

CHAPTER FIVE

COLLOCATIONS AND THE PHILOSOPHICAL LANGUAGE OF JOHN WILKINS IN WILLIAM LLOYD'S LEXICOGRAPHY OF POSSIBILITIES ("AN ALPHABETICAL DICTIONARY", 1668)

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And as for the principal difficulties, which I met with in any other part of this Work, I must acknowledge my self obliged to the continual assistance I have had, from my most Learned and worthy Friend, Dr. *William Lloyd*, then whom (so far as I am able to judge,) this Nation could not have afforded a fitter Person, either for that great Industry, or Accurate judgment, both in *Philological*, and *Philosophical* matters, required to such a Work. And particularly I must wholly ascribe to him that tedious and difficult task, of suting the Tables to the *Dictionary*, and the drawing up of the *Dictionary* it self, which upon tryal, I doubt not, will be found to be the most perfect, that was ever yet made for the *English Tongue*. (Wilkins–Lloyd 1668, sig. c1r)¹

1. Regarding the Philosophical Language and a Philosophical Dictionary

“This book first arose out of a passage in Borges”: so begins the preface to Michel Foucault's *The order of things* (1966/1971, xv). The passage that Foucault refers to is found in Jorge Luis Borges' essay “The Analytical Language of John Wilkins” (1942/1964), which opens,

¹ William Lloyd (1627–1717), was a protégé, ally, and friend of John Wilkins; he was quite active in the political and ecclesiastical life of his time. According to Shapiro (1969: 219), “The Duke of Buckingham, though unmentioned by Wilkins, also helped work on the dictionary.”

I have noticed that the 14th addition of *Encyclopedia Britannica* does not include the article on John Wilkins. This omission can be considered justified if we remember how trivial this article was (20 lines purely biographical data space...) ... it is an error if we consider the speculative works of Wilkins ... In the universal language which Wilkins invented in the 17th century, each word is defined by itself. (101)

While Borges writes that the Wilkins project is distinguished by its "ambiguities, redundancies and deficiencies", he also says, "Wilkins's analytical language is not the least admirable of those schemes" and reports that "Mauthner observes that children could learn Wilkins's language without knowing that it was artificial; later, in school, they would discover that it was also a universal key in the secret *Encyclopedia*" (103). Borges has noticed an absence, Foucault has read his Borges, and *An essay towards a real character and a philosophical language* (Wilkins 1668) finds an audience. The audience, however, is not entirely inquisitive: Borges tells us that he only read excerpts and commentaries on Wilkins's *Essay*; Foucault, though he digs into his Locke and Bacon, does not mention Wilkins during his archaeological excavations in search for the artifacts of classification that presume the possibility of representing human knowledge in an orderly universe.² The contemplation of a Universe of Things may be the basis for this genealogy of ideas, but it is the word made print, the search for definition, that underwrites whatever order things may appear to have.

obviously there is no classification of the universe that is not arbitrary and conjectural. The reason is very simple: we do not know what the universe is ... we must suspect that there is no universe in the organic, unifying sense inherent in that ambitious word. If there is, we must conjecture its purpose; we must conjecture the words, the definitions, the etymologies, the synonymies of God's secret dictionary. (Borges 1942/1964, 104)

² It is certainly a serious gap in Foucault's study that he does not take into consideration what is perhaps the best example of an attempt to understand epistemology as a reflection of the classification of the world by means of an empirical analysis of linguistic meaning. In an essay comparing Wilkins's methods in his religious writings with the *Essay* (see also Dolezal 1994 and Cram 1994), Leonardi (2003, 102) argues that "this perspective leads us to consider the *Essay* as a component of the continuum of Wilkins' speculation rather than as a serendipitous outcome, elicited by the universalistic interests of contemporary culture. In fact, this text is proposed as a complete epistemological instrument for acquiring real knowledge". Furthermore, since Locke knew his Wilkins, it would make more sense to speak of Locke's ideas on human understanding as an evocation of Wilkinsian epistemology and Wilkinsian linguistics rather than call them purely Lockean.

It is the naming of parts, things, which ends in ambiguities and speculations. The search for extralinguistic universals and descriptions of knowledge that are not bound to a particular natural language is an attempt to remove or transcend the well-known constraints of natural language, an attempt to construct communication systems free of ambiguities, redundancies, and deficiencies. No matter how scientifically or mathematically this problem has been approached, it never seems far removed from grasping at Borges' "secret dictionary of God". Wilkins wanted to avoid "those barren, empty speculations" about "*Materia prima*, and *Vni-versale*", for they were an example of "cob webs of learning" (Wilkins 1640: 236); the method he preferred derives from his earliest work on astronomy and mathematics: "the *demonstrations* of *Astronomy* ... are as infallible as truth it self" (ibid. 236–237). The "truth" is not found in ideas or things, but in "demonstrations": that is, observation, identification, and explanation taken as a unified process. The proof begins with the visible and measurable.

2. The Lexicographic Turn

Dictionary is the prosaic word that connects philosophical and poetic flights of linguistic speculation and archaeological excavations of human knowledge. Perhaps dictionaries mostly escape the notice of incisive literary critics because the pretense of ordering and classifying everything that is named under the sun is hidden inside a system that appears rather innocuous and ordinary to readers of Western languages, the alphabetical order. A dictionary based on metaphysical principles, however, will likely attract the commentary of the wits of any age. It is Wilkins's universal language based on a classification of things and ideas in the world—not called a dictionary, but "philosophical tables"—that is most provocatively appealing. The purpose of this present essay is to consider not just the ideas, or content, of the *Essay*, but also the presentation and transmission of ideas in print; my inclination has been to study the artifacts of knowledge production as bibliography, a task more prosaic than the figurative physical labor of an archaeological expedition.

This essay does not intend to explore the possible meanings of "knowledge". It will suffice to note that the "Philosophical tables" and "Alphabetical dictionary" appear to us as a reasonable representation of what we know about the usages of the English language. Wilkins takes the well-known, priority of the senses, to promote empirical research, to expand the university curriculum, and to separate the authority of scripture from the authority of natural knowledge. Language that is dependent upon

limited knowledge of the world cannot impede a new understanding of the world; it is experience mediated through demonstrable analysis that provides authority to our use of words.

The authority and reliability of the mode and product of the transmission of ideas was a concern of Wilkins, as well as the early membership of the Royal Society:

Whereas there is nothing more necessary for promoting the improvement of Philosophical Matters, than the communicating to such, as apply their Studies and Endeavours that way, such things as are discovered or put in practise by others; it is therefore thought fit to employ the *Press*, as the most proper way to gratifie those, whose engagement in such Studies, and delight in the advancement of Learning and profitable Discoveries, doth entitle them to the knowledge of what this Kingdom, or other parts of the World, do, from time to time, afford. (Oldenburg 1665, 1)³

The present essay is a continuation of previous studies of the lexicographical and lexicological methods and procedures of Wilkins–Lloyd.⁴ Lloyd's lexicographic practices in conjunction with the "Philosophical tables" ("Containing a regular enumeration and description of all those things and notions to which names are to be assigned" [Wilkins–Lloyd 1668, 22]) supply us not only with an array of fixed and variable collocations, but also with a study of definitions which are constructed by re-composing syntactic units and by arranging lexical items in contiguous and discontinuous paradigmatic sets.⁵ It will be necessary to use some terms used in present day metalexigraphy and linguistic analysis, which creates an uneasy anachronistic explanatory overlay. I hope to show that principles of linguistic collocation can describe a broader textual frame of discourse units that includes the concatenation of phrasemes, lexemes, and other discreet syntagmatic and paradigmatic units. Wilkins and Lloyd's attempt to classify all things and words under

³ The attention that Wilkins and his fellows paid to questions of authority and textuality is discussed in R. Lewis (2002); he concludes that "the publication of Wilkins's *Essay* points up several salient aspects of Restoration philosophical–scientific publishing in England ... the need for scientific works to be trusted; their utility in providing credit and status to the institutions attached to them ... and the difficulty of achieving philosophically–scientifically acceptable levels of accuracy in the publication of such texts ... Wilkins was a canny operator with a shrewd understanding of the conventions of print culture" (142).

⁴ See Dolezal 1983 and 1985 and Knappe 2004a and 2004b.

⁵ For a comprehensive study of the tables in the tradition of the topical dictionary see Hüllen 1999/2006, 250–264.

discourse inspired them to attempt a solution to representing linguistic (and lexical) meaning; their work not only inspired succeeding lexicographers and others interested in taxonomy and classification schemes, but it also continues to be a worthy object of study concerning the possibilities of lexicography and the representation of knowledge.

The universal language was meant to address one of the concerns Wilkins had concerning the relationship of language and thought: the proliferation in a natural language of semantically opaque lexical and syntactic compositions. The philosophical language was intended to make all signifiers transparent. Wilkins makes the case that in order for English speakers to find the unitary and transparent universal concept, the dictionary needs to explicate, and thus translate, the underlying linguistic structure of phrases and collocations; it is no wonder then that Lloyd's dictionary with its hundreds of phrasal verbs stands apart from the prevailing hard-word monolingual dictionary practice of his contemporaries.

Wilkins does not indicate just how it was that he saw the usefulness of compiling an alphabetical dictionary that would also serve to cross-reference the philosophical tables, rather than doing the much simpler task of putting together and appending a simple alphabetical list, or index, of the headwords found in the tables; clearly, he saw the need to provide a way for the universal language learner and user to have linguistically informed access to the conceptual units of the language. As a consequence, his project became an exercise in dictionary making.⁶

2.1 Heteroglossia: A Farrago of Text Types and the Transmission of Knowledge

The tables together with the dictionary display such a grand farrago of text types selected, combined, and sifted together that there is no easy typology that will categorize the whole text (see Appendix 1 and Appendix 3). Most of the definitions in the dictionary are lexicographical glosses which are written using a well developed lexicographical meta-language (for a discussion, see Dolezal 1985). The glosses regularly occur with semantic operators, including the particle "augmentative": *ladle* is defined as "Spoon (augm)" and *quaff* as "Drink (augm)"; *tippling* is "Drinking

⁶ For discussion of the relationship between the dictionary and the tables, particularly as an exemplification of Wilkins's theory of knowledge, see Leonardi 2003. See Knappe 2004a for discussion of the relationship as it concerns descriptive adequacy and English lexis. Subbiondo 1977/1992 investigates the tables and dictionary as a reflection of current trends in semantic theory, especially in regards to presupposition.

(freq." The first two of the examples below show typical entries from the dictionary; the third is an excerpt from the tables showing the semantic, grammatical, and pragmatic derivations of the concept SORRINESS.⁷

Riffraff.

[Sorry (augm.) discourse]

Fucus, [Paint]
sp. for the Face.]

SORRINESS, mean, poor, vile, trivial, contemptible, despicable, frippery, Trash, Trumpery, Raff, Scum, Drugg, silly, slight, paultry, scurvy, poor, course, flat, pedling, cheap, worthless, Fellow, Sirrah, Companion, Rascal, Varlet, Wretch, Scoundril, Skip-jack, Scribe, Urchin, Flirt, Gill, Jade. (Wilkins–Lloyd 1668, 32)

The semantic operators, which Wilkins calls "Transcendental Particles" (318), are introduced, explained and exemplified in the philosophical (universal) grammar of Wilkins's constructed language.⁸ Since the tables do not mark each derivative with its appropriate transcendental particle, we are left to decide the appropriate designation for "sorry (augm.)". "Frippery" and "Trumpery" seem to be good candidates. The *OED* has two entries for *riff-raff*; in the first entry we find sense 2, "Worthless stuff; odds and ends; trumpery, trash, rubbish. Now chiefly *dial.*"; the second entry, for a form which is described as obsolete and rare (the second and last quotation being 1617), appears to be a record of the sense "Sorry ... discourse" found in Lloyd's dictionary: "A hurly-burly, a racket; a rude piece of verse." It is not clear why the editors and compilers of the *OED* do not make more use of the "Philosophical tables" and "Alphabetical dictionary" as an authoritative record and source for illustrative quotations.

Recently Gabriele Knappe (2004a) published an extensive analysis of the content and structure of the Lloyd dictionary, enhancing our understanding and appreciation of the Wilkins–Lloyd project especially as it pertains to phraseology. Knappe has also correctly called our attention

⁷ Here and throughout this paper, definitions from the "Alphabetical dictionary" are reproduced photographically to preserve their typographical features.

⁸ Those familiar with Igor Mel'čuk's "Lexical Functions" in the *Explanatory-Combinatorial Dictionary* (Mel'čuk and Zholkovskii 1984) will notice the close similarity in linguistic type and function between the Lexical Functions of Mel'čuk and the Transcendental Particles of Wilkins (cf. Mel'čuk 1998 and Dolezal 1983).

more acutely to Lloyd's role in organizing the linguistic data found not only in the dictionary but also in the universal language scheme.⁹

At the time William Lloyd began compiling "An alphabetical dictionary" there did not seem to be a perceived need nor demand for monolingual dictionaries that were as inclusive and comprehensive in their selection of English vocabulary as could be found in a number of bilingual dictionaries of the time. Knappe (2004b) has presented evidence that Lloyd derived part of the vocabulary in his dictionary from bilingual dictionaries (for example, the Rider–Holyoke dictionaries), and has thus marshaled further support for including the "Alphabetical dictionary" in the genealogy of English lexicography. A comparison of Appendices 1 and 2 partially illustrates the textual relationship between a bilingual dictionary (Wase 1662) and Lloyd's work, and also the divergence of method between the two.

2.2 Bilingualism: The Philosophical Language and English

The blend of lexicographic gloss, exemplifications, criterial semantic features, and cross-references to the "Philosophical tables" in "An alphabetical dictionary" create the impression of both heteroglossia and a bilingual method within the text frame of a monolingual dictionary. Because the lexicographic definitions in the dictionary "are either referred to their places in the philosophical tables, or explained by such words as are in those tables" (Wilkins–Lloyd 1668, sig. aaa1r), the glosses and the exemplifications are not always generalized abstracted occurrences of the English language; as we shall see in the following sections, the definitions are often written in the abstracted philosophical language. In other words, the whole project (the tables, the grammar, the phonetic system, and the dictionary) can be understood as the presentation of a target language, in this case the universal language, through the vehicle of a natural language. That is to say, when we consult the "Philosophical tables" we find two distinct languages: 1) the universal, or philosophical, language; and 2) the

⁹ See Knappe (2004b) for discussion of phraseology and of bilingual dictionaries: "The dictionaries by Christopher Wase (1661 to 1662) and Francis Goldman (1664) were the latest developments in English–Latin lexicography on the market at the time at which Lloyd was probably working on his *Alphabetical Dictionary*... a comparison of the first 100 headwords of the letter "B" in the *Alphabetical Dictionary* (babble–bavin) with Wase's dictionary shows that Lloyd followed the bilingual tradition closely" (375). Christopher Wase (1627–1690), a well-known philologist, was highly regarded by John Evelyn, a correspondent and acquaintance of Wilkins.

English language. Whatever the failures and successes of the project, we can see interference between words considered conceptually and words considered lexically, because the conceptual units in the tables (L2) are mostly represented by fairly ordinary English words (L1). It is for this reason that no matter the intent or design of the system, the final product, one might argue, works best as a description of English vocabulary. It should be clear, however, that the discrete methods and procedures, unstated as they are, were motivated by an empirically oriented study of "things" which intentionally or not produced an acutely applied descriptive and explanatory analysis of lexical meaning.

3. The Imperfection of Phraseology

That is called *figurative* and irregular *Syntax*, which customary use, and not any natural propriety doth make significative; wherein there are some words always either *redundant*, or *deficient*, or *transposed*, or *changed*, from their proper notion. These *Phraseologies* are to be accounted an imperfection of Language ... they do exceedingly encrease the difficulty of Learning Tongues, and do not adde to the brevity or perspicuity of expression, but rather cumber and darken it with ambiguities. (Wilkins–Lloyd 1668, 447)

Signs ought always to be adequate unto the things or notions to be signified by them. (Wilkins–Lloyd 1668, 303)

The following list is a sample of verbal lexical and phrasal units that can be found in Lloyd's dictionary:

to Act in a play; bear down; bear off; bear out; ; cast about; cast in one's teeth; come in; come forward; come to light; doing battle; Draw sword; draw blood; draw wine; draw out; fall in love with; fall out; hold one's breath; Go through with it; hold off; keep away from; keep back; keep council; keep watch; lay hands on; lay waste; make the most; make good; make haste; make use of; Pack Jury; take Notice; Root out; set foot; take pains; take up time; yield up the ghost.

In addition to the verbal phrases mentioned above, the following is a sample of the form and variety of types of phraseological units included in the "Alphabetical dictionary":

at all; as it were; for as much; at last; at length; at once; by reason; by and by, down stream; good at; good for; over and above; for the most part; on

*all parts; safe and sound; underfoot; under hand and seal; well now; well then; as well.*¹⁰

Wilkins understood the importance of “phraseology” as it pertained to understanding and describing the lexical structure of natural languages; he intended his philosophical language to correct, or at least mitigate, these perceived “imperfections”. He specifically mentions English verbs as being particularly troublesome, because some of the most ordinary of them have no “less then thirty or forty ... senses, according to their use in Phrases” (18). He may wish to proscribe phraseology, that is, phrasal verbs, idioms and other fixed expressions, from his philosophical language, but this proscription does not affect the description of the English language found in the dictionary, nor that recorded in the tables; in order to exemplify his point about the lexical structure of the English language, he refers the reader to the dictionary:

As for the ambiguity of words by reason of *Metaphor* and *Phraseology*, this is in all instituted Languages so obvious and so various, that it is needless to give any instances of it; every Language having some peculiar phrases belonging to it, which, if they were to be translated *verbatim* into another Tongue, would seem wild and insignificant. In which our English doth too much abound, witness those words of *Break, Bring, Cast, Cleare, Come, Cut, Draw, Fall, Hand, Keep, Lay, make, Pass, Put, Run, Set, Stand, Take*, none of which have less then thirty or forty, and some of them about a hundred several senses, according to their use in Phrases, as may be seen in the Dictionary. And though the varieties of Phrases in Language may seem to contribute to the elegance and ornament of Speech; yet, like other affected ornaments, they prejudice the native simplicity of it, and contribute to the disguising of it with false appearances. Besides that, like other things of fashion, they are very changeable, every generation producing new ones; witness the present Age, especially the late times, wherein this grand imposture of Phrases hath almost eaten out solid Knowledge in all professions; such men generally being of most esteem who are skilled in these Canting forms of speech, though in nothing else. (17–18)

Phrasal verbs and other sorts of verbal collocations, and all collocations for that matter, bring to mind a variety of questions concerning

¹⁰ These are a sort of collocation (especially *at all, at last, well now, by and by*), that Rosamond Moon (1998) has found to occur most frequently, rather than idioms and other figurative fixed expressions, in text databases according to her study of collocations in corpus lexicography.

meaning and compositionality.¹¹ I suggest that the arrangement and order of lexical units in paradigmatic sets and taxonomic charts, collocations of concepts, are productive of narrative.¹²

Rather than concentrating on "things in the world", or the onomasiological perspective, the emphasis here is on the graphic presentation of lexicological and lexicographical relationships and how that presentation produces the effect of a macro-collocation, or the instantiation of the paradigmatic sets as signifiers.

The following questions are germane in my study of the representation, arrangement, or collocation of meaning and knowledge as found on the printed page: How much of the meaning that we ascribe to a lexical unit is actually the residual effect of its collocation with other lexical units on the syntactic and paradigmatic levels? In other words, do we separate the residual semantic effect of a frequent collocate of a discrete lexical unit from the meaning of the lexical unit considered in isolation? Furthermore, how much information on the paradigmatic level of analysis do we access when we read or hear a variable or even fixed collocation? That is, how

¹¹ Knappe (2004b) offers an elaborate discussion of the principles of compositionality and phraseology; I include her conclusions as they pertain to Wilkins–Lloyd here: "William Lloyd (and John Wilkins) could not manage *all* the problems of phrasal lexicography, above all semantic compositionality and idiomaticity. The problems were enhanced by inconsistencies in the presentation. Wilkins' and Lloyd's *Alphabetical Dictionary* is an innovative and very well considered approach to the treatment of phraseological units ... which make this early masterpiece of lexicography comparable to the *Oxford English Dictionary*, surpassing in this respect Samuel Johnson's celebrated *Dictionary*" (406). The following passage from Mel'čuk (1998, 24), which is an echo of the sentiment expressed in the preceding passage and the selection from Wilkins, illustrates the continuing complications of representing meaning: "At the same time, set phrases, or phrasings, represent one of the major difficulties in theoretical linguistics as well as in dictionary-making. Therefore, both linguistic theory, and lexicography should really concentrate on them ... A good dictionary of language **L** should include all the phrasings of **L**, because the main substantive property of a phrase name is its non-compositionality: it cannot construct it, for a given conceptual representation, from words or simpler phrases according to general rules of **L**, but has to be stored and used as a whole."

¹² This excerpt from a previous article (Dolezal 1994) summarizes my argument for a narrative of structure: "When enough lexical items have been distributed in a systematic way, there develops a discernible structure. We may call a simple structure a list of words; a more complex structure may be called the classification system. Be it simple or complex, the construct is really a list of words arranged in a variety of forms. Any proposition that can be made regarding the list of words must be manifested in relationships among the set (or list) of lexical items" (95).

much do we access the paradigmatic relationships that are suggested by any lexical unit and then, further, the related pragmatic relationships that are suggested by the lexical units it frequently combines with as collocation?

These questions are answered however obliquely in a consideration of the selection of entries and the form of definitions in “An alphabetical dictionary.” Lloyd was avid in collecting and organizing fixed and free expressions (syntactic units with high levels of predictability in regards to lexical membership): for example, “suck up the breath with [the] nose” (s.v. *snuff*). A typical example supplying a collocation of phrases for the purpose of restricting semantic interpretation can be found in this excerpted entry for *measure* (for the meaning of each item the dictionary user is referred to the appropriate tables included under the genus “Measure”)

Measure.
Proper. Mea.
 —of *Magnitude. Mea. I.*
 —of *Number. Mea. II.*
 —of *Gravity. Mea. III.*
 —of *Valour. Mea. IV.*
 —of *Time. Mea. V.*
 [Moderation]

Here is a similar collocation that is clearly a fixed expression (*inc.* means “inceptive”):

Peep.
 —of *day, [Day (inc.)]*

Lloyd applies a technique of supplying collocations and phrases in sets that reveal possible paradigmatic variation. For example, consider the entry for *Sitting*:

Sitting.
 { *Gesture. AC. VI. 5.*
 { *Posture. AC. VI. 5. A.*
 —as *Commissioners, [Toget-*
her sitting]
 —as a *hen, [a. Motion by up-*
on sitting.]
 —*down. [Sitting]*
 —*out, [Not-playing]*

—up, { Risting }
 { adj. Permanence out
 of bed. }
 as Bird, { Rest }
 { Stand }
 [Permanence]
 —hard at it, [adj. a. Dili-
 gence. adv. permanence]

There are a number of fixed and variable expressions under the entry *sitting*. A quick glance at the entry reveals a lack of thoroughness in recording the possible collocations. For now we confine the discussion to the following:

—as Commissioners, [Toge-
 ther fitting]
 —as a hen, [a. Potion by up-
 on fitting.]
 as Bird, { Rest }
 { Stand }

This excerpt illustrates the use of collocations as lexicographical meta-language; that is, they limit the scope and range of the definition. Two of the collocations may be collocations found in the ordinary English of the time: Lloyd has made a distinction between the units "sitting as Commissioners / sitting as a hen" and "Sitting ... As Bird".¹³ The "sitting as ..." pair would seem to describe a set with at least two variables, "commissioners" and "hen"; "As Bird" would seem to be purely lexicographical metalanguage to narrow the range of application for a sense of the word "sitting". The relevant selections (senses 33 and 4a, highly edited) from the entry for *sit* in the *Oxford English Dictionary* have some descriptive congruency with Lloyd's entry:

Of birds: To perch or roost; also, to rest the body on the ground or other surface.

...

¹³ "To sit, as a hen, with eggs. Incubo are" occurs as an entry in Wase 1662; *sitting as a hen* may have some status as a phraseme according to these analyses.

b. Of a hen or hen-bird: To sit upon, to hatch (eggs).

1600 Surflet *Countrie Farme* i. xvi. 107 Geese loue not almost to sit any but their owne egs. 1651 Baxter *Inf. Bapt.* 51 The Hen gathereth the youngest most tenderly: Yea, how long will she sit the very eggs?

[in another section of *sit*.] To occupy a seat in the capacity of a judge or with some administrative function.

4. A Lexicon of the Mind and a Dictionary of De-Lemmas

The “Philosophical tables” ideally comprise the finite set of concepts common to humankind; it is a system that evokes the empirical spirit of the natural philosophy espoused by Wilkins. The project is guided by human discourse and is an attempt to classify knowledge. The very nature of the universal language system and the universal grammar provides the basis for a mental lexicon (the term “mental lexicon” has no commonly accepted definition, so perhaps current work on constructing such a system could just as easily be called another way to search for God’s secret dictionary). However, because of the use of English lexical units to represent conceptual units in the dictionary and tables, the set of structured data (“Philosophical tables”) could also be called, though not exhaustively, an associative paradigm of lexical meanings, a word field, or an onomasiological chart of mid-seventeenth-century English. The term *lexicon* does occur in the Wilkins–Lloyd project (the “Alphabetical dictionary” defines it as “Catalogue of interpreted words”); the use of “mental lexicon” as a way of describing the tables is consistent with the philosophical perspective of Wilkins: the idea behind the universal language is predicated upon the common and universal shared experience of humankind. For instance, Wilkins writes,

As men do generally agree in the same Principle of Reason, so do they likewise agree in the same *Internal Notion* or *Apprehension of things*.

The *External Expression* of these Mental notions, whereby men communicate their thoughts to one another, is either to the *Ear*, or to the *Eye* ...

That *conceit* which men have in their minds concerning a Horse or Tree, is the *Notion* or *mental Image* of that Beast, or natural thing, of such a nature, shape and use. The names given to these in several Languages, are such arbitrary *sounds* or *words*, as Nations of men have agreed upon, either casually or designedly, to express their Mental notions of them, (20)

Whether by hook or by crook, they created a highly refined system of logical and lexicographical definition. These two types of definition help explain the distinction that Wilkins draws between the “Philosophical

tables" and the "Alphabetical dictionary". In the "Advertisement to the Reader" before the "Alphabetical dictionary", he writes,

The design of the Philosophical Tables is to enumerate and describe all kinds of *Things* and *Notions*: And the Design of this Dictionary, is to reckon up and explain all kinds of *words*, or *names* of things. (sig. aaa2v)

Setting the things and notions of the tables in juxtaposition with words and names of the dictionary, the hierarchical and formal "Philosophical tables" contrast significantly with the systematic, but abstract and generalizing, construction of the dictionary entries.

Their "Philosophical tables" and "Alphabetical dictionary" show a strong adherence to a method relying upon principles of collocation, cohesion, and predictable concatenation of lexical items and text units. Their logical and lexicographical definitions depend largely on understanding how each conceptual unit or lexical unit stands in relationship to other units, in continuous syntactic relationships, continuous paradigmatic relationships, and also discontinuous syntactic and paradigmatic relationships.

These relationships can be seen on each page as the result of the systematic use of a notational system (see Appendix 3). Their definitions also depend upon the decomposition of English lexical units into conceptual units and semantic operators. The lexicographical definitions which depend on cross-referencing the "Philosophical tables" help illustrate these ideas:

Sitting.
 { *Gesture. AC. VI. 5.*
 { *Posture. AC. VI. 5. A.*

The design of the macro and micro structure of the "Philosophical tables" and "Alphabetical dictionary" leads me to reconsider the ideas of canonical form and lemmatization; each radical word is presented in a canonical form (understood to be a "substantive"). The canonical form is the designatum of a conceptual unit in the universal language, not to be understood as an English word. In my analysis, the canonical forms, considered as conceptual units, are de-lemmatized English lexical units. The synonyms and other derived words that are listed with each radical word in the Tables, provide the re-lemmatization of the radical word who (for a typical example, see the list following the "radical" word JOINING in Appendix 3). In other words, each lemma (each of the items in the list) is a concatenation of possible semantic, pragmatic, and grammatical derivations of its respective radical words.

The lexicographical metalanguage in the entry for *sitting*, which typifies the method in “An alphabetical dictionary”, has a highly abstracted canonical form (a de-lemmatized lexical unit).¹⁴ We will look at two distinct types: (1) “together-sitting” / “upon-sitting” and (2) “AC.VI.5”.

The examples of type (1) follow a frequent pattern in the dictionary, for instance, this phrasal verb in the entry for *put*:

—together, [Together,put]

However, this method is not restricted to explaining phrasal verbs:

Compl.
[Together-two]

Drift.
—of Snow [Heap of —together blown]

Fagot, [Sticks (aggr.) together-bound.]

Gnash.
[Together-strike
noise (make) with }teeth.]

Household, [Together-adj. house (aggr.)

In her work on historical English phraseology Knappe (2004a) analyzes the phrasal verbs:

On the syntagmatic level, phrases such as *fall down* with the explanation ‘down-fall’, *put together*, described as [together-put], or *make league*, explained as [league (make)] are, by virtue of their circular definitions, certainly understood as phrases with literal meanings of the keywords. (401)

¹⁴ From the perspective of describing the entries as examples of a monolingual dictionary, the English language is both the object of lexicography (the terms to be defined) and the instrument of lexicography (the terms used to define). The entry is “conceived as the lexical abstraction of a lexical unit” (Zgusta 1971, 249).

Her reading that the inverted, re-composed phrasal verbs ("together-put") signify "literal meanings of the keywords" (though "direct sense" rather than "literal meaning" would be a more felicitous term) is supported by the excerpts below; at the same time, this analysis can be broadened by considering the dictionary as one important component of Wilkinsian epistemology as registered in lexicographical metalanguage¹⁵ (in this case the metalanguage is also representative of a systemic philosophical language):

Composc.
 [Together-put]
 —a { *Book*, { a. *Book* } } (make
 { *Verse*, { a. *Verse* } }

Hang.
 —together, [Together-ad-
 here.]

Join.
 Together-put. TA, II. I.

Lace. Pr. IV. 5.
 to—*together*, [Together-bind.
 sp. with *Lace.*]

Triumvirat. } Government } of to-
 } Magistracy } ge-
 } } ther-three (persons)

The lexicographical metalanguage does give the appearance of circularity in the definitions of the phrasal verbs; however, the circularity is mitigated by "reading" the entries in the context of the tables, which the dictionary users are invited to do (hence the dictionary title page: "English words ... referred to their places ... or explained by such words in [the] Tables"). This is made quite clear when we look up *together* in the dictionary:

Together. Adv. IV. I.
 —with. Prep. II. 2.

¹⁵ Leonardi (2003) cogently presents this idea: "In the essay Wilkins' linguistic and scientific speculation merge; and knowledge — which is a core concern throughout his production — can be identified as the 'thread' that connects them ... In fact, the essay is a project for a philosophical and universal language designed for expressing and granting access to real knowledge" (86).

Together is defined “society affirmed” in the tables of the philosophical grammar under Adverbs (313) :

such as denote the Circumstance of

IV. *Society, Affirmed, or Denied; Conjunction or Exclusion*

1. **TOGETHER**
ONLY, alone

The reference in the entry *join* to the tables (TA. II. 1 [39]) re-lemmatizes “together-put” and places it in its semantic paradigm:

II. *Causing of things to be together or asunder.*

1. JOINING, *annex, Connexion, couple, link, copulation, concatenation, conjunction, Coalition, coherent, copulative, conglutinate, combine, compact, set or put together.*

SEPARATING, Segregate, sunder, sever, dissever, divide, disjoin, disunite, dissect, dissolve, part, take in pieces, disjunctive.

In the same genus (see Appendix 3) the phrasal verb “putting together” is used to explain the radical “Applying” (“*putting of things together*”). Thus, even in the tables there is what at least appears to be a lexicographic gloss (the collocation of lexical items) and also a syntactic and semantic exemplification of the range of application for “putting together”. The sequence “together put” signals to the English reader that the significations of the two English words “together” and “put” have been removed from the context of ordinary English usage and have been recontextualized as an explanatory gloss written in the lexicographic metalanguage, and thus dellexicalized as an English lexical unit; the compound English lexical unit has been reconstituted as a systemic conceptual unit, and presumably the concept has a precise, rather than a generalized lexical meaning.

Now, I turn my attention to another type of lexicographical metalanguage, the use of the cross-referencing table locus illustrated in the entry for *Sitting*: AC.VI.5 (238). The table locus refers the user to a radical word in the tables:¹⁶

¹⁶ The radicals are overwhelmingly in the noun form; however, the noun forms are frequently nominalized derivatives of verbs: for example, SHEATHING, ROLLING, TICKLING, REASONING; the canonical form of the radicals is sometimes in the form of verbal collocations: *RIDING AT ANCHOR, KEEPING A WIND, and FALLING TO THE LEEWARD.*

AC. = Genus of "Corporeal Action"

VI. = Difference of "Gesture"

5. = Species signifying "altering the height, by motion of the ... hipps".

"Gesture" and "Posture" are re-lemmatized in the tables (238):

GESTURE, *Action, Behavior, Gesticulation, Mimic*, doth denote *such an Animal action* or motion *as alters the situation* of the whole or parts of the body: To which the word POSTURE, *Position*, may be annexed by way of affinity; signifying the *situation in which such motion is determined*.

By examining lexical sets that have a semantic and paradigmatic co-occurrence, beyond the syntagmatic relationship, we extend the membership of lexical items that can be described and analyzed as collocations. By way of elaborating upon the above example, I include these other paired sets of concepts (radical words) from the tables:

Walking/Running (240)

Spitting/Blowing the nose (241)

Ligament/Tendon (176)

Question/Answer (50)

Holding/Letting go (38).

The paired sets of radical words in the "Philosophical tables" can also be analyzed as paradigmatic units; when re-lemmatized as English lexical units, the conceptual sets can also be indicators of lexical co-occurrence. Are the tables the predictable outcome of classifying all words and things under discourse, or is the naturalness of the Wilkins–Lloyd tables the result of their empirical and intuitive analysis of the English usage of their time and of our own subjective judgments that recognize the "attraction" of the lexical items and concepts in the lists? These questions arise from reading current explorations of the nature of "collocates", the sort of lexical sets familiar to readers of the *Essay*. For instance, Michael Stubbs, in an article section entitled "Attraction between word forms, lemmas and lexical sets", makes the point that

[w]hat regularly takes a much larger difference [than lemmatizing collocates] is to group the collocates into sets of approximate synonyms:

aerial <bombardment 5%, bombing, attacks> 12%
 obey <orders 10%, order, law(s), rules, command(s), instructions>
 38%. (2002, 224)

In other words, in the database, the node word, *aerial*, occurs 5% of the time with *bombardment* and 12% of the time with all the collocates combined. He makes the point that

it would be difficult to quantify this effect precisely since it would be difficult to get a consensus between observers as to exactly which words should be grouped in this way. ... there are cases where a word has two senses, and two corresponding sets of collocates from different semantic fields:

commanded <respect, attention>
 commanded <army, troops, forces> (224–225)

What we see here is a corpus-based consideration of the same sorts of linguistic data that Wilkins and Lloyd attempted to sort out in the dictionary and tables. Stubbs also says that “amongst other frequent patterns [of semantic relations between node and collocates], there are many cases of co-occurring antonyms” (226). While there may be good philosophical, or logical, reasons to sort conceptual units by pairs of antonyms as Wilkins and Lloyd do in the tables, and as Lloyd defines with his lexicographical metalanguage in the dictionary, their decisions also reflect, even describe, frequent linguistic patterns. Stubbs goes on to say that antonym pairs are “admittedly an ill-defined relation” (226). Wilkins shows awareness of this problem, for he writes (290) of the conceptual pairs that are “*Opposites*” and those that have “affinity” to one another. Using the lexical pairs found in Stubbs, we see that *Eating* and *drinking* are paired in the Wilkins-Lloyd system as discontinuous constituents but not as immediate constituents: one conceptual unit of paired radical words

HUNGER ... EATING

is linked on the page with the following pair of radical words:

THIRST ... DRINKING. (234)

“Landlord” and “tenant” are represented in “affinity” as semantic derivatives under their respective paired radical words (notice also the variety of collocations: paradigmatic and syntactic units):

DEMISING, *let, let out, let to farm, least, Lessor, Landlord, Broker, Rent, Principal, Interest, put to use.*

HIRING, *farming, Hackney, mercenary, prostitute, Tenant, Lessee, Lease, Rent, Interest, Use, at livery, Gratis.* (268)

It may be that what I have been calling collocation would better be described as a function of cohesion, text with text. On the other hand, it seems clear that Wilkins and Lloyd use these binary radical words to limit semantic scope and thereby define through semantic correspondence and relationship as displayed using a notational scheme (though not always consistent in its application). The same procedure using yet another set of notational devices can also be found in the dictionary.

In the case of *An Essay towards a Real Character and a Philosophical Language*, the construction of a universal language required an accounting of universals, linguistic and extra-linguistic, which in turn required the construction of a conceptual lexicon. Wilkins and his philological partner William Lloyd faced the difficulty of how to produce and organize "the distinct expression of all things and notions that fall under discourse" (sig. a1v). He supplies this critique in a report of a conversation with Seth Ward (1617–1689) concerning previous attempts at producing a "Universal Character":

But for all such attempts to this purpose, which he had either seen or heard of, the Authors of them did generally mistake in their first foundations; whilst they did propose to themselves the framing of such a *Character*, from a *Dictionary of Words*, according to some particular Language, without reference to the *nature of things*, and that common Notion of them, wherein Mankind does agree, which must chiefly be respected, before any attempt of this nature could signifie anything, as to the main end of it. (sig. b2r)

As much as Wilkins wanted to create a table of de-lexicalized conceptual universals, he relied on the vocabulary and structure of the English language to represent them. Besides being a stimulus for considering and appreciating the task of formulating universals of language and thought, the *Essay* and dictionary are an authoritative, if not comprehensive, repository of the English language as spoken and written in the middle of the seventeenth century. The systematic arrangement and explication of a wide range of verbal collocations in the text frame of an English monolingual dictionary depended upon Lloyd's selection and empirical analysis of English usage and vocabulary. The practical solutions to compiling the results of the analysis, not only of collocations, but of explicating and describing a large selection of ordinary English, makes Lloyd's "An

alphabetical dictionary” a compendium of the many possibilities of lexicography.

A study of the *Essay* raises questions about dictionaries, definitions, and the authoritative representation of meaning and knowledge. The archaeological excavation, the bibliographical excursus, reminds us that the ambitious and flawed attempt of the *Essay* to classify the things and notions of the world still challenges those who would construct knowledge systems and other computer driven mirrors of natural languages.

The Wilkins *Essay* pretends to nothing less than the distinct expression of everything that may be spoken or written. In other words, the design is to construct the world in such a way that the readers may enter discourse, which always implies collaboration. This new discourse will be regulated by “a just *Enumeration* and description” (Wilkins–Lloyd 1668, 20) of the world—that falls under discourse. The regulations themselves are a product of inquiry and collaboration, in this case the deliberations and tabulations of the fellows and associates of the Royal Society—and finally with the readers of the *Essay*. Wilkins and Lloyd present their dictionary of metaphysics as meta-literature, a hopeful presentation of the possibility of a bibliography of knowledge.

Appendix 1: *Take* (Wilkins–Lloyd 1668)

Take, Cause } out of anothers }
to be t &—in ones own }
possession }

Proper.
without consent. TA. I. 4.
Judicially.
Person or Goods, [a. Arrest]
Part for Whole, [a. Seisin]
Injuriously, [Usurp]
Militarily.
Person, [Captivate] →
Place. RM. II. 4. E.
Goods, [a. Booty]
with consent.
} Receive]
} Accept]

Improper.
} Undertake]
} Think]
} Esteem]
} Elect]
} Find]
} To— } tion]
} Into— }
} Obtain]
(p. its end)
} Please]
} Have]
} Use]

—*account*, [Reckon (make)]
—*the air*, [Go into the open Air]
—*Breath*, [a. Breath]
—*Exceptions*, { Except]
 } adj. v. Displience]

—*fire*, [adj. v. fire (inc.)]
 } adj. p. Power]
—*Head*, { adj. Difobedience } (inc.)]

—*Heart*, [adj. p. Encouragement]
—*Heavily*, [adj. a. Grief for]
—*Heed*, { a. Heedfulness]
 } Observe]

—*his heels*, [Fly]
—*the height*, [Measure the h.]
—*hold*, [a. Hand (inc.)]
—*horse*,
as a man, [Up-ition upon his h.]
as mare, [v. Coition]
—*ill*, { v. Displience]
 } Esteem not-adj. friend]

—*Leave*, [a. Valediction]
—*Notice*, [Observe]
—*Oath*, [Swear]
—*pains*, { a. Diligence]
 } Operation (augm.)]
—*place*,

—*place*, [Precede]
—*a pride*, [Glorying]
—*Prisoner*, [Captivate]
—*a Purse*,
[Steal a purse]
[Rob money]
—*Roof*, [a. Roof]
—*shipping*, [into a. ship]
 } Discover defect]
—*sardy*, { Find adj. pref. acti-]
—*warning*, { Warning } (on)
 } adj. p. { Heedfulness]

—*Water*,
[Into-take water]
[Go into water]
[Navigate (inc.)]
—*well*, { Delectation]
[adj. p. { Consent]

—*away*,
{ a. Privative]
 } Diminish]
 } a. Ablatum]

—*forth*, { Imicate]
 } Proceed to learn]

—*in*,
—*a town*. RM. II. 4. E.
—*hand*, { Undertake]
 } Attempt]

—*pieces*, [Separate the parts]
—*Writing*, [Write]
—*off*, { From-take]
 } Diminish]

—*on*, { Grief }
[a. { Anger } (sign)]

—*to*, { To-ition]
 } Confidence]

—*Mercy*, [Be merciful to]
—*Wife*, [Marry]

—*up*,
[Lifting take]
[Reprehend] (p. angrily)]
—*Clath*, [Buy c. &c. without paying]
—*money*, [Borrow money]
—*a quarrel*, [Un-adj. a. contention (make)]
—*his rest*, [Rest]
—*time*, [Spend t.]
—*upon him*, [Claim]

Taken, [adj. p. Take]
—*for*, [In- { Thought]
 } stead— { Judged]

—*with*,
as with diseases, [Sick]
as with pleasure, [Pleased with (augm.)]

Appendix 2: *Take* (Wase 1662)

T A K	T A L
<i>Taffetic or taffeta. Multicia z.</i> <i>A kind of coarse taffetic. Multicia crassior.</i>	<i>A taking away. Direptio nis.</i> <i>A taking back again. Resumptio nis.</i>
<i>Tuff-taffetic. Villosa multicia. Stript taffetic. Multicia scutulata.</i>	<i>A taking in hand. Susceptio, aggressio nis.</i> <i>A taking hold on. Apprehensio nis.</i>
<i>Of taffetic. Ad multiciam pertinens.</i>	<i>A taking napping or at unawares. Incauta oppressio.</i>
<i>A tag of a point. Bracteola ligulæ.</i>	<i>A tale. Fabula z. Rumor is.</i>
<i>Tag and rag. Migratio clivi Aricini, farcinarum pomsa conveniens ponti.</i>	<i>A false tale. Fingentium i.</i> <i>A tale of a tub. Anilis fabula.</i>
<i>A tail. Cauda z.</i>	<i>To tel a tale or tales. Rumigero arc.</i>
<i>The plough tail. Bura z. Buris is.</i>	<i>A teller of merrie tales. Congero nis.</i>
<i>A tailor. Sartor is.</i>	<i>The invention of tales. Fictio nis.</i>
<i>To take. Capió, accipio, sumo etc.</i>	<i>A tale-beaver, or tell-tale. Rumigerulus i.</i>
<i>To take away. Abripio, diripio, eripio, subduco, adimo etc.</i>	<i>A talent. Talentum i.</i>
<i>To take back again. Resumo etc.</i>	<i>Talkative. Loquax.</i>
<i>To take in hand. Suscipio etc.</i>	<i>A talkative fellow. Lequutuleius i. Æs dodonæum, loquaculus, dicaculus.</i>
<i>To take heed. Caveo etc.</i>	<i>To talk. Colloquor i. Confabulator ari.</i>
<i>To take hold on. Pichendo etc.</i>	<i>To talk idly. Deliro arc. Aliena loqui.</i>
<i>To take napping, to take at unawares. Incautum opprimere, dormitanti supervenire.</i>	<i>Talk. Rumor is. Sermo nis.</i>
<i>To take up (a thing.) Atollo etc.</i>	<i>To fall in talk of. Incidere in narrationem.</i>
<i>To take up (or reprove.) Reprehendo etc.</i>	<i>One that loves to hear himself talk. Cui sermo in ore non in pectore nascitur.</i>
<i>To take in war. Manu capere.</i>	<i>Talked. Dictus.</i>
<i>To take a wife. Uxorem ducere.</i>	<i>A talker. Loquutor is. Qui loquitur.</i>
<i>Taken. Captus.</i>	<i>A talking. Confabulatio nis.</i>
<i>Taken away. Abreptus, ereptus.</i>	<i>Much talking. Garrulitas tis. Multiloquium i.</i>
<i>Taken hold on. Pichensius.</i>	<i>Tallage. Vectigal is.</i>
<i>Taken napping or unawares. Incaute oppressus.</i>	<i>Tall. Procerus.</i>
<i>Taken up. Sublatus.</i>	<i>Tallie. Procc. è.</i>
<i>Taken in war. Manu captus, captivus.</i>	<i>Talness. Proceritas tis.</i>
<i>A take, or, Comprhen/or is.</i>	<i>A tally. Talca tessera z. Patres bacilli debitoris & creditoris, quos unâ eâdemque crenâ incidendos uterque seorsim ad rationes æquandas servat.</i>
<i>A takey in hand. Aggressor, susceptor is.</i>	<i>A talon of a bird. Unguis.</i>
<i>A takey up of things. Sublator is.</i>	<i>A little talon. Unguiculus.</i>
<i>A taking. Comprhenfio nis.</i>	

Appendix 3: Corporeal action (Wilkins 1668: 39)

Chap. I. *Transcendental Relations of Action.* 39

- II. *Transcendental Relations of Action* COMPARETE, are such as do concern. II. Transf. Relat. of Actions COMPARETE.
Divers things at the same time; whether such kind of Actions as from the nature of the Agents or Patients, may be called
- Corporeal; denoting the
- Causing of things to be together or asunder.
1. JOINING, annex, Connexion, couple, link, copulation, concatenation, conjunction, Coalition, coherent, copulative, conglutinate, combine, compact, set or put together.
- SEPARATING, Segregate, sunder, sever, dissever, divide, disjoin, disunite, disscā, dissolve, part, take in pieces, disjunctive.
- Containing them together or asunder.
2. ADHEARING, cleave, stick to, cling to, hang together, coherent, inseparable.
- ABANDONING, Forsake, Desert, Relinquish, Leave, Forgo, Flinch, Quit, Dereliction, forlorn, desitute, shake or cast off, start back, give over.
- Mental; Putting of things together or asunder
3. APPLYING, lay or put to.
- ABSTRACTING.
- Both Corporeal and Mental; with respect to the
- Taking in of several things, or the leaving out of some.
4. COMPREHENDING, Contain, Comprize, Imply, Involve, Inclose, Include, inclusive, bold, Complication.
- EXEMPTING, Except, refrain, seclude, exclude, save, sa'vo, set aside.
- Putting of things together, the better to judge of their likeness or unlikeness, or examining of them for the distinguishing of that which is right and true.
5. COMPARING, Conferr, Collation, resemble.
- TRY, Prove, Search, Temptation, Experiment, test, touch, examin, gage poise, poise, probe.
- The same things at divers times, whether the same as to
- Substance; signifying either the doing of the same thing several times, or the making of a thing to be different at one time from what it was before.
6. REPEATING, Iterate, reiterate, recite, render, rehearse, redouble, reduplicate, inculcate, ingeminate, recapitulate, renew, afresh, again, Tautology, the burden.
- CHANGING, Mutation, Vary, Alter, Shift.
- Quantity; The giving back of the very same thing, or of something else equal to it.
7. RESTORING, Give back, Restitution, refund, return, Restoration.
- COMPENSATING, Recompense, award, make amends, remunerate, quit, requite, retaliate, retribute, reparation, paying, fit, being even with, meet with, make good, cry quittance, like for like, one for another.
- Quality; endeavouring to shew how another thing is, or to do the like.
8. REPRESENTING, declare, shew, exhibit, present.
- IMITATING, Mimick, personate, take furth, follow.
- Use; as means to an end, The making of a thing more fit or less fit for its end.
9. REPAIRING, Mending, Bettering, Improving, correct, rectifie, renew, redisse, Emendation, Instauration, Redress, set to right, make good, make up, patch up, piece up.
- SPOILING, Marring, corrupting, deprave, impair, raze, scrape or cross out, sleight works.