

THE END OF MEANING-DRIVEN DICTIONARIES?

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Abstract: The paper examines the evolution of the meaning-driven dictionaries based on the Hornby model, the impact of corpus evidence on dictionary compiling, the new model set by COBUILD, and finally looks at Hanks's pattern-driven dictionary project.

Keywords: monolingual learner's dictionary, meaning-driven dictionary, corpus evidence, pattern-driven dictionary.

A dictionary is a form of linguistic description, which consists of an organised inventory of words. As words are conventional in form and have conventional uses and meanings, one may say that a dictionary consists of a set of conventions which help the user grasp the procedures of language in use. What sort of conventions are presented in the monolingual learner's dictionaries (MLDs) that may help foreign users develop their grasp of the English language? What do MLDs offer in order to help the users communicate more effectively?

The needs of the users must be looked at closely when compiling an MLD, as foreign learners look not only for spellings and inflections but also for guidance on what words to choose and how to use them correctly in communicating. MLDs give such guidance on meaning(s) based on evidence of usage and report the normal uses and meanings of chosen words. However, no dictionary could ever attempt to cover all the possible uses of a word or all the content words of a language, as word meaning and use are infinitely flexible and elusive. Recent MLDs base their word selection on corpus evidence and point to the kind of usage that the native speakers of the language rely on when they communicate, in other words, to what is generally considered correct or normal usage.

In order to give foreign learners more guidance on the use of English, MLDs contain more information about the syntagmatic and paradigmatic behaviour of words than the dictionaries for native speakers, and have a pedagogic rather than an analytical focus.

The Hornby tradition

Gifted with sound theoretical instincts and highly motivated to make English accessible and assimilable to his Japanese students, A. S. Hornby realised that the dictionaries based on historical principles could not be used effectively in language learning. All English dictionaries at that time, including Fowler's *Concise Oxford Dictionary* of 1911 were based on historical principles, with prominence given to etymology and little concern for current English. Hornby participated in a programme for vocabulary research at the Tokyo Institute of Research into English Teaching on H. E. Palmer's invitation, and compiled intuition-based lists of *useful* English collocations. Together with Palmer, he worked on English verb syntax and vocabulary selection for various levels of learners.

A few of the insights that Palmer and Hornby had during their work on vocabulary have become principles of lexicography and defined a new genre ever since: the English pedagogic dictionary, later called 'the monolingual learner's dictionary'. They realised that the users of such dictionaries need idiomatic phraseology more than etymology, and introduced verb patterns, based on the insight that the verb is the pivot of the clause. Word selection was made according to frequency and usage criteria. Another insight was that English grammar is not similar to Latin grammar. For instance, Palmer identified 'determinatives' (determiners), adverbial particles, 'anomalous finite verbs' (auxiliaries, modals, and verbal pro-forms) alongside the classes inherited from Latin grammar (nouns, verbs, adjectives, adverbs, and others).

Working together with E. Gatenby and H. Wakefield, two other English teachers in Japan during the 1930s, Hornby compiled the first MLD, a dictionary for non-native speakers of English which was clear, accessible and comprehensible, and offered practical rules and models of language usage: the *Idiomatic and Syntactic English Dictionary* (ISED), published by Kaitakusha in 1942. The blurb of the dictionary's first edition, available on Kaitakusha's website (<http://www.kaitakusha.co.jp/book/book.php?c=82&l=en>) states clearly that:

"This dictionary has been compiled to meet the needs of foreign students of English. It is called *Idiomatic and Syntactic* because the compilers have made it their aim to give as much

useful information as possible concerning idioms and syntax. It is hoped that the dictionary will be of value to those who are learning English as a foreign language."

ISED rested on the authors' teaching experience in Japan, and explained extensively not only word meanings, but also their spelling, grammar, pronunciation, and usage. Sharing the fundamental ideas of Palmer's *Specimens of English Construction Patterns, An Essay in Lexicology* (1934) and Palmer and Hornby's *Thousand-Word English* (1937), the ISED compilers insisted that the more frequently used words are more important for the learner's development of productive skills (or language encoding – speaking and writing) than the other words and that the patterns in which these words occur are essential for everyday communication. The most useful words may be accompanied by other less frequently used ones, often encountered in the process of receiving or decoding language (listening comprehension and reading). As everyday patterns of usage are built up around a small number of frequent words, and as the verb is the pivot of the clause, they urged the learners to learn not only the words but also the verb patterns which were provided in the dictionary together with the verbs.

After Hornby left Japan, the dictionary is re-published by Oxford University Press in 1948 with the title the *Oxford Advanced Learner's Dictionary of Current English* (OALDCE) as he took with him to Great Britain the world rights to it (excluding Japan and China). The defining features of OALDCE1 are the limited number of entries and the guidance given to learners on verb patterns and word usage, illustrations of the principles devised by Hornby and Palmer. The verb patterns consist of two levels: a syntagmatic one (several words – at least a verb and a noun which co-occur) and a paradigmatic one (a lexical set of words – typically synonymous that can replace the given words).¹ In 1963 OALDCE becomes *An Advanced Learner's Dictionary of English* (ALDE). The third edition, published in 1974 by Hornby together with Tony Cowie, reintroduces the name *Oxford* to the title and the dictionary becomes the *Oxford Advanced Learner's Dictionary of English* (OALD).

Starting with the second edition (1963), Hornby makes some important changes: coverage is increased by the inclusion of thousands of additional entries and subentries, the subentries are nested under root words, and swung dashes are used for the repetition of the headword within entries. The definitions are rewritten in a more formal style. However, most of the newly added words present no serious difficulty in their idiomatic or syntagmatic

¹ In 1954, Hornby published *A Guide to Patterns and Usage in English*, a practical grammar which uses a similar manner of presentation to that of the dictionary.

behaviour or are improbable to have been used by learners in either spoken or written English. In other words, OALD is now both an encoding and a decoding dictionary. Although the increase in coverage makes it more useful for decoding language, the dictionary has a more reduced usefulness for encoding, as the learners have to spend more time to find the words they need. The other two changes – the use of swung dashes and the nesting of subentries under root words – both make words more difficult to find and recognise. These layout solutions are abandoned in the 5th and the 6th editions of 1995 and 2000, edited by Jonathan Crowther and Sally Wehmeier, respectively, which also benefit from work on corpus evidence. OALD9 has been published this year.

Hornby insisted repeatedly on the dangers facing foreign language learners who rely on analogy with either their own mother tongue clause patterns or with other English ones that they already master, and on the central importance of learning not only the meanings of verbs but also the verb patterns where these words may occur. This insight has been of great importance from the point of view of both lexical and grammatical theory as it reconsidered the relationship between meaning and use.

Hornby's patterns

Hornby drew attention to the highly patterned nature of English by elaborating a framework of verb patterns to which different meanings and idiomatic uses could be related, which were later revised by his followers. His patterns did not take into account the semantic types of the arguments of the verb; rather they analysed clauses in terms of clause roles and part-of-speech-classes only. Initially, Hornby identified 25 verb patterns complete with a number of subdivisions, which were referred to by numbers in a look-up table placed in the front matter of his dictionaries.

In the first two editions of his MLD, Hornby did not consider the subject. In OALD3 of 1974, published together with Tony Cowie, the subject is introduced as part of the pattern, and therefore, verb patterns are replaced by clause patterns (e.g. VP11: “S + vt + noun/pronoun + *that-clause*”). In other words, the compilers adopted a similar line to that of empirical linguists such as Quirk, Sinclair, Biber and Halliday, who recognize five basic clause roles (SPOCA: Subject, Predicator, Object, Complement, Adverbial). These roles are central in verb pattern analysis, as the relationship between the verb and the rest of the clause components is not only one between parts of speech but also one among clause roles.

The 25 clause patterns must have seemed daunting to a learner in the first place, and their being referred to by numbers must have made their use even more difficult. Moreover, in successive editions, the patterns were revised and renumbered, and their order changed. These were probably good reasons for simplifying the patterns in the more recent editions. Starting with OALD5 of 1995, the clause patterns are identified by phrases with mnemonic value rather than by numbers. Thus the OALD3 “S + vt + noun/ pronoun + *that*-clause” becomes in OALD5 a minimalistic grammatical metalanguage formula “Vn (*that*)”. The number of patterns has been reduced to 20, grouped into six subheadings according to verb behaviour: intransitive, transitive, ditransitive, linking verbs, verbs used with clauses or phrases, and verbs + direct speech. Grouping separately patterns that take clauses and mentioning patterns together with illustrative examples, not before the definition as in the earlier editions, are important improvements.

In 1978, the supremacy of Hornby's OALD was challenged by the *Longman Dictionary of Contemporary English* (LDOCE; <http://www.ldoceonline.com/>). This rival MLD is also endowed with an elaborate grammatical apparatus.

The answer to the question why patterns are contained almost exclusively in the pedagogic dictionaries probably lies in the difficulty to capture phraseology in the absence of clear evidence and analytic techniques. Moreover, meaning was assumed for a long time to be a property of words, not of phrases, built up compositionally from the contributions of each component element.²

Hornby's verb patterns, although based on introspection, provided a revolutionary insight into English verb valency, and stood the test of time until the advent of corpus linguistics.

The phraseological approach

In the 1980s and 1990s, one more important source of lexical evidence was added: corpus evidence. Up to this time, lexicographers had not had an accurate representation of the conventions of word meaning and use and their own introspection often proved to be less reliable. Although it has not provided many new words or senses for the new corpus-driven and corpus-based dictionaries, corpus evidence demonstrated that the definitions in pre-corpus dictionaries had a tendency to be biased in favour of the unusual rather than the typical and

² The only dictionary for native speakers which follows Hornby's grammar patterns tradition and makes sense distinctions based on SPOCA is the corpus-based *New Oxford Dictionary of English* of 1998.

produced the important insight that neither linguists nor lexicographers are good at reporting their own linguistic behaviour. When consulting their intuitions, linguists and lexicographers tend to visit the boundaries of the possible and come up with unusual examples rather than examples of everyday usage. Moreover, introspection could not yield an inventory of all the words in a language not only because of the difficulty of recall but also of one's less than perfect mastery of language.

Corpus evidence is a source of information about how each word is used on the basis of the patterns that it occurs in; it gives important clues about phraseology, and can provide hints, associations and probabilities about meaning(s) and usage. As Sinclair noted (Sinclair 1998, 1991, 2004), most meanings require the presence of several words for their normal realization and these patterns of co-selection have a direct connection with meaning. Moreover, corpus evidence shows what can be considered normal use in contrast to creative or abnormal variations.

In 1983, in the early days of corpus lexicography, John Sinclair and his team started work on the COBUILD dictionary (an acronym for Collins Birmingham University International Language Database), the first corpus-driven dictionary, based on the analysis of the Collins Corpus (which later developed into the Bank of English). This project inspired a completely new kind of lexicography which includes several innovations, among which the inclusion of natural examples selected from actual usage and full-sentence definitions. Not inherited from previous dictionaries, all COBUILD entries are the result of the analysis of corpus evidence. They involve links between meaning and use by encoding the definiendum in its most typical phraseology, and thus help the learner to see what are the collocational preferences of each sense of the word. They illustrate, therefore, Sinclair's principle that every distinction in meaning is associated with a distinction in form. COBUILD was a first attempt at showing that the patterns of co-selection affect word meaning, or that meaning is a property of phrases as well as words.

The first edition of 1987 offers SPOCA-based clause patterns associated with each meaning of each verb.³ For a long time COBUILD has been the only dictionary which identifies collocates by semantic type rather than by word class. The subsequent editions of 1995, 2001 and 2003 abandon the SPOCA-based terminology, adopt a grammar description

³ In 1987, Sinclair also published the paper 'The nature of the evidence' and a book of essays in which is stressed the importance of distinguishing significant collocations from random co-occurrences.

reduced to a word-class system, similar to those of OALD and LDOCE, and rely more on examples rather than explanations.

Like the other MLDs, COBUILD is a meaning-driven dictionary, which starts from a list of senses for each word. However, it is the first of a series of lexicographic works which puts emphasis on explaining usage rather than listing meanings and shows how each meaning is associated with a usage pattern. The examples it offers are chosen for typicality, not for interestingness or originality and its explanations focus on normal usage.

LDOCE3 of 1995 (published in the same year as OALD5) is based on evidence from the British National Corpus, avoids explicit grammar patterns and devotes considerable attention to spoken English. It only mentions verb transitivity (T) or intransitivity (I). The rest of the pattern mentioned takes the form [+adv/ prep].

The third important MLD, the *Cambridge International Dictionary of English* (CIDE) also published in 1995 uses a similar reduced grammatical apparatus. It is a corpus-based dictionary whose subsequent editions of 2003, 2005 and 2008 were published as the *Cambridge Advanced Learner's Dictionary* (CALD; <http://dictionary.cambridge.org>). It has a number of associated grammar modules, such as lists of verb complementation patterns, semantic classifications of nouns, and semantic domain categories.

OALD6 of 2000, with Sally Wehmeier as editor, also makes massive use of corpus evidence, places the current meaning of a word first and features elaborate and accurate definitions.

The most recent MLD published in Great Britain is the *Macmillan English Dictionary for Advanced Learners* (MEDAL 2002). This is a corpus-based dictionary which pays special attention to conventional metaphors and collocations. It used Kilgarriff and Rychlý's Sketch Engine, a computer program that identifies statistically significant collocations for each word, which made possible the association of specific senses of a word with specific collocational patterns.

The American pedagogic lexicographic tradition is not as rich as the British one. The first computer-based American dictionary was the *American Heritage Dictionary* (1969), which places the modern meaning first, and offers clear definitions that combine prescriptive elements with descriptive information. However, it has not had significant effects on lexicographic work as it uses limited corpus-based information.

The *Merriam-Webster's Advanced Learner's English Dictionary* of 2008 dedicated to words and meanings in current use in American English pays little attention to phraseology or the results of research in corpus linguistics.

Corpus linguists reinforced the idea that most lexical elements offer several possible variations of meaning and that the use of the same verb in different clause patterns activates different meanings. Without corpus evidence, systematic analysis of meanings is not possible. Using only the evidence of introspection, the number of variables associated with each word remain uncertain and therefore, unmanageable on one hand, and on the other, both the normal and the possible senses are given equal prominence.

So far MLDs have been structured around the assumption that words in isolation have meanings, and their entries have been organised according to the senses detected for each word and with little syntagmatic information. This is to say that MLDs have been meaning-driven. They are an illustration of the belief that dictionary users and scientists in the Leibnitz tradition share: the assumption that dictionary definitions are precise, certain and mutually exclusive. Patrick Hanks (1994, 2008, 2009, 2013) showed that, strictly speaking, this assumption is wrong: words in isolation do not have meanings, but meaning *potentials*. Only by looking at the patterns in which a word is normally used can one work out its meanings.

Recent studies by Hanks and Pustejovsky (Hanks 2004, 2008, 2009, 2013, Hanks and Pustejovsky 2004, 2005) have shown that word meanings are not mutually exclusive and that there are no clear criteria for distinguishing one meaning from another and no general agreement on what counts as a word meaning. There is often overlap between meanings: word meaning is vague, fuzzy and probabilistic even when words are used to make very precise statements. This is explained by the holism of text meaning and by the association of different meanings with patterns of use rather than with words in isolation. Language is a probabilistic and preferential system where contexts correlate with collocations in different clause roles and with patterns of various statistical significance. These probabilities and preferences can be analysed only in a new kind of dictionary – a pattern-driven one.

Saying that the current MLDs are meaning-driven may be rephrased in Hanks's words: they ask the question "How many senses does each word have, and what is the definition of each sense?" In contrast, a pattern-driven dictionary will ask the question "How many patterns does each word participate in, and what is the sense of each pattern?" (Hanks,

2008: 12). A pattern dictionary classifies as patterns strings of words shown by means of corpus evidence to be typical, conventional, recurrent and meaningful.

Hanks's pattern-driven dictionary project

The analysis of corpus-based MLDs has shown that the information they provide on patterns is limited and that the semantic types of the arguments are ignored. Therefore, a new type of dictionary is needed which may offer information about both collocations, lexical sets and the semantic types of the arguments. The new dictionary definitions need to be based not only on actual usage but also on associations of meaning with the patterns in which the word occurs. Moreover, grouping words according to semantic types may increase the power of the dictionary.

C. Fillmore proposed a ‘Constructicon’ in parallel to the ‘Lexicon’ and initiated FrameNet (<http://framenet.icsi.berkeley.edu/>). Hanks and Pustejovsky (2005) proposed a *Pattern Dictionary* (<http://nlp.fi.muni.cz/projects/cpa/>), starting from the same basic belief:

“The lexicon, which in important ways is not distinct from the repertory of constructions, associates with each lexical item, explicitly or implicitly, information about the grammatical constructions in which the item can participate. To the extent that a given lexical item is closely tied to one or more specific grammatical constructions, describing that item is equivalent to describing the constructions in which it participates. (Fillmore, 1988: 42)

FrameNet describes word meanings in relation to semantic frames, the deep semantics of situations, “schematic representations of the conceptual structures and patterns of beliefs, practices, institutions, images, etc., that provide a foundation for meaningful interaction in a given speech community” (Fillmore et al. 2003: 235). Information is specified in both semantic and syntactic terms. At the base of FrameNet are frames which allow the study of the meaning differences and similarities between different words in a frame.

The basic aim of Hanks's meaning-driven dictionary project is to analyse the relationship between verb meanings and patterns of use. His work founded in the empirical analysis of large samples of corpus evidence has re-evaluated several theoretical assumptions about words and meanings, the relationship between word meaning and word use, the role of collocations and valency in making meaning, and the nature of linguistic creativity. Hanks has searched the British National Corpus (BNC) to find the phraseological and collocational

patterns associated with verbs and distinguished the normal uses from the creative and anomalous ones.

Hanks has brought together the lexical theory that distinguishes norms from exploitations (TNE) (Hanks 2004, 2013; Hanks and Pustejovsky 2005), an architecture that structures clustering in the tradition of Hornby, Sinclair (Sinclair 1966, 1987, 1991, 2004) and Pustejovsky, a hierarchical organisation of semantic types reflecting word groupings (Hanks's 'shallow ontology'), a methodology – Corpus Pattern Analysis (Hanks 2004, Hanks and Pustejovsky 2005), statistical corpus analysis (Church and Hanks 1989, Kilgarriff et al. 2004, 2005), and corpus analysis tools (Kilgarriff and Rychlý's Word Sketch Engine). All these together offer the possibility of a systematic analysis of the patterns of meaning and use of each verb.

Hanks's methodology – Corpus Pattern Analysis (CPA) – was inspired by Palmer and Hornby's concept that the verb is the pivot of the clause. To this were added the ideas that a clause structure is associated with only one meaning of the verb, and that different semantic values can be associated to each argument (realised by collocates). In other words, patterns include both semantic types and lexical sets of arguments (valencies), and different semantic values of the arguments activate different meanings of each verb. CPA owes much to the work of Pustejovsky on the generative lexicon (1995), to Sinclair's work on corpus analysis and collocations (Sinclair 1966, 1987, 1991, 2004), to the COBUILD project in lexical computing (Sinclair *et al.* 1987) and to Fillmore's frame semantics.

Hanks's approach to pattern-based dictionary compiling involves two steps: identifying the usage patterns of a word and attaching meaning to them. His pattern dictionary investigates the syntagmatic criteria for differentiating the meanings of polysemous words in a 'semantically shallow' way, proceeding word by word, and distinguishing between normal patterns of word use ('norms') and abnormal ones, which exploit the normal patterns ('exploitations'). The latter include creative metaphors, elliptical and anomalous arguments.

Hanks started work on his corpus-driven dictionary of English verb patterns at Masaryk University in Brno and has continued it at the Research Institute of Information and Language Processing (RIILP, University of Wolverhampton). At Masaryk University, he developed Corpus Pattern Analysis, the foundation of *The Pattern Dictionary of English Verbs* (<http://pdev.org.uk>). At Wolverhampton RIILP, he has continued his research project on the *Disambiguation of Verbs by Collocation*.

From a pedagogic perspective, it is important that Hanks's pattern-driven dictionary provides phraseologic models which can be stored by users as models for future use, and information about the relative frequency of each pattern. This suggests that a learner must gain competence in two kinds of linguistic behaviour: in Hanks's words, in both norms and exploitations. Frequency counts give the users a good idea of which uses are normal, which are exploitations, and which are simply abnormal. Hanks's analysis of 600 verbs (of the approximately 6000 verbs in English) has shown that 85% - 90% of everyday speech and writing is phraseologically normal, 9% - 14% is unusual (creative) in some way, and about 1% is abnormal and often uninterpretable (Hanks 2013).

Unmistakably, Hanks is setting new standards in dictionary making and maybe, like Hornby, launching a new type of dictionary. Therefore, one may wonder whether the MLDs of the future will still be meaning driven or pattern driven.

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