerful ‘joint problem making’ tool, allowed me, for instance, to stop and reflect – during and after this process – on my way of ‘doing’ things, on the effects exerted by the techniques and tools that I used to use, on what my actions and decisions implied

and produced³². In other words, as I had the chance to observe later on, documenting our experience contributed, in a much more effective way than my many and interesting readings did, to my understanding of the limits and effects of the disciplinary tradition according to which I was educated and which imposed a specific vision and possibility of action on the world. Besides, being in stark contrast with solutionist approaches, the aim of the documentation, as in Sánchez Criado's previous experiences in Munich, was also that of potentially making the various steps of my experience with Moritz itself accessible to other architects, and, in this way, encouraging debate and possible further interventions and modifications. As scholars Antonio Lafuente, David Gómez and Juan Freire (who also learned about the relevance of the documentation through their involvement in Medialab-Prado activities) splendidly state: "to learn how to experiment is tantamount to making us tolerate uncertainty and to transforming failure into the engine of learning"³³ and from this perspective,

"not only documentation makes re-learning visible, but it makes it shared: it socializes it, it formalizes and opens it. (...) Documenting represents another form of loving one another: it proves that we are interested in the community. Documentation makes (...) both the learning process and the community that supports it visible. Documenting, then, constitutes a mental aptitude, a way to live: both a culture and a tool. It represents a culture because it promotes a certain way of connecting with each other and describing what we experienced together. Documentation narrates the world and builds 'us'. One who documents these processes also records doubts, uncertainties, mistakes, crossroads and conflicts. And it is not always possible to talk about solutions, whether they are better ones or not. Revealing our indecision makes us aware of our vulnerability. By not hiding our vulnerability we are able to reach others in the most direct way (...). Our vulnerability may reward us: it may lead us to drift unexpectedly or it may lead us to the open sea. This opening itself is capable of attracting and mobilize collective intelligence or, in other words, it can help us understand that our point of view, whether it is right or wrong, may not be the most suitable one."³⁴

In our case, to keep a shared record of each and every step of the entire experience – with the idea of a collaborative ethnographic log in mind – we used the *Evernote* software.

32 However, it seems opportune to point out that Sánchez Criado, by encouraging me to document every step of our experience, also constantly invited me to reflect on the socio-material aspect of ethnographic practice itself, and, therefore, on the different modalities and tools that I would choose to document the process and on their implications for knowledge itself. "How will you be able to take notes if you have to participate in the discussion yourself? And, especially while not being able to register any word or gesture, what choices will you make? What, in your opinion, is interesting and relevant about this moment? What will you choose to select and share in the future? The ways in which we document and take notes inexorably define our knowledge production". (Excerpt from a recorded conversation, 13 December 2019).

33 My translation (A/N). Sierra, F., Leetoy, S. and Gravante, T. (eds.) (2018) *Ciudadanía digital & democracia participativa*. Salamanca: Comunicación Social, p. 54.

34 My translation (A/N). Ibid. pp. 47-48.

To this software was added our email exchange, which represented an important tool through which we were able to collect our progressive reflections.

3. ‘Sensitising myself’ to my own practice

As I pointed out at the beginning of this chapter, one of the operations through which my re-learning was achieved was my sensitising myself to my own way of practising architecture, or, in other words, my way of ‘making’, in the sense that Ingold attributes to the verb. Fundamentally, during this process Sánchez Criado, as he had already done with his students in Munich, encouraged me to think ‘through’ – or ‘from’ – my material gestures and actions, rather than doing so before or after these. Just as Rancière’s *Ignorant Schoolmaster*, by constantly pointing at things and raising questions he triggered me to develop an increasing attentiveness towards my gestures and the knowledge-making and world-building effects of the instruments and methods I was using.

Some of what I believe to be the most emblematic steps of this phase are shown below, in the attempt of demonstrating how awareness progressively developed in me, about the world-making effects of my operating modalities.

3.1. Making of a shared-research tool

As a first step of our exploration Sánchez Criado suggested me to do some research on how architects and designers had intervened in similar fields. Hence, I undertook an exploration on different sorts of design encounters with people with intellectual and developmental disabilities, searching to understand their methods, devices and proposals. Whilst I will discuss these projects in a following section, here I will dwell on the process through which I was encouraged to think, ‘from’ my actions, to sensitize myself to my ways of operating. More specifically, this initial task comprised setting up a collective way of working, returning this research through a sort of map that could represent a ‘shared-research’ tool, that would allow us to start, and carry on, a joint debate on the research findings. In this sense, this was aimed at allowing an exploration on the contribution that architecture could make to research methods: the ways in which architecture can help to build and ask questions, document, comment, archive, and involve other people in the process. To quote his words: “the map should be visual, and if not having to be on a computer screen, much better... a material object would be nice” (excerpt from an e-mail I received from Sánchez Criado, 19 November 2019. Taken from our *Evernote* shared account). This suggestion, in line with his experiences in Munich, was based on the assumption that a material object may allow a more thorough kind of conversation compared to a digital representation, which is –

in itself – closed, and can merely offer the final summary of a process. In other words, from an Ingoldian perspective, this object could have been placed in front of us and would have allowed us to work with ‘our hands’, ‘forcing’ us to take breaks during our conversation. More importantly, this approach represented a way to encourage me to reflect on what vision of the world a certain materialisation might suggest, that is, on the epistemic assumptions and the agency, or performative mediation, of the specific material objects with which I would have presented my research (embodying, in a way, Yaneva’s considerations, together with those of the other authors analysed in chapter III, in a more ‘meta’ and pedagogical sense), and on how these objects would have allowed him and others to participate in this reflection³⁵.

Another way to formulate this invitation is: since I was interested in participation in architecture, how could I involve people in a participatory design process?

Below, my account of this process will show how, despite the fact that during my studies I had already come across several texts and works by architects and designers who work experimentally through the conceptualisation methods introduced by STS and particularly by ANT – one of whose many outcomes, as I would like to briefly repeat, is to move from designing ‘things’ (objects) to designing ‘Things’ (socio-material assemblies) – my understanding was rather superficial. Thanks to a direct experience, through which I underwent a re-learning process from ‘the inside’, I developed a greater awareness of the issues at stake.

35 An interesting reference for thinking from the materiality of mapping processes is the *Manual de Mapeo Colectivo. Recursos cartográficos críticos para procesos territoriales de creación colaborativa*, curated by Iconoclasistas – a duo formed by Argentineans Julia Risler and Pablo Ares – whose work combine graphic art, creative mapping and collective research. In the *Manual*, the authors advance the critical use of maps, with the aim to create the conditions for collective exchange to generate alternative accounts and cartographies challenging dominant and hegemonic ones, and devote ample space to showing and reflecting on their media, dynamics and mapping methods. Reporting examples of workshops held in cities of Argentina, Venezuela, Colombia, Mexico, Peru, Austria, Portugal, and Spain, they show how the maps might be a framework for collective work where everyday knowledge and experience of participants enable the critical visualization of various issues in a given area. Cf. Iconoclasistas (2013) *Manual de mapeo colectivo: Recursos cartográficos críticos para procesos territoriales de creación colaborativa*. Buenos Aires, Tinta Limón. The *Manual* can be found here: <https://iconoclasistas.net/4322-2/>

First attempt (14 - 27 November 2019)

As we had agreed, I started collecting a broad number of design proposals dealing with intellectual and development disabilities such as Dyspraxia, Dyslexia, Attention Deficit Hyperactivity Disorder, Dyscalculia, Autistic Spectrum, Tourette Syndrome, Down Syndrome, Alzheimer, Dementia. After carrying out this search, I started to think about how to display my findings – which moved between different scales, ranging from the city to the domestic, work and school environment – in an accessible way. Hence, as a first step, I tried to organize them by creating a number of spatial or functional categories, by which they seemed to me to be classifiable. In particular, these categories were: interior space (home and work environments), urban space, support (or aid) tools, tools for empathic understanding, the latter being the instruments that designers have developed to ‘understand’ and ‘empathize’ with these people and to step into their shoes to possibly provide them with better design solutions. Once organised the projects I had found in this way, I assigned a particular symbol to each category. In particular, during this phase, the examples collected in the category ‘aid tools’ caught my attention. Indeed, I had found many objects, tools, technologies, devices developed by designers in the attempt to ‘help’ these people in their daily activities. Some doubts began to trouble me, such as: “are these tools really helpful? Who are they really helping? Are designers really aware of these people’s needs? Did they investigate enough? Did they actually come in contact with them?” (Fieldnotes, 20 November 2019, taken from our *Evernote* shared account). All of this seemed to be directly connected to the issue of the final product and the solutionist logic on which its creation depends. These objects/products presented themselves as final solutions, leaving no space for the visualisation of the process – and, therefore, of the various and possible mistakes, alterations and choices – through which they were made.

On the basis of these considerations, I thought that a possible good way of mapping and visualising the elements of my research was that of creating an ‘ironic object’.

In fact, my idea was to create a box that could ironically represent an exhaustive, accessible and marketable container for every recommendation, method, tool, and product created by designers, in order to provide solutions for these people. A sort of toolbox, then, or toolkit, inside which anyone would easily find a solution to a possible situation of this kind. Therefore, there was in my mind an idea according to which the expertocratic and solutionist approach, typical of the dominant architectural culture – and which these examples seemed to have adopted – was problematic. However, we shall see how this first attempt proved to be unsuccessful, as my ironic approach was not really accessible.

This main box, according to my plans, would contain other smaller boxes inside it. My idea, in fact, was that of linking one of the categories that I had identified in the initial phase of my research to each of these little boxes, and of placing little note cards inside them too, which showed the different design solutions I had reached (Figure 1.1; 1.2; 1.3; 1.4). On the lid I glued a label reporting the title ‘the current designer’s toolkit for neurodiversity’ (Figure 1.5; 1.6).



Figures 1.1; 1.2; 1.3; 1.4

Figures 1.5; 1.6



First encounter: Architecture and Anthropology (28 November 2019, Sánchez Criado's office, Institut für Europäische Ethnologie, Humboldt-Universität zu Berlin)

As Sánchez Criado opened and observed with curiosity the various boxes and note cards, which showed the images and information relating to the project examples collected, he underlined how, despite the fact that my efforts and commitment to the creation of this object were evident, he found it difficult to understand, and participate in, the research process. In other words, we realized that the way in which I had collected and placed the material, and the shape I had given to this 'map', couldn't allow us to start a debate and a shared critical analysis on the ongoing research. Indeed, I had produced an object which was, in itself, closed, complete and codified, through a kind of formal synthesis exercise, and which, in that case, did not allow us to reflect together. Rather, we needed something 'looser' and appropriable, which could start a process and, therefore, welcome possible changes, comments and additions during our meetings.

Second attempt (28 November – 5 December 2019)

Later on, as I reconsidered and redefined this research tool, I thought that it might be useful to use the map of a city to encourage a critical and shared reflection on the design attempts regarding urban space that I had collected. Since I found it problematic to refer to a specific city, I decided to use an 'abstract' map of Berlin, one that would represent it as a 'children city'. In order to show and, therefore, encourage a debate about the solutions that I had collected concerning the interior space, I inserted a 'generic' type of axonometric projection of a domestic space. This represented my first hesitant attempt to build a base that would be as 'neutral' and 'generic' as possible, without specific restrictions, and suitable to every context (Figure 2.1). After this, I created a series of note cards that showed symbols or images of the design solutions that I had found – that is, as we shall see later on, certain guidelines, tools or technologies – which were aimed at creating a space for possible comments, questions and doubts that may have come up during a following moment of collective reflection. The note cards, each of them linked to a specific guideline from those I had found, had the purpose of encouraging a debate (Figure 2.2). I thought that each participant – another person attended the following meeting, as we shall see – could have used them just to write some comments about the map of the city and the apartment axonometry. At the end of these operations, I placed all of these elements, that is, the map and the various cards, in the main box (Figure 2.3).



Figures 2.1; 2.2; 2.3

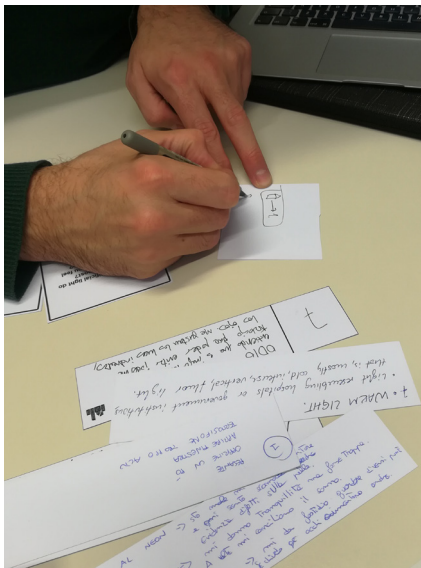
Second encounter: Architecture and Anthropology (6 December 2019, Sánchez Criado's office, Institut für Europäische Ethnologie, Humboldt-Universität zu Berlin)

Marco Paladines, sociologist and doctoral candidate at the Technical University, Berlin, also joined this meeting. While discussing and reflecting with my interlocutors, we soon realised that the map I had created wasn't abstract nor imaginary at all, because the various elements – buildings, streets, river, etc., even though I considered them 'symbolic' – were placed in quite a definite way. Besides, this object still made the possibility of an exchange and interaction – and, therefore, the disclosure of our process – difficult. For instance Paladines and Sánchez Criado could have only written their comments in the space of the rectangular note cards that I had crafted. Basically, the choice I had made

strongly limited their possibility to participate, recalling a certain record of projects, which, as observed in chapter I, Till criticizes, defining them ‘token’, ‘manipulated’, only creating a ‘feeling of participation’³⁶. With these considerations as a background and with the aim of making the session productive, my two interlocutors used the cards I had created anyway to write down notes, doubts and comments on the design solutions to which they referred (Figure 3.1; 3.2; 3.3; 3.4).

³⁶ Cf. Till, J. (2005), Till, J. (2005) The negotiation of hope. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*, pp. 19-40. New York: Spon Press, p. 23.

Figures 3.1; 3.2; 3.3



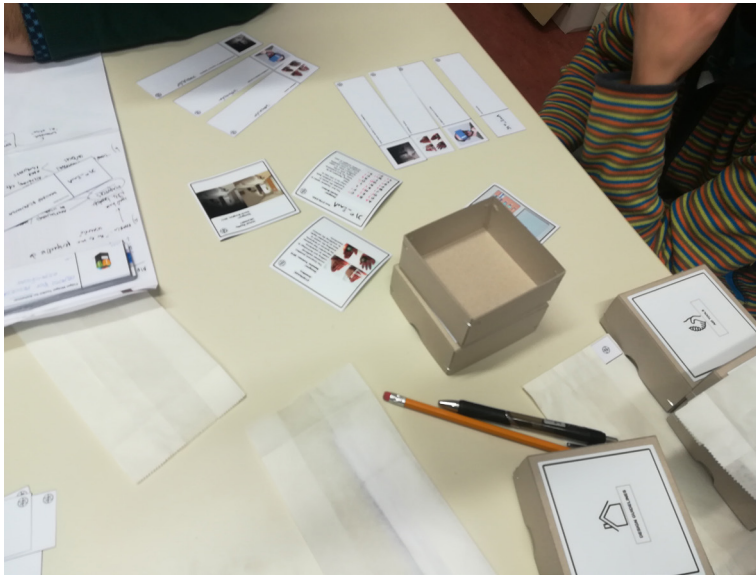


Figure 3.4

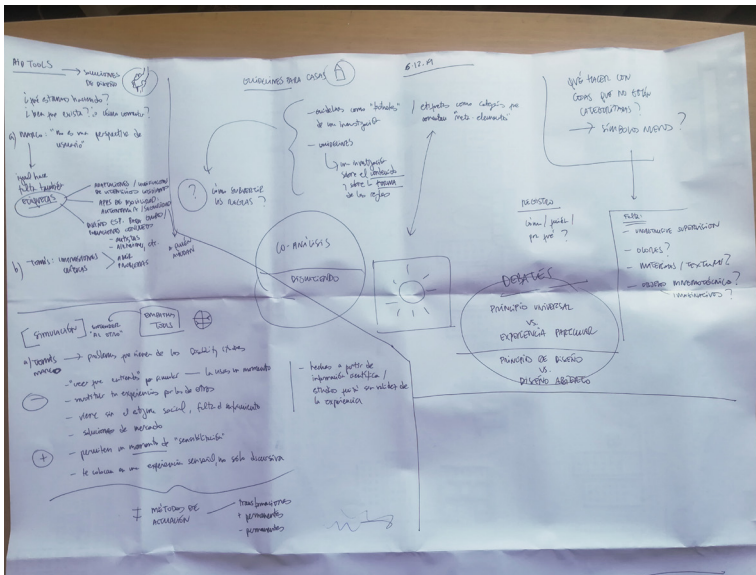


Figure 3.5

Moreover, since that kind of map didn't prove to be really useful, Sánchez Criado proposed to turn it upside down and to rather use it as 'continuous paper roll', another classic materiality of the documentation of design processes: where collective ideas or conversations are collected with everyone watching (Figure 3.5).

On the basis of the considerations that had come out during the meeting, for the following one we agreed on the fact that I would attempt to ‘force’ the object that I had created in order to generate a different kind of materialisation. In other words, I would

attempt to literally ‘open’ the research that I had carried out, to empty the boxes and reorganize the elements in order to identify possible connections between them.

Third attempt (9 – 12 December 2019)

In the attempt of putting into practice what we had agreed in the previous meeting, after I had spread a large paper sheet on my desk, I arranged in columns – which corresponded to the categories that I had created – the note cards on which the comments had been written. In order to emphasise the categories to which they belonged, I placed on top of every column the lid of its corresponding box. After this, I used some coloured post-it notes to point out the issues and problems that had come up during our joint analysis (Figure 4.1).

My idea was that of organising all the comments that I had collected, in order to create an overview which could encourage further considerations.

Figure 4.1



Third encounter: Architecture and Anthropology (13 December 2019, Sánchez Criado's office, Institut für Europäische Ethnologie, Humboldt-Universität zu Berlin)

We decided to devote this entire session to a more thorough discussion on the specific material choices I had made so far, as well as their world-building effects.

Particularly, a shared reflection on architects' way of thinking emerged, which in most cases takes place in terms of fixed scale models (what Jaque, as we have already seen in chapter IV, somehow jokes about in his *Superpowers of Ten*). In fact, I had made a distinction myself between the domestic space, the city and everyday objects, and ordered the scales in such a defined way that they even turned into little boxes. Interestingly, we reflected on how such inclination to think in terms of scales, so clearly separated, seemed to us to be somehow linked to the traditional discipline division typical of the education system of Italian universities (and, more generally, of the architecture schools of the Western world). The distinction between urban design, architectural design, interior design, and industrial design indirectly tends to 'force' one towards a certain type of vision and categorization of space. Through my thinking and material creation of those boxes, I had somehow 'staged' my education, that is, the way in which I had learnt to think of, and 'do', architecture. By documenting and filing so, I had arranged the world in a very precise way. More specifically, the particular material arrangements I had made did not really offered others the possibility to participate.

Later on, during the debate, I revealed more clearly my intention of 'playing' ironically with the idea according to which architects had already come up with prompt and decisive answers in this field. For this reason I created a toolbox, where my interlocutor could find what had already been produced in terms of space – in different scales – and, therefore, the solutions to the various problems of the case. However, thanks to our joint debate, it became clear that the way in which I had attempted to materialise the aforementioned irony actually prevented us from communicating. We realised that a way to make this ironic intent more effective, from a critical point of view, would have been, rather than dividing the scales in sealed-off compartments, to create a way to break this division and establish connections between the various elements of the map.

In this section I tried to retrace just one series of the most emblematic steps of a path that progressively sensitised me to my way of working and its effects. Indeed, as stated at the beginning, the purpose of this phase was that of to propose a collective way of working, focusing on the epistemic assumptions that different materialisations imply. However, this was a far more complex path which – even though I decided to discuss it elsewhere for the sake of argumentative clarity – I walked parallelly and which, at times, overlapped the other awareness-raising operations that I will discuss later on.

4. 'Sensitising myself' to bodily diversity

In the previous section I explained how the first phase of our experience required that I carried out a research on the results achieved up to that moment by architecture and design in the wide field of intellectual disability, or neurodiversity. Despite the fact that my various attempts to report the several examples that I had collected on a map, or shared-research and analysis tool, often proved to be unsuccessful – and yet, for this very reason, they were useful in sensitising myself to the way in which I used to approach my practice, and of the effects that my actions and tools had – during our various meetings we also had the chance to reflect on, and discuss, this topic for a long time.

As I mentioned at the beginning of this chapter, in fact, this experience was also aimed at sensitising me to bodily diversity, hence going beyond the usual type of body around which both architectural education and practice revolve, and, in particular, to engage myself in a situated and direct experience with Moritz.

The systematisation of this section was made possible from the readings on the subject that we shared and discussed together throughout the process.

In chapter II (see section 5) I analysed how the human subject, or the user of architecture, has been often reduced to a generic type or even ignored in Western architectural theories and practices. Indeed, there is a widespread tendency among architects to design according to technical and dimensional standards that revolve around a 'normate template'. We have also already seen how architectural handbooks themselves, such as Ernst Neufert's *Bauentwurfslehre*, have played a crucial role in reinforcing such attitude³⁷. Furthermore, architectural training devote little attention to issues concerning the design needs of disabled people³⁸. As Imrie and others³⁹ note, ableist bodily conceptions underpin architectural discourses and practices and architects often have a very general and at the same time reductive understanding of what disability is. What is usually emphasised is the stereotyped image of people with physical disabilities or wheelchair users, while there is no interest in investigating the complex ecologies of the bodymind (see i.b. V 1).

37 Cf. Imrie, R. (1999) The body, disability and Le Corbusier's conception of the Radiant environment. In R. Butler and H. Parr (eds.) *Mind and Body Spaces: Geographies of Disability, Illness and Impairment*, pp 25-45. London and New York: Routledge.

38 Cf. Imrie, R. and Hall, P. (2001) *Inclusive Design: Designing and Developing Accessible Environments*. London: Spon. See also: Milner, J. (1995) Disabling design and the dinosaurs. *Housing*, June: 31–33; Imrie, R. (2003) Architects' Conceptions of the Human Body. *Environment and Planning D: Society and Space* 21(1): 47–65.

39 See, for instance: Lifchez, R. (ed.) (1987) *Rethinking Architecture*. Berkeley, CA: University of California Press; Hayden, D. (1985) What would a non sexist city be like: speculations on housing, urban design, and human work. *Ekistics* 52(310): 99-107; Weisman, L. K. (ed.) (1992) *Discrimination by Design. A Feminist Critique of the Man-Made Environment*. Urbana and Chicago, IL: University of Illinois Press.

Personally, reflecting on my academic training, I can only agree with this analysis. During design studios I was only required to observe a simple regulation, which generally established the necessity of including, in one's project, ramps and bathrooms for wheelchair users, respecting the standard slope and measurements. This preparation has affected the way in which I approached a series of projects during my professional experience. I admit that I have often engaged with disability as if it were a 'special need', in a purely technical way.

This attitude towards reductionism and simplification becomes particularly problematic when we consider neurodivergent people, whose needs and peculiar ways of relating to space are generally ignored in the design of built space, even in places and buildings which are professed to be 'more democratic' and inclusive. An illustration can be found in the example of the common choice of fluorescent lighting within institutions, a well-known trigger of autistic sensory sensitivities that causes a significant disruption in cognitive-processing of a lecture or group discussion. Although lights may seem trivial, this simple environmental disturbance can mentally and physically exhaust autistic students, or force exclusion from critical participation⁴⁰.

Besides, the subtle way in which the neurotypical focus on language affects the design of built space is striking. Erin Manning's vivid description of the case of different types of university classroom deserves extensive quotation:

"A university classroom usually has a set of desks, and with that comes a directionality—desks pointed toward a board, or toward a podium, creating a posture hierarchically predetermined, everyone in their place. Attention is focused on what happens at the front, all eyes on the professor. The back rows can be a refuge, but an assumption reigns that sitting at the back is for the disinterested (and, by extension, the less engaged). 'Paying' attention is prized, revealed usually through the use, by the student, of language. Smaller, more senior classes tend to be organized with less of a marked frontality. But to imagine that the ubiquitous seminar-style classroom with desks oriented in a square eschews a formation of power would be to underestimate how frontality-for-all reinforces another kind of dramaturgy that is, in some cases, even more challenging, especially for the more neurodiverse among us. Indeed, the face-to-face setting imposed by desks facing each other can be torture, and the expectation that all should have something to say can keep those who struggle with the face-to-face from properly taking anything in. In this second case, there is a semblance of shared communication, but language continues to reign supreme

40 Cf. Judge, S. M. (2018) Languages of sensing: Bringing neurodiversity into more-than-human geography. In *Environment and Planning D: Society and Space* 36(6): 1101-1119, p. 1104. See also: Bogdashina O. (2003) *Sensory Perceptual Issues in Autism and Asperger Syndrome: Different Sensory Experiences – Different Perceptual Worlds*. London: Jessica Kingsley Publishers; Coulter, R. A. (2009) Understanding the visual symptoms of individuals with autism spectrum disorder (ASD). *Optometry & Vision Development* 40(3): 164-175.

as the prime modality of knowledge mobilization. In both types of classroom, shy, quiet, and sensorially overwhelmed students suffer, their modes of communication stifled. (...) For while the dramaturgies of power are different, they remain on a continuum, knowledge played out through the form of reporting. What does this reporting take for granted about how the environment presupposes commonality? How it defines togetherness?”⁴¹.

Below, I will first dwell on the wider historical-critical framework concerning accessibility in architecture and activist positions and struggles in which, due to Sánchez Criado’s knowledge of the fields, our dialogues were embedded. Afterwards, I will report some of the projects that I had collected – showing architects’ and designers’ current way of relating with neurodivergent subjects in their work –, and summarise a number of problematic aspects that we identified.

4.1. Discussing disability and accessible design

The genealogy of accessibility in architecture, as the readings that accompanied our process point out, is particularly complex, and has seen the interweaving of many different histories, reflections, claims and experiments. Most of the interventions in this field, as well as more generally in the field of disability studies, problematize the way disability is traditionally understood, not conceiving it as a bodily characteristic but rather as an ‘effect’ of abilist and stigmatizing categorizations and environmental constructions. Indeed, in line with the so-called ‘social model of disability’, disability is understood as “as a social and environmental construction, produced in the relationship between bodies and built environments, and thus not something innate to the body”⁴². Broadly speaking, in the Euro-American context accessibility is usually traced back to a mode of social ‘inclusion’, through the expert production of regulations, objects and urban interventions.

Its different versions originated from the multiple claims of disability rights activists. In the late 1960s and early 1970s, in fact, in the context of humanitarian and civil rights movements in the US⁴³, communities of disabled activists compelled architects, designers and lawyers to accommodate the needs of a greater diversity of bodies. This demand for equality meant equal access to public buildings and services, and the consequent removal of physical barriers and addition of safety features. As Hamraie writes:

41 Manning, E. (2020) *For a Pragmatics of the Useless*, pp. 145-146.

42 Hamraie, A. (2017) *Building Access: Universal Design and the Politics of Disability*. Minneapolis, MN: Minnesota University Press, p. 99. See also Oliver, M. and Barnes, C. (2012) *The new politics of disablement*. London: Palgrave Macmillan.

43 The US was the place where, thanks to these movements, the first official regulations on accessibility in the public urban environment appeared.

“Since the mid-twentieth century, supporters of more accessible, inclusive, and user-centered design have contended that design for the ‘mythic average user’ shapes architects’ default practices. (...) The related idea that ‘the world was not designed with disability in mind’ is, in one sense, a statement about omission and ignorance as ways of knowing and thinking. In another sense, however, it is a statement about omission and ignorance as material arrangements, ways of making and unmaking the world’s inhabitants through unintentional but accumulated practices”⁴⁴.

The impact of these claims has led to a progressive and non-linear transition from rehabilitation approaches to design that produce ‘special solutions for special needs’, to more ‘inclusive’ and ‘universal’ ones⁴⁵. The former, by providing *ad hoc*⁴⁶ design solutions, signalled the difference of disabled bodies; the latter, instead, rather than targeting a limited group of people with identifiable disabilities, resulted in the integral re-design of urban spaces and buildings to ensure an indistinct possibility of access ‘for all’, regardless of disability or age (to know some of the main steps of this historical path, see [i.b. V. 2]).

⁴⁴ Ibid. p. 19.

⁴⁵ In addition to Hamraie’s (2017), Bess Williamson’s work also offer a more detailed account of such a complex scenario. See: Williamson, B. (2019) *Accessible America: A history of disability and design*. New York: New York University Press.

To retrace these historical steps from the design of the bathroom, see: Penner, B. (2013), The Inclusive Bathroom. In Id. *Bathroom*, pp. 198-237. London: Reaktion Books. See also: Penner, B. (2013) Designed-in safety: ergonomics in the bathroom. In K. Cupers, *Use Matters. An Alternative History of Architecture*, pp. 153-168. Abingdon, UK - New York: Routledge. Adapted online version available at: <https://placesjournal.org/article/designed-in-safety/?cn-reloaded=1>

⁴⁶ See: Pullin, G. (2009) *Design meets disability*. Cambridge, MA: MIT Press.

i.b. V. 2 - From ‘rehabilitation’ to ‘design for all’

The first important step in accessibility was taken in 1961, when the *American National Standards Institute* (ANSI) published the A117.1. ‘Accessible and Usable Buildings and Facilities’, the world’s first accessibility standard, which established the principle that public buildings and facilities should be made accessible to people with physical disabilities. The A117.1 guidelines included considerations for public sidewalks, parking lots, doorways, ramps, entrances, floors, restrooms, public telephones, elevators, and technological features, such as sounds and flashing lights to communicate to visually and/or hearing-impaired people¹. As architectural

¹ Cf. Hamraie, A. (2017) *Building Access*, p. 73; Chatelain, L. (1965) Architectural Barriers-A Blueprint for Action. *A National Attack on Architectural Barriers*. Chicago, IL: National Society for Crippled Children and Adults, p. 3.



historian Barbara Penner points out, “[p]rior to this, people with disabilities had to adapt to the environment, rather than the other way around”². However, a controversial aspect of this first declaration of accessibility is that it emerged from within the rehabilitation profession, a field that through anthropometric studies that focused on finding population averages, “aimed at engineering more productive workers and citizens”³. As both Hamraie and Williamson signal, the term ‘rehabilitation’ brought together a range of specialised medical practices which were carried out under the assumption that a body could be healed, or ‘fixed’, by simply finding the appropriate tool or technique. This approach had become widespread in US in the 1940s and 1950s to meet the needs of disabled veterans returning from World War II and to address the consequences of the polio epidemic. In particular, it showed close connections to regimes of scientific management: provisions for high-tech prosthetics, customised cars, and house renovations were part of rehabilitation programmes meant to bring these people back to a productive state. As Williamson notes, prosthetic limbs helped to “fine-tune the very definition of ‘normal’”⁴. Timothy Nugent, who crafted the A117.1, was director of the educational rehabilitation programme at the University of Illinois at Urbana-Champaign, an experimental regime partially funded by the *US Veterans Administration*, which trained people with disabilities to live independently. Nugent believed the best way to do this was to promote self-sufficiency and teach disabled students to cope in the same environments as able-bodied students⁵. Soon, the 1961 *National Standard* was strongly criticised by disability activists for its focus on rehabilitation and the related assumption that disability represented a failure of human performance, and thus a problem to be ‘fixed’ and ‘eliminated’. Furthermore, these activists felt that these types of standards and codes were too weak to ensure the construction of an accessible built environment. As part of an increasingly active political climate in the United States to ensure that discrimination against disabled people was eradicated, the 1961 *National Standard* was subsequently implemented by a series of laws, such as the *Architectural Barriers Act* of 1968, the *Rehabilitation Act* of 1973, and the *Americans with Disabilities Act* (ADA) in 1990. However, activists were sceptical of the ADA itself, finding its access solutions insufficient for three reasons: firstly, they consisted of providing *ad hoc* services and access routes for disabled people, causing them to be segregated, and specialised equipment that emphasised their difference and impairment; secondly, adaptations to buildings were too often poorly done, resulting in many architects believing that designing for accessibility compromised the aesthetic qualities of buildings; thirdly, such solutions were mainly intended for wheelchair users, leaving aside a wider range of disabled people⁶. These observations were part of a wider spectrum of critical reflections on conventional approaches to design and marked the birth of *Universal Design*.

2 Penner, B. (2013) *The Inclusive Bathroom*, p. 215.

3 Hamraie, A. (2017) *Building Access*, p. 12.

4 Williamson, B. (2019) *Accessible America*, p. 21.

5 Cf. Penner, B. (2013) *The Inclusive Bathroom*, pp. 215-217.

6 Cf. Imrie, R. (2012) Universalism, universal design and equitable access to the built environment. *Disability and Rehabilitation* 34(10): 873-882, p. 875.



Ca. 1945. Pfc. Robert Langstaff, a uniformed soldier wearing metal dual hook-style prosthetic arms, demonstrates the 'special controls' on a Ford motorcar. Photo and caption: Williamson, B. (2019) *Accessible America*, p. 10.



'At the Veteran Building a display of spare parts to the human body is enlivened by a demonstration of the use of an artificial arm by John B. Seeley,' 1944. Seeley, wearing an undershirt, demonstrates two prosthetic arms to a group of well-dressed women visitors. Photo and caption: Williamson, B. (2019) *Accessible America*, p. 29.



Four students at the University of Illinois, 1950. Four young men sit in metal wheelchairs on a narrow wood-slatted wheelchair ramp with a single handrail. Timothy Nugent Papers, University Archives, University of Illinois at Urbana-Champaign. Photo and caption: Williamson, B. (2019) *Accessible America*, p. 60.



Institute of Physical Medicine and Rehabilitation's training kitchen, ca. 1960. A woman sits in a wheelchair in a white-painted kitchen. She reaches to retrieve a metal bowl from well-organized shelves. Photo and caption: Williamson, B. (2019) *Accessible America*, p. 29.

BFE's manifesto, ca. 1974.

In 1974, disabled architect Ronald Mace (among the most influential figures who led to the birth of the *Universal Design* movement in the late 1980s) founded *Barrier Free Environments* (BFE), an accessibility consultancy and design firm working with local businesses. The firm designed accessibility in spaces that were not yet subject to building codes, particularly multifamily dwellings, group homes, and mobile homes.

In the same year, Mace was also the author of *An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code*, Raleigh: North Carolina Building Code Council. Indeed, he was hired by the North Carolina state government to clarify and illustrate the state's new accessibility guidelines. This request aimed at improving architects' understanding of the code.

Source: Hamraie, A. (2017) *Building Access*, p. 146. Caption: cf. Hamraie, A. (2017) *Building Access*, pp. 142-154; Williamson, B. (2019) *Accessible America*, pp. 163-168.

DESIGN FOR DISABILITY

DURING THE NATURAL PROCESS OF AGING, FROM INFANCY TO DEATH, PEOPLE EXPERIENCE PERIODS OF VARYING ABILITY AND DISABILITY. BECAUSE OF HEREDITY, INCOMPLETE DEVELOPMENT, PREGNANCY, DISEASE AND, INEVITABLY, OLD AGE, ALL PEOPLE WILL AT SOME TIME BE DISABLED.

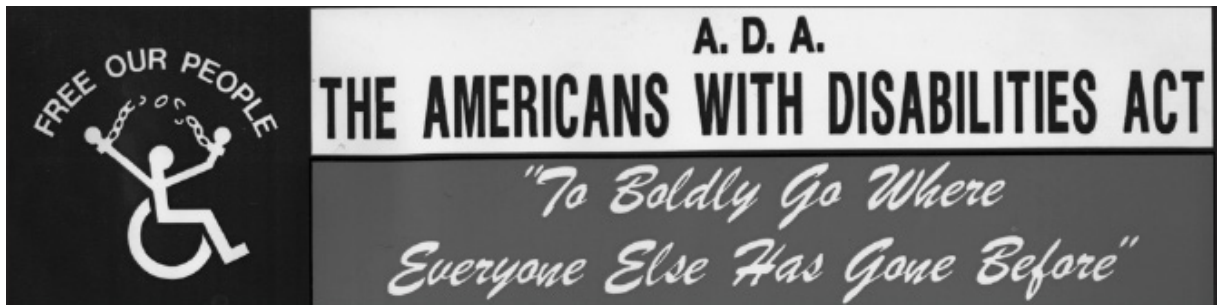
A DISABILITY DOES NOT RESTRICT ONE'S ACTIVITIES OR CAPABILITIES UNTIL THE ENVIRONMENT POSES OBSTACLES. ATTITUDINAL BARRIERS COMBINE WITH ENVIRONMENTAL BARRIERS TO SEVERELY LIMIT THE ACTIVITIES OF PEOPLE WITH DISABILITIES AND PERPETUATE THE MYTH THAT DISABLED PEOPLE ARE INFERIOR, DEPENDENT, AND IN NEED OF CONSTANT CARE.

ARCHITECTS, ENGINEERS, ADMINISTRATORS, DESIGNERS AND OTHERS WHO MAKE ENVIRONMENTAL DESIGN DECISIONS INADVERTANTLY CREATE BARRIERS. THE PHYSICAL ISOLATION RESULTING FROM SUCH BARRIERS HAS SEVERE SOCIAL AND PSYCHOLOGICAL CONSEQUENCES AND CONTRIBUTES TO MISCONCEPTIONS AND NEGATIVE ATTITUDES TOWARD THE DISABLED WHICH FURTHER SEPARATE THEM FROM THE MAINSTREAM OF SOCIETY.

BARRIER FREE ENVIRONMENTS, INC. IS AN ARCHITECTURAL AND DESIGN CONSULTING FIRM SPECIALIZING IN THE ENVIRONMENTAL NEEDS OF PEOPLE WITH DISABILITIES. BFE WORKS TO ELIMINATE ENVIRONMENTAL BARRIERS IN ARCHITECTURE, PRODUCT DESIGN, AND PLANNING; AND SEEKS THROUGH RESEARCH, AND THE DEVELOPMENT OF EDUCATIONAL AND AWARENESS MATERIALS TO MAKE KNOWN THE ABILITIES OF DISABLED PEOPLE.

**architecture
planning
products
awareness
research**

ADAPT, bumper sticker, ca. 1990. A bumper sticker promoting the Americans with Disabilities Act, originally printed in red, white, and blue, features the text 'To Boldly Go Where Everyone Else Has Gone Before' in a calligraphic font. To the left of the slogan, the ADAPT logo reads, 'Free Our People' with the image of a wheelchair user breaking the chains of handcuffs. Photo and caption: Williamson, B. (2019) *Accessible America*, p. 13.



Notably, the latter can be associated with the movement known as *Universal Design*, formed by a number of architects, designers and researchers in the late 1980s, who established a set of fundamental principles that were intended to challenge the disabling values and attitudes of society and call for the design of places and objects that are accessible to all, without requiring specialised assistive technologies. Indeed, disabled architect Ronald Mace, who first publicly used this notion, defined universal design as “the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design”⁴⁷. One of the starting assumption of such perspective was that all humans face varying


47 Mace, R. (1998) *Universal design: housing for the lifespan of all people*. Rockville, MD: Department of Housing and Urban Development, p. 1.

THE PRINCIPLES OF

1

EQUITABLE USE

The design is useful and marketable to people with diverse abilities.



GUIDELINES

- Provide the same means of use for all users: identical whenever possible; equivalent when not.
- Avoid segregating or stigmatizing any users.
- Make provisions for privacy, security, and safety equally available to all users.
- Make the design appealing to all users.


EXAMPLES

- Power doors with sensors at entrances that are convenient for all users
- Integrated, dispersed, and adaptable seating in assembly areas such as sports arenas and theaters

2

FLEXIBILITY IN USE

The design accommodates a wide range of individual preferences and abilities.



GUIDELINES

- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.


EXAMPLES

- Scissors designed for right- or left-handed users
- An automated teller machine (ATM) that has visual, tactile, and audible feedback, a tapered card opening, and a palm rest

5

TOLERANCE FOR ERROR

The design minimizes hazards and the adverse consequences of accidental or unintended actions.



GUIDELINES

- Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail safe features.
- Discourage unconscious action in tasks that require vigilance.


EXAMPLES

- A double-cut car key easily inserted into a recessed keyhole in either of two ways
- An "undo" feature in computer software that allows the user to correct mistakes without penalty

6

LOW PHYSICAL EFFORT

The design can be used efficiently and comfortably and with a minimum of fatigue.



GUIDELINES

- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimize repetitive actions.
- Minimize sustained physical effort.

EXAMPLES

- Lever or loop handles on doors and faucets
- Touch lamps operated without a switch

'The Principles of Universal Design', Version 2.0 (4/1/97). Source: Hamraie, A. (2017) *Building Access*, pp. 224-225.

288

degrees of physical disabilities throughout their lives, from childhood through the aging process and that these impairments are always exacerbated by poor design solutions. Along these lines, the proponents of universal design strongly criticized compensatory approaches to architecture, where accessibility is thought of as ‘additive design’⁴⁸, meant to compensate disabled people for their functional limitations. Indeed, since it focuses on an individual’s impairment, this ‘additive’ approach was seen as detrimental and potentially leading to stigma and social exclusion.

Since its first appearance in the 1980s, universal design has prompted many designers, educators, industrialists and politicians to develop ethical viewpoints and question their

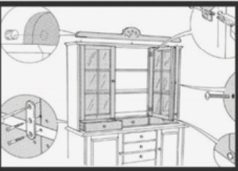
48 Cf. Imrie, R. and Hall, P. (2001) *Inclusive Design: Designing and Developing Accessible Environments*. London: Spon.

UNIVERSAL DESIGN

Version 2.0 (4/1/97)

3 SIMPLE AND INTUITIVE USE

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.



GUIDELINES


- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

EXAMPLES

- A moving sidewalk or escalator in a public space
- An instruction manual with drawings and no text

7 SIZE AND SPACE FOR APPROACH AND USE

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.



GUIDELINES


- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.
- 7d. Provide adequate space for the use of assistive devices or personal assistance.

EXAMPLES

- Controls on the front and clear floor space around appliances, mailboxes, dumpsters, and other elements
- Wide gates at subway stations that accommodate all users

4 PERCEPTIBLE INFORMATION

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.



GUIDELINES

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Maximize "legibility" of essential information.
- 4c. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4d. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

EXAMPLES

- Tactile, visual, and audible cues and instructions on a thermostat
- Redundant cueing (e.g., voice communications and signage) in airports, train stations, and subway cars

THE PRINCIPLES WERE COMPILED BY ADVOCATES OF UNIVERSAL DESIGN, IN ALPHABETICAL ORDER:

Betty Rose Connell, Mike Jones,
Ron Mace, Jim Mueller,
Abir Mullick, Elaine Ostroff,
Jon Sanford,
Ed Steinfeld, Molly Story,
and Gregg Vanderheiden.

NOTE:
The Principles of Universal Design are not intended to constitute all criteria for good design, only universally usable design. Certainly, other factors are important, such as aesthetics, cost, safety, gender and cultural appropriateness, and these aspects must also be taken into consideration when designing.

© Copyright 1997 NC State University,
Center for Universal Design, College of Design

responsibility towards the rights of disabled people to have equal access and autonomy of movement in the built environment. Its principles, therefore, might be considered as potentially valuable tools for reducing inequalities of access caused by poorly designed environments and for creating enabling alternatives. Indeed, by encouraging the design of flexible spaces and objects – such as adjustable furniture, responsive to people of different heights and/or bodily capabilities – they invite designers to consider the different ways in which people relate to objects and spaces throughout their lives, taking their physical and emotional changes into account⁴⁹. Nonetheless, what emerged from our joint reflections on the subject is that, as we shall see below, the very idea of universal design and the way it is applied are highly problematic and controversial.

4.1.1. Inclusion as a domain of technical experts

In short, as also a number of authors, among those we have referred to, pointed out, universal design, contrary to the very impulses that had inspired it in the first place, can produce a ‘depoliticized’ perception of disability, or even remove disabled people from view⁵⁰. Indeed, the overall aim of this project is “to integrate people with disabilities into the mainstream”⁵¹, but “such mainstreaming”, as Rob Imrie and Peter Hall note, “revolves around standards set by the dominant majority, or those allied to a definition of disability as ‘not-normal’ or abnormal. In this sense, impairment, as far as universal design ideas are concerned, is regarded as something to be overcome or to be eradicated, rather than to be accepted as an intrinsic feature or part of a person and their identity”⁵². Particularly, there is a certain vagueness in the notion of ‘universalism’ and

“there is much debate as to its meaning, and different ways in which it can be used to shape practice. In universal design, what values are being universalised and what are the claims advanced in relation to the status of disabled people in society? One appeal of universalism is in shifting emphasis from a focus on disability, and differing capabilities, to what is held in common by people. But there is the danger that the definition of the universal is no more than the normate body”⁵³.

Therefore, its underlying values and conceptual and theoretical content, as well as the way it approaches accessibility, should be analysed more carefully. Indeed, these values seem to

49 Cf. Imrie, R. (2012) Universalism, universal design and equitable access to the built environment; Imrie, R. and Luck, R. (2014) Designing inclusive environments: Rehabilitating the body and the relevance of universal design. *Disability and Rehabilitation* 36(16): 1315-1319.

50 Cf. Williamson, B. (2019) *Accessible America*; Hamraie, A. (2017) *Building Access*.

51 The Center for Universal Design (2008) Web site: www.design.ncsu.edu/cud/index.html, p. 1.

52 Imrie, R. and Hall, P. (2001) *Inclusive Design*, pp. 16-17.

53 Imrie, R. and Luck, R. (2014) Designing inclusive environments, p. 1316.

“revolve around, primarily, a value-rationality that is rooted in Western, enlightenment, discourses, and characterized by: a belief in the power of technology to provide the tools and techniques to enable the design of accessible places; the propagation of professional expertise and systems of expert knowledge, albeit in consultation with users; the development and delivery of universally designed environments by recourse to market exchange and the commodification of accessible design”⁵⁴.

In other words, as we critically observed, universal design has mostly become a depoliticised and solutionist approach in the hands of technical experts, who rely on regulations and handbooks with ready-made charts for designing for different types of populations, which can be easily translated into projects. Considering, as already seen above, that most architects and designers do not receive adequate training on these topics before using these codes and measures, such potentially technocratic and asymmetrical actions run the risk of segregating the very groups they are targeted to⁵⁵ [i.b. V. 3]. It is not clear, in fact, to what extent design technologies can achieve the desired results and how this project’s principles, in pursuit of universal access, are translated into practices that can truly recognise and respond to diverse social and cultural needs. Moreover, in reflecting on one of the further controversial aspects of such ‘universalism’, Imrie and Rachel Luck wonder: “[i]f [it] is predicated on equality of

54 Imrie, R. (2012) Universalism, universal design and equitable access to the built environment, p. 880.
55 Cf. Sánchez Criado T. and Cereceda Otárola M. (2016) Urban accessibility issues. Techno-scientific democratizations at the documentation interface. *CITY* 20(4): 619-636; Imrie, R. (1996) *Disability and the City: International Perspectives*. London: Sage.

i.b. V. 3 - The ‘shared street’ model

As an example, consider the case of the so-called ‘shared street’, or ‘shared space’, a widely acclaimed and followed model for the redesign of many urban environments with a view to removing the physical barriers separating motor vehicles, pedestrians and other road users to encourage the sharing of street space. Despite its apparent democratic potential to liberalise the mobility and movement of individuals, providing them with equal opportunities, such space is defined by Imrie as ‘self-disabling’, or “as ‘disembodied urban design’, that fails to capture the complexity of corporeal form and the manifold interactions of bodies-in-space”¹. Vulnerable street users, such as visually impaired people, perceive shared space as potentially dangerous, as it brings them into more direct contact with motor vehicles.

1 Imrie, R. (2012) Auto-disabilities, p. 2260. On this argument, see also: Sánchez Criado, T. and Cereceda Otárola, M. (2016) Urban accessibility issues.

status, how far is this realisable if a person's access to universally designed goods and services, and their subsequent uses of them, is shaped by, primarily, market exchange?"⁵⁶

4.1.2. A never-ending tension between universal and singular

In sum, what these observations, as well as a wider set of related criticisms⁵⁷, prompted us to reflect on is that inclusive design cannot be regarded as a ready-made set of technical rules that experts can apply in relation to different contexts and users. To use Imrie's words, it "cannot be universal unless it is embedded into the specificities of corporeality, and the differences that different bodies make in their everyday interactions with designed artefacts"⁵⁸.

To put it another way, it is "a concept on the move"⁵⁹, which cannot disregard specific bodies and spaces. This issue became particularly evident through the reading of – and subsequent joint discussion on – Kim Kullman's analysis of the activities and embodied experiences of the disabled architect and professor Yoshihiko Kawauchi, who has been for many years personally involved in the development of universal design.

Kullman here shows how such a project emerges from concomitant and frictional processes of universalisation, which are necessary for it to circulate and be applied, and "of *particularisation* (...), where ideas, materials and sites of universal design reveal themselves to be embedded within specific bodies and spaces, which travel only with difficulty and complicate attempts to generalise across corporeal, cultural and geographical differences"⁶⁰. Kawauchi's work demonstrates that the functioning of universal design cannot reside in the abstract space of neat, quantitative, predetermined guidelines. Rather, it is inextricably linked to a continuous, situated engagement with the built form. Indeed, his explorations reveal how the application of such guidelines by experts, who do not sufficiently interrogate themselves about specific contexts and needs, often generates incoherent and problematic results.

Moreover, another question we asked ourselves was: what about those situations where there are different types of users, with conflicting needs? How can these needs be

56 Imrie, R. and Luck, R. (2014) Designing inclusive environments: Rehabilitating the body and the relevance of universal design, p. 1317.

57 See also: Hamraie, A. (2013) Designing collective access: a feminist disability theory of universal design. *Disability Studies Quarterly* 33. Available at: <http://dsq-sds.org/article/view/3871>, accessed 6/3/2021; Gibson, B. E. (2014) Parallels and problems of normalization in rehabilitation and universal design: enabling connectivities. *Disability and Rehabilitation* 36(16): 1328-1333; Winance, M. (2014) Universal design and the challenge of diversity: reflections on the principles of UD, based on empirical research of people's mobility. *Disability and Rehabilitation* 36(16): 1334-1343.

58 Imrie, R. (2012) Universalism, universal design and equitable access to the built environment, p. 880.

59 Kullman, K. (2017) Universalising and particularising design with Professor Kawauchi. In J. Spinney, S. Reimer and P. Pinch (eds.) *Mobilising Design*. London: Routledge, p. 133.

60 Ibid. p. 132.



Kawauchi on a visit to Queen Elizabeth Park (London), the site for the 2012 Olympics.

"[t]he universal design guidelines created for the Olympics [are] now distributed worldwide as a template for future games and other major sports events. (...) In the guidelines, the Olympics are performed as an undisputable success story, catering for a variety of users." During his visit, Kawauchi "learned that the venues were too far apart from one another, making the distances between them quite long for him to manage in a manual wheelchair. And inside the Velodrome, several spaces reserved for spectators in wheelchairs had been eliminated through the addition of regular seating. (...) [a]t the Lee Valley Hockey and Tennis Centre, which hosted wheelchair tennis during London 2012, Kawauchi visited the changing facilities and noticed that many toilets had features to assist disabled people, but few could accommodate tennis players, who have wider wheelchairs". Kullman, K. (2017) *Universalising and particularising design* with Professor Kawauchi, pp. 138-139.

accommodated within the overall ethos propagated by universal design?⁶¹

The article in which Kullman, mobilising Rancière, describes the Ed Robert Campus⁶² a building designed and operated by the disability community in Berkeley, California, appeared particularly useful and emblematic to us. The campus is active since 2011 and was named after Ed Roberts, one of the pioneers of the disability rights movement and co-founder of the *Centre for Independent Living* (discussed further below). Interestingly, although it has been designed, following the principles of universal design, to accommodate "the broadest possible range of individuals with a whole variety of ability levels"⁶³, Kullman reveals that the campus is actually a 'site of dissensus', emphasising the inevitably conflicting needs of different bodies. Some of the occupants of the building, in fact, stressed its "restricted form of universalism"⁶⁴, showing how certain details or materials – such as electromagnetic waves or chemical substances – have disabling effects on them.

What particularly caught our attention and which we dwelt on at length was also his description of the case of the autistic young persons who take part in day programmes specifically conceived for them inside the building. Their actions, in fact, are seen by

61 Cf. Imrie, R. and Hall, P. (2001) *Inclusive Design: Designing and Developing Accessible Environments*.

62 Cf. Kullman, K. (2019) Politics of Dissensus in Geographies of Architecture: Testing Equality at Ed Roberts Campus, Berkeley. *Transactions of the Institute of British Geographers* 44(2): 284-298.

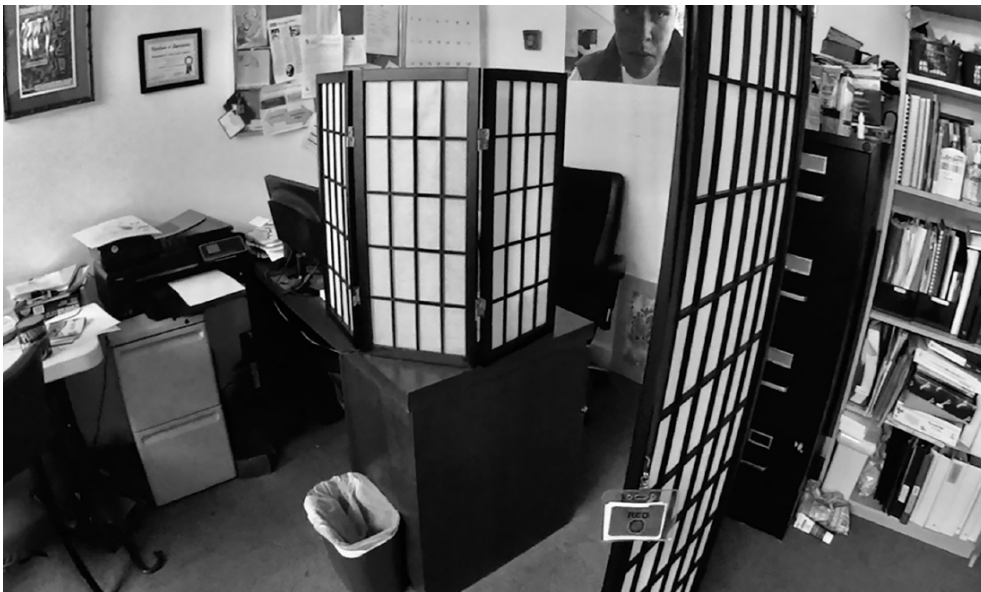
63 Ibid. p. 8.

64 Rancière, J. (2016) Critical questions on the theory of recognition. In K. Genel and J.-P. Deranty (eds.) *Recognition or disagreement: A critical encounter on the politics of freedom, equality, and identity*, pp. 83-95. New York: Columbia University Press, p. 84. Quoted in Kullman, K. (2019) Politics of Dissensus in Geographies of Architecture: Testing Equality at Ed Roberts Campus, Berkeley.



Exterior of Ed Roberts Campus. Source: Kullman, K. (2019) Politics of Dissensus in Geographies of Architecture.

Desk and signal cards attached to the screen on the right. An office space inside the Ed Roberts Campus. Source: Kullman, K. (2019) Politics of Dissensus in Geographies of Architecture.



Kullman “as moments of dissensus that intervene in the spatial and temporal order of the building”⁶⁵. Their ‘messy’ interactions with the building’s environments lead these young people to ‘disrupt’ and reconfigure the materiality of the campus: one of them avoids art class because of the noise and takes refuge in the adjacent warehouse; another has personalised his office space by removing the halogen lighting and installing screens on his desk to create a more isolated and protected environment, while overcoming the problem of communication through the use of coloured signal cards. As Kullman notes, since the way neurodivergent people engage with environments varies from individual to individual and thus is not categorizable, rather than confirming a particular group identity, they are emblematic of a plurality of – and sometimes conflicting – ways of occupying the space of the building. Interestingly, he writes, neurodivergent young persons “could be seen as evoking an ‘unfinished’ architecture, where buildings are co-evolving with bodies in various states of divergence, as occupants alter spaces to try out novel material arrangements that disrupt ‘built’ in behaviour patterns and other forced expectations”⁶⁶.

Therefore, what emerged from our dialogues is that, just as Imrie further stressed together with Luck, “[t]he challenge for universal design discourse is how to articulate a universal human ethic that is simultaneously responsive to the specific, situated, nature of human subjectivities”⁶⁷. Or, to put it exactly as Sánchez Criado stated in a text co-written with his colleague Marco Cereceda Otárola, what should be universal is a “will that singularities should be addressed, exploring different material, normative and knowledge repertoires to do so”⁶⁸.

In sum, this critical background in the field of accessibility led us to reflect on the various issues analysed in the previous chapters of this thesis. Indeed, the challenge of accommodating bodily diversity in built environment is not a matter of including predetermined identities in a consensual whole, to which technical experts can provide, using ready-made formulas, a certain material solution. Rather, it requires “constant verification in an open, experimental and non-teleological manner”⁶⁹. As Kullman

65 Kullman, K. (2019) *Politics of Dissensus in Geographies of Architecture: Testing Equality* at Ed Roberts Campus, Berkeley, p. 7.

66 Ibid. p. 8. Kullman here quotes Lerup, L. (1977) *Building the unfinished: Architecture and human action*. Beverly Hills, CA: Sage Publications, pp. 144-152.

67 Imrie, R. and Luck, R. (2014) *Designing inclusive environments: Rehabilitating the body and the relevance of universal design*, p. 1316.

68 Sánchez Criado T. and Cereceda Otárola M. (2016) *Urban accessibility issues. Techno-scientific democratizations at the documentation interface*, p. 633.

69 Bingham, C. and Biesta, G. (2010) *Jacques Rancière: Education, truth, emancipation*. London: Bloomsbury, p. 84.

argues following Rancière, what should be pursued is an “active equality”⁷⁰, where equality is not a distant goal or principle for action, but an ongoing, experimental and situated process, “a dynamic process that interacts creatively with a shifting landscape of inequality by inventing ever-new ways of breaking its hold over the world”⁷¹. This also resonates with the version of technical democracy that draws on Marres’ arguments on the materiality of issues. In this perspective, the project of democratisation requires a constant commitment to investigating the political effects of the built form, and consists in situated and experimental actions of tinkering and alteration. Moreover, it requires architects to question the means and methods by which they operate and the generic idea of the user they tend to address, opening themselves to be sensitised to heterogeneous versions of the world and knowledge and to productively ‘divergent’ ways of designing.

In line with Sánchez Criado’s previous pedagogical experiences, on this very reflection – as we shall see in detail later on – was based the meaning of my re-learning experience with Moritz.

4.1.3. Asserting and re-imagining disabled people’s political agency

Anyway, in the field of accessibility, and disability in general, the attempts to question the dominant expert knowledge paradigms were, and still are, numerous. In the following passage I will dwell on the analysis of some of these attempts, whose principles and criticalities – particularly those regarding problematic questions – emerged during our debates on many occasions.

4.1.3.1. *Nothing about Us without Us*

As we noted, for example, despite the depoliticised and potentially technocratic drift of universal design, the concerns of the very groups of disabled activists which led to its birth embodied a completely different ethos.

As already mentioned (see i.b. V 2), during the 1960s and 1970s in US, these activists strongly opposed rehabilitation professionals producing ‘special solutions for special needs’ and their view that disability was a failure of human performance and a problem to be ‘fixed’ and ‘eliminated’. In particular, the *Independent Living Movement* had its origins in student action at the University of California in Berkeley, but came to merge

70 Kullman, K. (2019) Politics of Dissensus in Geographies of Architecture: Testing Equality at Ed Roberts Campus, Berkeley, p. 2. Kullman here quotes May, T. (2008) *The political thought of Jacques Rancière: Creating equality*. Edinburgh, UK: Edinburgh University Press. <https://doi.org/10.3366/edinburgh/9780748635320.001.0001>, pp. 38-77.

71 Kullman, K. (2019) Politics of Dissensus in Geographies of Architecture, p. 2.

with and include a broader range of community members through the founding, in 1972, of the *Center for Independent Living* (CIL), a grassroots organization that became a model for community-run service agencies of and for disabled people. Notably, these activists claimed that their lived experiences made them better experts on disability: not by chance, in the 1990s their motto would be *Nothing about US without Us*⁷². This new disability epistemology, which Hamraie interestingly calls ‘crip technoscience’, focused on positioning users as experts⁷³, experimenting with new access technologies and combating the prejudice that a citizen had to necessarily be ‘productive’.

“crip technoscience involved strategies of friction, disorientation, and nonconformity. Activists engaged in self-taught design practices, creating their own tools, curb cuts, and ramps with repurposed materials, learning to code and hack computers, and tinkering with the structures of everyday life. For crip technoscientists, disability was the basis of shared culture and identity, a valuable resource for environmental retooling, and hence not a de facto disqualified condition.”⁷⁴

In particular, the *Independent Living Movement* had its antecedents in widespread networks of disabled people and their families in the post-polio maker community of the 1940s and 1950s, who adopted a ‘self-help’ and ‘do-it-yourself’ ethos to access built environments⁷⁵. Despite the title of the movement, these activists claimed the value of interdependence, emphasizing the mutual collaboration between disabled and non-disabled people and challenging the dominant norms of rehabilitation.

72 Charlton, J. (2004) *Nothing about Us without Us: Disability Oppression and Empowerment*. Berkeley, CA: University of California Press, pp. 3-4.

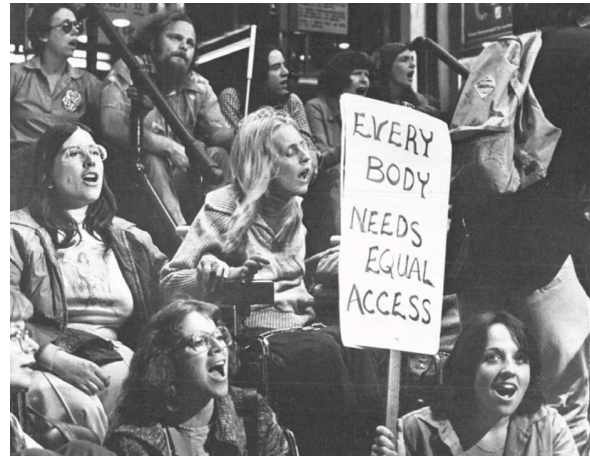
73 In the same years, a similar attempt in the UK was made by disabled architect Selwyn Goldsmith, who wrote an influential handbook titled *Designing for the Disabled*, which appeared in four editions in 1963, 1967, 1976 and 1997. See: Goldsmith, S. (1997) *Designing for the Disabled: the New Paradigm*. Oxford, UK: Architectural Press. To know more about Goldsmith’s influential contribution, see: Penner, B. (2013) *The Inclusive Bathroom*.

74 Hamraie, A. (2017) *Building Access: Universal Design and the Politics of Disability*, pp. 16-17.

75 To know more about this, see also: Electric Moms and Quad Drivers: Do-It-Yourself Access at Home in Postwar America, in Williamson, B. (2019) *Accessible America: A history of disability and design*.



Four disability activists roll up Berkeley's first official curb cut, which maintained a high lip. The Independent 2, no. 1 (Fall 1974). Photo and caption: Hamraie, A. (2017) *Building Access*, p. 117.

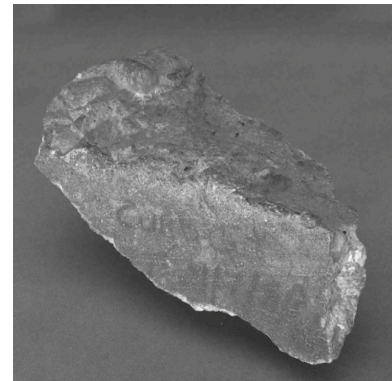


Independent Living Movement, protest. Source: Lifchez, R. and Winslow, B. (1979) *Design for independent living: The environment and physically disabled people*, p. 10.



Disability protesters at the 'Capitol Crawl', leaving behind wheelchairs, power chairs, and crutches to crawl up the steps of the U.S. Capitol Building in Washington, D.C. (March 12, 1990). Photograph by Tom Olin. Photo and caption: Hamraie, A. (2017) *Building Access*, p. 2.

A fragment of a concrete sidewalk, which disability activists in Denver smashed as part of a protest in 1978. National Museum of American History, Smithsonian Institution. Photo and caption: Hamraie, A. (2017) *Building Access*, p. 96.

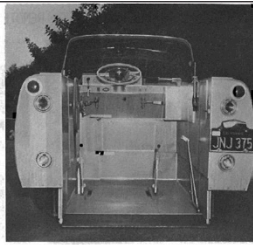


'Handicapped Protest', photograph, April 1977. Source: Williamson, B. (2019) *Accessible America*, p. 134.





Wheelchair turntable and auxiliary controls facilitate parking



Two positive sets of driver-operated locks secure wheelchair



To this prototype will be added rear door, enclosed top and windows

Three photographs showing Fred Taberlet's 'Para-car', a Citroen 2 with the top and back removed for wheelchair access. In the first photograph, Taberlet, dressed in a dark-colored suit and white hat, demonstrates the car's usability from his wheelchair. 'Equipment', Toomey J Gazette, 1968, 54. Post-Polio Health International. Photo and caption: Williamson, B. (2019) *Accessible America*, p. 91.



Ronald Mace tinkering with a tool at the Central Carolina Convalescent Hospital (1950). Photo and caption: Hamraie, A. (2017) *Building Access*, p. 104.

Disabled makers shared tips for designing features such as homemade wheelchair ramps. Toomey Gazette (Spring 1961): 11. Post-Polio Health International. Photo and caption: Hamraie, A. (2017) *Building Access*, p. 105.

EQUIPMENT

"In perhaps no other field of medical endeavor is mechanical assistance of such keystone importance as it is in rehabilitation of the physically handicapped. One lever, even one gadget, one device, may be worth one thousand dollars, ten thousand treatments or one hundred thousand words."

Howard A. Rusk, M.D.

A HOME RAMP

A ramp should be designed from the points of view both of appearance and safety. For an outdoor ramp: plan a gentle slope for easy maneuverability with crutch or wheelchair - not less than 7 feet in length for each foot rise is a good working rule. Thus, if the door is $2\frac{1}{2}$ feet from the ground, the ramp should be $2\frac{1}{2}$ times 7, or $17\frac{1}{2}$ feet in length.

That would be the minimum. Actually, it will be much easier to negotiate if 10 feet of length is allowed for every foot of height. This gentler slope makes ascending less strenuous and provides greater safety in descending.

For best surface traction, floor boards should be laid cross-wise and toe cleats placed along the center. As a further insurance against slips, sprinkle the ramp with clean fine sand while it is freshly painted or, before laying the cleats, cover it with black sand-surfaced roofing paper.

The cuts at right appeared in *POPULAR MECHANICS*, February, 1961, and illustrate an unobtrusive and workable ramp.

PORTABLE RAMPS: See TJG, Spring 1960, Supplement, Page 5.



PLYWOOD PLATFORM IS LOWERED into position by rope to connect head of ramp with porch floor. Platform is stored on porch when ramp is not being used

HINGED "DRAWBRIDGE" across side entrance is swung back onto ramp when latter is not being used so that door can be opened without interference



Interestingly, their perspectives strongly influenced UC Berkeley professor Raymond Lifchez, a figure on whom we have long dwelt because of the importance of his pioneering teaching approach, which was based on direct confrontation between students and disabled activists, whom he invited as ‘expert consultants’ to his design studios. In 1979, together with Barbara Winslow, Lifchez wrote a book titled *Design for Independent Living: The Environment and Physically Disabled People*⁷⁶, which offers an extraordinary portrait of the lives of these people. Based on their teaching experiences, the two authors conducted ethnographic research, documenting the daily practices and living spaces of these consultants. The portraits of these people, and their singular lives, contrasted strongly with the rigid standardised drawings showing a wheelchair without a person and within an abstract architectural space. Moreover, the book was the first to claim the need to move away from rehabilitative cultural approaches in environmental design. In Lifchez and Winslow’s words:

“Is the objective to assimilate the disabled person into the environment, or is it to accommodate the environment to the person? (...) Currently, the emphasis [in barrier-free design] is on assimilation, for this seems to assure that the disabled person, once ‘broken-in,’ will be able to operate in a society as a ‘regular person’ and that the environment will not undermine his natural agenda to ‘improve’ himself. (...) This assumption can be counterproductive when designing for accessibility. It may serve only to obscure the fact that the disabled person may have a point of view about the design that challenges what the designers would consider good design. Many designers have, in fact, expressed a certain fear that pressure to accommodate disabled people will jeopardize good design and weaken the design vocabulary. Though certain aspects of the contemporary design vocabulary may have to be reconsidered in making accessible environments, one must also look forward to new items in the vocabulary that will develop in response to these human needs—ultimately leading toward more humane concepts of what makes for good design”.⁷⁷

Another book by Lifchez, titled *Rethinking Architecture*⁷⁸ and published in 1987, was also a great source of inspiration in our dialogues. This book set out a truly new methodological direction for the architectural profession, based on the UC Berkeley experiments. Lifchez’s teaching of architectural design, in fact, moved radically away from the professional way of working in which architects followed guidelines and standards for the design of accessible spaces. Rather, as mentioned above, by inviting

76 Cf. Lifchez, R. and Winslow, B. (1979) *Design for independent living: The environment and physically disabled people*. New York: Whitney Library of Design. See also: Werner, D. (ed.) (1998) *Nothing about us without us: Developing innovative technologies for, by, and with disabled persons*. Palo Alto, CA: Health Wrights.

77 Lifchez, R. and Winslow, B. (1979) *Design for independent living: The environment and physically disabled people*, p. 150.

78 Cf. Lifchez, R. (ed.) (1987) *Rethinking Architecture*.

members of the *Independent Living Movement* into his design studios, he encouraged his students to consider them as design consultants, rather than as ‘end users’ requiring specific adaptations. As Donlyn Lyndon wrote in the preface of the book:

“Codification can institutionalize the neglect of minority concerns. The contributors to this volume are passionately dedicated to moving beyond the limits of type. They hold that architecture is specific, that it serves the purposes of individual inhabitants, that those purposes vary and cannot be arrived at by deduction. People differ, their needs differ, and those differences are not to be lightly swept aside in the interests of expediency. (...) [W]hile disabilities may be categorized, the lived experiences of people cannot be reduced to generic types.”⁷⁹

Beyond the Anglo-American context, another more recent and noteworthy experience on which we reflected is that of the Spanish *Independent Living Forum* (*Foro de Vida Independiente y Divertad*)⁸⁰ which, particularly during the demonstrations of the already mentioned *15-M Movement* in Spain (see chapter III), also brought to the fore the theme of urban spaces inaccessibility. Interestingly, by adopting and, at the same time, readapting the *Independent living* philosophy, this activist collective coined the term *diversidad funcional* (functional diversity), in open contrast to the forms of identity politics that revolve around ‘disability’. Rather, from a point of view that aims at undermining ‘able-bodied’ terms and structures, this term opposes biomedical ‘functionalist’ categorisation – which suggest the ‘inclusion’ of ‘lacking’ bodies – and reclaims the great variety of forms of body functioning beyond productive ones⁸¹.

In particular, also the experience of the collective *En torno a la silla*⁸² (already described in the conclusion of chapter III), of which Sánchez Criado was a member, has been a frequent object of discussion, precisely because of its intention to question dominant expert paradigms and to give rise, rather, to an open process of ‘joint problem making’, oriented towards finding more attentive alternatives to conventional market care technologies (in that case, more precisely, to the wheelchair of a member of the collective).

79 Lyndon, D. (1987) preface of Lifchez, R. (ed.) *Rethinking Architecture*, p. xiii.

80 See: <http://forovidaindependiente.org>

81 Cf. Sánchez Criado, T. (2019) Technologies of friendship: Accessibility politics in the ‘how to’ mode, p. 412.

82 Cf. Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?: En torno a la silla and the “Joint Problem-Making” of Technical Aids. See also: Sánchez Criado, T., Rodríguez-Giralt, I. and Menconi, A. (2016) Care in the (critical) making. Open prototyping, or the radicalisation of independent-living politics. *ALTER- European Journal of Disability* 10 (1): 24-39; Sánchez Criado, T. (2018) Functional Diversity as a Politics of Design? *Diseña* (11): 148-159; Sánchez Criado, T. (2019) Technologies of friendship: Accessibility politics in the ‘how to’ mode.



'A party'. Photo and caption: Lifchez, R. and Winslow, B. (1979) *Design for independent living*, p. 115.



'An ordered setting for a tender relationship'. Photo and caption: Lifchez, R. and Winslow, B. (1979) *Design for independent living*, pp. 92-93.

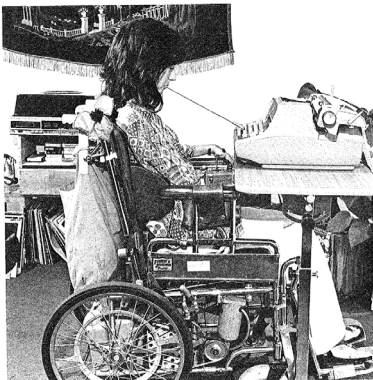
'Adaptations'. Photos and caption: Lifchez, R. and Winslow, B. (1979) *Design for independent living*, pp. 190-196.



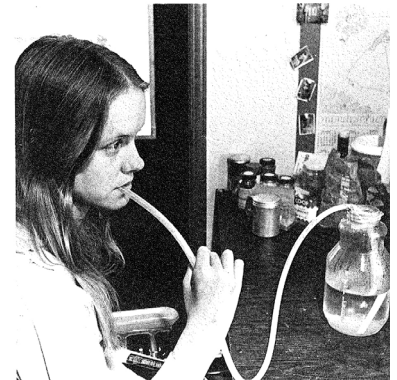
This letter board, mounted so others can see it, permits this person, who cannot speak, to convey his thoughts through words, phrases, and an alphabet indicated with his head wand.



Drinking through a straw is easy when the table height is designed for your needs.



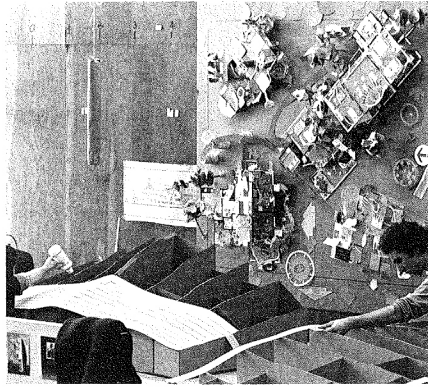
A light-touch typewriter, equipped with an extra-long sheet of paper, allows typing with a mouth wand with a special weighted tip.



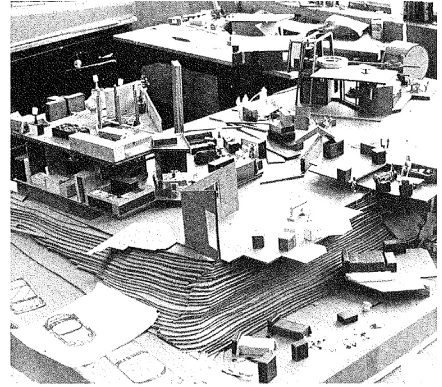
Tubing taped to the mouth of this water jug allows a person to drink without assistance.

'Scenario mapping'. Some of the activities that Lifchez and Winslow undertook by bringing disabled people into the design studio.

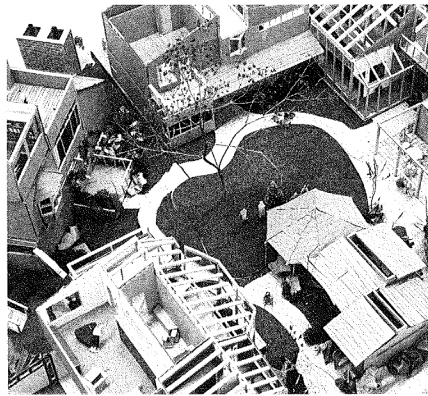
Source: Lifchez, R. and Winslow, B. (1979) *Design for independent living*, p. 146.



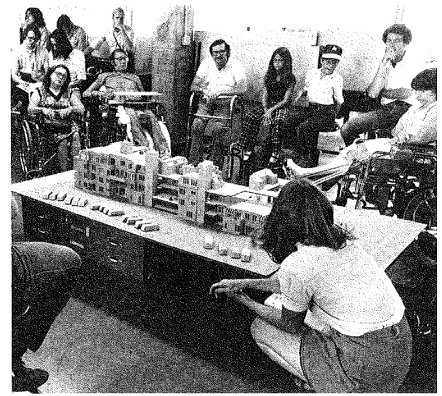
The three-dimensional model: constructing the site (foreground). In the background is the scenario map in plain view as a reference.



Development of the model.

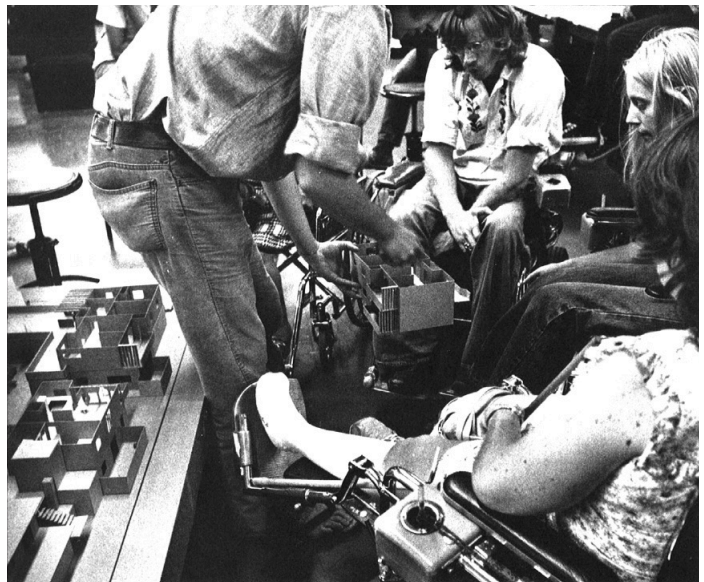


The environment.



Discussions with user-clients.

Model discussion. A group of wheelchair users gathers around Raymond Lifchez, who shows them an architectural model. Source: Lifchez, R. and Winslow, B. (1979) *Design for independent living*, p. 147.



4.1.3.2. The antipsychiatry movement of the 1960s and 1970s: the Italian case

Despite the fact that the premises and the field are different, another important experience we reflected on was the one started by the anti-psychiatry movement from the 1960s and 1970s. However, while the activist projects that we have seen so far involved these groups of disabled people themselves – who meant to claim agency, expertise and self-representation – this movement rather saw as its protagonists a series of psychiatrists who strongly opposed the theoretical and practical psychiatry models that had been applied up to then. Notably, anti-psychiatry, or radical psychiatry, included a vast variety of opinions and ideas, and identified itself with a great number of texts, leaders and experiences from different countries. Very briefly, this movement carried out a radical critique of the psychiatric – or total – institutions, which also evolved in a more general critique of power knowledge and of power relations. Radical psychiatrists, in particular, mostly conceived mental illness as a social construct, that is, as a product of social forces to be found inside and/or outside the family unit⁸³.

A very important chapter from the history of this movement was the one regarding the Italian experience, particularly revolving around the psychiatrist Franco Basaglia, who determined the actual abolition of the places where those who were considered mentally ill were segregated. In Italy, in fact, since the 1960s, a law of 1904 was in force which had established the principle that all citizens affected with mental illness had to be admitted to an asylum, or *Manicomio* – a term which meant, literally, ‘place for the care or custody of the mad’ – “when they are dangerous to themselves or others, or arouse public scandal and cannot be conveniently guarded and treated except in asylums”⁸⁴. Moreover, it must be observed that the category of the ‘mad’, or ‘dangerous individual’, was very broad and included – for example – people with Down syndrome, alcoholics and people with epilepsy. ‘Therapy’, in the asylums, mostly consisted of violent electroshock or insulin shock treatments.

As British historian John Foot writes, inside such places “[c]ustodia (custody) was what mattered, not cura (cure)”⁸⁵. Indeed, “[f]or the most part their objective was what Foucault described as to ‘discipline and punish’”⁸⁶.

Basaglia, along with many other authors, strongly criticized such models, and particularly the way psychiatry and neurology reduced the social and human complexity of mental

83 Cf. Foot, J. (2015) *The man who closed the asylums: Franco Basaglia and the revolution in mental health care*. London: Verso.

84 ‘Disposizioni sui manicomi e sugli alienati’, Legge 14 febbraio 1904, n. 36, Gazzetta Ufficiale, 43, 22 February 1904. See: http://www.cartedalegare.san.beniculturali.it/fileadmin/redazione/Materiali/Legge_14_febbraio_1904.pdf

85 Foot, J. (2015) *The man who closed the asylums: Franco Basaglia and the revolution in mental health care*, p. 48.

86 Ibid. pp. 53-54.

illness to a sick body. The institution of the asylum, as he said in an interview of 1978, “destroys the individual, separating him from society and then dividing him into all the hierarchies and categories that exist in the ‘order’ of the asylum”⁸⁷.

Hence his entirely nonconformist experience at the psychiatric hospital of Gorizia, on the border with Slovenia, of which he had become director in 1961. There, drawing inspiration from the experiences of South-African-American-Scottish psychiatrist Maxwell Jones, among others, in the UK⁸⁸, he started to create a ‘therapeutic community’. Foot and historian David Forgacs’s descriptions are useful to understand the importance of this revolutionary approach:

“Under Basaglia’s stewardship, democracy came to the mental asylum in Gorizia, a place that had never experienced any sense of free speech. From an institution which was the very essence of non-democracy and exclusion, where the mad were locked up and silenced, and became non-people, without an identity, a past or a future, Gorizia’s asylum developed into a school for democracy, a place people would visit to see new forms of democracy in action. This was the ‘overturning’, the ‘negation’ that was discussed so often by the Basaglian équipe. Gorizia was a wonder of the 1968 world, something to visit and be amazed by, a vision of change that transformed people’s lives: a kind of miracle. (...) Patients were taking back some control over their lives and over those of their fellow inmates. They were becoming people again, even citizens, with responsibilities and rights”⁸⁹.

87 Basaglia, F. and Fornari, F. (1978) *La violenza*, G. Controzzi and G. P. Dell’Acqua (eds.). Firenze: Vallecchi, p. 32.

88 See, for instance: Jones, M. (1976) *The Maturation of the Therapeutic Community. An Organic Approach to Health and Mental Health*. New York: Human Sciences Press.

89 Foot, J. (2015) *The man who closed the asylums: Franco Basaglia and the revolution in mental health care*, pp. 320-325.

Double-page spread (unnumbered) from Basaglia, F and Ongaro Basaglia, F. (eds) (1969), *Morire di classe*. Photo and caption: Forgacs, D. (2014) *Italy’s Margins*, p. 204.



...Sono relitti, bucce di uomini,
che la sorte ha sputato. Umidi
di questa saliva della sorte strisciano su un muro...

BALESTRIEROTTO e go derada Mado Lavaroli Boggio

Double-page spread (unnumbered) from Basaglia, F and Ongaro Basaglia, F. (eds) (1969), *Morire di classe*. Photo and caption: Forgacs, D. (2014) *Italy’s Margins*, p. 218.

**Le finestre dovranno
avere una protezione
adeguata. Si raccomanda di mascherare le inferriate artisticamente per evitare al malato l'impressione di essere in un carcere.**

Da un libro per la... e per la... e per la...
psichiatrico

“Wards were opened up, the wire perimeter fences were taken down, walls dismantled, and patients began to go back and forth between the hospital and the adjoining city”⁹⁰.

It is also thanks to Basaglia’s contribution [i.b. V. 4] that the following decade was characterised by a big push towards the deinstitutionalisation, decentralization and political reform of the mental health field.

In 1978 a new mental health act, Law 180, also known as ‘Legge Basaglia’ (Basaglia Law) made the respect for the patient’s human and civil rights essential. This led, over the following years, to the closure of most *manicomi* in Italy.

Also Basaglia’s experience in the mental hospital of Trieste is particularly noteworthy. Between 1971 and 1974, the hospital was “transformed into an experimental space,

90 Forgacs, D. (2014) *Italy’s Margins. Social Exclusion and Nation Formation since 1861*. Cambridge, UK: University Press, p. 199.

i.b. V. 4 - Basaglia and his philosophical influences

Particularly, Basaglia’s thinking was influenced and refined by his reading of the work of Marx, Sartre, Goffman, Fanon e Foucault. Goffman’s *Asylums*¹, for instance, criticised the perverse mechanisms of what the author called ‘total institutions’; for his part, Michel Foucault, in his *Folie et déraison. Histoire de la folie à l’âge Classique*² provided a theoretical and methodological basis for the study of madness. According to him, since the seventeenth and eighteenth centuries, madness had been detached from the continuum of human experience, objectified, medicalized, seen as ‘unreason’ and consequently treated in asylums by specialized doctors who saw themselves as embodying reason. Such ideas were embodied in *L’istituzione negata*³, *Morire di classe*⁴, *La maggioranza deviante*⁵ and *Crimini di pace*⁶, a series of books that Basaglia co-edited with his wife Franca Ongaro, in which the authors enlarged the scope of their arguments beyond psychiatry and made a more generalized critique of power, calling for collective action against capitalist exploitation and social injustice.

1 Cf. Goffman, E. (1961) *Asylums: Essays on the Social Situation of Mental Patients and Other Inmates*. New York: Doubleday.

2 Cf. Foucault, M. (1961) *Folie et Dérison. Histoire de la folie à l’âge classique*. Paris: Éditions Gallimard. Engl. version Id. (2006) *History of Madness*, J. Khalfa (ed.) J. Murphy and J. Khalfa (transl.). London: Routledge.

3 Cf. Basaglia, F. (ed.) (1968) *L’istituzione negata*. Torino: Einaudi.

4 Cf. Basaglia, F. and Ongaro Basaglia, F. (eds.) (1969) *Morire di classe. La condizione manicomiale fotografata da Carla Cerati e Gianni Berengo Gardin*. Torino: Einaudi.

5 Cf. Basaglia, F. and Ongaro Basaglia, F. (eds.) (1971) *La maggioranza deviante. L’ideologia del controllo sociale totale*. Torino: Einaudi.

6 Cf. Basaglia, F. and Ongaro Basaglia, F. (eds.) (1975) *Crimini di pace. Ricerche sugli intellettuali e sui tecnici come addetti all’oppressione*. Torino: Einaudi.

Franco Basaglia with the patients of the psychiatric hospital in Gorizia, 1968-1969. Photo: Gianni Berengo Gardin, *Contrasto*. Source: internazionale.it



hosting art and theatrical projects, exhibitions, plays, conferences, concerts, numerous debates and meetings and international congresses. Militants, students, intellectuals and practitioners flocked to Trieste. It was a time of extraordinary ferment”⁹¹.

At the end of 1972, together with his cousin, the artist Vittorio Basaglia, the theatre director and actor Giuliano Scabia and other four artists, Basaglia organised a groundbreaking collective project with the patients. In short, the project consisted in a piece of ‘wandering theatre’ (*teatro vagante*), with stories and performances centred on large puppets and a wooden sky blue painted horse on a wheels. On 25 February 1973 four hundred patients ‘breached’ the wall of the hospital wheeling the wooden horse out and started marching through the streets of Trieste. *Marco Cavallo* (Marco the Horse) – as it was called – was intended as the symbol of a process of liberation that was taking place for all those who were suffering from life in asylums⁹². As Forgacs notes, “[t]he symbolism could be interpreted as that of the Trojan horse in reverse: wheeled from inside a walled compound to the outside, not to invade and capture a city but to free captives held on the edge of the city”⁹³.

Interestingly, in some of his – recently published – reflections⁹⁴, Basaglia explicitly refers

91 Foot, J. (2015) *The man who closed the asylums*, pp. 744-745.

92 Cf. Forgacs, D. (2014) *Italy’s Margins*.

93 Ibid. p. 221.

94 Cf.: Minguzzi, G. F., Basaglia, F. and Ongaro Basaglia, F. (1967 January) Exclusion, programmation et intégration, in *Recherches*, 5: 75-84. Italian transl. Iid. (2017) Esclusione, programmazione e integrazione. Appunti sulla realtà psichiatrica italiana, in F. Ongaro Basaglia (ed.) *F. Basaglia, Scritti, 1953-1980*. Milano: Il Saggiatore; Basaglia, F. (1976?) *Schema di un articolo per Casabella*, with annotation: ‘Titolo provvisorio: Psichiatria ed architettura’, to be edited in collaboration with F. Ongaro Basaglia, G. Bellavitis e N. Valle, in G. Scavuzzo (2020) *Il parco della guarigione infinita. Un dialogo tra architettura e psichiatria*, pp. 254-260. Siracusa: LetteraVentidue Edizioni; Basaglia, F. (1980) Introduction, in S. Santiano, *B come architetture, z come salute. Per un uomo che sembra doversi liberare, per sopravvivere, e della medicina e dell’architettura diventate mercificazione*. Perugia: Bertoni.

to architecture itself, in its connection with psychiatry. In particular, he argues that the traditional notion of design as a prefiguration of a physical reality must be questioned:

“Being traditional institutional psychiatry a pessimistic technique of corporeal manipulation of the ill man’s body, it only allowed the exchange and transmission of ahistorical, ‘technical’ instructions between the psychiatrist and the architect; hence the possibility of elaborating specific typologies, and progressively perfect them in a self-protective sense for society and the psychiatrist, and, therefore, sadistic and belittling (existenzminimum) for the mentally ill person. The result was symmetrical: to the maximum destruction of the ‘cured’ subject corresponded the maximum material constructability of architecture (...) Instead, the negation of the institution seems to more decidedly undermine the professionalism of the architect as it consists in skills regarding the lasting human-environmental corporeal manipulation. In a psychiatric practice, which tends to the absolute problematization of the relationship between the psychiatrist and the ill subject, the margin for the typological rationalisation of needs, that is, for the transposition of needs in the blue print of the organisation chart, progressively reduces itself to its extinction”⁹⁵.

95 My translation (A/N). F. Basaglia, F. (1976?) *Schema di un articolo per Casabella*, p. 258.



Franco Basaglia, his collaborators and patients break through the fence of the Trieste asylum's Pavilion P to get Marco Cavallo out (1973). Source: cultweek.com

(next page)
Marco Cavallo marches through the streets of Trieste (1973). Source: spiweb.it





Marco Cavallo marches through the streets of Trieste (1973). Source: ilculturale.com



Marco Cavallo marches through the streets of Trieste (1973). Source: ilculturale.com

4.1.3.3. Inside the *Neurodiversity Movement*

Particularly, another reason why we focused on the experience of the antipsychiatry movement is that it, together with its intellectual vanguard, has been the historical antecedent from which the term – and the movement associated with it – ‘neurodiversity’ emerged. As already seen at the beginning of this chapter, in much the same way as with the aforementioned ‘functional diversity’, activists use ‘neurodiversity’ against the hegemonic idea of the human mind.

Such hegemonic framework, in fact, in most cases requires people with mental and developmental disabilities to learn to ‘be in control’ and “tame the exuberant body (...) limiting [their] potential to express beyond the stranglehold of neurotypical models of personhood”⁹⁶. The concept of neurodiversity rather “highlights the vast differences between and within neurologies. Each individual experience of neurodiversity is unique and irreducible to a set, categorical assignment of symptoms and limitations”⁹⁷. As autistic activist Steve Graby explains:

“[n]eurodiversity activists (...) seek social acceptance and equal opportunity for all individuals regardless of their neurology (...) believing that neurological diversity should be celebrated and appreciated (...). People who experience difficulties in society due to their cognitive or behavioural differences from the norm (...) need to be recognised and accommodated, with an emphasis on the need to change society rather than the individual”⁹⁸.

In explaining that, Graby also distinguishes on the use of the term when referring to groups or individuals: “[w]hile a group or a society can be ‘neurodiverse’, it is generally considered inaccurate to call an individual person ‘neurodiverse’, as neurodiversity encompasses both the typical and the atypical; however, ‘neurodivergent’ can be used as a generic adjective to refer to people of minority neurotypes”⁹⁹. The words of autistic geographer Sara M. Judge are particularly useful to understand the reasons for this struggle against biomedical categorisation: “[c]linical terminology like ‘disorder’ and

96 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 273. See also: Yergeau, M. (2018) *Authoring Autism: On Rhetoric and Neurological Queerness*.

97 Judge, S. M. (2018) Languages of sensing: Bringing neurodiversity into more-than-human geography, p. 6. See also: Davidson, J. and Henderson, V. L. (2010) ‘Travel in parallel with us for a while’: Sensory geographies of autism. *The Canadian Geographer* 54: 462-475; Jaarsma, P. and Welin, S. (2012) Autism as a natural human variation: Reflections on the claims of the neurodiversity movement. *Health Care Analysis* 20: 20-30; Armstrong, T. (2011) *The Power of Neurodiversity: Unleashing the Advantages of Your Differently Wired Brain*. Cambridge, MA: Da Capo Press.

98 Graby, S. (2015) Neurodiversity: bridging the gap between the disabled people’s movement and the mental health system survivors’ movement? In H. Spandler, J. Anderson and B. Sapey B. (eds.) *Madness, distress and the politics of disablement*, pp. 231-243. Bristol, UK: Policy Press, pp. 234-235.

99 Ibid. p. 235.

‘syndrome’ leave me feeling forcibly disabled and reduced to a condition that is only impaired. It leaves little room for recognition of, or pride in, the strengths and skills that I also possess as a consequence of the same neurological-differences”¹⁰⁰. At the same time, the term also challenges the frequent tendency at labelling some of these people as ‘high-functioning’. In fact, “[a]n irksome discomfort exists around the dualism of ‘high/low-functioning’ labels that disregard the strengths and struggles of each individual, and strongly imply categorisation based on one’s capacity to ‘pass for normal’ rather than a true assessment of individual capabilities”¹⁰¹. In general, therefore, also this notion evokes the attempts of civil rights claims so that minorities can be acknowledged rather than inscribed in pathological frameworks. Their condition is not seen as a disease or disorder that must be eradicated, prevented or cured.

Anyway, during our shared readings and dialogues it emerged that the term does not always elicit positive responses. Indeed, a number of authors point out that neurological-difference can actually have devastating effects on quality of life, and the concept of ‘neurodiversity’ may risk diminishing or even hiding the very real suffering that some people experience¹⁰².

4.1.3.4. The limits of self-advocacy

Indeed, it should be taken into account that among those categorised as intellectually disabled, not all are equally able to articulate. As we have already seen, Simplican¹⁰³ and Berger¹⁰⁴, for instance, note that whereas for some people who have trouble expressing themselves within prevalent norms, such as autistic people or those with cerebral palsy, communication might somehow be made possible, some others have more serious difficulties in language and cognition. Considering this, the disability movement itself, with its motto *Nothing about Us without Us*, assuming that disabled people must speak for themselves, might paradoxically share the Lockean/Rawlsian assumptions leading to the ‘capacity contract’, that is, to repeat it briefly, a series of intellectual-linguistic capacities allowing to become readable as ‘a political agent’ or ‘citizen’. As Simplican points out, in staking “inclusion on cognitive competence”, the movement “unintentionally recasts

100 Judge, S.M. (2018) Languages of sensing, p. 6.

101 Ibidem. See also: Fenton, A. and Krahn, T. (2009) Autism, neurodiversity and equality beyond the ‘normal’. *Journal of Ethics in Mental Health* 2: 1–6; Yergeau, M. (2009) Circle Wars: Reshaping the typical autism essay. *Disability Studies Quarterly* 30(1). Available at: <https://dsq-sds.org/article/view/1063/1222>> (Accessed 26 March 2021); Kim, C. (2013) Decoding the high functioning label. In *Musings of an Aspie*. Available at: <https://musingsofanaspie.com/2013/06/26/decoding-the-high-functioning-label/> (accessed 26 March 2021).

102 Cf. Judge, S. M. (2018) Languages of sensing, p. 6. See also: Fenton, A and Krahn, T. (2009) Autism, neurodiversity and equality beyond the ‘normal’; Jaarsma, P. and Welin, S. (2012) Autism as a natural human variation: Reflections on the claims of the neurodiversity movement.

103 Cf. Simplican, S. C. (2015) *The Capacity Contract. Intellectual Disability and the Question of Citizenship*.

104 Cf. Berger, J. (2019) Rethink: Agency, theory and politics in disability studies.

exclusion and stigma on others who are more severely impaired”¹⁰⁵. Precisely for this reason, as we have already seen, in contrast to Berger, she argues that other forms of political activism can be seen, for example, in non-verbal activities such as dance. Particularly, during our joint exploration we dwelt on an experience that in some ways could be considered an interesting historical antecedent of what is expressed by Simplicitan’s ideas, namely that of the French psychiatrist and educator Fernand Deligny¹⁰⁶ and his methods of mapping ‘autistic space’. In France, as well as in Italy, the anti-psychiatry movement acquired particular relevance, and an important subversion attempt was made at the *La Borde* clinic, where Felix Guattari was among the staff. In 1965, when Deligny arrived at *La Borde*, he created a network of facilities for taking care of children with autism and those ‘outside of speech’ (*hors de parole*). Notably, in line with Basaglia and his colleagues in Italy, he tried to foster an alternative to institutional psychiatry and also criticised the educational methods of the time, which embodied the will of society to repress whatever deviated from the norm. Rather than trying to teach something to non-speaking autistics, he hoped instead that he could learn from them, and to do so he spent time with them, living with them on an everyday basis on the Cévennes Mountains in southern France¹⁰⁷. At that time, this meant questioning the centrality of psychoanalysis and its insistence on language.

As Manning observes, in contrast to this tendency,

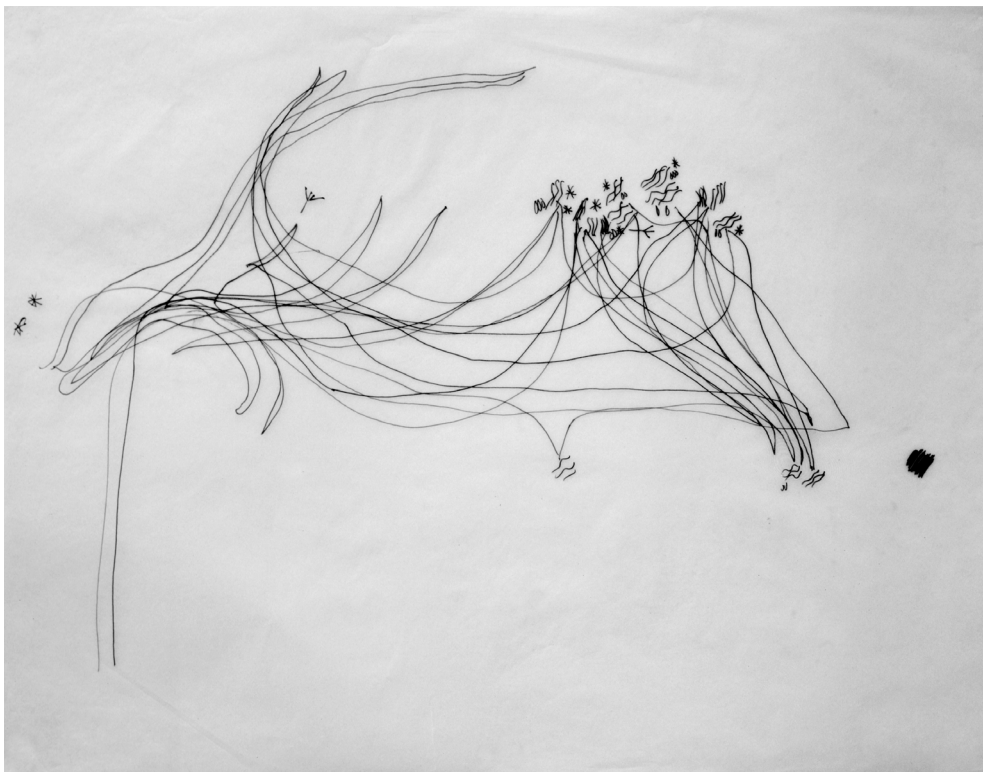
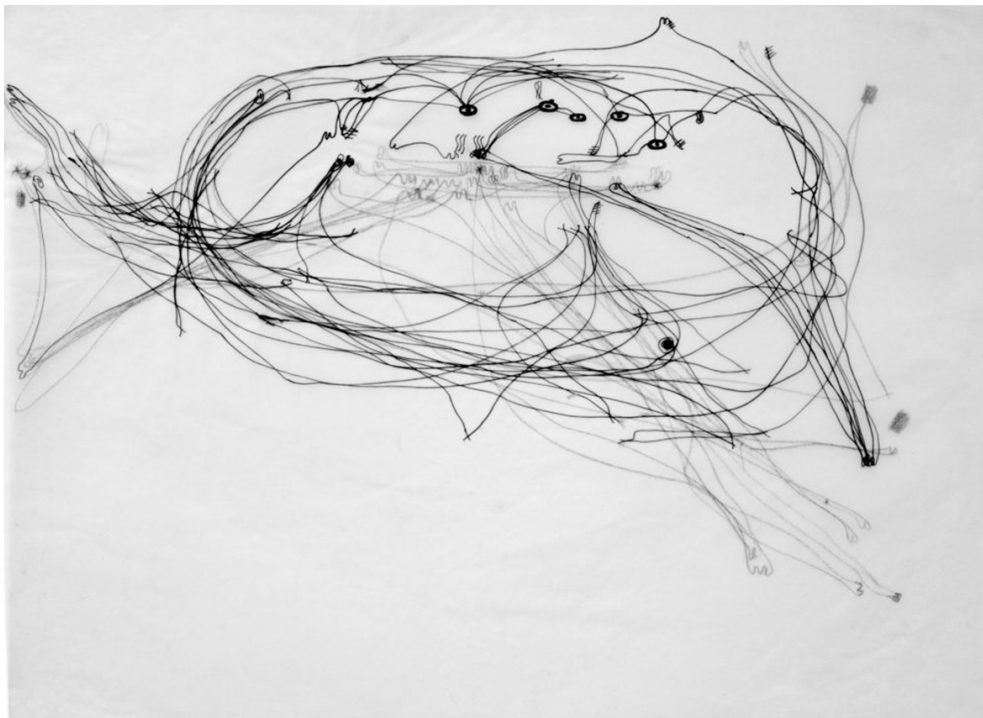
“Deligny refused to make language a central modality of existence for and with autistics. He refused to engage with any mode of representation that would seek to organize autistics outside of the in-act of their complex daily expressions, including how they move through the world, how they break down when the world becomes too much, how they make themselves understood, how they play, what they are concerned with, how they dream, how they create”¹⁰⁸.

105 Simplicitan, S. C. (2015) *The Capacity Contract. Intellectual Disability and the Question of Citizenship*, p. 5.

106 A similar logic underlies a contemporary example, namely the work of *Debajo del Sombrero*, a Madrid-based platform for the creation, research, production and dissemination of art whose main protagonists are people with intellectual disabilities. The collective’s workshops focus on creating moments of learning and dialogue with other artists, as well as individual and collective projects. In particular, in *Some Things from Somewhere*, the Welsh artist Cai Tomos, together with the artists of the collective, carried out a creative research based on the body, its movement and expression, trying to understand the ways of relating to the worlds of these people. Cf. Tomos, C. (2018) *Some Things from Somewhere*. Barcelona, ES: Caniche Editorial.

107 Cf. Petrescu, D. (2007) The indeterminate mapping of the common. *field* 1(1): 90-91. Available at: <http://field-journal.org/wp-content/uploads/2016/07/d-petrescu.pdf>. See also: Dosse, F. (2011) *La Borde: Between Myth and Reality*. In Id. *Gilles Deleuze & Félix Guattari: Intersecting Lives*, pp. 40-55. New York: Columbia University Press.

108 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 159. See: Deligny, F. (1979) *Les détours de l’agir ou le moindre geste*. Paris: Hachette.



Fernand Deligny,
lignes d'erre, (ca.
1976).
Sources: ici-berlin.org; scalar.usc.edu

Fernand Deligny and Jean Marie, one of the children he cared for (1974).
Source: telerama.fr



In other words, rather than focusing on their deviation from the norm, he tried to focus on the autistic people's own modes of expression. Particularly, together with a network of people who chose to follow his methods, he developed a particular survey method which implied mapping the lines that autistic children traced on their walks and throughout their everyday life activities. These lines represented the so-called wander lines (*lignes d'errres*), which "need no translation they make felt through the force of the line and the thickness of multiple layers of tracings, one on top of the other, how subjectivity is produced in the moving. There is no question here of separating individual from movement, or individual from world. (...) What we see in the wander line palimpsests are bodies that resist organization: wander lines celebrate deviation, detour"¹⁰⁹.

Deligny's approach, therefore, appeared to us particularly interesting as it somehow represented one of the first attempts to go beyond verbal language and, in addition, to treat 'autistic space' as something that exceeds the conventional notions of space and of its representation.

¹⁰⁹ Ibidem.

4.2. Architects and neurodiversity: a glimpse at the current and most common design responses

The aim of this section, instead, is to show a series of approaches and projects developed by architects and designers and currently used in situations where they are required to deal with neurodivergent subjects.

As I mentioned before, this review is the result of a research I carried out at the beginning of our experiment, which could allow us to dialogue and reflect on the way in which the theme of neurodiversity in the fields of architecture and design is dealt with today.

It should be pointed out that, given the very limited time in which this research took place, it was in no way intended to provide an exhaustive picture of the ‘state of the art’ in these fields, but rather to allow us to identify some recurring logics and ways of working. I am aware that, in doing so, I have inevitably overlooked a much wider range of experiences and reflections, which could certainly be useful for a more extensive and accurate analysis of the issues at stake¹¹⁰.

110 For example, later on, long after the short period in which I carried out the research, and already during the writing of this thesis, I discovered other interesting works, which would certainly have allowed us to carry out a more in-depth investigation and critical analysis. Among these works are, for example, analyses of references to built space in the anti-biographies: Baumer S. and Heylighen, A. (2010) Harnessing Different Dimensions of Space. *The Built Environment in Anti-Biographies*. In P. Langdon et al. (eds.) *Designing Inclusive Interactions*, pp. 13-23. London: Springer-Verlag; Kinnaer, M. et al. (2016) Autism-friendly architecture from the outside in and inside out: An explorative study based on autobiographies of autistic people. *Journal of Housing and the Built Environment* 31(2): 179-195; interviews to autistic users: Nguyen, P., D’Auria, V. and Heylighen, A. (2020) Detail matters: Exploring sensory preferences in housing design for autistic people. In Langdon, P. et al. (eds.) *Designing for inclusion*, pp. 132-139. London: Springer Verlag; Baumer S., Heylighen, A. (2014) Performing their Version of the House. Views of an Architectural Response to Autism. In M. Maudlin and M. Vellinga (eds.) *Consuming Architecture*, pp. 57-69. Abingdon, UK: Routledge; Eisazadeh, N., Heylighen, A. and Houbart, C. (2020) Learning from disabled people about qualities and obstacles in historic cities. The case of Liège. *Value of heritage for tourism*. Proceedings of the 6th UNESCO UNITWIN Conference 2019, pp. 55-67. Leuven, BE: University of Leuven; Heylighen, A. (2020) How can different kinds of minds inform campus design? Reflections on a field experiment. Conference: SENSING SPACES, PERCEIVING PLACE - ANFA 2020 VIRTUAL CONFERENCE; Nguyen, P., D’Auria, V. and Heylighen, A. (2021) Understanding independent Living with Autism: The role of the housing environment in the experiences of two autistic men. *European Journal of Creative Practices in Cities and Landscapes*, 3(2): 8-30. Available at: <https://cpcl.unibo.it/article/view/10781/12411>; analysis of autistic people’s approach to design: Baumer S. and Heylighen, A. (2015) Capturing Experience: An Autistic’s Approach to Designing Space. *The Design Journal* 18(3): 237-243; co-analysis with autistic people: Baumer S. (2012) *Beyond Known Worlds. A Fragmentary Exploration of Encounters between Autism and Designing Space*. Leuven, BE: KU Leuven; Tackx, E. (2020) *Student life on the autism spectrum. How the built and social environment affect the experience of living in a student accommodation*. Leuven, BE: KU Leuven; a design studio that include people with Down Syndrome, autism and intellectual disabilities: La Casa de Carlota & friends, <https://www.lacasadecarlotaandfriends.com/en/the-studio>. Other interesting works include: Matusiak, M. (2021) How to create an autism-friendly environment. Living Autism Ltd: <https://livingautism.com/create-autism-friendly-environment/>; Bettarello, F., Caniato, M., Scavuzzo, G. and Gasparella, A. (2021) Indoor Acoustic Requirements for Autism-Friendly Spaces. *Applied Sciences* 11(9): 3942.

Moreover, I would like to underline that, although I have grasped and summarised only a few aspects, many of the approaches and projects I have collected are articulated in a much broader way. They are also the result of considerable, appreciable efforts. Many of the architects and designers who developed them certainly show a strong interest in, and sensitivity to, the subject.

However, our joint analysis allowed us to identify some of the problematic aspects inherent in these works.

Below, I will show some of the ‘design responses’ that we analysed and commented on together¹¹¹, and briefly report our critical reflections on each of them.

At the end of the section, I will again list the problematic aspects that we have identified in a series of points, so that the reader may have a more complete overview of what has emerged from our meetings and discussions.

111 Other works that we analysed and discussed, but which I do not report below for the sake of brevity, include, for example: Scott, I. (2009) Designing learning spaces for children on the autism spectrum. *Good Autism Practice (GAP)* 10(1): 36-51. Available at: http://www.swarch.co.uk/wp-content/uploads/2017/03/41_2009_Good-Autism-Practice-101-2009-Iain-Scott_Designing-Learning-Spaces-for-Children-on-the-Autism-Spectrum.pdf; Decker, E. F. (2014) A City for Marc, an inclusive urban design approach to planning for adult with autism. Master thesis, Department of Landscape Architecture, Regional + Community Planning. College of Architecture, Planning + Design, Kansas State university. Available at: <https://krex.k-state.edu/dspace/handle/2097/17606>; Van Steenwinckel, I. (2015) *Offering architects insights into living with dementia Three case studies on orientation in space-time-identity* (doctoral dissertation). Kampenhout, BE: KU Leuven; Schelings, C. and Elsen, E. (2017) Inclusion of Down Syndrome in Architectural Design: Towards a Methodology. *Proceedings of the second international conference on Universal Accessibility in the Internet of Things and Smart Environments*, pp. 20-25.

‘DESIGN RESPONSE’ 1

According to architect and professor Magda Mostafa, “[t]he key to designing for autism seems to revolve around the issue of the sensory environment and its relationship to autistic behavior. [The latter] – which is characterized by repetitive behavior, limited communication skills, challenges in social interaction and introversion – may be a result of a malfunction in sensory perception. This malfunction may take the form of hyper-sensitivity or hypo-sensitivity, in its various degrees and across the scope of all the senses, leaving individuals with autism with an altered sensitivity to touch, sound, smell, light, color, texture etc. In other words, this leaves them with an altered sense of the world around them”¹.

Mostafa’s *Autism ASPECTSS™ Design Index* proposes the following design principles (or guidelines):

Acoustics:

“This criterion proposes that the acoustical environment be controlled to minimize background noise, echo and reverberation within spaces used by individuals with ASD. The level of such acoustical control should vary according to the level of focus required in the activity at hand within the space, as well as the skill level and consequently severity of the autism of its users”².

Spatial Sequencing:

“This criterion is based on the concept of capitalizing on the affinity of individuals with autism to routine and predictability. (...) [It] requires that areas be organized in a logical order, based on the typical scheduled use of such spaces. Spaces should flow as seamlessly as possible from one activity to the next through one-way circulation whenever possible, with minimal disruption and distraction”³.

Escape Space:

“The objective of such spaces is to provide respite for the autistic user from the over-stimulation

1 Mostafa, M. (2014) “Architecture for Autism: Autism ASPECTSS™ in School Design.” *Archnet-IJAR: International Journal of Architectural Research* 8(1): 143-158, p. 144.

See also: Mostafa, M. (2008) An Architecture for Autism: Concepts of Design Intervention for the Autistic User, *Archnet-IJAR: International Journal of Architectural Research* 2(1): 189-211.

More information can be found at: <https://www.autism.archi>

2 Ibid. p. 147.

3 Ibidem.

found in their environment. (...) Such spaces may include a small partitioned area or crawl space in a quiet section of a room, or throughout a building in the form of quiet corners. These spaces should provide a neutral sensory environment with minimal stimulation that can be customized by the user to provide the necessary sensory input”⁴.

Compartmentalization:

“The philosophy behind this criterion is to define and limit the sensory environment of each activity, organizing a classroom or even an entire building into compartments. Each compartment should include a single and clearly defined function and consequent sensory quality. The separation between these compartments need not be harsh, but can be through furniture arrangement, difference in floor covering, difference in level or even through variances in lighting. The sensory qualities of each space should be used to define its function and separate it from its neighboring compartment. This will help provide sensory cues as to what is expected of the user in each space, with minimal ambiguity”⁵.

Transition Zones:

“Working to facilitate both Spatial Sequencing and Sensory Zoning, the presence of transition zones helps the user recalibrate their senses as they move from one level of stimulus to the next. Such zones can take on a variety of forms and may be anything from a distinct node that indicates a shift in circulation to a full sensory room that allows the user to re-calibrate their sensory stimulation level before transitioning from an area of high-stimulus to one of low-stimulus”⁶.

Sensory Zoning

“This criterion proposes that when designing for autism, spaces should be organized in accordance to their sensory quality, rather than the typical architectural approach of functional zoning. Grouping spaces according to their allowable stimulus level, spaces are organized into zones of ‘high-stimulus’ and ‘low stimulus’. The former could include areas requiring high alertness and physical activity such as physical therapy and gross motor skill building spaces. The latter could include spaces for speech therapy, computer skills and libraries. Transition zones are used to shift from one zone to the next”⁷.

4 Ibidem.

5 Ibidem.

6 Ibid. pp. 147-148.

7 Ibid. p. 148.

Safety

“A point never to be overlooked when designing learning environments, safety is even more of a concern for children with autism who may have an altered sense of their environment. Fittings to protect from hot water and an avoidance of sharp edges and corners are examples of some of these considerations”⁸.

This approach reveals a certain reductionist and generalising tendency towards the sensory experiences of autistic subjects, observed in the light of clinical studies and labelled mostly as ‘malfunctions’. The principles, or guidelines, outlined in the *Autism ASPECTSS™ Design Index*, appear vague and solutionist.

‘DESIGN RESPONSE’ 2

Among other things, in their book, drawing on what they define as “Foundational Theories for ASD”⁹ (at the crossroads of design, medicine, psychology, and psychiatry and focused on the study of human-environment experience), the authors of *Designing for Autism Spectrum Disorders* outline a number of recommendations to design spaces that might be suitable for people with ASD (autism spectrum disorders).

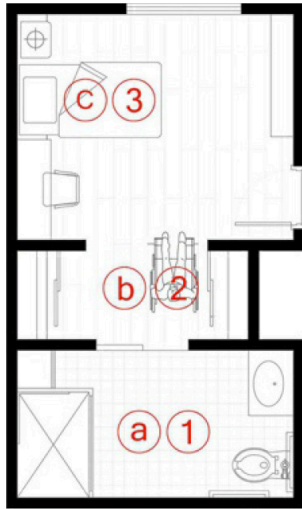
Designing to Promote Routine

“Individuals with ASD tend to thrive in environments that are laid out in orderly, predictable ways. Spaces should be straightforward and easy to navigate. This is because individuals with autism have difficulty forming mental maps of spaces they travel through. (...) Reinforcing routines may be accomplished through incorporating appropriate adjacencies (...) and configuring spaces to communicate the sequencing of activities”¹⁰.

⁸ Ibidem.

⁹ Gaines, K., Bourne, A., Pearson, M. and Kleibrink, M. (2016) *Designing for Autism Spectrum Disorders*. London and New York, Routledge, pp. 45-56.

¹⁰ Ibid. p. 158.



Designing for Routine.



Designing for Routine: Organized storage of personal items helps establish and reinforce routines.

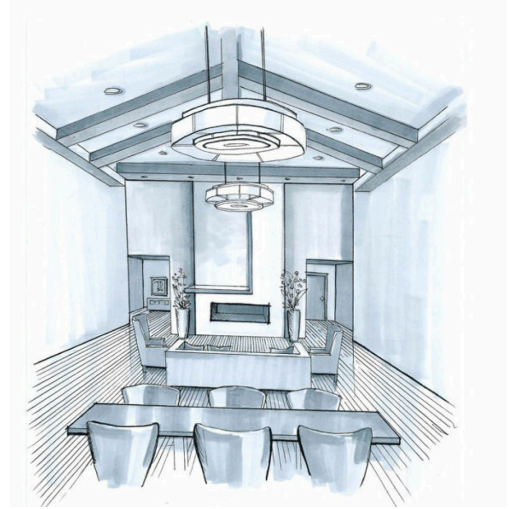
Designing for Predictability

“One of the keys to providing empowerment to people with ASD is to help them gain independence. Improving an individual’s ability to navigate throughout spaces is especially important for empowerment and independence. Clear sight lines, definable architectural forms and surfaces, and purposeful, meaningful spaces serve as modeling devices that help the occupant learn independently. Careful configuration and application of the forms within a space—including ceilings, floors, walls, and architectural features and fixtures including doors, windows, cabinetry, and furnishings—all contribute to empowerment and predictability. Building materials, finishes, textures, patterns, and colors provide meaning within a space and serve as a learning tool that can empower an individual with ASD to be more independent. Providing transparency throughout spaces can allow individuals to predict what is around them. (...) The opportunity to preview a space before entering also permits them to observe, ponder, digest, and learn what appropriate behavior is and to develop an understanding of what activities take place in a room.

(...) Designers can bring order to spaces by:

- clearly defining individual parts and groupings
- identifying intersections of spaces
- clarifying the intent of visibility
- creating sequencing of spaces
- creating hierarchal arrangement of spaces”¹¹

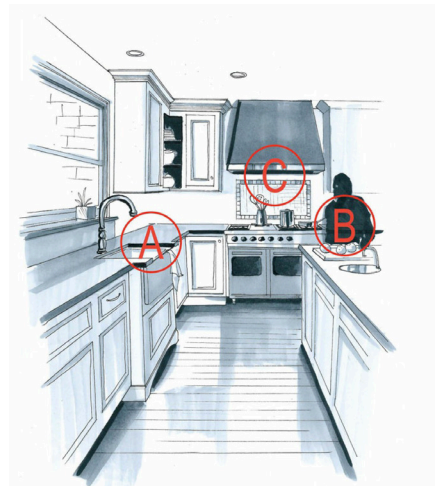
¹¹ Ibid. p. 160.



Designing for Predictability: Views from a distance provide insights into the purpose and activities of a particular space.

Communication of Purpose

“Providing spaces that communicate their purpose and the expected behaviors within the setting is important to help a person with ASD fit into an environment and contribute in a productive and meaningful way. Careful manipulation and configuration of built forms like furnishings, finishes, and equipment allows an individual with ASD to experience and maneuver through a space with cognitive clarity. For example, spaces, such as kitchens, that demonstrate food preparation, storage, and clean up areas help individuals on the spectrum understand the meaning and purpose of each space. The visual representation of fixtures, equipment, appliances, and cabinetry helps put a space into context. (...)”¹²



Communication of Purpose: Careful spatial arrangements of plumbing and cooking fixtures help indicate the function of a space and the sequence of events.

¹² Ibid. p. 162.

Wayfinding

“Clearly defined access, entries, and exits enable one to approach a social setting, engage in conversation, and leave if he or she is overwhelmed. Predictable, permanent landmarks also help individuals with ASD orient themselves in a given space. Carefully laid out landmarks such as columns, archways, and views to a garden leave a lasting impression on people. These landmarks can also help people remember where they have been and where they want to go. Identifiable, permanent features also enable individuals to see and make connections with the space around them. (...) All of these triggers are important in communicating how an individual on the spectrum should act in different settings. Various applications of the elements and principles of design such as pattern, texture, light, and color in the environment can help one adjust to social settings, because people on the spectrum rely on the sense of touch to make their way through a space. (...)”¹³



Designing for Wayfinding: Clearly defined architectural forms and finishes help those with ASD find their way.

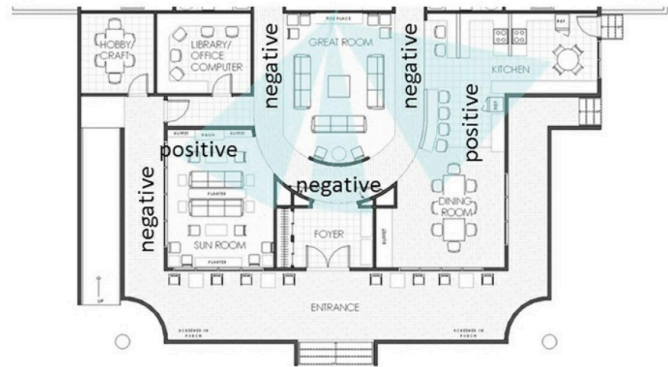
Designing for Social Interaction

“(...) Designing spaces that respect the social inhibitions common in people with ASD means creating environments that help them overcome their ‘mind-blindness,’ the lack of ability to understand the way others think and behave, read body language, facial expressions, etc. Providing opportunities for one to look and see what is going on in a space is one way to help them overcome their mind-blindness. This can be achieved in several ways such as creating positive versus negative space, providing homelike settings, and providing opportunities for prospect and refuge. (...)”¹⁴

¹³ Ibid. p. 165.

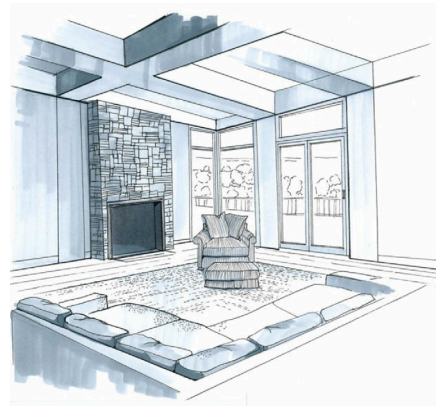
¹⁴ Ibid. p. 167.

The adjacencies of positive and negative spaces in the plan provide interventions for social interaction.



Engagement

“Several design interventions are recommended to help a person with ASD fit into the environments they use. (...) Providing a sheltered space where individuals can look onto other settings can create areas for prospect. Incorporating both open and closed spaces into the building configuration and using floor-to-ceiling windows like those found in a sunroom also enable individuals to gain control over their environment and feel more engaged. These types of spaces allow individuals with ASD to ‘visually test the waters’ and observe their surroundings without being noticed. This is important for these individuals’ well-being, as they are often intimidated by large group settings and are unsure of what is expected of them in certain social settings. (...) Contrary to the manner in which NT [neurotypical] people perceive space, most people with ASD perceive their surroundings in pieces rather than as a whole. Because of this challenge, it is important to organize or group objects, fixtures, and equipment in such a manner that they make up a whole. (...) Pattern helps code a space to communicate with the complex mind, breaking it down into parts that make up a whole. The parts act as a communication tool to construct the whole and thereby foster communication (...). One way to achieve this is to arrange seating in groups that are demarcated by floor finishes. (...)”¹⁵



Defining areas with area rugs and ceiling structures help contain a space within an open-concept plan and help the occupant feel grounded.

15 Ibid. p. 169.

Enhancing Communication Skills to Aid Social Interaction

“Articulating needs and participating actively in conversation is difficult for many adults with ASD. Often the environment did not encourage them, although they may have completed several years of speech development and exposure to a variety of situations where they could practice communicating. Design interventions that are strategically implemented into the built environment may help people with ASD develop their ability to speak and act appropriately. Rooms with an open-concept layout and versatile seating layouts allow one to sit with another person, in a group, or alone in a room and permit viewing from a variety of angles. Ensuring these spaces have minimum vertical obstructions, such as columns, can encourage social interaction. Ensuring there is natural light in every room also promotes social interaction. Additionally, having an organized, clutter-free environment with a neutral color palette helps individuals concentrate on the conversation or activity taking place. A space with too many objects or patterns, (...), may cause individuals on the spectrum to become distracted. (...)”¹⁶

Variation in ceiling heights provides options for the occupants. Lower ceiling heights provide for intimate, quiet engagement, whereas higher ceiling levels encourage more extraverted engagement.



Again, what is evident in this approach is a rather clear certainty – obtained, it seems, with the support of medical studies and what the authors call ‘Foundational Theories for ASD’ – as to what issues are at stake. The vague recommendations listed show a clear solutionist orientation, aimed, among other things, at ‘helping’ individuals living with ASD, who are again deemed ‘malfunctioning’ (the authors, for example, point out how this approach can help these people ‘to overcome their ‘mind-blindness,’ i.e. the lack of ability to understand the way others think and behave’¹⁷). In addition, they are accompanied by images depicting Euclidean and volumetric spatial representations. The peculiar spatial perceptions and ways of experiencing space of different subjects are ignored.

¹⁶ Ibid. p. 173.

¹⁷ Cf. Ibid. p. 167.

‘DESIGN RESPONSE’ 3

In her paper titled *Neurodivergent Themed Neighbourhoods as A Strategy to Enhance the Liveability of Cities: The Blueprint of an Autism Village, Its Benefits to Neurotypical Environments*, architect Eurydice Rayanna Lo Chan “explores the existing design guidelines through recommendations on how spaces can be articulated by considering the value of savant skills and productive vocational skills for individuals living with ASD. [It] hopes to enlighten built environment practitioners in designing spaces where different populations can co-exist, particularly those with varied abilities. The environmental needs of ASDs and the proposed spatial interventions also extend its benefits to the well-being of neurotypicals”¹⁸.

Lo Chan, therefore, considers it necessary to involve ASD individuals themselves in order to understand their real needs. In this regard, she shows a survey questionnaire she used for her research.

“The participants invited are Filipinos of any gender and aged eighteen and above. The reason being (1) living environments specifically designed for ASD individuals are yet to exist in the Philippines; (2) the research targets the adult ASD population group; (3) to investigate if culture has a direct influence on their spatial preferences. The survey was done in the form of a questionnaire which was sent through electronic mail, the preferred mode of communication by the interested participants. The questions were derived from a review of existing literatures that established the ‘common’ attributes of ASD individuals (...) and ‘appropriate’ environments for ASD individuals (...). Since qualitative data is most relevant and significant for this study, most of the questions are intentionally subjective (...). This is to encourage the participants to freely give their insights. In cases where the individual cannot express his or her opinions, the questionnaire was answered by a family member who can best discern what is most suitable for them or how the individual would have answered it”¹⁹.

18 Lo Chan, E. R. (2018) Neurodivergent Themed Neighbourhoods as A Strategy to Enhance the Liveability of Cities: The Blueprint of an Autism Village, Its Benefits to Neurotypical Environments. *Urban Sci* 2(2): 42, p. 1.

19 Ibid. p. 3.

**NEURODIVERGENT THEMED NEIGHBOURHOODS
AS STRATEGY TO ENHANCE THE LIVEABILITY OF CITIES**
The Blueprint of an Autism Village, its Benefits to Neurotypical Environments
QUESTIONNAIRE

Gender: ☐ Male ☐ Female

Age:

* Note: You can ✓ more than one answer if it is applicable to you. If you are a parent of the ASD individual, please answer the questions on behalf of your child.

1. Who are you?
 - ☐ ASD individual
 - ☐ Parent of an ASD individual
 - ☐ Others (i.e., carer/therapist of an ASD individual)
2. Who are you (referring to the ASD individual) currently living with?
 - ☐ None (Living independently)
 - ☐ Parents and relatives
 - ☐ Co-individuals with ASD
 - ☐ Others (i.e., carer/therapist)
3. Who do you (referring to the ASD individual) like to live with?
 - ☐ None (Live independently)
 - ☐ Parents and relatives
 - ☐ Co-individuals with ASD
 - ☐ Others (i.e., carer/therapist)
4. Living in:
 - ☐ a landed house
 - ☐ a condominium
5. Living in:
 - ☐ single storey
 - ☐ multi-storey
6. If given a choice, do you prefer to live in a:
 - ☐ a landed house
 - ☐ a condominium
7. Do you like your house? ☐ Yes ☐ No (skip no. 7 & jump to no. 8)
8. If yes, which part of your house do you like most?

Survey Questionnaire (Page 1 of three), p. 17.

In spite of its attempt to stimulate architects to design ‘spaces where different populations can co-exist’, stressing the importance of also taking into consideration the opinion of individuals ‘living with ASD’, this study presents a series of problems. Firstly, emphasis is placed on the figure of the ‘autistic savant’, that is, an ‘individual with autism who has extraordinary skills not exhibited by most persons’²⁰. In section 4.1.3.3 we have already seen how Judge strongly criticises the prejudice inherent in defining some of these individuals as ‘high-functioning’. This definition, besides negatively marking those who are on the other side of the binomial – that is, those who would be ‘low-functioning’ –, denotes a “categorisation based on one’s capacity to ‘pass for normal’ rather than a true assessment of individual capabilities”²¹.

Furthermore, the participatory modes used by this study are pre-set and token. They revolve around verbal language and, where the subjects they want to involve do not express themselves in this way, they rely on what their relatives say about them.

‘DESIGN RESPONSE’ 4

Autism Planning and Design Guidelines 1.0, a research carried out by the Ohio State University City and Regional Planning Students, was aimed at providing “a planning and design framework (...) that can create effective policies for professionals who are interested in improving the built environment so adults with autism can thrive”²².

As the students point out, the “research employed a semester-long review of the literature, two focus groups (adults with autism and parents of adults with autism) and a design and policy charrette over an academic year”²³.

20 Cf. Ibid. p. 6.

21 Judge, S. M. (2018) Languages of sensing: Bringing neurodiversity into more-than-human geography, p. 6.

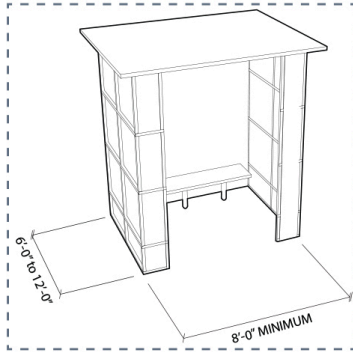
22 The Ohio State University City and Regional Planning Students, *Autism Planning and Design Guidelines 1.0*, Knowlton School of Architecture (City and Regional Planning). Attempt 1.0 August 2017 - December 2018, p. 5.

The booklet is available at: <https://www.housingonline.com/wp-content/uploads/2019/11/Autism-Planning-Design-Guidelines-December-2018.pdf>

23 Ibid. p. 6.

C. BUS STOPS

(feeling safe, feeling clear, feeling connected, feeling calm, feeling private)



FROM THE RESEARCH

The research indicates that confusion and anxiety associated with transportation can be alleviated by a more humane design for bus stops. Comfort and safety are important.

GUIDELINES

Shelters shall be a minimum of 8' 0" wide and have a maximum depth of between 6'0" and 12'0". Bus stops shall feature shelters and provide adequate, comfortable seating. Bus stops shall be equipped with an interactive digital help and route display board. The interactive help and route display board shall feature a function that indicates that a passenger is waiting on a particular approaching bus. All bus stops shall provide the same amenities for passengers that busier routes or larger bus stations may have.

D. PARKING GARAGES

(feeling safe, feeling clear, feeling private, feeling calm, feeling connected)

FROM THE RESEARCH

Concerns over safety and wayfinding in parking areas including parking garages were prominent. Creating designated clearly-marked walking areas helps to make garages safer for the people walking through it, and safer for the drivers through. Concerns over memory and "drifting off" were shown in the research, so creating a more visual way to remember where the car is parked is important. Adding color to in addition to each parking level number can make it easier to remember. Adding speed bumps and signage to crosswalks creates extra precautions for drivers to create a safer walking environment. Adding sidewalks provides an extra layer of safe space for pedestrians.

GUIDELINES

Parking garages shall have clearly-marked sidewalks along garage walls that direct pedestrians to elevators and stairs.

Crosswalks shall be present on each level of the parking garage with visible directional signage.

There shall be speed bumps on either side of the crosswalk. Each level shall have a color along with a level number.

E. PARKING LOTS

(Feeling safe, feeling clear, feeling private, feeling free)

FROM THE RESEARCH

Concerns about safety and wayfinding in parking lots are widely shared. Creating a color/symbol coded system that shows exactly where cars will be driving and where it is safe to walk will help adults with autism more easily navigate a parking lot. The idea for a circular pick-up/drop-off zone was gleaned from the need for safety and clarity. (See Appendix Page 142.) The minimum of 25'0" radius dimension idea was based on the average length of a car so that a car can be parked along the sidewalk to allow other cars to pass.

GUIDELINES

Parking lots shall connect parking spaces to a destination using sidewalks.

The crosswalk shall further protect pedestrians from automobiles with speed bumps and signs for yielding or stopping.

Parking spaces shall be separated into clearly-identifiable, marked sections.

Wayfinding from the destination shall include visual directions on the sidewalk to parking sections.

If a pick-off/drop-off location is needed, its radius shall be 25'0" minimum.

Guideline's examples: 'common infrastructures', p. 16.

TO BE READ ALOUD BY DR. AMIGO (FOCUS GROUP 1) – VERBAL CONSENT FOR PARTICIPATION IN FOCUS GROUP FOR ASD ADULTS

Hello,

You are invited to tell city planners how they can improve your lives by building better places. The benefits of this research will provide useful information that will contribute to the city planning profession for adults on the ASD spectrum. Your answers will be recorded by a professional stenographer who will create a transcript of your responses. No names will appear on the transcript.

If you agree to participate in this study, you will answer several questions. I encourage you to bring up other issues if you think there is something I have missed. Some of our questions have to do with how you move around town, what kind of house you prefer, how you play, work, and study.

Because of the open-endedness of the focus-group, the length depends in part on your answers. Based on past experience, I would anticipate that it would take up to 2 hours. Of course, you may end your participation at any point (or speak for longer if you like).

Confidentiality

As mentioned, your answers will be recorded by a professional stenographer who will create a transcript of your responses. Your name will not appear anywhere on the transcript. Until the completion of the study, only one file that links names to pseudonyms or numbers, but this will be kept on a separate computer or in a separate location from the transcripts themselves. Quotes your interview in future writings will be treated in manner that makes it impossible to identify you. The transcripts will be retained 5 years (this is a federal requirement) or until the completion of the research, whichever is longer. While we ask other group participants to keep the discussion in the group confidential, we cannot guarantee this.

Your participation is voluntary. If you don't want to participate, it won't impact your current or future relationship with the Ohio State University, or have any other consequence. There will be no penalty or loss of benefits to which you are otherwise entitled. Even if you agree to participate, you can stop the interview at any time, and you can, of course, also decline to discuss a particular issue or answer a particular question.

Potential Risks:

The risks may be no greater than those encountered in daily life, but no study is entirely without risks. At minimum, there could be a risk of participant breaching confidentiality even though they will be asked to keep the discussion in the group confidential. Again, while we do not anticipate any circumstances where confidentiality would need to be broken, there are always risks involved in focus groups such as the one we are proposing. Please be responsible, respectful of others, and do not discuss the conversation conducted in this focus group. Do not mention names to ensure confidentiality and privacy.

Contacts and Questions

If you have any additional questions concerning this research or your participation in it, or you feel you have been harmed as a result of participation, please feel free to contact Jonathan Ezell at ezell.5@osu.edu. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251. 12

Verbal consent: ASD adults, p. 72.

The guidelines developed, as in previous cases, are solution-oriented. It is not clear what their results might be in specific design situations. Again, the designers' intention appears to be that of using their technical expertise to 'help' autistic people, 'improving the built environment so that they can thrive'²⁴. The accompanying images show a Euclidean and volumetric spatiality.

The participatory process outlined, as shown by the format of the consent model addressed to autistic individuals, refers exclusively to those who express themselves verbally (another model, not shown here, is addressed to their relatives).

'DESIGN RESPONSE' 5

In their *Making Homes That Work. A resource guide for Families Living with autism spectrum Disorder + Co-occurring Behaviors*, architects George Braddock and John Rowell outlined "Six Most Common Home Modifications for a person with significant ASD"²⁵.

According to them, there are a few 'must have' for the home "to better support the life of an individual who experiences significant ASD (...). Each individual is unique, but environments where people experiencing Autism can live, learn, work and play successfully share many common characteristics. If you ask the right questions and get the fundamental patterns right, the whole environment will work better for everyone. The home will be a safer place, the individual will have more opportunity and choice, other supports can be more effective, and the family can be more stable and resilient to other stresses.

1. Autism-Friendly-home:

The focus in an Autism-Friendly Home is on reducing risk and anticipating activities. Broken windows, slipping, falls, broken or damaged furniture, special equipment or conveyances, unsafe applications, and non-functional hardware are addressed.

2. Connected home:

This will be a helpful resource if you are challenged by a lack of visibility between rooms, the need to ensure safety, or the need to monitor activities including self injury, seizures, and medical issues.

24 Cf. Ibid. p. 5.

25 Braddock, G. and Rowell, J. (2011) *Making Homes that Work. A resource guide for Families Living with autism spectrum Disorder + Co-occurring Behaviors*, p. 23. The booklet is available at: <https://www.communitylivingbc.ca/wp-content/uploads/2018/03/Making-Homes-That-Work-A-Resource-Guide.pdf>

3. The essential bathroom:

These modifications can help address the most common challenges related to incontinence, toileting issues, water play, keeping clean, flooding, slipping, damage to the bathroom, and falls, bad smells, and poor ventilation.

4. Walking loop:

An in-home 'loop' designed for pacing and stress relief can also address running, jumping, chasing, avoidance of social interaction, seclusion, and vestibular disorders.

5. Places of control + layers of freedom:

These examples can help address issues related to voluntary engagement, safe boundaries, fencing, preferred activities, eating disorders, and fears.

6. Tools for housekeeping:

A resource to address disorganization, chaos, inappropriate storage, bad smells, soiled furniture, ineffective housekeeping, and caregiver exhaustion²⁶.

Furthermore, the authors point out that, "because conventional housing does not meet the unique needs of some individuals with more significant ASD, failure of the environment contributes to caregiver fatigue, health and safety risks, problem behaviors, individual dissatisfaction, and failure to thrive. These are some of the major contributing factors in out-of-home placement. As a way of addressing this problem, this project makes the case for including environmental assessment and home modifications in person-centered planning. The evidence from actual projects and experience in practice indicates that appropriate modifications to the physical environment improves the likelihood that families will remain intact.

Traditionally, the environment has been viewed as neutral, and assistance for families in crisis has focused on human supports such as respite, medical interventions or trainings. This project challenges the prevailing assumptions that human supports alone are enough. It suggests that the right physical environment can help individuals and families experiencing ASD and co-occurring behaviors to live full, meaningful and rich self-directed lives, thereby making human supports more effective²⁷.

Each of these six recommendations, presented as 'the most common home modifications for a person with significant ASD', is further articulated in different subsets of design guidelines. Unlike other collected approaches, the authors explicitly state that "each

²⁶ Ibidem.

²⁷ Ibid. p. 55.

individual is unique”, and that these recommendations constitute “fundamental patterns” which, if followed, can ensure that “the whole environment will work better for everyone”²⁸. In the final part of the book, they also devote an entire section to recounting singular design encounters with different autistic individuals. For each of these encounters, there are lists of ‘modifications’ made in the different flats, a series of ‘lessons learned’ and, in some cases, even some ‘success stories’. However, the logic behind these recommendations and interventions remains solutionist. Architects appear as experts who can guarantee the best technical solution to ‘help’ each individual.

‘DESIGN RESPONSE’ 6

On their webpage, *ga architects* present themselves as an architectural firm specialised in the design of environments for children and adults with ASD and other learning difficulties.

They point out that “(...) [p]roviders of care and education for children and adults with ASD and other learning difficulties do not always have access to designers who are experienced in this specialist field. Furthermore, there has been a lack of recognition of the fact that a well-designed building can be influential in the lives of those that are coping with a disability and their carers. (...)”²⁹.

A section of the webpage is dedicated to listing a series of recommendations, or guidelines, for what they call ‘Friendly Design’³⁰, i.e. design that takes into account the needs of children and adults with ASD.

START WITH A GOOD LAYOUT

No corridors

Create a circulation space with areas for seating, socialising or sitting alone

Simple wayfinding

Curved walls add a humanising effect and eliminate harsh corners

By creating space we create choice

28 Ibid. p. 23.

29 Retrieved 17 November, 2019 from: <https://www.autism-architects.com/aboutautismdesign>

30 Retrieved 17 November, 2019 from: <https://www.autism-architects.com/autism-friendly-design>. Further information, as well as some articles written by the architects can be found at: <https://www.autism-architects.com>

COLOURS AND PATTERNS

Choose low arousal interiors
No complicated or fussy patterns
Avoid colours as red and orange
No highly reflective surface

ACOUSTIC

A sense of calm is essential
Noise will result in anxiety

HEALTH AND SAFETY

Good natural light and ventilation
Reduce glare with integral blinds
Reduce jumping and running opportunities
Secure windows with restricted opening

LIGHTING

Avoid harsh and flickering fluorescent lighting
Choose lighting with an indirect source where possible
Dimming controls will provide the opportunity to change the “mood” and offer choice of lighting intensity

HEATING

CHOOSE UNDERFLOOR OR CEILING HEATING

Eliminate radiators
Reduces jumping and “posting” opportunities
Provides an even and controllable heat zone by zone

PERSONAL SPACE (PROXEMICS)

Adequate personal space will reduce anxiety from being forced too close to others
Avoid crowded spaces with no choice to “escape”

SUPERVISION

Individuals are more content when they are free to express themselves without being under constant supervision

Good planning can contribute to unobtrusive supervision

SUSTAINABILITY

Low Carbon refurbishment

Reduce energy demand

Natural light

Indoor air quality and ventilation

Temperature and relative humidity

Mechanical

As in the cases analysed above, architects present themselves as experts in designing for autistic individuals, offering solutions in terms of vague guidelines. They seem to resort to psychological and medical explanations of what autism is. In general, a certain generalisation and simplification is clearly recognisable.

‘DESIGN RESPONSE’ 7

Design for Dementia, as the authors explain, is a Design Guide in 2 volumes³¹ “which aims to assist designers and others working in the built environment to tackle the challenge of dementia in society”³².

In volume 1, architect Bill Halsall outlines ‘six key design principles’ to “guide our thinking about ‘Design for Dementia’, whether in the context of specialist care, housing design or planning the wider environment.

1. Familiarity

People living with dementia relate to their environment through familiar places, objects, or landmarks.

31 Cf.: Halsall, B. and McDonald, R. (2015) ‘Design *for* Dementia Volume 1 - A Guide, Halsall Lloyd LLP. Available at: http://www.hlpdesign.com/images/case_studies/Vol1.pdf; Halsall, B. and McDonald, R. (2015) ‘Design *for* Dementia’ Volume 2 - Research Projects, Halsall Lloyd LLP. Available at: http://www.hlpdesign.com/images/case_studies/Vol2.pdf.

32 Halsall, B. and McDonald, R. (2015) ‘Design *for* Dementia Volume 1 - A Guide, Halsall Lloyd LLP, p. 1:1.

Familiar faces of family friends and neighbours become very important. Memory of past times and events may be more easily recalled than recent events. (...)

2. Distinctive Environments

To assist people with dementia to move freely and independently around their homes and their neighbourhood, environments must generate a sense of place through distinctiveness of design. (...)

3. Legibility

To navigate their surroundings people with dementia need help in finding their way to where they want to go. (...)

4. Accessibility

The design of all environments must respond to the needs of a full range of users including those living with dementia. (...)

5. Comfortable and Stimulating Environments

Environments should reduce stress and disorientation and encourage participation, conversation and activity. (...)

6. Safety

The safety of people with dementia in both the home environment and the external spaces they use, is obviously a critical design requirement. (...)”³³.

These principles, each containing a set of recommendations that designers are invited to follow for their implementation, were defined through research initiatives based on a participatory approach. That is, the designers not only collaborated with local communities and stakeholders, the academic community and health professionals, but also involved people living with dementia.

The How Dementia Friendly is our City project, for instance, “was facilitated using ‘photo cue’ cards (...). In a ‘Living Lab’ we asked a mixed group of people to comment on a range of themed photographs of different locations and to record their views on the back of the cards. The exercise asked for responses from a user viewpoint including the viewpoint of those living with dementia and using the shared public realm of our city centre. An Equality Act ‘mini-audit’ provided a parallel commentary to the photo cues”³⁴.

33 Ibid. p. 6:1.

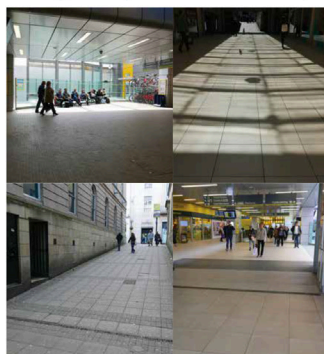
34 Ibid. p. 4:7. Further information on this project can be found in the second volume: Halsall, B. and McDonald, R. (2015) ‘Design for Dementia’ Volume 2 - Research Projects, Halsall Lloyd LLP, pp. 2:1-2:14.

EXTRACTS FROM VOLUME 2 - *Summary of comments received at the Town Hall event and the DAA meeting in response to a series of images (photo cue cards)*



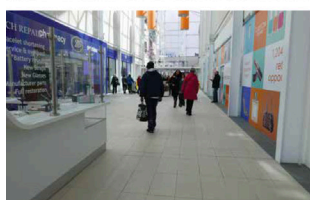
Comments from Workshop Participants

- Seats are uncomfortable, don't look like seats.
- Arbitrary paving patterns
- Grey bins blend in with grey floor
- Noise of buskers
- Cacophony of noise - buskers etc
- 'An awful place'
- Lively, busy, active, the centre of 'town' and it is important that this space is welcoming to all
- Seating is same colour as floor - would be better if seating was a different colour.



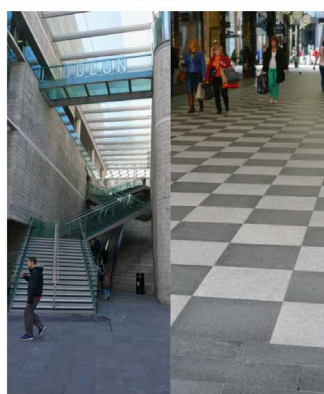
Comments from Workshop Participants

- Good use of natural light
- Good sitting space
- Handy for bikes
- Shadows on paving could cause a disturbing pattern
- The shadows make it difficult to judge the surface
- The ramp is too steep, difficult in high heels or when wet
- Handrails on the ramp?
- No steps as an alternative?
- The gradient of the ramp is too steep
- Black mat could read as a hole and cause someone with dementia to hesitate - potential accident.



Comments from Workshop Participants

- Signs written on glass are very hard to read and seem very unclear.
- Should there be a tapping edge to assist visually impaired people?
- Black mat with shiny metal strips is disturbing
- Bollards are too low and distracting
- Black mat looks like a hole, or a step up
- The glass door needs clearer signs.



Comments from Workshop Participants

- 'Jazzy' paving pattern could be disturbing for people with dementia
- Checks on the floor design are very confusing and look very disorientating
- Hidden dark escalators
- Glass balustrades are disturbing
- Could bang your head on the stairs
- No clear signs - need a sign at eye level to say 'Odeon'.

Summary of comments: participatory workshop *The How Dementia Friendly is our City project*, p. 4:6.

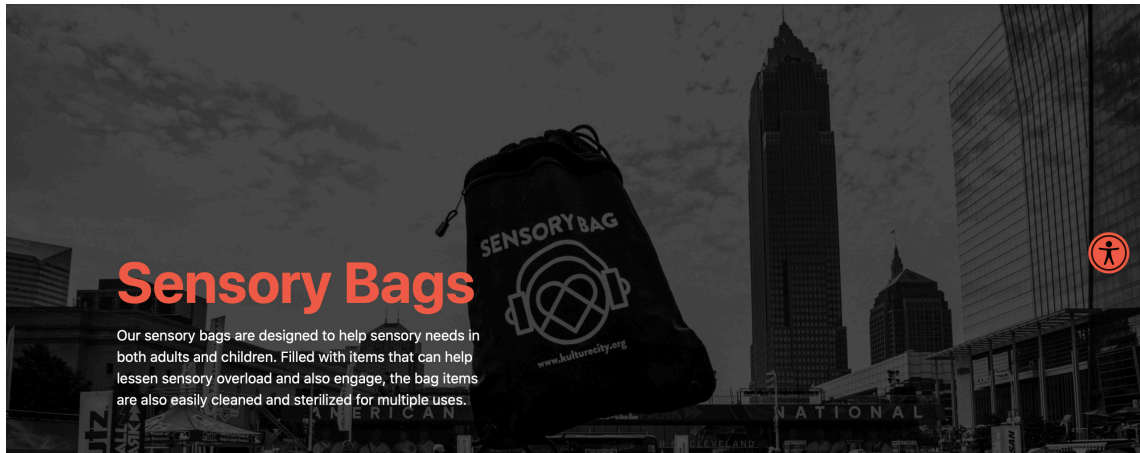
Despite the fact that, like the other works and projects analysed above, this study reveals a particular attention and sensitivity towards the subject, the principles and the numerous recommendations, or guidelines, proposed by the authors – in relation to different spatial contexts, that is, from public space to private homes or dementia care clusters – remain on a generic and solutionist level. In other words, no reference is made to any specific situation or design encounter with an individual living with dementia, nor to the specific problems encountered.

In addition, although it is repeatedly emphasised in the volumes that these principles and recommendations have been defined through participatory processes, these appear to be mostly pre-established and expert-led. In general, therefore, the approach of this work is more like designing 'for' rather than 'with'.

‘DESIGN RESPONSE’ 8

KultureCity define themselves as the USA “leading nonprofit on sensory accessibility and acceptance for those with invisible disabilities”³⁵.

Their *Sensory Bags*, for instance, “are designed to help sensory needs in both adults and children. Filled with items that can help lessen sensory overload and also engage, the bag items are also easily cleaned and sterilized for multiple uses”³⁶.



Whats in our bag?



Headphones



Marble Fidget



Noodle Fidget



Tangle Fidget



ID Cards



KultureCity, *Sensory Bags*. Source: kulturecity.org

The company designs, produces and markets ‘sensory inclusive’ objects, programmes and certifications. What stands out the most is a reductionist and generic understanding of what the real ‘sensory needs’ of different individuals might be. There seems to be a very clear idea of what issues need to be addressed and how to solve them. The emphasis is on how such objects, programmes and certifications – mostly extremely expensive – can ‘help’ neurodivergent people.

35 Retrieved 18 November, 2019 from: <https://www.kulturecity.org>

36 Retrieved 18 November, 2019 from: <https://www.kulturecity.org/sensory-bags/>

‘DESIGN RESPONSE’ 9

David Burgher, an architect at Scottish practice Aitken Turnbull, developed the *Virtual Reality Empathy Platform (VR-EP)*, “a virtual reality tool that mimics the visual impairments experienced by dementia sufferers to help architects design better spaces. Burgher (...) worked with researchers from the Dementia Centre and the Glasgow-based CGI company Wireframe Immersive (...). The VR-EP kit comprises a laptop with high-performance graphics, a virtual reality headset, games controller, camera and bespoke software programming. Those wearing the virtual reality headset are able to experience some of the symptoms of dementia, including dimmer lighting. Burgher hopes the tool could be used to gauge appropriate lighting levels, room layouts and way-finding to improve design of care homes, hospitals and sheltered housing”³⁷.



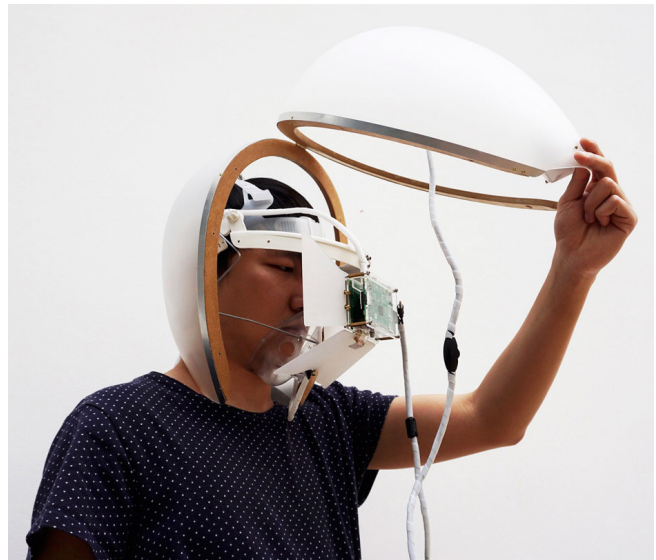
David Burgher, Visual showing appearance of a room without and with the *Virtual Reality Empathy Platform* headset (2017). Source: dezeen.com

The empathic approach used in this work, as well as in the other two shown below – namely the empathic tools of designers Di Peng and Heeju Kim – is very problematic and carries a number of risks. While I will elaborate more on these problems and risks later on (see the concluding part of this section), here I would just like to say that this approach is based on a strongly reductionist logic too, i.e. it treats the experiences of different autistic individuals as stable, already given and generalisable, and therefore assumes that it is possible to understand them simply by using particular technological devices.

37 Mairs, J. (2017) New virtual reality tool helps architects create dementia-friendly environments. Retrieved 18 November, 2019 from: <https://www.dezeen.com/2017/02/22/virtual-reality-empathy-platform-tool-help-architects-create-dementia-friendly-environments-david-burgher-aitken-turnbull-wireframe-immersive/>

‘DESIGN RESPONSE’ 10

Central Saint Martins graduate Di Peng designed a *Dementia Simulator* headset which let “wearers experience symptoms of the disease for themselves (+ movie). The helmet affects each of the senses, in an attempt to replicate many of the challenges faced by dementia sufferers. The translucent, egg-shaped device sits over the wearer’s entire head, and includes a mouthpiece, earpiece and screen that covers the eyes. Distorted sounds and critical comments are played back to mimic the auditory hallucinations experienced by those with dementia, while the mouthpiece makes it hard for the wearer to speak by muting certain words. The helmet’s visor affects vision by blurring out the faces of those nearby – a reminder of the challenges faced by patients that struggle to recognise individuals”³⁸.



Di Peng, *Dementia Simulator* (2016). Source: dezeen.com

For a critical reading, see design response n. 9.

³⁸ Tucker, E. (2016) Di Peng recreates the experience of dementia with sense-distorting helmet. Retrieved 19 November, 2019 from: <https://www.dezeen.com/2016/07/31/video-di-peng-dementia-experience-sense-distorting-helmet-central-saint-martins-graduate-movie/>

‘DESIGN RESPONSE’ 11

Royal College of Art graduate Heeju Kim designed a kit titled *An Empathy Bridge for Autism* which “uses sweets to recreate the tongue-tying experience of living with autism. Kim created three tools and a mobile application as part of the project (...). A set of six awkwardly shaped lollipops and candies impede tongue movement in various ways. They make it hard for users to hold a conversation, conveying how unclear pronunciation has an impact on autistic individuals.

An augmented-reality headset is worn over the eyes and connects to a smartphone to alter the user’s perception of what’s in front of them. It restricts the view of their periphery, gives them double vision or obscures their focus with a patch of black. Meanwhile, oversensitive hearing is simulated with a pair of headphones that amplify nearby sound. (...) Kim has a younger brother with autism, which prompted her to investigate ways of increasing understanding around the condition. She purposefully used low-cost materials as a way of making the kit easier to produce and share with a wider audience – and designed pieces in low-arousal colours favoured by people with autism”³⁹.



Heeju Kim, *An Empathy Bridge for Autism* (2017). Source: dezeen.com

For a critical reading, see design response n. 9

39 Tucker, E. (2017) Empathy kit uses augmented reality and candy to help users better understand autism. Retrieved 19 November, 2019 from: <https://www.dezeen.com/2017/01/08/heeju-kim-emapthy-bridge-kit-help-users-understand-autism-augmented-reality-candy/>

‘DESIGN RESPONSE’ 12

Judith Bower, internal trainer and Dementia Adviser at the Society in Lancashire, and Jane Souyave, Senior Graphic Design Lecturer at the University of Central Lancashire, developed the *Fidget Widget Toolkit*, a set of tools designed to provide meaningful activity for people with advanced dementia while also involving carers. The project was funded by Alzheimer’s Society.

“They wanted to dispel the myth that fidgeting is negative or a kind of ‘disruptive behaviour’. Instead, they decided to recreate repetitive fidgeting actions such as turning, twisting, rolling, pulling and flicking movements for positive ends.

(...) This aimed to raise awareness of how to communicate and connect with people in the later stages of dementia, when words may become difficult. Judith and Jane hoped to provide opportunities for people with dementia to engage in meaningful activities that could also involve carers. (...)

The tools are designed to not rely on memory or words, and not to represent a recognisable tool, such as a screwdriver or kitchen utensil. This means that people interact with them creatively, with no right or wrong way to use them.

Over a two-year period, the Fidget Widget Toolkit was tested in people’s own homes, day centres and care homes. A range of measures were used to measure its impact, including interviews and audio and video recordings. (...) Interactions with the Fidget Widget Toolkit enhanced the person’s wellbeing by supporting their psychological needs to feel occupied, engaged and included in a meaningful activity of their choice. According to carers, this effect was ongoing and lasting”⁴⁰.



Judith Bower and Jane Souyave, *Fidget Widget Toolkit* (2018). Source: qualitylife.org.nz

Beyond the ambiguity of the term ‘meaningful activity’, the approach used in this project is solutionist. The product is marketed without any mention of its construction process, of specific situations that Bower has been confronted with (if any). The designer, therefore, comes across as an ‘expert harbinger’ of a ‘good solution’ to help people living with dementia.

⁴⁰ Alzheimer’s Society (2018) The Fidget Widget Toolkit. Retrieved 19 November, 2019 from: <https://www.alzheimers.org.uk/Care-and-cure-magazine/winter-18/fidget-widget-toolkit>

‘DESIGN RESPONSE’ 13

Riga School of Design and Art graduate Paula Lorence created *Taktil*, “a series of objects to help children with autism spectrum disorders with their sensory development. The (...) collection features 12 objects made from eight types of materials that are designed to produce different tactile sensations when touched by children. (...)”

Lorence separated the objects into three levels. The first level is for children who are particularly sensitive, the second is for children who are more developed and can manage stronger tactile stimulation, the third level objects are used in situations when children have anxiety or panic attacks. The objects are made from a variety of materials, including silicone, wood, transparent plastic, aluminium, cork, bristle, felt and composite material silkstone. Each product is meant to produce a different tactile sensation.

The project aims to provide tools that can help children on the autistic spectrum achieve higher levels of concentration and reduce stress in their everyday lives. (...) She also spoke to parents of children with autism, who expressed the need for more products designed for those affected by the disorder”⁴¹.



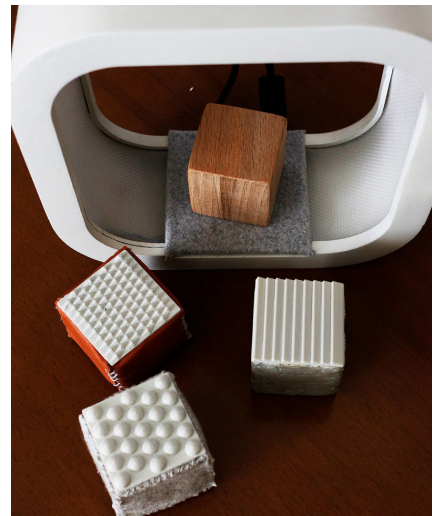
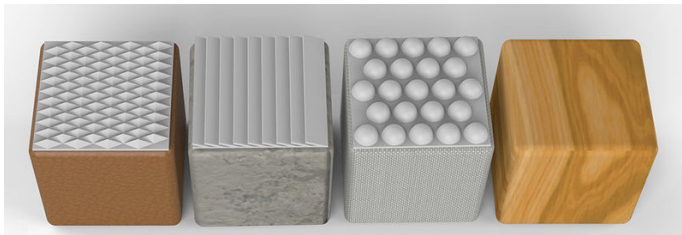
Paula Lorence, *Taktil* (2018). Source: dezeen.com

Again, the logic behind these objects is reductionist and solutionist. It seems to be very clear what the ‘sensory perceptions’ of different autistic children are and how to offer them ‘help’ through a particular technical solution. The design process that led to the realisation of these tools is not revealed. The designer is portrayed as an expert creator who is able to ‘do good’.

41 Yalcinkaya, G. (2018) Paula Lorence designs Taktil objects for children with autism. Retrieved 21 November, 2019 from: <https://www.dezeen.com/2018/10/15/paula-lorence-tactile-objects-children-autism-london-design-festival/>

‘DESIGN RESPONSE’ 14

Shirin Amini and Farid Hatimi designed the *‘Things’ therapy game*, “a therapeutic pastime for children, especially those with autism to help with sensory development and more. The game consists of the main light unit along with four cubes that feature various materials and textures on each side that can be positioned into the hollow frame of the illuminator. This helps children with becoming more comfortable with various textures, materials and lighting effects that they might be sensitive to, which will come as welcome news to parents. The ‘Things’ therapy game is specially designed by the creators to not have any intense colors or brightness levels in order to not trigger the user. The light itself also doubles as a nightlight for a dual-purpose functionality”⁴².



Farid Hatimi, *the ‘Things’ therapy game* (2019)
Source: yankodesign.com

For a critical reading, see design response n. 13.

⁴² Hemsworth, M. (2019) The ‘Things’ Therapy Game Helps with Sensory Development. Retrieved 21 November, 2019 from: <https://www.trendhunter.com/trends/therapy-game>

‘DESIGN RESPONSE’ 15

Tata Elxsi, the global design company, developed the *Smart Assistive Wearable*, a design concept that combines Mixed Reality (MR) and Smart Assistive Wearable Devices.

“These devices have been designed by the company to help people with special needs such as Autism or Alzheimer’s to deal with social situations, which they might otherwise find difficult. The system is deliberately discreet and the clever use of audio ensures others in the environment are less aware of the support being provided. For example, the device may help people recognise a person whose name they may have forgotten, or support the individual in stressful situations by playing music or pre-recorded calming phrases.

The devices employ Mixed Reality by taking information from input devices like discrete wearable cameras driving facial and environment recognition and microphones then feeding back to the user using earphones / ear buds and sound collars. These devices in turn help users to participate in social interactions by giving them subtle guides in the form of audio cues”⁴³.



Tata Elxsi, *Smart Assistive Wearable* (2020). Source: tataelxsi.com

As in the examples analysed above, the design concept and the technological devices designed and produced by this company are promoted as solutions that can ‘help’ neurodivergent people. The process is not revealed, nor are any issues raised during the process. Moreover, it is not clear how such devices can ‘help’ users to participate in social interactions, what these ‘subtle guides’ are, and according to what logic they have been created.

43 Tata Elxsi’s Smart Assistive Wearable Wins International iF Design Award. Retrieved February 16, 2020 from: <https://www.tataelxsi.com/news-and-events/tata-elxsi-s-smart-assistive-wearable-wins-international-if-design-award>

List of problematic aspects that emerged during the joint analysis

- a) What many examples reveal are functionalist readings of neurodiversity, as if the problems were already known, using ready-made neurological understandings of what is at stake. Most of these projects, in fact, use biomedical categories to learn about users or ‘summarise’ what they are, in order to find rather quick solutions.
- b) Many of them offer vague solutionist guidelines and bullet-points. It is not clear how these can be useful in practical terms and there is a risk that they may lead to a rather superficial approach. The specific material results of their application require more attention.
- c) Some proposals, although oriented towards the participation of neurodivergent people, use rather tokenistic and verbal language-centric devices and approaches, such as ready-made questionnaires or surveys (therefore targeting people with fewer verbal communication difficulties) when not using the experiences recounted by relatives. There is no apparent willingness or concern to investigate what participation might mean when dealing with less articulated people (an issue that lies at the core of our problematic brief, or crisis project). Thus, the modes of collaborative practice might be regarded as forms of ‘designing for’, and not of ‘designing with’. Architects and designers are always framed as expert harbingers of ‘the good’ through their more or less participatory technical interventions, in a rather technocratic fashion.
- d) Some projects adopt an ‘empathetic’ approach, based on the idea that designers can establish an affective and sensory connection to users. Anyway, this approach is inherently problematic and entails a number of risks. As Kim Kullman points out¹¹², in fact, various authors in the field of philosophy and neuroscience¹¹³ have questioned this view by signaling the complex relationship between simulation, cognition and embodiment. As the condition of others is only staged and experienced in isolated moments¹¹⁴, it is often inevitably reduced. In addition, many of these wearable simulations can lead to a ‘over-identification’¹¹⁵, exaggerating the environmental effects of ‘impairment’, whereby designers might consider themselves ‘as more representative

112 Cf. Kullman, K. (2016) Prototyping Bodies: A Post-Phenomenology of Wearable Simulations. *Design Studies* 47 (November): 73–90.

113 Cf. Coplan, A. and Goldie, P. (eds.) (2011) *Empathy: Philosophical and Psychological Perspectives*. Oxford, UK: Oxford University Press; Decety, J. and Ickes, W. (eds.) (2011) *The Social Neuroscience of Empathy*. Cambridge, MA: The MIT Press.

114 See also: Ratcliffe, M. (2012) Phenomenology as a form of empathy. *Inquiry: An Interdisciplinary Journal of Philosophy* 55(5): 473–495.

115 Cf. LaCapra, D. (2001) *Writing History, Writing Trauma*. Baltimore, MD: The Johns Hopkins University Press.

of other people' than they actually are¹¹⁶. Other authors have pointed out that the use of this approach in disability awareness training can be problematic¹¹⁷, as this can often reinforce stereotypical ideas about disabled people and disregard their actual and singular life experiences [i.b. V. 5]. In short, then, the so-called 'empathic' approaches oscillate between two extremes. On the one hand, there is a tendency to attribute to the designer the ability – derived from the presumption of his/her having the 'right' sensibilities – to face and 'solve', on the basis of the representation of his/her own isolated or occasional experiences, the problems at stake. On the other, there is a tendency to collect in typical categories the specificities – always irreducible – of individual disabled people. Furthermore, as Despret wonderfully points out: "[e]mpathy allows us to talk about what it is to be (like) the other, but does not raise the question 'what it is to be 'with' the other'. Empathy is more like 'filling up one self' than taking into account the attunement"¹¹⁸.

116 Cf. Nickerson, R. S., Butler, S. F. and Carlin, M. (2011) Empathy and knowledge projection. In J. Decety and W. Ickes (eds.) *The Social Neuroscience of Empathy*, pp. 43-56. Cambridge, MA: The MIT Press, p. 49.

117 Cf.: Burgstahler, S. and Doe, T. (2004) Disability-related simulations: If, when and how to use them in professional development. *The Review of Disability Studies* 1(2): 8-18; French, S. (1996) Simulation exercises in disability awareness training: A critique. In G. Hales (ed.) *Beyond Disability. Towards an Enabling Society*, pp. 114-123. London: Sage.

118 Despret, V. (2004) *The Body We Care for: Figures of Anthro-p-zoo-genesis*, p. 128.

i.b. V. 5 - Patricia Moore and her empathic experiment

Nevertheless, it should be acknowledged that some experiences that have been made using this approach are particularly interesting. For instance, Patricia Moore, an industrial designer and leader in the *Universal Design* movement, in 1978 embarked on an peculiar adventure, supporting a radical transformation of what had hitherto been the priorities of design. Particularly interested in the field of design for the elderly, Moore recounts her radical empathic experimentation in her book *Disguised: A True Story*¹. With the help of a professional make-up artist and friend, she disguised herself as an elderly woman, applying layers of latex to her face, wearing opaque glasses to blur her vision and earplugs to reduce her hearing. Disguised in this way, she tried to understand the everyday life of elderly people in the urban environment, and also attended a design conference. There, Moore witnessed that her fellow designers, unaware of her true identity, showed no care and attention to her. "A 'young-is-beautiful' bias, she wrote, dominated American design"².

1 Cf. Moore, P. and Conn, C. P. (1985) *Disguised: A True Story*. Waco, TX: Word Books.

2 Williamson, B. (2019) *Accessible America*, p. 171.

e) Some proposals show an emphasis on the ‘help’ – when not on the ‘control’ – that neurodivergent individuals might receive from/with a certain technological solution, thereby reducing them to a condition that is only impaired.

f) The spatiality of most of these proposals is Euclidean and volumetric, and when not showing a ready-made space, what architects (as seen in point b) tend to put forward are normative lists and checklists of what spaces need to have without much explanation.

To sum up, what the collected examples seem to reveal is a neurotypical design approach to neurodiversity. Therefore, what we asked ourselves was: how can this model be challenged and overcome? What would a participatory design involving those who challenge Kantian subjectivity models consist in? What would a neurodiverse spatial practice be? These questions, therefore, inspired the following steps of our experience. First of all, however, I will dwell on the reflections of some authors who, during our exploration, have represented a remarkable source of inspiration to better define the contours and implications of what could be considered a neurotypical way of understanding – and living – space, as well as to help us grasp the extraordinary value and potential of its existing and yet to be explored alternatives.

Non-concluding thoughts: Beyond ‘distantism’

John Lee Clark, an American deafblind poet and writer, describes neurotypical spatiality using the concept of ‘distantism’: “(...) [t]he English word ‘distance’ comes from ‘distantia’, Latin for ‘a standing apart’. A point could be made that distantism refers to the privileging of the distance senses of hearing and vision”¹¹⁹. As Manning notes, following Clark’s insights, even the usual accounts of spatial orientation reveal a propensity to perceive the world in terms of distance. The space results as a ‘large flat empty surface’. In the case of an airport, for example, “[p]aths are drawn point to point, tracing a line as though we were flying overhead, little or no mention of the trolleys, the children running, the spilled drink, the noisy lineup blocking the way, the suitcase”¹²⁰.

In the hegemonic neurotypical perspective, “all that is valued in existence can be mapped point to point”¹²¹. This means that, what Manning calls the ‘infrathin’¹²², that is the real consistency of space – everything that happens in crossing the distance between the different points – loses any value, it becomes ‘useless’: “‘Over there!’ is how we give directions, how we occlude the ineffability of that infrathin living that simply cannot be reduced to a series of points. A life pre-drawn in geometries of distance”¹²³.

Taking an airport as an example again, she writes that “to map [its space] withholding the buzz of the fluorescent lights, the glaring waxed surfaces of the floors, the loud PA system, the anxiety around security, the overlap of smells, the undercurrent of fear, is to radically underestimate how environments shape our ability to navigate them”¹²⁴.

In this understanding of the world and space, complexity and ambiguity are abandoned, in favour of “myths of normality that create structural barriers and exclude people”¹²⁵. As we have seen, those who can perceive them, and therefore do not possess what she calls an ‘executive function’¹²⁶, or ‘capacity for subtraction’¹²⁷ and ‘zeroing’¹²⁸, are almost always pathologised and marginalised.

119 Clark, J. L. (2017) Distantism. Retrieved March 26, 2021, from <https://johnleeclark-blog.tumblr.com/post/163762970913/distantism>

120 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 7.

121 Ibid. p. 246.

122 Ibid. p. 1. Manning borrows the concept of ‘infrathin’ from Marcel Duchamp, who describes it as “the most minute of intervals, or the slightest of differences” (quoted in Perloff, M. (2002) *The Conceptual Poetics of Marcel Duchamp*. In Id. *21st-Century Modernism: The “New” Poetics*, pp. 78-114. Oxford, UK: Wiley-Blackwell, p. 101). See also Davila, Th. (2010) *De l’inframince, brève histoire de l’imperceptible de Marcel Duchamp à nos jours*. Paris: Édition du regard.

123 Ibid. p. 246.

124 Ibidem.

125 Ibid. p. 5.

126 Ibid. p. 3.

127 Ibid. p. 5.

128 Ibidem.

Yet, as Manning splendidly points out, invoking a more-than-human perspective, “[a]mbiguity is actually something to be embraced rather than to be avoided. It is an inevitable feature of human discourse”¹²⁹. Particularly, in making this assertion she draws on Whitehead, whose philosophy of process, as we have already seen in part in Chapter III, rather than placing the human at the centre, aims at “untethering any preexisting notion of subjectivity from the events that compose (with) it”¹³⁰. According to Whitehead, “matter (...) is fused into its environment. There is no possibility of a detached, self-contained local existence. The environment enters into the nature of each thing”¹³¹. Distantism, instead, “makes too strong a distinction between body and world. It speaks of self and other as preexisting categories, prioritizing extensive quantity over intensive magnitude”¹³². In this sense:

“[b]odies are properly bodies only when they can fully distinguish themselves from the touch of the world. Bodies that sense too much, bodies that feel the touch of the world and are moved by it, are at a loss. Their sense of agency is weakened by the pulse of what moves them, of what is moved by them. The deficit model of sensation relies on a preexisting body-matrix onto which a body is drawn. This abstraction is made possible by extracting the body from the ecology of its surrounds to recompose it as a form untouched by the fomenting of the relational complex. Paradoxically, it is this abstraction that we regularly call ‘my body,’ a form whose integrity we far too rarely question”¹³³.

Therefore, what seemed interesting to us is Manning’s proposal to make a ‘deviation from normopathy’¹³⁴, an attunement with what is excluded from anthropocentric and normalising conceptions of neurotypicality. In her words, “[a] politics of the infrathin: a quest, in registers more-than human, for the most minor of variations, the minor a key rather than a quantity. A care for ecologies of practice that value the effects of what can but barely be perceived, if it can be perceived at all”¹³⁵. Interestingly, she celebrates the “sense in excess of form, in excess of geometry”¹³⁶, proper to that ‘autistic perception’¹³⁷ that neurotypicality excludes. In fact, neurotypicality tends to categorise,

129 Ibidem.

130 Ibid. p. 12.

131 Whitehead, A. N. (1938) *Modes of Thought*. New York: Free Press, p. 188. Retrived from: Erin Manning, E. (2020), *For a Pragmatics of the Useless*, p. 34.

132 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 249.

133 Ibid. pp. 248-249.

134 Cf. Ibid. p. 280.

135 Ibid. p. 16.

136 Ibid. p. 247.

137 Ibid. p. 2. ‘Autistic Perception’ is a key concept in Manning, E. (2013) *Always More Than One: Individuation's Dance*. Durham, NC: Duke University Press. See chapters “Toward a Leaky Sense of Self” and “An Ethics of Language in the Making.”; See also Manning, E. (2016) *The Minor Gesture*, chapters “Artfulness: Emergent Collectivities and Processes of Individuation” and “Choreographing the Political”.

separating subjects from objects and hierarchizing identity over multiplicity, while the way of feeling of neurodiversity “is the opening, in perception, to the uncategorized, to the unclassified”¹³⁸. Neurodiversity is “ecstatically more-than human”¹³⁹, intrinsically ecological and relational, “a feeling-with that extends beyond the human and connects to all that edges into experience”¹⁴⁰.

Clark’s reflections reveal how this breakdown of any separation and categorisation is particularly evident in the deaf-blind vision, or, more specifically, in what he calls ‘metatactile knowledge’: “[i]t involves feeling being felt, being able to read people like open Braille books, and seeing through our hands and the antennae of and within our bodies. (...) [M]etatactile knowledge (...) extends to interactions with objects”¹⁴¹. Deaf-blind spatiality, like neurodiverse spatiality, does not know distance, because “we all are in continuous conversation”¹⁴². It is ‘full’, dense, intrinsically topological, and therefore “queers Euclidean angularity”¹⁴³.

Furthermore, we noted how such radical relationality also resonates in the marvellous words of the autistic poet and writer Tito Mukhopadhyay¹⁴⁴:

Green mimicking green.
Brightness of sun spreading
upon brightness of trees,
their mixing up the green, spreading one green upon another green
as green mimicked green.
Leaf spreading itself on leaves, displaying its green. And hundred other leaves
all mimicking that green, as if believing no one could want anything
from the sunshine, but green.
So green mimicked green.

And in those of Judge, when she refers to her inseparable connection with other, non-human entities:

“[t]he sound of water looks and feels similar to human and non-human voices according to my senses, it has never occurred to me that a river is any less communicative than a bird or a human. (...) When I am seeing a bird, I sense that the

138 Manning E. (2016) *The Minor Gesture*, p. 14.

139 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 256.

140 Ibid. p. 254.

141 Clark, J. L. (2017) *Distantism*.

142 Ibidem.

143 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 262.

144 Tito Mukhopadhyay, Facebook post, May 28, 2010. Retrived from: Manning, E. (2020), *For a Pragmatics of the Useless*, p. 276.

bird is also seeing me. We are thus communicating through our mutual sensory presence in this moment”¹⁴⁵.

What emerged from our analysis and dialogues encouraged us to reflect on the fact that, in order to envisage new possibilities for co-design, or participation – when one finds him/her-self approaching actors situated beyond the kind of Kantian articulated subjectivity –, it would be important for architects to first engage in designing particular material conditions through which they can sensitise themselves to the embodied knowledge of neurodivergent people themselves – something that needs to be done every time in situated encounters – thereby challenging hegemonic neurotypical models and opening up knowledge to different versions.

It is according to this very logic that my experience with Moritz took place. Particularly, my relationship with him soon revealed how limiting and mostly ineffective the knowledge, skills, and tools I was counting on were. Through a series of operations – or proto-architectural operations – I attempted to expand my modes of engagement with space, learning from his own modes, and to find clues for a neurodiverse-inflected architectural practice.

In particular, the relationship between Moritz and me in some way attempted to activate what Manning calls an ‘approximation of proximity’, that is, something that would allow us to ‘come into proximity’ of each other, and that can only take place in our difference, in an approximate and never complete way. Indeed: “[a]pproximation of proximity is a way of speaking about two divergent planes, not converging as though they could become one, but meeting at the differential of their potential for the approximate. For isn’t sociality precisely that which sidles proximity differently, that which asks how else a coming-together-in-difference can be felt? Or (...) difference without separability?”¹⁴⁶

145 Judge, S. M. (2018) Languages of sensing, pp. 1111-1113. Notably, Judge explores how the experience of ‘being with’ non-humans takes on particular relevance in neurodiverse autobiography, challenging conventional ideas of what is not ‘social’. For many of these authors, and for herself, understandings of places, organisms and objects with personalities and feelings often makes more sense than humans. Autistic academic Temple Grandin, for example, is able identify fear-inducing stimuli for cattle based on sensory empathy; Greg Krueger, who has been diagnosed with Asperger Syndrome, became particularly notorious for his particular sensitivity to cats, which led him to introduce some structural changes to his home to better accommodate them; autistic anthropologist Dawn Prince-Hughes shows a particular ability to understand gorillas and their life in captivity. Along with other authors, Judge identifies a close connection between the fields of more-than-human and neurodiversity research, as both deal with ‘less-than-human’ actors, whose knowledge and sensory language systems tend to be framed as something ‘other’, rather than as alternative ways of knowing and doing. Cf. Judge, S. M. (2018) Languages of sensing, 1101-1119. See also: Grandin, T. (1995) How people with autism think. In Schopler, E. and Mesibov, G. (eds.) *Learning and Cognition in Autism*. US: Springer, pp. 137-156; Grandin, T. (2012) *Different... Not Less*. Arlington, TX: Future Horizons Incorporated; Prince-Hughes, D. (2004) *Songs of the Gorilla Nation: My Journey through Autism*. New York: Three Rivers Press.

146 Manning, E. (2020) *For a Pragmatics of the Useless*, p. 6.

REFERENCES (Chapter V)

- Abram, D. (1996) *The Spell of the Sensuous: Language and Perception in a More Than Human World*. New York: Vintage Books.
- Armstrong, T. (2011) *The Power of Neurodiversity: Unleashing the Advantages of Your Differently Wired Brain*. Cambridge, MA: Da Capo Press.
- Ash, J. and Simpson, P. (2019) Postphenomenology and method: Styles for thinking the (non) human. *GeoHumanities* 5(1): 139-156.
- Basaglia, F. (ed.) (1968) *L'istituzione negata*. Torino: Einaudi.
- Basaglia, F. and Ongaro Basaglia, F. (eds.) (1969) *Morire di classe. La condizione manicomiale fotografata da Carla Cerati e Gianni Berengo Gardin*. Torino: Einaudi.
- Basaglia, F. and Ongaro Basaglia, F. (eds.) (1971) *La maggioranza deviante. L'ideologia del controllo sociale totale*. Torino: Einaudi.
- Basaglia, F. and Ongaro Basaglia, F. (eds.) (1975) *Crimini di pace. Ricerche sugli intellettuali e sui tecnici come addetti all'oppressione*. Torino: Einaudi.
- Basaglia, F. (1976?) *Schema di un articolo per Casabella*, with annotation: "Titolo provvisorio: Psichiatria ed architettura", to be edited in collaboration with F. Ongaro Basaglia, G. Bellavitis e N. Valle. In G. Scavuzzo (2020) *Il parco della guarigione infinita. Un dialogo tra architettura e psichiatria*, pp. 254-260. Siracusa: LetteraVentidue Edizioni.
- Basaglia, F. and Fornari, F. (1978) *La violenza*, G. Controzzi and G. P. Dell'Acqua (eds.). Firenze: Vallecchi.
- Basaglia, F. (1980) Introduction, in S. Santiano, *B come architetture, z come salute. Per un uomo che sembra doversi liberare, per sopravvivere, e della medicina e dell'architettura diventate mercificazione*. Perugia: Bertoni.
- Baumers, S. (2012) *Beyond Known Worlds. A Fragmentary Exploration of Encounters between Autism and Designing Space*. Leuven, BE: KU Leuven.
- Baumers S. and Heylighen, A. (2010) Harnessing Different Dimensions of Space. The Built Environment in Anti-Biographies. In P. Langdon et al. (eds.) *Designing Inclusive Interactions*, pp. 13-23. London: Springer-Verlag.
- Baumers S., Heylighen, A. (2014) Performing their Version of the House. Views of an Architectural Response to Autism. In M. Maudlin and M. Vellinga (eds.) *Consuming Architecture*, pp. 57-69. Abigdon, UK: Routledge.
- Baumers, S. and Heylighen, A. (2015) Capturing Experience: An Autistic's Approach to Designing Space. *The Design Journal* 18(3): 237-243.
- Berger, J. (2019) Rethink: Agency, theory and politics in disability studies. In K. Ellis, R. Garland-Thomson, M. Kent and R. Robertson (eds.) *Manifestos for the Future of Critical Disability Studies*, pp. 209-216. London: Routledge.
- Bettarello, F., Caniato, M., Scavuzzo, G. and Gasparella, A. (2021) Indoor Acoustic Requirements for Autism-Friendly Spaces. *Applied Sciences* 11(9): 3942.
- Bingham, C. and Biesta, G. (2010) *Jacques Rancière: Education, truth, emancipation*. London: Bloomsbury.

Blackman, L. (2008) *The Body: The Key Concepts*. London: Routledge.

Bogdashina O. (2003) *Sensory Perceptual Issues in Autism and Asperger Syndrome: Different Sensory Experiences – Different Perceptual Worlds*. London: Jessica Kingsley Publishers.

Borch, C. (ed.) (2014) *Architectural Atmospheres. On the Experience and Politics of Architecture*. Basel, CH: Birkhauser Architecture.

Braddock, G. and Rowell, J. (2011) *Making Homes That Work. A resource guide for Families Living with autism spectrum Disorder + Co-occurring Behaviors*. The booklet is available at: <https://www.communitylivingbc.ca/wp-content/uploads/2018/03/Making-Homes-That-Work-A-Resource-Guide.pdf>

Bryant, L. (2014) *Onto-cartography: an ontology of machines and media*. Edinburgh, UK: Edinburgh University Press.

Burgstahler, S. and Doe, T. (2004) Disability-related simulations: If, when and how to use them in professional development. *The Review of Disability Studies* 1(2): 8-18.

Charlton, J. (2004) *Nothing about Us without Us: Disability Oppression and Empowerment*. Berkeley, CA: University of California Press.

Chatelain, L. (1965) Architectural Barriers-A Blueprint for Action. *A National Attack on Architectural Barriers*. Chicago, IL: National Society for Crippled Children and Adults.

Clark, J. L. (2017) Distantism. Available at <https://johnleeclark-blog.tumblr.com/post/163762970913/distantism>

Coplan, A. and Goldie, P. (eds.) (2011) *Empathy: Philosophical and Psychological Perspectives*. Oxford, UK: Oxford University Press.

Coulter, R. A. (2009) Understanding the visual symptoms of individuals with autism spectrum disorder (ASD). *Optometry & Vision Development* 40(3): 164-175.

Davidson, J. and Smith, M. (2009) Autistic autobiographies and more-than-human emotional geographies. *Environment and Planning D: Society and Space* 27: 898-916.

Davidson, J. and Henderson, V. L. (2010) 'Travel in parallel with us for a while': Sensory geographies of autism. *The Canadian Geographer* 54: 462-475.

Davila, Th. (2010) *De l'inframince, brève histoire de l'imperceptible de Marcel Duchamp à nos jours*. Paris: Édition du regard.

Decety, J. and Ickes, W. (eds.) (2011) *The Social Neuroscience of Empathy*. Cambridge, MA: The MIT Press.

Decker, E. F. (2014) A City for Marc, an inclusive urban design approach to planning for adult with autism. Master thesis, Department of Landscape Architecture, Regional + Community Planning. College of Architecture, Planning + Design, Kansas State university. Available at: <https://krex.k-state.edu/dspace/handle/2097/17606>

Deleuze, G. and Guattari, F. (1994) *What is Philosophy?* London: Verso. Originally published in France as *L'id.* (1991) *Qu'est-ce que la philosophie?* Paris: Éditions de Minuit Paris.

Deleuze, G. and Parnet, C. (2007) *Dialogues II*. New York: Columbia University Press. Originally published in France as *Id.* (1977) *Dialogues*. Paris: Flammarion.

Deligny, F. (1979) *Les détours de l'agir ou le moindre geste*. Paris: Hachette.

- Despret, V. (2004) The Body We Care for: Figures of Anthro-po-zoo-genesis. *Body and Society* 10(2-3): 111-134.
- Dosse, F. (2011) La Borde: Between Myth and Reality. In Id. *Gilles Deleuze & Félix Guattari: Intersecting Lives*, pp. 40-55. New York: Columbia University Press.
- Eisazadeh, N. Heylighen, A. and Houbart, C. (2020) Learning from disabled people about qualities and obstacles in historic cities. The case of Liège. *Value of heritage for tourism*. Proceedings of the 6th UNESCO UNITWIN Conference 2019, pp. 55-67. Leuven, BE: KU Leuven.
- Engelmann, S. and McCormack, D.P. (2018) Sensing atmospheres. In C. Lury, R. Fensham, A. Heller-Nicholas, S. Lammes, A. Last, M. Michael and E. Uprichard (eds.), *Routledge Handbook of Interdisciplinary Research Methods*, pp. 187-193. London: Routledge.
- Fenton, A. and Krahn, T. (2009) Autism, neurodiversity and equality beyond the 'normal'. *Journal of Ethics in Mental Health* 2: 1-6.
- Foot, J. (2015) *The man who closed the asylums: Franco Basaglia and the revolution in mental health care*. London: Verso.
- Forgacs, D. (2014) *Italy's Margins. Social Exclusion and Nation Formation since 1861*. Cambridge, UK: University Press.
- Foucault, M. (1961) *Folie et Dérailson. Histoire de la folie à l'âge classique*. Paris: Éditions Gallimard. Engl. version Id. (2006) *History of Madness*, J. Khalfa (ed.) J. Murphy and J. Khalfa (transl.). London: Routledge.
- Fraser, M. (2010) Facts, ethics and event. In C. Bruun Jensen and K. Rodje (eds.) *Deleuzian Intersections in Science, Technology and Anthropology*, pp. 57-82. New York: Berghahn Press.
- French, S. (1996) Simulation exercises in disability awareness training: A critique. In G. Hales (ed.) *Beyond Disability. Towards an Enabling Society*, pp. 114-123. London: Sage.
- Gaines, K., Bourne, A., Pearson, M. and Kleibrink, M. (2016) *Designing for Autism Spectrum Disorders*. London and New York: Routledge.
- Gibson, B. E. (2014) Parallels and problems of normalization in rehabilitation and universal design: enabling connectivities. *Disability and Rehabilitation* 36(16): 1328-1333.
- Goffman, E. (1961) *Asylums: Essays on the Social Situation of Mental Patients and Other Inmates*. New York: Doubleday.
- Goldsmith, S. (1997) *Designing for the Disabled: the New Paradigm*. Oxford, UK: Architectural Press.
- Graby, S. (2015) Neurodiversity: bridging the gap between the disabled people's movement and the mental health system survivors' movement? In H. Spandler, J. Anderson, and B. Sapey B. (eds.), *Madness, distress and the politics of disablement*, pp. 231-243. Bristol, UK: Policy Press.
- Grandin, T. (1995) How people with autism think. In Schopler, E. and Mesibov, G. (eds.) *Learning and Cognition in Autism*, pp. 137-156. US: Springer.
- Grandin, T. (2012) *Different... Not Less*. Arlington, TX: Future Horizons Incorporated.
- Halsall, B. and McDonald, R. (2015) *Design for Dementia*, Volume 1 - A Guide, Halsall Lloyd LLP. Available at: http://www.hlpdesign.com/images/case_studies/Vol1.pdf
- Halsall, B. and McDonald, R. (2015) *Design for Dementia*, Volume 2 - Research Projects, Halsall Lloyd LLP. Available

at: http://www.hlpdesign.com/images/case_studies/Vol2.pdf

Hamraie, A. (2013) Designing collective access: a feminist disability theory of universal design. *Disability Studies Quarterly* 33. Available at: <http://dsq-sds.org/article/view/3871>

Hamraie, A. (2017) *Building Access: Universal Design and the Politics of Disability*. Minneapolis, MN: Minnesota University Press.

Harris, A. (2020) *A Sensory Education*. London: Routledge.

Hayden, D. (1985) What would a non sexist city be like: speculations on housing, urban design, and human work. *Eskistics* 52(310): 99-107.

Hemsworth, M. (2019) The 'Things' Therapy Game Helps with Sensory Development. Available at: <https://www.trendhunter.com/trends/therapy-game>

Heylighen, A. (2020) How can different kinds of minds inform campus design? Reflections on a field experiment. Conference: SENSING SPACES, PERCEIVING PLACE - ANFA 2020 VIRTUAL CONFERENCE.

Husserl, E. (1913-1914) *Ideen zur einer reinen Phänomenologie und Phänomenologischen Philosophie*. Halle a. d. S., D: Max Niemeyer Verlag; Italian transl. Id. (1950) *Idee per una fenomenologia pura e una filosofia fenomenologica*. Torino: Einaudi.

Iconoclastas (2013) *Manual de mapeo colectivo: Recursos cartográficos críticos para procesos territoriales de creación colaborativa*. Buenos Aires, Tinta Limón. Available at: <https://iconoclastas.net/4322-2/>

Imrie, R. (1996) *Disability and the City: International Perspectives*. London: Sage.

Imrie, R. (1999) The body, disability and Le Corbusier's conception of the Radiant environment. In R. Butler and H. Parr (eds.) *Mind and Body Spaces: Geographies of Disability, Illness and Impairment*, pp. 25-45. London and New York: Routledge.

Imrie, R. and Hall, P. (2001) *Inclusive Design: Designing and Developing Accessible Environments*. London: Spon.

Imrie, R. (2003) Architects' Conceptions of the Human Body. *Environment and Planning D: Society and Space* 21(1): 47-65.

Imrie, R. (2012) Universalism, universal design and equitable access to the built environment. *Disability and Rehabilitation* 34(10): 873-882.

Imrie, R. (2012) Auto-disabilities: The Case of Shared Space Environments. *Environment and Planning A* 44(9): 2260-2277.

Imrie, R. and Luck, R. (2014) Designing inclusive environments: Rehabilitating the body and the relevance of universal design. *Disability and Rehabilitation* 36(16): 1315-1319.

Ingold, T. (2013) *Making: Anthropology, Archaeology, Art and Architecture*. New York: Routledge.

Ingold, T. (2017) *Anthropology and/as Education*. London: Routledge.

Jaarsma, P. and Welin, S. (2012) Autism as a natural human variation: Reflections on the claims of the neurodiversity movement. *Health Care Analysis* 20: 20-30.

Jones, M. (1976) *The Maturation of the Therapeutic Community. An Organic Approach to Health and Mental Health*. New York:

Human Sciences Press.

Judge, S. M. (2018) Languages of sensing: Bringing neurodiversity into more-than-human geography. *Environment and Planning D: Society and Space* 36(6): 1101-1119.

Kim, C. (2013) Decoding the high functioning label. In *Musings of an Aspie*. Available at: [https:// musingsofanaspie.com/2013/06/26/decoding-the-high-functioning-label/](https://musingsofanaspie.com/2013/06/26/decoding-the-high-functioning-label/)

Kinnaer, M. et al. (2016) Autism-friendly architecture from the outside in and inside out: An explorative study based on autobiographies of autistic people. *Journal of Housing and the Built Environment* 31(2): 179-195.

Kullman, K. (2016) Prototyping Bodies: A Post-Phenomenology of Wearable Simulations. *Design Studies* 47 (November): 73-90.

Kullman, K. (2017) Universalising and particularising design with Professor Kawauchi. In J. Spinney, S. Reimer and P. Pinch (eds.) *Mobilising Design*. London: Routledge.

Kullman, K. (2019) Politics of Dissensus in Geographies of Architecture: Testing Equality at Ed Roberts Campus, Berkeley. *Transactions of the Institute of British Geographers* 44(2): 284-98.

LaCapra, D. (2001) *Writing History, Writing Trauma*. Baltimore, MD: The Johns Hopkins University Press.

Latour, B. (2004d) How to Talk about the Body? The Normative Dimension of Science Studies. *Body & Society* 10(2-3): 205-229.

Lea, J. (2009) Post-phenomenology/post-phenomenological geographies. In R. Kitchin and N. Thrift (eds.) *International encyclopaedia of human geography*, pp. 373-378. Oxford, UK: Elsevier.

Lerup, L. (1977) *Building the unfinished: Architecture and human action*. Beverly Hills, CA: Sage Publications.

Lifchez, R. and Winslow, B. (1979) *Design for independent living: The environment and physically disabled people*. New York: Whitney Library of Design.

Lifchez, R. (ed.) (1987) *Rethinking Architecture*. Berkeley, CA: University of California Press.

Lo Chan, E. R. (2018) Neurodivergent Themed Neighbourhoods as A Strategy to Enhance the Liveability of Cities: The Blueprint of an Autism Village, Its Benefits to Neurotypical Environments. *Urban Sci* 2(2): 42.

Locke, J. (1979) *An Essay Concerning Human Understanding*, P. H. Nidditch (ed.). Oxford, UK: Oxford University Press. Originally published as Id. (1690) *An Essay Concerning Human Understanding*. London: Thomas Baffet.

Locke, J. (2004) *The Two Treatises of Government*, P. Laslett (ed.). Cambridge, UK: Cambridge University Press. Originally published as Id. (1689) *The Two Treatises of Government*. London: Awnsham Churchill.

McCormack, D.P. (2018) *Atmospheric Things: On the Allure of Elemental Envelopment*. Durham, NC: Duke University Press.

Mace, R. (1998) *Universal design: housing for the lifespan of all people*. Rockville, MD: Department of Housing and Urban Development.

Manning, E. (2013) *Always More Than One: Individuation's Dance*. Durham, NC: Duke University Press.

Manning, E. (2016) *The Minor Gesture*. Durham (NC): Duke University Press.

- Manning, E. (2020) *For a Pragmatics of the Useless*. Durham (NC): Duke University Press.
- Mairs, J. (2017) New virtual reality tool helps architects create dementia-friendly environments. Available at: <https://www.dezeen.com/2017/02/22/virtual-reality-empathy-platform-tool-help-architects-create-dementia-friendly-environments-david-burgher-aitken-turnbull-wireframe-immersive/>
- Matusiak, M. (2021) How to create an autism-friendly environment. Living Autism Ltd. Available at: <https://livingautism.com/create-autism-friendly-environment/>
- May, T. (2008) *The political thought of Jacques Rancière: Creating equality*. Edinburgh, UK: Edinburgh University Press.
- McCormack, D.P. (2017) The circumstances of post-phenomenological life worlds. *Transactions of the Institute of British Geographers* 42(1): 2-13.
- McCormack, D.P. (2018) *Atmospheric Things: On the Allure of Elemental Envelopment*. Durham, NC: Duke University Press.
- Merleau-Ponty, M (1962) *Phenomenology of Perception*. London: Routledge and Kegan Paul. Originally published in France as Id. (1945) *Phénoménologie de la perception*. Paris: Gallimard.
- Michael, M. (2012) De-signing the object of sociology: toward an ‘idiotic’ methodology. *The Sociological Review* 60(1suppl.): 166-183.
- Michael, M. (2013) The idiot. *Informática Na Educação: Teoria & Prática* 16(1): 71-82.
- Milner, J. (1995) Disabling design and the dinosaurs. *Housing* June: 31-33.
- Minguzzi, G. F., Basaglia, F. and Ongaro Basaglia, F. (1967 January) Exclusion, programmation et intégration, in *Recherches* 5: 75-84. Italian transl. Id. (2017) Esclusione, programmazione e integrazione. Appunti sulla realtà psichiatrica italiana. In F. Ongaro Basaglia (ed.) *F. Basaglia, Scritti, 1953-1980*. Milano: Il Saggiatore.
- Moore, P. and Conn, C. P. (1985) *Disguised: A True Story*. Waco, TX: Word Books.
- Mol, A. (2002) *The Body Multiple: Ontology in Medical Practice*. London and New York: Duke University Press.
- Mol, A. and Law, J. (2004) Embodied Action, Enacted Bodies: The Example of Hypoglycaemia. *Body and Society* 10(2-3): 43-62.
- Mostafa, M. (2008) An Architecture for Autism: Concepts of Design Intervention for the Autistic User. *Archnet-IJAR: International Journal of Architectural Research* 2(1): 189-211.
- Mostafa, M. (2014) Architecture for Autism: Autism ASPECTSS™ in School Design. *Archnet-IJAR: International Journal of Architectural Research* 8(1): 143-158.
- Nguyen, P., D’Auria, V. and Heylinghen, A. (2020) Detail matters: Exploring sensory preferences in housing design for autistic people. In Langdon, P. et al. (eds.) *Designing for inclusion*, pp. 132-139. London: Springer Verlag.
- Nguyen, P., D’Auria, V. and Heylinghen, A. (2021) Understanding independent Living with Autism: The role of the housing environment in the experiences of two autistic men. *European Journal of Creative Practices in Cities and Landscapes*, 3(2): 8-30. Available at: <https://cpcl.unibo.it/article/view/10781/12411>
- Nickerson, R. S., Butler, S. F. and Carlin, M. (2011) Empathy and knowledge projection. In J. Decety and W. Ickes (eds.) *The Social Neuroscience of Empathy*, pp. 43-56. Cambridge, MA: The MIT Press.

- Norberg-Schulz, C. (1980) *Genius Loci: Towards a Phenomenology of Architecture*. New York: Rizzoli.
- Oliver, M. and Barnes, C. (2012) *The new politics of disablement*. London: Palgrave Macmillan.
- Paci, E. (1961) *Tempo e verità nella fenomenologia di Husserl*. Bari, Laterza.
- Pallasmaa, J. (1995) *The Eyes of the Skin: Architecture and the Senses*. Chichester, UK: John Wiley & Sons.
- Pallasmaa, J. (2009) *The Thinking Hand: Existential and Embodied Wisdom in Architecture*. Chichester, UK: John Wiley & Sons.
- Pallasmaa, J. (2011) *The Embodied Image: Imagination and Imagery in Architecture*. Chichester, UK: John Wiley & Sons.
- Penner, B. (2013) The Inclusive Bathroom. In Id. *Bathroom*, pp. 198-237. London: Reaktion Books.
- Penner, B. (2013) Designed-in safety: ergonomics in the bathroom. In K. Cupers, *Use Matters. An Alternative History of Architecture*, pp. 153-168. Abigdon, UK, New York: Routledge. Adapted online version available at: <https://placesjournal.org/article/designed-in-safety/?cn-reloaded=1>
- Perloff, M. (2002) The Conceptual Poetics of Marcel Duchamp. In Id. *21st-Century Modernism: The "New" Poetics*, pp. 78-114. Oxford, UK: Wiley-Blackwell.
- Petrescu, D. (2007) The indeterminate mapping of the common. *field* 1(1): 90-91. Available at: <http://field-journal.org/wp-content/uploads/2016/07/d-petrescu.pdf>
- Prince-Hughes, D. (2004) *Songs of the Gorilla Nation: My Journey through Autism*. New York: Three Rivers Press.
- Pullin, G. (2009) *Design meets disability*. Cambridge, MA: MIT Press.
- Rancière, J. (1991) *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*. Stanford, CA: Stanford University Press.
- Rancière, J. (2016) Critical questions on the theory of recognition. In K. Genel and J.-P. Deranty (eds.) *Recognition or disagreement: A critical encounter on the politics of freedom, equality, and identity*, pp. 83-95. New York: Columbia University Press.
- Ratcliffe, M. (2012) Phenomenology as a form of empathy. *Inquiry: An Interdisciplinary Journal of Philosophy* 55(5): 473-495.
- Rawls, J. ([1967] 1999) Distributive Justice. In S. Freeman (ed.) *Collected Papers*, pp. 130-153. Cambridge, MA: Harvard University Press.
- Rawls, J. (2005) *Political Liberalism*. New York: Columbia University Press.
- Sánchez Criado, T. and Rodríguez-Giralt, I. (2016) Caring through Design?: En torno a la silla and the "Joint Problem-Making" of Technical Aids. In C. Bates, R. Imrie and K. Kullman (eds.) *Care and Design: Bodies, Buildings, Cities*, pp. 198-218. Oxford, UK: Wiley.
- Sánchez Criado T. and Cereceda Otárola M. (2016) Urban accessibility issues. Techno-scientific democratizations at the documentation interface. *CITY* 20(4): 619-636.
- Sánchez Criado, T. (2018) Functional Diversity as a Politics of Design? *Diseña* (11): 148-159.

Sánchez Criado, T. and Estalella, A. (2018) Introduction: Experimental Collaborations. In A. Estalella and T. Sánchez Criado (eds.) *Experimental Collaborations: Ethnography through Fieldwork Devices*, pp. 1-30. New York: Berghahn.

Sánchez Criado, T., Rodríguez-Giralt, I. and Mencaroni, A. (2016) Care in the (critical) making. Open prototyping, or the radicalisation of independent-living politics. *ALTER- European Journal of Disability* 10 (1): 24-39.

Sánchez Criado, T. (2019) Technologies of friendship: Accessibility politics in the 'how to' mode. *The Sociological Review Monographs* 67(2): 408-427.

Scavuzzo, G. (2020) *Il parvo della guarigione infinita. Un dialogo tra architettura e psichiatria*. Siracusa: LetteraVentidue Edizioni.

Schelings, C. and Elsen, E. (2017) Inclusion of Down Syndrome in Architectural Design: Towards a Methodology. *Proceedings of the second international conference on Universal Accessibility in the Internet of Things and Smart Environments*, pp. 20-25.

Scott, I. (2009) Designing learning spaces for children on the autism spectrum. *Good Autism Practice (GAP)* 10(1): 36-51. Available at: http://www.swarch.co.uk/wp-content/uploads/2017/03/41_2009_Good-Autism-Practice-101-2009-Iain-Scott_Designing-Learning-Spaces-for-Children-on-the-Autism-Spectrum.pdf

Serres, M. (1997) *The Troubadour of Knowledge*. Ann Arbor, MI: The University of Michigan Press.

Sierra, F., Leetoy, S. and Gravante, T. (eds.) (2018) *Ciudadanía digital & democracia participativa*. Salamanca: Comunicación Social.

Simplican, S. C. (2015) *The Capacity Contract. Intellectual Disability and the Question of Citizenship*. Minneapolis, MN: University of Minnesota Press.

Singer, J. (1999) 'Why Can't You Be Normal for Once in Your Life?' From a 'Problem with No Name' to the Emergence of a New Category of Difference. In M. Corker and S. French (eds.) *Disability Discourse*, pp. 59-67. Buckingham, UK: Open University Press.

Stengers, I. (2005) The cosmopolitical proposal. In B. Latour and P. Weibel (eds.) *Making things public: atmospheres of democracy*, pp. 994-1003. Cambridge, MA - Karlsruhe: MIT Press - zkM/Center for Art and Media in Karlsruhe.

Stengers, I. (2015) *In Catastrophic Times: Resisting the Coming Barbarism*. Luneburg, D: Meson press.

Tackx, E. (2020) *Student life on the autism spectrum. How the built and social environment affect the experience of living in a student accommodation*. Leuven, BE: KU Leuven.

Till, J. (2005) The negotiation of hope. In P. Blundell Jones, D. Petrescu and J. Till (eds.) *Architecture and Participation*, pp. 19-40. New York: Spon Press.

The Ohio State University City and Regional Planning Students, *Autism Planning and Design Guidelines 1.0*, Knowlton School of Architecture (City and Regional Planning). Attempt 1.0 August 2017 - December 2018. The booklet is available at: <https://www.housingonline.com/wp-content/uploads/2019/11/Autism-Planning-Design-Guidelines-December-2018.pdf>

Thrift, N. (2008) *Non-representational theory: space, politics, affect*. London: Routledge.

Tomos, C. (2018) *Some Things from Somewhere*. Barcelona, ES: Caniche Editorial.

Tucker, E. (2016) Di Peng recreates the experience of dementia with sense-distorting helmet. Available at:

<https://www.dezeen.com/2016/07/31/video-di-peng-dementia-experience-sense-distorting-helmet-central-saint-mar-tins-graduate-movie/>

Tucker, E. (2017) Empathy kit uses augmented reality and candy to help users better understand autism. Available at: <https://www.dezeen.com/2017/01/08/heeju-kim-emapthy-bridge-kit-help-users-understand-autism-augmented-reality-candy/>

Van Steenwinckel, I. (2015) *Offering architects insights into living with dementia Three case studies on orientation in space-time-identity* (doctoral dissertation). Kampenhout, BE: KU Leuven.

Weisman, L. K. (ed.) (1992) *Discrimination by Design. A Feminist Critique of the Man-Made Environment*. Urbana and Chicago, IL: University of Illinois Press.

Werner, D. (ed.) (1998) *Nothing about us without us: Developing innovative technologies for, by, and with disabled persons*. Palo Alto, CA: Health Wrights.

Williams, S. J. and Bendelow, G. (1998) *The Lived Body: Sociological Themes, Embodied Issues*. London and New York: Routledge.

Williamson, B. (2019) *Accessible America: A history of disability and design*. New York: New York University Press.

Winance, M. (2014) Universal design and the challenge of diversity: reflections on the principles of UD, based on empirical research of people's mobility. *Disability and Rehabilitation* 36(16): 1334-1343.

Whitehead, A. N. (1938) *Modes of Thought*. New York: Free Press.

Yalcinkaya, G. (2018) Paula Lorence designs Taktil objects for children with autism. Available at: <https://www.dezeen.com/2018/10/15/paula-lorence-tactile-objects-children-autism-london-design-festival/>

Yergeau, M. (2009) Circle Wars: Reshaping the typical autism essay. *Disability Studies Quarterly* 30(1). Available at: <https://dsq-sds.org/article/view/1063/1222>>

Yergeau, M. (2018) *Authoring Autism: On Rhetoric and Neurological Queerness*. Durham, NC: Duke University Press.

Zumthor, P. (2006) *Atmospheres: Architectural Environments – Surrounding Objects*. Basel, CH, Boston, US and Berlin: Birkhauser Verlag.

REFERENCES (of the following part)

- Alberti, L. B. (1565) (transl. by D. Domenichi) *La Pittura*. Mondovi, IT: Leonardo Torrentino.
- Alberti, L. B. (1568) C. Bartoli (ed.) *Opuscoli morali*. Venezia: Francesco Franceschi, Sanese.
- Alberti, L. B. (1868) C. Popelin (transl. and ed.) *De la statue et de la peinture*. Paris: A. Lévy Éditeur.
- Alberti, L. B. (1877) (text, transl. and notes by H. Janitschek) *Klein ere Kunsttheoretische SchTiften*. Quellenschriften fur Kunstgeschichte und Kunsttechnik des Mittelalters und der Renaissance, 11. Vienna: Barumuller.
- Alpers, S. (1983) *The Art of Describing: Dutch Art in the Seventeenth Century*. Chicago, IL: University of Chicago Press.
- Coates, M. (2014) UR... *A practical guide to unconscious reasoning*. London: Book Works.
- Deligny, F. (1979) *Les détours de l'agir ou le moindre geste*. Paris: Hachette.
- Dosse, F. (2011) La Borde: Between Myth and Reality. In Id. *Gilles Deleuze & Félix Guattari: Intersecting Lives*, pp. 40-55. New York: Columbia University Press.
- Gansterer, N, Cocker, E. and Greil, M. (eds.) (2017) *Choreo-graphic Figures: Deviations from the Line*. Berlin-Boston: Walter de Gruyter.
- Garcés, M. (2013) *El Compromís / Commitment*. Barcelona, ES: Centre de Cultura Contemporània de Barcelona CCCB.
- Garcés, M. (2013) *Un mundo común*. Barcelona, ES: Edicions Bellaterra.
- Gisbert Alemany, E. (2018) Learning Design with Social Insects: The ant, the spider, and the wasp. *Diseña* (12): 256-283.
- Harris, A. (2020) *A Sensory Education*. London: Routledge.
- Henderson, K. (1999) *On Line and On Paper: Visual Representations, Visual Culture, and Computer Graphics in Design Engineering*. Cambridge, MA: MIT Press.
- Ihde, D. (2012) *Experimental Phenomenology. Multistabilities*. Albany, NY: State University of New York Press.
- Ingold, T. (2013) *Making: Anthropology, Archaeology, Art and Architecture*. New York: Routledge.
- Ivins, W. M. (1973) *On the Rationalization of Sight*. New York: Plenum Press.
- Kullman, K. (2016) Prototyping Bodies: A Post-Phenomenology of Wearable Simulations. *Design Studies* 47 (October): 73-90.
- Latour, B. (1986) Visualization and Cognition: Thinking with Eyes and Hands. *Knowledge and Society: Studies in the Sociology of Culture Past and Present* 6: 1-40.
- Latour, B. (2004) How to Talk about the Body? The Normative Dimension of Science Studies. *Body & Society* 10 (2-3): 205-229.

- Manning, E. (2020) *For a Pragmatics of the Useless*. Durham (NC): Duke University Press.
- Monge, G. (1798) *Géométrie descriptive. Leçons données aux Écoles normales, l'an 3 de la République*. Paris: Baudouin.
- Petrescu, D. (2007) 'The indeterminate mapping of the common'. *field* 1(1): 90-91. Available at: <http://field-journal.org/wp-content/uploads/2016/07/d-petrescu.pdf>
- Puig de la Bellacasa, M. (2017) *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis, MN: University of Minnesota Press.
- Selinger, E. (2006) Normative phenomenology: Reflections on Idhe's significant nudging. In E. Selinger (ed.) *Postphenomenology: A Critical Companion to Idhe*, pp. 89-107. Albany, NY: State University of New York Press.
- Verbeek, P.-P. (2006) Materializing morality: Design ethics and technological mediation. *Science, Technology and Human Values* 31: 361-380.

The following part has the shape of a notebook of sort and reports the documentation of my entire process, including different attempts of facing the issues I encountered along the way. Somehow, by going beyond and against the logic, approaches, actions and material arrangements which had previously led me to create a closed object (see section 3, chapter V), my intention is to propose, through this notebook, a sort of device that can trigger an open participatory process, available to other architects who, in other situated design encounters with neurodivergent subjects, may be interested in picking it up again, modifying it, and adding their own experiences to it.

This device represents a first, sketchy attempt to initiate the constitution of a kind of ‘anti-*Bauentwurfslehre*’, i.e. a productive alternative to Neufert’s handbook¹⁴⁷ and the other ones encountered in various chapters of this thesis. Where such books represent exhaustive containers of regulations and standards set on a ‘normate’ template, which inevitably and violently excludes those who do not fit in, this alternative could, instead, take the form of an open ‘cookbook’, conceived as a non-finished collector of situated design encounters – such as mine with Moritz – with bodily difference, accompanied by the documentation of each process. It would, in other words, invoke careful explorations in search of alternative possibilities for architecture and what is usually understood by collaboration or participation, which go beyond the ‘capacity contract’¹⁴⁸.

As we shall see, the experience documented below prompted us to reconsider the potential of generic guidelines and recommendations. Indeed, where historically most of the critique in the field of accessibility has brought the introduction of strict standards, shaped on bodies that have physical disabilities, more open guidelines and recommendations – whose vagueness we had previously criticised – appeared more suitable to accommodate a complex, inherently relational, atmospheric type

147 Cf. Neufert, E. (1936) *Bauentwurfslehre*.

148 Cf. Simplican S. C. (2015) *The Capacity Contract*.

of spatiality, which neurodiversity seems to suppose. Since the ways of experiencing – and relating to – the space of each neurodivergent individual are irreducible to fixed coordinates, a certain degree of generalization and openness seems to be both beneficial and necessary. However, the openness and generality of the guidelines is not sufficient in itself, as far as they reproduce a ‘normate template’, which does not take into account individuals in their own uniqueness.

They should not be understood as an encyclopaedic taxonomy, or normative standpoints which define the levels of what is possible, but, rather, as principles of action, open to – and modifiable by – singular and situated material experimentations.

“We have a desperate need for other stories, not fairy tales in which everything is possible for the pure of heart, courageous souls, or the reuniting of goodwills, but stories recounting how situations can be transformed when thinking they can be, achieved together by those who undergo them. Not stories about morals but ‘technical’ stories about this kind of achievement, about the kinds of traps that each had to escape, constraints the importance of which had to be recognized. In short, histories that bear on thinking together as a work to be done. And we need these histories to affirm their plurality, because it is not a matter of constructing a model but of a practical experiment. Because it is not a matter of converting us but of repopulating the devastated desert of our imaginations”.

Stengers, I. (2015) *In Catastrophic Times: Resisting the Coming Barbarism*. Lüneburg, D: Meson press, p. 132.

PROTO-ARCHITECTURAL OPERATIONS
FOR A NEURODIVERSE SPATIAL PRACTICE

Operation 1

Retraining the body of the architect (1)

The first operation required me to train and open myself up to other ways of relating to the world, to other ways of sensing and to other spatialities. The experience and the perception of the world, and knowledge itself, are mediated by the devices we equip ourselves with. Every – material and non-material – technique, technology, device and, therefore, the very way we attempt to access the world, is performative, and creates specific relationships. It creates worlds. Perception, or knowledge, thus, is a process, which, by questioning human authority and agency, is rather shaped by a mutual interaction between human and non-human. The body, or the subject, does not exist prior to experience, but arises through it. In his text written in 2004¹ (see i.b. 6, chapter IV), Latour looks at how novice perfumers are ‘trained to be affected’. In this process of learning to be affected by previously unregistrable differences ‘body parts are progressively acquired’. For Latour, the body is an interface that determines itself as it learns to be affected by more and more elements, thus becoming sensitive to what the

world is made of. Through practices such as the training of perfume makers or expert wine tasters, the body learns to feel, to be sensitive, and materials such as the *malettes à odeurs*, wine kits, and wine labels, or particular rules to be followed during the training, are all part of this process². This led to the idea of the need to train, or sensitise, the architect’s body to other ways of sensing and knowing, and the search for particular devices that could enable this exploration. British artist Marcus Coates and his book *UR... A practical guide to unconscious reasoning*³ was an incredibly fascinating source of inspiration. The exercises and techniques he proposes are aimed at training the reader to experiment and expand the scope of his or her imagination. As absurd or bizarre as they may seem, the clear and concise steps which Coates invites to follow for each of them served as protocols or instructions to sensitise me and access, in an experimental and playful way, other possibilities of knowing the world and space. The ways to do this, however, could be endless.

2 Cf. Harris, A. (2020) *A Sensory Education*. p. 5.

3 Cf. Coates, M. (2014) *UR... A practical guide to unconscious reasoning*. London: Book Works.

1 Cf. Latour, B. (2004) *How to Talk about the Body?*



I HAD THE FEELING THAT THE MORE ISOLATED THE PLACE, THE MORE COMPLICATED THE EXERCISE. I LAID ON MY BACK ON THE CARPET IN MY ROOM, EYES CLOSED. IS MY BREATH A SOUND TOO? THE SOUND THAT I HEARD(...)

I STRUGGLED TO KEEP CONTROL AND FOUND THAT QUITE EXHAUSTING. AFTER A WHILE MY INSTINCT TOOK OVER (...)



I PUT MY HANDS AHEAD OF ME, PALMS OUTWARD, EYES FIXED, AND STARTED WALKING BACKWARDS. AFTER A FEW SECONDS I NOTICED THAT PEOPLE(...)

MOVEMENT AGAINST MUSIC

DURATION 5 mins

METHOD Sit and listen to music.

How does your body want to move to the music?

Stand up and do the opposite. Make movements that do not express your body's instinctive reaction.

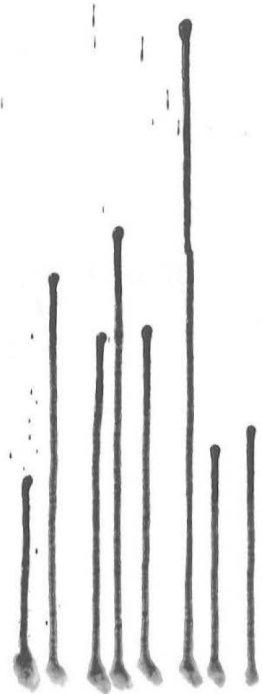
Move against the rhythm, against the melody, against the sentiment.

What did you find?

Did you have to constantly think about your movements to control them?

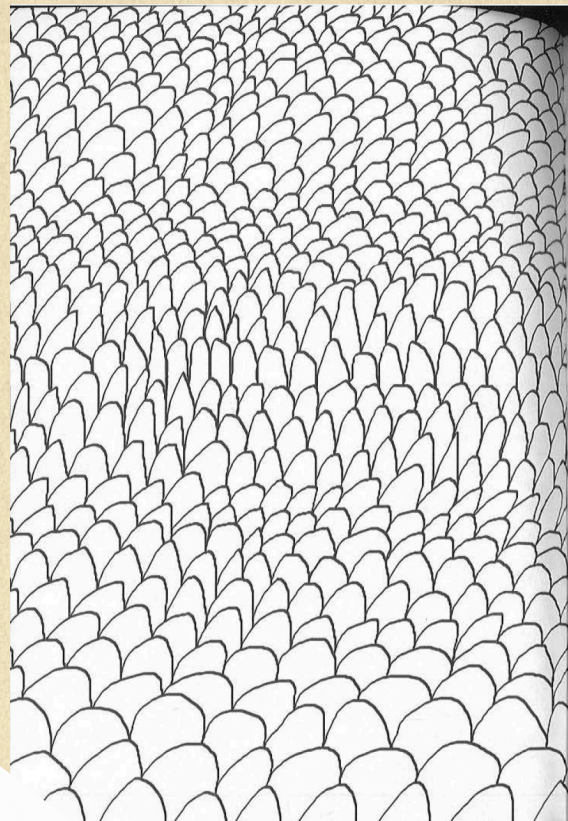
Could you override your instinct (what your body automatically wanted to do), with what you were telling your body to do?

Which has more control over you, thinking or instinct?



FIELDNOTES, 28 DECEMBER 2019
LOCATION: MY BEDROOM, BERLIN
MUSIC TRACK: BOWSPRIT, BALMORHEA

AT THE BEGINNING, IN THE VERY FIRST SECONDS, IT SEEMED TO BE WORKING BUT I REALLY HAD TO FOCUS MY ATTENTION ON EVERY SINGLE MOVEMENT OF MY BODY. SOMEHOW I EVEN FORGOT ABOUT MUSIC. THAT WAS PRETTY CHALLENGING AND I DIDN'T REALLY KNOW HOW TO MOVE 'AGAINST' MY INSTINCT. I STRUGGLED TO KEEP CONTROL AND FOUND THAT QUITE EXHAUSTING. AFTER A WHILE MY INSTINCT TOOK OVER AND I JUST STARTED FOLLOWING IT. I FOUND IT VERY LIBERATING. I COULDN'T TELL MY BODY WHAT TO DO AND HOW TO MOVE.



Physical Imagination
SOUND OF MIND

DURATION 5–20 mins

METHOD Lie on your back on the floor/pavement/grass (somewhere you won't be stepped on or create an obstruction).

Close your eyes, or wear an eye mask, and listen to the sounds around you for approx 1 minute before you do anything.

Start to make movements for these sounds. Try to articulate their character with your body.

Start with small movements for the quieter sounds then gradually work up to larger movements for the louder sounds.

Think about the pitch, length, volume and texture of the sounds and how these might translate into actions.

Use all of your body from eyelids to toes.

Don't copy the sound, try to be it, act as if the sound was coming from you.

Go from moving to a single sound at a time, to moving to many sounds at once.

143

U

Don't move unless a sound allows you to.

Sounds decide how and when you can move. Use them to get up and move about.

See if you can walk to the shops or make a cup of tea using only sounds.

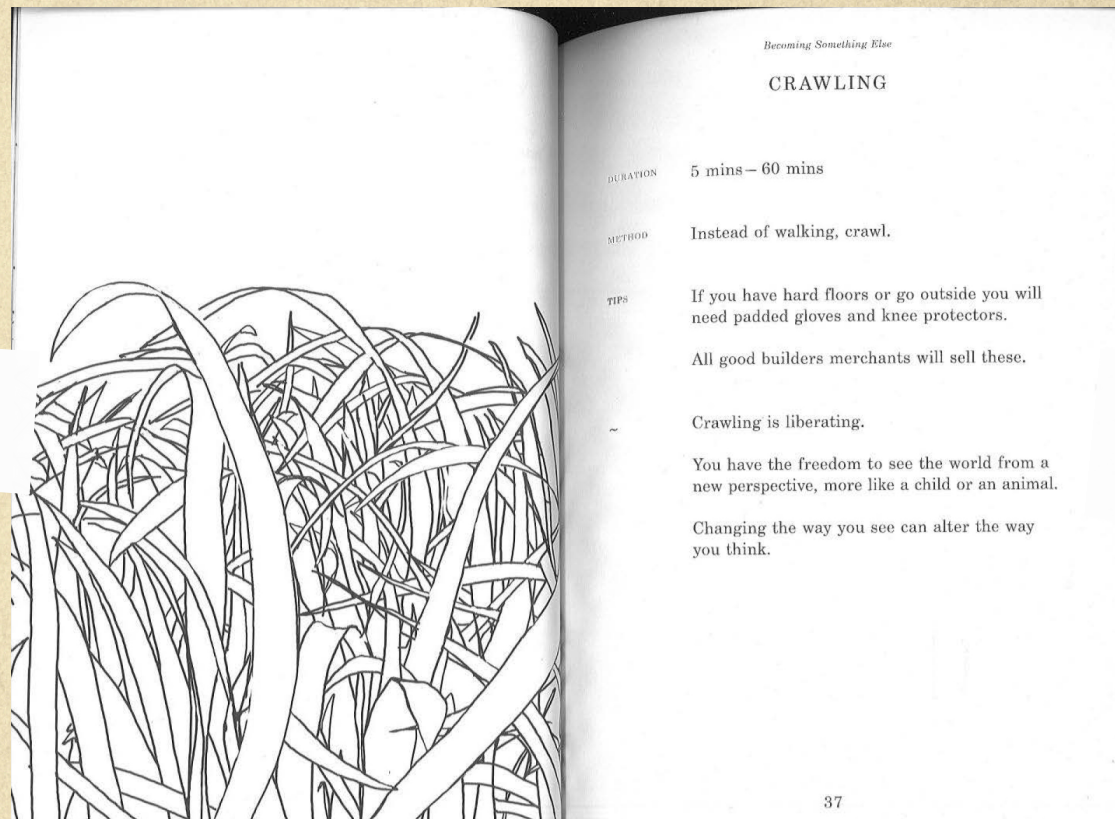
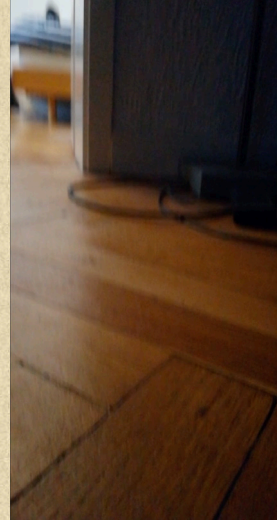
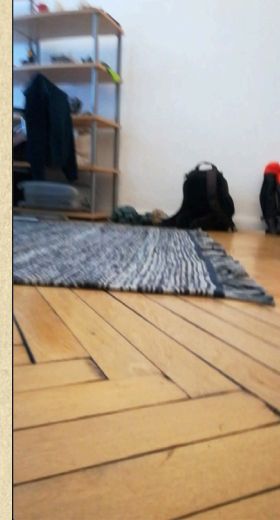
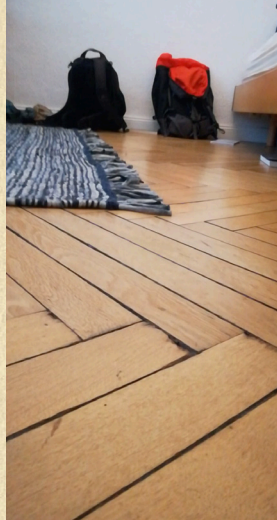
144

R

145

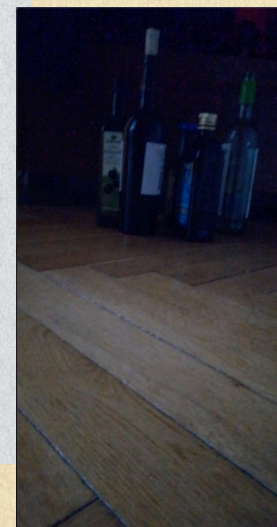
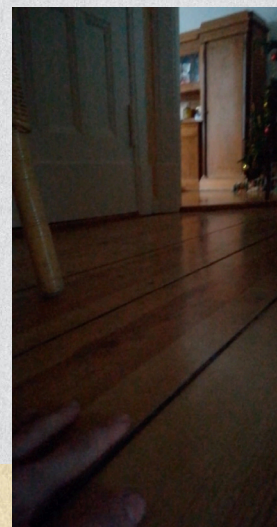
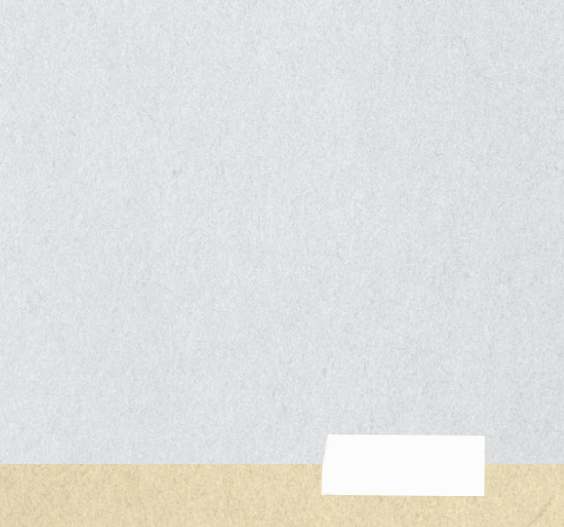
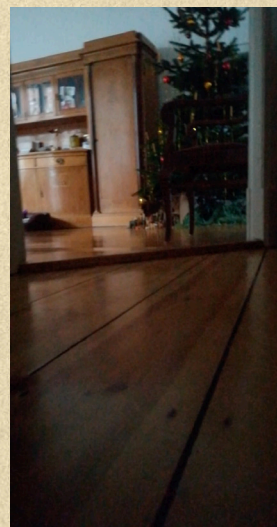
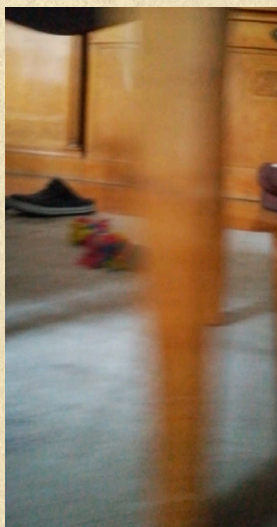
FIELDNOTES, 29 DECEMBER 2019
LOCATION: MY BEDROOM, BERLIN

I HAD THE FEELING THAT THE MORE ISOLATED THE PLACE, THE MORE COMPLICATED THE EXERCISE. I LAID ON MY BACK ON THE CARPET IN MY ROOM, EYES CLOSED. IS MY BREATH A SOUND TOO? THE SOUND THAT I HEARD MORE WAS THAT OF PASSING CARS. ONE OF THEM (THE LOUDER SOUND) MADE ME GET UP. THE WOODEN FLOOR OF MY ROOM WAS CRACKING AT EVERY STEP SO I COULDN'T STOP MY FINGERS, MY NECK, MY HEAD FOR AWHILE. I STARTED BLINKING WITH THE SOUND OF SOME BIRDS OUTSIDE. THE SOUND OF A BELL HELPED ME TO MOVE ON. I ARTICULATED EVERY MOVEMENT OF MY LEGS AND FEET ACCORDING TO ITS SOUND.



FIELDNOTES, 29 DECEMBER 2019
LOCATION: MY APARTMENT, BERLIN

AS SOON AS I STARTED DOING IT, I STARTED NOTICING
A LOT OF DETAILS (THE LOWER PART OF SUSANNE'S
APARTMENT) I USUALLY DON'T PAY ATTENTION TO.
ANYWAY, I CANNOT REALLY SAY IF IT ACTUALLY ALTERED
MY PERCEPTION. MAYBE I FELT WEAKER, A LITTLE BIT
MORE VULNERABLE. I DID IT FOR 10 MINUTES, SHOULD I
HAVE PERHAPS DONE IT FOR LONGER?

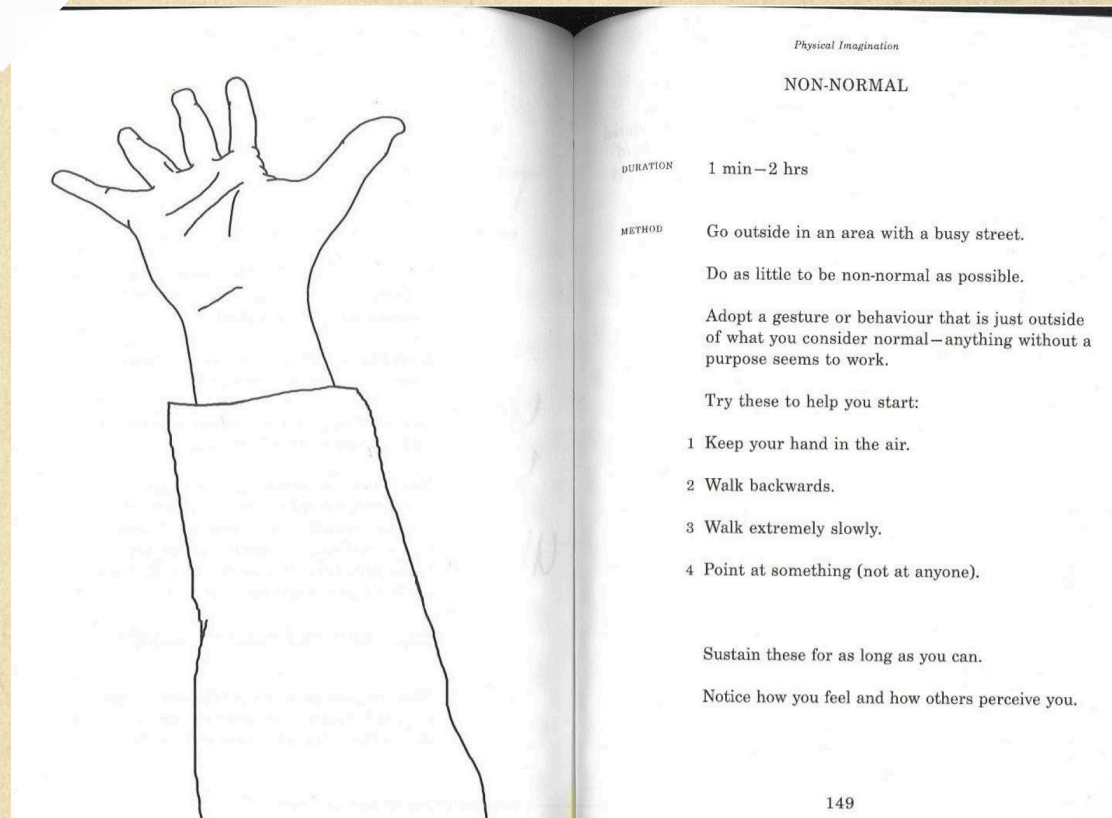


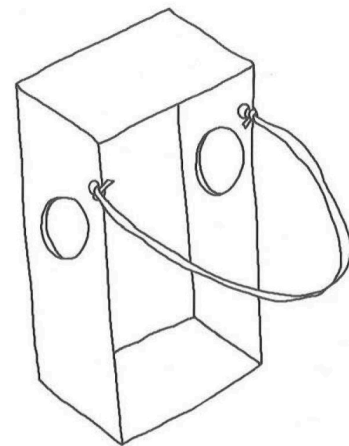


FIELDNOTES, 2 JANUARY 2020

LOCATION: ON A BRIDGE, SOMEWHERE NEAR THE
ELBPHILHARMONIE, HAMBURG

I THOUGHT ABOUT IT A LOT BEFORE I DECIDED TO TRY
OUT THIS EXERCISE. AT THE BEGINNING JUST THE
THOUGHT OF IT MADE ME FEEL QUITE UNCOMFORTABLE.
FOR INSTANCE, I DEFINITELY WOULDN'T HAVE BEEN ABLE
TO DO THIS IN THE PLACE WHERE I WAS BORN. I WOULD
HAVE BEEN AFRAID OF WHAT PEOPLE MIGHT HAVE THOUGHT.
EVERYBODY KNOWS ME THERE. THIS FEELING BOTHERED ME.
NO ONE KNOWS ME IN HAMBURG. MOREOVER, MY PARTNER
WAS WITH ME. WE COULD TALK ABOUT IT BEFORE, I
COULD EXPRESS MY DISCOMFORT AND CONCERNS, WE COULD
EVEN LAUGH IT OFF TOGETHER. I COULD DEFINITELY SAY
THAT, IN A WAY, I REMAINED IN MY COMFORT ZONE, EVEN
THOUGH DOING IT HAS BEEN PRETTY CHALLENGING. ON
THE BRIDGE NEAR THE ELBPHILHARMONIE, I PUT MY HANDS
AHEAD OF ME, PALMS OUTWARD, EYES FIXED, AND STARTED
WALKING BACKWARDS. AFTER A FEW SECONDS I NOTICED
THAT PEOPLE WERE STARTING TO TURN AROUND AND LOOK
AT ME. SOME OF THEM WERE INTRIGUED, OTHERS WERE
LAUGHING AND MAKING FUN OF ME. I HAD THE FEELING
THAT SOMEONE WAS STARTING TO IMITATE ME. LATER
ON, MY PARTNER DID CONFIRM IT TO ME. MY HEART WAS
POUNDING, BUT STILL, I ENJOYED IT. I COULD HAVE
HELD OUT LONGER, BECAUSE IT WAS STARTING TO GET
FUNNY AND VERY INTERESTING. ANYWAY, I SUDDENLY
STOPPED AS SOON AS I NOTICED THAT SOMEONE WAS ABOUT
TO TAKE A VIDEO/PHOTO OF ME. THIS MADE ME MAD, OR
AT LEAST ANNOYED ME VERY MUCH. IS HE/SHE GOING TO
POST THIS VIDEO/PHOTO ON FACEBOOK OR INSTAGRAM? I
JUST COULDN'T CONTINUE.





Becoming Something Else

BIRD BRAIN

DURATION 30 mins

YOU WILL NEED A box the size of your head, elastic, scissors.

METHOD Find a box that fits over your face comfortably.

Connect some elastic across the back so it will secure the box against your face like a mask.

Cut holes in the sides (not the front) of the box, at the same level as your eyes.

Wear it on your head.

You should just about be able to see out of the side holes.

Move around your house, don't stop.

TIP Most birds have eyes on the side of their heads, they have to move their heads to move their eyes. You will have to do this.

~ If you move and behave like a bird, are you more able to imagine what it is like to be one?

FIELDNOTES, 4 JANUARY 2020

LOCATION: SUSANNE'S APARTMENT (WHERE I HAVE BEEN LIVING), BERLIN

MY EYES WERE HURTING FROM IT. DON'T KNOW IF I SHOULD HAVE CUT BIGGER HOLES IN THE SIDES OF THE BOX. I DID IT FOR 30 MINUTES, DURING WHICH I TRIED NOT TO STOP WALKING. I HAD TO CONTINUOUSLY ROTATE MY HEAD IN ORDER TO GET MY BEARINGS. I BUMPED INTO OBJECTS MANY MANY TIMES BUT I TRIED NOT TO USE MY HANDS TO TOUCH AND AVOID OBSTACLES. I KIND OF REALIZED WHY BIRDS CANNOT SEE GLASS AND OFTEN BUMP INTO IT, VERY OFTEN TO DEATH. I GOT USED TO IT AFTER AWHILE BUT I GUESS IT WAS EVEN HARDER FOR ME. I WAS WEARING MY EYEGLASSES, AND NORMALLY VISIBILITY IS ALREADY LIMITED ON THE SIDES. I FOUND DIFFERENT INTENSITIES IN LIGHT AND SHADOW BETWEEN THE DIFFERENT ROOMS PRETTY HELPFUL. IT GOT HARDER TOWARD THE END, EVEN EXHAUSTING: I STARTED WALKING A LOT SLOWER. I GOT TOTALLY DIZZY. AFTER REMOVING THE BOX FROM MY HEAD, I FELT NAUSEOUS.

BECOMING A BAT

Sit down.

Can you breathe?

Can you detect temperature?

Can you detect light?

Can you hear?

Can you make vocal sound?

If yes to any of the above then you have more in common with a bat than you might have thought.

DURATION 20 mins

METHOD Put on an eye mask/blindfold.

Ask a friend to hold these objects in front of your face (approx 10 cm away), one at a time.

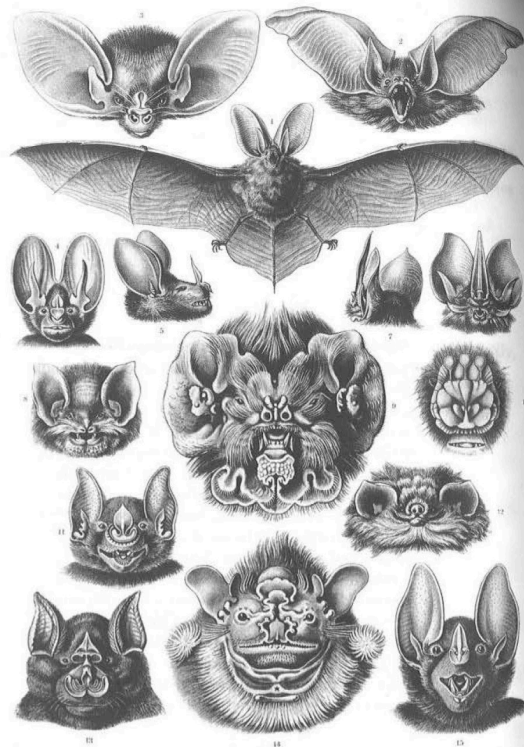
A cushion

A tray (flat area facing)

A pen (hold horizontally)

Image: see over for key

133



U

For each object make a short sharp burst of high pitch sound (as high and as short as you can).

Try using a hard letter like K or T to make your sound.

As you make the sound listen to it very carefully.

With practice you should be able to use the sound and not your eyes to tell the objects apart.

134

R

KEY

Kunstformen der Natur (1904) plate 67: Chiroptera, Ernst Haeckel.

- 1-2 Brown Long-eared Bat
- 3 Lesser Long-eared Bat
- 4 Lesser False Vampire Bat
- 5 Big-eared Woolly Bat
- 6-7 Toms's Sword-nosed Bat
- 8 Mexican Funnel-eared Bat
- 9 Antillean Ghost-faced Bat
- 10 Flower-faced Bat
- 11 Greater Spear-nosed Bat
- 12 Thumbless Bat
- 13 Greater Horseshoe Bat
- 14 Wrinkle-faced Bat
- 15 Spectral Bat

135

FIELDNOTES, 4 JANUARY 2020

LOCATION: MY BEDROOM, BERLIN

IT SHOULD BE DONE FOR MORE THAN 20 MINUTES TO REALLY MAKE IT WORK. AT THE BEGINNING I WASN'T ABLE TO TELL ANY OF THE OBJECTS APART, ALTHOUGH I WAS TRYING HARD TO FOCUS ON MY SOUNDS. AFTER THE FIRST ATTEMPTS I DISCOVERED THE TRICK. A CUSHION ABSORBS THE SOUND (NO ECHO, NO VIBRATION); A TRAY, ESPECIALLY A METAL ONE, COULD EVEN ENHANCE THE SOUND (SOME VIBRATION; SOUND LASTS A LITTLE LONGER); MAKING A SOUND WITH A PEN IN FRONT OF MY FACE IT'S LIKE HAVING NO OBSTACLE. THE OBJECT IS TOO SMALL AND IF THERE'S ANY DIFFERENCE IN SOUND, IT'S REALLY HARD TO NOTICE IT. ONCE I COULD ONLY DISTINGUISH IT BECAUSE I TRIED TO COMPARE THAT/ITS SOUND WITH OTHERS. IS IT TRUE? OR AM I LYING? MAYBE I WAS JUST LUCKY AND IT WASN'T AN ACTUAL INTUITION AFTER ALL.



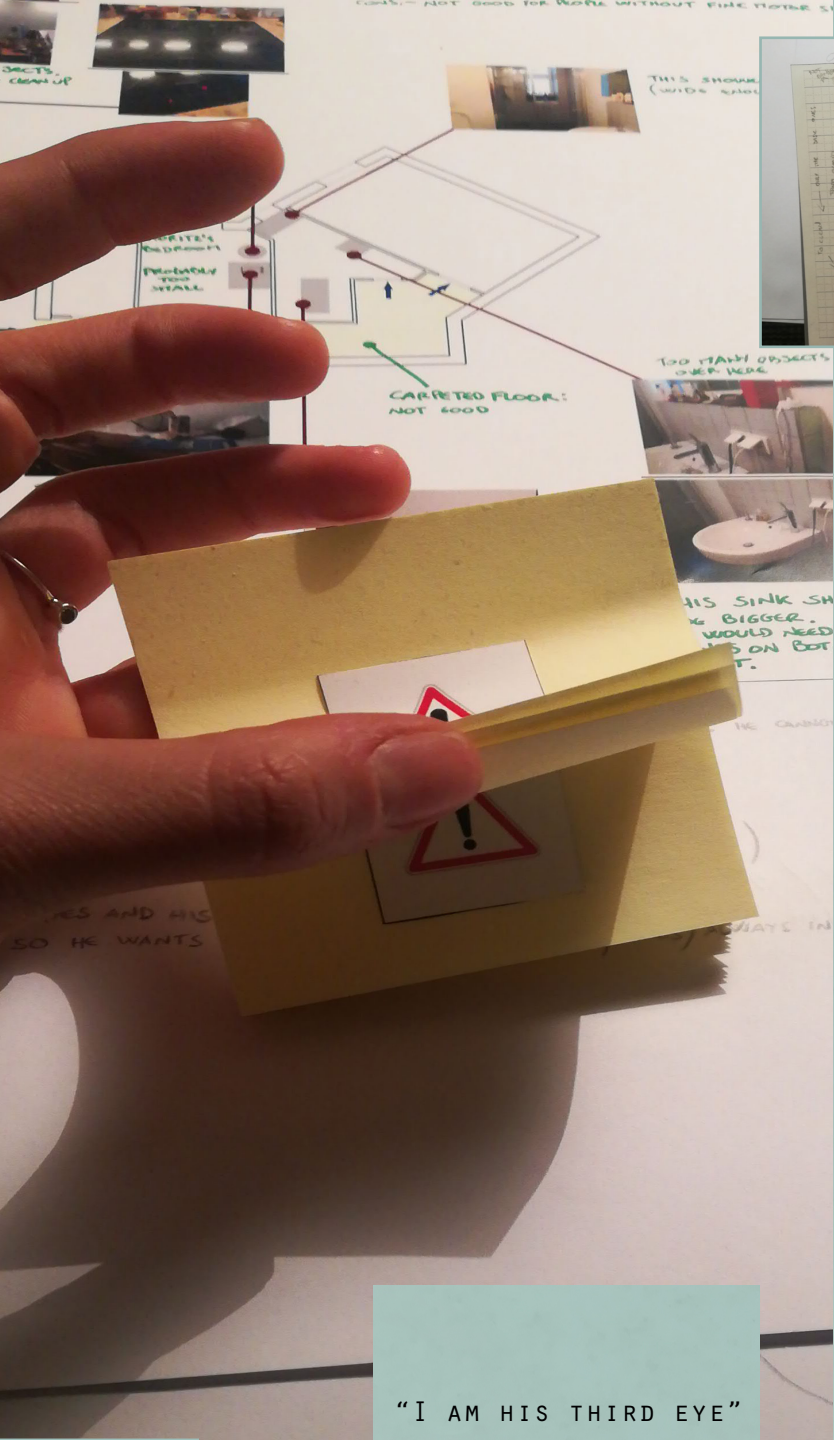
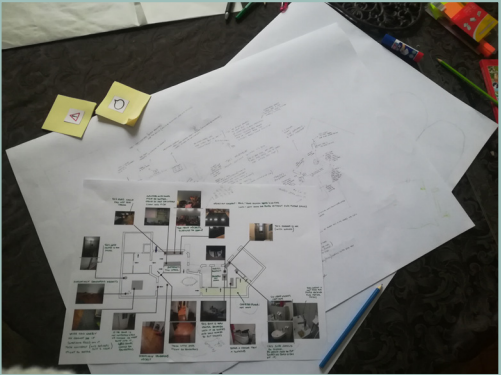
Operation 2

Thinking from (singular) uses

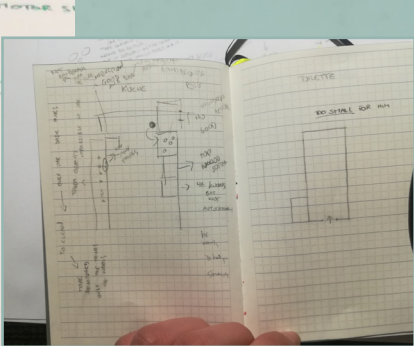
The second operation involved an exploration of the way Moritz uses and relates to space. The aim was not to design ‘for’ him, but to observe – and learn from – his spatial practice, i.e. how he enabled certain spatial and relational arrangements, and how these arrangements influenced his surroundings. For this very reason, in addition to my direct relationship with him, the presence and help of his family members, who acted as ‘epistemic companions’, was particularly relevant: compared to conventional ‘service’ relationships, where designers call on relatives and ethnographers as ‘information providers’ to propose solutions in terms of design, Susanne (Moritz’s mother) and Julian (his brother) were rather collaborators. Because they were directly influenced by his spatial relationship arrangements, they did not speak ‘for’ Moritz, but ‘from’ their own experiences, sharing with me their rich personal, experiential, lived experience. Moritz’s spatial and relational arrangements, in fact, required them to learn to know and pay attention to them, and to generate and activate particular – material and behavioural – devices which facilitated and corresponded to them.

Therefore, I documented the qualities and uses of Susanne’s apartment, where he lived for a long time and to which he frequently returns, in order to reconstruct its ‘biography’, paying attention to the most minute details and anecdotes. The aim was, in fact, to sensitise myself to the (singular) uses of a space. The space of a house, or an apartment, is not that of an Autocad layout or a render, in which the hypothetical users are completely absent or reduced to standardised figurines that can be downloaded from online catalogues. It is not pre-constituted, but rather a living fabric of complex and radically singular relationships and uses, and one must somehow become part of these relationships in order to – at least provisionally – understand them. Somewhat in line with Deligny’s experience of refusing to engage with any mode of representation that exceeds the autistics’ own modes of expression, movement and relationship, I have attempted to learn from Moritz’s movements and uses. Rather

“HE USED TO TOUCH
EVERYTHING (...) THAT
WAS HIS WAY OF SEEING”
(SUSANNE, 25 JANUARY 2020)



“I AM HIS THIRD EYE”
(SUSANNE, 25 JANUARY 2020)

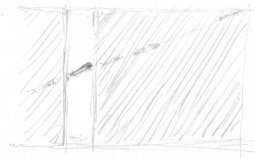


“HE CANNOT MEASURE THE
FORCE”
(JULIAN, 29 JANUARY 2020)

than mapping *lignes d'erre*¹, with the help of my ‘epistemic companions’, I collected a plurality of spatial and temporal details that would allow me to learn from his uses. Therefore, as Gisbert Alemany, inspired by Ingold, suggests in her ‘experiments with the profession’², I adopted the method of participant observation, or the ‘art of inquiry’³. I placed myself at the centre of the experience, rather than simply representing or describing it, and attempted to learn from the people, things and spaces I worked with, reflecting on what my approaches and tools were ‘doing’ in a concrete situation, expanding and re-adapting them as I went. I showed photos, plans, drawings to Susanne and Julian, in order to solicit a conversation starting from them; at their request, I followed them as they moved from one room to another, taking notes – both in written form and in sketches – on what they told me; I invited them to point out certain ‘points of interest’, i.e. particular objects and spaces which had proved to be problematic for Moritz or which allowed particular memories to emerge; I paid attention to what Moritz himself said to me and to his gestures, trying to memorise and then transcribe what I learned through texts and sketches.

1 Cf. Deligny, F. (1979) *Les détours de l'agir ou le moindre geste*; Petrescu, D. (2007) The indeterminate mapping of the common; Dosse, F. (2011) *La Borde: Between Myth and Reality*; Manning, E. (2020) *For a Pragmatics of the Useless*, pp. 159-161.
2 Cf. Gisbert Alemany, E. (2018) *Learning Design with Social Insects*.
3 Cf. Ingold, T. (2013) *Making*.

"THERE IS A TRADITION AT EASTER FOR CHILDREN HERE. WE USUALLY HIDE CHOCOLATES AND SWEETS ALL OVER THE HOUSE, OR EVEN IN THE GARDEN, AND THE CHILDREN HAVE TO FIND THEM. THIS WASN'T POSSIBLE WITH MORITZ, BECAUSE HE COULDN'T FIND THEM."
(SUSANNE, 25 JANUARY 2020)

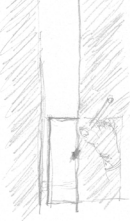


"IF I GO TO THE AIRPORT WITH B. (JULIAN'S SON, A TWO-YEAR-OLD CHILD) AND POINT OUT A PLANE, HE SEES IT. MORITZ WOULDN'T SEE IT."
(SUSANNE, 25 JANUARY 2020)

"HIS BROTHERS GOT USED TO IT TOO... THEY USED TO... ACTUALLY THEY STILL DO IT... I MEAN, TO REMOVE POTENTIALLY DANGEROUS OBJECTS STANDING IN HIS WAY."
(SUSANNE, 24 JANUARY 2020)

"I ASKED HIM HOW A BETTER KITCHEN SHOULD LOOK LIKE FOR HIM, BUT HE TOLD ME SOME DIFFERENT THINGS THAN THE ONES I THOUGHT. FOR INSTANCE, HE SAID THAT KITCHEN FURNITURE SHOULD NOT HAVE DOORS, BECAUSE IN THIS WAY HE COULD MUCH MORE EASILY SEE AND FOUND WHAT HE'S LOOKING FOR."
(SUSANNE, 6 FEBRUARY 2020)

"NO CONNECTION BETWEEN HIS EYES AND HIS HANDS. WHEN HE WRITES, HE DOESN'T LOOK AT HIS HANDS."
(SUSANNE, 25 JANUARY 2020)



"TODAY, FOR INSTANCE, WE WERE ON THE BUS GETTING BACK TO BERLIN FROM BONN... HE TOOK HIS JACKET FROM THE OVERHEAD COMPARTMENT AND JULIAN'S LAPTOP, WHICH WAS THERE, FELL DOWN."
(SUSANNE, 6 FEBRUARY 2020)

"HE USED TO RIDE THE BIKE WITH BACK WHEELS, OTHERWISE HE WOULD FALL. NOW, HE CAN'T RIDE A BIKE ANYMORE, IT'S TOO DANGEROUS."
(SUSANNE, 25 JANUARY 2020)



"TV BUTTONS ARE DIFFICULT FOR HIM TO HANDLE... ACTUALLY ANY ELECTRONIC ITEM OR DEVICE."
(JULIAN, 29 JANUARY 2020)

"YOU KNOW THOSE STAIRS NEXT TO THE BUILDINGS ALONG BERGTAN STRASSE? WHEN I GO WITH HIM WE WALK A BIT AWAY FROM THEM, OTHERWISE HE WOULD BUMP INTO THEM AND STUMBLE."
(SUSANNE, 26 JANUARY 2020)

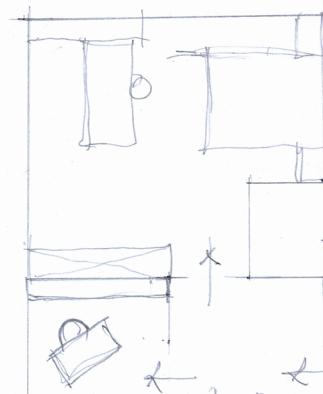
"THIS INDUCTION COOKTOP IS GOOD BECAUSE HE MIGHT FORGET THINGS, LIKE PUTTING OUT THE FIRE."
(JULIAN, 29 JANUARY 2020)

"IT'S GOOD BECAUSE THERE'S NO FIRE, WHICH CAN BE DANGEROUS... BUT THESE BUTTONS ARE NOT GOOD FOR FINE MOVEMENTS..."
(SUSANNE, 27 JANUARY 2020)

"HE KNOWS HE HAS TO LEAVE HIS SHOES AT THE ENTRANCE, BECAUSE IF HE COMES IN AND GOES TO THE BEDROOM HE DOESN'T REALISE WHETHER HIS SHOES ARE CLEAN OR DIRTY."
(SUSANNE, 26 JANUARY 2020)

M: "DID YOU HAVE TO MAKE ANY CHANGES IN THIS FLAT? I MEAN, ANYTHING IN ITS SPACE OR IN THE ARRANGEMENT OF THE FURNITURE?"

SUSANNE: "WE DIDN'T CHANGE ANYTHING FOR MORITZ. WE MOVED HERE WHEN JULIAN WAS ONE AND A HALF YEAR OLD AND MORITZ WAS FOUR. I GOT USED TO CARE ABOUT HIM... TO LOOK AFTER HIM. I GOT USED TO REMOVE OBJECTS/TOYS STANDING IN HIS WAY."
(24 JANUARY 2020)



"THIS BATHROOM IS DEFINITELY TOO SMALL FOR HIM."
(SUSANNE, 25 JANUARY 2020)

"TOO MANY OBJECTS HERE. HE MIGHT STRUGGLE TO FIND THE PLUG BEHIND THEM OR THAT SPECIFIC OBJECT HE NEEDS."
(JULIAN, 29 JANUARY 2020)

"IF HE LOOKS STRAIGHT AHEAD, HE CAN'T SEE BELOW, OR THE OTHER WAY AROUND."
(SUSANNE POINTED ME IN THE DIRECTION WITH HER HANDS)
(25 JANUARY 2020)

"DOORHATS SHOULD BE FIXED ON THE FLOOR BECAUSE HE MIGHT SLIP AND FALL."
(JULIAN, 29 JANUARY 2020)

"THE TENT SHOULD BE FIXED VERY WELL. HE MIGHT PULL AND BREAK IT. HE CANNOT MEASURE THE FORCE."
(JULIAN, 29 JANUARY 2020)

"THIS WOODEN FLOOR IS GOOD... BECAUSE IF HE FALLS, IT'S SOFT."
(SUSANNE, 26 JANUARY 2020)

"HE WALKS VERY FAST. FOR INSTANCE, HE WOULDN'T SEE THAT LITTLE CAR THAT B. (JULIAN'S SON, A TWO-YEAR-OLD CHILD WHO WAS THERE WITH US) IS USING. HE WOULD STUMBLE OVER IT... HE IS HYPERACTIVE, SO ESPECIALLY WHEN HE WAS A CHILD HE WAS CONSTANTLY ON THE MOVE, ALWAYS JUMPING FROM SIDE TO SIDE."
(SUSANNE, 24 JANUARY 2020)

"WHEN I SET THE TABLE, I USUALLY PUT THE GLASS A LITTLE FURTHER AWAY, BUT RIGHT IN FRONT OF HIM, OTHERWISE HE DOESN'T SEE IT."
(SUSANNE, 24 JANUARY 2020)

"I PUT THIS BOX HERE SO HE KNOWS WHERE TO PUT THINGS. YOU KNOW, IT IS NECESSARY TO CREATE A ROUTINE."
(SUSANNE, 27 JANUARY 2020)

"BEHIND THE SINK SHOULD BE BIGGER, SO HE COULD HAVE ALL THE OBJECTS HE NEEDS RIGHT IN FRONT OF HIM."
(SUSANNE, 27 JANUARY 2020)

"THIS TAP IS NOT VERY GOOD FOR HIM... THIS SYSTEM, THE WAY IT WORKS, IT'S HARD FOR PEOPLE WHO LACK FINE MOTOR SKILLS."
(SUSANNE, 27 JANUARY 2020)

"MIRRORS CAN BE VERY DANGEROUS... FOR INSTANCE IF HE CARRIES A CHAIR HE MIGHT BREAK A MIRROR. MAKE SURE NO MIRRORS IN SMALL OR NARROW SPACES."
(JULIAN, 29 JANUARY 2020)

"ONCE MORITZ CAME TO DRESDA TO SEE ME. WE WENT FOR A WALK. IN A BIG SQUARE THERE WAS AN ARTIST WHO WAS PAINTING THINGS. THIS MAN HAD A SMALL TIN CAN TO COLLECT MONEY. MORITZ STARRER RUNNING ACROSS THE SQUARE FOR FUN... AND HE MANAGED TO HIT THAT VERY SMALL TIN CAN IN THAT HUGE SQUARE. HE HAD NOT SEEN IT AT ALL."
(JULIAN, 29 JANUARY 2020)

M: "IF I ASKED YOU FOR ADVICE ON HOW TO DESIGN A HOUSE/ROOM FOR HIM, WHAT WOULD YOU SAY TO ME?"

SUSANNE: "I WOULD SAY PLEASE DON'T PUT TOO MANY THINGS IN THE ROOM... ONLY THE IMPORTANT ONES, AND A STRONG CONTRAST."
(24 JANUARY 2020)

"WHEN HE WAS A CHILD HE USED TO TOUCH EVERYTHING, BECAUSE HE COULDN'T SEE WELL. THAT WAS HIS WAY OF SEEING."
(SUSANNE, 25 JANUARY 2020)

"WITH THIS CARPET HE CANNOT SEE IF SOMETHING FALLS ON IT... MAYBE, MORE CONTRAST WOULD BE BETTER. BUT IT DEPENDS ON THE COLOR OF THE OBJECT WHICH FALLS ON IT."
(SUSANNE, 24 JANUARY 2020)

"THE DOORS SHOULD BE EITHER ALL OPEN OR CLOSED. IF THEY ARE HALF OPEN, LIKE 45 DEGREES, HE MIGHT SLAM INTO THEM... GLASS DOORS WOULD BE VERY DANGEROUS FOR HIM BECAUSE HE WOULDN'T BE ABLE TO SEE THEM."
(SUSANNE, 25 JANUARY 2020)

"(DURING DINNER) MORITZ COULDN'T SEE THE GLASS OF WINE, UNTIL I PUT IT JUST IN FRONT OF HIM."
(30 JANUARY 2020)

"THESE STEPS MIGHT BE DANGEROUS BECAUSE HE WOULD STUMBLE ON THEM, BUT HE IS USED TO THEM HERE. HE KNOWS THEY ARE HERE."
(SUSANNE, 26 JANUARY 2020)

"THIS CARPETED FLOOR IS NOT GOOD, BECAUSE IF HE IS HOLDING A CUP OF COFFEE HE DROPS IT EASILY AND IT SPILLS ALL OVER."
(SUSANNE, 27 JANUARY 2020)

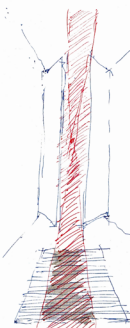


"HE HAD TOY CARS LIKE THIS WHEN HE WAS A CHILD, BUT IT WOULD BE IMPOSSIBLE FOR HIM TO OPEN THIS LITTLE DOOR."
(SUSANNE, 25 JANUARY 2020)

"(DURING DINNER) I NOTICED A KIND OF MECHANICAL OR NON-FLUID MOVEMENT OF HIS HAND WHEN I HANDLED HIM A PIECE OF CHOCOLATE."
(30 JANUARY 2020)

"I CAN SEE (MORITZ SAYS A FEW WORDS IN ENGLISH AND THE BEST IN GERMAN. BUT I DON'T UNDERSTAND GERMAN)... BETWEEN THE 20/50%... YOU SEE, AS NORMAL."
(MORITZ, 29 JANUARY 2020)

"ONCE WE WENT PLAYING WITH GO-KARTS. WHILE DRIVING HE HIT THE ONLY PART OF THE TRACK THAT WASN'T PROTECTED AND BROKE HIS ARM."
(JULIAN, 29 JANUARY 2020)



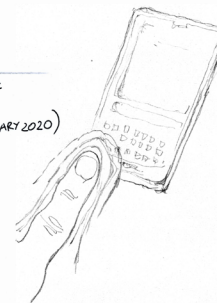
"MY BODY TELLS ME WHAT TO DO... IF IT'S TOO MUCH ENERGY, I TRY TO SIT DOWN, RELAX... I TAKE A SHOWER."
(MORITZ, 30 JANUARY 2020)



"IN MORITZ'S FIRST BEDROOM THERE WAS A DUNK BED. ONCE, WHEN HE WAS UP THERE, DOMINIK (MORITZ AND JULIAN'S YOUNGER BROTHER) WENT UP TO THE HIGH BED WHERE MORITZ WAS AND MORITZ PUSHED HIM WHILE THEY WERE PLAYING. DOMINIK FELL DOWN AND BROKE HIS ARM. HE WAS TWO OR THREE YEARS OLD. MORITZ WASN'T AWARE OR COULD NOT SEE THE TWO-METRE DIFFERENCE IN HEIGHT."
(JULIAN, 29 JANUARY 2020)

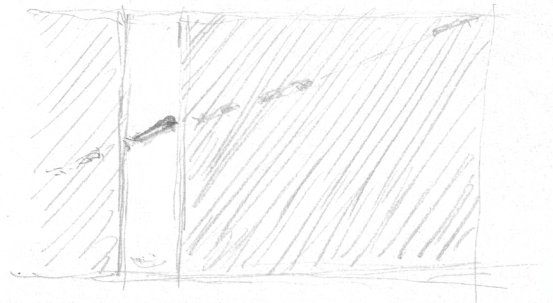
"WHEN THEY WERE CHILDREN I USED TO TAKE THEM TO THE LAKE. ONCE, MORITZ, WHEN HE WAS SIX OR SEVEN YEARS OLD, WAS RIDING HIS BIKE VERY FAST BY THE LAKE... HE TURNED AROUND AND FELL INTO THE WATER... HE COULDN'T SEE THAT THERE WAS WATER ON THAT SIDE."
(SUSANNE, 26 JANUARY 2020)

"MY FINGERS ARE TOO FAT."
(MORITZ, 30 JANUARY 2020)



"I'M LEAVING TO GO BACK TO ITALY. MORITZ JUST CAME TO SAY GOODBYE AND HUG ME. I NOTICED THAT I HAD TO BE RIGHT IN FRONT OF HIM. OTHERWISE, HE WOULD NOT HAVE BEEN ABLE TO SEE ME WELL."
(7 MARCH 2020)

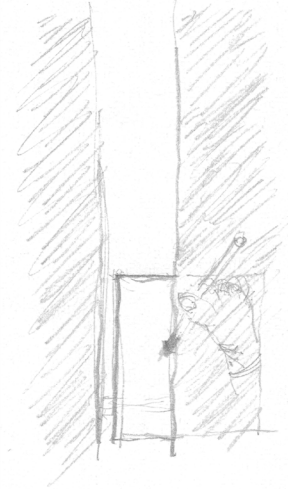
"THERE IS A TRADITION AT EASTER FOR CHILDREN HERE. WE USUALLY HIDE CHOCOLATES AND SWEETS ALL OVER THE HOUSE, OR EVEN IN THE GARDEN, AND THE CHILDREN HAVE TO FIND THEM. THIS WASN'T POSSIBLE WITH MORITZ, BECAUSE HE COULDN'T FIND THEM."
(SUSANNE, 25 JANUARY 2020)



"IF I GO TO THE AIRPORT WITH B. (JULIAN'S SON, A TWO-YEAR-OLD CHILD), AND POINT OUT A PLANE, HE SEES IT. MORITZ WOULDN'T SEE IT."
(SUSANNE, 25 JANUARY 2020)

"HIS BROTHERS GOT USED TO IT TOO... THEY USED TO... ACTUALLY THEY STILL DO IT... I MEAN, TO REMOVE POTENTIALLY DANGEROUS OBJECTS STANDING IN HIS WAY."
(SUSANNE, 24 JANUARY 2020)

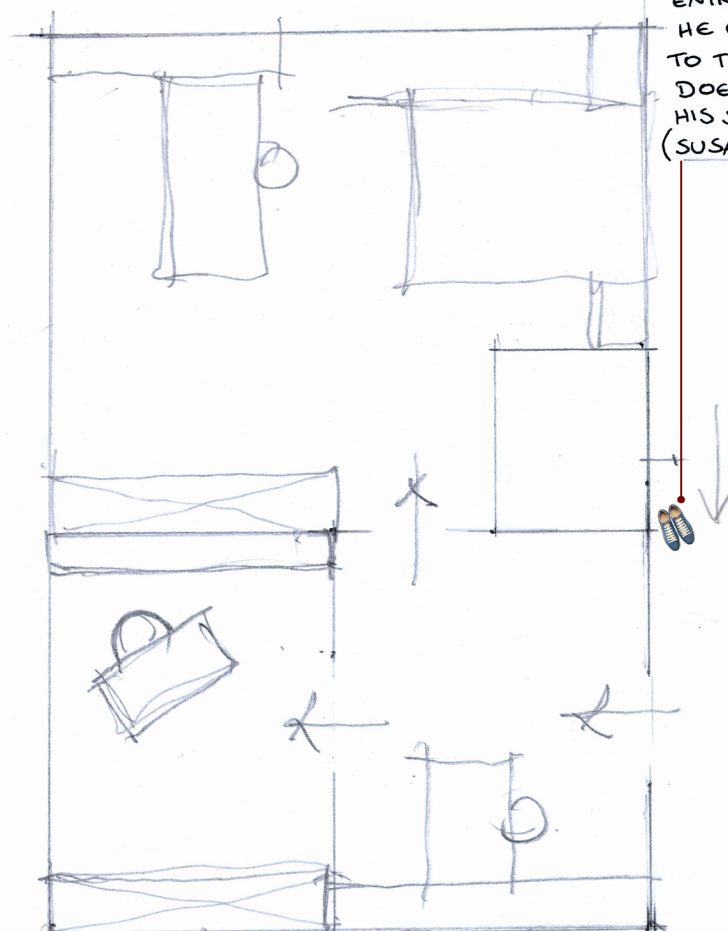
"I ASKED HIM HOW A BETTER KITCHEN SHOULD LOOK LIKE FOR HIM, BUT HE TOLD ME SOME DIFFERENT THINGS THAN THE ONES I THOUGHT. FOR INSTANCE, HE SAID THAT KITCHEN FURNITURE SHOULD NOT HAVE DOORS, BECAUSE IN THIS WAY HE COULD MUCH MORE EASILY SEE AND FOUND WHAT HE'S LOOKING FOR."
(SUSANNE, 6 FEBRUARY 2020)



"NO CONNECTION BETWEEN HIS EYES AND HIS HANDS. WHEN HE WRITES, HE DOESN'T LOOK AT HIS HANDS."
(SUSANNE, 25 JANUARY 2020)

M: "DID YOU HAVE TO MAKE ANY CHANGES IN THIS FLAT? I MEAN, ANYTHING IN ITS SPACE OR IN THE ARRANGEMENT OF THE FURNITURE?"

SUSANNE: "WE DIDN'T CHANGE ANYTHING FOR MORITZ. WE MOVED HERE WHEN JULIAN WAS ONE AND A HALF YEAR OLD AND MORITZ WAS FOUR. I GOT USED TO CARE ABOUT HIM... TO LOOK AFTER HIM. I GOT USED TO REMOVE OBJECTS/TOYS STANDING IN HIS WAY."
(24 JANUARY 2020)



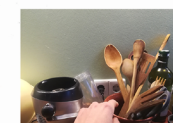
"HE KNOWS HE HAS TO LEAVE HIS SHOES AT THE ENTRANCE, BECAUSE IF HE COMES IN AND GOES TO THE BEDROOM HE DOESN'T REALISE WHETHER HIS SHOES ARE CLEAN OR DIRTY."
(SUSANNE, 26 JANUARY 2020)

"THIS INDUCTION COOKTOP IS GOOD BECAUSE HE MIGHT FORGET THINGS, LIKE PUTTING OUT THE FIRE."
(JULIAN, 29 JANUARY 2020)

"IT'S GOOD BECAUSE THERE'S NO FIRE, WHICH CAN BE DANGEROUS... BUT THESE BUTTONS ARE NOT GOOD FOR FINE MOVEMENTS..."
(SUSANNE, 27 JANUARY 2020)



"THIS BATHROOM IS DEFINITELY TOO SMALL FOR HIM"
(SUSANNE, 25 JANUARY 2020)



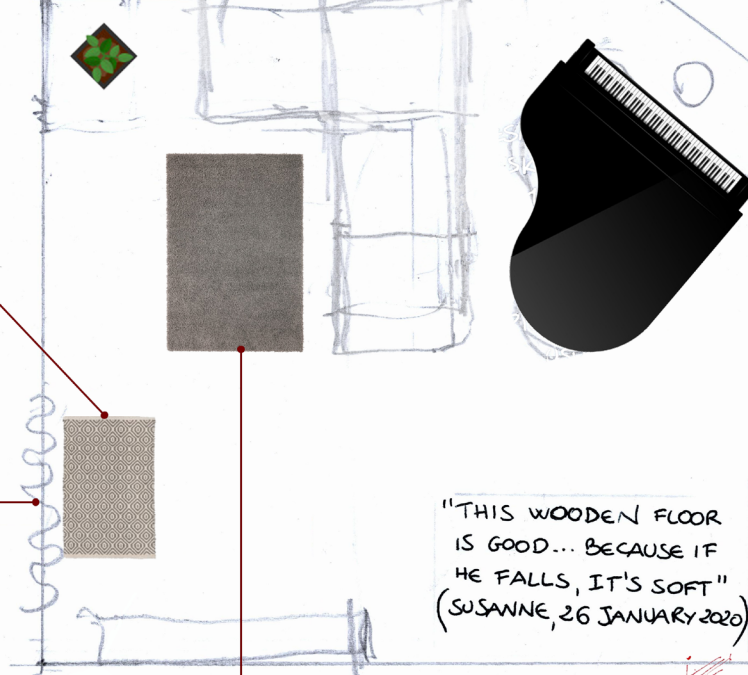
"TOO MANY OBJECTS HERE. HE MIGHT STRUGGLE TO FIND THE PLUG BEHIND THEM OR THAT SPECIFIC OBJECT HE NEEDS"
(JULIAN, 29 JANUARY 2020)

"IF HE LOOKS STRAIGHT AHEAD, HE CAN'T SEE BELOW, OR THE OTHER WAY AROUND."
(SUSANNE POINTED ME IN THE DIRECTION WITH HER HANDS)
(25 JANUARY 2020)



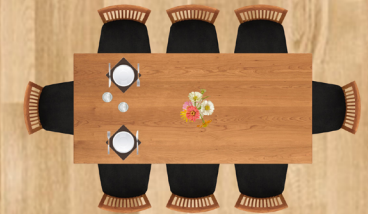
"THE TENT SHOULD BE FIXED VERY WELL. HE MIGHT PULL AND BREAK IT. HE CANNOT MEASURE THE FORCE."
(JULIAN, 29 JANUARY 2020)

"DOORMATS SHOULD BE FIXED ON THE FLOOR BECAUSE HE MIGHT SLIP AND FALL."
(JULIAN, 29 JANUARY 2020)



"THIS WOODEN FLOOR IS GOOD... BECAUSE IF HE FALLS, IT'S SOFT"
(SUSANNE, 26 JANUARY 2020)

"HE WALKS VERY FAST. FOR INSTANCE, HE WOULDN'T SEE THAT LITTLE CAR THAT B. (JULIAN'S SON, A TWO-YEAR-OLD CHILD WHO WAS THERE WITH US) IS USING. HE WOULD STUBBLE OVER IT... HE IS HYPERACTIVE, SO ESPECIALLY WHEN HE WAS A CHILD HE WAS CONSTANTLY ON THE MOVE, ALWAYS JUMPING FROM SIDE TO SIDE"
(SUSANNE, 24 JANUARY 2020)



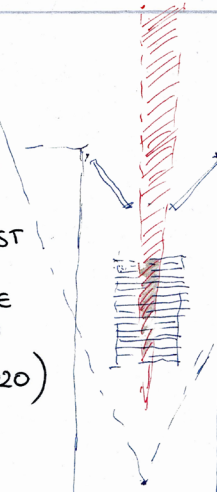
"WHEN I SET THE TABLE, I USUALLY PUT THE GLASS A LITTLE FURTHER AWAY, BUT RIGHT IN FRONT OF HIM, OTHERWISE HE DOESN'T SEE IT."
(SUSANNE, 24 JANUARY 2020)

M: "IF I ASKED YOU FOR ADVICE ON HOW TO DESIGN A HOUSE/ROOM FOR HIM, WHAT WOULD YOU ~~TELL~~ ME?"

SUSANNE: "I WOULD SAY PLEASE DON'T PUT TOO MANY THINGS IN THE ROOM... ONLY THE IMPORTANT ONES, AND A STRONG CONTRAST."
(24 JANUARY 2020)

"WHEN HE WAS A CHILD HE USED TO TOUCH EVERYTHING, BECAUSE HE COULDN'T SEE WELL. THAT WAS HIS WAY OF SEEING."
(SUSANNE, 25 JANUARY 2020)

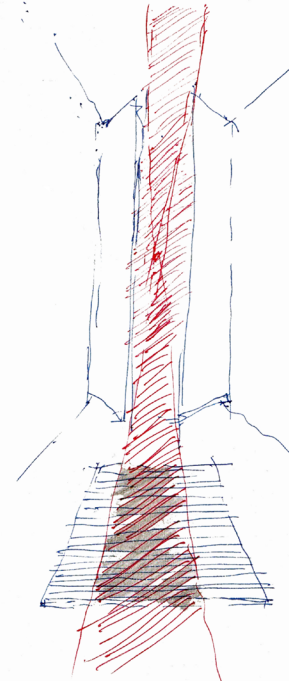
"WITH THIS CARPET HE CANNOT SEE IF SOMETHING ~~FALLS~~ FALLS ON IT... MAYBE, MORE CONTRAST WOULD BE BETTER. BUT IT DEPENDS ON THE COLOR OF THE OBJECT WHICH FALLS ON IT"
(SUSANNE, 24 JANUARY 2020)



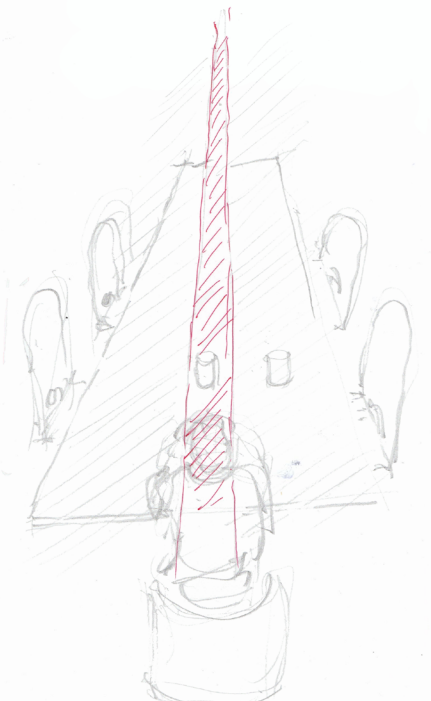
"THE DOORS SHOULD BE EITHER ALL OPEN OR CLOSED. IF THEY ARE HALF OPEN, LIKE 45 DEGREES, HE MIGHT SLAM INTO THEM... GLASS DOORS WOULD BE VERY DANGEROUS FOR HIM BECAUSE HE WOULDN'T BE ABLE TO SEE THEM."
(SUSANNE, 25 JANUARY 2020)

(DURING DINNER)
MORITZ COULDN'T SEE THE GLASS OF WINE, UNTIL I PUT IT JUST IN FRONT OF HIM.
(30 JANUARY 2020)

"I ALWAYS HAD TO RUN AFTER HIM TO REMOVE OBJECTS. I AM HIS THIRD EYE."
(SUSANNE, 25 JANUARY 2020)



"MY BODY TELLS ME WHAT TO DO... IF IT'S TOO MUCH... ENERGY, I TRY TO SIT DOWN, RELAX... I TAKE A SHOWER."
(MORITZ, 30 JANUARY 2020)



"ONCE WE WENT PLAYING WITH GO-KARTS. WHILE DRIVING HE HIT THE ONLY PART OF THE TRACK THAT WASN'T PROTECTED AND BROKE HIS ARM."
(JULIAN, 29 JANUARY 2020)

"TODAY, FOR INSTANCE, WE WERE ON THE BUS GETTING BACK TO BERLIN FROM BONN .. HE TOOK HIS SACKET FROM THE OVERHEAD COMPARTMENT AND JULIAN'S LAPTOP, WHICH WAS THERE, FELL DOWN."
(SUSANNE, 6 FEBRUARY 2020)

"HE USED TO RIDE THE BIKE WITH BACK WHEELS, OTHER WISE HE WOULD FALL. NOW, HE CAN'T ~~BE~~ RIDE A BIKE ANYMORE, IT'S TOO DANGEROUS."
(SUSANNE, 25 JANUARY 2020)

"I GO RUNNING FOUR TIMES A WEEK."
(HE JUST SHOWED ME AN APP ON HIS MOBILE, WHICH COUNTS HIS STEPS AND MONITORS HIS PROGRESS. HE ALSO SHOWED ME A KIND OF GAME, BUT I WASN'T ABLE TO UNDERSTAND SO MUCH. IT SEEMS TO ME THAT HE NEEDS BIGGER SYMBOLS/ CONTROLS TO TOUCH ~~THE~~ THE SCREEN)
(MORITZ, 30 JANUARY 2020)

MY DOCTOR SAYS I HAVE TOO MUCH ENERGY. I CAN'T PLAY BASKETBALL... (HE ~~INDICATES~~ INDICATES HIS EYES WITH HIS FINGERS... I THINK HE MEANS THAT THE PROBLEM IS HIS VISION) ... BUT I RUN, VERY FAST
(MORITZ, 30 JANUARY 2020)

"HE DOESN'T HAVE FINE MOTOR SKILLS... CANNOT MAKE SMALL MOVEMENTS WITH HIS HANDS, SUCH AS PICKING UP SMALL OBJECTS... CHILDREN START PICKING UP SMALL OBJECTS USING THREE FINGERS YOU KNOW? MORITZ DID NOT KNOW HOW TO DO IT... HE COULDN'T.. FOR EXAMPLE, HE CANNOT SWITCH THIS LAMP ON OR OFF, THE SWITCHER IS TOO SMALL"
(SUSANNE, 25 JANUARY 2020)

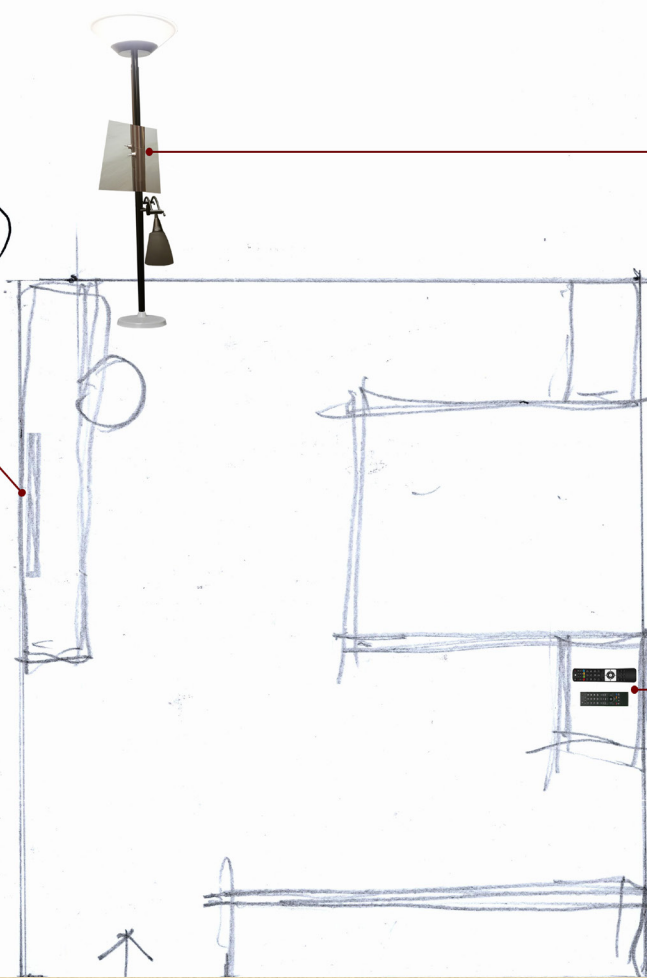
"HE COLLECTS CARDS, SMALL CARDS... ONCE HE REALLY WANTED ME TO BUY A BOOKSHELF WITH GLASS SHELVES, ONE WITH SLIDING DOORS, WHERE HE COULD PUT HIS CARDS. HE BROKE IT SHORTLY AFTERWARDS."
(SUSANNE, 25 JANUARY 2020)

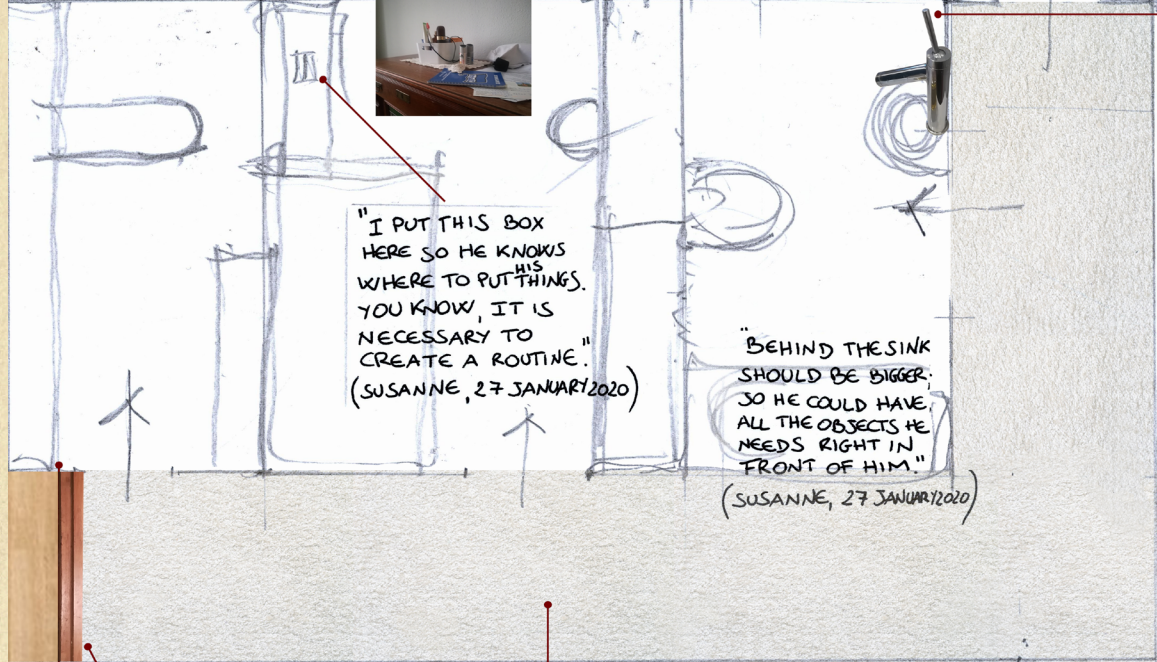
"I DON'T REALLY KNOW IF HE CAN HANDLE THESE TV REMOTES."
(JULIAN, 29 JANUARY 2020)

"TV BUTTONS ARE DIFFICULT FOR HIM TO HANDLE... ACTUALLY ANY ELECTRONIC ITEM OR DEVICE"
(JULIAN, 29 JANUARY 2020)

"YOU KNOW THOSE STAIRS NEXT TO THE BUILDINGS ALONG BERGMANSTRASSE? WHEN I GO WITH HIM, WE WALK A BIT AWAY FROM THEM, OTHERWISE HE WOULD BUMP INTO THEM AND STUMBLE."
(SUSANNE, 26 JANUARY 2020)

"IF HE LOSES SOMETHING, HE CAN'T FIND IT ANYMORE."
(JULIAN, 29 JANUARY 2020)





"I PUT THIS BOX
HERE SO HE KNOWS
WHERE TO PUT THINGS.
YOU KNOW, IT IS
NECESSARY TO
CREATE A ROUTINE."
(SUSANNE, 27 JANUARY 2020)

"BEHIND THE SINK
SHOULD BE BIGGER;
SO HE COULD HAVE
ALL THE OBJECTS HE
NEEDS RIGHT IN
FRONT OF HIM."
(SUSANNE, 27 JANUARY 2020)

"THIS TAP IS NOT VERY
GOOD FOR HIM... THIS
SYSTEM, THE WAY IT
WORKS, IT'S HARD
FOR PEOPLE WHO LACKS
FINE MOTOR SKILLS"
(SUSANNE, 27 JANUARY 2020)

"MIRRORS CAN BE VERY
DANGEROUS... FOR INSTANCE
IF HE CARRIES A CHAIR HE
MIGHT BREAK A MIRROR.
MAKE SURE NO MIRRORS
IN SMALL OR NARROW SPACES."
(JULIAN, 29 JANUARY 2020)

"ONCE MORITZ CAME TO DRESDA
TO SEE ME. WE WENT FOR A WALK.
IN A BIG SQUARE THERE WAS AN
ARTIST WHO WAS PAINTING THINGS.
THIS MAN HAD A SMALL TIN CAN
TO COLLECT MONEY. MORITZ STARTED
RUNNING ACROSS THE SQUARE
FOR FUN... AND HE MANAGED TO
HIT THAT VERY SMALL TIN CAN IN
THAT HUGE SQUARE. HE HAD NOT
SEEN IT AT ALL."
(JULIAN, 29 JANUARY 2020)

"THESE STEPS
MIGHT BE DANGEROUS
BECAUSE HE WOULD
STUMBLE ON THEM.
BUT HE IS USED TO
THEM HERE, HE KNOWS
THEY ARE HERE."
(SUSANNE, 26 JANUARY 2020)

"THIS CARPETED FLOOR
IS NOT GOOD, BECAUSE
IF HE IS HOLDING A CUP
OF COFFEE HE DROPS IT
EASILY AND IT SPILLS
ALL OVER."
(SUSANNE, 27 JANUARY 2020)



"HE HAD TOY CARS LIKE
THIS WHEN HE WAS A
CHILD, BUT IT WOULD
BE IMPOSSIBLE FOR HIM
TO OPEN THIS LITTLE DOOR."
(SUSANNE, 25 JANUARY 2020)

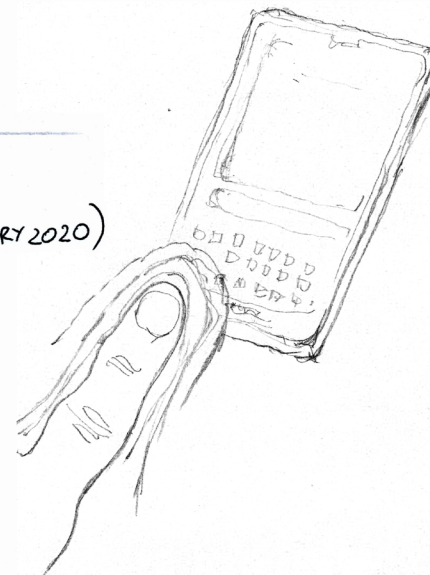
(DURING DINNER)
I NOTICED A KIND OF
MECHANICAL, OR NON-FLUID
MOVEMENT OF HIS HAND
WHEN I HANDLED HIM
A PIECE OF CHOCOLATE
(30 JANUARY 2020)

"I CAN SEE (MORITZ SAYS A FEW
WORDS IN ENGLISH AND THE REST
IN GERMAN. BUT I DON'T UNDERSTAND
GERMAN)... BETWEEN THE 30/50%...
YOU SEE, AS NORMAL."
(MORITZ, 29 JANUARY 2020)

IN MORITZ'S FIRST BEDROOM
THERE WAS A BUNK BED. ONCE,
WHEN HE WAS UP THERE, DOMINIK
(MORITZ AND JULIAN'S YOUNGER
BROTHER) WENT UP TO THE HIGH
BED WHERE MORITZ WAS AND
MORITZ PUSHED HIM WHILE THEY
WERE PLAYING. DOMINIK FELL DOWN
AND BROKE HIS ARM. HE WAS
TWO OR THREE YEARS OLD. MORITZ
WASN'T AWARE OR COULD NOT SEE
THE TWO-METRE DIFFERENCE IN HEIGHT
(JULIAN, 29 JANUARY 2020)

"WHEN THEY WERE CHILDREN I
USED TO TAKE THEM TO THE LAKE.
ONCE, MORITZ, WHEN HE WAS
SIX OR SEVEN YEARS OLD, WAS
RIDING HIS BIKE VERY FAST BY
THE LAKE... HE TURNED AROUND
AND FELL INTO THE WATER...
HE COULDN'T SEE THAT THERE WAS
WATER ON THAT SIDE."
(SUSANNE, 26 JANUARY 2020)

"MY FINGERS ARE
TOO FAT."
(MORITZ, 30 JANUARY 2020)



I'M LEAVING TO GO BACK
TO ITALY. MORITZ JUST CAME
TO SAY GOODBYE AND HUG ME.
I NOTICED THAT I ~~HAD~~ HAD
TO BE RIGHT IN FRONT OF
HIM. OTHERWISE, HE WOULD
NOT HAVE BEEN ABLE TO
SEE ME WELL.
(7 MARCH 2020)

Operation 3

Thinking from (multiple) singular uses

After having explored the uses of – and relations with – the space of the house where Moritz lived for a long time, in their radical singularity, a subsequent operation was aimed at expanding this spatial analysis to the urban context, and allowing a reflection on the problems that would emerge. How should one behave when and where an infinite plurality of needs and ways of using a space, even conflicting ones, coexist? The opening to and the raise of awareness of individual – concrete and not abstract – situations and users in a public context, seems to clash with the need to make precise material choices. With these questions in mind, Sánchez Criado and I asked another ‘epistemic companion’ to collaborate with us. This time, he was an ethnographer ‘trained in the field’, namely Patrick Bieler, PhD candidate at the Institute for European Ethnology of Humboldt-Universität zu Berlin, whose research investigates on how people with mental distress relate to social and material urban environments in everyday life. Specifically, we asked Bieler to show us a neighbourhood of Berlin where he had done research, telling us stories of how several of his ethnographic counterparts experienced space on a daily

basis. The idea consisted in my acting that day like a regular architect who approaches the documentation of a problem, carrying a map of the area, sketching and taking pictures. The walk created an interesting frictional moment: whilst Bieler told stories to make us perceive the singularity of the ways of living and using spaces, I struggled to inscribe those stories with visual means. These stories, in fact, described a complex topological spatiality, made up of singular experiences and emotions, which I was unable to account for with the tools I was used to working with. Moreover, both during the walk and during a break in a café in the neighbourhood, a long conversation ensued, in which we discussed how Bieler’s ethnographic stories could be made into matter in approaching the design of these spaces. How to compose these multiple experiences and singular needs, so different and contrasting? What choices should be made when designing a space? Architects, or urban planners, are used to approaching this problem by applying rigid standards and regulations in an uncritical way, offering a specific solution through a one-size-fits-all approach, which is hypothetically able to end any conflict. In doing so, however, not



“HOW CAN I STOP COLLECTING DATA? IF I KEEP COLLECTING ALL THE INFORMATION ABOUT ALL THESE SINGLE WORLDS, HOW CAN I STOP AND START DESIGNING...”



“ONE OF MY INFORMANTS ALWAYS CARRIES HER BICYCLE, SHE DRAGS IT BY HAND AS A PROTECTIVE SHIELD IN THE CROWDED STREETS...”

only are singularities erased, but bodies that do not fit those standards are irreparably and violently excluded. On the basis of these considerations, we reflected on how guidelines and bullet points – that is, some of the tools through which architects, according to what emerged from the research I had done and our joint analysis (see chapter V, section 4.2), are used to approaching people with intellectual and developmental disabilities – can be relevant, when not used as normative standpoints, but as ‘middle-ground’ approaches to conceptualising these singular spatialities, perhaps allowing urban designers to capture other forms of ‘doing’ space for their projects. In other words, while standards imply an exclusionary rigidity, imposing a specific and fixed version of the world and its different users, and a specific idea of what is the ‘common’, or the ‘common good’, the guidelines, in their looser nature, offer the possibility of composing these singularities without understanding them as already given and implying a closed summation. If declined and enriched through singular, situated and material experiences, the guidelines can represent a valid instrument to generate forms of sharing, and, therefore, to try to find a common territory, where the ‘common’ is not already known or ‘solved’. The architect is no longer the public architect of an already given public, but the architect of ever emerging publics.



LOCATION OF THE WALK:
KIEZINGEN (UNTERSTADT, BERLIN)*

PARTICIPANTS:

PATRICK BIELER (ETHNOGRAPHER)

MICOL RISPOLI (ARCHITECT)

TOMÁS SÁNCHEZ CRIADO (ETHNOGRAPHER)

MEETING POINT: MARKUS SQUARE

DATE: 8 FEBRUARY 2020

TIME: 10 AM – 1 PM

EXCERPTS FROM THE RECORDED CONVERSATION AND
TOMÁS SÁNCHEZ CRIADO'S NOTES

(DURING THE WALK. PATRICK TALKS AND I INTERRUPT HIM
FROM TIME TO TIME. TOMÁS TAKES NOTES ON WHAT HE
SAYS AND ON OUR CONVERSATIONS)

P: SOME OF MY INFORMANTS USUALLY WALK AS CLOSE AS
POSSIBLE TO THE BUILDINGS

M: WHY?

P: BECAUSE THEY FEEL MORE PROTECTED FROM THE STREET
AND THE TRAFFIC. THEY ALSO PREFER TO SIT WITH THE
BUILDINGS AT THEIR BACK

M: HERE?

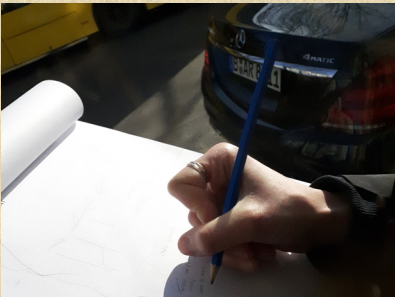
P: NOT HERE, IN SOME STREETS THERE ARE BENCHES, I
WILL SHOW YOU LATER ON

(PATRICK TELLS SOME STORIES ABOUT HIS INFORMANTS)

M: THIS IS VERY INTERESTING...ANYWAY I WOULD NEED
MORE SPATIAL DETAILS

P: WHAT DO YOU MEAN? WHAT ARE YOU TRYING TO DO?

M: I'M TRYING TO MAKE SOME SKETCHES, BUT YOU'RE
TELLING ME STORIES ABOUT HOW THESE PEOPLE FEEL IN
DIFFERENT PLACES AROUND HERE...IT'S HARD FOR ME TO
GRASP AND SKETCH THE SPATIAL DETAILS FROM THESE
STORIES



P: SO HOW WOULD YOU LIKE ME TO TELL THEM?

M: I DON'T KNOW, I WOULD NEED MORE INFORMATION
ABOUT SPECIFIC PLACES, DETAILS, SPATIAL
REFERENCES...

(TOMÁS INTERVENES TO SHOW ME ON THE MAP I BROUGHT
WITH ME WHERE WE ARE EXACTLY, SO THAT I CAN BETTER
ORIENT MYSELF)

P: I COULDN'T TELL YOU EXACTLY, I CAN'T TELL YOU
PRECISELY 'THEY SIT HERE, OR THEY WALK THERE'...

(WE KEEP WALKING AND PATRICK KEEPS TELLING US HIS
STORIES)

P: FOR EXAMPLE IN THIS STREET SOME OF MY
INFORMANTS, SOME WOMEN, FEEL UNCOMFORTABLE. THEY
PREFER NOT TO GO THROUGH HERE BECAUSE THE STREET
IS TOO NARROW AND THERE ARE THESE STANDS AND CAFES
RIGHT ON THE STREET. THEY FEEL LIKE THEY ARE BEING
WATCHED BY LARGE GROUPS OF ARAB MEN SITTING IN THE
CAFÉS OUTSIDE

(...)

P: ANOTHER INFORMANT, THE BOTTLE COLLECTOR, COMES
HERE REGULARLY (HE INDICATES A CAFÉ) BECAUSE THERE
ARE MANY BOTTLES THAT PEOPLE LEAVE IN THESE SPACES
(HE INDICATES THE SPACES BETWEEN THE BENCHES).
PEOPLE WHO FREQUENT THESE BARS AND SIT ON THESE
BENCHES ALWAYS LEAVE THEIR BOTTLES

(I KEEP STOPPING HIM AND ASKING HIM TO POINT OUT
SPATIAL DETAILS. I DON'T KNOW WHAT NOTES TO TAKE,
I DON'T KNOW WHAT TO DRAW. I'M TAKING SOME PICTURES
OF THE BENCHES)

P: MANY OF THEM FEEL INTIMIDATED BY THE RUBBISH (HE
POINTS TO A PILE OF RUBBISH)

(...)

P: ONE OF MY INFORMANTS ALWAYS CARRIES HER BICYCLE,
SHE DRAGS IT BY HAND AS A PROTECTIVE SHIELD IN THE



CROWDED STREETS...BUT ANOTHER ONE PREFERS TO WALK IN THE CROWDED STREETS TO FEEL MORE PROTECTED FROM THE NOISE OF THE CARS...

M: THIS IS SUPER INTERESTING, EVERYONE LIVES AD FEELS THESE PLACES IN COMPLETELY DIFFERENT WAYS

P: YES, EXACTLY, THERE ISN'T JUST ONE WAY, EACH OF THEM DOES DIFFERENT THINGS

(I TAKE PICTURES OF THE STREET AT RANDOM)

M: YOU KNOW, I HAVE NO IDEA OF WHAT TO FOCUS ON EXACTLY, I DON'T KNOW WHAT NOTES TO TAKE, I MEAN, AS AN ARCHITECT...

P: I THINK THIS IS THE PROBLEM WITH SINGULAR STORIES

P: HERE (WE WERE INSIDE A FAMOUS SHOPPING MALL IN THE NEIGHBOURHOOD), FOR EXAMPLE, SHE (ONE OF HIS INFORMANTS) WOULD NEVER GO INSIDE, IT'S TOO NOISY...YOU SEE THESE ESCALATORS WE JUST TOOK? SHE TOLD ME SHE WAS AFRAID THE FLOOR WOULD COLLAPSE UNDER HER FEET

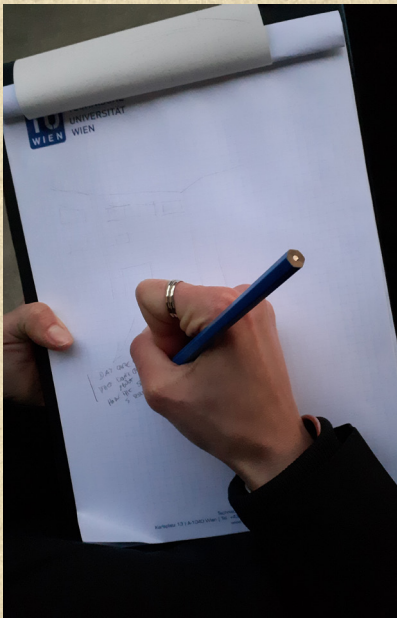
(...)

(WE ARE APPROACHING A BAKERY WHICH IS USUALLY FREQUENTED BY OF ONE OF HIS INFORMANTS)

P: SHE SITS OUTSIDE, BECAUSE INSIDE IT'S TOO NOISY AND CROWDED

(WE ENTER A CAFÉ NEXT TO THE BAKERY TO TAKE A BREAK AND SIT AT A TABLE. PATRICK KEEPS TELLING US HIS STORIES, I HAVE STOPPED TAKING NOTES)

P: SHE (THE SAME WOMAN WHO FREQUENTS THE BAKERY) WOULD NEVER COME IN HERE...DURING WEEKDAYS A LOT OF PEOPLE COME HERE TO WORK WITH THEIR LAPTOPS, THEY USE THIS PLACE AS A KIND OF LIBRARY, AND THEY SPEAK ENGLISH AND SHE DOESN'T, AND SHE CLEARLY NOTICES THIS, AND SHE SAYS I'D NEVER GO THERE, SIMPLY BECAUSE OF THIS, SHE ALWAYS GOES TO THE BAKERY. THE



BAKERY, ON THE OTHER HAND, IS FREQUENTED BY LOCALS, WHOM SHE MEETS EVERY DAY AND WITH WHOM SHE CAN CONVERSE, EVEN BRIEFLY. HERE YOU HAVE ALSO VERY SELECTED KINDS OF MUSIC, IN THE OTHER PLACE THEY PUT RADIO MUSIC. FOR INSTANCE I HAVE A FIELDNOTE SAYING: ONCE I WENT TO THE BAKERY WITH HER AND THERE WAS RADIO MUSIC PLAYING AND PEOPLE WOULD COME IN AND TALK ABOUT SOCCER, AND THEN I CAME HERE TO WRITE MY FIELDNOTES AND THEY WERE PLAYING THIS KIND OF INDIAN ESOTERIC KIND OF MUSIC AND IT WAS EXACTLY LIKE SHE SAID, THAT EVERYBODY WAS SPEAKING ENGLISH, SO SHE HAS GOOD POWERS OF OBSERVATION

M: SO SHE DOESN'T FEEL REALLY COMFORTABLE IN THIS NEIGHBOURHOOD...MAYBE BECAUSE IT HAS BEEN GENTRIFIED FOR SOME YEARS NOW, IT BECAME SOMEHOW COOL AND A LOT OF FOREIGN PEOPLE ALSO CAME HERE TO LIVE

(...)

P: WELL, YES AND NO. SHE CALLS THEM "THE ENGLISH", SHE LIKES LOOKING AT PEOPLE BUT SHE DOESN'T WANT TO PARTICIPATE...SHE SOMEWHAT LIKES LOOKING AT PEOPLE PASSING BY AND HAVING FUN. SHE LIKES IT BUT AT THE SAME TIME IT IS A PROBLEM FOR HER

(WE STEP OUT OF THE CAFÈ. TOMÁS PROPOSES THAT WE REPORT ON THE EXPERIENCE AND REFLECT ON WHAT HAS EMERGED FROM IT)

T: IT WAS A VERY SHORT EXPERIENCE, ANYWAY LET'S TRY TO UNDERSTAND WHAT CAME OUT OF IT. ON THE ONE HAND, PATRICK, YOU HAVE BEEN IN A WAY CREATING SOME SORT OF A GUIDED STORY-TELLING WALK WHERE YOU WERE SHOWING SOMETIMES CONFLATING SINGULAR STORIES OF DIFFERENT PEOPLE...AND THEN, MICOL, AT THE VERY BEGINNING YOU WERE OBSESSIVELY TRYING TO GET TO THE SPATIAL CLUES OF THESE STORIES AND YOU WERE ALSO STRUGGLING WITH THAT, THE WALK SOMETIMES WAS TOO FAST WITH YOU NOT KNOWING HOW TO COLLECT ANYTHING FROM THIS

M: YES, I DIDN'T KNOW HOW TO REPRESENT THIS INFORMATION. MY TOOLS, THE WAY I WAS USED TO DOING



SURVEYS, JUST DIDN'T WORK. WHAT IS THE SPATIAL INFORMATION HERE? THERE ARE TOO MANY STORIES, THEY'RE ALL DIFFERENT STORIES, AND THEN THEY ARE ALL ABOUT FEELINGS, SENSATIONS...PECULIAR PERCEPTIONS OF INDIVIDUAL PEOPLE. PATRICK, IN YOUR STORIES YOU HAVE USED A MYRIAD OF PSYCHOLOGICAL, PHENOMENOLOGICAL, SUBJECTIVE AND ATMOSPHERIC CATEGORIES, WHICH CANNOT BE THOUGHT OF EASILY IN SPATIAL TERMS OR DESCRIBED IN THE RES EXTENSA. YOU KNOW, IN GENERAL ARCHITECTURE IS OBSESSED WITH THE MATERIAL DIMENSION...THERE IS A DIFFICULTY IN ABOLISHING THE SUBJECT/OBJECT BINOMIAL. AND THEN WHAT YOU TOLD US ARE SINGULAR STORIES, PARTICULAR TRAJECTORIES THAT CANNOT BE COMPILED ONE ON TOP OF THE OTHER...I MEAN, ALL OF THEM WERE INCREDIBLY FASCINATING...BUT HOW DO I CHOOSE ONE OF MANY? WHICH STORY SHOULD I CHOOSE TO DESIGN SOMETHING?

T: IT SEEMS WE ARE NOW TRAPPED INTO THE DOMAIN OF THE PSYCHOLOGICAL, IN THE SENSE THAT IT'S ALL ABOUT THE INDIVIDUAL SUBJECT'S FEATURES THAT WE CANNOT ACCESS BUT THAT WOULD BE NEEDED TO BE UNDERSTOOD SO THAT WE COULD DESIGN A SPACE...LIKE EACH PERSON IS A WORLD, RIGHT? AND THEN, SINCE EACH PERSON IS A WORLD, HOW CAN YOU KNOW?

M: YES, THAT'S EXACTLY WHAT I WAS THINKING, IF EACH PERSON IS A WORLD, HOW CAN I DO SOMETHING...MAYBE I SHOULD JUST STOP...I MEAN, IF EACH PERSON IS A WORLD, HOW CAN I DESIGN OR RE-DESIGN? I THINK THAT IN A WAY WHAT YOU ARE SAYING, PATRICK, IS THAT WE SHOULD BE FOCUSING MORE ON PEOPLE AS SUCH, BEING INDIVIDUALS WITH INSURMOUNTABLE OR INCOMMENSURABLE NEEDS OR FEELINGS...BUT ANYWAY, MAYBE THERE ARE SOME PATTERNS THAT COULD BE TAKEN INTO ACCOUNT... FOR INSTANCE, GUIDELINES, PRINCIPLES, GENERIC THINGS, AND THAT RATHER THAN BEING ONLY ABOUT SPATIAL DESIGN THESE PATTERNS CAN ALSO BE ABOUT SOCIAL DESIGN...THEY MIGHT BE USEFUL TO THINK ABOUT HOW DIFFERENT PEOPLE MIGHT LIVE TOGETHER IN A SPACE

P: I WOULDN'T DESIGN A PLACE BASED ON THE NEEDS OR ACCOUNTS OF PEOPLE WITH MENTAL DISABILITIES...I WOULD DEFINITELY REFRAIN FROM THAT, BECAUSE IT'S NOT GENERALIZABLE IN ANY SENSE...WHAT I FIND



INTERESTING IS TO HAVE A SPACE THAT ALLOWS VERY DIFFERENT USAGES AND ALLOWS FOR INTERACTION AND MEETING, AND ALLOWS EXCLUSIONS AS WELL

M: YOU WERE TELLING US STORIES ABOUT HOW YOUR INFORMANTS LIVE AND FEEL IN THOSE PARTICULAR SPACES, SO I, AS AN ARCHITECT, WAS TRYING TO FOCUS ON WHAT THEY WERE STRUGGLING WITH, WHAT KIND OF SPACES, OBJECTS, DETAILS, STREET FURNITURE THEY WOULD FIND MOST APPROPRIATE OR NOT...AND TRYING TO COLLECT THIS INFORMATION IN ORDER TO RE-DESIGN A SPACE BY TAKING IT INTO ACCOUNT...

T: SO YOU WERE FEELING THE IMPULSE TO USE THESE SORT OF DATA, SO TO SPEAK...

M: YES, OR RATHER, THIS IS WHAT I AM USED TO DOING...INFORMATION RETRIEVAL TO KNOW HOW AND WHAT TO DESIGN

T: BECAUSE THIS FOR YOU WOULD BE JUST ADDING DIFFERENCE, RIGHT? SO ONE PERSON, TWO PEOPLE, THREE PEOPLE...BUT ALL OF THEM HAVE DIFFERENCES, HOW CAN WE COMPOSE THEM TOGETHER AND THEN...

M: YES, THAT IS WHAT I WOULD DO...OR, RATHER, IT'S WHAT I THOUGHT I WOULD DO...BUT, AS I SAID, THIS IS IMPOSSIBLE

P: BUT THIS WOULD MEAN...WOULD YOU NEED MORE ACCOUNTS OF INDIVIDUALS USING THAT SAME SPACE?

M: BUT THEN HOW CAN I STOP COLLECTING DATA? IF I KEEP COLLECTING ALL THE INFORMATION ABOUT ALL THESE SINGLE WORLDS, HOW CAN I STOP AND START DESIGNING...THAT'S WHY I THOUGHT THAT MAYBE SOME PATTERNS ARE EXACTLY WHAT MIGHT BE NEEDED IN THIS CONTEXT. YOU KNOW, TOMÁS AND I, DURING A RESEARCH WE CARRIED OUT, WERE PAYING SOME ATTENTION TO THE WAYS IN WHICH USUALLY ARCHITECTS OR URBAN DESIGNERS APPROACH THESE KINDS OF ISSUES...MOST OF THE TIME, RATHER THAN HEAVILY REGULATED SPATIAL CUES LIKE 1.7 METERS OR LIKE THIS KIND OF PAVEMENT OR THIS KIND OF MATERIAL, THEY PROPOSE VERY VAGUE GUIDELINES, PRINCIPLES OF DESIGN THAT WOULD BE EXTREMELY WEIRD



TO CONSIDER WITHOUT LOADS OF INTERPRETATIONS...BUT AT THE SAME TIME I HAVE THE IMPRESSION THAT YOU ARE SUGGESTING THAT THERE IS SOME INTEREST IN THIS KIND OF THINGS BECAUSE THERE IS THE APPROPRIATE LEVEL OF GENERALIZATION THAT WOULD BE NEEDED NOT TO GET STUCK INTO: "EACH PERSON BEING AN INCOMMENSURABLE BEING THAT HAS INCOMMENSURABLE NEEDS THAT CANNOT BE COMPOSED TOGETHER"...

T: SO THEN, THERE IS SOME LEVEL OF GENERALIZATION EITHER IN BETWEEN THE ETHNOGRAPHIC AND URBAN DESIGN THAT IS NEEDED, RIGHT?

M: WHICH CAN ALSO BE PROBLEMATIC SOMEHOW...

P: BUT WHY IS IT PROBLEMATIC FOR YOU?

M: I DON'T KNOW...AT THE SAME TIME I FEEL THAT SOMEHOW I WOULD EXCLUDE MANY MANY VOICES, AS IT ALWAYS HAPPENS WITH GENERALIZATION

P: BUT WHY IS THAT EXCLUSION IF IT'S QUITE CLEAR THAT YOU CANNOT DESIGN THE NEIGHBORHOOD FOR EVERYBODY TO USE IT IN THE PERFECT WAY...IT IS INCOMMENSURABLE...SO WHY IS IT PROBLEMATIC TO DESIGN SOMETHING THAT NECESSARILY EXCLUDES THE ONE WAY OR THE OTHER?

M: IS IT A MATTER OF LEAVING A CERTAIN DEGREE OF OPENNESS?

T: YES, EXACTLY...I MEAN, EACH PERSON IS BRINGING A VERY PECULIAR WORLD, THAT FIRST WE DON'T REALLY KNOW HOW TO KNOW...BECAUSE FOR INSTANCE WE HAVE YOUR ACCOUNTS, PATRICK, AND YOUR ACCOUNTS ARE LIKE SECONDARY SOURCES OF EXPERIENCES THAT MAYBE YOU RECORDED WALKING ALONG WITH THEM, THEY WERE THE THINGS THAT THEY SAID BUT, I MEAN, WE DON'T REALLY KNOW HOW IT FEELS TO BE IN THAT MALL WHERE WE WERE BEFORE, CLIMBING THE ESCALATOR AND THINKING THAT THE WORLD IS GOING TO CRUMBLE UNDER OUR FEET...SO PERHAPS THAT OPENNESS IN DESIGN IS NEEDED, OR AN INSCRIBED OPENNESS. MAYBE INSTEAD OF FOCUSING ON NITTY-GRITTY MATERIAL INTERVENTIONS HERE THE TASK OF ANY URBAN DESIGNER WOULD BE ONE



OF SOCIAL COMPOSITION...

M: I THINK THAT THE GUIDELINES, WHICH DURING OUR ANALYSIS, TOMÁS, WE CRITICISED A LITTLE FOR THEIR VAGUE, TOO GENERIC NATURE, COULD BE RE-EVALUATED... UNLIKE RIGID STANDARDS, WHICH DEFINE THE WORLD MATERIALLY IN A PRECISE WAY AND EXCLUDE MANY SUBJECTS WHO HAVE DIFFERENT WAYS OF LIVING, PERHAPS THE GUIDELINES PROVIDE US WITH THAT DEGREE OF OPENNESS WE ARE TALKING ABOUT. BUT TO PREVENT THIS LEVEL OF GENERALISATION FROM BECOMING PROBLEMATIC AGAIN, PERHAPS IT WOULD BE USEFUL TO THINK ABOUT ENRICHING THESE GUIDELINES OR PATTERNS WITH MANY DIFFERENT SINGULAR STORIES, SITUATED MATERIAL INTERVENTIONS...NO?

T: YES, SOMETHING THAT ALWAYS REMAINS OPEN, ON AN APPROPRIATE AND PRODUCTIVE LEVEL OF GENERALISATION, WHICH AT THE SAME TIME SHOWS DIFFERENT SINGULAR SITUATIONS, SPECIFIC MATERIAL INTERVENTIONS, WHICH MAKE IT POSSIBLE TO COMPARE, ENRICH, REVISE...I THINK THIS IS A DIFFERENT IDEA OF ARCHITECTURE AND URBAN DESIGN...

* As in Patrick Bieler's PhD thesis, the actual names of places have been intentionally replaced by pseudonyms. This is a common practice in ethnography based on ethical considerations to protect the identities of research subjects. For a detailed discussion of the meanings of the pseudonyms, see: Bieler, Patrick (2021): *BioÖkologien des Begegnens: Eine ethnografische Untersuchung der relationalen Konstitution psychischer Gesundheit und urbaner Umwelten*. Unveröffentlichte Dissertation, Berlin.



Operation 4

Retraining the body of the architect (2)

The last operation had, in principle, the same objective as the first, namely to train my body and open myself up to other ways of sensing and knowing. This time, however, this possibility was specifically offered to me by my relationship with Moritz. During the exploration of the flat, the stories of his mother and brother, and the direct observation, had provided me with a range of information about his spatial experiences. I had in fact attempted to somehow ‘come into proximity’ of Moritz and sensitise myself to the way in which he sees, where the contrast between different colours is more blurred and the angle of view is narrower than mine; to the way in which he hears, where the contrast between different sounds also appears to be less pronounced than mine; to the way in which he touches, where the medically labelled ‘lack of fine motor skills’ renders his hand contact different from mine. In particular, to this end, in the final phase of this experience I carried out a number of material explorations to prototype new, alternative architectural devices which would differ from the ones offered by traditional architecture’s visual culture and let me explore space in new ways. Again Latour, in fact, points out that visual culture is not a metaphorical but a literal and

material world view¹, i.e. how a culture sees the world and makes it visible². My sketchy attempts included binocular lenses

1 Cf. Latour, B. (1986) Visualization and Cognition: Thinking with Eyes and Hands. *Knowledge and Society: Studies in the Sociology of Culture Past and Present* 6: 1-40. Here Latour cites Svetlana Alper’s analysis of Dutch painting: cf. Alpers, S. (1983) *The Art of Describing: Dutch Art in the Seventeenth Century*. Chicago, IL: University of Chicago Press. See also: Henderson, K. (1999) *On Line and On Paper: Visual Representations, Visual Culture, and Computer Graphics in Design Engineering*. Cambridge, MA: MIT Press.

2 What Ivins calls ‘the rationalization of sight’ took place by means of very precise material instruments or techniques, such as Alberti’s perspective scheme of 1435-1436, which “marked the effectual beginning of the substitution of visual for tactile space awareness, because its novel procedure of central projection and section not only automatically brought parallel lines together in logically determinable vanishing points, but provided a basis for the hitherto missing grammar or rules for securing both logical relations within the system of symbols employed and a reciprocal, or two-way, metrical correspondence between the pictorial representations of objects and the shapes of those objects as located in space” (Ivins 1973: 10). This is also the case for descriptive geometry, which was literally created by Monge and developed “into a full-fledged mathematical discipline” (Ivins 1973: 12) at the end of 18th century. Cf. Ivins, W. M. (1973) *On the Rationalization of Sight*. New York: Plenum Press; Alberti, L. B. (1877) (text, transl. and notes by H. Janitschek) *Klein ere Kunsttheoretische SchTiften*. Quellenschriften fur Kunstgeschichte und Kunsttechnik des Mittelalters und der Renaissance, 11. Vienna: Barumuller; Id. (1565) (transl. by D. Domenichi) *La Pittura*. Mondovi, IT: Leonardo Torrentino; Id. (1568) C. Bartoli (ed.) *Opuscoli morali*. Venice: Francesco Franceschi, Sanese; Id. (1868) C. Popelin (transl. and ed.) *De la statue et de la peinture*. Paris: A. Lévy Éditeur; Monge, G. (1798) *Géométrie descriptive. Leçons données aux Écoles normales, l’an 3 de la République*. Paris: Baudouin.



that channel sight and reduce contrast, sound recordings – later merged together and adjusted to blur contrast between different sounds – and worker gloves to experience other ways of touching and handling things. Here it is necessary that I dwell further on the meaning that I attributed to these objects and their role as mediators. Indeed, these devices were in no way intended to imply and enable a ‘representationalist’, or ‘empathic’ approach, which would presuppose the idea of replicating real bodily characteristics more or less accurately through simulation, and easily accessing the affective and sensory worlds of others (these issues have been more fully discussed in Chapter V, section 4.2), thereby reducing experience and the body itself to finite models³. Rather, starting from the assumption that our experience and perception of the world always pass through different – material and immaterial, simple or complex – mediators, which “shape what counts as ‘real’”⁴, as well as Coates’ instructions for sensory experiments, I intended to capture from – and attribute to – such devices a performative character. Rather than neutral tools, these glasses, sound and gloves are to be understood as active and speculative tools. As Kullman would say, assuming that “access to others and the world is a fragile accomplishment”⁵, they had both the purpose and effect of engaging me in “perceptual variation”, i.e. expanding my modes of engagement with space, giving me the possibility to explore “different perceptual possibilities that a phenomenon can exhibit while viewed from different vantage points”⁶.

3 Cf. Kullman, K. (2016) Prototyping Bodies.

4 Verbeek, P.-P. (2006) Materializing morality: Design ethics and technological mediation. *Science, Technology and Human Values* 31: 361-380, p. 366. Cited in Kullman, K. (2016) Prototyping Bodies.

5 Kullman, K. (2016) Prototyping Bodies, p. 77.

6 Selinger, E. (2006) Normative phenomenology: Reflections on Idhe’s significant nudging. In E. Selinger (ed.) *Postphenomenology: A Critical Companion to Idhe*, pp. 89-107. Albany, NY: State University of New York Press, p. 92. Cited in Kullman, K. (2016) Prototyping Bodies, p. 78. See also: Ihde, D. (2012) *Experimental Phenomenology. Multistabilities*. Albany, NY: State University of New York Press.

[6 FEBRUARY 2020]

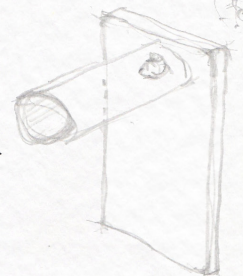
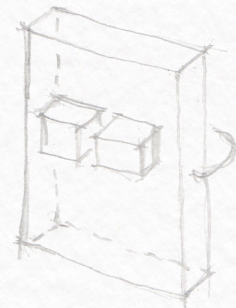
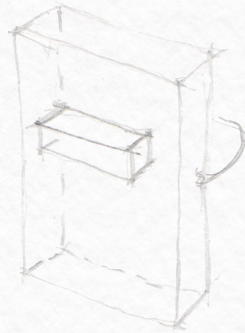
I BUILT A RUDIMENTARY OBJECT TO ALLOW ME TO "CHANNEL" MY VISION
I TOOK THE LID OF A SHOEBOX AND TIED A RUBBER BAND
TO IT TO MAKE A MASK.

THEN I CARVED A RECTANGULAR HOLE AT EYE LEVEL AND
INSERTED A PIECE OF SCRAP CARDBOARD, SHAPING IT TO
FIT THE PERIMETER OF THE CARVING AND CREATING AN
EXTRUSION TOWARDS THE OUTSIDE OF THE LID.

IT DOESN'T WORK.

THE VIEW ISN'T ~~AS MUCH~~ CHANNELLED ENOUGH.

I GLUED A PIECE OF SCRAP CARDBOARD TO THE
CENTRE OF THE HOLE SO TO SPLIT IT IN TWO, AND
INSERTED SCRAP CARDS INTO THE TWO RESULTING
HOLES, SHAPING THEM AS I HAVE DONE BEFORE AND
CREATING TWO HOLLOWED-OUT PARALLELEPIPEDS OF SORT.



1

[8 FEBRUARY 2020]

I JUST SHOWED THE MASK TO SUSANNE. SHE TOLD ME
THAT MORITZ'S VISION IS NOT ONLY "CHANNELLED"
AND THEREFORE WITH A NARROW FIELD OF VIEW, BUT
ALSO MORE "BLURRED" THAN OURS. "LESS CONTRAST".
PERHAPS I COULD USE A FILTER TO DECREASE THE CONTRAST
BETWEEN DIFFERENT OBJECTS AND COLOURS...

SUSANNE PUT HER SUNGLASSES ON THE OPTICAL "CHANNELS"...
"MORE OR LESS LIKE THIS, BUT NOT QUITE"

[10 FEBRUARY 2020]

I TRIED USING DIFFERENT TYPES OF FILTERS.

- TRACING PAPER
- PLASTIC BAGS (BLACK AND WHITE)
- NAYLON SOCKS
- A BLACK FABRIC

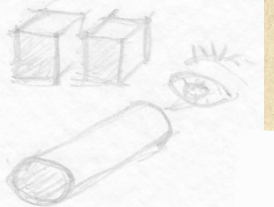
I TESTED THEM ON A CARDBOARD TUBE OF TOILET PAPER.

THEY DON'T WORK, THEY DON'T ALTER THE DIFFERENCE
BETWEEN OBJECTS AND COLOURS. THEY DON'T FLATTEN THE CONTRASTS.

I TRIED PUTTING PIECES OF BROWN TAPE ON THE OPTICAL
CHANNELS... MAYBE IT WORKS.

I ALSO MADE A VIDEO WITH MY MOBILE PHONE, HOOKING
THE TOILET PAPER TUBE WITH THE FILTER ON THE MOBILE
PHONE'S CAMERA.

IT SEEMS TO WORK

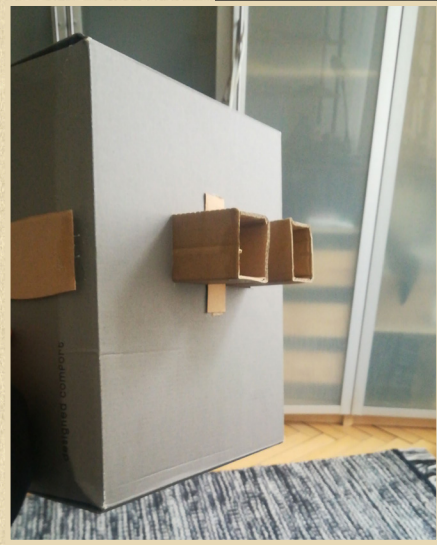
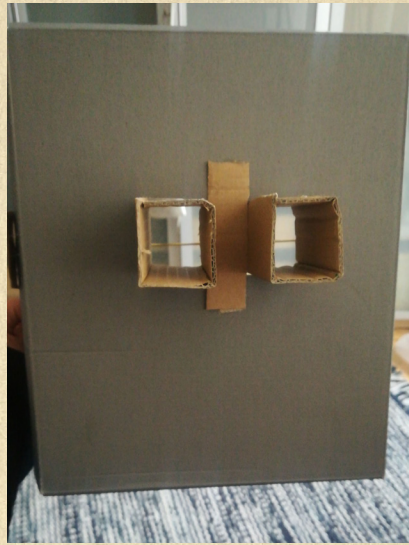
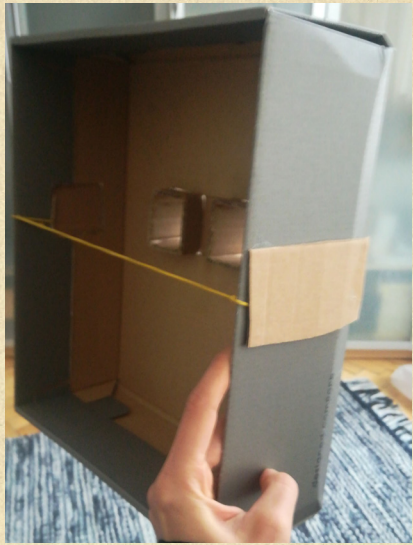


SUSANNE THINKS IT WORKS AS WELL. SHE PUT ON THE MASK
AND TOLD ME THAT MAYBE IT WORKS, THE VISION IS MORE LIKE MORITZ'S.

"BUT NOW YOU SHOULD DO THE SAME FOR THE EARS, BECAUSE HE
CAN'T DISTINGUISH BETWEEN SOUNDS. HE DOESN'T KNOW WHICH
ONE IS MORE RELEVANT".

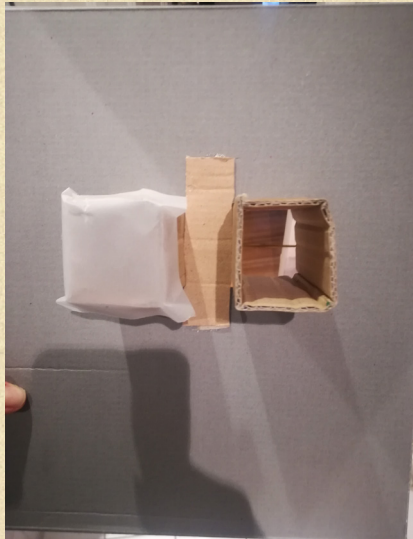
BUT THE MASK "DANCES" A BIT. IT'S NOT FIXED, AND I
CAN'T TURN MY HEAD DOWNWARDS.

2



"BUT NOW YOU
SHOULD DO THE
SAME FOR THE
EARS, BECAUSE HE
CAN'T DISTINGUISH
BETWEEN SOUNDS.
HE DOESN'T KNOW
WHICH ONE IS MORE
RELEVANT"

(SUSANNE, 10 FEBRUARY 2020)



[12 FEBRUARY 2020]

I TOOK THE TASK TO TOMÁS TO SHOW IT TO HIM.
HE SAYS HE FINDS IT OPPRESSIVE BECAUSE IT COVERS THE WHOLE FACE
AND THE SMELL OF GLUE IS NAUSEATING.

[13 FEBRUARY 2020]

I HAVE TO EXPERIMENT WITH SOUND SPACE AS WELL. AND I ALSO
NEED TO DO SOMETHING ABOUT HAND CONTRAST BECAUSE HE HAS
DIFFICULTY IN HOLDING THINGS AND MANOEUVRING OR HANDLING
SMALL THINGS. HE DOESN'T FEEL THE CONTRAST BETWEEN OBJECTS..

SOUND COLLECTION IN THE HOUSE AND AROUND THE CITY:

- DISHES
- COFFEE MACHINE
- TV SOUND
- THE SOUND OF KEYS ON MY MAC KEYBOARD
- MY SNEEZING AND COUGHING
- THE SOUND OF THE U-BAHN TRAIN
- AMBULANCE SIREN
- A JACKHAMMER
- PEOPLE TALKING
- MY FOOTSTEPS
- A DOOR SLAMMING
- THE INDUCTION COOKER

.....

AND INTENSITY

I PUT THEM ALL ON AUDACITY TO MODULATE THE FREQUENCY OF THE DIFFERENT
SOUNDS.

I FLATTENED THEM, SET THEM ALL AT THE SAME FREQUENCY
TO REMOVE THE CONTRASTS.

(I DON'T UNDERSTAND ANYTHING --- IT'S UNBEARABLE ---

3

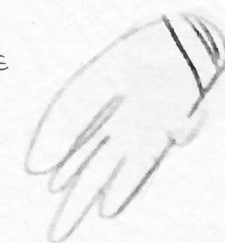
[14 FEBRUARY 2020]

I WENT TO A ~~SAFETY~~ SAFETY EQUIPMENT SHOP IN KREUZBERG,
A SHOP THAT SELLS CLOTHING AND TOOLS AND SOME
OTHER STUFF FOR MECHANICS, ELECTRICIANS AND OTHER
PEOPLE WHO NEED THICK GLOVES TO AVOID INJURY.

I BOUGHT WORKER GLOVES TO LIMIT THE FINE MOVEMENTS
OF MY HANDS.

I HAVE TRIED THEM, I CAN'T DO MANY THINGS ...
SUSANNE SUGGESTED I TRY TO COOK WITH THESE
GLOVES, EVEN CUT VEGETABLES.

I TRIED TO DO IT, IT'S VERY DIFFICULT



[15 FEBRUARY 2020]

BACK TO WORK ON THE VISION TOOL/DEVICE. I HAVE TO
MAKE SOMETHING THAT ONLY COVERS THE EYES,
OTHERWISE IT'S OPPRESSIVE.

(I'M AT MODULOR, MAYBE I CAN FIND SOME USEFUL MATERIAL HERE).

- TRANSPARENT PROTECTIVE MASK FOR WELDING OPERATION
(I HAVE TO REMOVE THE SINGLE LENS AND INSERT CYLINDERS
TO CHANNEL THE SIGHT).

- BLACK CARDBOARD TO MAKE CYLINDERS

THERE IS NO PAPER OR OTHER MATERIAL (PLASTIC OR NOT) THAT
IS USEFUL IN REDUCING CONTRAST.

I'VE TRIED DOZEN OF THEM.

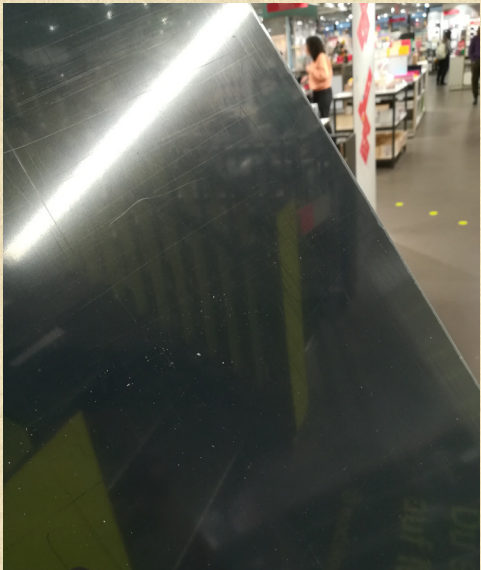
THE MOST USEFUL ONE SEEMS TO BE BROWN TAPE,
FOR COLOR AND LEVEL OF TRANSPARENCY.

4



(...) I HAVE TRIED
THEM, I CAN'T DO
MANY THINGS... SUSANNE
SUGGESTED I TRIED
TO COOK WITH THESE
GLOVES, EVEN CUT
VEGETABLES. I TRIED
TO DO IT, IT'S VERY
DIFFICULT (...)

(14 FEBRUARY 2020)



(AT HOME)

[CONSTRUCTION PHASE]

I TRIED TO CUT OR BREAK THE TRANSPARENT SCREEN OF THE MASK, BUT IT IS TOO HARD AND RESISTANT FOR THE CUTTER.

JULIAN HELPED ME IN HIS SHOP.

AFTER SEVERAL ATTEMPTS WITH DIFFERENT TOOLS HE MANAGED TO BREAK THE SCREEN.

THERE IS ONE PROBLEM.

IF I USE THE BROWN TAPE AS A FILTER, ITS ~~ADHESIVE~~ ADHESIVE SIDE CORRESPONDS TO THE INNER SURFACE OF THE OPTICAL CHANNEL, OR LENS..

EVERY TIME A SPECK OF DUST OR SOME SCRAP FROM THE CARDS I'M USING FALLS OFF, IT STICKS TO THE ADHESIVE AND MAKES THE VIEW DIRTY.

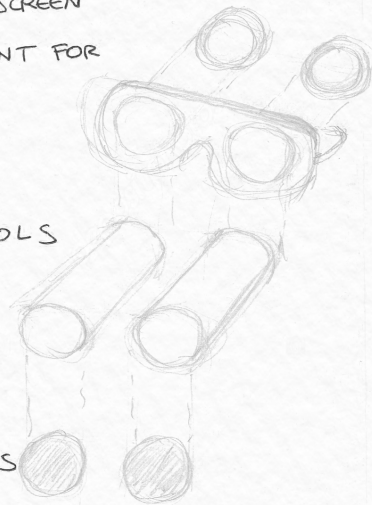
MAYBE I NEED SOME TRANSPARENT PLASTIC DISCS...
(I CAN STICK THE ADHESIVE PART OF THE BROWN TAPE ON THEM)

IT DOESN'T WORK, AIR BUBBLES FORM WHEN I GLUE THE BROWN TAPE TO THE TRANSPARENT DISCS.

THE ANTI-CONTRAST FILTER DOESN'T WORK LIKE THAT.

[YOUTUBE TUTORIAL]

REMOVE THE GLUE FROM THE TAPE WITH SOAP AND WATER MIXTURE.
IT DOESN'T WORK.



5

I ALSO TRIED WITH OIL BUT IT DOESN'T WORK.

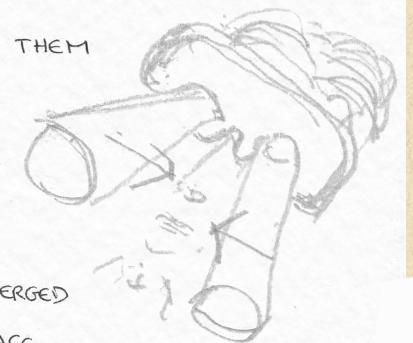
I CAN'T, I'LL LEAVE IT LIKE THAT.

(I HAD TO DISASSEMBLE AND ASSEMBLE THE VARIOUS PARTS SEVERAL TIMES, BECAUSE DUST OR REMNANTS OF PAPER EASILY ENTERED THE MASK AND SOILED THE FILTER).

JULIAN REMOVED THE WHOLE MASK SCREEN, I CAN'T SNAP IN THE CYLINDERS, THEIR DIAMETER IS SMALLER

I USED BLACK ELASTIC BANDS TO ATTACH THEM TO THE MASK AND STABILISE THEM.

I PUT THESE BANDS THROUGH SLITS THAT I CUT IN THE CYLINDERS.



I PUT THE MASK ON BUT THE TWO CYLINDERS DIVERGED OUTWARDS SO THAT THE MASK WOULD FIT MY FACE..
MORE BANDS TO MAKE THE CYLINDERS CONVERGE.

I PUT OTHER BLACK BANDS THROUGH ~~THE~~ OTHER SLITS THAT I CUT IN THE FRONT OF THE CYLINDERS, ON THE TWO OPPOSITE SIDES.

A RUBBER BAND FROM SIDE TO SIDE TO KEEP THEM IN A STRAIGHT LINE.

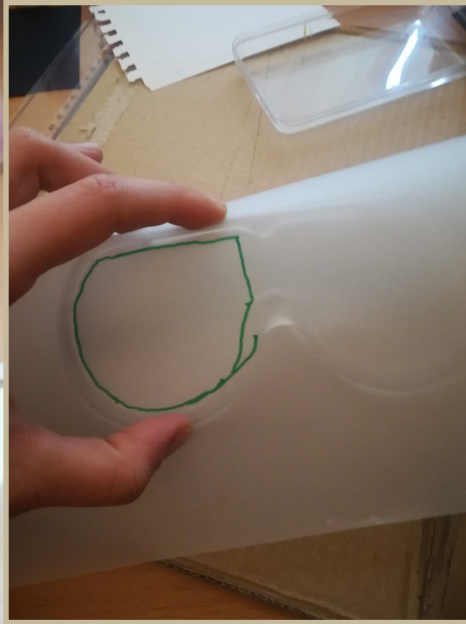
I PUT THE MASK ON BUT IT HURTS, THE TWO CYLINDERS PRESS TOO HARD ON MY FACE, IT FEELS LIKE TWO CIRCLES ARE CUTTING INTO MY SKIN.

I GLUED THE PERIMETER OF THE CYLINDERS WITH A SPONGE CLOTH I FOUND IN THE KITCHEN.

[16 FEBRUARY 2020]

I TRIED THIS HORRIBLE MASK AT HOME AND IN TEMPELHOF PARK.
IT SEEMS TO REDUCE CONTRASTS, BUT I DON'T KNOW

6



(...) I HAD TO
DISASSEMBLE AND
ASSEMBLE THE VARIOUS
PARTS SEVERAL TIMES,
BECAUSE DUST OR
REMNANTS OF PAPER
EASILY ENTERED THE
MASK AND SOILED THE
FILTER (...)

(15 FEBRUARY 2020)





(NOT)FINAL REMARKS: AN ODE TO THE GUIDELINE

1. THE GUIDELINE MAY BE A GATEWAY TO OTHER POSSIBLE ARCHITECTURES.

THE GUIDELINE, UNLIKE A STANDARD, DOES NOT DICTATE RIGID MEASURES, THUS EXCLUDING BODIES THAT DO NOT FIT IN. ITS 'LOOSE' AND OPEN NATURE IS NOT VIOLENT, BUT IMPLIES AND CAN PRODUCE SPACES OF ENCOUNTER AND COEXISTENCE. IT CONTEMPLATES, CELEBRATES AND EVOKES DIFFERENCE (SEE OPERATION 3).

HOWEVER, IF CONSIDERED AND APPLIED UNCRITICALLY AND GENERICALLY AS A NORMATIVE BULLET POINT (SEE CHAPTER V, SECTION 4.2), THE GUIDELINE RISKS PERPETUATING THE STANDARD AND ITS EFFECTS. IT SHOULD NOT, THEREFORE, BE USED REGARDLESS OF THE SPECIFICITY OF EACH INDIVIDUAL DESIGN SITUATION AND OF THE WAYS IN WHICH TO ADDRESS IT (SEE OPERATIONS 2 AND 4).

2. RATHER THAN AS A TOOL ALREADY DEFINED AND APPLICABLE IN THE ABSTRACT, THE GUIDELINE SHOULD BE REGARDED AS A RECIPE OR OPEN INSTRUCTION. IN THIS WAY, IT MAY START/ TRIGGER A PROCESS, STIMULATING VARIOUS CONCRETE AND SITUATED DESIGN EXPERIENCES (SEE OPERATIONS 2 AND 4). THE DOCUMENTATION OF SUCH MULTIPLE DESIGN ENCOUNTERS COULD ENRICH IT, OFFERING POSSIBILITIES FOR COMPARISON, REVISION, ALTERATION. THE GUIDELINE DOES NOT STABILISE THE 'COMMON', BUT LEAVES ROOM FOR NEW, EVER EMERGING VERSIONS. IT SHOULD BE TREATED AS A 'GENERATIVE REGULATION'.

"Generalization should be a vehicle for travelling through as many differences as possible – thus maximizing articulations – and not a way of *decreasing* the number of alternative versions of the same phenomena".

Latour, B. (2004) How to Talk about the Body?, p. 221.

3. THE GUIDELINE IS PARTICULARLY RELEVANT IN THE CASE OF NEURODIVERSITY. NEURODIVERSE SPATIALITY IS NOT EUCLIDEAN, VOLUMETRIC, MEASURABLE. IT IS ATMOSPHERIC, COMPLEX, INTANGIBLE. RIGID STANDARDS AND REGULATIONS ARE COMPLETELY INEFFECTIVE IN TAKING IT INTO ACCOUNT. THE GUIDELINE, IN ITS OPEN, VAGUE, WEAK NATURE, CAN ACCOMMODATE DIFFERENT SPATIALITIES (SEE OPERATIONS 1 AND 4).

4. THE GUIDELINE REQUIRES OPERATIONS OF 'DESIGN BEFORE DESIGN', THAT IS, CONCEPTUAL, BODILY, PRACTICAL EXPLORATIONS OF THE WAYS OF DOING ARCHITECTURE, WHICH GO BEYOND NORMATIVE AND PROCEDURAL 'KNOW-WHAT' (SEE OPERATIONS 1, 2, 3 AND 4). IT REQUIRES ARCHITECTS TO GO BEYOND NEUROTYPICAL DISTANTISM, AND TUNE IN TO MORE-THAN-HUMAN SPATIALITIES, I.E., TO TOPOLOGICAL SPATIALITIES IN WHICH, FOR EXAMPLE, CONTRAST, COLOUR OR THE TACTILE SENSE ARE NOT ADJECTIVES OR SECONDARY QUALITIES OF A EUCLIDEAN SPACE, BUT REPRESENT THE VERY WAY OF RELATING SPATIALLY – I.E., THE PECULIAR ECOLOGIES – OF CERTAIN BODIES (SEE OPERATION 4). THIS ATTUNEMENT DOES NOT DEPEND ON VERBAL LANGUAGE, ON WHICH PARTICIPATORY AND NON-PARTICIPATORY DESIGN APPROACHES ARE GENERALLY BASED IN SIMILAR SITUATIONS, BUT TAKES PLACE THROUGH SPATIAL RELATIONSHIPS AND AGREEMENTS.

"*How* indicates activity, the unfolding of a process. (...) *How do you do that?* The question *how* is often coupled with the answer 'like so'. The sharing of process can be approached as the trade or swapping of techniques or ways of doing things, a form of skills transfer or knowledge exchange. There is a pedagogical aspect to this modality of *how*: observe the imperative of the *step-by-step* guide or technical manual, united in a shared attempt to communicate and teach the

procedural knowledge of *how-to*. In some disciplines, the principle of *how* is instilled through training, the perfection of a notionally correct way of doing things, whilst in other contexts *how* emerges through self-discovery (...). *How* can be proper and improper, diligent or deviant. Act of revelation: the (s)*howing of the how*. (...) [T]here are things that cannot be so easily explained, that refuse to be reduced to a map or guide. Beyond the *know-what* of the encyclopedia, consider the experiential, those embodied forms of tacit knowledge or even *know-how*; resistant to being shown or said, that only can be performed or practised. Indeed, how do we account for those processes in which not knowing, uncertainty, trial and error, feeling one's way and contingency perform a significant role. (...) *How* is less the destination, rather the journey travelled”.

Gansterer, N., Cocker, E. and Greil, M. (eds.) (2017) *Choreo-graphic Figures: Deviations from the Line*. Berlin-Boston: Walter de Gruyter, pp. 63-64.

“Approximation of proximity is a way of speaking about two divergent planes, not converging as though they could become one, but meeting at the differential of their potential for the approximate. For isn't sociality precisely that which sidles proximity differently, that which asks how else a coming-together-in-difference can be felt? Or (...) difference without separability?”

Manning, E. (2020) *For a Pragmatics of the Useless*, p. 6.

5. THE GUIDELINE MAY SUGGEST AND IMPLY A CONTRACT FOR A MORE CAREFUL WAY OF DESIGNING. THAT IS, A CONTRACT THAT DOES NOT CONCERN THE MERE ‘SERVICE PROVISION’ FROM ARCHITECT TO CLIENT, WHICH THEREFORE ENDS WHEN A CERTAIN DESIGN ‘SOLUTION’ IS PRODUCED, ‘FOR’ OR ‘INSTEAD OF’ NEURODIVERGENT PEOPLE. THE GUIDELINE MAY ALLOW US TO FIND AN ALTERNATIVE, AN UNUSUAL CONTRACT, THAT CREATES NEW OBLIGATIONS AND INVOLVES CONSTANT COMMITMENT AND CARE, IN DIALOGUE WITH A WIDE VARIETY OF EPISTEMIC COMPANIONS (SEE OPERATIONS 2 AD 3) IN PROBLEMATIZING THE WAYS IN WHICH DESIGN PRACTICE AND MATERIAL INTERVENTIONS MIGHT ACCOMMODATE BODILY DIVERSITY.

“Making a commitment is, essentially, letting oneself be committed (...). This means breaking down the barriers of immunity (...). This means letting oneself be affected, letting oneself be touched, letting oneself be addressed, knowing one is required, and seeing oneself as concerned. It means moving into spaces of life that we cannot aspire to totally control, getting involved in situations that are too much for us and that require us to come up with answers that perhaps we don't have and that, most probably, would make us different people of us. Any commitment is, perforce, a transformation, with no guaranteed results. (...) [I]t lays bare what is, for the modern individual, the most disagreeable truth: to exist is to depend”.

Garcés, M. (2013) *El Compromís / Commitment*. Barcelona, ES: Centre de Cultura Contemporània de Barcelona CCCB, p. 31.

“[T]o care joins together an affective state, a material vital doing, and an ethico-political obligation”. (...) [It is a] commitment because it is indeed attached to situated and positioned visions of what a livable and caring world could be; but one that remains speculative by not letting a situation or a position (...) define in advance what is or could be”.

Puig de la Bellacasa, M. (2017) *Matters of Care*, p. 42-60.

6. THE GUIDELINE CAN MAKE IT POSSIBLE TO TURN DESIGN INTO A SPECULATIVE TOOL, A DOMAIN OF PROBLEMATISATION (SEE OPERATIONS 1 AND 4). BEYOND CONSENSUAL NARRATIVES, READY-MADE FORMULAS OR CLEAR-CUT IDEAS OF WHAT SHOULD BE DONE AND HOW, SUCH UNDERSTANDING OF DESIGN REQUIRES US TO SLOW DOWN, CARE, LEARN TO BE AFFECTED AND OPEN UP UNFORESEEN FORMS OF WORLD-MAKING.

THE GUIDELINE MAY BE A GATEWAY TO OTHER POSSIBLE ARCHITECTURES.

ARCHITECTURES THAT DO NOT EXCLUDE
ARCHITECTURES THAT DO NOT 'INCLUDE' BUT CONTINUALLY REDEFINE
THEMSELVES
ARCHITECTURES THAT ARE NOT SATISFIED WITH ABSTRACT DEFINITIONS
AND FORMULAS

UNCOMMON ARCHITECTURES
ARCHITECTURES THAT ARE PLURAL, MULTIPLE, ALWAYS EMERGING
ARCHITECTURES THAT DO NOT ASPIRE TO SIMPLIFY AND/OR RESOLVE

NON-EXPERT ARCHITECTURES
NON-HIERARCHICAL ARCHITECTURES
A-DISCIPLINARY ARCHITECTURES
ARCHITECTURES BEYOND THE CAPACITY CONTRACT
ARCHITECTURES BEYOND NEUROTYPICAL DISTANTISM
ARCHITECTURES THAT REMAIN OPEN, THAT QUESTION AND OFFER
QUESTIONS

LIVING, UNSTABLE, ENTHUSIASTIC, CURIOUS, RESTLESS
ARCHITECTURES

QUEER ARCHITECTURES

CAREFUL ARCHITECTURES
ARCHITECTURES OF ENCOUNTERS
ARCHITECTURES SHOWING ATTEMPTS, MISTAKES, FAILURES

VULNERABLE, GENEROUS ARCHITECTURES

NEURODIVERSE ARCHITECTURES

MORE-THAN-HUMAN ARCHITECTURES

