John Wilkins and 17th-Century British Linguistics

Edited by Joseph L. Subbiondo

Volume 67

Joseph L. Subbiondo (ed.)

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ACKNOWLEDGEMENTS

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part of the articles reproduced in the present volume have not been listed separately here.

WILKINS' NATURAL GRAMMAR
THE VERB PHRASE

THOMAS FRANK

0. *Introduction*

Most students of Wilkins have concentrated on his semantics, i.e., on the way his symbols represented the world and how they related to one another. There can be no doubt that his central concern was to find the closest fit between his basic semantic categories (the forty genuses) and his perception of the universe. However, Wilkins was well aware that such a purely encyclopaedic approach to the formulation of a philosophical language would be inadequate unless it also provided for "such a *natural grammar* as might be suited to the philosophy of speech, abstracting from those many necessary rules belonging to instituted language" (Wilkins 1668:B2 verso).

1.0 *The Role of Grammar in Wilkins' Philosophical Language*

Earlier attempts to create a universal language, like those of Cave Beck and, to some extent, of George Dalgarno had failed precisely because they had either neglected grammar altogether, or had assigned to it an entirely subordinate function. This does not mean that Wilkins was a 17th-century Chomsky who assigned a central place to syntax in his analysis of language. He too saw 'words' rather than propositions as being of central importance.[1] Although he gave grammar a distinctly subordinate place in his scheme, Wilkins entitled the whole of Part III of the *Essay*, "Concerning Natural Grammar". Just as there existed for Wilkins a 'semantics of things', there also existed for him a 'grammar of things': the former reflected the structure of the world, the latter mental processes.

In his *Essay*, Wilkins' understanding of the isomorphism between language and reality faced Janus-like in two directions: towards lexis, or his en-

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[1] For an ample treatment of the movement from an atomistic to propositional semantics, see Land (1974).

cyclopaedia on the one hand, and towards grammar on the other. His tables constituted "the Scientifical part [...] which may be stiled Universal Philosophy", whereas grammar was

> the organical part, or an inquiry after such necessary helps, whereby as by instruments we must be assisted in forming these more simple notions into com-plex propositions and discourses, which may be stiled grammar, containing the art of words or discourse. (297)

Thus according to Wilkins, the grammatical rules of instituted languages were nothing but local, partial, and frequently deformed versions of universal grammar. This perception was perfectly in line with his mediaeval and Renaissance predecessors, some of whom he mentioned specifically, such as Duns Scotus,[2] Caramuel, and Tommaso Campanella. However, he found their treatment of grammar inadequate since

> it seems that all the authors (though some more than others) were so far prejudices by the common theory of the languages they were acquainted with, that they did not sufficiently abstract their rules according to nature. In which I do not hope, that this which is now to be delivered can be faultless; it being very hard (if not impossible) wholly to escape such prejudices: yet I am apt to think it less erroneous in this respect then the rest. (297-298)

Wilkins' debt to his predecessors was certainly greater than he was willing to admit;[3] but we must not assess his importance as a theoretical grammarian on the basis of his originality, but rather on the internal coherence and the explicative force of his system. Although his tables, and his grammar at times, often seem highly artificial, bizarre, and even downright perverse; they should be seen as an attempt to create a semantico-logical calculus for the realized forms of instituted languages. Thus, his 'natural grammar' should not be compared with the forms of known languages, but with the abstract formulations of symbolic logic without the support of mathematical theory.

Although Wilkins, as he himself recognized, was not immune from the prejudices he had noted in previous grammarians; it should be understood that he was attempting to construct a grammar on a strictly deductive rather than inductive basis. This attempt links him with the Port Royal grammarians (whose work he seems not to have known) and to his 18th-century successors such as

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[2] The *Grammatica Speculativa* which at one time was thought to be by Duns Scotus, is now attributed to Thomas of Erfurt (cf. Bursill-Hall 1972).

[3] For the whole question of Wilkins' sources, see Salmon (1975).

James Harris. Wilkins did not develop a grammar which was the sum total of what all grammars have in common, but he designed a philosophical, universal grammar (though he preferred the term 'natural'), that did away with the redundancies, superfluities, and anomalies of the grammar of instituted languages. He developed a system that "should contain all such grounds and rules, as do naturally and necessarily belong to the philosophy of letters and speech in general" (p.297).

2.0 *Integrals and Particles*

Wilkins's primary grammatical categories were integrals and particles:

> By integrals or principal words, I mean such as signify some entire thing or notion: whether the *ens* or thing itself, or the *essence* of a thing, as *nouns neuters*, whether concrete or abstract; or the doing or suffering of a thing as *nouns active* or *passive*; or the manner and affection of it, as *derived adverbs*. (298)

This division was entirely traditional and goes right back to Donatus and Priscian. The integrals signify, the particles ('syncategoremata' in the tradition) merely co-signify. Priscian stated:

> There are therefore two parts of speech, according to the logicians, the noun and the verb, because only these two when combined give complete sense, whereas the other parts called 'syncategoremata' only co-signify. (Quoted in Michael 1970:49; my translation: TF)

This tradition runs right through the late mediaeval Modistae down to Renaissance grammarians like Sanctius. For example, the early 14th-century logician and grammarian Siger de Courtrai wrote of *magis principalis* and *minus principalis*, the former being endowed with greater significativity than the latter. (Bursill-Hall 1972:50, Padley 1976:68-70)

Wilkins went further than his predecessors in reducing fully significant words to the one basic category of the noun - a category which subsumed all others. The distinction between nouns and adjectives as two separate categories is comparatively recent. Until the beginning of the 18th-century, grammarians talked of 'nouns substantive' and 'nouns adjective'; one presumes for formal rather than semantic reasons. For example, James Harris, whose conceptual framework was essentially Aristotelian, preserved the distinction between words that are "significant from themselves" and those that are "significant by relation" (Harris 1751:31). He divided the former into substantives (nouns and pronouns, the latter called 'Substantives of the Secondary Order') and attributives (verbs, adjectives, and participles) — a distinction one

might compare to the concepts of 'theme' and 'rheme' in modern semantic and pragmatic theory.

As we shall see shortly, for Wilkins the verb had no place in the deep structure, i.e., on the level of analysis on which the philosophical language operated. He realized that integrals could be either nouns substantive or nouns adjective or in the form of 'derived adverbs', i.e., adverbs of manner. He knew that the grand ragbag into which words are consigned with such different functions as say 'there' and `happily' did not constitute a viable category, particularly if one takes as one's point of departure semantic rather than grammatical function. Therefore, he assigned adverbs of manner ('derived adverbs') to the category of the integrals, and adverbs of place, time, etc. to that of the particles.

In his complete scheme as it appeared on page 298 of the *Essay*, the features 'neuter', 'active' and 'passive' were attributed not to the verb, as would appear natural to anyone brought up in the Graeco-Roman grammatical tradition; but to nouns (substantive and adjective) and adverbs. I do not wish in the present study to go into these distinctions or try to explicate Wilkins' scheme (for a fuller treatment, see Frank 1979:179-183). Nor do I wish here to deal with what Wilkins called the 'transcendental particles', which played a fundamental, if somewhat heterogeneous role in his grammatical system, comprising such features as *metaphorical/like*, *thing/person*, *cause/sign*, *aggregate/segregate*, *inceptive/frequentive*, *male/female*, etc. A full treatment of these particles merits further investigation, especially because these particles, as Wilkins said (p.351), were "for the most part *new*, and not all of them used in any one language"

3.0 *The Verb in Wilkins' Grammar*

My chief concern in the rest of this paper will be with the verb phrase (VP). Perhaps the best way to start is to look at the way Wilkins saw the function of the VP.

> The most necessary amongst all the rest (i.e. of the particles), which is essential and perpetual in every complete sentence, is stiled the *copula*; which serves for the uniting of the subject and predicate in every proposition. The word *subject* I use, as the logicians do, for all that which goes before the *copula*; which if it consists only of one word, then it is the same which grammarians call the *nominative case*. By the word *predicate*, I mean likewise all that which follows the copula in the same sentence, whereof the adjective (if any such there be) immediatley next after the copula, is commonly incorporated with it in instituted languages, and both together make up that which grammarians call a *verb*. (304)

For Wilkins, the verb as such had no status in his philosophical language. He said (p.303):

> That part of speech, which by our common grammarians is stiled a *verb* (whether neuter, active or passive) ought to have no distinct place among the integrals in a philosophical grammar; because it is really no other than an *adjective*, and the *copula sum* affixed to it or contained in it .

In his definition of the proposition, Wilkins thought in terms of ordinary unmarked declarative sentences in a language having basic SV order — sentences unaffected by any marking devices, such as right dislocation of the subject or clefting. More interesting, I believe, was his view that the basic function of the verb was to predicate something of the subject; and that this predicating function was fulfilled by the copula. Wilkins, like his predecessors, did not seem to be aware of the twofold function of the verb *be* in a great many languages: the existential function as in 'John is in the room' and the equative function as in 'John is a friend of mine' (Lyons 1977:185). In Wilkins' scheme, the existential function was expressed by an integral. However, the relation of this integral to the copula was not clear unless the copula was interpreted as a purely abstract and grammatical function of predication. Thus rather paradoxically, the sentence 'John is in the room' would be symbolized in Wilkins' scheme as 'copula'+ BEING + 'active participle marker'.

Some previous writers had taken a different view; for example, Julius Caesar Scaliger (1484-1558) had defined the verb in terms of tense "Verbum est rei nota sub rei tempore" (Scaliger 1540:220); and, two hundred years earlier Thomas of Erfurt (fl.1300) affirmed that the verb *be* was present (or 'included') in all verbs (Bursill-Hall 1972:220). There is clear continuity between this and the claim of the Port Royal grammarians that the verb was "un mot dont le principal usage est signifier l'affirmation" (Arnauld & Lancelot 1660:90) and their tendency to reduce the verb to copula + participle. The same idea was expressed earlier by Tommaso Campanella (1568-1639), whose grammar Wilkins cited specifically as one of his sources. Campanella wrote:

> All verbs are to be resolved in the substantive '*sum, es, est*', since anyone who does or suffers something, is the very same person doing, having or suffering: therefore '*ego curro*' is the same as *ego sum currens*. (615; my translation: TF).

On a later page, the same author affirmed:

anyone who wanted to construct a new language on a philosophical basis, ought to derive all verbs from their respective nouns and conjugate them all in the same way, except for the substantive verb. (713, my translation: TF)

Wilkins' refusal to consider the verb as a category of his natural grammar cannot be considered mere caprice. It was entirely in harmony with his general position and with the central aim of the *Essay* which was, to give a name, and more specifically to give the right name, to things. There was no place for the verb in his doctrine of words because all referential functions are subsumed in the name; and both the *modus entis* and the *modus esse* of the mediaeval grammarians were merged in this central, all-embracing category. Therefore Wilkins intended much more than the class 'noun' (whether 'substantive' or 'adjective') since in the last resort the noun, as he exemplified in the tables, comprised "all those things and notions to which names are to be assigned" (p.22) — in other words, one's knowledge of the world.

Wilkins' scheme therefore provided for the splitting of the verb into its predicative function with the copula as a universal verb, and its referential function described in the tables. Let us take a very simple example: in a conventional predicate calculus, a two-place predicate like 'the carpenter makes the table' would be represented as M(c,t), where the relationship of 'make' (M) is predicated from c to t. In Wilkins' system, 'make' would be a member of one of his tables, that is to say of the genus Transcendental General, 2nd Difference, 1st Species: EFFICIENT, *Author*, *Maker*, *Efficacy*, etc., and be transformed by means of the appropriate grammatical markers into `making' and represented something like this: UV (m,c,t), where the three symbols inside the bracket were presumably three arguments with equal referential capacity, and each capable of combining with the universal verb. Therefore, a rule would have to establish with which argument UV would be combined, since at least in theory, both 'carpenter' and 'table' might become 'verbs', presumably with surface readings corresponding to something like 'to work as a carpenter', 'to function as a table', etc.

Wilkins realized that the contention that every 'noun' had a verb corresponding to it was problematic. Here is what he said (p.300):

> Though every noun substantive have not an active or passive belonging to it either in *Greek*, *Latin*, *English*, &c. yet according to the nature and philosophy of things, whatsover hath an *essence*, must likewise have an act; either *being* or *becoming*: or of *doing* or *being done*: or of *making* or *being made*: to *be* or *do*. And consequently every radical substantive which is capable of action, should have an active or passive formed from it, which is commonly called a *verb*.

> As for such things which have not of their own any proper act of *doing*, they are not capable of the derivation of active and passive, *ob defectum materiae*; as in the words stone, mettle, &c. But the verbs belonging to such radicals can only be *neuter*, denoting the act of being or becoming; unless when they are compounded with the transcendental mark of *causatio*, which will add to them a transitive sense, as Petrify, Metallify, &c.

The weakness of this formulation lies in the fact that Wilkins confounded the syntactic with the lexical plane: the transformation noun —> verb (participle) operated on a purely syntactic plane; whereas some nouns *ob defectum materiae* cannot be transformed into normal verbs because of their lexical nature.

Clearly when Wilkins affirmed that the verb had no place in his philosophical language, he was not maintaining that his language would be incapable of expressing actions. This would have reduced his language to a mere lexicon. I suggest that he was thinking about the VP much like it has been treated in classical TG theory. In Chomsky's earliest formulation of his theory (Chomsky 1957:38-40), he hypothesized a feature '{aux}' which included tense, modality, and aspect besides the grammatical markers of person and number. In this way, the lexical verb and the obligatory markers that accompany it were symbolized separately.[4] This is exactly what Wilkins did in decomposing the VP into copula and the appropriate symbol from his tables.

Wilkins' verbs were not marked for person and number, since these features were present in the NP; and according to his general principles; his grammar was strictly non-redundant. Although there was a notable exception to this as we shall see shortly, all features like concord and grammatical government were excluded *a priori*. Redundancy and irregularity were in fact two of the main defects he found in natural languages, and especially in Latin which still enjoyed enormous prestige and was often considered the model of a perfect language. Apart from the fact that Wilkins was probably not aware of the function of redundancy in natural languages, his adhering to the principle of indicating each feature only once in the structure need hardly surprise us. Afterall, Wilkins was not concerned with language as a means of everyday communication, but with a philosophical language, i.e., an instrument of knowledge.

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[4] In a finite verb, tense and person are obligatorily present, modality and aspect are virtually present. In a language like English, modality and aspect may be unmarked and therefore symolized by O and contrasted with forms in which they are explicit, e.g., 'he runs' vs. 'he may be running'; but on a semantic plane, indicative 'runs' is in opposition to the epistemic modality 'may' just as non-continuous aspect is in opposition to continuous aspect.

3.1 *Predicative Element of the Verb*

Let us now examine more closely the grammatical or predicative element of the VP. The subject was dealt with in Chapter V of Part III of the *Essay*. Wilkins distinguished particles which had some autonomy in the phrase structure, such as prepositions and interjections, and the servile particles, which were of three kinds, belonging either

> 1. To an *integral alone*, as *articles*. 2. To the *copula alone*, as in the *modes*. or 3. Both to *integral and copula* as the *tenses*. Each of which are in some languages taken in, or involved in the inflexion of words: But in others, they are provided for by distinct words to express them. (315)

Wilkins divided the modes, in accordance with classical theory, into primary and secondary. The former gave the indicative and the imperative, the latter "are such, as when the *copula* is affected with any of them, make the sentence to be (as logicians call it) a *modal proposition*" (p.316). What is not entirely clear is whether when he said these words "affect" the copula, he meant that the symbol for the appropriate mode is to be added to that of the copula or to replace it. The samples of prose transcribed in real characters at the end of the book do not give us any help on this point. The question is perhaps not of fundamental importance, though some interest attaches to it, in the sense that in one case the copula would be a universal predicator, modally unmarked, and in another the predicative funtion operator. Wilkins was thinking in terms of an alternative copula/modal operator, rather than of a cumulative symbol copula + modal.

It is perhaps worth noting that Wilkins did not specifically deal with interrogative forms. On the one hand he provided for an interrogative mark among the punctuation marks, but on the other hand he did not clearly distinguish between the interrogative and the anaphoric functions of pronouns like 'who'. Above all he did not recognize the existence of two distinct types of interrogatives, the so-called wh-questions and the yes-no questions. His neglect of this important feature of the VP derives from his intention to design a 'philosophical language', i.e., a language which privileges argumentative, informative, or narrative discourse in which the interrogative plays only a very minor part.

Wilkins' formulation of the imperative mode is couched in what we might almost term socioliniguistic terms, for he distinguished between three types of imperatives: 1) when the imperative is addressed to superior, it is 'petition'; 2) when it is addressed to an equal, it is 'persuasion'; and 3) when it is addressed

to an inferior, it is a 'command'. To each of these different imperatives, Wilkins assigned a separate symbol in his system.

Wilkins did not provide for a subjunctive mood, since the function of the subjunctive was taken over by his four modal operators of the secondary order, each of which can in its turn be either absolute or conditional, giving altogether eight secondary modal symbols, expressing both epistemic and deontic modality.[5] Wilkins' scheme was as follows:

1) Possibility	absolute CAN conditional COULD
2) Liberty	absolute MAY conditional MIGHT,

where liberty was defined as depending "upon a freedom from all obstacles either within or without" (p.316) and therefore straddled epistemic modality (within) and deontic modality (without), in the sense that freedom from an obstacle within was tantamount to 'possibility'.

3) Inclination of the will	absolute WILL conditional WOULD
4) Necessity	absolute MUST, *ought, shall* conditional MUST, *ought, should,*

where necessity was defined as deriving "from some *external* obligation whether *natural* or *moral* which we call duty" (p.316).

Wilkins' debt to classical logic, as he himself admitted, was evident here; and though he was certainly conditiond by the structure of the English modals,[6] he was trying to shake off those shackles and work towards a more general theory of modality. What is not clear from his treatment was whether the modal symbols were to be combined with the tense markers, as would

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[5] Needless to say, there is a vast literature on the question of modality both from a strictly linguistic and from a logical point of view. Among some recent works on the subject, one might cite Lyons (1977:787-849), Coates (1983), and Palmer (1988).

[6] The debate in the late seventies as to whether these are 'verbs' or not are of no concern to us here. On this question, see, on the one hand, Huddleston (1976a, 1976b, 1980) and Pullum & Wilson (1977), and, on the other, see Palmer (1979, 1988)

seem natural in view of his highly complex theory of tense, or whether they substituted for it. As with the question of the interrogative, which we have dealt with briefly above, Wilkins did not always carry his valuable intuitions about grammatical structure and its relation to semantic representation to their logical conclusions. Thus his grammar proceeded along traditional lines while showing occasionally fascinating, if not always entirely convincing, novel approaches which remained little more than isolated chunks of a grammar which were not fully integrated into his traditional framework.

3.2 Tense

Let us now turn to Wilkins' treatment of tense. As we have seen, he regarded the fundamental attribute of the VP to be predication, and tense being, as it were, a subsidiary feature of the VP.[7] There seems to be no awareness in his treatment that 'tense' and 'time' are not necessarily coreferential, and that tense and aspect are best treated as separate but interlocking categories. In fact, he first outlined the traditional division into past — present — future, the past being further divided into imperfect — perfect — pluperfect. Each of these five tenses was said to have an active and a passive form. Thus far, his treatment was entirely in line with the tradition as handed down by the Latin grammarians. But clearly he found this unsatisfactory; and having enunciated the classical scheme, he went on to affirm:

> But the most distinct and explicit way of expressing any proposition, is by affixing these tenses, both to the *copula*, and the *predicate*; the latter of which will show the time of the action, &c. whether past, present, or future: and the former, the state of the person or subject who doth this action,

	Has been,		Past that Action,
whether he	Is now,	either	Acting in it,
	Shall be hereafter.		Yet to do it.

> And a proposition thus expressed, in the very expressing of it, resolved into its parts of *subject*, *copula* and *predicate*. (317)

Wilkins' treatment of the subject was perfunctory and contains little more than a set of examples or paradigm, as reproduced below. What his scheme

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[7] Tense has been amply discussed in recent syntactic theory; among the many treatments are Allen (1966), Palmer (1974) as far as the English verb is concerned, and in a wider perspective Lyons (1977:677-690) and Comrie (1985): both treat tense as a deictic category, i.e., the action, etc. expressed by the verb is seen in relation to a deictic centre, a feature of tense of which there is no hint in Wilkins' treatment.

implied was a symbolization of this type: VP —> copula + tense 1 + lexeme + tense 2, where tense 1 and tense 2 were not necessarily coreferential. As a matter of principle, such a scheme was not neccessarily objectionable, for one could conceive of these features being present in the deep structure and then being collapsed in their surface realization. My objection is that Wilkins suggested no plausible theoretical explanation or justification for a way of looking at verbal tense that differed fundamentally from all previous treatments. How is one to conceptualize a phrase like 'I (now) read (tomor-row)'? He himself did not seem very sure; and in fact, he immediatedly backpaddled after drawing a paradigm of 27 forms (3 tenses in the copula x 3 tenses in the radical x active/pas-sive/neuter), he conceded (p.318):

> if any should conceive this way needless or too laborious, as being too much distant from the manner of instituted languages; he may by putting the *copula* in the place of the tense, as well express his mind in this, as in any other instituted language

But we surely cannot leave the matter there, for in Chapter VIII, Wilkins added an indefinite or aorist to these definite tenses, giving as examples *Homo est animal* and *Deus vivit* (p.353). These forms, he wrote, were neutral with respect to the temporal axis. That the present tense in many natural languages has this function is of course well known. Although Wilkins did not state this specifically, he probably believed this aorist would be present in the usual triple form of active/passive/neuter; thereby, giving a total of 30 verbal 'tenses' if one assumes that definite and indefinite tenses cannot be combined.

Yet this is not the whole story, for why should the modals stand outside the temporal scheme? That certainly is not the case in English or in a great many other natural languages. For the sake of argument, if the symbol 'modal' is added to or substituted for the predicative element, this produces 324 possible verb forms; and if the aorist forms are counted as well, this produces 360 verb forms. This would indeed be a highly 'laborious' system.

Clearly some of the outputs would be logically absurd. For example, the imperative necessarily implies non-past, since it would be logically absurd to conceive of a form like 'I order you to do something in the past.' There are a number of similar incongruities in the scheme which I have extrapolated from Wilkins' tantalizingly brief and perfunctory treatment of the subject. It could of course be argued that this is reading far more into the text than the author's actual words warrant, and this may well be so.

4.0 *Conclusion*

 What leaves the reader somewhat perplexed is not so much that Wilkins' grammar was so laborious, but that it did not seem to be based on any discernable theoretical principle. The reader is left with the impression that Wilkins developed his grammar without having adequately considered all the implications of his scheme. In Wilkins' treatment of grammar, even more so than in the rest of the *Essay*, we get a fascinating, if not at times irritating, mixture of highly innovative approaches and traditional ideas, of brilliant insights and commonplace observations — all of which makes Wilkins' *magnum opus* a highly stimulating, if slightly flawed, masterpiece.

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