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Joint PhD Thesis

Dispute Resolution and New IT Realities

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Introduction

John F. Kennedy: *“Let us begin anew; remembering on both sides that civility is not a sign of weakness. Let us never negotiate out of fear, but let us never fear to negotiate”*.

Chapter Aims

- What is the general aim of this work?
- What is the state of the art of Online Dispute Resolution?
- What are the outcomes of this thesis?
- What is the methodology used in this thesis?

Sections:

Section 1: General aim of Thesis

Section 2: State of the art

Section 3: Key Issues that will be Raised in this Thesis

Section 4: Chapter breakdown

Section 5: Methodology

Section 6: Desired take away messages

This chapter aims to introduce the reader to the concepts explored in this thesis. In doing so, the author will explain to the reader the aim of the thesis, the methods used and the reasons why they were selected.

Credit must also be attributed to Professor Francesco Romeo and Professor Paul de Hert for their joint efforts in some of the work described.

How a dissertation regarding the use of new technologies for settling disputes could be important in the scholarly debate concerning the functioning of justice and the settlement of disputes?

What I will achieve in my thesis is to apply fair division algorithms – effective only in Common Law areas – all over the world, including Civil Law areas like Italy, Belgium and Europe.

The aim of the project is to apply these principles not just in the shadow of law, but also by trying to operate on the available rights of each European national regulation, in order to have more credit and foster access to justice.

I would substantiate the need to provide all stakeholders with a real, practical alternative solution to courts. A legal layer into the framework of fair division schemes.

This introductory chapter will therefore allow the reader to understand the overall context and aims behind each of the chapters in this thesis.

Section 1 briefly explains the general aims of this thesis. Section 2 will explain the current background and context that exist as a backdrop to this work. Section 3 discusses a series of key questions that form the basis of the five chapters of this thesis, analysed in section 4. The methodology used in these chapters will be explained in section 5. Finally, in section 6, the author will identify

two key points that he hopes the reader will take with away from this thesis.

Section 1: General aim of Thesis

The main aim of this thesis is to demonstrate the primary contention described below:

The primary contention is the advantages of online dispute resolutions, involving the use of fair division principles, compared to trials and other alternative dispute resolution methods, in particular with regards to family disputes.

In harmony with wider changes in society – in particular the advances in technology and the large scale use of online services to transact all forms of business – recent developments in the field of online dispute resolution – such as the new European ODR platform – have led to a new and deep interest in their use as one of the best alternatives to the trial in several law domains, like consumers and family disputes.

The concept is discussed in more detail below in section 5. An example of the advantages might include the fact that judges are restricted by the law; ODR does not have these kinds of boundaries. Another example of the relevance of ODR might include the

necessity of online and offline approaches, e.g. in disputes raised online.

These approaches will help reduce obstacles to the good functioning of civil proceedings, negotiations and settlements, especially the cross-border ones, by enforcing a method that could improve agreements by means of a new e-procedure in certain areas of civil law. These areas include successions and trust and matrimonial regimes in a first stage, and later in other areas such as property and lease, company law and consumer law.

It is the creation of such e-procedure that triggers the engagement of a number of important legal and non-legal approaches. The first is the use of reason – let me persuade you that this is the way to settle – or, in other words, the rational thinking, the arguments and reasoned persuasions. However, to reach a solid agreement engaged people need more than merely rational-economical forces.¹ Logic is not always the best way and does not always leave room for our values and emotions. A much more systematic approach would examine and take adequate account of two other major modes of modern discourse: bargaining and affective (involving emotion and ethical, religious, or strongly held values) or feeling-based arguments.²

As proved by John Nash's work on game theory, in certain cases an optimal solution for the individual could lead to a sub optimal solution for the entire society. Thus, it is not always true, as claimed by Adam Smith, that if each person in society worked to

¹ Gould, J.P., *The Economics of Legal Conflicts*, *Journal of Legal Studies*, 1973, 279-300: "The rational-economical model traditionally assumes that people strive to maximize their own gains, without regard to the gains of others".

² Menkel-Meadow, C., *Scaling up Deliberative Democracy as Dispute Resolution in Healthcare Reform: a work in progress*, 2011, available at www.law.duke.edu/journals/lcp.

optimise his welfare the whole society would have the optimal welfare. Therefore, if we are looking for the paramount results not just for individuals, but the group as a whole, we should regard emotional and psychological forces not merely as barriers but as potential promoters of a positive outcome for the dispute.

Such approaches, including where it occurs not only rational arguments but also bargaining for common interests and the own and other's values and emotions, can produce a proper settlement. Online dispute resolution also has some drawbacks, but if our society invests in the development of ODR and IT realities, they will be a fundamental resource, especially in family and e-commerce disputes.

This thesis will demonstrate how, in several law domains, e-procedures based on game theory principles of fair division and win-win solutions are more satisfactory than using law principles. A perusal of research on issues related to introduction of these procedures in the law domain shows that whilst there is numerous debate, finding their origin in social engineering studies – such as Rational Choice Theory – there is, at least in Europe, little or no debate concerning the use of these methods.

In particular, Rational Choice Theory is an approach used by social scientists to understand human behaviour.³ Individual are supposed to act as “rational agents” and the social desirability of a rule is thought as if it could be rationally and objectively stated. On the contrary, the debate in the jurisprudence in the last two decades

³ Green, S.: Rational Choice Theory: An Overview, Prepared for the Baylor University Faculty Development Seminar on Rational Choice Theory, May 2002.

has highlighted the important role of the law in protecting individuals in their non-rational choices. Particularly the whole consumers law is devoted to protect citizens “against themselves”⁴.

This lack of debate (both in academic and judicial circles) means that the situation in Europe is radically different from the one existing in U.S., due to the lack of unity of the European Public Order and, consequently, to the presence of various multiple and different mandatory rules in each Member State.

This thesis, following Brams’s proposal of 1978⁵ and the subsequent debate aroused from this proposal, will argue the potential of online negotiation systems for providing greater access to the judicial system. This thesis will show how ODR providers use their experience from earlier settlement agreements not only for resolving disputes but also for preventing them, including the possibility of changing the behaviours of disputants.

Section 2: State of the art

It is becoming increasingly difficult to ignore the online dispute resolution’s (ODR) development and evolution.

⁴ Browne, M., Bischoff Clapp, K., Kubasek, N. and Biksacky L.: Protecting Consumers from Themselves: Consumer Law and the Vulnerable Consumer, *Drake Law Review*, Vol. 63/2015, 157-191.

⁵ Brams, S.: Applying Game Theory to Antitrust Litigation, *Jurimetrics, Journal* 18 (Summer), 320-327.

Over the past century there has been an increasing interest in online dispute resolution due to the enormous potential for meeting the needs of the system and its users.

Its aim is to broaden access to justice and resolve disputes more easily, quickly and cheaply. The challenge lies in delivering a system that fulfils that objective. A system which has more than one connection with IT.

IT can be used in support of the court system in two quite different ways. The first involves the application of technology to improve what is already in place today. In this way, IT is grafted onto existing working practices and so replaces or perhaps enhances current systems. This approach tends to be costly, difficult, and, in the end, often delivers ‘mess for less’, that is, it replaces today’s inefficient, paper-based processes with IT-based systems. It does not fundamentally change the underlying processes and procedures.

The second use of IT in the courts is to enable the delivery of services in entirely new ways. When this is the aim, it encourages new and imaginative thinking and urges reformers to start afresh, with a blank sheet of paper. This is therefore in contrast with many projects that are currently in progress in the civil justice system – those that fall into our first category and are seeking to systematize the traditional operation of the courts.⁶

Nowadays, the conception of ODR is broader than that of many specialists in online dispute resolution. The term ODR has come to be used to refer to IT and the Internet to help resolve

⁶ Online Dispute Resolution for Low Value Civil Claims, Online Dispute Resolution Advisory Group: www.judiciary.gov.uk/wp-content/uploads/2015/02/Online-Dispute-Resolution-Final-Web-Version1.pdf.

disputes. While a variety of definitions of ODR have been suggested, this thesis will not use the definition of “computerization of the current court system”, in other words, conducting court hearings across video links or online tracking of the progress of trials could not be referred to ODR.

When a conflict is handled using ODR, a traditional courtroom or hearing room is not employed. Instead, the process of settling a dispute is entirely or largely conducted across the Internet. In other words, dispute resolution services are made available as a type of online service. Many techniques fall under the umbrella of ODR. Sometimes human beings remain heavily involved, as when ODR systems provide facilities for judges, mediators, or negotiators to handle disputes by communicating electronically with parties and by reviewing documents in digital form. On other occasions, the assessment of a legal problem or the negotiation itself might be enabled by online e-supported service without much or any expert intervention.

ODR techniques are already being deployed around the world in resolving a wide range of disagreements – from consumer disputes to problems arising from e-commerce, from quarrels amongst citizens to family disputes. ODR is not appropriate for all classes of dispute but, on the face of it, is best placed to help settle high volumes of relatively low value disputes – robustly, but at much less expense and inconvenience than conventional courts. We find that ODR is best explained by example. Accordingly, in chapter 4, we provide a set of illustrations of ODR and algorithms in action.

Section 3: Key Issues that will be Raised in this Thesis

In order to demonstrate the main contention of this thesis (described in section 1 above) this thesis will examine four major issues:

- 1) Which algorithms are used in solving disputes?
- 2) What is the most suitable legal context for using such a method?
- 3) Is there a role for online e-supported systems in solving disputes?
- 4) Is this approach efficient (pareto-optimal) in practice for all the parties involved?

Section 4: Chapter breakdown

This thesis will consist of 5 chapters. Each of these chapters is related to one of the key questions identified above. Each of these chapters will allow a key issue to be demonstrated that, when taken together, will allow the main contention of this thesis to be demonstrated.

a. Chapter 1 Background chapter

- From Game Theory principles of Fairness, Win-Win solution and Envy-freeness (Brams and Taylor 1996) to algorithms – based on these principles – able to solve a dispute.

Nowadays a good amount of disputes could be solved applying several “games” for a fair solution for the parties involved. Since the pioneering work of the three mathematicians Hugo Steinhaus, Bronislaw

Knaster and Stefan Banach in Poland during World War II, fair division procedures made their entry (Brams 1996).

In the 1990s fair division literature has grown and a popular book was written by Steven J. Brams and Alan D. Taylor in 1999. Several fair division algorithms were developed throughout this whole period (Brams, Jones and Klamler 2004). The recent years have witnessed an increasing interest by the international scientific community, testified by a large number of publications in the field from all over the world.

Unfortunately, very few empirical studies have put fair-division procedures to the test. Despite their immense potential we have only Pratt & Zeckhauser in 1990, Raith in 2000, Schneider & Kramer in 2004, Daniel & Parco in 2005, Dupuis-Roy & Gosselin in 2009.

b. Chapter 2 Background chapter

- The three forms of dispute resolution, with a particular focus on Negotiation and Mediation.

This chapter will describe how the process of Alternative Dispute Resolution was developed in USA and how it was adapted in Europe with a different ratio. Moving through the idea of the vanishing trial (Galanter 1984), the importance of the trial (Mulcahy 2012) and the idea of being against settlement (Fiss 1984), with all the related concerns about this strict point of view (Luban 1995), I will focus on the possible ways of Dispute Resolution (Menkel Meadow 2015) and the importance of getting to yes (Fisher and Ury 1981). Finally, I will focus on the importance of the 3rd party's role (Black and Baumgartner 1983).

c. Chapter 3 Empirical chapter

- Online Dispute Resolution (Origin, ratio, forms) from its actual use and limits to the Automatic Systems (ratio, applications in common law, limits especially in civil law).

This chapter will describe how the Online Dispute resolutions diverge from Alternative Dispute Resolution. This chapter will investigate the e-supported systems.

The Online Dispute Resolution environment should be envisioned as a virtual space in which disputants have a variety of dispute resolution tools at their disposal. Participants can select any tool they consider appropriate for the resolution of their conflict and use the tools in any order or manner they desire, or they can be guided through the process.

Even if a stalemate occurs, suitable forms of ADR (such as blind bidding or arbitration) can be used on a smaller set of issues. In this chapter I will focus on new decision analysis strategies (Brams 2008), (Thiessen and MacMahon, 2000) (Zelevnikow 2014).

In this chapter I will introduce the concept of E-Negotiation and E-Mediation.

These are processes that may use a negotiation support system including computers or other forms of electronic communications that enable parties to negotiate their own agreements. In its most advanced form, E-Negotiation is a form of artificial intelligence that fully automates mediation (perfectly neutral, super intelligent, and very secure). While in many cases unnecessary, E-Negotiations and E-Mediations can include face-to-face meetings if such meetings enhance the process (Thiessen, Miniato and Hiebert 2012).

As said by Ernest Thiessen, Paul Miniato and Bruce Hiebert, “the key difference with eNegotiation is that the parties are in full control both during the process and in accepting or rejecting an outcome... and a well-designed eNegotiation systems will reduce the conflict or eliminate it by changing the fundamental nature of the interaction between the parties”.

d. Chapter 4 Analytical chapter

- Analysis of ten Italian situations in which the e-procedure could be useful (or, at least, better than the final judgment).

Throughout the empirical chapter, I will have explored the interactions between alternative dispute resolution and game theory. This analytical chapter will delve from the empirical data presented to discuss the idea of a dialogical relationship between online negotiation systems and fair division algorithms. Analysis will critically assess with the Italian jurisprudence and in particular with family law cases offering different ways of framing the benefits of using such a procedure instead of going to the trial.

It is crucial to emphasize the fact that in chapter 4 I will apply this method in an experimental way. I will take judgments already decided and, thanks to the final verdict and confidential documents related to the case judged, attributing values to the parties, I will show how convenient and efficient is such a method.

In this analytical chapter I will engage once again with my initial theoretical chapter, before I began fieldwork. So far, throughout the data analysis process much of the initial theoretical ideas resonate, thus they form a good base for the discussion.

- e. Chapter 5
- Conclusions

This chapter, based on the analysis of the previous chapter, will underline once more the use and development of algorithms for the resolution of disputes. Use that should be applied once we distinguish available rights (*droits disponibles*) from national mandatory rules (*loi de police*) which are presently in force in the different member states. I am focused on the family law sector (offering an analytical approach in the previous chapter). Some of them have been patented in the United States; others are either patent-pending or in the process of development.

A potential use of these theories, based on the application of this methodology *instead of law* is based on the concept expressed by the article 1134 and 1165 of the Belgian civil code and the article 1322 of the Italian civil code – the principle of freedom of contract⁷ – could eschew recourse to national courts by simplifying

⁷ Germany: Article 2(1) of the German Constitution; Greece: Article 5(1) of the Hellenic Constitution and Article 3 of the Civil Code; Denmark: Article 5.1.1 *Danske Lov* (old Danish Code of 1683); Spain: Article 6 and 1255 of the Civil Code; France, Belgique and Luxembourg: Article 6, 1123 and 1134 para 1 of the Civil Code indirectly; Italy: Article 1322 of the Civil Code; The

and solving disputes using algorithms as expeditiously and fairly as possible.

In ODR, the use of algorithms, if successful, will supersede differences in national laws, paving the way for their adoption and enforcement by the EU.

Section 5: Methodology

The main aim of this thesis is to demonstrate the primary contention (see section 1) through consideration of each of the key issues described above (see section 3). Approaching each of the issues demands a multidisciplinary approach. This involves research concerning areas as diverse as, on the one hand, game theory and fair division and, on the other hand, alternative dispute resolution and online dispute resolution in particular.

The use of such approaches, and the reasons for their selection is described below.

1) Empirical approach of fair division algorithms (related to key issue 1)

2) Empirical approach of alternative dispute resolution (related to key issue 2)

Netherlands: Article 6:248 BW; Portugal: Article 405 of the Civil Code; Austria: § 859 ABGB.

3) Empirical approach of online dispute resolution (related to key issue 3)

4) Analytical approach of ten Italian judgements in which I applied the Adjusted Winner (related to key issue 4)

Section 6: Desired take away messages

This thesis refers to and discusses a wide range of content. In this context the author realises that it may be difficult for the reader to retain a clear grasp on the central message of this thesis. In order to improve clarity, the two main messages that the reader should derive from this thesis are described below.

1) There is no single truth

While two or more people are arguing, no decision will be accepted if people will not believe in it; a solution that is fair, a good outcome. To achieve it, it is essential to “get the focus off the focus”. People have to bear in mind that the main negotiation is the one they have with themselves, their internal dispute.

Although transparency and openness are the basis, it is crucial to emphasize the concept that truth is not so strict anymore: there is not just a single truth, but there are more truths such as the rational one or the emotive one.

The evidence of this last sentence can be clearly seen in the touching scene of the movie “I am Sam”. In this movie, a mentally handicapped man fights for custody of his 7-year-old daughter, and

in the process teaches his cold hearted lawyer the value of love and family.

As described by Roger Ebert, *I Am Sam* is aimed at audiences who will relate to the heart-tugging relationship between Sam and Lucy. Every device of the movie's art is designed to convince us Lucy must stay with Sam, but common sense makes it impossible to go the distance with the premise. "You can't have heroes and villains when the wrong side is making the best sense".⁸

Hence, the final message of this movie is that we are in the middle of an evolution; perhaps we may find the truth and perhaps is it not the only one. This is where mediation comes in, to take into account the interests behind the position, not just ZOPA, BATNA or WATNA, but possible and practical solutions, such as the idea of a joint custody in the movie "*I am Sam*".⁹

2) People should be part of the solution

The phenomenon of Online Dispute Resolution, in both a socio-psychological approach and in its legal one, represents an excellent perspective through which to view the expressive activity of solving dispute.

In such a context, ADR are not the Alternative Dispute Resolution but the Appropriate Dispute Resolution.

⁸ www.rogerebert.com/reviews/i-am-sam-2002.

⁹ Message elaborated from the speech of Prof. Menkel-Meadow in Leuven University at the conference *Beyond Mediation (building Blocks of Constructive Conflict Management)*, on the 8th of February 2016.

Chapter 1

Game Theory and Fair Division models

Rumi:

*“Beyond our ideas of
right-doing and wrong-
doing, there is a field.
I’ll meet you there”.*

Chapter Aims

- What is Game Theory and Fair Division.
- What are Fair Division's principles.
- Describe the most well-known fair models, such as the Last-Diminisher, the Divider-Chooser, Taking Turns, the Lone-Divider, the Selfridge–Conway, the Moving Knife, the Lone-Chooser and the Adjusted Winner.
- Demonstrate the advantage and the differences between the Adjusted Winner and all the other procedures.

Sections:

Section 0: Introduction

Section 1: Game Theory and the four Fair Division principles

Section 2: The eight well-known fair models

Section 3: 1st model

Section 4: 2nd model

Section 5: 3rd model

Section 6: 4th model

Section 7: 5th model

Section 8: 6th model

Section 9: 7th model

Section 10: 8th model

Section 11: Conclusions

Section 0: Introduction of the 8 fair division models

This chapter aims to develop an understanding of the phenomenon of fair division. This may help us to understand, firstly, why game theory's tools may be an added value in the context of solving a dispute (this will be discussed further in chapter 3 where the author will attempt to offer a wide-ranging summary of procedures already tested) and, secondly, why fair models have received limited attention thus far from legal scholars, as a result there has been little efforts to define the concept when it is discussed in a legal context (this is discussed further in chapter 5).

Following the most notably Rawls's "Justice as Fairness", this chapter will show how four game theory principles for having fairness and a win-win solution, such as "proportionality", "efficiency", "equitability" and "envy-freeness" and several algorithms – based on these principles – are able to solve a dispute. This idea is important in allowing individuals to live their lives in the manner in which they would want and therefore also in maintaining a pluralistic society. The perception is useful in allowing the fair procedures to be linked to ideas and arguments found within ethical and philosophical theories.

Starting by providing in section 1 a broad overview of the notions of game theory and fair division, this chapter will describe eight different models that are commonly used in the field of game theory. Each of which is capable of describing important facets of fair division and satisfying more or all of its properties.

This description begins with section 2, which starts by introducing generally the fair division models and their properties. Section 3 will provide an overview of the Last-Diminisher method. Section 4 follows on from this with a focus on the Divider-

Chooser method. Section 5 follows on paying attention to Taking Turns. Section 6 follows on with an emphasis on the Lone-Divider method and section 7 on the Selfridge–Conway method. Section 8 and 9 will concentrate on the procedures of Moving Knife and Lone-Chooser respectively. Finally, section 10 will explore the Adjusted Winner and its properties, underlining that it's the method that reflects more properties than the others.

Nowadays, a good amount of disputes could be solved applying several “games” for a fair solution for the parties involved. Since the pioneering work of the three mathematicians Hugo Steinhaus, Bronislaw Knaster and Stefan Banach in Poland during World War II, fair division procedures made their entry (Brams 1996). In the 1990s fair division literature has grown, a popular book was written by Steven J. Brams and Alan D. Taylor in 1999 and several fair division algorithms have been developed through the whole period. The recent years have witnessed an increasing interest by the international scientific community, testified by a large number of publications in the field from all over the world.

Unfortunately, despite their immense potential, just very few empirical studies have put fair-division procedures to the test: Pratt & Zeckhauser in 1990, Raith in 2000, Schneider & Kramer in 2004, Daniel & Parco in 2005, Dupuis-Roy & Gosselin in 2009.

The aim of this chapter is to provide the reader with a firm understanding of fair division procedures, an understanding that will be required in subsequent chapters in order to: (i) understand how fair procedures can be more efficient, cheaper and shorter in time compared with standard legal procedures; (ii) understand why Adjusted Winner is the model the author will use in the analytical chapter (this is discussed further in chapter 5) and (iii) understand

whether fair procedures that deal with analogous issues of legal approaches are able to limit the recourse to courts in a subsequent phase to the dispute.

Section 1: Game Theory and the four Fair Division principles

1.1 Definition of Game Theory and Fair Division

As announced we are now introducing the notion of Game Theory, in order of illustrating later the notion of Fair division and its four principles.

Game theory is a branch of mathematics devoted to the study of strategic interactions, i.e., interactions which involve more than one agent and in which the effects of each agent's decision depend not only on her decision but also on the decisions of the other agents so that what each agent does depends on what she thinks the other agents will do.¹⁰

In other words, game theory can be defined as “a set of tools and a language for describing and predicting strategic behaviour”. Strategic behaviours are situations in which one person would like to take into account how a second person will behave in making a decision, and the second person would like to do likewise. Strategic settings typically involve two or more decision makers, and the

¹⁰ Zaluski, W., Game Theory in Jurisprudence, Copernicus Center Press, 2013.

possibility of linking one decision to a second decision, and vice versa.¹¹

Since his pioneering studies, Steinhaus introduced the concept of “Fair division”: it all starts with the renowned and well-known example of cake cutting division introduced in his “The Problem of Fair Division”, 1948 and the foremost and notorious dilemma “How do we fairly share the cake?”.¹²

It is necessary here to clarify exactly what is meant by Fair Division:

In the literature, the term tends to be used to refer to achievable ways of dividing a resource among several parties in such a way that all recipients believe that they have received a fair amount, according to different criteria of fairness.

Of course, it is never an easy task, due to the fact that each recipient may have a different measure of the value of the resources involved in the division.

1.2 Principle 1 and Principle 2

There is a large number of published studies describing the principles of a fair division:

¹¹ Picker, R., *An Introduction to Game Theory and the Law*, Chicago Working Paper in Law & Economics, 1994, 1-26.

¹² Id.

According to Steven J. Brams, professor of New York University “there are four criteria by which to judge the fairness of settlements: Proportionality, Envy-freeness, Equitability and Efficiency”.¹³

Besides, it is easy for Brams to reduce these principles to three due to the fact that Proportionality could be seen as a weaker version of Envy-freeness and it could be not taken into account.

More precisely, when we are talking about two-parties disputes, proportionality and envy-freeness are equivalent (if I think I have at least one-half, then I will not envy you, so the settlement is envy-free, and also proportional).

On the other hand, in the case of a three-parties dispute, envy-freeness is stronger than proportionality:

If I think I have at least one-third, then I will not envy you, whenever I think the others together don't receive more than two-thirds, so the settlement is envy-free and, consequently, it's easy to say that it is also proportional.

If I think I am getting one-third, but I think you are getting one-half and the third party just one-sixth, then, in my eyes, I will envy you.

Thus, as a direct consequence, it is easy to affirm that, on one hand, an envy-free allocation is always proportional, even if there are more than two parties, but, on the other hand, a proportional allocation is not necessarily envy-free.

¹³ Brams, S. & Taylor, A., *The Win-Win solution*, Norton & Company, 1999.

Brams's statement can be proved by considering its equivalent contrapositive: "If a fair-division method is not proportional then it is not envy-free".

It is suitable to prove this to be true as follows:

Suppose a fair division method is not proportional. Then one of n players (say P1) believes that he or she did not receive at least $1/n$ of the total value in the division. Thus, that player believes the total value shared by the other players is more than $(n-1)/n$ of the value. Then, if that is true, one of the other $n-1$ players must have more than $1/n$ of the total value. Thus P1 will envy that player.

For making it easy to understand this previous argument, it is better to try in the case $n = +2$ (i.e., $n = 3$ or $n = 4$).

Hence, avoiding to linger on the first principle, it is easy to trace back the principle of proportionality to the Greek philosopher Aristotle. The Alexander the Great's preceptor in his "Ethics" argued that "goods should be divided in proportion to each claimant's contribution".

In other words, a division of goods can be described as a proportional between two people if each player, based on his/her own preferences, evaluates the piece he/she received worth at least one-half of the whole amount of goods to divide between them. If there are three people, each evaluates the piece he/she received worth at least one-third of the total value and so on.

Generally speaking, “an envy-free division is one in which every person thinks he or she received the largest or the most valuable portion of something – based on his or her own valuation – and hence does not envy anyone else”.¹⁴

Although the concept of envy-freeness has been used in the mathematics literature on Fair division for almost sixty years (Gamow and Stern, 1958) and in the economics literature for almost fifty years (Foley, 1967), only almost two dozen years ago several algorithms have been developed. Algorithms able to guarantee envy-freeness in a wide variety of situations.¹⁵

1.3 Principle 3

Moreover, slightly related to the concept of envy-freeness, there is also the third principle of Equitability that has to be taken into account as one of the fair division criteria.

Roughly speaking the term equitable has been applied to fair division method where each participant believes he or she has received the same fraction of the total value of the object or objects divided.

This concept might seem simple but it is not.

Think about an inheritance or a divorce settlement, in which you got 60% of the total value of the joint holdings but in which your opponent thinks he or she got 95% of the total value, because your rival had little interest in what you got.

¹⁴ Brams, S. & Taylor, A., *Fair Division, from cake cutting to dispute resolution*, Cambridge University Press, 1996.

¹⁵ *Id.*

The first person, regardless of what his or her opponent thinks, in his or her eyes his or her opponent received only 40% of the total value that was divided.

The focus point is that if we couple these two principles (envy-freeness and equitability) it means not only that both get more than 50% but also that both exceed 50% by the same amount.

In the previous example an equitable and envy-free division would hold if the first person believed he got 65% and his or her opponent 65% which is quite a different story from the one above mentioned.

1.4 Principle 4

The last criteria to analyze for having a fair division is the term Efficiency.

In Economics, the term Efficiency is generally understood to mean Pareto-optimality (also named after Vilfredo Pareto), which is an extremely important property to economists.

A fair-division method is Pareto-optimal if and only if there are no possible exchanges or different allocations that would benefit at least one participant that doesn't also make at least one other participant worse off.

To summarize, a fair method of fair-division is fair if it satisfies one of the preceding criteria of fairness (either proportionality, envy-freeness, Pareto-optimality, or equitability).

1.5 Applying fair division principles in the models

A method can be:

Proportional: if every player gets at least $1/n$ of the cake, by her own valuation.

Envy-Free: if no player prefers getting the piece allotted to any of the other players.

Equitable if all the players get the exact same utility in x , by their own valuations.

It is essential to note that each of these criteria of fairness is satisfied if and only if every participant considers the allocation he made fair in that sense.

That is, as it is more appropriate now to define it, a method of fair-division is fair (in some sense) if and only if every participant considers it to be fair (in that sense).

It is crucial to bear in mind the assumptions implicit in the above definitions:

Firstly, the above mentioned definition of fairness is restricted to situations in which all participants to a division do have equal claim in whatever is being divided.

Secondly, perhaps some allocation of goods and/or issues can be considered fair but it does not satisfy any of the criteria already defined. For this reason, it is possible to speak, for example, of fair-division methods which is “fair in the sense of being proportional” or which is “fair in the sense of being equitable.”

Actually, these economic principles are not suited to every dispute. Brams and Taylor (1990s) investigated the differential impact of several fair division procedures (hereafter fair division models

and in the following sections will be analysed 8 well-known models) on series of disputes and they realised that these economic procedures are more suitable for two-party disputes, relating to the division of goods or issues (preferably divisible) and based on voluntary choices and a willingness to state preferences.¹⁶

Firstly, nowadays, most of the conflicts inherently involve two parties or coalition who shared interests and coordinate their actions and, secondly, they are not only more practical but also more amenable and less complicated for achieving a settlement.

In addition, the disputes could involve both goods or issues, but it's possible to refer to them merely as items. On the one hand, the goods can be described as the physical objects that must be divided among the heirs to an estate and, on the other hand, the issues can be defined as matters on which there are opposite positions.

Bram's and Taylor's studies observed that all fair division models are based on voluntary choice. The output is left to the disputants, to their choices, as allowed by the rules. They may be supported, clarified and facilitated by a mediator or a negotiator but the final decision will never be imposed by an outside third party, as a tribunal court or as an arbitration panel.

In conclusion, through the following models and especially in the last one analysed, the adjusted winner, it will be shown that, regarding the opportunity of stating preferences, to the party is at least required to pick a favourite item among the goods and/or issues, but it could be requested also to compare and then to choose between two piles of items or even to attribute to each single item a personal value.

¹⁶Id.

Section 2: The eight well-known fair models

The opportunity of applying Fair Division principles to solve disputes will provide a real alternative from courts to disputants. An alternative method based on people's preferences, following Nash's optimal negotiation and bargaining.¹⁷

The huge toughness in finding solutions acceptable to all the players involved in a dispute motivated many mathematicians and game theorists to develop fair-algorithms.

Inspired by "*I cut... you choose procedure*", since 1940s, Steinhaus, Banach and Knaster produced the first algorithms aiming at dividing a single divisible good between a number of agents fairly which will be the underpinnings of these "fair procedures".

Previous empirical studies, in Common Law areas, have put these fair-algorithms in practice, applying them in an alternative fair dispute resolution, without receiving a due credit. (Pratt & Zeckhauser, 1990; Raith, 2000; Schneider & Kramer 2004, Daniel & Parco 2005, Dupuis-Roy & Gosselin 2009).

In the field of alternative dispute resolution there are a huge number of methods, which are not well used or developed as much as it could be done.

Nowadays, as we will illustrate in the following section a good amount of disputes could be solved applying several "models" for a fair solution for the parties involved. Here there are eight models

¹⁷ Nash, J., Two person Cooperative Games, *Econometrica*, 1953.

which will be simplified in order of being able to understand why the last model has more advantages, comparing to the others mentioned below.

Section 3: 1st model

A first example of a fair division procedure is Divide and Choose:

A fair division procedure for dividing an object into two parts in any way that one desires and the other party chooses which-ever part he/she wants.¹⁸

“One divides, the other chooses” can be seen as the first cake-division procedure.

A cake-division procedure is used to divide and choose some object among three or more people, and cake is the metaphor used to help explain this procedure.¹⁹

The cake-division procedure involves finding allocations of a single object that is finely divisible.

¹⁸ For definitions and graphs in this paragraph, I am referring into this chapter to: Freeman, W.H., For All Practical Purposes: Mathematical Literacy in Today's World, Comap, 2011.

¹⁹ Id.

In this procedure, each player has a strategy that will guarantee his or her satisfaction, even in the face of collusion by the others.

In other words, to be satisfied means that one thinks his piece is of size or value at least what he viewed as a fair share or he does not want to trade.

A cake-division procedure (for n players) will be called proportional if each player's strategy guarantees that player a piece the size or value at least $1/n$ of the whole in his or her own estimation.

It will be called envy-free if, as in the adjusted winner context, each player's strategy guarantees that player a piece he or she considers to be at least tied for largest or most valuable.²⁰

Steven J. Brams, in its article "Fair Division",²¹ made two assumptions about cake-cutting:

1. "The goal of each player is to maximize the minimum-size piece (maximin piece) he or she can guarantee for himself or herself, regardless of what the other players do. To be sure, a player might do better by not following such a maximin strategy; this will depend on the strategy choices of the other players. However, all players are assumed to be risk-averse: They never choose strategies that might yield them larger pieces if they entail the possibility of giving them less than their maximin pieces".²²

2. "The preferences of the players over the cake are continuous, enabling one to use the intermediate-value theorem. To illustrate, suppose that a knife moves across a cake from left to right and, at any moment, the piece of the cake to the left of the knife is A and the piece to the right is B . If, for some position of the knife,

²⁰ Id.

²¹ www.nyu.edu/gsas/dept/politics/faculty/brams/fd_handbook.pdf

²² Id.

a player views piece A as being larger than piece B, and for some other position he or she views piece B as being larger than piece A, then there must be some intermediate position such that the player values the two pieces exactly the same”.²³

The origins of the divide and choose procedure, also called the Divider-Chooser method, date back thousands of years. The rules to the procedure are simple:

“Someone divides the object into two parts and the other person chooses first”.

As suggested by his name, the first player, called the divider, divides a cake into two shares, and the second player, called the chooser, picks the share he or she wants, leaving the remaining share of the cake to the divider.

The natural strategies of the divide and choose procedure are quite obvious:

The divider makes the two parts equal in his estimation.

The chooser selects whichever piece he feels is more valuable.

This method guarantees that divider and chooser will each get a fair share (with two players, this means a share worth 50% or more of the total value of the cake).

Not knowing the chooser’s likes and dislikes, the divider can only guarantee himself a 50% share by dividing the cake into two halves of equal value; the chooser is guaranteed a 50% or better share by choosing the piece he or she likes best.

²³ Id.

Other strategic considerations may be relevant, such as the question:

Would you rather be the divider or the chooser?

Not knowing the other party's preference, one would want to be the chooser.

The divider is guaranteed a share worth exactly 50% of the total value of the cake. Conversely, the chooser could end up with a share worth more than 50%.

If the players each had the same value system, they would each end up with exactly 50%.

The differences between their value systems is what allows the chooser to virtually end up with more than 50%.

Section 4: 2nd model

Another example of a fair division procedure is Taking Turns:

A fair-division procedure in which two or more parties alternate selecting objects.²⁴

The rules to the procedure are simple too:

“With two parties, one party selects an object, then the other party selects one, then the first party again, and so on”.

²⁴ Freeman, W.H., *supra* note 18.

Questions arise with taking turns:

How do we decide who goes first?

A possible answer for deciding it could be to toss a coin or bid for the right to go first.

Since choosing first is often quite an advantage, should the other party be compensated in some way?

A possible and fair compensation could be extra choices at the next turn (i.e., in a 4 items division one player could choose item n1, the second player item n2 and item n3 and the first player the remaining item, item n.4).

Should a player always choose his or her favourite from those that remain, or try to choose strategically to get better overall results?

If a player chooses strategically, he or she could get better results.

Example of Taking Turns:

Suppose Bob and Carol are getting a divorce and their four main possessions are ranked from best to worst by each:

	Bob's Ranking	Carol's Ranking
Best	Pension	House
Second best	House	Investments
Third best	Investments	Pension
Worst	Vehicles	Vehicles

Figure 1

If they both choose sincerely, the items would be allocated as follows:

First turn: Bob takes the pension.

Second turn: Carol takes the house.

Third turn: Bob takes the investments.

Fourth turn: Carol is left with vehicles.

Anyway, Bob may vote insincerely and chooses the house first. He actually would do better (getting his first and second choice).

First turn: Bob takes the house.

Second turn: Carol takes the investments.

Third turn: Bob takes the pension.

Fourth turn: Carol is left with vehicles.

This is the so called Bottom-up strategy. It is another method that can be used for optimal strategy for rational players, each knowing the other's preferences.

The called Bottom-up strategy is based on two principles:

During your turn, you should never choose your least-preferred available option.

You should never waste a choice on an option that will come to you automatically in a later round.²⁵

²⁵ Id.

Section 5: 3rd model

Since the pioneering work of the three mathematicians Hugo Steinhaus, Bronislaw Knaster and Stefan Banach in Poland during World War II, fair division procedures made their entry.²⁶

Banach-Knaster “last-diminisher procedure” was developed in 1946, and the Steinhaus “lone-divider procedure” in 1948. Both of these two procedures can be seen more in details below.²⁷

The last-diminisher procedure and the lone-divider procedure are both cake-division procedures.

More in details, the Lone-Divider Method developed by Hugo Steinhaus is a cake-division procedure that works for three players and produces an allocation that is proportional but not, in general, envy-free.²⁸

This is just an extension of the Divider-Chooser Method to more than two players.

One cuts the cake and the other two players must approve a piece if they think it is the size of at least one-third. If the other

²⁶ Brams, S., *Fair Division: From Cake-Cutting to Dispute Resolution*, Cambridge University Press, 1996.

²⁷ Steinhaus, H., *The Problem of Fair Division*. *Econometrica*, 1948.

²⁸ Freeman, W.H., *supra* note 18.

two players disapprove of a piece, then that piece can go to the cutter, or some pieces can be put back together and recut.

This fair division scheme requires three steps:

Step 1. Division:

The divider slices the pizza into three pieces. This division is rational only if each piece has equal value to the divider.

Step 2. Declarations:

Each chooser declares which pieces he or she considers acceptable (a fair share, in other words).

Step 3. Distribution:

What happens here depends on the declarations.

In case number 1, one chooser declares more than one piece acceptable. Then the other chooser gets her or his chosen piece, the chooser of more than one piece gets her or his other choice, and the divider gets what was left. (Note that everyone gets a fair share.)

In case number 2, both choosers declare just one piece, and they are different. The distribution is obvious in this case.

In case number 3, both choosers declare just one piece, and it is the same piece. Here we give the divider one of the two undeclared pieces (randomly selected). Then we put the remaining two

pieces back together and apply the divider-chooser method. Again everyone gets a fair share.

Moreover, even though we have described the process for three players, we can easily extend it to more players if needed.²⁹

Section 6: 4th model

On the other hand, the Last-Diminsher Method developed by Banach and Knaster is a cake division procedure for any number of players that produces an allocation that is proportional but not, in general, envy-free.³⁰

In the first ever paper on fair division, Steinhaus (1948) reports on his own solution and a generalisation to arbitrary items proposed by Banach and Knaster.³¹

In this method everybody is both a divider and a chooser. The method makes sense only for division problems in which the item that should be divided among the parties involved is something more complicated than a cake.

²⁹ Brams, S. & Taylor, A., An Envy-free Cake Division Protocol. American Mathematical Monthly, 1995.

³⁰ Freeman, W.H., *supra* note 18.

³¹ Steinhaus, H., *supra* note 27.

- a) Player 1 cuts off a piece (that he or she considers to represent $1/n$).
- b) That piece is passed around the players. Each player either lets it pass (if he or she considers it too small) or trims it down further (to what he or she considers $1/n$).
- c) After the piece has made the full round, the last player to cut something off (the “last diminisher”) is obliged to take it.
- d) The rest (including the trimmings) is then divided amongst the remaining $n-1$ players. Play cut-and-choose once $n = 2$.

The procedure’s properties are similar to that of the Steinhaus procedure (it is proportional; not envy-free; not contiguous; bounded number of cuts).³²

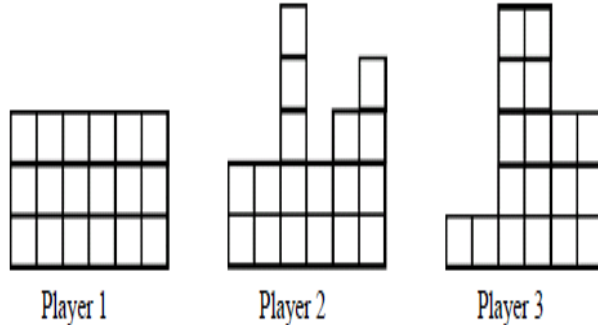
For four or more players, one person cuts a piece of the cake and hands it to another player. The player examines it. If it looks fair, he passes it along to the next player. If it looks too big, he trims it first (puts the trimmed part back on the cake) and then passes it on (either unaltered or diminished). This continues down the line until all everyone has had a chance to trim.

The last person to trim the piece receives that piece and exits the game.

³² Id.

Example

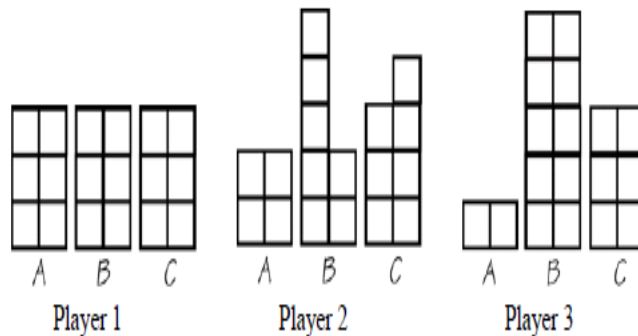
Suppose that players 1, 2, and 3 view a cake as follows.



If player 1 cuts the cake into what she perceives as three equal pieces, draw three diagrams to show how each player will view the division. Can all players be satisfied by this division?

Figure 2, example 1 of a cake procedure³³

Solution



Each player needs to have a piece that they see as having at least 6 square units. Player 1 must choose piece *A* in order for the other players to be satisfied. Both players 2 and 3 would be satisfied with either of the remaining pieces. Since player 2 views both *B* and *C* the same, it would seem reasonable that player 3 would prefer piece *B* to piece *C*, but would be satisfied with either. Thus, all players can be satisfied.

³³ Freeman, W.H., *supra* note 18.

Figure 3, solution of example 1³⁴

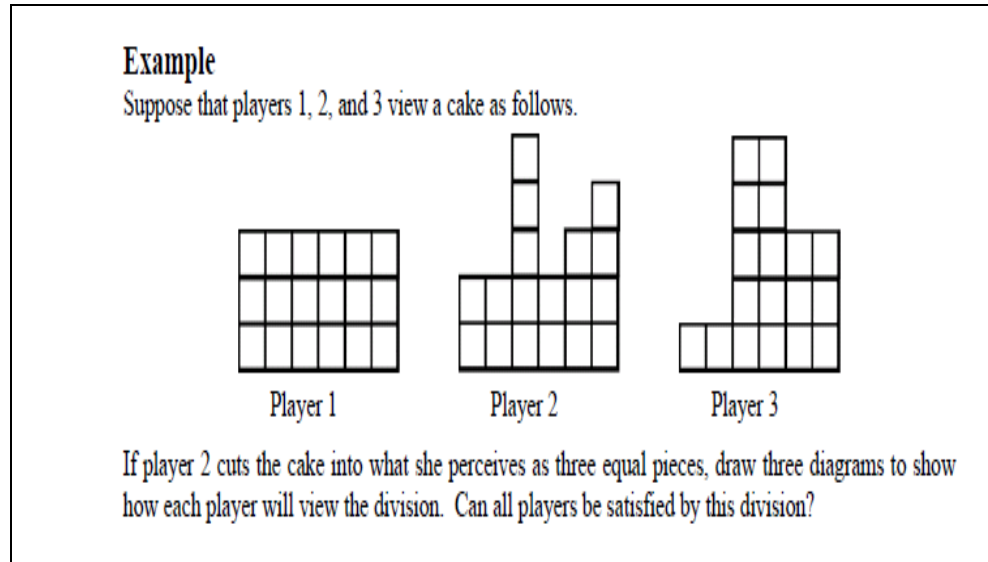
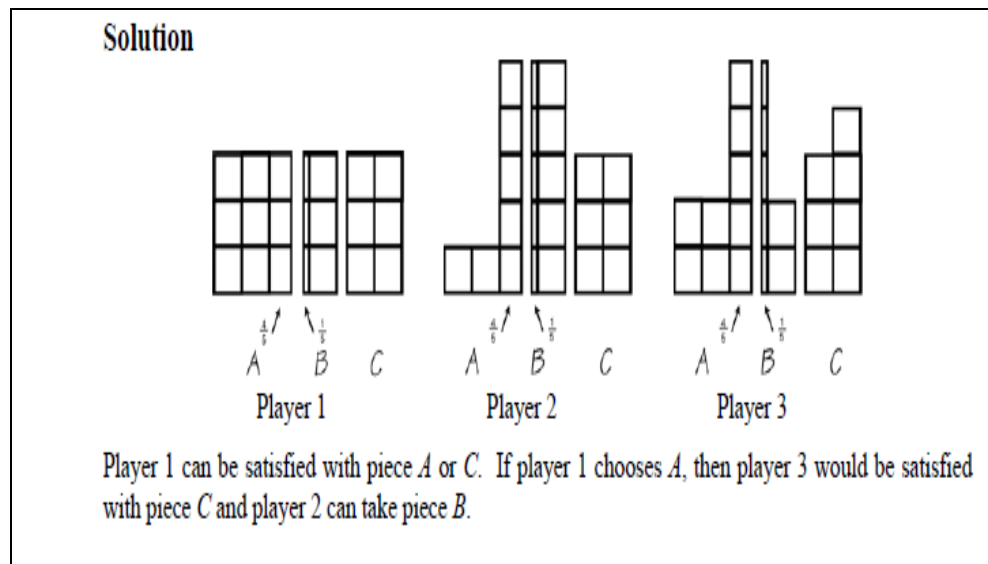


Figure 4, example 2 of a cake procedure³⁵



³⁴ Id.

³⁵ Id.

Figure 5, solution of Example 2³⁶

A few years later, more precisely in 1960, John Selfridge developed the Selfridge–Conway discrete procedure for creating an envy-free cake-cutting among three people.

Selfridge, a mathematician at Northern Illinois University, developed this in 1960, and John Conway, a mathematician at Princeton University, independently discovered it in 1993. Neither of them ever published the result, but Richard Guy, a British mathematician, Professor Emeritus in the Department of Mathematics at the University of Calgary, told many people Selfridge’s solutions in the 1960s, and it was eventually attributed to the two of them in a number of books and articles.

Section 7: 5th model

The Selfridge–Conway discrete procedure is an envy-free variation of the lone divider method for $n=3$ people, proposed independently by Selfridge and Conway.³⁷

Let Bob, Carol, and Dick be the three people who want to divide the cake. The method has two steps.

Step 1: The first step, as in Steinhaus’s lone divider method, is to let one person—say Bob—divide the cake into three equal (from her point of view) pieces. Bob is the divider.

³⁶ Id.

³⁷ Borgers, C., *Mathematics of social choice: Voting, Compensation and Division*, 2010.

Next, Carol inspects the three pieces. If one piece is strictly larger than the other two in his opinion, he trims that piece, so that there is a tie for first place. The trimmings are set aside. For now, he will only divide the cake minus the trimmings in an envy-free way.

The trimmings will be divided in the second step. Carol is the trimmer.

The trimmer might not trim anything at all from any piece, if he thinks that there is a tie for first place; in that case, there are no trimmings, and there will be no need for a second step.

Now Dick is asked to choose one of the three pieces. Thus, Dick is the chooser.

Of course, Dick will choose the piece that, in his opinion, is the largest or, if there is a tie in his opinion, one of the pieces that are largest. So Dick will envy nobody in the first step.

After this, Carol gets to choose a piece. Recall that in his eyes, after the trimmings were removed there were two pieces that tied for first place.

Perhaps, Dick chose one of those two pieces, but even then Carol can still choose the other; so Carol has no reason to envy anybody in the first step.

Next, it does impose one extra constraint on Carol: If Dick did not choose the trimmed piece, then Carol must choose it. Actually, since in his eyes the trimmed piece tied for first place, he has no reason to object to this rule.

Finally, Bob takes the remaining piece. Note that the piece that remains for Bob is not the trimmed piece, for that one was taken

either by Dick or by Carol. So what remains for Bob is one of the pieces that he originally cut.

Section 8: 6th model

In 1961, Dubins and Spanier proposed a proportional procedure for n agents, producing contiguous slices - the “moving knife procedure” - the first n -person version of the last-diminisher procedure.³⁸

It produces contiguous slices (and hence uses a minimal number of cuts), but it is not discrete and requires the help of a referee.

- A referee moves a knife slowly across the cake, from left to right and any player may shout “stop” at any time.
- Whoever does so receive the piece to the left of the knife.
- When a piece has been cut off, we continue with the remaining $n-1$ players, until just one player is left (who takes the remaining part).

It is crucial to bear in mind that this is also a not envy-free procedure. The last chooser is best off (he or she is the only one who can get more than $1/n$).

Section 9: 7th model

³⁸ Dubins, L.E & Spanier E.H., How to Cut a Cake Fairly, American Mathematical Monthly, 1961, 1-17.

In 1964, a mathematician at Iowa State University, Arlington M. Fink, proposed a completely different approach for extending the divider-chooser method.

This new method is well-known as the “lone-chooser procedure”, because in this method one player plays the role of chooser and in the meantime all the other players start out playing the role of dividers.

The “lone-chooser method” was revised and extended by Austin (1982) and Woodall (1986).³⁹

In 1982, Austin noticed that using his moving-knife procedure into Fink’s procedure, one can obtain a procedure that yields an allocation among n players such that each player thinks he or she receives a piece of size exactly $1/n$. On the other hand, in 1986, Woodall provided an algorithm for achieving an allocation with Knaster’s properties. Woodall assumed that, firstly, there is a piece of cake that two players value differently, and, secondly, we know the fraction of value that each player attributes to that piece.⁴⁰

The lone-chooser method involves more than two players.

This procedure allows all but one of the players to cut up the goods as they wish, and after that, the last player is allowed to choose his pieces first.

As an example, assume Bob, Carol, and Dick want to split a cake into three pieces.

³⁹ Id.

⁴⁰ Brams, S., *supra* note 26.

Using the Lone Chooser Method, we let Bob and Carol be the dividers and let Dick be the lone chooser.

The method would then be carried out as follows:

Step 1: First Division

Bob and Carol divide the cake into 2 slices using the divider-chooser method. Each considers her slice worth at least one-half of the total (or a fair share).

Step 2: Second Division

Bob and Carol divide their slices into 3 pieces of equal value.

Step 3: Selection

Dick now chooses 1 of Bob's three pieces and 1 of Carol's three pieces. Bob gets her remaining two pieces and likewise with Carol.

This method is not envy-free. Actually, both Bob and Carol might envy Dick's share.

Finally, a number of substantial and important considerations need to be revealed, regarding the characteristics of each fair division procedure mentioned up to now.

Firstly, Divide and Choose is proportional and envy-free, but it is not Pareto-optimal:

By definition, divide and choose is a fair-division method for only two players.

Divide and choose is proportional because the divider can divide the object (or objects) so that he or she considers each part of the division to represent $1/2$ of the original value. Also, the chooser may select either of the parts cut by the divider so that he

or she receives a portion that represents at least $1/2$ of the value as perceived by the chooser.

In divide and choose, once a player believes he (or she) has received at least $1/2$ of the original value, that player would consider that the other player will not have received more than $1/2$ of the value and would therefore not envy the other player.

With regards to the efficiency:

Suppose two players consider dividing a cake that is half chocolate and half vanilla.

Suppose one player, the divider, likes both vanilla and chocolate equally while the other player, the chooser, loves chocolate but hates vanilla.

Suppose the divider cuts the cake so that each piece is half chocolate and half-vanilla.

In the eyes of the divider, this represents a proportional division – each will get half.

It has to be noticed that there is another allocation that will make the chooser happier without hurting the divider.

In other words, this division is not Pareto-optimal.

By definition, a division procedure is Pareto-optimal if it always results in a division such that no other division could make one party better off without hurting at least one player.

In this case, if the divider cut the cake so that half was vanilla and half was chocolate, the divider would be equally happy (he liked both) and the chooser would be much happier – he only wanted chocolate.

Secondly, the lone divider method is proportional but not envy-free:

Remember that there are three possibilities that could result after division by the lone divider. It is clear that the first two possibilities result in allocations that are proportional.

It is also clear that the third possibility also yields a proportional allocation is justified as follows:

Suppose Bob, Carol and Dick are dividing a cake and Bob has divided the cake into parts x , y and z that he considers are worth $1/3$ of the value of the cake.

Suppose Carol and Dick only approve of part x . Then we give Bob part z and combine parts x and y into xy and let Carol and Dick use divide and choose to split xy .

Now Carol and Dick each will consider this a proportional allocation because Carol and Dick did not approve of z and thus consider xy to be more than $2/3^{\text{rds}}$ of the value of the cake.

Because divide and choose is proportional, Carol and Dick will each get $1/2$ of what is at least $2/3^{\text{rds}}$ in their estimation and therefore at least $1/3^{\text{rd}}$ of their estimation of the cake.

Finally, it is clear that in every possibility that the divider (Bob) always gets a share she considers proportional.

Thus in each case all 3 players will always receive an allocation that he or she considers proportional.

To show that this method is not envy-free we consider the case where both choosers (Carol and Dick) both split the combined piece xy .

Suppose they split that piece in a way that Bob considers not equal. In that case, it is possible that while Bob receives what he considers to be at least $1/3$ of the cake, he may consider what one of the other players received to be better than his share. Thus Bob may envy one of the choosers.

Thirdly, the last diminisher method is proportional but not envy-free:

The last diminisher method begins with some player (say Gianni) first cutting a piece of the object to be divided. Suppose all n players consider that piece to be not more than $1/n$ of the value of the object. Thus Gianni takes that piece and exits.

Now suppose that as the process continues, player B (say Dick) cuts a piece that Gianni considers to be more than $1/n$ of the original value. If all the remaining players consider that piece to be not more than $1/n$ of the original value, then B takes that piece and exits. However, Gianni will envy the piece received by Dick.

Thus, in spite of the fact that the to complete the last diminisher method all divisions must be considered no more than $1/n$ of the total value, it is possible that at least one player will envy another (like Gianni will envy Dick in the discussion above).

Fourthly, the Selfridge-Conway method of fair division is proportional and envy-free:

To show it is envy-free we must reconsider the Selfridge-Conway division process:

Remember there were two stages in this division method and we considered this method only in the case of three players. We will show no player experiences envy in the first stage and then no player experiences envy in the second stage.

In the first stage of the Selfridge-Conway division procedure, player 1, say Bob, will cut the object into three pieces. He would be equally happy with any of these pieces. Now player 2, say Carol, might trim one of the three pieces to make at least a two-way tie for best piece among the three. If Carol does trim a piece he will have to take that piece if player 3, say Dick, doesn't take it. Now Dick will experience no envy in the first stage because he is the first to choose. Carol will experience no envy because he can pick one of the two that were tied for best and Bob will experience no envy because there will always remain an untrimmed piece after the others have taken theirs.

If there are no trimmings left from the first stage then the division is done and the second stage is not needed, there will be no players experiencing envy.

If there are trimmings left from the first stage, then we can show the steps involved in the second stage for insuring that no player will experience envy.

Remember, initially, either Carol or Dick did not receive a trimmed piece and that player will cut the trimmings and choose last from the trimmings.

Now the player that got the trimmed piece will pick first from the trimmings and envies no one because he picks first.

Bob picks second from the trimmings and will not envy the player that went before him because that player got a trimmed piece in stage 1 and only gets a portion of the trimmings from that piece. Bob also does not envy the other player because he is picking before him.

The last player to choose from the trimmings in the second stage envies no one because he had cut the trimmings into what he considered equal pieces.

In 1990s fair division literature has grown, thanks to five academic books written (starting from Young in 1994,⁴¹ Brams and Taylor in 1996,⁴² Robertson and Webb in 1998,⁴³ Moulin in 2003⁴⁴ and Barbanel in 2004⁴⁵), a popular book written by Steven J. Brams and Alan D. Taylor in 1999 and several fair division algorithms developed through the whole period.⁴⁶

Section 10: 8th model

Fair Division Theory originated in mathematics,⁴⁷ and then became a proper branch in the modern social sciences at the end of 1990s with the publication of the book “Fair Division” by S. J. Brams and A. D. Taylor.⁴⁸

⁴¹ Young, H. P., *Equity in Theory and Practice*. Princeton, NJ: Princeton, 1994.

⁴² Brams, S., *supra* note 26.

⁴³ Robertson, J. & Webb, W., *Cake-Cutting Algorithms: Be Fair If You Can*, Cambridge, 1998.

⁴⁴ Moulin, H.J., *Fair Division and Collective Welfare*. Cambridge, MA: MIT Press, 2003.

⁴⁵ Barbanel, J.B., *The Geometry of Efficient Fair Division*. Cambridge: Cambridge University Press, 2004.

⁴⁶ Brams, S., Jones M., Klamler C., *Perfect Cake-Cutting Procedures with Money*, New York University, 2004.

⁴⁷ Steinhaus, H., *supra* note 27.

⁴⁸ Brams, S., *supra* note 26.

Hence, in this last book the authors presented one widely known model – Adjusted-winner – patented by Brams and Taylor on the 9th of November 1999 (Patent Number: 5983205).⁴⁹

The present procedure was designed to determine how two parties should settle a dispute involving issues or objects by each party quantifying the importance he/she attaches to getting its own way on each of the objects or issues.⁵⁰

The key aspects of the Adjusted Winner Procedure can be listed as follows:

1. Each party distributes 100 points over the items in such a way that reflects their relative worth. Essentially, the party quantifies the importance for an item by placing a higher “bid” on that item.
2. Each item is initially given to the party that assigned it more points. Each party then assesses how many of his or her own points he or she has received. The party with the fewest points is now given each item on which both parties place the same points.
3. Since the point totals are not likely to be equal, let A be the party with the higher point total and B be the other party. Start transferring items from A to B in a certain order (as in step 4) until the point totals are equal.
4. The order is determined by going through the items in order of increasing point ratio. An item’s point ratio, fraction, is $= (\text{A's point value}) \div (\text{B's point value})$, where A is the party with the higher point total.⁵¹

⁴⁹ Brams, S. & Taylor, A., *supra* note 29.

⁵⁰ Freeman, W.H., *supra* note 18.

⁵¹ *Id.*

For two parties, the adjusted winner procedure produces an allocation, based on each player's assignment of 100 points over the items to be divided.

This can be illustrated briefly by a few examples:

	Carol	Bob
Main home	20	30
Second home	10	20
Investments	15	20
Summer cottage	11	14
Retirement Account	10	5
Diamonds	15	6
Silverware	5	1
Old clock	2	1
Carol's mother's kitchen	10	2
Old table	2	1

Figure 6

Suppose Carol and Bob are getting a divorce and must divide up some of their assets. Suppose they distribute 100 points among the ten items as shown in the above graph.

Once Carol and Bob each distribute their 100 points as given in the table below, we can pass to the first assignment phase:

	Goes to	Carol	Bob

Main home	Carol	10	5
Second home	Bob	10	20
Investments	Bob	15	20
Summer cottage	Bob	11	14
Retirement Account	Bob	20	30
Diamonds	Carol	15	6
Silverware	Carol	5	1
Old clock	Carol	2	1
Carol's mother's kitchen	Carol	10	2
Old table	Carol	2	1

Figure 7

The adjusted winner procedure goes through the list of items and initially divide the items among the two parties according to who had placed a higher point value on each item.

Generally, the point totals received by each party will not be equal - as in this case. The totals listed at the bottom of the table indicate the total points received by each party according to that initial point distribution.

Carol	Bob
-------	-----

Main home (10)	
	Second home (20)
	Investments (20)
	Summer cottage (14)
	Retirement Account (30)
Diamonds (15)	
Silverware (5)	
Old clock (2)	
Carol's mother's kitchen (10)	
Old table (2)	
Total = 44	Total = 84

Figure 8

It is notable that point values are based on that party's valuation of a given item. The adjusted winner procedure could stop here if each party receives an equal number of points.

If there are any items that both parties valued equally, it is possible to transfer those items to the party with the smaller point total. If a fraction of an item had to be transferred at this stage to make the totals equal, it will be useful the algebraic process shown later in the above example.

Because the point totals are not equal, it will now be suitable to transfer items, or a part of one item, from one party to the other to equalize the point totals.

	Carol	Bob	Point ratio
Second home	10	20	$20/10 = 2$
Investments	15	20	$20/15 = 1.33$
Summer cottage	11	14	$14/11 = 1.27$
Retirement Account	20	30	$30/20 = 1.5$

Figure 9

The point ratio mentioned in the graph is the result of A's valuation divided by B's valuation:

Formula of Point ratio = (A's valuation / B's valuation)

Where A is the party with the greater point total, in this case Bob.

Notice that because it will only be transferred a certain amount of items from Bob to Carol, it is possible to calculate point ratios for items belonging to Bob only.

Thus, following the adjusted winner procedure, we will transfer items from Bob to Carol in order of increasing point ratio (from smallest to largest point ratio).

Carol	Bob
Main home (10)	

	Second home (20)
	Investments (20)
Summer cottage (11)	
	Retirement Account (30)
Diamonds (15)	
Silverware (5)	
Old clock (2)	
Carol's mother's kitchen (10)	
Old table (2)	
Total = 55	Total = 70

Figure 10

Because of the lowest point ratio, the first transfer is the summer cottage.

Notice the Summer cottage was worth 14 to Bob but only 11 to Carol. It is necessary to adjust the point totals accordingly.

After the first transfer the procedure will continue to transfer items from Bob to Carol until the point totals are equal.

By increasing point ratio, the next item to transfer will be the Investments.

Remind that if the transfer includes the entire investments from Bob to Carol then Carol (with 60 points of total value) will have more points than Bob (with 50).

Therefore, the entire Investments will not be transferred to Carol, but just a part of them.

Let x be the fraction of the Investments that Bob will keep and therefore $1 - x$ will represent the fraction that Carol will receive.

For example, if $x = 2/3$ then $1 - x = 1/3$.

In the transfer of the Investments, Bob will keep $20x$ points from the Investments and Carol will receive $15(1-x)$ points.

An algebraic procedure will be used to find the fraction x of the Investments that will be transferred from Bob to Carol.

Note that Carol currently has 55 points and will receive $15(1-x)$ points.

Note that Bob has 50 points plus will keep some portion of the Investments, which is represented by $20x$.

To equate the point totals, the equation will be:

$$55 + 15(1-x) = 50 + 20x$$

Now, solving this linear equation:

$$55 + 15(1-x) = 50 + 20x$$

$$55 + 15 - 15x = 50 + 20x$$

$$70 - 15x = 50 + 20x$$

$$20 = 35x$$

$$x = 20/35$$

$$x = 4/7$$

Therefore, Bob will keep 4/7 of the chest and Carol will receive 3/7 of the Investments.

Observe the significance of the solution to this equation:

$$\text{Given the equation: } 55 + 15(1-x) = 50 + 20x$$

If $x = 4/7$ then each side becomes

$$55 + 15 (3/7) = 50 + 20 (4/7)$$

$$61.43 = 61.43$$

Each party will receive an equal number of points.

This is where the adjusted winner procedure ends, with a partial transfer of the chest, all of the items have been divided in a way that each party will consider equitable.

Carol	Bob
Main home (10)	
	Second home (20)
Investments (3/7 of 15)	Investments (4/7 of 20)

Summer cottage (11)	
	Retirement Account (30)
Diamonds (15)	
Silverware (5)	
Old clock (2)	
Carol's mother's kitchen (10)	
Old table (2)	
Total = 61.43	Total = 61.43

Figure 11

The result of the adjusted winner procedure is the distribution of items as shown in the table.

- ✓ Carol gets the main home, the summer cottage, the diamonds, the silverware, the old clock, her mother's kitchen, the old table and 3/7ths of the investments.
- ✓ Bob gets the second home, the retirement account and 4/7ths of the investments.

Another example of what is done by the adjusted winner procedure:

Example

Suppose that Sami and Hanna place the following valuations on the three major assets, which will be divided up:

Asset	Sami	Hanna
Artwork	30	40
Business	20	30
House	50	30

- Who gets each of the assets initially?
- How many points does each of the players get according to this allocation?
- What further exchange of property is necessary in order to equalize the allocations?
- After this final reallocation of property, how many points does each of the players receive?

Figure 12, Example 2 of Adjusted Winner⁵²

Solution

- Hanna gets the artwork and business, while Sami gets the house.
- Sami gets 50 points for the house, while Hanna gets 70 for the other assets (40 for the artwork and 30 for the business).
- Some of Hanna's property has to be transferred to Sami, since she has received more points initially. To determine how much, we first compute the fractions.

$$\text{Artwork: } \frac{40}{30} \approx 1.33 \quad \text{Business: } \frac{30}{20} = 1.50$$

We now transfer part of Hanna's assets to Sami as follows.

- Let x equal the fraction of the artwork which Hanna will retain.
- To equalize the number of points, we solve the following equation.

$$30 + 40x = 50 + 30(1 - x) \Rightarrow x = \frac{5}{7}$$

- Since Hanna retains $\frac{5}{7}$ of the artwork, she must transfer $1 - \frac{5}{7} = \frac{2}{7}$ of the artwork to Sami.
- Hanna gets to keep the business, which is worth 30 points to her, she also retains a $\frac{5}{7}$ share in the artwork, which is worth $40(\frac{5}{7}) = 28\frac{4}{7}$ points, giving her a total of $58\frac{4}{7}$ points. Sami gets the house, worth 50 points to him, and a $\frac{2}{7}$ share in the artwork, worth $30(\frac{2}{7}) = 8\frac{4}{7}$ points, totaling $58\frac{4}{7}$ points.

Figure 13, Solution 2 of Adjusted Winner⁵³

⁵² Id.

⁵³ Id.

Compared to the fair division procedures above mentioned, the Adjusted Winner is more complete, as it has all the previous cited properties:

The allocation is equitable:

Both players believe that he or she received the same fractional part of the total value.

The allocation is envy-free:

Neither player would be happier with what the other received.

The allocation is Pareto-optimal:

No other allocation, arrived at by any means, can make one party better off without making the other party worse off.

However, the adjusted winner procedure has not escaped criticism that Brams and Taylor explained on their website:

One major drawback of the adjusted winner is that this procedure is easily applied to goods but less easily to issues, in which much negotiation must precede its use. In applying the Adjusted Winner to goods in a divorce or an estate division, the only real difficulty is in each person's assigning points to the goods.

With the direct consequence that, if the items are not physical goods but issues that must be resolved, then the parties need to reach an agreement on not only what the issues are but also what winning and losing on each issue means.

Because there is no mechanical procedure that can resolve difference at this level, this is the area in which a good deal of hard bargaining is to be expected.⁵⁴

Another critical point is that the packaging of issues is crucial in applying Adjusted Winner, particularly breaking up a single large issue into different parts that are as separable as possible.

Thus, if salary is the overriding concern in a labor-management dispute, then there is nothing to trade off against losing on this issue. But often an issue like this can be broken down into components, such as basic hourly or piecework rate, overtime wages, pensions, medical benefits, and the like that the employer and the employee value differently.

Hence, “salary” is turned into a compensation package, and its components can be treated as separate issues.

Care must be taken in packaging items, however, so as to make them relatively independent of each other. This is to ensure that winning on one does not affect how much one wins on another; otherwise, the summation of points across all items would not be meaningful.⁵⁵

The last criticism regards manipulation. This is sufficiently difficult under Adjusted Winner so as not to be a practical problem.

One catch in using Adjusted Winner is that, theoretically, one side can do even better, at the expense of the other side, by capitalizing on its advance knowledge of the other side’s allocations.

⁵⁴ www.nyu.edu/projects/adjustedwinner, last accessed on 31st March 2016.

⁵⁵ *Id.*

This is not usually a serious practical problem, however, because it is highly unlikely that one side would have the precise information it needs about the other side's allocations to exploit Adjusted Winner in this manner.

In fact, although being off by only one point can lead to a relatively poor outcome for both parties, the honest party's sincerity guarantees that it will not envy the disingenuous party.

Thus, the incentives to exploit Adjusted Winner will be minimal, with honesty guaranteeing a party at least half its total valuation of all items.⁵⁶

Section 11: Conclusions

The aim of this chapter was to develop a normative argument concerning the use of fair division. In doing so the author has attempted to forge a link between concepts found most commonly in the field of game theory associated with fair division principles to important ideas in theories concerned with new dispute resolution methods. More specifically this effort revolves around the primarily "fair division principles" of "proportionality, envy-freeness, equitability and efficiency" (section 1). The first principle refers to an estimation made by each person of receiving at least a piece of the cake that he considers is at least proportional, such as at least $1/3$ of the cake among three people. The second that is related to the first, express the idea that each person prefers his share than trading it randomly with another person's share. With regards to

⁵⁶ Id.

the third, it is satisfied if everyone has the same satisfaction level and the forth – the so-called efficiency or Pareto-optimality – when there is no other distribution that can help some players without hurting others, or at least not making them worse off.

Subsequently, in section 2, I described the state of the art of the existing different models. In this thesis the author focuses on eight models, which are ordinarily used in the field of game theory for solving disputes in an envy-free, equitable and efficient way.

In section 3, the author provided an overview of the Last-Diminisher method. Section 4 followed on from this with a focus on the Divider-Chooser method. Section 5 the attention was towards the Taking Turns. In section 6 the emphasis was on the Lone-Divider method and in section 7 on the Selfridge–Conway method. Section 8 and 9 concentrated on the procedures of Moving Knife and Lone-Chooser respectively. Lastly, section 10 explored the Adjusted Winner and its properties, highlighting that it's the method that reflects all the properties above mentioned, compared to the others.

What I will do in my next chapter is to analyse the main forms of *getting to yes* and trying to focus on negotiation and mediation, where the parties are involved in the final solution, in order to verify if these methods could be the basis for introducing the e-supported systems in chapter 3.

Chapter 2

The three forms of Dispute Resolution

Henry Kissinger:
*“Each success only buys
an admission ticket to a
more difficult problem”.*

Chapter Aims

- An introduction to the concept of ADR.
- Making the reader aware of what is behind a dispute.
- Describe the importance of getting to yes.
- Describe the importance of the 3rd party's role.
- Describe the resolution forms of Negotiation and Mediation.

Sections:

Section 0: Introduction

Section 1: Naming Blaming Claiming

Section 2: Litigotiation

Section 3: The three main forms of Dispute Resolution

Section 4: The list of factors

Section 5: Criticisms of the trial and the shift towards ADR

Section 6: Getting to Yes

Section 7: The six phases of negotiation

Section 8: The four barriers of negotiation

Section 9: Ten reasons to mediate

Section 10: Facilitative mediation

Section 11: Narrative and transformative mediation

Section 12: Riskin's grid

Section 13: Conclusion

Section 0: Introduction

This thesis is not concerned with application of game theory into the field of law in general, but more specifically by the possible practises into the field of alternative dispute resolution.

The aim of this chapter is to provide the reader with a firm overview of alternative dispute resolution methods, an outline that will be required in subsequent chapters in order to: (i) appreciate where exactly is it possible to apply the economic algorithms in the field of law; (ii) recognise whether in several cases it is better to go to the court/to an arbiter or to negotiate or to have a mediation; (iii) discuss whether it is appropriate to solve the dispute with or without a third party's involvement.

In this chapter, I focus especially on just one aspect of dispute resolution: to define the three primary forms of dispute resolution and to assess the factors to consider when choosing a particular process.

It is important to acknowledge from the outset that in the vast majority of cases there is not a proper and unique method to choose for solving a dispute.

In order to provide a broad overview of the concept of alternative dispute resolution, I will start focusing in section 1 on the perception of an injury and the process of Naming Blaming Claiming that will lead us to the birth of a dispute. After that in section 2 and section 3 I will illustrate, respectively, the theory of Litigation and the three forms of dispute resolutions. In section 4, I show the factors that you have to bear in mind when you have to choose which one is the most appropriate for yourself. In section

5, I will analyse the ADR critics compared to the trial and from section 6 to section 12 I will focus entirely on two of the form illustrated before, negotiation and mediation.

In addition, this chapter will describe several different approaches that were commonly used in understanding these procedures. This begins with section 2 which starts by introducing the definition of a “dispute” and its “social construct”. In this section it’s also explained how the process of Alternative Dispute Resolution was developed in USA and how it was reformed in Europe.

Moving through the idea of the vanishing trial (Galanter 1984), the importance of the trial (Mulcahy 2012) and the idea of being against settlement (Fiss 1984), with all the related concerns about this strict point of view (Luban 1995), I will focus on the importance of “getting to yes” (Fisher and Ury 1981) and the possible ways of Dispute Resolution (Menkel Meadow 2015). Moreover, I underline. Through all the chapter it will be emphasised the importance of the 3rd party’s role (Black and Baumgartner 1983).

In section 3, I focus accurately on just one aspect of dispute resolution: to define the three primary forms of dispute resolution and to assess the factors to consider when choosing a particular process instead of another. Factors such as confidentiality and ethics, costs, speed, expertise of third parties, fairness, establishing a precedent, predictability, quality of the judges , maintenance of relationships and timing.

All the factors, analysed in section 4, should be considered, as well as any underlying issue to the dispute.

Section 6 until section 12 of this chapter, they will attempt to make the reader aware of the differences, the critical issues, controversial points, benefits, advantages and disadvantages regarding the negotiation and the mediation. On the one hand, with regards

to negotiation, in section 6 I will focus on the importance of *getting to yes*, in section 7 the six phases and in section 8 the four barriers. On the other hand, focusing on mediation, in section 9 I will concentrate on the ten reasons to mediate, in section 10 on facilitative mediation, in section 11 on the narrative and the transformative ones and, finally, in section 12 on the well-known Riskin's grid.

It follows that certain issues and the nature of the dispute will state that some factors are more relevant than others in order to solve a particular dispute. The questions pursued in the sections that follow focus on pros and cons of Adjudication, Mediation and Negotiation as regards to the factors involved in particular cases. How do people select the method of dispute resolution that they used? More importantly, how should they select the method?

Therefore, I would like to focus the attention on two basic ideas. The first one concerns the fact that in this *mare magnum* it's essential to understand that our perspective is influenced not only by the work of lawyers⁵⁷, but also by the one of anthropologists who have observed forum choice, economists concerned with responses to consumer dissatisfaction and others who have measured or observed the way individuals manage personal problems.

The second idea, on the other hand, concerns that albeit many other disciplines have much to offer, there are needs (i.e. factors like timing, quality of the judges or maintenance of relationship, discussed in section 4 of this chapter) that can be protected and safeguarded just going to the trial and going to the court.

⁵⁷ Felstiner, W., Abel, R., and Sarat, A., 1980, The Emergence and Transformation of Disputes: Naming, Blaming, Claiming, *Law & Society Review*, vol. 15, no. 3/4, pp. 631-654.

Section 1: Naming Blaming Claiming

Knowing the law and being one of the best lawyers: are these qualities really necessary to solve a dispute in a fair, efficient and envy-free solution? Nowadays, going to the trial is just one of the possibilities in the many options that you have to bear in mind when you are taking into account which is the most suitable form of dispute resolution to pursue your aims and to solve the inconvenient situations in which you are involved.

Before speaking about the various forms of dispute resolution it is mandatory to focus on the dynamics of disputes. Indeed, we can consider how grievances and disputes arise in the first place, what motivates people to voice, pursue or abandon their grievances, the point at which a grievance becomes a dispute and the part that different thresholds of tolerance or notions of equity play in decision making. Nevertheless, we also begin to look at what it is that people seek to achieve when they pursue disputes and the structural barriers that exist to people engaging in legal disputes.

As suggested by various sociologists⁵⁸, it is important to acknowledge from the outset that disputes are not concrete things but “social constructs”: a social process where experiences, through several transformations, convert into legal disputes.⁵⁹

⁵⁸ See Lewis (1973), Mayhew (1975), Marks (1976), Griffiths (1977).

⁵⁹ Felstiner, W., Abel, R., and Sarat, A., *supra* note 57.

The first step for the emergence of a dispute is that an unperceived injurious experience (so-called unPIE) must be transformed into a perceived injurious experience (so-called PIE). This step is called “Naming”, when a party, indeed, recognizes an experience as injurious [transformation from unPIE to PIE].

The following step is the attribution of fault for the injury to someone else that could be an individual, a group or an entity. This step is called “Blaming”, when a party figures out that someone else is responsible for her injury [transformation from PIE to a grievance].

The next step occurs when it happens the phenomenon of voicing something to someone asking for some remedy⁶⁰. This step is called “Claming”, when a party communicates that conclusion to the faulty party [transformation from a grievance to a claim].

Once and only once a claim is rejected, in whole or in part, by the faulty party, the claim itself is transformed into a dispute.

Because of the perception of an injury is really subjective and consequently unstable, complicated and incomplete, not all the grievances evolve into law suits. This is the so called “Grievance Apathy”.

There are so many personality variables which may affect transformations, including risk preferences, contentiousness and personal feelings and that’s why not every injurious experience needs to wind up in a court of law.

In such a context, the competing languages of different normative frameworks is what it is crucial for a proper transformation.

⁶⁰ if requested, facilitating communication between the parties.

The most known forms of languages involved in transformations are three: *Rephrasing*, *Narrowing* and *Expansion*.⁶¹

1. Rephrasing: it consists in a “reformulation of the issues in a dispute into a public discourse”. Parties may rephrase in front of third. Third party may rephrase to them e.g., mediator as devil’s advocate.
2. Narrowing: it consists in a process through which established categories are imposed in a way which makes it amenable to conventional categories e.g., courts. It’s a process where there are routine ways of dealing with cases.
3. Expansion: it consists in a challenging of existing established categories for defining the ambit of dispute, a framework not previously accepted by third party e.g., Southwark mediation. This is the way that social change can be linked to legal change e.g., common law, in which adversaries encouraged to put alternative visions.

During these transformation it’s essential to underline the role of a third party in providing support and narrowing or expanding the issue involved. This third party could be involved in just one of the processes or even in the three of them among the antagonists⁶².

Moreover, in the late twentieth century, the perceived problems of civil justice set out. Because of the litigation system had become a battleground where no rules work properly⁶³, one of the

⁶¹ Mather, L. & Yngvesson, B., Language, Audience, and the Transformation of Disputes, *Law & Society Review*, Vol. 15, No. 3/4, Special Issue on Dispute Processing and Civil Litigation, 1980 – 1981, 775-821.

⁶² Mulcahy, L., *Disputing Doctors*, Open University Press, 2003.

⁶³ Woolf, H., *Access to justice: Final report*, London: Stationery Office, 1996.

possible scenario was to promote settlement at the earliest moment and preferably without the issue of court proceedings⁶⁴.

Section 2 Litigotiation

An appreciation of these antecedents of disputes is particularly important to better understand that alternative dispute resolution methods may be much more dependent on the “non-legal context” in which the dispute arose as it is the strength of the legal case.

Therefore, in the United States of America is it evident the decline in the portion of cases that are terminated by trial and the decline in the absolute number of trials in various American judicial *fora*, both federal and state courts, since the mid-1980s (60 per cent decline in the absolute number of trials)⁶⁵.

He identifies five “vanishing trial stories” as hypotheses to explain the phenomenon⁶⁶: convergence of common law and civil code systems; displacement of trials to administrative, arbitral, and other dispute resolution mechanisms; assimilation of trial-like procedures and due process into surrounding institutions other than

⁶⁴ Genn, H., *Judging Civil Justice*, The Hamlyn Lectures, Cambridge, Cambridge University Press, 2008.

⁶⁵ Galanter, M., *Contract in Court, or Almost Everything You May or May Not Want to Know About Contract Litigation*, *Wis. L. Rev.*, 2001, 577–627.

⁶⁶ Bingham L.B., Nabatchi T., Senger J. & Jackman M.S., *Dispute Resolution and the Vanishing Trial: Comparing Federal Government Litigation and ADR Outcomes*, *Ohio State Journal on Dispute Resolution*, 2009, 67-89.

courts; transformation of the legal system from a rational, rule-centered, and formal system into an informal decisional process entailing negotiation, participation, and interaction; and evolution of an adversarial process into something different, entailing process pluralism “intelligently designed” to produce more optimal outcomes.⁶⁷

Plausible causes for this decline could be not only the diversion of cases to alternative dispute resolution forums but also the shift in ideology and practice among litigants, lawyers, and judges, the engagement in outsourcing to ADR institutions and the enhancement of both the power of those institutions and their exclusive jurisdiction. ADR institutions and programs have proliferated.⁶⁸

The fear here is, of course, that we may reach a point where we actually lose the ability to retain the trial as an important element of our public culture, even if we want to⁶⁹.

And the numbers make it clear that the word “death” is not too strong as a word.

Marc Galanter and Angela Frozena have updated previous work to bring the data up to 2009⁷⁰. With regard to civil trials in the federal courts, they conclude that there is “no news” and “big news.” The “no news” is that the half-century old downward trend lines continue. The “big news” is that the civil trial in the federal

⁶⁷ Galanter, M., *A World Without Trials?*, *Journal Disp. Resol.* 7, 2006.

⁶⁸ *Id.*

⁶⁹ Burns, R., *What Will We Lose If the Trial Vanishes?*, Northwestern University School of Law, 2011. The analogy with global warming is inevitable. At a certain point in the process, it becomes irreversible.

⁷⁰ Galanter, M. & Frozena, A., *The continuing decline of civil trials in American courts*, Forum for State Appellate Court Judges, 2011. www.poundinstitute.org/sites/default/files/docs/2011%20judges%20forum/2011%20Forum%20Galanter-Frozena%20Paper.pdf.

courts is approaching extinction. In 1938, about 20% of federal civil cases went to trial. By 1962, the percentage was down to 12%. By 2009, the number has sunk to 1.7%.

The percentage of jury trials in federal civil cases was down to just under 1%, and the percentage of bench trials was even lower. So between 1938 and 2009, there was a decline in the percentage of civil cases going to trial of over 90% and the pace of the decline was accelerating toward the end of that period, until very recently, when there was almost literally, no further decline possible.

In addition, most disputes don't end in litigation also because most legal systems pressurize the parties to settle through negotiation or mediation.

In these circumstances, the parties tend to bargain by reference to what they may get at trial, especially because they can still use the threat of trial during an alternative resolution process.

In this way litigation casts a shadow over negotiations so that the parties are said to "bargain in the shadow of the law"⁷¹.

Disputants may have no intention of going to court, but they may use the threat of going to trial in negotiations or mediation in order to "persuade" the other side to do something. In other words, if a person has a good case and he can threaten to go to litigation, it always gives him some power.

According to Marc Galanter, the negotiation of disputes is not an alternative to litigation. It is only a slight exaggeration to say that it is litigation. Indeed, there are not two distinct processes, negotiation and litigation, however, there is a single process of disputing in the vicinity of official tribunals that we might call "Litigotiation",

⁷¹ Mnookin, R., Why negotiations fail: An exploration of barriers to the resolution of conflict *Ohio State Journal of Dispute Resolution*, 1993, 235-249.

that is the strategies pursuit of settlement through mobilising the court process: “adjudication remains a compelling presence even when it does not occur”⁷².

Besides, whilst a large part of the doctrine strongly concerns about the vanishing trial phenomenon⁷³, other part, directed especially by Owen M. Fiss, considers that alternative dispute resolutions underestimate the value of lawsuits and reduces the social function of adjudication to just the resolution of a private dispute.⁷⁴

According to Owen M. Fiss, “[adjudication’s purpose is] to explicate and give force to the values embodied in authoritative texts such as the Constitution and statutes: to interpret those values and to bring reality into accord with them”.⁷⁵

Indeed, the settlements are a capitulation to the conditions of mass society. In such a context, Courts have a social and a political role: they exist to give meaning to public values, not only to resolve private disputes.

Fiss explained with a strong metaphor the relationship between an alternative dispute resolution method and the trial: “The difference between a settlement and a judgment is like the one between

⁷² Galanter, M., *Worlds of Deals: Using Negotiation to Teach about Legal Process*, *Journal of Legal Education*, 1984, Vol. 34 2, 268-276.

⁷³ Galanter, M., *The Vanishing Trial: An Examination of Trials and Related Matters in Federal and State Courts*, *Journal of Empirical Legal Studies*, 2004, 459-570.

⁷⁴ Fiss, O., *Against Settlement*, 93 *Yale Law Journal*, 1984, 1073, 1085. http://digitalcommons.law.yale.edu/fss_papers/1215/

Fiss described public values as ethical ideals of justice that a public should want to uphold. He refuted the idea of a settlement not only on the ground that the settlement per se does not embody the values represented in a trial before a court of law, but also because it is physiologically unfair for one of the parties

⁷⁵ *Id.*

a signal and an explanation. Both reveal information but just the latter provides a basis for further conversation”⁷⁶.

He firmly believed that the confidential and private sphere of ADR may curtail the development of law and undermine the precedent-setting role of Courts; “settlements deprive a court of the occasion, and perhaps even the ability, to render an interpretation”⁷⁷.

However, ADR processes can go beyond an individualistic resolution of isolated disputes. David Luban, in fact, revisited Fiss’s ideas arguing that Fiss is not against settlement in general, but “it’s essential to understand when to settle”⁷⁸. In other words, the crucial point is not whether to settle but when to do it.

To this extent, it is better to illustrate two “pure” accounts of the legitimacy of government and of the judicial role:

1. the problem-solving conception
2. the public life conception⁷⁹

The first idea is the dominant version of state legitimacy in contemporary America. It can be shown in an equation like this:

$$\text{Public : Governmental} = \text{Private : Market Relationships}$$

⁷⁶ Id.

⁷⁷ Id.

⁷⁸ Luban, D., Settlements and the Erosion of the Public Realm, Georgetown, 1994-5, 2619-2662.

⁷⁹ Id.

In accordance with the Hobbesian thought, the first point of view locates human freedom in the private sphere and it recognizes the functions of government in wholly pragmatic terms, as interventions meant to solve problems within civil society that civil society cannot solve on its own⁸⁰.

The second idea, according to Hannah Arendt, is that public-life conception locates freedom in the public sphere, not in market relationships or personal intimacy⁸¹.

In Luban's view, Fiss said that because the law is the visible residue of public action, the law elevates private disputes into the public realm.

In Owen Fiss's words: "Civil litigation is an institutional arrangement for using state power to bring a recalcitrant reality closer to our chosen ideals".

For the problem-solving conception, by contrast, government gets involved only by unhappy necessity in the private ordering of human affairs.

On this view, judicial involvement in a dispute is a necessary evil, whereas for the public-life conception it is an essential good.⁸²

From Fiss's point of view it can be clear that he is not against settlements in general but just against the wrong ones, but, follow-

⁸⁰ Id.

⁸¹ Arendt, H., *The Human Condition*, 1958.

⁸² Fiss, O., *supra* note 74.

ing the public-life conception of legitimacy, it would not be difficult to have a proper set of criteria for deciding which settlements are wrong.⁸³

According to Luban, the problem-solving conception's belief is that dispute resolution service to individuals should be the primary function of courts. In addition, facilitating settlement in private sphere is healthy because private is the place of freedoms.

Conversely, the public life conception's view is that the trial is a sign of healthy public sphere, because people need rules and certainty framework to bargain in shadow of law. Adjudication is the process that makes lawyers more litigation savvy and it's really important to publicize facts.

In the common law system, indeed, going to the trial will afford so many obstacles because, firstly, most cases do not involve a point of law and, secondly, precedent setting is an uncertain and expensive business. Likewise, on the one hand litigants are not always interested in precedent and, on the other hand, lawyers are often ethically bound to agree to settlement.

Thus, precedent and legal rules are public goods. Although the original litigants of the cases purchase the rules, future litigants use these rules without paying. This exemplifies a more general economic receipt: absent public intervention, private economic actors often have inadequate incentives to produce public goods, because it is individually rational to be a free rider⁸⁴.

The question concerning which forum to choose for the resolution of a dispute is a tricky one, due especially to the wide variety

⁸³ Galanter, M., *supra* note 73.

⁸⁴ *Id.*

of processes that currently can help us for resolving disputes: “people make their own settlement, but they do not make it just as they please” (adaptation Marx, 1976)⁸⁵.

Deciding the dispute resolution forum is something that could be established *ex ante* (when drafting the dispute resolution clause) or *ex post* (once a dispute has already arisen). In the first case, there are several options regarding the clause’s redaction and parties can either elect one forum or a combination of different forums. The starting point is deciding which is the most apposite clause: whether an adjudication or a mediation or a negotiation clause (Pactum de negotiando) or even an escalation clause⁸⁶.

This requires an understanding of the advantages and disadvantages of the different forums as, in each case, the transaction will be better suited to one or the other. In the latter case, based on the assumption that you or your client are firmly interested in solving the dispute, two are the primary concepts that you have to face: on the one hand the interests and the goals to achieve and, on the other hand, the impediments to a settlement.⁸⁷

Actually, it’s crucial to reflect on what are your client’s goals and the impediments to settlement in order to value what dispute

⁸⁵ Marx, K., 1976: “Men make their own history, but they do not make it just as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given, and transmitted from the past”.

⁸⁶ E.g., Bird and Bird explanation of escalation clauses. See more on the website: www.twobirds.com/~media/PDFs/Brochures/Dispute%20Resolution/Client%20know%20how/Client%20briefings%20-%20Escalation%20clauses.ashx.

⁸⁷ Sanders, F. & Goldberg S., Fitting the Forum to the Fuss: A User-Friendly Guide to Selecting an ADR Procedure, *Negotiation Journal*, 2007, 49-68.

resolution procedure is most likely to achieve those goals and overcome those impediments.

David Luban argued that Law must to be seen as a valuable public good⁸⁸.

According to Linda Mulcahy, we definitively need law to guide our behaviour: “courts are the only forum in which there is an effective motivation to produce precedent for the good of all and where the principles established in a judgment are binding on future generations”⁸⁹.

Section 3: The three main forms of Dispute Resolution

Although our era is characterized by a considerable and substantial number of processes that are qualified as part of the “arsenal” of dispute resolution methodology, it’s easier to focus on the primary forms of dispute resolution.

The primary processes consist of dyadic bargaining (negotiation), and third party facilitated approaches (mediation), or third party decisional formats (arbitration and adjudication)⁹⁰.

The *ratio* of this “process pluralism” is that “different disputes need different processes”. For instance, each of these three forms has its own logic, purpose and jurisprudential justification.

⁸⁸ Luban D., *supra* note 78.

⁸⁹ Mulcahy, L., The Collective interest in private disputes, *Oxford Journal of Legal Studies*, 2013, 59-80.

⁹⁰ Menkel-Meadow, C., Mediation, Arbitration, and Alternative Dispute Resolution (ADR), *International Encyclopedia of the Social and Behavioral Sciences*, 2015, 9507-9512. Menkel-Meadow added also the individual action (avoidance) as one of the process, but because it is just a single decision, I didn’t focus my attention on it through my thesis.

Firstly, it's relevant to divide these primary forms and, secondly, to analyse them by the extent to which the intervention of a third party is less or more incisive⁹¹.

3.1 Negotiation

Negotiation is the natural expression of a dyadic bargaining, a process in which disputing parties attempt to resolve their conflict. To do this, the parties are unassisted by a neutral third party, but they may be represented by their attorneys. Thus, in this polycentric dispute a main role is played by the human aspect.⁹² On the one hand, this could be helpful, if parties, producing a psychological commitment to a mutually satisfactory outcome, try to understand the consequences of the perceived facts and legal issues,⁹³ or disastrous, if parties take a hard negotiation position which may lead to very unfavourable outcomes.

Compared to the other means, negotiation is largely unstructured, and as a practical matter, everyone, even if just in an unconscious way, engages in some sort of negotiation every day (i.e. family, professor, or employer).

⁹¹ Black, D. & Baumgartner, M., 'Towards a theory of the third party, in Boyum, K., and Mather, L., *Empirical Theories about courts*, New York: Longman, 1983, 84-114.

⁹² Fisher, R., & Ury, W., *Getting to Yes: Negotiating an Agreement Without Giving In*, Random House, 1981.

⁹³ Beron, B., *Litigation Risk management and ADR*, <http://litigationrisk-management.com/wp-content/uploads/2014/01/Litigation-Risk-Management-and-ADR.pdf>.

3.2 Mediation

By contrast, in a mediation is crucial the role of the third party who actively coaxes the disputants towards a settlement.⁹⁴ This person is not a decision maker but, according to Gulliver, he looks like a facilitator and adviser⁹⁵. Indeed, the main function of the mediator should be always to improve the communication among the parties involved and, when it is necessary, also to “reorient” the parties to each other, helping them to find themselves their proper way to solve the problem.

According to De Bono (1986), the role of the mediator could be seen as “converting the two-parties dispute into a three - dimensional exploration leading to the design of an outcome”⁹⁶.

Mediation is usually a private process, and tends to be more flexible than other forms of dispute resolution. Even though several courts mandate that certain cases go to a preliminary mediation, the process is still considered to be a voluntary and a consensual one⁹⁷. This is underlined also because of the parties’ self-determination and the flexibility of the agreements.

3.3 Adjudication

Moreover, before introducing the concept of adjudication, it’s better to explain the difference between litigation and adjudication. This difference could be illustrated as follows: While the litigation

⁹⁴ Roberts S. & Palmer M., *Dispute Processes: ADR and the Primary Forms of Dispute Resolution*, Cambridge, Cambridge University Press, 2005.

⁹⁵ Gulliver, P.H., *Disputes and Negotiations: A Cross cultural perspective*, New York Academic Press, 1979.

⁹⁶ Brown, H. & Marriot, A., *ADR: Principles and Practice*, Sweet & Maxwell, 2012.

⁹⁷ Menkel-Meadow, *supra* note 90.

refers to the process, the adjudication refers, contrariwise, to full-dress individualized and formal application of rules by officials in a particular litigation⁹⁸.

The adjudication's ratio is about solving definitely a dispute requiring, firstly, fact finding, secondly, the interpretation of contractual terms and, finally, the application of legal principles.

Indeed, as a natural consequence, it's easy to say that arbitration is a form of adjudication.

In the adjudication the function of resolving dispute is delegated to lawyers or court, the outcomes are defined by winner and losers, the process is private (arbitration) or public (litigation) and follows strict procedural rules. The party who loses the adjudication can appeal to the appropriate appellate court which will consider only the legal issues in the case.

Section 4 List of factors

What dispute resolution process is best suited to achieving that goal? What alternative options do you have to solve a dispute? There are a number of factors parties should consider in selecting the best form of settlement. Here I will focus briefly on dozens of them. Although a lot of them are not related to law, there are needs

⁹⁸ Galanter, M., *supra* note 73.

and interests which cannot be protected without going to the court, under the authority of a judge.

Before analysing the factors, it is necessary to underline once again the importance of your approach and to bear in mind a good strategy based on defining your “best alternative to a negotiated agreement” (hereafter BATNA) and trying to improve it as much as possible.

With regards to your approach, according to Felstiner, Abel and Sarat, it's crucial:

- to be aware of an injury (Naming),

- to attribute fault to a person, institution or event (Blaming)

- to voice (Claiming).

Only if your remedy is rejected, you can eventually think which is the most suitable forum.

For what concerns, conversely, your strategy, according to Fisher and Uri, “the better your BATNA the better your power”.

Several mediators argued that it's always possible, once you identified your BATNA, to improve it, so that you can focus on your priorities to understand which form is the most convenient.

List of factors:

1. Confidentiality and Ethics

All out-of-court forms of dispute resolution promise some degree of confidentiality. In an arbitration hearing, even if the procedure is as much as like litigation as possible, its most attractive characteristic is that it promises to be confidential.

Communications made during mediation are frequently protected by evidentiary rules, and are not admitted during a trial (without prejudice communication)⁹⁹.

2. Cost

Cost is one of the primary reasons given for resorting to an alternative dispute resolution method. Any reduced cost may be due in part to the reduced time involved. Due to their informality and flexibility, and the fact that they can be conducted in any convenient location, mediation and negotiation are often less expensive than more elaborate techniques. Although it is often assumed that arbitration is also less expensive than litigation, that may not always be the case.

3. Speed

Courts in almost all over the world are overcrowded, and trials are delayed. Any other method of dispute resolution would probably be faster than that. An arbitration hearing may be scheduled as soon as convenient for the parties' and arbitrator' schedules, sometimes in a matter of weeks. Due to its informality and flexibility, mediation is often speedier than more elaborate techniques.

⁹⁹ Brown, H. & Marriot, A., *supra* note 96.

4. Expertise of third parties

In adjudication, decisions are made by a judge, or by a jury. In arbitration, non-lawyers are often asked to make legal determinations. In mediation, the mediator does not actually make legal determinations, but an unrepresented party may waive legal rights without realizing it. There are qualified neutrals experienced in all forms of dispute resolution. The real issue is the method used for identifying and selecting them.

5. Fairness (fairness of process)

Parties' perceptions of procedural fairness have been found to have an effect on the acceptance of an unfavourable outcome, and on evaluations of the neutral party. Procedural fairness improves satisfaction with the resolution, fosters better relationships between the parties, and prevents the recurrence of the dispute.

During a mediation, ensuring that parties enter into a fair agreement is not within the power or function of a mediator, but a mediator can and need to establish fairness of process as ensuring that parties may negotiate and decide freely, preventing power imbalances from distorting the process¹⁰⁰.

6. Establishing a precedent

Despite all the advantages of other forms of dispute resolution, only litigation is designed to establish precedent. There are certain situations where parties need a determination from the courts.

¹⁰⁰ Id.

7. Predictability

Methods with the greatest predictability in their result are those that follow precedent.

8. Quality of the judges

Wherever the quality of court judges is top-class: the judgment given in those courts is usually sensible, correct and justifiable.

9. Maintenance of relationships

Court proceedings and arbitration are adversarial in nature, and damaging to a relationship. Mediation and negotiation are not. One of the objectives of transformative mediation is to maintain, and improve, the relationship.

10. Timing

Mediation, negotiation, and some other less formal methods can be used at any time and can be used more than once. Consequently, parties can negotiate or mediate as soon as a claim is filed. If there is no settlement, it can be attempted again. Even after a court decision, parties frequently mediate when the case is on appeal.

Section 5: Criticisms of the trial and the shift towards alternative dispute resolutions

There are too many reproaches concerning the trial's function. A key concern is the fact that parties lose control of dispute resolution when they cede authority to external parties like lawyers and judges, which could impose norms and solutions without taking care of parties' wills. Consequently, the law focuses on rights and obligations at the expense of parties' interests.¹⁰¹

Court based systems can be impersonal, insensitive and inaccessible. Moreover, in trial oppositional tactics are encouraged and the improvement of these tactics exacerbate conflict. There is a reluctant information exchange and settlement occurs at information "hot spots" usually associated with litigation deadlines. The cross examinations are so rigorous and Courts provide remedies, which are always rigid and never towards creative solutions.¹⁰²

In addition, we have to think also about the duration of a trial and at the costs of all the parties involved.

These criticisms explain why alternatives to the trial such as mediation have developed which have traditionally been underpinned by different philosophies of dispute resolution. In many

¹⁰¹ Resnik, J., *Secrecy in Litigation: Uncovering, Disclosing and Discovering How the Public Dimensions of Court-Based Processes Are at Risk*, Kent L. Rev. 521, 2006, Vol. 81 2, Available at: <http://scholarship.kent-law.iit.edu/cklawreview/vol81/iss2/9>.

¹⁰² Bilsky, L., Fisher A., *Rethinking settlement*, Theoretical Inquiries in Law, 2014.

advanced legal systems across the globe, the use of ADR is now such that trials have become very rare occurrences¹⁰³.

In such a context the role of the judge should be follow more a catalyst conception than the one¹⁰⁴, suggested by Fiss, of an “adjudicator and remedial architect” which “will bargain against the people’ preferences”.¹⁰⁵

These debates raise important questions: what problems with adjudication is negotiation and mediation a response to? Are negotiation and mediation suitable forms of dispute resolution for all disputes? When determining which form of dispute resolution is suitable for a client should we be required to take the collective need for adjudication into account? To what extent are negotiation, mediation and adjudication alternatives to each other? To what extent do they rest on completely different ideas about the purpose of dispute resolution?¹⁰⁶

The vanishing trial, as above suggested by Marc Galanter, has prompted heated debate across jurisdictions about the extent to which we should be ensuring that certain cases get to trial.¹⁰⁷

We have to pay attention to the fact that in common law jurisdictions a diminishing number of cases going to trial may lead to a situation where there is no sufficient law for negotiators and mediators to bargain in the shadow of.

¹⁰³ Mulcahy, L., 'The Market for Precedent: Shifting Visions of the Role of Clinical Negligence Claims and Trials, *Medical Law Review*, 2014, 274-290.

¹⁰⁴ Sturm, S., *Equality and the Forms of Justice*, 58 *U. Miami L. Rev.* 51, 2004.

¹⁰⁵ Fiss, O., *supra* note 74.

¹⁰⁶ Cohen, A.J., *Revisiting Against Settlement: Some Reflections on Dispute Resolution and Public Values*, *Fordham Law Review*, 2009, Vol.78 3, 1148-1170.

¹⁰⁷ Galanter, M., *supra* note 73.

Common law and civilian lawyers have also drawn attention to the need for the courts to be seen of being enforcing certain types of rights and showing public disapproval of certain types of behaviours.¹⁰⁸

On 26 July 1996, Lord Woolf, the Lord Chancellor instructed the Master of the Rolls two years before in England and Wales, published his Access to Justice Report in which he “identified a number of principles the civil justice system should meet to ensure access to justice”.

Those principles can be summarized as follows.

A civil justice system:

1. should be just in the results it and they deliver;
2. should be fair and be seen to be fair;
3. should ensure litigants have an equal opportunity, regardless of their resources, to assert or defend their legal rights;
4. should ensure that every litigant has an adequate opportunity to state his or her own case and answer their opponent’s;
5. should treat like cases alike (and conversely treat different cases differently);
6. should deal with cases efficiently and economically, in a way which is comprehensible to those using the civil justice system and which provides litigants with as much certainty as the litigation permits; and do so within a system best organized to realize these principles¹⁰⁹.

¹⁰⁸ Fiss, O., *supra* note 74

¹⁰⁹ Lord Woolf M.R., Access to Justice: Interim Report to the Lord Chancellor on the Civil Justice System in England and Wales, HMSO, 1995, chapter 1.3.

Lord Woolf in his report underlined that “it became increasingly obvious... that the civil justice system was failing most conspicuously to meet the needs of litigants”¹¹⁰.

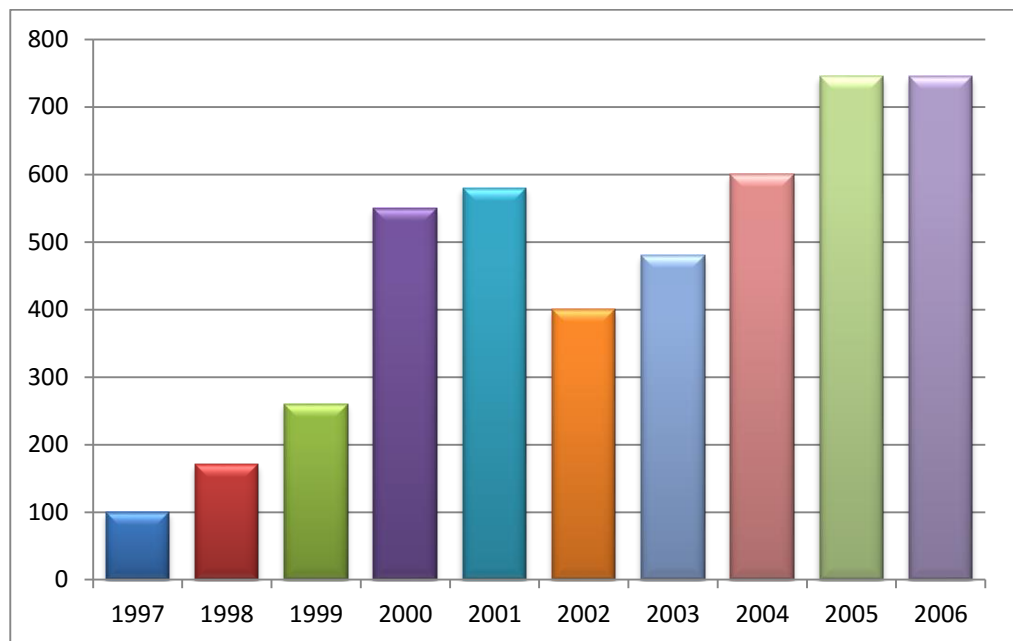
In consonance with Woolf’s reform courts would be avoided wherever possible, litigation will be less adversarial and more co-operative but principally “less complex”.

Moreover, the timescale of litigation would be shorter and verdicts more certain. The costs of litigation would be more affordable and more proportionate to the value and complexity of cases.

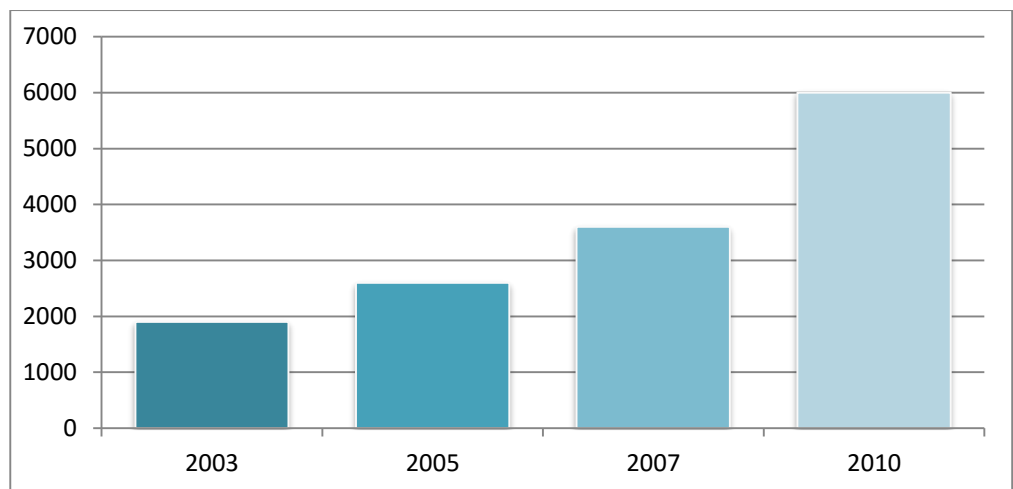
Judges would be deployed effectively so that they can manage litigation more effectively.

As it may be expected, the Woolf’s reform was not enough and the progress of Alternative Dispute Resolution, especially the mediation, increased more and more in a maturing marketplace, where demand and the differing needs of the users were not afforded by the trial; as we can easily see in the graphs below.

¹¹⁰ Access to Justice Final Report, by The Right Honourable the Lord Woolf, Master of the Rolls, July 1996, Final Report to the Lord Chancellor on the civil justice system in England and Wales.



The Growth of Mediation CEDR civil mediations 1997-2006¹¹¹



Growth in civil and commercial mediation in UK¹¹²

¹¹¹ CEDR Annual Review 2006. www.cedr.com/news/resolutions/Review06.pdf

¹¹² CEDR Annual Review 2006. www.cedr.com/news/resolutions/Review06.pdf

Section 6: Getting to yes

In this section we will be looking at the most common primary form of “getting to yes”. Negotiation is an everyday activity: each of us is a negotiator in attempting to resolve daily disputes.

Even if it is often argued that some people are “born negotiators”, no one can deny that that negotiation training can significantly improve the chances of succeeding in getting your client a good outcome.

It’s essential to reach a proper preparation in the field of negotiation. Contemporary negotiation theorists and practitioners acknowledge that there are a range of different ways of being an effective negotiator and that dispute resolution experts need to be able to determine what style of negotiation will suit particular parties or particular disputes¹¹³.

This means that dispute resolution experts need to recognize and acquire knowledge about different styles and to be flexible in their approach. Approaches to negotiation that rely on the notion of a bottom line or strategy that has been fixed in advance are less likely to succeed in getting the best deal for their client. Negotiation training now favours an approach that views negotiations and mediation as cyclical processes rather than linear ones in which strategies need to be re-aligned as you acquire additional information from the other side¹¹⁴. The first questions arising when thinking

¹¹³ Roberts, S. & Palmer’s, M., *supra* note 94.

¹¹⁴ *Id.*

about negotiation are the following: Do I need an intuitive based approach or singular approach to a negotiation? What's the value of having advance strategy(s)? What strategy is most likely to achieve a result for your client? When might it be appropriate to adjust your preferred style? How can you develop strategies so that the dispute does not get "locked in" or stuck? How to win a negotiation?

Before going to the fulcrum of negotiation, it's crucial to bear in mind constantly the importance of analysing the dispute and risk involved in a (possible) failure of dispute resolution; the fact that you have to understand your needs, preferences and options but previously you have to understand the other side's needs, preferences and options. Successively, you have always to consider that the best outcome is not necessarily who gets the best immediate financial deal, it's better to think in long-term outcomes¹¹⁵.

Of course, a negotiation works well when non-legal remedies required or a speedy solution is required or even when parties are evenly balanced and there's no lack of transparency.

According to Fisher and Ury, who wrote, possibly the most famous book on how to negotiate called *Getting to Yes*, the parties involved in a negotiation have to be open minded; they have to focus on inter-dependency; the interest will not be position based; both parties have to be proactive and trying to find eventual "expand the pie" solutions; they have to focus on shared problems and joint gains, being prepared to reveals their own needs because relational aspects of deal have to be into account¹¹⁶.

¹¹⁵ Mulcahy, L., supra note 85.

¹¹⁶ Fisher, R., & Ury, W., supra note 36. -24

Moreover, it's essential to focus on what outcome the parties desire rather than what the law can deliver. In other words, it's better to separate the problems from the legal merits of the dispute.

Therefore, in their book Fisher and Ury suggest to improve position without having guarantee that you will win and what you have to do if the other side is more powerful. To be a good and effective negotiator requires substantial skill.¹¹⁷

Negotiations may be competitive and integrative: where the issue is division of a fixed asset then competitive approach may be the correct one, but when your goal is to preserve good relationships then integrative approach may work better.

Fisher and Ury dwell on the dyad concept of BATNA-WATNA (Best and Worst alternative to negotiated agreement).

What scenario does seem the most realistic? In other words, which are the real options you have if negotiations fail?

It's really important to assess your own BATNA and WATNA in advance of negotiations, to find out as much as possible about their secret facts during negotiations, to use the negotiations to try and tease out your opponents BATNA and WATNA, to work to change the views of an unduly optimistic opponent¹¹⁸.

According to Fisher and Ury, if you have a good BATNA you should reveal it during negotiations, whereas if you have a bad BATNA you should be reluctant to reveal it.

Besides, if both sides have good BATNAs it may lessen the chance of an agreement being reached.

¹¹⁷ Id.

¹¹⁸ Id.

The prominence of the language in negotiation is something to be reckoned with ¹¹⁹.

Section 7: The six phases of negotiation

According to De Girolamo, I report below a few sentences where it would be easy to feel the “*voluntas negotiandi*” of the parties involved:

Moving to a procedural approach, it's possible to disclose the existence of a six-phase bidirectional procedural foundation, superimposed by a repetitive procedural arc of phases interacting with one another within and during the process. The six stages disclosed by the data are:

1. Unilateral Articulation of Positions,
2. Information Exchange,
3. Testing of Positions,
4. Shift in Position,
5. Bargaining Proposals and

¹¹⁹ Bazerman, M. & Neale, M., *Negotiating rationally*, New York: The Free Press, 1992.

6. Joint Decision-making for Final Agreement¹²⁰.

During the first phase (Unilateral Articulation of Positions), the parties articulate their opening positions which reflect their views about the strengths of their case and the weaknesses of the others. In this moment it's easy to identify a competitive approach among the parties that are focusing only on their own positions.

In the second phase (Information Exchange), it happens the selection of information disclosed. The parties discuss facts and express what they believe is an appropriate way to resolve the dispute. Again, they are not willing at this stage to accept another view of the facts, be influenced by their opponent's case; they use this phase to strengthen their bargaining position, hoping to influence the other party as to the merits of their view.

In this phase the degree of attention, diligence and protection of the other party's convenience will depend on what is imposed or authorized by the regulatory system under which the parties negotiate. Of relevance in this sense would be the existence of a legal provision generally regulating the negotiation process (which, under Italian Law, is regulated by the general *bona fide* clause) which might imply, in its application, the duty to disclose with reasonable care to the other party every relevant, known or even knowable information in negotiating the contract.¹²¹

In the third phase, (Testing of Positions), The parties reduce the distance not by numbers, but by trying to undermine the

¹²⁰ De Girolamo, D., *The Negotiation Process: Exploring Negotiator Moves Through a Processual Framework*, Ohio State Journal on Dispute Resolution, 2013.

¹²¹ Court of Cassation Ruling n. 19024 of 29 September 2005; Grand Chamber of the Court of Cassation Ruling n. 26725 of 19 September 2007, Grand Chamber of the Court of Cassation Ruling n. 26724 of 19 September; Court of Cassation Ruling n. 24795 of October 2008).

other's confidence in their own case, but still they have not yet begun to consider real potential outcomes. It is not until the movement into the next phase that shifts in positions occur. Essentially, the parties engage in strategic distributive conduct: the unwillingness to accede to any form of compromise, the demand for unilateral concessions, the unrelenting hold on a positive view of one's case with the accompanying denial of weakness in any form, and the need to ensure that the pie is divided unequally-more for one than the other¹²².

In the fourth phase (Shift in Position), the movement by the parties to begin to formulate, articulate, and respond to bargaining proposals follows a change that occurs within the parties' assessments of their positions. This stage must occur before bargaining is contemplated.

The shift is a culminating event, one that may take parties by surprise and surreptitiously lead them to the offer and counteroffer dance of bargaining proposals or one that occurs as a result of the rational assessment of information disclosed during the course of the process thus far.

In the fifth phase, (Bargaining Proposals), it can be seen a shift from the competitive mode of the prior phases to a seemingly more cooperative approach as the parties seek to find an acceptable outcome. During this stage, parties re-evaluate their expectations, they assess their opponents' expectations, they speculate on the possible reactions to their offers, they formulate offers within the contract zone, and they postulate reasons why their offer mer-

¹²² Gifford, D., A Context-Based Theory of Strategy Selection in Legal Negotiation, 46 Ohio St. L.J., 1985; Menkel-Meadow, C., Toward Another View of Legal Negotiation: The Structure of Problem-Solving, Ucla L. Rev., 1983-84.

its acceptance. (Phenomenon of exchange of offers and counter-offers, according to Schelling we can entitle this phase as “pure bargaining”)¹²³.

Here, the parties are balancing between two goals: to maintain bargaining strength and to reach agreement. On the one hand, in seeking agreement, they desire the most advantageous bargain they can get and in this way they are at odds with each other. On the other, they both realize there must be compromise to reach agreement¹²⁴.

Finally, in the last phase (Joint Decision-making for Final Agreement) a cooperative effort is clearly evident. The parties work together to formalize the details of the agreement and the arrangements necessary for the agreement to be finalized.

It is only in the final phase that problem-solving and cooperation dominate.

Section 8: the four barriers of negotiation

Indeed, final agreement is reached when the parties sign the agreement, either in each other's presence or alone.

¹²³ Schelling, T., *The Strategy of Conflict*, Harvard University Press, 1980.

¹²⁴ Lord Woolf M.R., *supra* note 53. -14

During a negotiation it's really imperative for all the parties involved to know from the very beginning which are the possible barriers that may lead to a fail in settlement.

Here below I will analyse a few of them.

According to Mnookin, there are at least four barriers that we have to take into account for exploring why negotiations sometimes fail, based on different perspectives¹²⁵.

1. The first one is a strategic barrier, based on game theory and the economic analysis of bargaining¹²⁶.

What unites all negotiations is the tension between the cooperative interest (discovering shared interests and maximizing joint gains) and the competitive interest: (maximizing one's own gains where more for one side will necessarily mean less for the other).

A strategic behaviour could lead to inefficient outcomes, especially because of the information asymmetry: each side to a negotiation characteristically knows some relevant facts that the other side does not know¹²⁷.

2. The second barrier concerns the relationship between the principal and his agent. As a matter of fact, in many disputes, principals do not negotiate on their own behalf but instead act through agents who may have somewhat different incentives than their principals.

¹²⁵ Mnookin, R., *supra* note 67.

¹²⁶ Dixit, A. & Nalebuff, B., *Thinking Strategically: The Competitive Edge in Business, Politics, and Everyday Life*, 1991. This barrier relates to an underlying dilemma inherent in the negotiation process.

¹²⁷ Rasmusen, E., *Games and Information: An Introduction to Game Theory*, 1989.

This is the so called “principal/agent problem” in law and economics and transaction cost economics¹²⁸.

It is not simple to align perfectly the incentives for an agent with the interests of the principal.

3. The third barrier is cognitive, and relates to how the human mind processes information, especially in evaluating risks and uncertainty.¹²⁹ There are a lot of biases related to a negotiation but according to Daniel Kahneman and Amos Tversky two of them are truly relevant:

- a. Loss aversion.

Before speaking about loss aversion it is better to start with the phenomenon called “risk aversion”: most people will take a sure thing over a gamble, even where the gamble may have a somewhat higher “expected” payoff.

For instance, in a group of 4 people in which everyone could have \$50 today or just one of them \$200 tomorrow, the overwhelming majority of people would choose the sure gain of \$50, even though the “expected value” of the second, just possible but not sure, alternative, \$200, is slightly more.

In other words, most of people would not gamble for a gain, even though the expected value of \$200 exceeds the sure thing of \$50.

¹²⁸ Williamson, O., *The Economic Institution of Capitalism*, 1985; Milgrom, P., and Roberts, J., *Economics, Organizations and Management*, 1992.

¹²⁹ Kahneman, D., et al., *Judgment Under Uncertainty: Heuristics and Biases*, 1982.

On the other hand, the phenomenon called “loss aversion” illustrates that most of people would gamble to avoid a sure loss, even though, on the average, the future possible loss is higher.

For instance, in the same group of 4 people in which everyone has to spend \$50 today or just one of them \$200 tomorrow the overwhelming majority of people would choose to gamble, even though the “expected loss” of the second, just possible but not sure, alternative is slightly more.

In other words, most of people would gamble for a sure loss, even though the expected possible value slightly exceeds the sure loss.

Thus, comparing risk aversion and loss aversion after experimental evidence suggests that the proportion of people who will gamble to avoid a loss is much greater than those who would gamble to realize a gain¹³⁰.

b. Framing effects

One of the most striking features of loss aversion is that whether something is viewed as a gain or loss - and what kind of gain or loss it is considered - depends upon a -reference point, and the choice of a reference point is sometimes manipulable¹³¹.

¹³⁰ Id.

¹³¹ Id.: e.g. Imagine that you park your car in Cleveland and make a horrifying discovery – you’ve lost the tickets. Assume that you cannot be admitted to the symphony without tickets. Also imagine that someone is standing in front of the Symphony Hall offering to sell two tickets for \$100. You have a choice. You can use the \$100 you intended for the fancy dinner to buy the tickets to hear the concert, or you can skip the concert and simply go to dinner. What would you do?

Consider a second hypothetical. After you park your car, you look in your wallet and you realize to your horror that the \$100 is gone, but the tickets are

The point is that whether or not an event is framed as a loss can often affect behaviour. This powerful idea concerning “framing” has important implications for the resolution of disputes.

4. The fourth and final barrier, “reactive devaluation”, relates to the fact that bargaining is an interactive social process in which each party is constantly drawing inferences about the intentions, motives, and good faith of the other¹³².

According to a large number of experiments conducted by Lee Ross, a given compromise proposal is rated less positively when proposed by someone on the other side than when proposed by a neutral or an ally.

Mr. Ross and his team also demonstrated that a concession that is actually offered is rated lower than a concession that is withheld, and that a compromise is rated less highly after it has been put on the table by the other side than it was beforehand.¹³³

there. In front of the Symphony Hall is a person holding a small sign indicating she would like to buy two tickets for \$100. What do you do? Do you sell the tickets and go to dinner? Or do you instead skip dinner and simply go to the concert?

Experimental research suggests that in the first example many more people will skip the symphony and simply go out to dinner, while in the second example, the proportions are nearly reversed; most people would skip dinner and go to the concert. The way we keep our mental accounts is such that, in the first instance, to buy the tickets a second time would somehow be to overspend our ticket budget. And, yet, an economist would point out that the two situations are essentially identical because there is a ready and efficient market in which you can convert tickets to money or money to tickets.

¹³² Ross, L. & Stilling, C., *Barriers to Conflict Resolution*, 1991.

¹³³ *Id.*

Section 9: Ten reasons to mediate

As mentioned in section 3, with regards to a third party approach I will focus on mediation, but what is a mediation in simple words? According to the Centre for Effective Dispute Resolution (CEDR), mediation is “A flexible process conducted confidentially in which a neutral person assists the parties in working towards a negotiated agreement of a dispute or difference, with the parties in ultimate control of the decision to settle and the terms of resolution.”¹³⁴

Although part of the doctrine used to distinguish among three forms of mediation (evaluative facilitative and transformative), I prefer to discern between facilitative and transformative (following the scheme indicated by Brown and Marriott)¹³⁵.

Following Brown and Marriott, I strongly believe that the difference between evaluative and facilitative is just a false dichotomy: “all mediation is facilitative, since that is an integral aspect of the process, with parties for example being assisted in communicating and negotiating effectively”¹³⁶.

In addition, “an evaluative mediator gives advice, makes assessments, states opinions, including opinions on the likely court outcome, proposes a fair or workable resolution to an issue or the

¹³⁴ www.cedr.com/solve/mediation/

¹³⁵ Brown, H. & Marriot, A., *supra* note 92.

¹³⁶ *Id.*

dispute, or presses the parties to accept a particular resolution ... but those activities are inconsistent with the role of a mediator”¹³⁷.

Love underlines this theory based on ten reasons.

Reason 1:

The role/task of an evaluator (arbitrator, judge or neutral expert) and of a facilitator (mediator) are different and thus the mediator risks losing neutrality and losing focus in his task.

Reason 2:

Evaluation promotes positioning and polarization, which are antithetical to the goals of mediation.

When parties are in the presence of an evaluator, they make themselves look as good as possible. They do not make offers of compromise or reveal their hand for fear that it weakens the evaluator’s perception of the strength of their case. They are in a competitive mind-set seeking to capture the evaluator’s favour and *win* the case.”

When parties are in presence of a facilitator, “an atmosphere of respectful collaboration is a necessary foundation for creative problem-solving” is needed.

Reason 3:

Assuming a specific position violates the ethical mediation codes.

The Model Standards of Conduct for Mediators highlight party self-determination as a fundamental principle to mediation, and the

¹³⁷ Love, L., The top ten reasons why mediators should not evaluate, Florida State University Law Review, 1996.

committee to the standards rejected that mediation could evaluative stating that the mediator should rather refer a dispute to the more evaluative forums than becoming evaluative.

Vice versa for arbitrators (they should not assume a neutral role) which is based on the notion that the arbitrator may be improperly influenced by the settlement discussions. So why should this rationale not be applied to mediators?

Reason 4:

By accepting that mediators may be evaluative, they must be lawyers; but this would weaken the field

If the field is the lawyer's, then they would probably pull mediation into an adversarial paradigm.

Reason 5:

There is insufficient protection against wrong settlements

You can appeal a judgment, but you can't appeal a settlement

And mediators are in most cases immune from liability for careless opinions (quasi-judicial immunity).

Reason 6:

The disputing world needs alternative paradigms

There are so many evaluative kinds of dispute resolution; we need an alternative – the “collaborative paradigm of mediation”

Mediation offers a dispute resolution “through which parties are taught how to resolve their disputes, listen to each other differently, broaden their own capacities for understanding and collaborating, and create resolutions that build relationships, generate more harmony, and are win-win”.

Evaluative mediators “trash” the parties’ cases, predicting loss and risk if litigation is pursued. They “bash” settlement proposals that the other side will not accept. We lose a great deal if mediation becomes a mere adjunct of the adversarial norm. Having mediators use evaluation as a technique to get movement takes us in that direction.

Reason 7:

Evaluation detract the focus away from party responsibility for critical evaluation, re-evaluation and creative solutions

As a society, we need to think higher levels of creativity. And accepting evaluative mediation is way thinking backwards, not forwards.

“... Evaluative mediation pulls mediation away from creativity and into the adversarial frame. If we are to continue to survive and evolve as a species, we need to nurture the processes that tap our affinity to create and imagine”.

Reason 8:

Evaluation can stop negotiation

The parties may use the mediator’s opinion as leverage in negotiations.

Reason 9:

A uniform understanding of mediation is critical to the development of the field

Studies show that the term mediation is a used in an extraordinary variety of ways. A uniform understanding will make parties more comfortable choosing ADR.

Reason 10:

Mixed processes can be useful, but call them what they are!

When lawyers and scholars use term like med-arb, neg-med and mini-trial, they must make sure that it is correctly labelled.

A properly labelled process promotes integrity, disputant satisfaction and uniform practice.

10. Facilitative mediation

The facilitative mediator's skills are, first of all, to be an impartial third party, to speak in a confidential way, to operate in a secure negotiation environment, to be selected by the parties or nominated by a mediation agency.

The characteristics of this process are the following:

Firstly, the authority of the mediator derives from parties. The parties involved, with the help of the mediator will empower themselves. It's important to underline that the mediator has no authority to make a determination of outcome, but he will facilitate the negotiation among the parties, which will hopefully reach a consensual resolution or an agreement.

In this type of mediation, we are able to distinguish two stages: one before mediation commences and one during it.

The following framework provides a structural overview of the facilitative mediator's role before mediation commences:

Engage the parties in the mediation forum – provision of information

Obtain commitment and agree mediation “rules”

Preliminary communication and preparation

Organisation of joint meeting rooms and caucus space

Meet and greet at staggered times

Contrariwise, during the mediation the third impartial party has to establish the issues and prepare the agenda, to gather information, to conduct a substantive negotiation, to deal with the possible impasse, in particular with creative solutions and to conclude the mediation, recording the outcome.

The transformative mediation was developed by Proff. Robert Baruch Bush and Joseph Folger, the authors of *The Promise of Mediation*, a key text in the field of alternative dispute resolution methods¹³⁸.

Bush and Folger consider mediation something more than a problem-solving method: they fiercely believe that the transformative approach goes deeper and has the capacity to change not only how people behave in a particular conflict but also in their future life.

¹³⁸ Baruch Bush, R.A. & Folger, J.P., *The Promise of Mediation; The Transformative Approach to Conflict*, revised edition, San Francisco, Jossey-Bass, 2005.

They said that parties “learn how to draw on those positive capacities in dealing with life’s problem and in relating to others”¹³⁹.

This particular approach has two main goals and no one of these includes the settlement of dispute (to settle is not viewed as a priority):

Empowerment: “helping parties to find their own strength to explore goals, resources and options and make their own decisions”.

Recognition: “giving due consideration and recognition to the views of the other party to the conflict: the evocation in individuals of acknowledgment and empathy for the situation and problems of others”¹⁴⁰.

The following framework provides a structural overview of the transformative mediator’s role:

Parties structure process and outcome.

Aims at maximum empowerment and long lasting personal change.

Parties must meet together because of need for joint recognition.

Focus on opportunity to hear and understand another point of view.

Telling can be cathartic and repair relationships.

Opens up emotional space for apology.

¹³⁹ Id.

¹⁴⁰ Id.

Part of therapeutic justice movement.

From the idea of the transformative mediation and the one of a narrative mediation, Gary Paquin & Linda Harvey spoke about “therapeutic jurisprudence”, which the main goal is to find ways in which the legal system can have a positive emotional impact on people, or have less of an aversive influence. It emphasises the importance of parties’ stories.¹⁴¹

Section 11: Narrative and transformative mediation

11.1. Narrative mediation

Focuses on the dispute as just being one view of the relationship between the disputants. The mediator helps the parties develop an alternative story of their relationship, one that might encourage reasonable trust.

Based on four criticisms of facilitative and evaluative mediation:

- Parties’ lack of entitlement in a dispute.
- The assumption that mediators are neutral and leave their own “stories” at the door.

¹⁴¹ Paquin, G., & Harvey, L., Therapeutic Jurisprudence, Transformative mediation and narrative mediation: A natural connection, Florida Coastal Law Review, 2001.

- The assumption that the mediator can stay neutral and act in the manner of the scientist-practitioner.
- The belief that mediators are able to separate the process of mediation from the content of the messages offered by the parties.

Counteracts this through questioning, which facilitates parties developing their own stories. Mediators help parties examine the meaning in the messages they are saying, and the origin of the ideas that make up that meaning.

Process: Engagement; deconstructing the dominant story; and constructing alternative stories.

11.2. Transformative mediation

Encourages people to clarify their positions in the dispute and to open up opportunities for each to hear and consider the other's viewpoints.

Based on the objectives of providing opportunities for empowerment and recognition.

Process: Introduction; micro focusing on parties' issues; encouraging deliberation and choice making; and fostering perspective-taking.

The difference between the narrative and the transformative approach is that transformative mediators look at changing the cultural worldview through the parties' experience of resolving conflict; while narrative mediators seek to expose the impact of this cultural worldview, by having the parties deconstruct the dominant social discourses in order to resolve their dispute.

Paquin & Harvey based on these two methods created their own hybrid method based on the strengths of both models:

They believed in expanding transformative work by providing the more specific techniques of narrative therapy, but still retaining a focus on helping the parties become empowered and recognising each other's position.¹⁴²

Section 12: Riskin's grid

As we said in the Section 8, sometimes negotiation fails because of some barriers,¹⁴³ and the parties involved may go to an impasse.

The mediator may solve the situation with creative solutions and going over these barriers. In particular, he may help in putting more information on the table or may also help in perceiving each other more fully and accurately.

Thus, the parties will have more power control with the direct effect that there will be a greater degree of participation during this process and a fuller opportunity to express themselves and to communicate their views.

The outcome effects are valued by parties.

The Mediator's role is twofold: on the one hand, he has to increase the level of parties' participation and their control of the

¹⁴² Id.

¹⁴³ Roberts, S. & Palmer's, M., *supra* note 94.

mechanism, and, on the other hand, he has to improve the quality of communication¹⁴⁴.

In other words, he has to support parties to their own deliberation and to enhance of their participation, control and self-determination over the process.

With regards to the interests in play, according to Riskin, it's better to divide them in four levels¹⁴⁵:

Level 1 – Litigation issues – The primary goal of mediation in this level is to settle the matter at hand through an agreement.

Level 2 – Business Interests – This level focuses on the prolonged interests and life of the business such as a long lasting relationship between the parties, profitability, reputation etcetera.

Level 3- Personal Issues – This focuses on solving the personal and emotional issues of the individuals within the party organizations. These personal issues may range from humiliation, anger, anxiety, or loss of self-esteem. The mediator must focus on solving these problems and removing these barriers to mediation.

Level 4 – Community interests – This is the broadest level of interests such as setting precedents for the community with similar issues and the focus is on improving the community.

¹⁴⁴ Bush, R., What do we need a mediator for? Mediation's value added for negotiators, *Ohio State Journal on Dispute Resolution*, 1996 Vol. 12 1, 1-36.

¹⁴⁵ Riskin, L., Understanding Mediators' orientations, strategies and techniques: A grid for the perplexed, *Harvard Negotiation Law Review*, 1996, Vol. 1 7, 7-51.

Moreover, Riskin intended to develop a categorisation system for different variations of mediation:

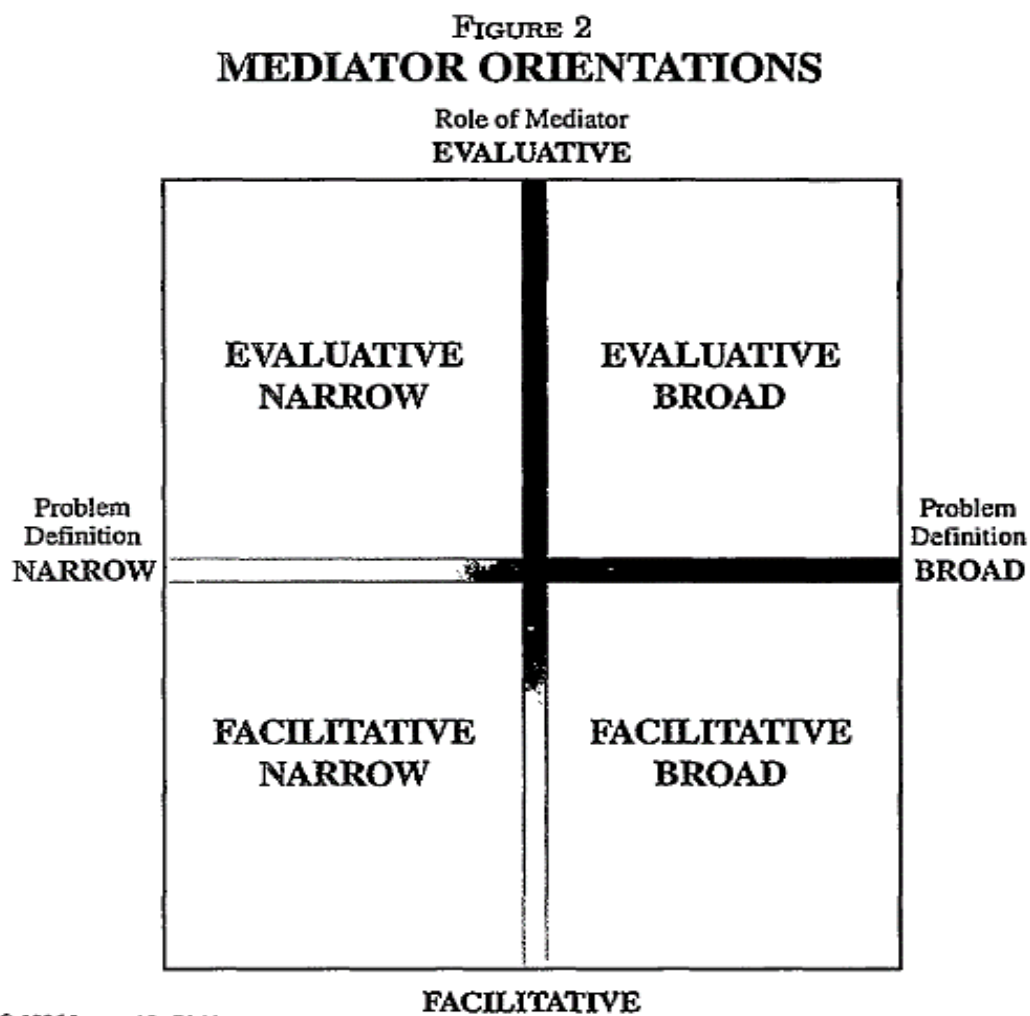


Figure 14¹⁴⁶

- 1) Evaluative Narrow – to help party better understand their position, the mediator stresses the outcome of litigation and what he considers that is likely to occur is what he will emphasize that the parties.

¹⁴⁶ Id.

- 2) Evaluative Broad – Med educates themselves about the underlying interests of the parties, they predict the impact of not settling, they develop offers focusing more on company interests, they urge the parties to accept their proposals.
- 3) Facilitative Narrow – the mediator asks questions to help the parties understand the legal positions of the parties, these can be in the form of private caucuses they help the parties develop their own narrow proposals.
- 4) Facilitative Broad – They help the parties understand the underlying interests of both the parties. They help the parties develop broad and interests based options for settlement. They help the parties evaluate proposals.

To this extent, Riskin illustrated also the mediator's techniques but it's really important to underline that mediators do not always fit cleanly in a category and they sometimes shift category in the course of the mediation:

MEDIATOR TECHNIQUES

Role of Mediator

EVALUATIVE

Problem Definition NARROW	<p>Urges/pushes parties to accept narrow (position-based) settlement</p> <p>Proposes narrow (position-based) agreement</p> <p>Predicts court or other outcomes</p> <p>Assesses strengths and weaknesses of each side's case</p>	<p>Urges/pushes parties to accept broad (interest-based) settlement</p> <p>Develops and proposes broad (interest-based) agreement</p> <p>Predicts impact (on interests) of not settling</p> <p>Educates self about parties' interests</p>	Problem Definition BROAD
	<p>Helps parties evaluate proposals</p> <p>Helps parties develop & exchange narrow (position-based) proposals</p> <p>Asks about consequences of not settling</p> <p>Asks about likely court or other outcomes</p> <p>Asks about strengths and weaknesses of each side's case</p>	<p>Helps parties evaluate proposals</p> <p>Helps parties develop & exchange broad (interest-based) proposals</p> <p>Helps parties develop options that respond to interests</p> <p>Helps parties understand interests</p>	

FACILITATIVE

Figure 15¹⁴⁷

¹⁴⁷ Id.

Evaluative narrow – to help parties understand strengths and weaknesses of positions as well as likely outcomes of litigation.

Facilitative-Narrow – to educate parties on strengths and weaknesses of their claim and consequences of failing to settle.

Evaluative Broad – the strategy is to learn about circumstances and underlying interests.

Facilitative-Broad – to help participants define subject matter of mediation in terms of underlying interests, and to help develop/choose solutions responding to the interests.

In accordance with Riskin, here I underline the advantages and disadvantages of various approaches¹⁴⁸.

In the first approach, the so called Narrow Problem Definition, the advantages are the increasing chances of resolution, the time reduction and the possibility of keeping proceeding relatively simple. On the other hand, the disadvantages are the increasing chances of impasse, with little creativity and this kind of approach does not address long-term mutual interests.

¹⁴⁸ Id.

In the second approach, the so called Broad Problem Definition, the advantages are the accommodation of parties' underlying interests, the increment of the likelihood of settlement, the time reduction and the reduction of chances of impasse, with a high creativity. On the other hand, the disadvantages are the percentage increase of chances of impasse, a focus on unnecessary issues and a possibility of making parties and lawyers uncomfortable not only with the with process but also with the atmosphere.

In the third approach, the so called Evaluative Approach, the advantages are the removal of decision making burden from parties and lawyers. On the other hand, the disadvantages are the possibility of impairing parties' faith in mediator's neutrality, the restriction of parties' flexibility, the drop of parties' participation, a lowering satisfaction, a reduction in opportunities for changing and growing.

In the fourth approach, the so called Facilitative Approach, the advantages are a higher party participation and a higher control, the parties are allowed to fine-tune problem definition and to strengthen their communication, an agreement often reflective of parties' interests and an improvement on the abilities for parties of working together. On the other hand, the disadvantages are that the parties' lack of knowledge may impede ability to reach optimal agreement and the possibility of time wastage and incoherence with parties' underlying interests.

Riskin's grid received a lot of critics. One of the main was to one of Prof. Joseph Stulberg.¹⁴⁹

Stulberg said that the Riskin model can be used as a description model, but only if we accept 4 false assumptions.

The assumptions are:

1. You are unable to critique or criticize the intervener performance. The grid assumes that the only test of success is whether the mediator convinced the parties to accept an outcome. In theory, a mediator could have bullied his or her way to an outcome but the grid overlooks improper performance.

2. The grid assumes the client is able to dictate the mediation style. The problem with the grid is that it assumes that the client is able to demand that the mediator conduct him or herself a particular way – overlooks the mediator's style.

3. Some styles of mediation may favour one party over another. Some styles favour the characteristics of one party of another. Therefore, if you follow the description, it may lead to inequitable mediation.

4. Limit the possible range of the uses of mediation.

The image the grid puts of mediation is another form of trial

¹⁴⁹ Stulberg, J., Facilitative versus evaluative mediation orientations: Piercing the Gridlock, Florida State University Law Review 985, 1996, 1001.

Stulberg also criticizes the definition of facilitative and evaluative because it distorts the strategies, techniques, and theories that distinguishes them. Stulberg argued that any mediation that is evaluative is not consistent with mediation.¹⁵⁰

Section 13: Conclusion

In trying to conceptualise what exactly alternative dispute resolutions or ADR are the concept of “getting to yes” is useful. It allows most disputes to be viewed under a single concept, something that no legal approach appears able to offer. *Getting to yes* describes the ability of find the best way for people to deal with their differences by a fair and mutually satisfactory agreement. A practical method, defined by the authors of one of the all-time bestselling books on negotiation, able to negotiate an agreement amicably, without giving in, based on the work of the Harvard Negotiation Project, a group that deals with all levels of negotiation and conflict resolution.

Such instruments are often criticized because of their perceived low level of impact upon individual citizens. Their impact is considered low because individuals are sceptical and reluctant towards all the methods described above for solving their disputes other than litigation – and for litigation I mean not only cases that actually go to trial but also lawsuits that are settled before they get to court – for having their rights to be respected. This stance has to

¹⁵⁰ Id.

be overcome, especially now that traditional adversary method in civil cases may lead not only to theoretical but also practical problems. First, it is not the most effective way to resolve some kinds of disputes. Second, it can be made more effective for most kinds of disputes by borrowing certain of the non-adversarial features of other forms of dispute resolution. Third, from both the societal and the individual perspective, we may no longer be able to afford it in its undiluted form¹⁵¹.

As a consequence of this limited impact on individuals, there is, in general, an encouragement of alternative dispute resolution methods, on the one hand, by international organisations, such as the European Union, and, on the other hand, at a national level, by every national judicial system.

The use of ADR methods in reality however often involves more than the mere idea that the truth will emerge when opposing sides present their cases as aggressively as possible. ADR can often be infused with advice, efforts at persuasion and they are all attempts to save legal and managerial time and money, and they all try to take at least some of the edge off the adversarial attitude.¹⁵²

The possibility of using ADR instruments to settle disputes as painlessly as possible needs not only a good communication, but also, some degree of trust, and. The creation of trust is central to the design of many ADR techniques.

Given that the traditional adversary system of dispute resolution nurtures animosity, distortion, and distrust, the contention of ADR instruments is based on the trust and dialogue. The ability of

¹⁵¹ Allison, J., Five Ways to Keep Disputes Out of Court, Harvard Business Review, 1990. <https://hbr.org/1990/01/five-ways-to-keep-disputes-out-of-court>

¹⁵² Id.

individuals to not be simply the beneficiaries but also the producers of the agreement.

This chapter has presented a small overview of the three main ADR methods, discussed in section 3, starting by the description, in section 1, of the perception of an injury and the process of Naming – Blaming – Claiming that will lead individuals to the birth of a dispute. In section 2, I clarified the idea of Litigotiation, dwelling on the factors to bear in mind when the parties have to choose which one is the most appropriate method for themselves, in section 4. In section 5, I analysed the main critics towards the trial compared to ADR and from section 6 to section 12, I focused entirely on two of the three form illustrated in section 3, negotiation and mediation.

In order to illustrate the importance of choosing the best method for solving a dispute, this chapter presented in details two different ways in which ADR are often used for getting to yes.

(i) Negotiation

As suggested by Fisher and Ury, individuals first have to deal with relational issues, including considering each party's perception – for example by reversing roles – seeking to make negotiation proposals consistent with the other party's interests, making emotions explicit through active listening. In negotiation, there are multiple, shared, compatible, and conflicting interests. Identifying shared and compatible interests as a “common ground” is helpful in establishing a groundwork for additional negotiation discussions. Fisher and Ury recommend to do, firstly, a brainstorming, in other words to develop multiple solution options prior to evaluation of those options and, secondly, a selection for decision-making, based upon objective criteria as precedent, tradition, a course of dealing, outside recommendations, or the flip of a coin.

(ii) Mediation

Differently from negotiation, the parties agree to work with a facilitator or mediator to resolve a dispute. Mediation has a special and distinctive use: it is generally employed when a process has reached an impasse or major breakdown. Sometimes consensus-building efforts lead to an impasse and this is especially true for controversial or complex projects. In such cases, both agencies and participants need another means to determine which way to go.

Mediation has been employed in transportation projects and long-range planning studies where profound disagreement has occurred. Any mediation involves a trained, impartial third party to help reach consensus on substantive issues at disagreement among conflicting parties. A mediator can be from within or outside an agency but must be neutral and perceived as such by all parties. He frequently creates a draft working document that is modified through discussions with all parties to reflect developing points of consensus. A mediator is able to work on a single issue on a short-term basis, with the possible option to remain involved as a monitor of future activity or implementation.

Whilst on the one hand it may seem pointless for lawyers and third parties to only help the parties in creating their own settlement based on an economic and non-legal sphere, the ability of these individuals to express their attitudes and opinions in such area is, on the other hand, seen as an integral aspect of these ADR processes. A real benefit of using these methods is the fact that even when it fails to produce an acceptable resolution, the effort will not be wasted. Most of the time and money already spent on the unsuccessful ADR procedure will be useful in preparing for trial.

The fact that no single ADR method is necessarily best, and since sometimes no ADR method will work, choices about ADR should take into account several key factors, as described in section 4.

In addition, in order for the people to be able to choose the best method for a proper settlement they need to know how fundamental will be the role of a third party, particularly in a negotiation or in a mediation, as observed by Black and Baumgartner.

The aim of this chapter was to show some of the varying ADR in which a dispute can be solved by the parties, especially being themselves part of the solution and not just let a third party to decide their own problems and differences. The examples provided demonstrate the variety of methods that, although called alternative, they seem to be, in more than one occasion, the most appropriate¹⁵³ to resolve certain types of disputes, such as family disputes or those of e-commerce.

This possible appropriate use of ADR demonstrates that our system needs not only to implement these “alternative” forms but also to stimulate the dissemination of several positive results which could be achieved by the use of this kind of methodologies instead of the traditional ways.

Using the traditional courts in all cases would simply not be feasible, most notably because it would prevent the parties from being the main characters to protect their interests, especially the most sensitive issues. Given these opportunities to both parties it

¹⁵³ Some commentators have used the phrase “appropriate dispute resolution” to suggest that processes like mediation need not be viewed as alternative to anything. For a discussion using this terminology, see. Sander, F. & Rozdeicz, L., *Selecting an Appropriate Dispute Resolution Procedure: Detailed Analysis and Simplified Solution*, in *The Handbook of Dispute Resolution*, Michael L. Moffitt & Robert C. Bordone, eds., 2005.

is therefore necessary to guide them through a mutual solution, an approach which could be offered to parties online or offline. This “online approach” to guide the parties will take place in chapter 3, with reference to the notion of online dispute resolution system, in particular as meant by Steven J. Brams (introduced in chapter 1).

Chapter 3

Online Dispute Resolution

Tom Peters: “*Under-promise; over-deliver*”.

Chapter Aims

- An introduction to the concept of Online Dispute Resolution.
- Making the reader aware of what differences ODR from ADR.
- Describe two types of ODR: E-mediation and E-negotiation.
- Describe the application of these principles into the ODR field
- Describe actual ODR platforms, developed into the EU domain and possible new application of fair division principles into these platforms

Sections:

Section 0: Introduction

Section 1: the state of the art of ODR

Section 2: ODR benefits

Section 3: Online negotiation (E-Negotiation)

Section 4: Online mediation (E-Mediation)

Section 5: ODR platforms

Section 6: EU platform

Section 7: Conclusions

Section 0: Introduction

The past twenty years have seen increasingly rapid advances in the field of Online Dispute Resolution (hereafter ODR).

Nowadays that our society has embraced technology so thoroughly, many questions have been raised about how these technologies should assist parties in solving their disputes.

At the very beginning the first platforms of online dispute resolution simply replicated face-to-face dispute resolution approaches online.

On the other hand, Frank Sander, since the Pound Conference in 1976, envisioned a courthouse with many doors, each leading to a resolution process appropriate for a different kind of dispute. Doors that can be customized to individual disputes on demand.

In addition, according to an article written by Colin Rule on “Dispute Resolution Magazine” last Winter 2015: “Experience quickly demonstrated that online dispute resolution required new approaches to reach its full potential. For example, ODR is pushing practitioners to break down some of the silos we have constructed within the face-to-face dispute resolution field. Instead of bright lines between diagnosis, negotiation, mediation, arbitration, and ombuds (terms parties often don’t understand), many online disputants prefer a seamless progression from communication to evaluation, perhaps within hours”.¹⁵⁴

¹⁵⁴ Rule, C., Technology and the Future of Dispute Resolution, Dispute Resolution Magazine, 2015, 21(2). Retrieved on 10 October 2015 from www.americanbar.org/publications/dispute_resolution_magazine/2015/winter/technology-and-the-future-of-dispute-resolution.html.

However, Online Dispute Resolution is not a good fit with every dispute. Because of this statement, it is crucial that Dispute Resolution professionals should know how to use technology when it is appropriate and avoid using it when it is not.

Online Dispute Resolution will be the normal answer to future disputes: not controversial at all or even seen as particularly innovative.

In this chapter, I will focus on the state of the art of Online Dispute Resolution and their benefits (section 1 and 2 respectively), which may help the parties in different ways to reach an agreement.

Moreover, in the following sections, I will focus on the two main developed ODR systems: I will examine specifically the online negotiation in section 3 and the online mediation in section 4.

Finally, in section 5, I will analyse the existing platforms, focusing my attention in section 6 on the EU platform (opened last 15th of February).

This chapter will be a right introduction to the use of algorithms in online dispute resolution. A use that I will treat analytically in chapter 4.

Section 1: the state of the art of ODR

Internet and cyberspace in general is continuing to evolve and the use and the deployment of new communication tools is increasing. Like all the evolutions, it does not bring just a positive trend.

Of course communication technologies and speed are soared and now it's almost everywhere possible to virtually communicate synchronously and asynchronously, but this will not imply that the web will be always a harmonious place.

Obviously, since the World Wide Web was invented in 1989 and the online population at that time was not willing to generate a range or a quantity of conflicts that would suggest something different from the physical and concrete dispute resolution methods and entities.

E-commerce disputes, privacy and copyrights are currently common disorders characterised by the online field and people ought to have an easy and safe mean to solve eventually their disagreements.

Traditionally the online population would often find ways to avoid the solution of the potential conflicts which could be arise in the web domain just in the physical world entities.

On the other hand, as a consequence of these needs' safeguard, it is becoming increasingly difficult to ignore the progression of Online Dispute Resolution multifaceted phenomenon.

Even if the term ODR was coined in the mid-1990s what is lacking is a cogent and univocal theoretical base.

Online Dispute Resolution can broadly be defined as the use of Alternative Dispute Resolution techniques over the internet.¹⁵⁵ Since its origin, ODR was focused on disputes related to online activities, but now this method is also applied in offline disputes.

As remarked by Katsh, “the marketplace for ODR is now offline disputes as well as those originating online and public sector disputes as well as those originating in the private sector”.

Indeed, currently it is barely preferable to make a distinction between proceedings that rely heavily on online technology and proceedings that do not.¹⁵⁶

Both, ADR and ODR, especially from the EU point of view, they are means of securing greater access to justice and they have to be implemented to foster this service to citizens.

Basically, ODR differs from ADR in one important aspect, as ADR typically refers to processes. As many experts in the field of ODR already said, one perspective is that ODR is not merely a useful tool to cases involving small dollar amounts, distant parties, and often relatively obscure issues.¹⁵⁷

ODR is, instead, a natural evolution of the previous ADR trend using alternative approaches across a wide range of civil domains.¹⁵⁸

¹⁵⁵ Pappas, B.A., Online Court: Online Dispute Resolution and the Future of Small Claims, *UCLA Journal of Law & Technology*, Vol. 12, 2, 2008, 7-26.

¹⁵⁶ Hörnle, J., *Cross-Border Internet Dispute Resolution*. Cambridge: Cambridge University Press, 2009.

¹⁵⁷ Wahab, M., Katsh, E. & Rainey D., *Online Dispute Resolution: Theory and Practice*, Eleven International Publishing, 2012.

¹⁵⁸ Ebner, N., Zeleznikow, J., Fairness, Trust and Security in Online Dispute Resolution, *Journal of Public Law and Policy*. Available at: <http://digitalcommons.hamline.edu/jplp/vol36/iss2/6>

A considerable amount of literature has been published on Online Dispute Resolution especially in the last few years, but a seminal book still remains “Online Dispute Resolution” by Katsh and Rifkin.¹⁵⁹

They were the first in observing the fact that our society was creating a huge number of disputes born online with no practical way for the parties in engaging in traditional face-to-face solutions. They introduced the concept of Online Dispute Resolution as a “fourth party”. The other three parties may be complemented with Information and Communication Technology (ICT).¹⁶⁰

Technology is the “fourth party” in a dispute: it is another participant at the negotiating table. Just picture that the first two parties are the two disputants, the third part is the human negotiator/mediator and technology is the fourth party, such as a “friendly and patient robot”.¹⁶¹

The fourth party’ theory is a clear metaphor which stresses how technology can be as influential as to change the traditional three side model.¹⁶² The fourth party embodies a range of facilities in the same manner that the third party does.¹⁶³

¹⁵⁹ Katsh E. & Rifkin J., *Online Dispute Resolution: Resolving Conflicts in Cyberspace*, San Francisco: Jossey-Bass, 2001.

¹⁶⁰ Cortes, P., *A European Legal Perspective on Consumer Online Dispute Resolution*. *Computer Telecommunications Law Review*, 2009, 1-28.

¹⁶¹ Katsh, E. & Rifkin J., *supra* note 159.

¹⁶² Katsh, E; Wing, L., *Ten Years of Online Dispute Resolution (ODR): Looking at the Past and Constructing the Future*, 38 *University of Toledo Law Review* 19, 2006.

¹⁶³ Gaitenby, A., *The Fourth Party Rises: Evolving Environments of Online Dispute Resolution*, 38 *University of Toledo Law Review* 101, 2006

Whereas the fourth party may at times take the place of the third party – i.e. automated negotiation – it will frequently be used by the third party as a tool for assisting the process.¹⁶⁴

There are a large range of activities that are conducted mainly through the use of this fourth party, such as organizing information, sending automatic responses, shaping writing communications in a politer and constructive manner e.g. blocking foul language.

In addition, technological systems can monitor performance, schedule meetings, clarify interests and priorities, and so on.¹⁶⁵ The assistance of the fourth party will increase the more technology advances, thus reducing the role of the third neutral party. Actually, ICT advance is occurring exponentially since ICT advance speeds up over the time.¹⁶⁶

Although differences of opinion still exist, there appears to be some agreement that Online Dispute Resolution refers to an alternative to traditional dispute resolution procedures.

The acronym ODR embodies a multitude of concepts which Schultz and other commentators define it, firstly, as a mixture of a *sui generis* form of dispute resolution responding to the needs of

¹⁶⁴ Bol, S.H., An Analysis of the Role of Different Players in E-Mediation: The (Legal) Implications. *IAAIL Workshop Series—Second International Workshop*. www.odrworkshoinfo/papers2005.

¹⁶⁵ Katsh, E. & Rifkin J., *supra* note 159.

¹⁶⁶ Katsh, E. & Rifkin J., *supra* note 159.

Internet users and, secondly, as a different alternative dispute resolution form enriched with online capabilities.¹⁶⁷

Specifically, ODR is the application of information communications technology to the practice of dispute resolution. Generally speaking, ODR involves the application of dispute resolution techniques over the internet. Thus, ODR is used to resolve internet-related disputes such as e-commerce, but it also can be used for more traditional off-line disputes.¹⁶⁸

Petrauskas and Kybartiene argue that the key components of ODR can be listed as follows:

1. Similar to ADR, companies agree to resolve their disputes outside the courts, the difference being to use the Internet to enhance the process;
2. Professionals guide the parties and apply their ADR experience to support the Internet process;
3. ADR rules and practices are adapted to the Internet environment, and
4. Software tools are used to enhance Internet exchanges.¹⁶⁹

Moreover, they also focused on the main web-based services offered in ODR systems which have been tested and introduced.

¹⁶⁷ Schultz, T., *Online Dispute Resolution: The State of the Art and the Issues* (with Gabrielle Kaufmann-Kohler, Dirk Langer & Vincent Bonnet), University of Geneva, 2001.

¹⁶⁸ *Id.*

¹⁶⁹ Petrauskas, F. & Kybartiene, E., *Online Dispute Resolution in Consumer Disputes*, Jurisprudencija, 2011.

These new services will enable the main parties and the third ones to:

1. Meet online and work in shared, protected work spaces,
2. Access databases with precedents,
3. Retrieve and manage key documents,
4. Hold meetings with voice and video conferencing as desired and with translation services as needed.¹⁷⁰

Section 2: ODR benefits

Nowadays, Online Dispute Resolution has been integrated into familiar dispute resolution processes and generating novel approaches to responding to and preventing conflict, approaches not possible to develop in a traditional offline context.¹⁷¹

It is not essential to underline whether this fourth party is significant or limited in the dispute solution, but accordingly it is crucial to emphasize the fact that it is still likely to be a factor.

Colin Rule, co-founder of MODRIA¹⁷² – one of the well-known ODR providers in Silicon Valley – writes that the distinction between online and offline is a false dichotomy: “Most of us

¹⁷⁰ Id.

¹⁷¹ Wahab, M., Katsh, E. & Rainey D., *supra* note 157.

¹⁷² Modular Online Dispute Resolution Implementation Assistance, www.modria.com.

are comfortable using technology to communicate sometimes and at other times getting together face-to-face. We constantly navigate back and forth between our online and offline channels, sometimes in the space of just a few minutes. This is true in ODR as well. We may begin a process with an online filing form and move to telephone calls and then to face-to-face meetings before finalizing the agreement online. Joint sessions might be held in person, with in-between conversations happening over email. This is the way our parties live their lives, and they expect to be able to resolve their disputes with similar fluidity”.¹⁷³

Indeed, it is useless to pick online or offline dispute resolution, we can choose both.

There are several benefits which make ODR especially attractive:

These include cost savings, the speed of resolution, convenience, and individually tailored processes. In terms of money, ODR is mostly useful in cases where the attorneys’ fees would exceed the likely award amount. ODR is faster than a typical trial or even ADR because technology can shorten the distances parties might otherwise need to travel. Furthermore, ODR does not depend on clearing time on a mediator’s or a judge’s calendar. Using e-mail, discussion groups, and web sites, agreements can be written and amended when convenient.¹⁷⁴ Further, instead of a cookie cutter approach, each dispute process can be tailored to fit the disputants’ individualized needs and it would be easy to avoid the possible distraction due to the presence of the emotional aspect of the conflict.

¹⁷³ Rule, C., *supra* note 154.

¹⁷⁴ Krause, J., *Settling It on the Web: New Technology, Lower Costs Enable Growth of Online Dispute Resolution*, 2007.

Generally, the key companies' and individuals' needs and concerns can be listed as follows: reputation, quality control, information strategies and mutual learning.

As a result, Online Dispute Resolution can often resolve the dispute quickly in an efficient way and with more participation and control of the outcome by the parties who must work with each other to resolve the dispute. The parties using Online Dispute Resolution can have more flexibility, a flexibility that is not just a geographic flexibility – ODR can allow parties in different locations or countries to avoid the costs and inconveniences of travel – but also about the choice of which laws apply when the parties are from different countries. In addition, companies – especially E-commerce ones – which showed on their homepages the possibility of solving directly online the possible argues may reach more reliability and trust on web users, who want to trust online transactions and know a reliable dispute resolution process exists in the event of a dispute and they will encourage other customers to frequent often your website.

Actually the key advantage of resolving disputes through an online system is that it avoids the matter of whether a specific court has jurisdiction or not over the dispute.¹⁷⁵

Moreover, ODR could be the only feasible option for people unable to afford expensive travelling costs or for those involved in e-commerce negotiations regarding small amounts of money.¹⁷⁶

¹⁷⁵ Lide, E., ADR and Cyberspace: The Role of Alternative Dispute Resolution in Online Commerce, Intellectual Property and Defamation, *Ohio State Journal on Dispute Resolution*, 1996, 921-941.

¹⁷⁶ Bordone, R., Electronic Online Dispute Resolution, 3 *Harvard Negotiation Law Review* 175, 1998.

Many sceptic practitioners have argued that an online negotiation are less influential than face-to-face dispute resolutions since it is more difficult for both parties to understand each other's interests due to the absence of non-verbal signals, which in turn reduces the chance of achieving a satisfying agreement.¹⁷⁷

Recently, researchers have shown that online communication is more unsharpened and rough than face-to-face communication and can therefore more easily lead to misunderstandings.¹⁷⁸

Several studies have attempted to explain that it would be easier to increase the likelihood of finding an integrative agreement if negotiators know each other prior to the negotiation, hence they have more cues to interpret the other party's actions and motivations. Otherwise, misunderstandings can easily lead to negative communication, distrust and eventually impasse. As suggested by Diane Moore, for ODR to be triumphant it is accordingly important to have some insights into the other party's intentions which can "be achieved by shared group membership or mutual self-disclosure".¹⁷⁹

On the one hand, it may consequently be argued that divorce cases are particularly suited for ODR since both parties know each other well enough to interpret each other's actions, and, on the other hand, especially during divorces parties could be distracted

¹⁷⁷ Bazerman, M., Negotiation, 51 Annual Review of Psychology, 2000, 279-314.

¹⁷⁸ Sproull, L. & Kiesler, S., Connections: new ways of working in the networked organization, 1991.

¹⁷⁹ Moore, D., Long and short routes to success in electronically-mediated negotiations: Group affiliations and good vibrations., 77 Organization Behaviour & Human Decision Processes, 1999.

by the emotional sides of the divergence, but thanks to the distance, they could focus on the matter that need to be settled.

One of these benefit is definitely ODR's potential for growth as a means of dispute resolution. It is certain that ODR field is being changed by technological development, the only uncertainty that remains is whether this change will take one, five ten or more to elect Online Dispute Resolution as the normal way of solving disputes.

Online Dispute Resolution may be divided into two main classes:

On the one hand, the first class, the so-called Hard ODR – or traditional ODR – which covers procedures intending directly to resolve conflicts and, on the other hand, the second class, the so-called Soft ODR that seek to prevent disputes, or to facilitate their resolution once disputes have arisen, without actually adjudicating them.

As suggested by Thornburg – an US commentator – this distinction is supported by the idea of thinking ODR as encompassing not just traditional resolute processes but also newer preventative processes by content owners to forestall copyright infringement.¹⁸⁰

¹⁸⁰ Thornburg, J., *Going Private: Technology, Due Process and Internet Dispute Resolution*, 2000.

Online Dispute Resolution systems may be classified according to the “hard systems” into three main categories:

- a. Online negotiation, using expert systems to automatically settle financial claims;
- b. Online mediation, using a website to resolve disputes with the aid of qualified mediators.
- c. Online arbitration, using a website to resolve disputes with the aid of qualified arbitrators.

It is essential to emphasize that not all of these types of ODR are fully developed yet. Online negotiation and online mediation are currently the most advanced and I am going to examine these two figures in the following sections.

Section 3: Online negotiation (E-Negotiation)

Online negotiation may be divided into two main sub-groups but sometimes may involve a combination of these two methods:

Automated Negotiation

Assisted Negotiation

Whereas there are providers such as Cybersettle¹⁸¹, who provide blind-bidding model also called automated negotiation, other platforms – such as eBay¹⁸² and PayPal¹⁸³ – offer so-called assisted negotiation, by outlining, based on prior experience from similar cases, a number of possible remedies to the parties to a dispute.¹⁸⁴

3.1 Automated Negotiation

Online Dispute Resolution uses Information and communications technology (ICT) for Negotiations, not only tools such as e-mail or videoconferencing, but also with providers which help parties in negotiating online through a process called “blind-bidding”. During automated negotiation ICT takes over the negotiation.

¹⁸¹ www.cybersettle.com (last access 31st March 2016).

¹⁸² www.ebay.com (last access 31st March 2016).

¹⁸³ www.paypal.com (last access 31st March 2016).

¹⁸⁴ Cortés, P., A new regulatory framework for extra-judicial consumer redress: where we are and how to move forward, University of Leicester School of Law Research Paper, 2013.

Blind-bidding is a negotiation process designed to determine economic settlements for claims in which liability is not challenged. Indeed, automated negotiation is ideal for online settlement of financial claims.

This is a very simple, easy and straight forward method with no other assistance needed.

Generally, automated negotiation provides two parts:

1. Offering Party, which is the party who makes the offer or the party who is going to pay.
2. Demanding Party, which is the party who makes the demand or the party who is seeking payment.

As a general rule, as blind-bidding example, we should consider a dispute between two insurance companies as to who pays out in what proportions in relation to a car accident.

Typically, in blind-bidding one party (hereinafter A) contacts an ODR provider and presents his or her case against a second party (hereinafter B).

The online dispute resolution provider contacts B, who can accept or refuse to submit to the jurisdiction of the institution. The parties then enter the so-called “blind bidding” procedure.

Each of them in turn enter their respective offer and demand. The proposed figures are confidential; they are neither made public nor communicated to the other party. The figures are kept confidential regardless of whether the case settles or not.

The parties also choose a percentage range. The ODR algorithm computes a settlement amount between the offer range and the demand range provided the figures are within the given range.

The number of bids varies between three and unlimited. If the two bids in any of the rounds come close enough to one another, the midpoint figure will be deemed as accepted

Most sites offering automated negotiation also impose a time limit for the parties to reach an agreement.

Automated negotiation ODR is mainly applicable only to purely monetary disputes and cannot deal with factual or legal disputes of any complexity. Examples of such sites include Cybersettle, SettlementOnline,¹⁸⁵ ClickNsettle,¹⁸⁶ ClaimRoom,¹⁸⁷ Smartsettle¹⁸⁸ and FairOutcomes,¹⁸⁹ all of them which claim to have processed large amounts of cases successfully.¹⁹⁰

On the one hand, Cybersettle and SettlementOnline both allow three rounds of bidding, using a simple and practical system based on double blind bidding. In such a procedure, both parties are unaware of the specifics offered by the other party, only that a negotiation is in process. The computer operates according to a formula for each round – compares the offers and counteroffers – and when the offers are within a specific range it announces a deal. If

¹⁸⁵ www.settlementonline.com (last access 31st March 2016).

¹⁸⁶ www.clicknsettle.com (last access 31st March 2016).

¹⁸⁷ www.theclaimroom.com (last access 31st March 2016).

¹⁸⁸ www.smartsettle.com (last access 31st March 2016).

¹⁸⁹ www.fairoutcomes.com (last access 31st March 2016).

¹⁹⁰ Edwards, L. & Wilson C., Redress & Alternative Dispute Resolution in Cross-Border E-commerce Transactions, Briefing Note, (IP/A/IMCO/IC/2006-206).

the software determines that a settlement has not been reached, then their offers remain confidential and future bargaining positions are unaffected.

The difference between the two system is that while on Cyber-settle, a settlement is reached if there is less than 20% between the offers in any of the rounds, and then the claim will settle for the average of the two amounts,¹⁹¹ on the other hand, SettlementOnline allows the parties to set their own settlement range for each individual case.¹⁹²

On the other hand, Smartsettle and ClickNsettle use a method called visual blind bidding. In Smartsettle – based on visual blind bidding – that is applicable to simple cases and scalable to complex multiparty cases, the visible suggestions are put forward by each party and the computer operating as an intelligent agent, but each side's acceptances are kept hidden from the other party. The computer announces a deal when hidden acceptances coincide.

ClickNsettle, however, allows many rounds of offers and counteroffers within a specified period of time. For ensuring the good faith of the negotiations, parties are required to increase/decrease their offer/counteroffer by a specified percentage over their previous offer. If a settlement is not reached within the specified time period, then the offers expire and the cyber-negotiation fails and parties are free to resubmit their dispute or to move towards another dispute resolution method.¹⁹³

¹⁹¹ www.cybersettle.com/demo/demo_pf.asp (last access 31st March 2016).

¹⁹² www.settlementonline.com/Proposal2.html (last access 31st March 2016).

¹⁹³ Ponte, L., *Boosting Consumer Confidence in E-business: Recommendations for Establishing Fair and Effective Dispute Resolution Programs for B2C Online Transactions*, 2002.

In the end, Fair Outcomes Inc. is the most interesting one as a provider, because it provides parties with access to several proprietary systems that are grounded in mathematical algorithmic theories of fair division and of games – it is into this provider that Brams' algorithms of fair division are applied.

3.2 Assisted Negotiation

In order to describe the assisted negotiation is useful to bear in mind what was stated before about negotiation. Such as the offline negotiation the assisted negotiation, indeed, is a process where parties negotiate and settle their issues, disputes or grievances.

Negotiation is chosen by parties on a voluntary basis. Attorney may represent the parties during the process. Parties reach agreement without any external entity empowered to make a decision against their will.

The main difference is that in the Assisted Negotiation is the technology who assists the negotiation process between the disputes parties.

The Online dispute resolution provider supplies facilities such as a secure site, communication facilities, and possibly storage for documents and other such facilities.

The main service provided are the following:

developing agendas,
engaging in productive discussions,
identifying and assessing potential solutions,
writing agreements.

It is worth mentioning that the assisted negotiation procedures are designed to improve parties' communications through the assistance of a third party or a software.

The major advantages of these processes, when used online, are their informality, simplicity and user friendliness.¹⁹⁴

A well-known example is the Internet auction website eBay which has a business relationship with the ODR provider Square-Trade,¹⁹⁵ and thereby provides assisted negotiation to a large number of eBay users alongside other processes.

So far, once we illustrated the difference between automated negotiation and assisted negotiation, we can introduce the concept of E-Negotiation. It is a process that uses a negotiation support system including computers or other forms of electronic communications that enable parties to negotiate their own agreements.

“In its most advanced form, E-Negotiation is a form of artificial intelligence that fully automates mediation (perfectly neutral,

¹⁹⁴ Motion, P., Article 17 ECD: Encouragement of Alternative Dispute Resolution. Online Dispute Resolution: A View from Scotland, Hart Publishing, 2005.

¹⁹⁵ www.squaretrade.com (last access 31st March 2016).

super intelligent, and very secure). While in many cases unnecessary, E-Negotiations can include face-to-face meetings if such meetings enhance the process”.¹⁹⁶

In 1980s the first E-Negotiation systems or computer-mediated negotiation systems were built¹⁹⁷:

Around the world we have (just in alphabetic order):

Adjusted Winner,¹⁹⁸

AniMed,¹⁹⁹

AutoMed,²⁰⁰

Asset Divider²⁰¹ (ex Family Winner),

Cybersettle,²⁰²

¹⁹⁶ Thiessen, E.M., Miniato, P. & Hiebert, B., ODR and eNegotiation, Online Dispute Resolution: Theory and Practice (a treatise on technology and dispute resolution), Eleven International Publishing, Wahab M., Katsh E. & Rainey D., eds, 2012.

¹⁹⁷ Id.

¹⁹⁸ See supra n. 54.

¹⁹⁹ Lin, R., Gev Y., and Kraus, S., Facilitating Better Negotiation Solutions using AniMed”, 2010. Available at u.cs.biu.ac.il/~linraz/Papers/linetal-acan11.pdf, (last access 31st March 2016).

²⁰⁰ Chalamish M. & Kraus, S., AutoMed – An Automated Mediator for Multi-Issue Bilateral Negotiations”, Journal of Autonomous Agents and Multi-Agent System, 201, www.aaai.org/ocs/index.php/ICCCD/ICCCD09/paper/viewFile/1025/3320 (last access 31st March 2016).

²⁰¹ Abrahams, B., Bellucci, E. & Zeleznikow, J., Incorporating Fairness into Development of an Integrated Multi-agent Online Dispute Resolution Environment, Group Decision and Negotiation, published online 3 March 2010: vuir.vu.edu.au/6967, (last access 31st March 2016).

²⁰² www.cybersettle.com, (last access 31st March 2016).

Fair Outcomes,²⁰³

Genie,²⁰⁴

Genius,²⁰⁵

Invite,²⁰⁶

Joint Gains,²⁰⁷

Negoisst,²⁰⁸

Negoplan,²⁰⁹

Persuader,²¹⁰

²⁰³ www.fairoutcomes.com, (last access 31st March 2016).

²⁰⁴ Wilkenfeld, J., Kraus S., Holley, K.M. & Harris, M.A., GENIE: A Decision Support System for Crisis Negotiations, 1999. Available at www.sciencedirect.com/science/article/pii/016792369400027P, (last access 31st March 2016).

²⁰⁵ Lin, R., Kraus, S., Tykhonov, N., Hindriks K. & Jonker, C.M., Supporting the Design of General Automated Negotiators”, in T.Ito, M. Zhang, V. Robu, S. Fatima, T. Matsuo, and H. Yamaki(eds.), Innovations in AgentBased Complex Automated Negotiations,”, Volume 319 of Studies in Computational Intelligence. Available at <http://u.cs.biu.ac.il/~linraz/Papers/linetal-agentDesignBookChapter.pdf>, (last access 31st March 2016).

²⁰⁶ Kersten G. & NoronhaS.: Negotiation via the World Wide Web: A Cross-cultural Study of Decision Making, Group Decision and Negotiation, 1999, 8, pp. 251-279. invite.concordia.ca, (last access 31st March 2016).

²⁰⁷ sal.aalto.fi/en/personnel/raimo.hamalainen/publications, (last access 31st March 2016).

²⁰⁸ wi1.uni-hohenheim.de/negoisst.html, (last access 31st March 2016)..

²⁰⁹ Matwin, S., et al., NEGOPLAN: An Expert System Shell for Negotiation Support, IEEE Expert, 4(4), 1989, 50-62.

²¹⁰ Sycara, K., Machine Learning for Intelligent Support of Conflict Resolution, Decision Support Systems, 10, pp. 121-136, 1993.

Smartsettle²¹¹

and Split-Up²¹².

Using these systems, stakeholders may solve their dispute just online, regardless of where it originated.²¹³ Some systems are designed also with the possibility of face-to-face meetings.²¹⁴

Nowadays, so many case studies illustrate “how cross-cultural negotiations can be managed through modern channels of social influence and information-sharing and shed light on the critical social, cognitive and behavioural role of the negotiator in resolving on-line, cross-cultural, conflicts and disputes, and generally in bargaining and negotiation”.²¹⁵

As said by Ernest Thiessen, Paul Miniato and Bruce Hiebert, “the key difference with E-Negotiation is that the parties are in full control both during the process and in accepting or rejecting an outcome... and a well-designed E-Negotiation system will reduce the conflict or eliminate it by changing the fundamental nature of the interaction between the parties”.²¹⁶

²¹¹ See *supra* n. 188.

²¹² Stranieri, A., et al., *A Hybrid-Neural Approach to the Automation of Legal Reasoning in the Discretionary Domain of Family Law in Australia*, *Artificial Intelligence and Law*, 7(2-3), pp. 153-183, 1999.

²¹³ Thiessen and Zeleznikow believe ODR systems face five main challenges as they attempt to present an effective medium for online dispute resolution: 1) Problem representation, 2) Preference elicitation, 3) Effective communication, 4) Neutrality provision and 5) Degree of automation.

²¹⁴ Thiessen E. & Zeleznikow J., *Technical aspects of online dispute resolution challenges and opportunities*. Conley Tyler, M., Katsh, E. & Choi, D., *Proceedings of the Third Annual Forum on Online Dispute Resolution*, 2004.

²¹⁵ Harkiolakis, N., *E-Negotiations: Networking and Cross-Cultural Business Transactions*, Gower, 2012.

²¹⁶ Lide, E., *supra* note 175.

Section 4: Online mediation (E-Mediation)

The so-called E-supported mediation (or just E-Mediation) refers to mediations that are fully e-supported as well as the hybrid mediations, where they are partly computerized and partly face-to-face. Participation is voluntary and confidential.

During an e-supported mediation, the parties need to fill out an online intake before the joint mediation takes place.

For answering the intake questions are used asynchronous messages which are only shared with the mediator, not also with the other party.

Once the intake is finalized, appointments are made for the face-to-face mediation. As soon as parties finish their mediation, they receive an e-mail inviting parties to participate in the study.²¹⁷

In ODR mediation, compared to a traditional mediation, asynchronous are opposed to real time discussion and common and private communication rooms are desirable but not always available.

²¹⁷ Bollen, K. & Martin Euwema M., *The Role of Hierarchy in Face-to-Face and E-Supported Mediations: The Use of an Online Intake to Balance the Influence of Hierarchy*, Negotiation and Conflict Management Research, 2013.

The main disadvantages are that the lack of face-to-face contact may inhibit development of trust, deny clients their chance to “tell their story” and thus inhibit the reaching of possible solutions.

A study conducted by Juripax has shown that adding an online element to workplace mediation processes contributes to their effectiveness by eliminating

asymmetry in hierarchal workplace disputes.²¹⁸

The first notable e-mediation projects²¹⁹ may be listed as follows:

- the Online Ombuds project, which was a pilot ODR program established in 1996,²²⁰
- the Maryland Family Mediation project, which was another early initiative funded by the National Center for Automated Information Research (NCAIR) in the United States,²²¹
- the Cybertribunal project at the University of Montreal School of Law, which later developed into e-Resolution, a commercial service provider providing e-mediation as well as arbitration for domain name disputes,²²²

²¹⁸ Bollen, K., Martin Euwema M., *Angry at Your Boss or Fearing Your Employee? Negative Affect in Hierarchical Conflicts and the Moderating Role of E-Supported Mediation*, Kyoto, IACM, 2009.

²¹⁹ Katsh, E., Rifkin, J. & Gaitenby, A., “E-Commerce, E-Disputes, and E-Dispute Resolution: In the Shadow of eBay Law”, 28 Ohio St. J. on Disp. Resol. 810, 2000.

²²⁰ Katsh E. & Rifkin J., *supra* note 159.

²²¹ Getz, C., *Closing the Distance with Technology: Report on Phase I of the Technology-Assisted Family Mediation Project*, 2007.

²²² Katsh E. & Rifkin J., *supra* note 159.

- SquareTrade, which picked up the eBay mediation project where the Online Ombuds left off, as a business venture.²²³

This last one example – referring to eBay in conjunction with the internet start-up SquareTrade – introduced an online dispute resolution system which allowed buyers and sellers to settle various contentious issues in a structured format.²²⁴

In this E-mediation provider, parties are asked to answer questions on a customised complaint form and provide supporting documentation for their claim.

During this initial stage, the parties try to reach an agreement by communicating directly with each other through SquareTrade's Direct Negotiation tool, which is a completely automated web-based communications tool.

SquareTrade will transmit the form to the other party and encourage that party to respond. If the parties fail to reach a compromise, through direct negotiation, then they have the option of requesting assistance from a mediator. SquareTrade is careful to explain that the mediator is not a judge or arbitrator, but merely seeks "to facilitate positive solution-oriented discussion between the parties... The mediator will only recommend a resolution if the parties request it".²²⁵

²²³ Abernethy, S., The Square Trade Experience in Online and Offline Disputes, Proceedings of the 2003 United Nations Forum on ODR 2003.

²²⁴ Abernethy, S., Building Large-Scale Online Dispute Resolution & Trustmark Systems, Proceedings of the United Nations Economic Commission for Europe, UNECE, 2003.

²²⁵ www.squaretrade.com/cnt/jsp/odr/learn_odr.jsp (last access 31st March 2016).

Even then, the mediator's recommendation is not binding on the parties.

The dispute resolution mechanism established by Wikipedia works in a similar fashion and is another prominent example of online mediation.²²⁶

In addition, such as SquareTrade, there are websites like Internet Neutral,²²⁷ and WebMediate,²²⁸ to facilitate the resolution of disputes.

Although these websites rely primarily on online technologies such as e-mail, chat rooms, and instant messaging, they also incorporate more traditional communication methods into the negotiation process.

Normally, a party contacts the service and fills out an online form that identifies the problem and possible resolutions. A mediator, then, reviews the form and contacts the other party to see if they will participate in the mediation. If the other party agrees to participate, they can fill out their own form or respond to the initial form through e-mail.

This early talk of opinions may help the parties to understand the dispute better and possibly to reach an agreement. If the dispute remains unresolved, the mediator will work with the parties to help determine issues, articulate interests, and evaluate potential solutions.

²²⁶ Rabinovich-Einy, O., Katsh, E., Digital Justice, Reshaping Boundaries in an Online Dispute Resolution Environment, 1(1) International Journal of Online Dispute Resolution, 2014, 5-36.

²²⁷ www.internetneutral.com/forum.htm (last access 31st March 2016).

²²⁸ www.webmediate.com/intro.html (last access 31st March 2016).

Internet Neutral, on the one hand, allows parties to choose from several online mediation alternatives, including e-mail, instant messaging, chat conference rooms, and/or video conferencing.

The costs, however, vary depending on the online technology used and the length of the mediation sessions.

Disputes with simple facts that rely entirely on e-mail are charged for the time that the mediator spends preparing, sending and reviewing emails.

Internet Neutral uses conferencing software that enables the mediator to communicate with the parties in designated channels or “rooms” accessed by passwords.

During the mediation, the software enables the parties to communicate through two channels: one channel is for a private dialogue between one party and the mediator, while the other channel is an open dialogue with all participants, including the mediator.²²⁹

WebMediate, on the other hand, provides a range of cyber-mediation services along with other dispute resolution systems, including arbitration.

It claims to be the “only company to provide a fully-integrated range of ADR processes online – alternatively, simultaneously, or sequentially.”

²²⁹ Goodman, J., The Pros and Cons of Online Dispute Resolution: An Assessment of Cyber-Mediation Websites, *Duke Law & Technology Review*, 2003, Vol. 2 1, 1–16.

WebMediate offers parties an opportunity to begin with less powerful dispute resolution mechanisms and, if those fail to reach a settlement, to move onto more powerful dispute resolution mechanisms.

Almost all of WebMediate's cases enter into their system through a fully automated cyber-mediation process, WebSettlement.

If the dispute is not resolved through the WebSettlement, then “parties may choose to involve an experienced online WebMediator, to facilitate the discussion of their dispute and assist in identifying and assessing options for resolution”.²³⁰

After exhausting the WebSettlement and WebMediator options, the parties may then choose WebArbitration and “submit their dispute for resolution by a third-party sitting in the role of a private judge”.²³¹

Section 5: ODR platforms

As illustrated by Professor Julia Hörnle in 2011, an international ODR platform should have five separable basic functions.

²³⁰ Id.

²³¹ Id.

Firstly, it is mandatory to set minimum standards for ADR/ODR providers and only admits ADR/ODR providers complying with these (the so-called Clearing House Function).

Secondly, it is essential to search engine to enable consumers to find competent ADR/ODR scheme in trader's state and tests whether dispute is in scope (the so-called Referral Function).

Thirdly, it is fundamental to give consumer choice and info and to provide information about outcomes of other disputes (the so-called Transparency Function).

Fourthly, it is noteworthy to allow consumer to file dispute (claim plus evidence and to transfers dispute to competent ADR/ODR (the so-called Transfer Function).

Finally, it is significant to maintain record of ADR/ODR outcome, to record whether trade has complied or not and to compile statistics (the so-called Enforcement Function).²³²

In the previous paragraphs we discussed a little bit about Cybersettle, Modria and SquareTrade/eBay system.

However, there are more ODR platforms already developed. Among them, in alphabetic order, I have selected the following²³³:

a. Canadian Civil Resolution Tribunal

²³² Hörnle, J., www.law.ox.ac.uk/sites/files/oxlaw/dr_julia_hornle.pdf.

²³³ Susskind, R., Report of Civil Justice Council's Online Dispute Resolution Advisory Group, www.judiciary.gov.uk/wp-content/uploads/2015/02/Online-Dispute-Resolution-Final-Web-Version1.pdf.

- b. Financial Ombudsman Service
 - c. Nominet
 - d. Online Schlichter
 - e. Rechtwijzer 2.0
 - f. Resolver
 - g. Traffic Penalty Tribunal
 - h. Youstice
- a. The Canadian Civil Resolution²³⁴

The Canadian Civil Resolution Tribunal is regulated under the Civil Resolution Tribunal Act 2012. It is an online tribunal launched in 2015 in British Columbia, Canada.

The online tribunal is available as an alternative pathway to the traditional courts for resolving small claims through a process that is expected to be more convenient and less costly. Although it is essential to specify that this year, in 2016, the Civil Resolution Tribunal will move from voluntary to mandatory to resolve minor strata and many small claims disputes up to 10.000 dollars. At present, it deals with claims (under 25.000 Canadian dollars) relating to debts, damages, recovery of personal property, and certain types of condominium disputes. It doesn't handle disputes affecting land. There are two systems being developed to support the CRT and increase access to justice in Canada. The first system, the Solution Explorer, is designed to provide people with the tools they need to assess their options and resolve their disputes themselves.

²³⁴ www.civilresolutionbc.ca, (last access 31st March 2016).

The second system, the Dispute Resolution Suite, will enable the CRT to pursue further early resolution options and adjudications. The online tribunal operates in several stages. In the first instance, the facility will help users explore possible solutions. Then, parties will be required to use the tribunal's online negotiation platform, which is subject to short timelines and supported by templates for statements and arguments. If a settlement is not reached, then a tribunal case manager will be appointed to assist the parties to settle their dispute through a mediation process that will take place online or over the telephone. If parties do not settle by this mediation process, they will then be invited to agree to a third and final stage of adjudication. The adjudicator will contact the parties via the online platform, over the phone, or, when necessary, through video-conferencing, and then will make a decision that will be final and binding.

b. Financial Ombudsman Service²³⁵

The UK Financial Ombudsman Service was established by statute in 2000 as the mandatory ADR body in the financial services sector. Its purpose is to resolve disputes between consumers and UK-based financial businesses quickly and with minimum formality. Its process is designed around the principle that a dispute is usually best resolved at the earliest possible stage and that most problems can be resolved without needing a formal determination by an ombudsman. Businesses covered by the ombudsman have the opportunity to resolve disputes before the service becomes involved, but they must resolve complaints promptly – and always in

²³⁵ www.financial-ombudsman.org.uk, (last access 31st March 2016).

fewer than eight weeks. Once a complaint is referred to the service, its process is geared towards early and informal resolution. Its adjudicators attempt to facilitate an amicable resolution to the dispute between the two parties, usually resulting in adjudicators writing to parties with their view on what the fair and reasonable outcome should be. If both parties agree (which typically happens in around 90% of cases), the dispute is resolved. But either party may disagree and ask for the case to be referred to an ombudsman for final, binding, determination. The service has trialled new ways of working that will allow some disputes to be settled even more informally and quickly - that is, in hours and days. An ombudsman's determinations can be accepted or rejected by a consumer, but if a consumer accepts the decision then it is binding. These decisions are not appealable, but are subject to judicial review. The service is a 'distance' service, so that each year there are usually less than 20 face-to-face meetings with adjudicators or ombudsmen.

c. Nominet²³⁶

Nominet is a domain name registry company which has run the .uk domain name since 1996 and has run the .cymru and .wales domain names since September 2014. Nominet has to register .uk domain names on a "first-come, first-served" basis - without examining the merits of the application. It therefore established a Dispute Resolution Service (DRS) to provide a means of resolving .uk domain name disputes without recourse to court. To pursue a claim through the DRS, complainants have to demonstrate that they have rights in a name that is the same or similar to the disputed

²³⁶ www.nominet.org.uk, (last access 31st March 2016).

domain name and that the registration has been abusive (for example, the spelling of a domain name is deliberately very similar to the complainant's in order to confuse Internet users). The first stage of the DRS requires a complainant to complete a form on Nominet's website. This includes specifying what remedy is being sought (the most common remedy is the transfer of the disputed domain name to the complainant). The material submitted by the complainant is then sent to the registrant of the domain name. Nominet then appoint a mediator, who contacts both parties by telephone to seek a solution. The majority of cases settle at this stage and the mediation generally takes around two weeks. There is no cost to either party at this stage. If the case does not settle via mediation, the complainant can pay to have an independent expert appointed. The expert's decision will be based solely on the materials submitted by the complainant and the registrant. Appeals from the expert stage are permitted, but rare. Both the expert's decision and that in any appeal are published on the Nominet website.

d. Online Schlichter²³⁷

The Online Schlichter is an online mediation service for Business-to-Consumer e-commerce and direct selling disputes. It has been run by the Centre for Consumer Protection in Europe (ECC) in Kehl/Strasbourg since 2009. Its aim is to increase access to justice and reduce the number of cases reaching the regular courts. The service is free for both parties and the mediators/advisors are independent lawyers at the ECC. There is considerable emphasis

²³⁷ www.online-schlichter.de, (last access 31st March 2016).

on analyzing the case from the start and providing both parties with legal advice and evaluation of their legal position, thereby correcting any unfounded expectations about their rights. This online advice is partly automated by using textual building blocks and decision trees. This up-front advice and evaluation often helps to achieve early settlement. The mediator makes a non-binding recommendation. In about two-thirds of all cases both parties accept the recommendation and the case is settled accordingly. Its high settlement rate attests to the success of this technique for small claims.

e. Rechtwijzer 2.0²³⁸

Rechtwijzer 2.0 was developed for the Dutch Legal Aid Board by The Hague Institute for the Internationalisation of the Law (Hiil). The service is provided by the Netherlands Ministry of Justice and Security. It is designed to help parties resolve disputes through a process that takes them from problem diagnosis, through facilitated, Questions & Answers based framing of their case, to problem solving and assisted negotiation and, finally, to various forms of ODR. To assist in negotiation, the process provides automated legal guidance, based on the answers parties have given during the Questions & Answers session. The first service is for matrimonial disputes, including divorce and ancillary matters, such as custody and maintenance. Landlord and tenant and neighbour disputes are planned for the future. The ADR phase is reached on failure of the parties to reach a resolution by themselves. This takes the form of online mediation or arbitration. The

²³⁸ www.hiil.org/project/rechtwijzer (last access 31st March 2016).

process takes place online on a secure and confidential platform, designed for asynchronous dialogue. The platform enables the mediator to engage in separate confidential discussions with each party, consistent with normal mediation practice. Finally, as a “fail safe” against a resolution being reached that does not satisfy the criteria of “fairness”, agreements go before an independent lawyer for confirmation.

f. Resolver²³⁹

Resolver is a UK-based online facility that helps consumers raise complaints with suppliers and retailers. The operators of the site have populated it with the e-mail contacts of the complaint departments of over 2000 major organizations. Through a form-filling exercise and helped by the provision of standard phrases, a consumer is given online assistance in drafting a complaint. This is then e-mailed directly to the relevant complaint department. The suppliers and retailers are urged to respond to the Resolver e-mail address so that the exchange of messages can be stored on the consumer’s case file that is then maintained on the site. The service presently covers energy, telecoms, transport, loan companies, restaurants, high street shops, solicitors, and many more sectors. Resolver provides a platform through which parties can discuss their differences in a structured way. Emoticons are provided to help consumers better express their emotions. The service holds details of the escalation procedures of the 2000 organizations and guides users from first-tier complaints handling up to the highest level. Users are alerted by e-mail to any responses and are prompted to

²³⁹ www.resolver.co.uk, (last access 31st March 2016).

escalate when responses are not received. The service is free of charge, both to consumers and to the organizations to whom they are complaining.

g. Traffic Penalty Tribunal²⁴⁰

The Traffic Penalty Tribunal (TPT) of England and Wales has launched a web-based portal BECK (Best Evidence Cloud Knowledge), for use by appellants, respondent authorities as well as the adjudicators and administrators. The Portal enables appellants to appeal, upload evidence and follow cases and hearings under one evidence screen and account. Likewise, each authority has a dashboard showing current cases, enabling them to submit evidence, comment, and follow progress of hearings and decisions. Appellants create an account and receive all notifications by email. They comment on evidence, request their preferred hearing type and follow progress of the case through to the decision, viewed online. Their dashboard displays the status in each case, prompting actions. The TPT administrators, who no longer data-input, now focus on customer service, for example, 'offline' appellants phoning for a form or help. TPT's workload, which will shortly increase by 30%, will be administered by the same staff numbers with reduced case closure times. Adjudicators can manage their own case-load, send directions to parties, and easily see uploaded evidence, including videos, which is also displayed to all parties. At telephone conference hearings all participants can view the same evidence, guided by the adjudicator.

²⁴⁰ www.trafficpenaltytribunal.gov.uk, (last access 31st March 2016).

h. Youstice²⁴¹

Youstice is an ODR service for handling large volumes of low value consumer complaints, relating both to goods and services, whether or not the purchases took place online. There are two tools. The first enables negotiation between parties. It provides assistance in framing arguments – parties are invited to describe their position by selecting from a series of phrases, with relevant icons for each. The site also suggests suitable solutions that again can be represented by icons. A form of structured (asynchronous) dialogue can take place within a limited area for free form comment. The objective is to encourage and facilitate the parties to reach an agreed settlement directly between themselves. Using the second tool, customers can escalate cases and seek an independent review by one of a number of neutrals accredited by Youstice. Customers can file their claims either directly at the retailers' websites or at websites of consumer organizations. Shops are entitled to use the Youstice logo if they reach agreement on Youstice with consumers in at least 80% of cases and they implement at least 98% of the agreements reached or of decisions by third-parties. Use of the facilitated negotiation platform is free to consumers, with Youstice earning its income from the retailers who pre-register and who display the Youstice logo in their marketing.

Section 6: EU platform

²⁴¹ www.youstice.com (last access 31st March 2016).

So far, we will start focusing on the European ODR platform.

In accordance with the provisions of Regulation 524/2013 on online dispute resolution for consumer disputes – the “ODR Regulation” – the EU has currently created an ODR platform, aimed at enhancing the accessibility of ADR schemes online. This platform has become operational on the 9th of January 2016. It will serve as a single connection point for EU-based traders, consumers, and ADR entities and will apply strictly to online transactions between these parties, both domestic and cross-border.

The ODR platform is operational since the 9th January 2016 and has been made accessible in stages. It is accessible to consumers and traders since the 15th February 2016.

Dispute resolution bodies are currently not available on this site for some sectors and in the following countries: Croatia, Germany, Lithuania, Luxembourg, Malta, Poland, Romania, Slovenia, Spain but The EU Commission will try to cover all the EU members by next summer (2016).

The link to the ODR platform is: www.ec.europa.eu/odr and it is possible to find more information on the following website: www.ec.europa.eu/consumers/solving_consumer_disputes/non-judicial_redress/adr-odr/index_en.htm

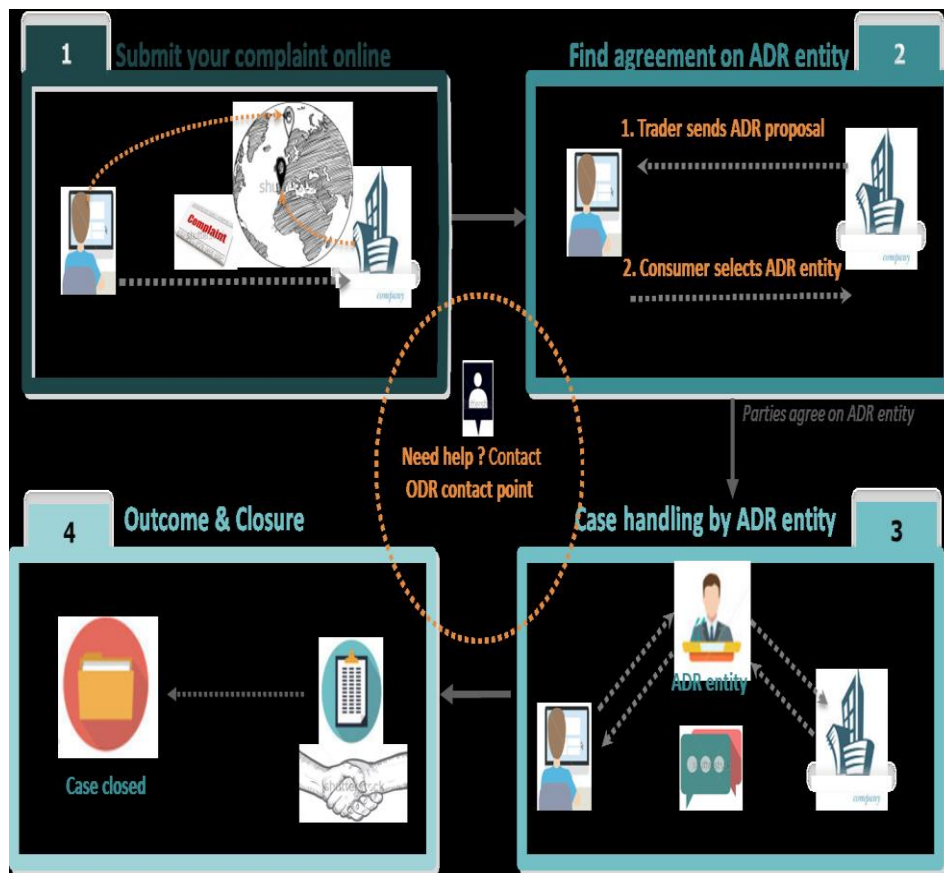


Figure 1²⁴²

As shown in Figure 1 above, a main role is the one of the national contact points established in each Member State to provide assistance to users of ODR platform, a network²⁴³ of online dis-

²⁴² Image from the EU ODR platform.

²⁴³ See article 7, Regulation (Eu) No 524/2013 of the European Parliament and of the Council, 21 May 2013, on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Regulation on consumer ODR).

Network of ODR contact points:

1. Each Member State shall designate one ODR contact point and communicate its name and contact details to the Commission. The Member States may

pute resolution facilitators (“ODR facilitators’ network”). A network composed of contact points for ODR in the Member States which host online dispute resolution facilitators.

confer responsibility for the ODR contact points on their centres of the European Consumer Centres Network, on consumer associations or on any other body. Each ODR contact point shall host at least two ODR advisors.

2. The ODR contact points shall provide support to the resolution of disputes relating to complaints submitted through the ODR platform by fulfilling the following functions:

(a) if requested, facilitating communication between the parties and the competent ADR entity, which may include, in particular:

(i) assisting with the submission of the complaint and, where appropriate, relevant documentation;

(ii) providing the parties and ADR entities with general information on consumer rights in relation to sales and service contracts which apply in the Member State of the ODR contact point which hosts the ODR advisor concerned;

(iii) providing information on the functioning of the ODR platform;

(iv) providing the parties with explanations on the procedural rules applied by the ADR entities identified;

(v) informing the complainant party of other means of redress when a dispute cannot be resolved through the ODR platform;

(b) submitting, based on the practical experience gained from the performance of their functions, every two years an activity report to the Commission and to the Member States.

3. The ODR contact point shall not be obliged to perform the functions listed in paragraph 2 in the case of disputes where the parties are habitually resident in the same Member State.

4. Notwithstanding paragraph 3, the Member States may decide, taking into account national circumstances, that the ODR contact point performs one or more functions listed in paragraph 2 in the case of disputes where the parties are habitually resident in the same Member State.

5. The Commission shall establish a network of contact points (“ODR contact points network”) which shall enable cooperation between contact points and contribute to the performance of the functions listed in paragraph 2.

6. The Commission shall at least twice a year convene a meeting of members of the ODR contact points network in order to permit an exchange of best practice, and a discussion of any recurring problems encountered in the operation of the ODR platform.

7. The Commission shall adopt the rules concerning the modalities of the cooperation between the ODR contact points through implementing acts. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 16(3)

These facilitators should provide support to the resolution of disputes relating to complaints submitted via the ODR platform. They host at least two advisors and have access to dispute data if anyone ask for their assistance. This could be a leading role not only for helping parties in case of problems but also to disseminate the opportunity for consumers and traders to use such a solution instead of going to the trial, and hopefully to surpass the scepticism regarding the use of online-tools for solving a dispute.

In the EU portal, it is possible to do everything online in 4 main steps:

1) Complaint Submitted

Traders or a consumers have filled in the online complaint form and submitted it to this site. The other party has received it.

A party will now need to agree with the other party on the dispute resolution body that will handle their dispute. They have 30 days to do so.

The complaint has been sent to the other party.

The screenshot shows the 'Give us some details about the trader' step of the EU ODR process. The page has a blue header with the EU flag and 'Online dispute resolution' text. Navigation links include HOME, ABOUT THIS SITE, GET HELP, SIGN IN, and Register. A progress bar at the top shows three steps: 1 (selected), 2, and 3. The main content area is divided into three sections: 'Trader details', 'Describe your complaint', and 'Personal information'. The 'Trader details' section contains a search bar for finding the trader in a list, and fields for the trader's name, email address, website, and country. Below these are fields for the trader's address, including street, postcode, and city. A 'GO TO NEXT STEP' button and a 'SAVE AS DRAFT' button are at the bottom right. A sidebar on the left explains why the information is needed: to narrow down the list of dispute resolution bodies to the ones best suited to dealing with the complaint.

Figure 2²⁴⁴

2) Agreement on Dispute Resolution Body

A party has 30 days to agree with the other party on the dispute resolution body that will handle their dispute. Once you do so, this site will automatically send the details of their dispute to that body. If a party cannot agree, her complaint will not be processed further.

²⁴⁴ Image from the EU ODR platform

The screenshot shows the 'MY DASHBOARD' for a user named Krsto STJEPANOVIC. The main heading is 'A complaint has been made about you'. Below this is a table summarizing the complaint details:

	Consumer's version of events
Complaint reference	2015/1278
Submitted on	18/11/2015
Submitted by	Henrik Magnussen
Country	Denmark
Type of good/service	Consumer Goods Information and communication technology (ICT) goods
Type of complaint	Not in conformity with order
Transaction amount	500 EUR - Euro
Purchase date	12/11/2015
Order reference number	123456
Contact made between consumer and trader?	Yes
Have you already tried to reach an out-of-court settlement or taken the other party to court over your complaint?	Yes
Has the trader said they want to use a specific dispute resolution body?	No
Description	I received a product that does not correspond with the colour I wanted. Read all
Solution proposed	I want reimbursement of my money. Read all

Below the table, there is a section titled 'Thank you for taking the time to read through this complaint.' with two options:

- > You agree to suggest a dispute resolution body**
At this stage, all you are doing is proposing a dispute resolution body – it doesn't mean you agree with the complaint. You'll be able to say what you think about the complaint during the process itself.
- > You do not suggest a dispute resolution body**
This means you are rejecting the possibility of out-of-court settlement over the complaint. The person who made the complaint will be informed of this. The complaint will be automatically closed and you won't be able to access it anymore.

At the bottom, there are three buttons: 'I suggest a dispute resolution body' (green), 'I do not suggest a dispute resolution body' (red), and 'Select representative(s)' (grey).

Figure 3²⁴⁵

3) Dispute Handled by the Dispute Resolution Body

- The dispute has been sent to a dispute resolution body.
- The dispute resolution body will get back to parties.
- The dispute has been sent to a dispute resolution body. The dispute resolution body will get back to parties.
- The dispute has been sent to a dispute resolution body. The dispute resolution body has three weeks to decide whether it is competent or not to deal with your dispute and inform the parties thereof. It may contact the parties for more information.

²⁴⁵ Image from the EU ODR platform

- e. The dispute resolution body will have an outcome for their dispute within 90 days.

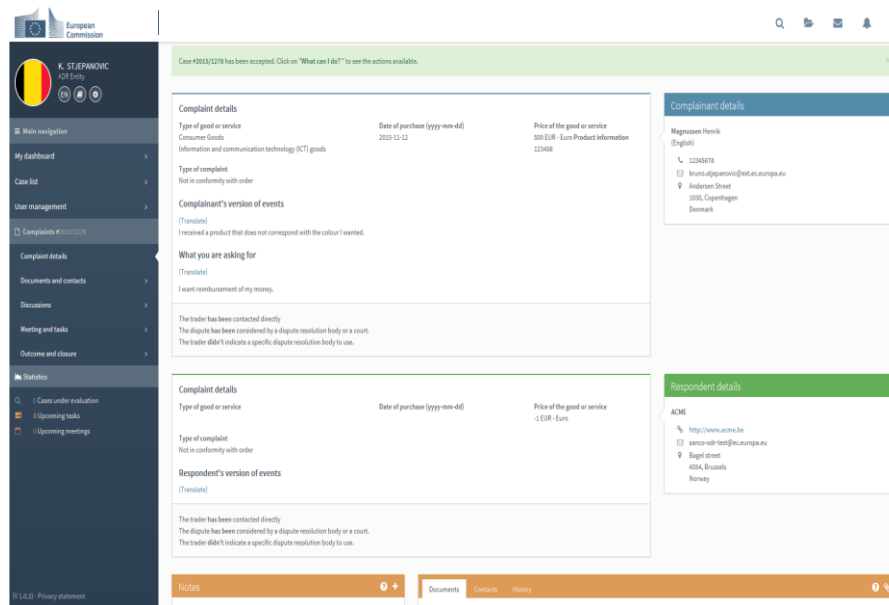


Figure 4²⁴⁶

5) Outcome of the Procedure

Once the procedure is over, the dispute resolution body will inform the parties of the outcome. This outcome varies per dispute resolution body.

²⁴⁶ Image from the EU ODR platform

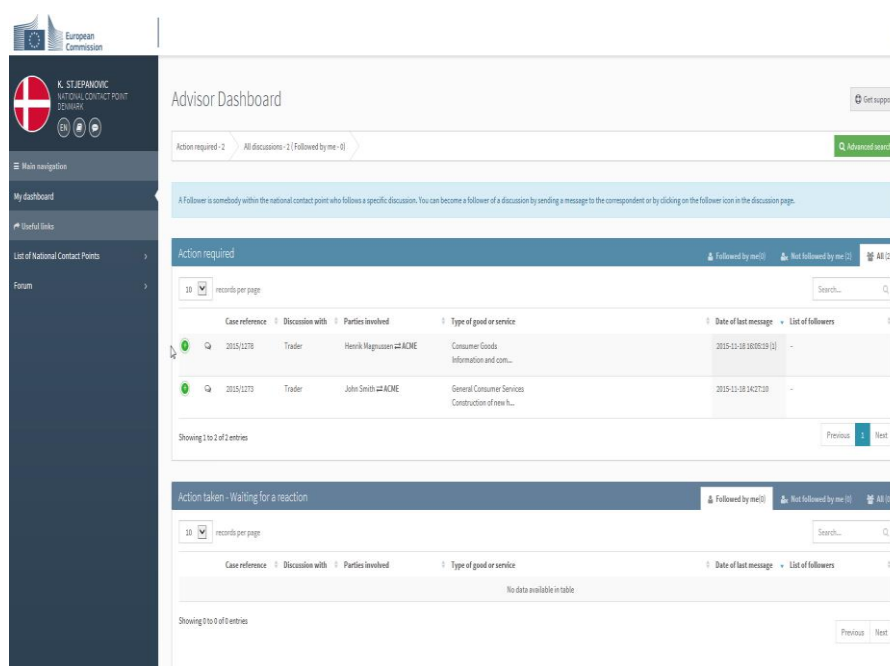


Figure 5²⁴⁷

Section 7: Conclusions

Online dispute resolution entities in the private sector – such as e-Bay – and in courts and government agencies have used a variety of online platforms – such as Modria – to provide the opportunity for consumers to raise complaints and seek redress through online dispute resolution.

Whereas many have automatic algorithms – such as Fair Outcomes.Inc – others provide access to live mediators, arbitrators or even adjudicators – such as Rechtswijzer2.0 – with varying tem-

²⁴⁷ Image from the EU ODR platform

platforms for form complaints or opportunities to customize negotiations and complaints directly with companies and government agencies.

As many online dispute resolution experts have suggested, technology will be a positive force for enhancing access to justice and broader opportunities to negotiate for redress.²⁴⁸

Online negotiation allows direct negotiation with a “hosted” negotiation partner (e.g. the company from which you bought something or the government agency with whom you want to negotiate over a benefit or an obligation).

In addition, new online dispute resolution platforms allow one to negotiate with others, as a platform provides a place for non-in person negotiation (such as old algorithm driven Cybersettle for monetized civil and insurance cases, or technology assisted (Skype) negotiations in both synchronous and asynchronous time.

To the extent that similar negotiations and data of outcomes are available on the above mentioned sites, parties to negotiation may actually become better informed about what is possible or legal or customary in particular matters. Like medical-disease affinity groups, online and hosted “legal problem” sites can enhance bargaining power by providing data and sharing stories of successes.²⁴⁹

For instance, ODR providers may use their settlement agreements in previous similar cases to give possible remedies and suggestions – using ICT for identifying recurring patterns of disputes or categorising complaints – in order not only to solve disputes,

²⁴⁸ Susskind, R., Susskind D., *The Future of the Professions: How technology will transform the work of human experts*, Oxford University press, 2015.

²⁴⁹ Menkel-Meadow, C., Schneider, A.K. & Love, L., *Negotiation: Processes for Problem Solving*. New York: Aspen Wolters Kluwer Law and Business, 2014.

but also to prevent them,²⁵⁰ offering to disputants an opportunity for changing their behaviours.²⁵¹

For a long time people considered e-supported communication to be inferior to the ones face-to-face; however – especially in cases such as the arrangement of a divorce – a specific type of e-supported mediation can be successfully applied to mediate family disputes with outstanding results of high settlement rates and high scores, reaching not only an agreement, but also a high level of justice perceptions.²⁵² In particular, starting from the beginning stages of a mediation an asynchronous communication may offer parties a protected atmosphere to voice their emotions, share their opinion and talk without any sort of negative emotional prejudice.²⁵³ After all, it is the way parties perceive the mediation that will affect their current and future behaviours, feelings and thoughts.²⁵⁴

An appreciation of these ODR systems is important in order (as this thesis aims) to develop a normative position on the use of ODR methods by citizens and to look at the ability of ODR platforms in its various guises to meet a normative approach. In particular, this chapter has looked at aspects of online dispute resolutions that are relevant to this thesis. These include:

²⁵⁰ Cortes, P., A supra note 160.

²⁵¹ Susskind, R., *The End of Lawyers? Rethinking the nature of legal services*, Oxford University Press, 2010.

²⁵² Poitras, J. & Le Tareau, A., *Quantifying the quality of mediation agreements*. Negotiation and Conflict Management Research, 2009.

²⁵³ Yen, J.Y., Yen, C.F., Chen, C.S., Wang, P.W., Chang, Y.H., & Ko, C.H., *Social anxiety in online and real-life interaction and their associated factors*. CyberPsychology, Behavior and Social Networking, 2012. <http://dx.doi.org/10.1089/cyber.2011.0015>.

²⁵⁴ Bollen, K., Verbeke, A. & Euwema, M., *Computers work for women: Gender differences in e-supported divorce mediation*, Computers in Human Behavior, 2014.

(i) *The phenomenon of ODR*

The recognition of Online Dispute Resolution as a raising phenomenon and its engagement by the law may not be straightforward given some of the properties that define it. It is, as a concept, closely linked to other alternative dispute resolution methods such as Mediation and Negotiation, both analysed in depth in chapter 2. It has a number of properties however that will likely make its engagement (especially in family disputes and e-commerce) necessary and not just alternative.

(ii) *Proper approach towards ODR*

In terms of dispute resolution, my research has tended to focus on ODR systems as a place – where to settle – rather than also the process – how to settle – or both of them. This includes the benefits of developing such a system, such as avoiding, on the one hand, the matter of whether a specific court has jurisdiction or not over the dispute and, on the other hand, to afford expensive travelling costs.

(iii) *Aspects of developed ODR systems*

As mentioned above in section 2, currently, online negotiation (so called e-negotiation) and online mediation (so called e-mediation) are the most advanced systems and I examined these two sub-groups in sections 3 and 4 respectively, with all the differences between their correlative offline figures: negotiation and mediation. With regards to e-negotiation, I analysed the fork roads of Automated Negotiations and Assisted Negotiations, focusing mainly on the automated ones where the platforms already applied algorithms

for solving disputes, such as the Adjusted winner in Fair Outcomes, Inc. (www.fairoutcomes.com).

(iv) The existing platforms and the new EU ODR platform

In sections 5 and 6 I focus my attention on eleven developed Online dispute resolution platforms and the new European portal for ODR. The most interesting finding is that one and the only one platform is operating in a civil law system, Rechtwijzer 2.0, and clearly is not an automated but just an assisted negotiation portal. The other platforms are all operating in a common law context, where there is a different conception of solving disputes, conception that we will discuss further in conclusions.

What I will do in my next chapter is to analyse several judgements in the Italian family disputes domain and trying to apply fair division algorithms instead of the judge's decision and to verify if this method could be more satisfying and closer to the parties' wills.

Chapter 4

Application of Adjusted Winner in 10 judgements

Stephen Covey:

*“I am not a product
of my circumstances. I
am a product of my de-
cisions”.*

Chapter Aims

- Applying Adjusted Winner in judgements
- Comparing the results of the algorithm with the final judgement
- Demonstrate the advantage and the differences between the Adjusted Winner and the traditional way of solving dispute
- Describe how the Adjusted Winner could be more convenient, more satisfying than the traditional trial

Sections:

Section 0: Introduction

Section 1: Case 1

Section 2: Case 2

Section 3: Case 3

Section 4: Case 4

Section 5: Case 5

Section 6: Case 6

Section 7: Case 7

Section 8: Case 8

Section 9: Case 9

Section 10: Case 10

Section 11: Conclusions

Section 0: Introduction

In this chapter, I will apply one of the algorithms described in chapter 1, the Adjusted Winner, in judgements already made by the Italian Courts, in order to prove that in many cases the final results of this economic tool could be more satisfactory (Pareto optimal) and efficient for the disputants than the final verdict that they received by a judge.

In the previous chapters, I described the state of the art of the algorithms already used in law platforms in order to solve law cases but almost all of them are used in common law systems, thus it would be impossible for the aims of my research to have enough data from the only platform used in a civil law system,

Rechtwijzer 2.0, operating in The Netherlands. Thus, in the following chapter, I decide to verify the practicability of these algorithms even in civil law schemes.

In European civil law systems, due to the lack of unity of the European Public Order and, consequently, to the presence of various multiple and different mandatory rules in each Member State – that have to be taken into account before trying to applying any algorithm or economic principle – there are not international platforms already operating at European level. Differences between civil and common law systems stems from insights in the area of mandatory and available rights. Remarkable differences could be found among company law and other contracts, but also in other fields, such as family law.

The distinction between mandatory rules and available rights is crucial in order to assert the possibility of operating only on the available rights at an international European level with these algorithmic procedures instead of the judiciary ones. Such a scheme

will preserve the role of each national legal system in modern societies.

Before focusing on the experimental phase, it is crucial to underline the fact that even if the parties wanted to choose a method like the Adjusted Winner, they both have to take into account the possibility of an output which could be appealed before the appropriate State authority, in respect of the right to defence which, pursuant to Art. 24, Paragraph 2 of the Italian Constitution, is «invulnerable at every stage and instance of legal proceedings». Indeed, a method such as the Adjusted Winner is particularly suitable for people which are really interested in settling a dispute in a short time without wasting a lot of money and consequently are not interested in appeals.

Hence, for the practical corroboration of the purposes of this research, I applied the algorithms to Italian judgments decided according to traditional methods (*da mihi factum dabo tibi ius*) in order to verify that the alternative algorithmic solution could have given more effective and useful results than the trial.

To this extent, as an experimental analysis, I focused my attention on family affairs, even if game theoretical literature emphasised an algorithmic approach to other kind of disputes, such as disputes arising from bankruptcy situations or from cost allocation problems – even in cooperative situations where coalitions of stakeholders may form. From section 1 to 10 I analysed 10 Italian cases of family disputes, involving always specific goods, identified by both parties involved and in section 11, the analysis of data is followed by a discussion of the research findings. The findings relate to the research questions that guided the study. In this section, data obtained from the analysis of the previous chapters will be examined and the comparison with the final judgments discussed.

Data were analysed to identify, describe and explore the use of economic algorithms such as the Adjusted Winner in a legal framework such as family disputes and to determine the need for an e-supported system like this in such a context.

Data were obtained thanks to the help of two Italian lawyers that helped me in my research. I asked explicitly to share with me confidential document – because in the official judgment is almost impossible to identify always the parties' wills – which were fundamental for the attribution of values into the Adjusted Winner simulation.

A total of 300 cases were received, however, I enclosed in 10 sections the most common cases – the ones more frequent during my analysis of judgements and confidential legal documents – which were functioning for this study and met the required inclusion criteria as discussed in chapter 1. I preferred to select cases where one party or even both were not satisfied after the judge's decision, showing the chance of reaching a different outcome, closer to the parties' initial wills, through the involvement of the Adjusted Winner.

Before analysing the case one by one I strongly underline that the attribution of values was accurately made in order to preserve the parties' wills.

Section 1: Case 1

The first case I analysed is an ordinance granted by Naples Court of Justice on the 09/07/2013,²⁵⁵ in which a couple of people

²⁵⁵ Judgment delivered by Naples Tribunal, n. 6307/2013.

– which lived on the outskirts of Naples – asked for the approval of the separation agreement.

In this cases both parties agreed on the identification of 4 items:

- 1) the possession of an apartment
- 2) the possession of a lumber-room
- 3) the alimony
- 4) the ordinary maintenance and repair costs

Actually, this case was not that difficult because the parties agreed on the assignment of every single item; however, this is a proper case where is it possible to apply easily the Adjusted Winner.

Before applying the algorithms in this case, it's recommended to take a closer look at the decision issued by the judges:

The judges decided on the assignment of the possession of the apartment to the wife without any alimony or ordinary maintenance and repair cost towards of her husband which received also the possession of a lumber-room. This possession should be separated by the possession of the apartment just because the lumber-room is located outside of the apartment assigned to the wife (otherwise, according to Italian law, the household objects should follow the fate of the main good they are related, as established by art. 818 of the civil code).

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
Apartment possession	40	60
Lumber-room possession	20	10
Alimony	15	10
Ordinary maintenance and repair costs	25	20

Table 1

With the first assignment which should be like this:

ITEMS	Husband	Wife
Apartment possession		60
Lumber-room possession	20	
Alimony	15	
Ordinary maintenance and repair costs	25	
TOTAL	60	60

Table 2

It is apparent in tables 1 and 2 that, on the one hand, the wife with the application of the algorithm should receive the possession of the apartment, while, on the other hand, the husband should receive the possession of the lumber-room and the avoidance of alimony and the ordinary maintenance and repair costs.

What is interesting in this data is that parties would have reached always the same results but with the application of the algorithm this result should have been reached in a simple, low-cost and proficient way.

Section 2: Case 2

The second case I analysed is an ordinance granted by the Rome Court of Justice on the 22/09/2010,²⁵⁶ in which a couple of married people asked for the termination of their joint tenancy.

In this cases both parties agreed on the identification of 7 items:

- 1) assignment of apartments A & B
- 2) assignment of apartment C
- 3) house-hold objects of apartments A & B

²⁵⁶ Judgment delivered by Rome Tribunal, n. 18800/2010.

- 4) house-hold objects of apartment C
- 5) shed related to apartments A & B
- 6) shed related to apartment C
- 7) jewellery and valuables

Essentially, this case was more difficult than the previous one because the parties didn't agree on the assignment of the items.

In this case I always applied the Adjusted Winner but before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judge decided on the assignment of the possession of the apartment C to the wife, included the house-hold objects and the shed related to it, and the possession of the jewellery and valuables, with a subsequent cash compensation towards the husband for the value of 50% of the allocated assets.

With regards to the husband, the judge assigned to him the possession of the apartments A & B, included the house-hold objects and the shed related to them, and the cash compensation due to assignment of the possession of the jewellery and valuables towards his wife.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartments A & B	30	10
assignment of apartment C	10	30
house-hold objects of apartments A & B	15	5
house-hold objects of apartment C	5	15
shed related to apartments A & B	15	5
shed related to apartment C	5	15
jewellery and valuables	20	20

Table 3

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartments A & B	30	
assignment of apartment C		30
house-hold objects of apartments A & B	15	
house-hold objects of apartment C		15
shed related to apartments A & B	15	
shed related to apartment C		15
jewellery and valuables	10	10
TOTAL	70	70

Table 4

From the data in tables 3 and 4 it is apparent that, on the one hand, the husband with the application of the algorithm should receive the possession of assignment of apartments A & B, the house-hold objects of apartments A & B, the shed related to apartments A & B and the cash compensation, due to assignment of the possession of the jewellery and valuables towards his wife.

Whereas, the wife should receive the assignment of apartment C, the house-hold objects of apartment C, the shed related to

apartment C and the assignment of jewellery and valuables, with the cash compensation due to her husband, for the amount of the 50% of the total values of jewellery and valuables.

As both tables 3 and 4 show, it is significant that parties would have reached always the same results but with the application of the algorithm this result should have been reached in a simple, low-cost and proficient way.

Section 3: Case 3

The third case I analysed is a judgement decided by the Novara Court of Justice on the 08/11/2010,²⁵⁷ in which a couple of married people asked for the judicial separation and the custody of their daughter.

In this cases both parties agreed on the identification of 6 items:

- 1) assignment of apartment with house-hold objects
- 2) assignment of child's custody
- 3) alimony
- 4) child support
- 5) housing expense reimbursement
- 6) personal goods

²⁵⁷ Judgment delivered by Novara Tribunal, n. 1040/2010.

Basically, this case was even more difficult than the previous ones because the parties didn't agree on anything.

In this case I always applied the Adjusted Winner but before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judges decided on the child's custody and the assignment of the possession of the apartment to the husband, included the house-hold objects.

In addition, the husband has to pay the alimony to her wife, but he doesn't have to reimburse the housing expenses to her wife not to give her back the personal goods she was asking for.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartment with house-hold objects	10	0
assignment of child's custody	30	15
alimony	30	35
child support	20	10
housing expense reimbursement	10	5
personal goods	0	35

Table 5

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment with house-hold objects	10	
assignment of child's custody	30	
alimony		35
child support	20	
housing expense reimbursement	10	
personal goods		35
TOTAL	70	70

Table 6

From the data in tables 5 and 6, we can see that the husband with the application of the algorithm should receive the child's custody, the assignment of apartment with house-hold objects and the avoidance of paying the housing expense reimbursement to his wife.

Whereas, the wife should receive the assignment of the alimony from her husband and the personal goods she was interested for.

In this case tables 5 and 6 are quite revealing in several ways: this should be a case where the parties would have not reached the

same result by using the Adjusted Winner instead of going to the Courts. By the application of the algorithm the result should have been different and maybe more useful and satisfying for both than the judgement pronounced by the civil court.

In case 3 the wife could reach her personal goods with the use of the Adjusted Winner, but not with the trial because the judges stated that her request on her personal goods was inadmissible and avoiding to put her attention on the housing expense reimbursement maybe she would have reached a bigger alimony than the one stated by the judges.

Section 4: Case 4

The forth case I analysed is a judgement decided by the Monza Court of Justice on the 07/05/2013,²⁵⁸ in which a couple of married people asked for the division of their community property.

In this cases both parties agreed on the identification of 3 items:

- 1) assignment of apartment A
- 2) assignment of apartment B
- 3) assignment of apartment C

²⁵⁸ Judgment delivered by Monza Tribunal, n. 1260/2013.

Effectively, this case was different from the previous ones and the parties didn't agree on a possible solution.

In this case, I always applied the Adjusted Winner but before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judge decided on the assignment of the property of the apartment A to the wife, with a subsequent cash compensation towards the husband for the value of 50% of the allocated asset. Moreover, the judge assigned apartment B to the wife and apartment C to the husband with a small cash compensation to the husband, due to the fact that the property of apartment B is a little bit more expensive than the apartment C allocated to the husband.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartment A	50	50
assignment of apartment B	20	30
assignment of apartment C	30	20

Table 7

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment A	25	25
assignment of apartment B		30
assignment of apartment C	30	
TO- TAL	55	55

Table 8

From the data in tables 7 and 8, we can see that the husband with the application of the algorithm should receive the property of apartment C and the cash compensations for the value of 50% of the apartment A. Whereas, the wife should receive the property of apartments A and B, always taking into account that she has to compensate her partner for the 50% of the value of apartment A.

What is interesting in tables 7 and 8 is that parties would have reached a better deal than the one stated by the judge just in the case that they agreed on who would have received the possession of apartment A and who the cash compensation. Otherwise the algorithm is useless. This is because the application of such a tool

is based on the mutual agreement, the real will of both parties involved to go together until a final and a common settlement.

Section 5: Case 5

The fifth case I analysed is a judgement decided by the Messina Court of Justice on the 10/10/2006,²⁵⁹ in which a couple of married people asked for the judicial separation and the restitution of defined goods.

In this cases both parties agreed on the identification of 3 items:

- 1) assignment of apartment (property of the wife)
- 2) alimony for the wife
- 3) assignment of an old video projector

The particularity in this case is represented by the presence of a specific object, a request that in a judicial separation and the following division cannot be asked but that can be done by use of the Adjusted Winner.

²⁵⁹ Judgment delivered by Messina Tribunal, on the 10th October 2006.

In this case, I always applied the Adjusted Winner but before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judge decided on the assignment of the property of the apartment to the wife (but it was a superabundant measure because it was already in her and only property) and the alimony until the woman renounced due to the start of a commercial activity, while he held inadmissible the request of the husband.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement also on the video projector in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartment	0	10
alimony	20	80
assignment of an old video projector	80	10

Table 9

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment		10
alimony		80
assignment of an old video projector	80	
TOTAL	80	80

Table 10

From the data in tables 9 and 10, we can see that the husband with the application of the algorithm should receive the assignment of the old video projector. Whereas, the wife should receive the property of her apartment and the alimony until the day she asked for the cancellation, because of the new commercial activity that she was involved during the process.

As tables 9 and 10 show, there is a significant difference between the use of the algorithm or going to the trial, especially for the specific interest of the husband toward a specific item, such as the old video projector, an item that is not possible to assign in

such a dispute in a trial where the parties are asking for a judicial separation and the following division of goods.

A division that would have been easily made by the use of Adjusted Winner, where, as shown in tables 9 and 10, the interest of the husband was almost totally on his old video projector. This is one of the main cases where the solution of the trial is totally unsatisfied for one of the party but the same party should have been satisfied by the use of our economic tool.

Section 6: Case 6

The sixth case I analysed is a judgement decided by the Trani Court of Justice on the 10/10/2006,²⁶⁰ in which a couple of married people asked for the division of defined goods and adequate compensation.

In this cases both parties agreed on the identification of 3 items:

- 1) assignment/division of apartment
- 2) adequate compensation
- 3) assignment of house-hold objects

²⁶⁰ Judgment delivered by Trani Tribunal, n. 1057/2008.

The distinctiveness in this case is represented by the absence of a possible agreement between the parties, and without a possibility of an agreement it is almost impossible to use the Adjusted Winner instead of going to the Court.

In this case, I always tried to apply the Adjusted Winner but before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judge decided on the division of the apartment by selling it with the help of an expert and by dividing between the parties the money from the sale but he rejected every other request.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement also on every request in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment/division of apartment	50	50
adequate compensation	25	25
assignment of household objects	25	25

Table 11

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment	25	25
alimony	12,5	12,5
assignment of an old video projector	12,5	12,5
TOTAL	50	50

Table 12

From the data in tables 11 and 12, we can see that the couple cannot reach any agreement with the Adjusted Winner because their wills are not directed to achieve any settlement.

In such a situation it is useless any chance for any economic method because each method is based on parties' agreement. However, in this case the only way to end their dispute is to let a third party decide, without any possibility for them to be active parts of the solution.

Section 7: Case 7

The seventh case I analysed is a judgement decided by the Naples Court of Justice on the 19/11/2013,²⁶¹ in which a couple of married people asked for changing from a judicial separation to the approval of the separation agreement.

²⁶¹ Judgment delivered by Naples Tribunal, n. 3387/2013.

In this cases both parties agreed on the identification of 4 items:

- 1) assignment of the apartment
- 2) property of the apartment
- 3) assignment of child's custody
- 4) child support

The uniqueness in this case is represented by the fact that the couple decided together to settle their dispute from a judicial separation to the approval of the separation agreement.

In this case, I always tried to apply the Adjusted Winner but before applying the algorithms it is useful to take a closer look at the decision made by the parties:

They decided to proceed with the approval of the separation agreement based on the assignment of the apartment and its property to the wife, a with the joint custody of the child, with residence in the mother's apartment and with a monthly support by her father.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement on every request in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartment	25	25
property of the apartment	25	25
assignment of child's custody	25	25
child support	25	25

Table 13

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment	12,5	12,5
property of the apartment	12,5	12,5
assignment of child's custody	12,5	12,5
child support	12,5	12,5
TOTAL	50	50

Table 14

From the data in tables 13 and 14, we can see that the couple could have reached the same agreement with the Adjusted Winner because their wills are directed to achieve a settlement.

This situation is one of the main cases where the solution of Adjusted Winner (or another economic tool) is not only proper but necessary to have a prompt decision, useful for all the parties involved (daughter included), and cheaper in terms of money and especially time.

Section 8: Case 8

The eighth case I analysed is a decree declared by the Naples Court of Justice on the 14/06/2011,²⁶² in which a couple of married people asked for the judicial separation and the division of defined goods.

In this cases both parties agreed on the identification of 5 items:

- 1) assignment of apartment A
- 2) assignment of apartment B

²⁶² Judgment delivered by Naples Tribunal, on the 14th June 2011.

- 3) assignment of apartment C
- 4) child support
- 5) alimony

The distinctiveness in this case is represented by the presence of a common will for a settlement.

In this case the parties went to the court just asking for the homologation of their agreement, however also in this condition is possible to apply the Adjusted Winner in order to divide the identified goods.

Thus, in this case, I always applied the Adjusted Winner but before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judge decided on the assignment of apartments A and B to the wife, which renounced to a possible alimony due to the approval of her husband about supporting their child with his university's fees.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartment A	5	20
assignment of apartment B	5	20
assignment of apartment C	40	10
child support	10	40
alimony	40	10

Table 15

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment A		20
assignment of apartment B		20
assignment of apartment C	40	
child support		40
alimony	40	
TOTAL	80	80

Table 16

From the data in tables 15 and 16, we can see that the couple could have reached the same agreement with the Adjusted Winner because their wills are directed to achieve a settlement.

This situation is another case where the solution of Adjusted Winner (or another economic tool) is not only proper but necessary to have a prompt decision, useful for all the parties involved (children included), and cheaper in terms of money and especially time.

Section 9: Case 9

The ninth case I analysed is a decree declared by the Naples Court of Justice on the 07/06/2013,²⁶³ in which a couple of married people asked for the judicial separation and the division of defined goods.

In this cases both parties agreed on the identification of 3 items:

- 1) assignment of apartment
- 2) child custody and support
- 3) alimony

The distinctiveness in this case is represented by the presence of an initial dispute turned out into a common settlement.

²⁶³ Judgment delivered by Naples Tribunal, n. 8722/2013.

In this case the parties went to the court just asking for a judicial separation. As we have already seen, also in this condition is possible to apply the Adjusted Winner in order to divide the identified goods.

Thus, just before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judge decided, on the one hand, on the assignment of child's custody and the apartment to the wife, which accepted a lower alimony than the one she initially requested. On the other hand, the husband left the property of his apartment to his wife, paying at the same time the amount of money he initially requested for alimony and for child's support.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartment A	20	30
child custody and support	20	30
alimony	60	40

Table 17

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment		30
child custody and support		30
alimony	60	
TOTAL	60	60

Table 18

From the data in tables 17 and 18, we can see that the couple could have reached the same agreement with the Adjusted Winner because their wills are directed to achieve a settlement.

This situation is another case where the solution of Adjusted Winner (or another economic tool) is not only proper but necessary to have a prompt decision, useful for all the parties involved (children included), and cheaper in terms of money and especially time (here they started their dispute in 2011 and they received the verdict on 2013).

Section 10: Case 10

The tenth case I analysed is a judgment issued by the Naples Court of Justice on the 10/06/2008,²⁶⁴ in which a couple of married people asked for the judicial separation and the division of defined goods.

In this cases both parties agreed on the identification of 5 items:

- 1) assignment of apartment A
- 2) assignment of apartment B
- 3) children custody and support
- 4) alimony
- 5) personal goods

The singularity in this case is represented by the presence of two children and the fact that a separation agreement turned into a judicial separation because the husband discovered to be cheated by his wife during their wedding.

²⁶⁴ Judgment delivered by Naples Tribunal, n. 9212/2018.

In this case the parties went to the court just asking for a judicial separation. As we have already seen, even in this condition is possible to apply the Adjusted Winner in order to divide the identified goods.

Thus, just before applying the algorithms it is useful to take a closer look at the decision issued by the judges:

The judge decided, on the one hand, on the assignment of apartment A and custody of a child and several personal goods to the wife, which accepted of not receiving any alimony. On the other hand, the husband received the assignment of apartment B and custody of the other child, paying at the same time a little amount of money for the other child's support.

If the parties had chosen the adjusted winner instead of going to the courts, they would have reached an agreement in an efficient, easier and cheaper way in terms of time and money.

The possible scheme with the attribution of values should be like this:

ITEMS	Husband	Wife
assignment of apartment A	20	30
assignment of apartment B	30	20
children custody and support	20	20
alimony	20	10
Personal goods	10	20

Table 19

With the first assignment which should be like this:

ITEMS	Husband	Wife
assignment of apartment A		30
assignment of apartment B	30	
children custody and support	10	10
alimony	20	
Personal goods		20
TOTAL	60	60

Table 20

From the data in tables 19 and 20, we can see that the couple could have reached the same agreement with the Adjusted Winner because their wills are directed to achieve a settlement.

This situation is once again another case where the solution of Adjusted Winner (or another economic tool) is not only proper but necessary to have a prompt decision, useful for all the parties involved (children included), and cheaper in terms of money and especially time (here they started their dispute in 2004 and they received the verdict on 2008).

Section 11: Conclusions

As already stated in the previous chapters and in the section 0, I analysed various cases in order to apply one the algorithms described in chapter 1, the Adjusted Winner, in judgements already made by the Italian Courts.

I decided to operate with this kind of analysis in order to prove the efficiency, the proportionality and the envy-freeness of the Adjusted Winner. As already shown in chapter 1, the Adjusted Winner in all the cases involving easily specified issues or well-defined goods, such as divorce settlements or the division of marital property, could be more satisfactory (Pareto optimal) and efficient for the disputants than the final verdict that they received by a judge.

In the previous chapters, I described the fair division principles which rules economic tools such as the Adjusted winner (chapter

1), I made a close examination of the various forms of alternative dispute resolutions where these algorithms may be used (chapter 2), dwelling on the figure of Online dispute resolution and on the platforms already in use, opened to citizens for solving any dispute (chapter 3). Thus, in the following chapter, I corroborated the feasibility of these algorithms in civil law framework, applying the Adjusted winner to 10 Italian judgments decided by the Italian National Courts of Justice.

This chapter has presented a small sample of the possible application of economic tools based on fair division principles to the national and cross-border disputes. Such statements are able to influence the future choice of which forum a citizen should use for settling a dispute and to open new possible scenarios for online dispute resolution, not just as the place where to settle but also a support for the parties to realise how to settle (chapter 3).

In order to illustrate the importance of having such an alternative way of intending ODR, this chapter presented ten different cases in which Adjusted Winner are often used in a stigmatising manner.

In particular, this chapter has looked at family disputes concerning the assignment of items that are relevant to this thesis. These include:

(i) *The approval of a separation agreement*

As shown in section 1, this is the easiest case where it is possible to apply the Adjusted Winner because the parties would have reached always the same results but with the application of the algorithm this result should have been reached in a simple, low-cost and proficient way, in terms of costs and money.

(ii) *The termination of a joint tenancy*

As shown in section 2, even in a situation like this, the parties would have reached always the same result of going to the Court, but with the application of the algorithm this result should have been reached in a simple, low-cost and efficient way.

(iii) *The judicial separation and the custody of a child*

As shown in section 3, 8, 9 and 10, a separation involving the custody of a child is never simple, but once the parents decide which should be the best solution for their child and they avoid of putting in the dispute the apartment where one of the partners will live with his/her child/children, the division of the other items will be easier for everyone.

(iv) *The division of their community property*

As shown in section 4, in which the number of items is not divisible for two, the application of the Adjusted Winner is possible just in the case where both parties would agree on who will receive the possession of one of the apartments and who, however, the cash compensation.

Without an agreement, indeed, the algorithm is useless. This is because the application of such a tool is based on the mutual agreement, the real will of both parties involved to go together until a final and a common settlement.

(v) *The judicial separation and the restitution of defined goods*

As shown in section 5, the Adjusted Winner could be very useful. Indeed, there are cases like this where the use of the algorithm will reach to a decision which should not be reached by going to the trial, especially for the specific interest, as mentioned in the above case, of the husband toward a specific item, such as the old video projector. An item that is not possible to assign in such a dispute in a trial where the parties are asking for a judicial separation and the following division of goods in which the house-hold objects have to follow the fate of the apartment.

(vi) *The division of defined goods and adequate compensation*

As shown in section 6, the parties cannot reach any agreement with the Adjusted Winner because their wills are not directed to achieve any settlement. This is a focal point: even if the parties can decide which items are to assign but they don't want to reach an agreement, it is not possible and not convenient to apply the Adjusted Winner, while, if both parties agree on the fact of according, there should be space for an e-supported tool for solving the dispute.

(vii) *The switch from a judicial separation to the approval of the separation agreement*

As shown in section 7, the crucial point of such a case is the wills of both parties of switching from a judicial separation to the approval of the separation agreement in order to save money and time. However, it is fundamental to say that is not only proper but necessary to have a prompter decision, useful for all the parties

involved (children included), and cheaper in terms of money and time.

These were the circumstances, in the field of family disputes, in which I applied the Adjusted Winner, based on normal judgments issued by Italian National Courts of Justice and I proved that the use of such a tool could be more Pareto optimal and efficient for the disputants than the final verdict from the traditional ways of solving a dispute, through an adjudication.

Chapter 5

Conclusions and Conceptual Messages

Rumi:

*“When the soul lies
down in that grass,
the world is too full to
talk about.*

*Ideas, language, even
the phrase ‘each other’
doesn’t make sense
any more”.*

Chapter Aims

- What is currently the link between Game Theory and Law
- What are the new possible scenario

Sections:

Section 1: Game Theory and the four Fair Division principles

Section 2: New possible scenario

Section 3: Two Core Concepts Developed in This Thesis

The aim of this thesis was not to undertake a comprehensive and extensive analysis of every type of legal approach and its possible interaction with fair division processes. Its aim was rather to raise the profile of a problem that had come to the attention of the author in his own scholarship. This was a problem that has thus far received limited attention by legal scholars in general. Despite the illustrative nature of this thesis it has nonetheless covered a vast range of dispute resolution concepts and ideas. The purpose of this short note is to distil this mass into a simple message that the reader will (hopefully) retain long after reading. It is the author's hope that this message will provide "food for thought" not only for legal scholars, those involved in the legal process but also, where possible, those individuals involved in searching new forms or approaches to dispute resolution. The following pages are split into two parts. The first will present the relationship between game theory and law and some simple scenarios that could be considered in order to reduce the potential problems that have been identified. The second will summarise the central message the author would like the reader to take from this thesis in two (relatively) succinct points. These points represent the core message this thesis was intended to transmit and are the points that the author would hope would remain in the mind after reading.

Section 1: Game Theory and Law

One of the most significant current discussions in law and economics is the possibility of solving disputes using Game theory's principles instead of law.

It is becoming increasingly difficult to ignore this argument given that many economic principles have been used to analyse legal problems since the second half of the twentieth century.

The first serious discussions and analyses of a link between the fields of Economics and Law emerged during the 1960s. Indeed, more than a half century has passed since Ronald Coase published his pioneering work, “The Problem of Social Cost”,²⁶⁵ that provided the foundations for the field now known as “Law and Economics”, and paved the way for the use of economic principles to analyse legal problems.²⁶⁶

Besides Ronald Coase’s book, it is important to underline other fundamental preliminary works which firmly rooted economics’ application to legal questions. The first one is “The Costs of Accidents: A Legal Economic Analysis”, undertaken by Guido Calabresi in 1970 and the second is “Economic Analysis of Law”²⁶⁷, undertaken by Richard Posner in 1973²⁶⁸.

Since several articles were published after these three groundbreaking books in this hybrid field, i.e. using game theory to examine pre-trial negotiations²⁶⁹ or to show how informational asymmetry influences parties’ settlement decision²⁷⁰ or, also, to solve bankruptcy’s cases²⁷¹, “Game Theory and the Law”, written by

²⁶⁵ Coase, R., *The Problem of Social Cost*, 1960.

²⁶⁶ Hawkins, J. & Steiner, N., *The Nash Equilibrium meets BATNA: Game Theory’s Varied Uses in ADR Contexts*, *Harvard Negotiation Law Review*, 1996, 249-256.

²⁶⁷ Calabresi, G., *The Costs of Accidents: A Legal Economic Analysis*, 1970.

²⁶⁸ Posner, R., *Economic Analysis of Law*, 1973.

²⁶⁹ Cooter, R., *Bargaining in the shadow of the Law: A Testable Model of Strategic Behavior*, 1982.

²⁷⁰ Bebchuk, L., *Litigation and Settlement under Imperfection Information*, 15 *Rand. J. Econ.* 404, 1984.

²⁷¹ Jackson, T., *Bankruptcy*, 1982.

Douglas G. Baird, Robert H. Gertner and Randal C. Picker in 1994²⁷², can be considered the major underpinning in which game-theoretic principles have been applied to broad legal affairs.²⁷³

The wide-ranging use of game theory is occasionally linked to “a tool for explaining and thereby predicting human behaviour, and – in its normative usage – it encompasses a tool for determining the content of normative concepts”.²⁷⁴

In the literature, the term tends to be used to refer to an approach for analysing situations that has been increasingly used in economics from 1970 to 2000, It has also been increasingly used in law-and-economics to “simplify situations enough to show the key forces at work. This involves ruthlessly stripping away any features of the situation being analysed that are unconnected to these key forces”.²⁷⁵

Game theory has been successfully applied in many areas of the natural sciences, i.e., evolutionary biology, and the social sciences, i.e., economics and sociology. Given that game theory can be applied also as a useful tool for legal scholars, it deals with various branches of law, i.e., contract law or constitutional law, for the simple reason that strategic interactions constitute an important object of legal regulations and lie at the root of the legislative process.²⁷⁶

²⁷² Baird, D., Gertner R., Picker R., *Game Theory and the Law*, Harvard University Press, 1994.

²⁷³ Hawkins, J. & Steiner, N., *supra* note 266.

²⁷⁴ *Id.*

²⁷⁵ Rasmusen, E., *Law and Game Theory*, Edward Elgar Publishing, 2007.

²⁷⁶ *Id.*

Indeed, a large and growing body of literature has investigated the possibility of solving legal disputes applying game theory's principles to obtain a fair solution.

The first systematic study of game theory applied to legal affairs by involving economic principles instead of rigorous binding and compelling law principles was undertaken by the mathematician Hugo Steinhaus.²⁷⁷

Fair division problems arise when demands or desires of one party are in conflict with those of another. However, objects must be divided or contents must be shared in such a way that no one is treated unfairly.

Examples of the civil legal affairs where these fair procedures can be applied include divorce, inheritance, the liquidation of a business, labour-management negotiation, or an international dispute.

However, the idea of applying game theory to legal affairs has been criticised by a number of experts in the field. Anatol Rapoport (1960), pointed out that “perhaps enough have been said about practical difficulties of applying game theory in human affairs”.²⁷⁸ But he argues that “game theory stimulates us to think about conflict in a novel way”²⁷⁹ and also shows how interdependent decision situations can be “precisely characterized and rigorously analysed”.²⁸⁰

²⁷⁷ Steinhaus, H., *supra* note 27.

²⁷⁸ Rapoport, A., *Fights, Games, and Debates*, University of Michigan Press, 1960.

²⁷⁹ *Id.*

²⁸⁰ Private communication between Brams and Rapoport in 1990, mentioned in: Brams, S., *Game Theory and Humanities*, MIT Press, 2012.

The recent years have witnessed an increasing interest by the international scientific community, testified by a large number of publications in the field from all over the world.

Unfortunately, very few empirical studies have put fair-division procedures to the test. Despite their immense potential we have only Pratt & Zeckhauser in 1990,²⁸¹ Raith in 2000,²⁸² Schneider & Kramer in 2004,²⁸³ Daniel & Parco in 2005,²⁸⁴ Dupuis-Roy & Gosselin in 2009.²⁸⁵

As suggested by Professor Ronald P. Loui, artificial intelligence's models may be more useful than game theory's models in framing situations. They will offer a broader picture of the phenomenon of negotiated agreement.²⁸⁶

In the detail, game theory does not consider deliberation upon the relative preference for a proposal, which is assumed to be known at the outset and unchanging.

Whereas, in game theory's models utilities can shift only because of new evidence on which an agent's probabilities can be

²⁸¹ Pratt, J.W. & Zeckhauser, R.J., The fair and efficient division of the Windsor family silver, Management Science, 1990.

²⁸² Raith, M.G., Fair-negotiation procedures. Mathematical Social Sciences 39, 2000.

²⁸³ Schneider, G. & Kramer, U.S., The limitations of fair division - An experimental evaluation of three procedures. Journal of Conflict Resolution, 48 4, 506-524, 2004.

²⁸⁴ Daniel, T.E., & Parco, J.E., Fair, efficient and envy-free bargaining: An experimental test of the Brams-Taylor adjusted winner mechanism. Group Decision and Negotiation, 14 3, 241-264, 2005.

²⁸⁵ Dupuis-Roy, N. & Gosselin, F., An Empirical Evaluation of Fair-Division Algorithms. In Love B.C., McRae K. & Sloutsky V.M., Proceedings of the 30th Annual Conference of the Cognitive Science Society, 2681- 2686. Amsterdam, NL: Cognitive Science Society, 2009.

²⁸⁶ Loui, R. & Moore, D.: Dialogue and Deliberation, WUCS-97-11, 1997.

conditioned, which changes an agent's expectations and spurious shifts in an agent's tastes, in artificial intelligence model outcomes are evaluated heuristically: "heuristic evaluation leads to the possibility that different deliberations can result in different preferences".²⁸⁷

The artificial intelligence picture of the agent will be to the game theoretic one in the modelling of interactions in direct proportion to the extent to which knowledge informs creativity.

The main difference is that AI's models consider topics such as Planning, Knowledge representation, automated reasoning and argumentation as a separate field of study.

The lack of game theory's models relies on the fact that – compared to AI's models – they seek to explain settlements in a static problem formulation with static valuations of proposals.

The key point is that negotiation includes more important phenomena such as dialogue, planning, focusing and reformulating. As sustained by the authors, the aim of an AI model is of "fitting all the pieces together, so that the output of one could be the input of the next... with the result of a better depiction of negotiation".²⁸⁸

Section 2: New possible scenario

According to professor Loui, a game theoretical model on its own is not enough for the citizens' needs. However, coupled with an AI model which could integrate features such as dialogue and

²⁸⁷ Id.

²⁸⁸ Id.

possibility of reformulating there could be chances for ODR's rise.²⁸⁹

Accordingly, some ODR providers focus on using technology as a way of bringing parties into contact without involving the presence of a human third party such as a negotiator or a mediator. In these cases, service providers are more the third party than the fourth party, due to the absence of a human third party.

Conversely, these service providers recognize that many cases fail to reach conclusion for other reasons, and that the presence or assistance of an E-negotiator or e-mediator can be helpful. These service providers offer E-mediation, in one form or another, as an add-on process after the primary process of negotiation has failed.

For instance, SmartSettle also offers third party assistance in different forms, eBay and PayPal's dispute resolution process include live mediation for parties who do not reach agreement through the automated process and Cybersettle offers telephone facilitation in the event that parties to a blind-bidding process do not overlap, but are judged to be sufficiently close to one another that a final nudge might help them to settle the case.²⁹⁰

E-negotiation and e-mediation systems offer a great many advantages to traditional forms of alternative dispute resolution. In the field of ODR these several advantages can make the difference between the inevitability of going to the trial or a failure to address a conflict and achieving a resolution.

At present, one criticism of much of the literature on negotiation is that it can be very expensive in terms of time and energy,

²⁸⁹ Id.

²⁹⁰ Ebner, N., *e-Mediation, Online Dispute Resolution: Theory and Practice* (a treatise on technology and dispute resolution), Eleven International Publishing, Wahab M., Katsh E., Rainey D., eds, 2012, 357-386.

especially when they involve face-to-face meetings or high-priced professionals. In addition, arranging communication can be complex, time consuming, and costly in support resources.

Another serious weakness is that many disputes have multiple components and without sophisticated tools to deal with the inherent complexity, decision-makers are forced to deal with issues one at a time. A piecemeal approach to negotiation encourages positional rather than mutual gains bargaining. Various issues and outcomes may lead negotiators to make decisions based on psychological dynamics and emotion rather than reason.

Moreover, reasonable outcomes are compromised when decision-makers make logic errors, take short-cuts, or permit emotions to get the upper hand when under the stress of intensive negotiations. Without properly assessing the risks, parties are often unrealistically confident of a favourable outcome, should the matter be taken to court.

Furthermore, multi-party disputes can be much more complex and require many meetings and expert intervention in order to facilitate resolution of the conflict. Such disputes can be facilitated electronically through document transmission and conference calls, but they still exist primarily in the face-to-face realm.

However, to face all these concerns, it is essential to illustrate the advantages of e-negotiation and e-mediation systems.

A well-designed e-negotiation system reduces much of the cost of conventional negotiations.²⁹¹

These systems offer asynchronous access using the Internet: this makes access easy, cuts operational costs, and speeds up the

²⁹¹ Friedman, G.: *Alternative Dispute Resolution and Emerging Online Technologies: Challenges and Opportunities*, 1997.

process.²⁹² A well-designed e-negotiation system with an intuitive graphical user interface allows parties not only to model the problem and represent their preferences well, but also, to interact flexibly and asynchronously.²⁹³

Furthermore, in asynchronous processes, the slowed-down pace can allow the mediator a more intentional application of the mediator's toolbox. This is enhanced by improved opportunities for nuance and subtlety.²⁹⁴

As argued by Melamed: "Asynchronous Internet communications have the advantage of being edited 'best' communications in sometimes contrast to 'first' (often impulsive) responses that can take place in real time face-to-face mediation discussions".²⁹⁵

Mediators might find it easier to tweak and reframe messages. They can create opportunities for, light, behind the scenes contact with each party to a greater degree than face-to-face processes allow, as private communication reduces threats to perceived neutrality. Working with asynchronous methods, mediators can conduct simultaneous caucusing, saving process-time. Further utility can be achieved due to the elimination of those caucuses which face-to-face mediators find they conduct for the sole purpose showing even-handedness.²⁹⁶

²⁹² Gibbons L., Kennedy R. & Gibbs J.: *Frontiers of Law: The Internet and Cyberspace: Cyber-mediation communications Medium Massaging the Message*, 2002.

²⁹³ Lide, E., *supra* note 157.

²⁹⁴ Melamed, J., *The Internet and Divorce Mediation*, available at www.mediate.com/articles/melamed9.cfm

²⁹⁵ *Id.*

²⁹⁶ Rule, C., *New Mediator Capabilities in Online Dispute Resolution*, 2000. Available at www.mediate.com/articles/rule.cfm.

A whole category of disputes currently not being considered for ODR has become appropriate for application of comprehensive E-Negotiation systems, such as family disputes.

The main contribution of these studies into family disputes aims to show that a specific type of e-supported mediation, namely asynchronous text-based e-supported mediation, can be successfully applied to mediate divorces resulting in high settlement rates and high scores on all types of justice reflecting a high mediation quality.²⁹⁷

Moreover, in order to get an idea of mediation effectiveness – given that divorce mediations usually produce high settlement rates – it is even more important to look at the perceived quality of the mediation instead of the objective outcome.²⁹⁸

The outcomes of e-mediations and e-negotiations show high levels of justice perceptions and agreements reached. Also, recent research in the context of therapy shows that certain online applications can be very successful.²⁹⁹

During family disputes, an e-negotiation/e-mediation system with a range of features provides an opportunity for introducing parties to e-negotiation/e-mediation tools in stages. One party might first be persuaded to use the system's decision support features as an aid to their own side of the dispute solution.

In addition, parties could attempt to model their counterparty's preferences and use the tool to simulate the entire negotiation as an aid to better understanding.

²⁹⁷ Poitras, J. & Le Tareau, A., *supra* note 252.

²⁹⁸ *Id.*

²⁹⁹ Yen, J.Y., Yen, C.F., Chen, C.S., Wang, P.W., Chang, Y.H., & Ko, C.H., *supra* note 253.

In order to provide even greater comfort prior to actual negotiation parties may be given the opportunity to participate in role reversal simulations. Such practices have been shown to be effective in increasing understanding of the negotiations and the value of an e-negotiations tool. With sufficient familiarity all parties can gain enough trust to use an e-negotiation tool in their real-life situation. The productive value and possible individual improvements must be stressed as part of the introduction to these systems.

For high-value transactions, where computer-based tools such as spreadsheets are already used, the advantage of sophisticated e-negotiation systems will be recognized much sooner. For low-value transactions, especially in some cultures, it may take explicit marketing programs to demonstrate the value of collaborating using e-negotiation systems. A robust system easy enough for average technologically literate users to adopt and flexible enough to handle multiple types of conflicts would be of high value as a commercial opportunity.

E-negotiation/e-mediation systems can use third-party neutral servers and high levels of encryption. This allows for secure and reliable data movement between parties that minimize the risk of privacy violation or loss of communication capacity.

An e-supported system with a web-based interface and multilingual capacity holds the potential to be affordable and work within many environments. Web interfaces are popular and relatively well-understood. Such approaches open the possibility of dispute resolution to anyone with access to the Internet.

E-supported system developers can produce systems that explain themselves through an interactive, iterative process, leading to better user understanding and increased comfort with the process.

The prevalent form of communication in e-negotiation and e-mediation is text communication. The benefit of such a communication in e-supported systems is that it often minimizes the effects of “good talkers” gaining the upper hand or of dominant figures causing others to reduce their participation levels.³⁰⁰

In addition, the emotion-limiting nature of text communication has been suggested as an advantage in e-negotiation and e-mediation as reducing confrontational dynamics, although this is certainly issue for debate.³⁰¹

Parties and mediators can engage in discussion without the immediate time pressure and other dynamics associated with synchronous, face-to-face conversations.

External experts can be consulted with, or brought into the process as necessary, regardless of their geographical location, and without disrupting the process’ dynamics.

In such a context, however, the research has tended to focus on ODR systems as a place – where to settle – rather than also the process – how to settle – or both of them.

In the previous chapter I analysed several judgements in the Italian family disputes domain and I applied fair division algorithms instead of the judge’s decision in order to verify that this method is more satisfactory and closer to the parties’ wills.

Looking at over 300 cases, I encircled in 10 sections the most common circumstances which were effective for showing the potential of these algorithms.

³⁰⁰ Thompson, L., *The Mind and Heart of the Negotiator*, (2nd ed.) Prentice Hall 2001.

³⁰¹ Victorio, R.M., *Internet Dispute Resolution (IDR): Bringing ADR into the 21st Century*, *Pepp. Disp. Resol. L. J.*, 2000, 279-300.

The situations in which I applied the Adjusted Winner were the approval of a separation agreement, the termination of a joint tenancy, the judicial separation and the custody of a child, the judicial separation and the restitution of defined goods, the switch from a judicial separation to the approval of the separation agreement, where this application was very useful, efficient, equitable and envy-free (see section 1).

In cases such as the division of community property or the division of defined goods and adequate compensation, the application of the Adjusted Winner is possible where both parties would agree on who receives the possession of one of the apartments and who receives the cash compensation. Adjusted Winner and the other algorithms are, indeed, useless without the will for settling in both parties. This is because the application of these algorithms, such as the others illustrated in chapter 1, are all based on the mutual agreement, the real will of both parties involved to go together until a final and a common settlement.

Although it seems we live in a disheartening time of inability to negotiate, the new technologies provide opportunities for aggregations of claims and publicity to move negotiators to grant redress or even to change policies. I do not simply believe that these new technologies will overcome and realign all the power imbalances, but I do think and hope that changing our negotiation strategies, altering our traditional canon of skills and theories on ADR, we can meet the challenge of new forms of negotiations among and between traders, consumers and citizens.

Section 3: Two Core Concepts Developed in This Thesis

1. Utility of fair division tools in solving a dispute

A primary aim of this thesis was to demonstrate the idea that the use of fair division tools can be useful and advantageous (especially in online disputes resolution methods involving family matters, as discussed in chapter 3). As described in chapter 2, most types of alternative dispute resolution methods are associated with a high level of flexibility, a low level of cost – in terms of money and time – and a lack of legal restraint, as well as a lack of envy towards the opponent's output. This makes them attractive in terms of being tools that can be used to address some wide range situations where a fast and flexible agreement may be needed. In addition, such tools come with an expectation that they don't produce unexpected consequences on individuals, because the parties involved in a dispute express their main preferences, a point that cannot simply be ignored. As a result, there is often an implicit assumption that the use of such tools, if well-explained to the parties, may strengthen their relationship and avoid possible future appeals towards the final agreement.

Internet makes virtually anything available. Not only the most requested item online, such as drugs, sex or cars, but also tools and services, including transportation (Uber), housing (Airbandb), medical (Webmd) and even legal advice (Legalzoom). All these delivery methods are opened to possible conflict or dispute over time, quality, quantity, payment, availability or even the satisfaction. As an inevitable consequence, it is necessary for consumers to be able to negotiate – or even to mediate – with one of these big online purveyors.

Online mediation and negotiation are a meaningful way of providing legal assistance and solutions to these legal problems but there are at least two challenges for these ODR methods. Firstly, there are still people with limited resources that are less likely to benefit from the legal services on internet or other ICT channels³⁰² and, secondly, the difficulty of online processes to incorporate the negative emotions of disputing parties. However, the day-by-day advancement in other ICT fields, such as social media, undoubtedly reveal that this limitation could be surmounted with original and creative approaches and solutions.³⁰³

The author would for example point to the Netherlands (as a European country where several pilot projects³⁰⁴ or platforms³⁰⁵ were launched) as a possible inspiration to show that such e-mediation and e-negotiation systems are possible.

Thinking of solving the extended debate on the possible application of game theory into the field of law is not an easy task, but regarding this new possible approach of settlements, is it possible to rest his bases on the principle of freedom of contract³⁰⁶, expressed by the article 1134 and 1165 of the Belgian civil code and the article 1322 of the Italian civil code. The parties can solve their disputes as an exercise of their private autonomy.

³⁰² Buckley, M., *Moving Forward on Legal Aid: Research on Needs and Innovative Approaches*, 2010.

³⁰³ Gramatikov M. & Klaming L.: *Getting Divorced Online: Procedural and Outcome Justice in Online Divorce Mediation*, 2011. Tilburg University TISCO Working Paper. Available at SSRN: <http://ssrn.com/abstract=1752903> or <http://dx.doi.org/10.2139/ssrn.1752903>

³⁰⁴ Raad voor Rechtsbijstand, see www.rvr.org/,

³⁰⁵ Rechtwijzer, see www.rechtwijzer.nl/

³⁰⁶ See *supra* n. 7.

2. The importance of the role of lawyers in the solution

Nowadays, it is really difficult to understand that not only the role of the third party is fundamental for having a positive outcome, but also the role of lawyers.

Lawyers, while on the one hand, could be afraid of perceiving jeopardized their role or position from other fields such as economy, game theory, on the other hand, they have to realize that, in such contexts, they would take care of the joint interests involved in a dispute. In other words, the lawyers will take into account not only the legal interest of their client but also the economic interest and the emotional or ethical interests involved. This will be made considering also the position and the other party's interests, concerning a legal, economic and emotional approach.

In addition, the lawyers will consider risk aversion of both parties, because even if your party win, it is essential to understand how angry the other side would be – insisting on the fact that this will not be just a legal analysis, but it will take into account the other no-legal interests. This is what a lawyer 2.0 has to do.

We need to switch mentality, we need to re-educate lawyers: in that way we have not to focus ourselves on blaming judges or lawyers but to think about the education and training of citizens. It is possible to provide to parties some educational tools in order to afford the basic notions of game theory useful in these procedures.

Negotiation and mediation could bring people to a true dialogue through a real communication based on active listening.

It's crucial to overcome the paradox of looking at conflicts in the binary "I win you lose" way. Both negotiation and mediation, as discussed in chapters 2, and e-negotiation and e-mediation, as discussed in chapter 3, can go beyond this perspective – trying to

get all the interests and emotions on the table – looking at conflicts not as a threat but as a friction, an opportunity to work together to create something different.

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