The search for Old English semantic primes: the case of HAPPEN

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Abstract
This journal article aims at contributing to the research line of the Natural Semantic Metalanguage Research Programme by identifying the Old English exponent for the semantic prime HAPPEN. This study applies four different criteria, namely, the morphological, textual, semantic and syntactic one, in order to select the most suitable candidate for prime exponent. The analysis is based on both lexicographical and textual sources. Conclusions are reached on both the descriptive and the methodological side.

Keywords: Natural Semantic Metalanguage; Semantic primes; Old English

1. Introduction

This research takes the approach of the *Natural Semantic Metalanguage* (NSM) model, which is based on the assumption that there is a set of core meanings in every natural language in terms of which complex words can be described by means of simpler terms. If these words are identified in every language, this will give rise to a universal 'natural semantic metalanguage' by which every concept will be understood without cultural or ethnicity restrictions.[1] In order to contribute to the development of the *Natural Semantic Metalanguage Research Programme* (NSMRP) as well as the study of Old English lexicology, this article aims at establishing the Old English exponent for the semantic prime HAPPEN. In this sense, this article follows the line of research represented by previous work by Martin Arista and Martin de la Rosa (2006), de la Cruz Cabanillas (2007), Guarddon Anelo (2009) and Mateo Mendaza (2013), who have searched Old English for the exponents of semantic primes.

The organization of the article is as follows. Section 2 briefly reviews the basis of the NSM model and presents the method and sources of this research. Section 3 discusses the selection of candidates for prime exponent and analyses them in terms of the methodology previously proposed. Section 4 addresses some questions posed by the identification

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of semantic exponents. Finally, section 5 draws the main conclusions of this research.

2. Theoretical background and methodology

One of the main aims of the *Natural Semantic Metalanguage Research Programme* (NSMRP) is the search for a set of core meanings shared by every natural language. This research programme, started by Wierzbicka (1972, 1996, 2003) and joined by Goddard and Wierzbicka (2002) and many other scholars, aims at identifying *semantic primes* or words with an indefinable meaning that can be found cross-culturally. The approach adopted by the NSM model is mainly empirical. It relies on the assumption that the speakers of any language share a similar conceptual system based on their human experience. Although there is no doubt that each language has culture specific words for which we cannot expect to find a counterpart in other languages, these, in principle, untranslatable words can be defined in terms of simpler words, the shared set of semantic primes. The inventory of universal semantic primes has been enlarged and modified in various ways since its initial version (Wierzbicka 1972) to its current state. In the latest version, the set of semantic primes is comprised of 16 different categories containing a total of 65 primes altogether, which are presented in Figure 1.

This set of semantic primes, first proposed for English, has also been identified in more than 30 different languages spoken all over the world, including, among others, French, Spanish, Italian, Chinese, Korean and Polish, as well as other less spoken languages such as Ewe (West Africa), East Cree (Canada), Koromu (Papua New Guinea) or Longgu (Solomon Islands) (Goddard and Wierzbicka 2014b). This is not to say that the identification of the exponents for semantic primes shown in Figure 1 is a straightforward question. Indeed, it may be affected by cross-cultural factors related to the different meanings conveyed by the words selected as exponents and also to the lexical relationships holding among such words in each natural language.[2]

[2] Mateo Mendaza (2013) insists on the language-dependent character of the network of lexical relations (hyponymy, synonymy, meronymy, etc.) of the language searched for semantic primes.

I-ME, YOU, SOMEONE, SOMETHING-THING, PEOPLE, BODY	Substantives
KIND, PARTS	Relational substantives
THIS, THE SAME, OTHER-ELSE	Determiners
ONE, TWO, SOME, ALL, MUCH-MANY, LITTLE-FEW	Quantifiers
GOOD, BAD	Evaluators
BIG, SMALL	Descriptors
KNOW, THINK, WANT, DON'T WANT, FEEL, SEE, HEAR	Mental predicates
SAY, WORDS, TRUE	Speech
DO, HAPPEN, MOVE, TOUCH	Actions, events, movement, contact
BE (SOMEWHERE), THERE IS, BE (SOMEONE)'S, BE (SOMEONE/SOMETHING)	Location, existence, possession, specification
LIVE, DIE	Life and death
WHEN-TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT	Time
WHERE-PLACE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE	Space
NOT, MAYBE, CAN, BECAUSE, IF	Logical concepts
VERY, MORE	Intensifier, augmentor
LIKE-AS-WAY	Similarity

Figure 1. Inventory of semantic primes by category (based on Goddard and Wierzbicka 2014a:12).

On the basis of semantic primes, the NSM model is developing a metalanguage ruled by the principle of reductive paraphrase, which stipulates that every complex concept in a language can be explicated in simpler and more explicit terms. By means of the appropriate grammatical rules governing the structure of the semantic primes, the NSM model engages in the study of the semantic primes from a syntactic point of view, in such a way that the primes combine with one another to function as a full natural language described by mean of *explications*. In order to combine these primes, it is necessary to know the syntactic configuration of each prime, this is, their basic and extended syntactic frames. Within the process of exponent selection, the chosen term must occur within the different syntactic frames associated to that semantic prime. These frames are called within the NSM as *valency options*, and they are described in the following terms:

Something HAPPENS	[minimal frame]
Something HAPPENS to someone/something	[undergoer frame]
Something HAPPENS somewhere	[locus frame]

(Goddard and Wierzbicka 2014a:14)

So far as the identification of semantic primes is concerned, several studies have sought to identify exponents of primes in historical languages, specifically Old English. Martin Arista and Martin de la Rosa (2006), de la Cruz Cabanillas (2007) and Guarddon Anelo (2009) have searched for Old English exponents of Substantive primes, for the Determiner and Quantifier primes, for the Descriptors BIG and SMALL, and for some of the Spatial and Temporal primes. These works identify as the main difficulty posed by historical languages the lack of native speakers and the associated impossibility of proposing paraphrases based on the linguistic knowledge of the speakers of the language in question. The solution adopted by the authors cited above is to resort to a frequency criterion according to which the semantic prime is the most text-frequent of the candidates for prime.

Mateo Mendaza (2013), who also searches Old English for the semantic primes from the category *Actions, events, movement, contact,* proposes a cluster of semantic, morphological, syntactic and textual criteria for prime selection. The morphological criterion requires that the exponent for the semantic prime constitutes a source rather than a target of lexical derivation. The textual criterion requires that the most frequent candidate for prime exponent is selected. The syntactic criterion gives priority for prime exponent to the verb with direct rather than oblique complementation patterns (morphological case government), or to the prime exponent with the widest choice of complementation patterns. Finally, the semantic criterion stipulates that the exponent for the semantic prime should conform as much as possible to the prototype of the semantic prime. Given the semantic nature of the NSM model, the semantic criterion is considered the most important one. Therefore, the results of the application of this criterion should have priority over the other criteria.

With these criteria, the decision on the exponent for the semantic prime in a historical language is based not only on the written records but also on the morpho-syntactic and semantic organization of the language under analysis. The application of these criteria involves the following

steps of analysis: (i) the identification of the possible exponents for the semantic prime HAPPEN in Old English, (ii) the analysis of patterns of lexical inheritance of the verbs under analysis, (iii) the quantification of the textual occurrences of the candidates for prime and (iv) the analysis of their syntactic behavior. These analytical steps, in turn, call for two types of sources. On the lexicographical side, different works have been consulted in order to retrieve the information on the possible candidates for semantic prime. These works include *The Dictionary of Old English A-G* (Healey 2007), *The Historical Thesaurus of the Oxford English Dictionary* (HTOED, Kay et al. 2009) and the lexical database of Old English *Nerthus* (Martín Arista et al, 2009), which contains form and meaning information retrieved mainly from the dictionaries by Bosworth and Toller (1973), Sweet (1987) and Clark Hall (1996). *Nerthus* also provides the lexical paradigms of headword entries, which contain a lexemic root and all the words morphologically related by processes of zero derivation, affixation and compounding. On the textual side, *The Dictionary of Old English Corpus* (DOEC) (Healy *et al.* 2012) is the main tool of analysis. This corpus is a collection of texts dated from the 6th century onwards and contains, approximately, three million words, which in practice amounts to all surviving written records of the language. Apart from word frequency counting, the texts allow the researcher to retrieve morphological and syntactic information on the verbs at stake.

To close this section, the analysis carried out below is strictly synchronic. As the sources of the discipline reviewed above and many other authors, it assumes the coherence and continuity of the language records of the Old English period.

3. The Old English exponent for HAPPEN

This section identifies the candidates for the Old English exponent of the semantic prime HAPPEN and applies the criteria for prime selection adopted in this research.

3.1. Narrowing the field

The first step of the analysis as described in the previous section is to identify the Old English verbs that convey the meaning ‘happen’. With

this purpose, the list of possible candidates for prime exponent has been retrieved from the HTOED. We would find a similar list of words, ranging from near synonyms to loosely related lexical items in a thesaurus of contemporary English, thus *happen, occur, take place, undergo, befall, come about*. As shown in Figure 2, these verbs are found under the section *The World*, the category *Existence in time and space* and the subcategory *Occur/happen*.

01. The World
01. 05. Existence in time and space
01. 05. 04 (vi.) Occur/happen
Figure 2. 'Happen' in the HTOED.

With these parameters, the HTOED provides a list of 26 verbs and/or constructions used during the Old English period with a meaning closely related to 'happen', namely: *ætfeallan, āgān, āgangan, becuman, belimpan, bēon, bescēotan, cuman, faran, fēran, forðfyligan, gebyrian, (ge)gān (forð), gegangan, (ge)limpan, gescēotan, getīmian, ongān, (ge)sǣlan, (ge)tīdan, tocuman, to mannum cuman, (ūp) ārīsan, wendan, wesan* and *(ge)weorðan*. This list consists of morphologically simple or complex words, with the only exception of the phrase *to mannum cuman* 'to men come', which constitutes a metaphorical extension of a verb of movement such as *cuman* 'to come'. Considering the focus of the NSM with core meanings as well as the rejection of metaphorical uses, the analysis that follows concentrates on the simple and complex words of the list. Moreover, this list includes verbs that present a high degree of polysemy and are found in various contexts and constructions, in such a way that the exponent identification process might be misled. For this reason, it is necessary to delimit the scope of the analysis on the grounds of the semantics and syntax of HAPPEN. With this aim, some aspects of grammatical theories of a functional persuasion, which are compatible with the aims of the NSM given their typological orientation, are brought into the discussion.

The grammatical rules governing the structure of the semantic prime HAPPEN need to take heed of several facts that ultimately account for the complexity of the syntactic configurations in which the exponent of this prime appears. Prototypically, HAPPEN has an external semantics of the type *It is the case that...*, while its internal semantics takes the form *An event takes place*. Less prototypically, the internal semantics is *A*

situation holds. In terms of the taxonomy of basic semantic categories put forward by Lyons (1995: 325) and enlarged by Functional Grammar (Dik 1997a, 1997b), we are dealing with a state of affairs embedded in a propositional content. To consider the question from another angle, the semantic interpretation of verbal arguments made by Role and Reference Grammar (Foley and Van Valin 1984; Van Valin and LaPolla 1997; Van Valin 2005) is based on two generalized semantic macroroles called ACTOR and UNDERGOER. In an a-transitive predication there is no macrorole. In the case of HAPPEN, the main predication belongs to the latter type whereas the embedded predication prototypically qualifies as a macrorole-transitive one and, less prototypically, as a macrorole-intransitive one. The syntax associated with this semantics clearly reflects the zero macrorole transitivity in selecting a semantically empty first argument in English and no first argument in Old English.

The description of the syntax and semantics of HAPPEN made above points to what has been referred to by previous work as *impersonal constructions*. The diachronic study of impersonal constructions includes the works by Van der Gaaf (1904), Mitchell (1985), Elmer (1981) and Visser (1984), among others, and the more recent research by Ogura (2002) and Möhlig-Falke (2009). Regarding the verb under analysis, the word *happen* was not introduced in the language until the 13th or 14th century (Van der Gaaf 1904: 17; Elmer 1981:132). For this reason, Van der Gaaf (1904) studies the verb *happen* from the Middle English period onwards and analyzes the evolution undergone by this verb from an impersonal to a personal construction. For their part, the works by Elmer (1981) and Möhlig-Falke (2012) focus on Old English words with the core meaning 'happen'. In a general view, Elmer (1981) proposes four different candidates, namely, *geweorðan, (ge)limpan, gebyrian* and *becuman*. However, *becuman* is removed from the list given that, although it conveys the meaning 'happen', it does not conform to the required semantic framework, since it is not used with sentential complements. In a further step of analysis, Elmer (1981) concludes that only *geweorðan* and *gelimpan* express 'happen' because *gebyrian* is closer to the members of the BEHOVE class both in terms of semantics and syntax. By elaborating on previous work, mainly Elmer (1981), Möhlig-Falke (2012) conducts her research only in verbs capable of impersonal use in Old English. Her detailed analysis devotes a section to verbs expressing the meaning 'happen'. In this section, Möhlig-Falke

(2012) identifies fourteen different verbs used to denote existential experience: *belimpan, (ge)limpan, gebelimpan, ālimpan, tōgelimpan, mislimpan, (ge)sǣlan, tōsǣlan, (ge)tīdan, mistīdan, getīmian, mistīmian, geweorðan* and *misweroðan.*

Against this background, the selection of the candidates for the present analysis is based on both the list proposed by Möhlig-Falke (2012) and the results retrieved from the HTOED. In order to delimit the scope of the research, only the verbs on which both sources agree will be taken into account. With these parameters, the list of candidates for prime exponent is reduced to six Old English verbs, namely, *belimpan*, *getīmian, (ge)limpan, (ge)sǣlan, (ge)tīdan* and *geweorðan.* It is worth mentioning that the unprefixed verb *weorðan* is excluded from the analysis because, as Möhlig-Falke (2009: 84) states, it is not found in impersonal use and, more importantly, it is not attested in the meaning of 'happen'. For this reason, only its complex counterpart, *geweorðan*, would be taken into consideration in our analysis.

3.2. The morphological criterion

Once we have determined which verbs would be suitable candidates for the Old English exponent of the semantic prime HAPPEN, the next step is to examine them in the light of the cluster of criteria presented in the previous section. The morphological criterion, to begin with, requires that the prime exponent should be a source rather than a target of lexical derivation. To carry out this analysis it is also necessary to take other aspects into account, like the word formation processes involved in derivation as well as the categories of the targets of derivation. These aspects can only be accounted for by means of a morphological model geared to the paradigmatic axis. In the discussion of this part, the concept of lexical paradigm as consisting of a lexemic root and all the morphologically related items draws on Pounder (2000), while the paradigm as a set of patterns of morphological and semantic inheritance in Old English is based on Martín Arista (2011, 2012a, 2012b, 2013, 2014).

It follows from the lexical paradigms in Figures 3-8 that only *(ge)limpan* and *geweordan* are primitives of lexical derivation. Although *belimpan* is a strong verb like *(ge)limpan* and *geweordan*, it does not function as the base of derivation of its lexical paradigm, but rather

constitutes a prefixal derivative of the primitive *(ge)limpan.* The case with the weak verbs *(ge)sǣlan*, *(ge)tīdan* and *getīmian* is comparable. Like *belimpan*, they represent targets rather than sources of lexical derivation. In this case, they are weak verbs derived, respectively, from the nouns *sǣl, tīd* and *tīma* by means of zero derivation. As such, they are recursive derivatives, that is, derived from already derived forms instead of the basic strong verb. On the semantic side, progressive divergence arises in the pattern given that some recursive derivatives may not not share the meaning 'happen'. For example, the meaning of *(ge)limpan* 'to happen, occur, take place, befall; to exist; to belong to, pertain, belong or be assigned to, to suit, befit; to come upon' is found in all its derivatives, as is the case with *gelimp* 'occurrence, event, outcome; fortune, lot; accident, misfortune, mishap' or *gelimplic* 'fit, suitable, seasonable; happening, fatal'. On the other hand, in the case of *(ge)tīdan,* it is the meaning conveyed by the noun *tīd* 'time, period, while, hour, season, age; proper time, opportunity' that is redundant in the rest of the derivatives, as in the noun *tīdðēnung* 'service performed at one of the seven canonical hours', whose meaning is not related to 'happen' but to 'time'.

Status	**Category**	**Predicate**	**Meaning**
Primitive	verb	*(ge)limpan*	to happen, occur, take place, befall; to exist; to be made or produced; to belong to, pertain, belong or be assigned to, fall to; to affect, concern; to suit, befit; to come upon
Zero derived[3]	noun	*belimp*	occurrence, event, affair, case
Prefixed	verb	*(ge)belimpan*	to happen, occur, befall; to concern, regard; to belong to; to conduce to; to befit; to appertain
Prefixed	verb	*tōbelimpan*	to belong, behove

Figure 3. *Belimpan* (strong verb IIIa) in its lexical paradigm.

[3] The term *zero derived* is used in this context to make reference to a derivational process whereby a derivative is obtained without the intervention of purely derivational morphemes. It can be of two types, morphemic (when a inflectional morpheme indicates the recategorization, as in *bearce* 'barking' < *beorcan* 'to bark') and non morphemic (if the ending of the nominative of the derivative is zero, as in *blinn* 'cessation' < *blinnan* 'to cease'). For more information, see Martín Arista (fc.).

Status	**Category**	**Predicate**	**Meaning**
Primitive	noun	*tīma*	time, period, space of time, hour lifetime; time, condition of things; fixed or appointed time; favourable time, opportunity; season of the year; age of the world; metrical unit; time of pronouncing a syllable (grammatical term)
Zero derived	verb	*getīmian*	to happen, befall, fall out
Prefixed	verb	*mistīmian*	to happen amiss

Figure 4. *Getīmian* (weak verb) in its lexical paradigm.

Apart from the status of the verbs under analysis, there are also quantitative and qualitative differences between the candidates that bear on derivational morphology. On the one hand, the paradigms of the verbs *belimpan, (ge)sǣlan*, *(ge)tīdan* and *getīmian* show no more than four derivatives, whereas the verb *geweorðan* presents 10 different derivatives. It is remarkable at this point that, although *geweorðan* is considered a primitive of lexical derivation, most of the derived words displayed in its paradigm are second-generation derivatives based on the verb *forweorðan* 'to vanish; to become nothing, perish, pass away, die; to deteriorate, sicken' and thus, they convey the meaning of the prefixed verb. For this reason, the counting of derivatives for *geweorðan* could be reduced to *forweorðan* and *misweorðan,* since only these two words can be considered direct derivatives of the primitive. On the other hand, the verb *(ge)limpan* stands out from the rest since it functions as the base of derivation or compounding of 20 different words. Furthermore, the latter is the only candidate that give rise to words belonging to all the major lexical classes (noun, verb, adjective and adverb) and all the word-formation processes of Old English (suffixation, prefixation, zero derivation and compounding) are present in its paradigm.

Status	**Category**	**Predicate**	**Meaning**
Primitive	verb	*(ge)limpan*	to happen, occur, take place, befall; to exist; to be made or produced; to belong to, pertain, belong or be assigned to, fall to; to affect, concern; to suit, befit; to come upon
Prefixed	verb	*ālimpan*	to happen, occur, befall
Prefixed	verb	*ætlimpan*	to fall away; to escape; to be lost
Zero derived	noun	*belimp*	occurrence, event, affair, case
Prefixed	verb	*(ge)belimpan*	to happen, occur, befall; to concern, regard; to belong to; to conduce to; to befit ; to appertain
Suffixed	adjective	*(ge)limpful*	fit, suitable, convenient
Suffixed	adverb	*(ge)limplīce*	fitly, conveniently, suitably, opportunely, seasonably; rightly, properly
Zero derived	noun	*gelimp*	occurrence, event, outcome; fortune, lot; accident, misfortune, mishap
Suffixed	adjective	*gelimplic*	fit, suitable, seasonable; happening, fatal
Suffixed	noun	*gelimplicnes*	opportunity, occasion
Suffixed	adjective	*gelumpenlic*	occasional, accidental; suitable, opportune
Suffixed	verb	*limplǣcan*	to unite, connect
Prefixed	noun	*misgelimp*	mishap, misfortune, misadventure
Zero derived	noun	*mislimp*	mishap, misfortune
Prefixed	verb	*mislimpan*	to go wrong, turn out unfortunately
Prefixed	verb	*tōbelimpan*	to belong, behove
Prefixed	noun	*unbelimp*	mishap, misfortune, mischance, accident
Prefixed	noun	*ungelimp*	mishap, misfortune
Suffixed	adverb	*ungelimplīce*	unseasonably; unhappily
Prefixed	adjective	*ungelimplic*	inconvenient, unfortunate; disastrous; abnormal; unreasonable; unseasonable; unhappy
Compound	noun	*wēasgelimp*	chance occurrence, accident

Figure 5. The lexical paradigm of the primitive *(ge)limpan* (strong verb IIIa).

Status	**Category**	**Predicate**	**Meaning**
Primitive	noun	*sǣl*	time, season; opportunity, occasion; condition, circumstance, position; prosperity, good fortune; happiness, joy
Zero derived	verb	*(ge)sǣlan*	to happen, take place, betide; to succeed
Suffixed	noun	*(ge)sǣlð*	fortune, hap; happiness, joy, felicity; prosperity, wealth, blessing, good fortune, good advantage; event
Suffixed	noun	*gesǣlnes*	occurrence, event, hap, chance
Prefixed	verb	*tōsǣlan*	to be unsuccessful, fail; to lack; to want; to happen amiss

Figure 6. *(ge)sǣlan* (weak verb) in its lexical paradigm.

Status	**Category**	**Predicate**	**Meaning**
Primitive	noun	*tīd*	time, period, while, hour, season, age; proper time, opportunity; feast-day, festival, anniversary; canonical hour or service; time, condition of things; tense (grammatical term)
Zero derived	verb	*(ge)tīdan*	to happen, betide, befall; to fall to (one's lot)
Compound	noun	*tīdðēnung*	service performed at one of the seven canonical hours
Suffixed	noun	*tīdung*	event, news, tidings

Figure 7. *(ge)tīdan* (weak verb) in its lexical paradigm.

Status	Category	Predicate	Meaning
Primitive	verb	*(ge)weorðan*	to be, become, be done, be made, come to be, turn to, turn into; to come, get; to happen, take place, come to pass, befall, arise, settle; to get on with, please, agree; think of, occur to; to grow
Prefixed	verb	*forweorðan*	to vanish; to become nothing, perish, pass away, die; to deteriorate, sicken
Suffixed	noun	*forwordenes*	failure, coming to nothing, perishing, ruin, destruction
Suffixed	adjective	*forwordenlic*	perishable, damnable; perishing
Zero derived	noun	*forwyrd*	loss, perdition, fall, damage, ruin, destruction, death
Zero derived	verb	*forwyrdan*	to corrupt, destroy
Suffixed	adjective	*forwyrdendlic*	perishable
Prefixed	verb	*misweorðan*	to turn out amiss
Prefixed	noun	*onforwyrd*	destruction
Prefixed	adjective	*unforwordenlic*	undecayed, uncorrupt
Prefixed	adjective	*unforwyrded*	undecayed, unspoilt

Figure 8. The lexical paradigm of the primitive *geweorðan* (strong verb IIIb).

To sum up, in terms of status, the verbs *(ge)limpan* and *geweorðan* can be considered suitable exponents for the semantic prime HAPPEN since both of them are primitive verbs, as opposed to the rest of the candidates. However, *(ge)limpan* is the only candidate that satisfies the requirements of the morphological criterion since, along with its primitive status, it produces the highest number of derivatives of all major lexical categories by means of the most significant word-formation processes in Old English.

3.3. The textual criterion

Regarding the textual criterion, the frequency of the verbs under analysis will be analysed from two different perspectives, including, the number of textual tokens (total number of occurrences of all inflectional forms of each verb) and textual types (the different inflectional forms for each verb found in the corpus), in contradistinction to the pure type, which refers to the lemmatised form and functions as reference form for each verb. As an example, *gelimpan* functions as reference form of the inflected forms *gelimpe*, *gelimpeð*, *gelimpað*, *gelimp,* etc. With this

information, the textual criterion stipulates that the higher the number of textual types and textual tokens, the more suitable for prime exponent the candidate will be. From the data retrieved from the DOEC, we obtain the results displayed in Table 1.

Type	Occurrences	Textual types	Textual tokens
geweorðan	*gewearð* (197), *gewurðe* (78), *gewyrð* (74), *geweorðe* (61), *gewurðan* (59), *geweorðan* (46), *gewurþe* (24), *geweorþan* (22), *gewyrðe* (18), *gewyrþe* (18), *geweorðad* (17), *geweorþe* (17), *gewarð* (16), *geweorðeð* (15), *gewearþ* (15), *geweorðode* (13), *geweorðað* (13), *gewurþað* (8), *gewurþan* (8), *gewurðað* (7), *gewyrðeð* (7), *gewyrþan* (7), *geweorþad* (7), *gewurðode* (7), *gewurðen* (6), *gewurðaþ* (6), *gewurð* (5), *gewurðad* (5), g*eweorþeð* (5), *geweorðeþ* (5), *gewurðon* (5), *gewurðeð* (5), *gewyrðan* (5), *gewærð* (4), *geweorð* (4), *gewiorðan* (3), *geweorþað* (3), *gewyrþað* (3), *geweorþeþ* (3), *geweorþode* (3), *gewurþad* (3), *geweorða* (2), *giwarð* (2), *gewurþode* (2), *gewyrþ* (2), *gewirð* (2), *geweorðæd* (1), *geweorðaþ* (1), *geweorðen* (1), *gewerð* (1), *gewiorðaþ* (1), *gewiorðeð* (1), *geweorþ* (1), *geweorþaþ* (1), *geweorþen* (1), *gewyrþaþ* (1), *gewurþon* (1). *gewirðe* (1), *gewurðæ* (1), *gewyrðode* (1)	60	851
(ge)limpan	*gelamp* (477), *gelimpe* (58), *gelumpe* (42), *gelimpð* (36), *gelimpeð* (31), *gelumpon* (23), *gelimpan* (20), *gelimpeþ* (17), *gelumpen* (16), *gelimpað* (14), *gelimp* (13), *limpð* (4), *limpeð* (4), *lamp* (4), *gelimpa* (3), *gilamp* (3), *limpe* (3), *gelimpþ* (2), *limpende* (2), *limpað* (2), *gelampt* (1), *gelimpæð* (1), *gelimpaþ* (1), *gilimpe* (1), *gelimpat* (1), *limpa* (1), *limpeþ* (1), *lumpe* (1), *limpan* (1), *gelumpð* (1)	30	584
[to be continued]			

belimpan	*belimpð* (67), *belimpað* (62), *belimpe* (28), *belimpeð* (14), *belamp* (11), *belumpon* (10), *belimpan* (7), *belumpe* (6), *belimp* (3), *belimpum* (3), *belimpþ* (3), *belimpende* (3), *belimpaþ* (3), *belimpeþ* (3), *belimpæð* (2), *bilimpe* (2), *belumpen* (2), *belimpoð* (2), *belimpendum* (2), *bilimpað* (2), *belimpedum* (1), *belimpas* (1), *bilimpæð* (1), *belimpet* (1), *bælimpað* (1), *belimped* (1), *belimpað* (1), *bilimpð* (1), *belimpu* (1)	29	244
(ge)sǣlan	*sæle* (38), *gesælde* (13), *sælde* (9), *sæles* (7), *gesæle* (6), *sælen* (4), *gesæled* (4), *sælen* (4), *sælan* (3), *gesælan* (3), *sælest* (1), *sældest* (1), *sældon* (1), *sæleð* (1), *sælende* (1)	15	96
getīmian	*getimode* (31), *getimað* (30), *getimian* (4), *getimiað* (1), *getimeð* (1), *getimod* (1), *getimad* (1)	7	69
(ge)tīdan	*getyde* (15), *tidan* (9), *getide* (3), *getidan* (1), *getid* (1), *tidon* (1), *getydum* (1)	7	31

Table 1. Occurrences of the verbs under analysis found in the DOEC.

At first sight, the analysis resulting from the number of occurrences per verb suggests that the strong verbs are more frequent in Old English texts than the weak verbs, both in terms of textual types and textual tokens. The weak verbs *(ge)sǣlan, (ge)tīdan* and *getīmian* present less than a hundred textual tokens, the verb *(ge)tīdan* being the less frequently used verb with only 31 occurrences in the corpus. Concerning the counting of textual types, although none of the verbs involved in the analysis displays more than one hundred textual types, weak verbs occupy the lower positions in the inventory presented in Table 1. On the contrary, the strong verbs *belimpan, (ge)limpan* and *geweorðan* score higher, although the data should be taken with caution. The verbs *belimpan* and *(ge)limpan* are found in middle position with a similar number of textual types, around 30 different derivatives in the corpus. However, in terms of textual tokens the figures differ significantly. Whereas *(ge)limpan* shows 584 occurrences, the derived form *belimpan* hardly displays a half of the occurrences of its primitive form. These figures are harder to interpret if the number of types and tokens are counted for the verb *geweorðan.* This verb shows 60 different types with a total of 851 occurrences or textual tokens altogether. This means that this verb doubles the results presented by the verb *(ge)limpan*, and, therefore, might be considered the best candidate for prime exponent. This is not the case, however. The

application of the textual criterion is the more reliable the less polysemous a lexical item is. Considering the degree of polysemy of the verbs under scrutiny and, above all, the polysemy of *geweorðan,* it is advisable to consider the results of the application of the textual criterion subservient to the other criteria (see discussion below).

3.4. The semantic and syntactic criteria

As in previous studies in Old English semantic primes (Mateo Mendaza 2013), the semantic and syntactic criteria will be discussed together. This decision is motivated by the fact that, in some cases, the syntax of a verb is affected by the different meanings it may convey.

Concerning the semantics of the verb 'happen', this verb denotes the occurrence of an event (Levin 1993) This central meaning is found in all our candidates, although most of them enjoy a considerable degree of polysemy. The semantic frame given for 'happen' involves an Experiencer, that could be absent, and the Experienced, expressed by a clausal complement or a nominative noun phrase (Möhlig-Falke 2012), usually accompanied by a time referent and/or, less frequently, a place referent. This prototypical frame is found for all the verbs under analysis, although the polysemic verbs *(ge)limpan*, *belimpan*, and *geweorðan* can also be found within other semantic frames depending on the meaning selected. Regarding *(ge)limpan* and *belimpan*, these verbs are found in three semantic frames, namely, that of 'to happen, befall', 'to belong to, befit' and 'to concern, grieve'. On the other hand, the verb *geweorðan* appears in five different semantic frames expressing the various meanings that this verb can convey. These meanings include that of 'to turn, revolve', 'to become', 'to come together' and 'to come to an agreement', and, of course, that of 'happen' (see Figure 9). A first look at these verbs would suggest that polysemic verbs would diverge from the prototype since the different meanings found for these verbs may alter the results obtained from the textual criterion, as thus, these words wouldn't make good candidates for prime exponent. However, it has to be noted that the semantic and syntactic criteria have some points of contact. In this sense, although some of the candidates are monosemic, and thus they should be preferred over polysemic verbs, their syntax does not conform to the prototype. Conversely, some of the requirements of the syntactic criterion are found for those verbs that show more than one

semantic frame. As it is demonstrated by the literature focused on the selection of exponents for certain semantic primes (Goddard 2002), there are many cases in which exponents of different languages display more than one meaning. For these cases, it is vital to highlight that only one of the meanings displayed by that word is selected to be part of the NSM theory. Therefore, the polysemic verbs presented in this study can also be considered suitable candidates for prime exponent if, apart from the semantic requirements, they also concur with what is stipulated by the syntax of the semantic prime under analysis.

Turning to the strictly syntactic part of the question, although 'happen' can partake in different syntactic constructions, it is considered an impersonal verb (van der Gaaf 1904; Elmer 1981, Mitchell 1985, Wierzbicka 1996; Möhlig-Falke 2012). In Old English, impersonal constructions are characterised by the lack of an explicit subject (for this reason impersonal constructions are sometimes referred to as *subjectless*) and a predicate verb marked for third person singular. This prototypical construction is labelled as *impersonal-zero* pattern in Möhlig-Falke's (2012) framework. Nevertheless, these impersonal constructions can be found in alternative formations where the grammatical subject can be encoded and the first argument appears in accusative or dative, the so-called *impersonal acc/dat* pattern (Möhlig Falke 2012: 6; Mitchell 1985: 429). Indeed, this construction can also display a second argument in genitive case, a prepositional phrase or a clausal complement. Still other possibility is the impersonal construction with the formal subject *hit* 'it' (Wahlén 1925 in Mitchell 1985: 429), since the verb is inflected for the third person of the singular number. Considering that there are instances of all the verbs under analysis with the *impersonal acc/dat* pattern and the the pronoun *hit* as subject, this cannot be considered a decisive factor for prime selection. Put in these terms, only the verbs *geweorðan, gelimpan, belimpan* and *getīmian* are found within the prototypical *impersonal zero* pattern. Nevertheless, in the case of *geweorðan* and *belimpan,* this pattern is not exclusive to the meaning 'happen' but it is also found with other senses attached to these verbs. It is meaning-exclusive for the verbs *gelimpan* and *getīmian*, however, whereas the

former displays around one hundred occurrences with this pattern, the latter shows just one occurrence in the Corpus.[4]

As already mentioned in section 2, the syntactic criterion also gives priority to those candidates with the widest choice of complementation patterns. In this sense, the verb *gelimpan* stands out from the rest of the verbs since it displays ten syntactic patterns, including both personal and impersonal. It is closely followed by the verbs *getīmian* and *geweorðan*, which appear in eight syntactic patterns. A qualitative difference arises with the verb *geweorðan*: in the cases of *gelimpan* and *getīmian* their patterns are restricted to one meaning, whereas the patterns presented by *geweorðan* are also found for other uses of this highly polysemic verb (See Figure 9).

Predicate	**Lexical fields**	**Syntactic patterns (*happen*)**
limpan	(a) to happen, befall (b) to belong to, befit (c) to concern, grieve	Personal with two arguments Impersonal acc/dat* Hit extraposition*
gelimpan	(a) to happen, befall (b) to belong to, befit (c) to concern, grieve	Personal with a single argument* Personal with two arguments Referring hit* Referring demonstrative or interrog. pronoun* Impersonal acc/dat* Impersonal zero* Impersonal passive* Personal passive* Hit extraposition* Extraposition of a demonstrative pronoun*
belimpan	(a) to happen, befall (b) to belong to, befit (c) to concern, grieve	Personal with a single argument* Personal with two arguments Impersonal acc/dat Impersonal zero Hit extraposition*

[to be continued]

[4] See Möhlig-Falke's (2012) Appendices A and B for detailed information on impersonal-zero frequencies and examples of different syntactic patterns per verb.

sǣlan	to happen, succeed	Personal with two arguments (dat/nom)
gesǣlan	to happen, succeed	Personal with a single argument Referring demonstrative pronoun Impersonal acc/dat Hit extraposition Extraposition of a demonstrative pronoun
tīdan	to betide, happen	Referring hwaet Impersonal acc/dat Hit-extraposition
getīdan	to betide, happen	Personal with two arguments Referring hwaet Impersonal acc/dat
getīmian	to happen, befall	Personal with a single argument Personal with two arguments Referring hit Referring demonstrative or interrog. pronoun Impersonal acc/dat Impersonal zero Hit extraposition Extraposition of a demonstrative pronoun
geweorðan	(a) to turn, revolve (b) to become (c) to happen, occur (d) to come together (e) to come to an agreement	Personal with two arguments Referring hit* Referring demonstrative, indef. or interrog. pronouns Impersonal acc/dat Impersonal zero Hit extraposition* Extraposition of a demonstr. or interrog. pronoun Plusperfect verb form, personal uses

Figure 9. Summary of meaning/semantic frames and syntactic patterns for 'happen' as found in Möhlig-Falke (2012)[5]

After the analysis of the semantics and syntax of the different candidates for prime exponent, the semantic-syntactic criterion indicates that the complex form *gelimpan* should be selected as the Old English exponent for the semantic prime HAPPEN since it conforms to the

[5] For verbs found in more than one lexical field, the syntactic patterns marked with * are exclusive to the lexical field 'happen'.

prototypical syntax of the impersonal verb and, moreover, presents the widest complementation pattern with the meaning 'happen'.

In order to check if *gelimpan* satisfies the requirements established by the NSM model, it is necessary to check this Old English verb against the syntactic structure proposed to the semantic prime HAPPEN. According to Wierzbicka (1996: 123), the basic structure of HAPPEN, this is, its minimal frame, consists on the verb accompanied by an event complement (SOMETHING) and an inherent time slot (AT THIS TIME) which can be explicit or understood. Besides, HAPPEN displays other alternative valency options where a patient or a place slot occur, namely an undergoer and a locus frame, respectively.

These frames are presented by Goddard and Wierzbicka (2014a: 14) as follows:

Something HAPPENS	[minimal frame]
Something HAPPENS to someone/something	[undergoer frame]
Something HAPPENS somewhere	[locus frame]

It must be considered that the substantive phrase SOMETHING is able to combine with the evaluators GOOD and BAD in an attributive relation in which the evaluators modify the substantive phrase to form a new noun-phrase (Goddard 2002: 44). Therefore, the verb selected for prime exponent must be also able to occur with this construction, which is expressed within the NSM in the following terms: 'SOMETHING GOOD/BAD HAPPENED (AT THIS TIME/ TO SOMEONE /SOMEWHERE)'. Apart from these valency options and the temporal slot inherent to the semantic prime HAPPEN, this prime, as well as the other semantic primes included under the group labelled as 'event primes' (HAPPEN, DO, SAY, MOVE and DIE), also allows for variation in manner. These primes are able to combine with the expression LIKE THIS (IN THIS WAY) occurring as an adverbial manner adjunct creating sentences such as 'It happened like this' (Goddard 2002: 53).[6]

[6] Even primes are capable of varying in a way which can be seen and commented on by an external observer (Goddard 2008: 72). The point of contact with event primes lies in the fact that they designate events which are open to external observation, and associated to this fact, that the expression LIKE THIS can combine with all of them in an adverbial function (Goddard 2002: 53).

The DOEC provides instances of the verb *gelimpan* occurring within the different valency options associated to HAPPEN as well as with the manner property, as shown in (1):

(1)
a. Minimal frame
[Bede 1 006300 (7.34.14)]
Ða gelamp þæt he sumne Godes mann preosthades, se wæs ða reþan ehteras fleonde, on gestliðnysse onfeng.
'It happened that he entertained a God´s man of the priesthood, who was fleeing from his fierce persecutors.'

b. Minimal frame (with time reference)
[Bede 3 (O) 001100 (14.204.13)]
& þa gelamp hit æfter monegum gearum þæt penda myrcna cynincg mid miclum herige þa ylcan stowe gesohte.
'After many years it happened that Penda, king of Mercia, came with a great army to that place.'

[ÆCHom II, 35 001000 (260.19)]
Hit gelamp on sumum dæge. ða ða godes englas comon. and on his gesihðe stodon.
'It happened on a certain day that God's angels came and stood in his sight.'

[ChronE (Irvine) 182300 (1124.3)]
Þa gelamp hit on þes dæges Annuntiatio Sanctę Marie þet se eorl Waleram of Mellant ferde fram his an castel Belmunt het to his an oðer castel Watteuile.
'Then on the feast of the Annunciation of St Mary, it happened that Earl Waleran of Meulan went from one of his castles called Beaumont to another of his castles, Vatteville.

c. Undergoer frame
[ChronE (Irvine) 084800 (1011.9)]
Ealle þas ungesælða us gelumpon þurh unrædes, þet mann nolde him to timan gafol bedan.

'All these misfortunes happened to us for bad advice, so that tribute would not be offered to him in time.'
[Bede 4 076100 (31.378.7)]
(...) ða gelamp <him> semninga mid gife þære godcundan arfæstnesse þurh reliquias ðæs halgan fæder Cuðbryhtes gehæledne beon.
'...it happened to him suddenly, by the grace of the divine providence, that he was healed by the relics of the holy father Cuthberht.'

d. Undergoer frame with evaluator
[ChronD (Cubbin) 097000 (1075.14)]
Ac on þære fare heom yfele gelamp, þa hi ut on sæ wæron, þæt heom on becom swiðe hreoh weder.
'But on the journey it happened unfortunatelly for them, when they were on the sea, that the weather became very rough for them.'

e. Locus frame
[GD 2 (C) 012200 (4.111.10)]
Þa gelamp hit in anum þara mynstra...
'It happened in one of the minsters...'

f. Manner adjunct
[ApT 000500 (1.6)]
Ða gelamp hit sarlicum gelimpe...
'Then it happened that, through a painful mishap...'

All in all, it can be concluded that the verb *gelimpan* makes a good candidate for the Old English exponent of the semantic prime HAPPEN, not only because it stands out from the rest of the verbs in terms of the semantic-syntactic criterion, but also because it takes place in allthe syntactic frames of HAPPEN as described within the NSM model.

4. Discussion: the search for prime exponents by indirect methods

As was pointed out in section two, the search for prime exponents in natural languages is generally carried out by native speakers of the language under analysis or, in other cases, the results obtained are directly checked against these speakers. Conversely, in the case of historical languages, the study of semantic primes requires the use of

indirect methods to select the optimal candidate for prime exponent. These indirect methods comprise an array of different criteria that test the candidates for prime from different perspectives. While several studies in natural languages indicate that the search for semantic primes can be altered by several linguistic phenomena, the investigation of this subject in historical languages also raises some issues regarding the reliability or accuracy of individual criteria. Although a cluster of criteria has been proposed to compensate for the shortcomings of criteria applied in isolation, it is worth discussing this question so as to decide if the criteria used so far need to be modified or enlarged.

Regarding natural languages, three main methodological problems have been distinguished in semantic prime identification, namely, allolexy, portmanteaus and polysemy (Goddard and Wierzbicka 2002). *Allolexy* is a phenomenon that describes "situations in which several different words or word-forms (allolexes) express a single meaning in complementary contexts" (Goddard and Wierzbicka 2002: 20), whereas *portmanteaus* are words that express the combined meaning of two or more different semantic primes in a single form.[7] The phenomenon of polysemy has also drawn the attention of NSM researchers (Goddard 2010, 2011; Wierzbicka 1996, 2003; Goddard and Wierzbicka 2002), given that it has become a central factor in the identification of prime exponents. It is sometimes the case that secondary meanings are closely related to the main one, so that they refer to similar situations, or they can be completely different, in such a way that there is a need to select the meaning relevant to the semantic prime. In other cases, a given word may be used to refer to two different primitives and disambiguation is necessary.[8] Such instances of polysemy require a solid grammatical basis that allows the researcher to determine which lexical field best expresses the meaning of the prime at stake, as well as the syntactic construction that conveys the meaning in question.

The search for semantic prime exponents in historical languages also poses some questions regarding the accuracy or reliability of some of the criteria. First of all, the morphological criterion requires to focus the attention on the status of the members of each lexical paradigm before drawing general conclusions. As it turns out, some derivatives are not

[7] See Wierzbicka (1996) and Goddard and Wierzbicka (2002) for further information on allolexy and portmanteaus.

[8] See the case studies in polysemy in Goddard and Wierzbicka (2002, 2014b).

directly based on the primitive, but constitute second-generation words resulting from recursive processes and, as such, they tend to convey the meaning of their source of derivation rather than of the primitive. This is the case with *(ge)limpan*. The verb *tobelimpan* 'to belong, behove' is a prefixed word derived from *(ge)belimpan* 'to happen, occur, befall; to concern, regard; to belong to', which, at the same time, derives from the primitive. Although in this case *(ge)belimpan* does convey the meaning of the primitive, the second-generation derivative *tobelimpan* has adopted a secondary meaning from its base of derivation. This example has not been considered in the analysis since it is an exceptional occurrence within the paradigm and does not modify the results. Nevertheless, it reinforces the idea that the morphological criterion should be applied with caution.

Regarding textual occurrences, two phenomena affect this criterion in a similar way, to wit, polysemy and homonymy. In terms of textual frequency, the verbs *geweorðan* and *(ge)limpan* display the highest numbers of types and tokens in the corpus. These figures, however, misrepresent the actual occurrences for the core meaning 'happen'. At this point, this criterion interrelates with the semantic-syntactic one, given that the degree of polysemy presented by these verbs and their inclusion in different semantic fields (specially in the case of *geweorðan*, *(ge)limpan* and *belimpan*) undoubtedly increases the number of occurrences. Moreover, in terms of frequency, *geweorðan* is not only affected by its array of meanings but also by its different grammatical uses within the sentence. Although its uses are quite restricted, the verb *geweorðan* has adopted most of the uses of its simplex counterpart *weorðan*. Thus, it is sometimes found in impersonal constructions functioning as a semi-auxiliary or a semi-copulative verb with infinitives and participles (Klaeber 1919; Wahlén 1925, in Mitchell 1985: 428 and 435; Visser 1984; Möhlig-Falke 2012), as well as in some passive constructions (Visser 1984). In addition, other less frequent uses of *geweorðan* are identified in infinitive constructions depending on *magan* and *lētan* (Möhlig-Falke 2012).[9]

In this line, the results obtained from the application of the textual criterion can also be altered by homonymy. The term *homonymy*

[9] See Visser (1984), Mitchell (1985), Möhlig-Falke (2012) and Bosworth-Toller's online dictionary on the different uses of *geweorðan*.

describes words with the same spelling and, sometimes, the same pronunciation but which have a different meaning. Cases of homonymy are commonly found for all those candidates that present similar forms in their verbal conjugation and nominal declension. This is the case with words such as *tīdan*, which can represent an infinitive or three cases in the singular and another two in the plural declension of the feminine noun *tīd* 'time, period, while, hour, season, age; proper time, opportunity' or *gelimpe,* which may correspond to a subjunctive form of the verb *gelimpan* or a dative form of the noun *gelimp* 'occurrence, event, outcome; fortune, lot; accident, misfortune, mishap'. However, cases like that of *geweorðan* deserve more attention since homonymy can cut across lexical paradigms. Some inflectional forms of this verb can be misunderstood for other forms of the verbs *geweorðian* 'to distinguish; to value, esteem, dignify' and *gewyrðan* 'to estimate, value, appraise', as well as to other nominal forms comprised in these paradigms, such as *geweorð* 'value, worth; price'.

As in natural languages, the solution adopted for the problems related to polysemy—and, in this case, also of homonymy—is to examine every occurrence in context and check its syntax and meaning within each sentence. In the case of our candidates, Möhlig-Falke's (2012) analysis provides us with this information and concludes that, almost all the occurrences of *(ge)limpan* correspond to the lexical field of 'happen, befall', but those of *geweorðan* are primarily attributed to the field of 'to become'.[10] However, an exhaustive analysis of all the relevant occurrences is time-consuming and may not always be fruitful. This is an additional reason why it is necessary to assess the accuracy and applicability of the criteria of semantic prime identification.

All in all, the semantic and syntactic criteria play a central role in the identification of primes given that they have proved of paramount importance when it comes to coping with the methodological and empirical issues discussed above. As for the two remaining criteria, whereas the morphological criterion normally turns out reliable results, the textual criterion should never be applied in isolation because its results can be unclear and need to be checked against those of the other criteria. This conclusion is consistent with the basis of the NSM model,

[10] See Möhlig-Falke's (2012) Appendices A and B for information on the textual occurrences of these verbs.

which relies primarily on semantic-syntactic grounds. Finally, it has to be borne in mind that, although the semantic and syntactic criteria are the most conclusive ones, morphology and textual frequency also constitute an important source of information in descriptive analysis like this and, therefore, should not be disregarded.

5. Conclusion

This research has contributed to the development of the NSM model by identifying the Old English exponent for the semantic prime HAPPEN. Given the historical nature of the language under investigation, the analysis has consisted of the application of a set of criteria of the morphological, textual, syntactic and semantic type. Such criteria indicate that the strong verb *(ge)limpan* is the optimal candidate for prime exponent on morphological, semantic and syntactic grounds. In contrast, the textual criterion selects *geweorðan* as the most suitable exponent. Since the textual criterion is, as discussed, susceptible to distortion on account of homonymy and, more frequently, of polysemy, the conclusion can be reached that the verb *(ge)limpan*, used exclusively with the meaning of 'happen', is selected as the Old English exponent for the semantic prime HAPPEN.

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