

THE NATURAL SEMANTIC METALANGUAGE OF OLD ENGLISH COMPOUND ADPOSITIONS*

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This paper examines the lexical content of a number of complex adpositions in Old English and the semantic processes that have produced them. Specifically, I have analyzed the complex adpositions that have *in*, *on* and *at* as controlling elements. The theoretical framework used is the Natural Semantic Metalanguage. The semantic primes put forward within this model are used to approach four fundamental aspects: 1) The senses of the component elements that are inherited by the complex adposition and the senses that are blocked; 2) The new senses which were not present in the component elements but arise in the process; 3) The potential semantic incompatibilities that prevent the combination of some adpositions and 4) The internal syntactic organization found in these complex adpositions.

This paper is also concerned with the more general issue of the diachronic evolution of the complex adpositions under analysis. I attempt to unveil the semantic factors that have led to the disappearance of some of these adpositions while others have survived to present-day English.

On the whole, the main goal of this paper is to demonstrate that the explanation of the combinatorial properties of spatial primes can serve to shed light upon aspects of the grammar of space that have not been clarified yet by the Cognitive Linguistics framework.

Key words: Natural semantic metalanguage, complex adpositions, compositional processes.

Este artículo se centra en el estudio del contenido léxico de una serie de adposiciones complejas en inglés antiguo y los procesos semánticos que las han originado. Concretamente, he analizado las adposiciones complejas que presentan 'in', 'on' y 'at' como elementos controladores. El marco teórico utilizado es el Metalenguaje Semántico Natural. Los primitivos semánticos propuestos dentro de este modelo se usan aquí para tratar cuatro aspectos

* The research reported here has been funded through the project FFI2008-04448.

fundamentales: 1) Los significados de los elementos componentes que la adposición compleja hereda, así como los significados que son restringidos; 2) Los significados que no estaban presentes en ninguno de los componentes pero que surgen en el proceso; 3) Las potenciales incompatibilidades semánticas que impiden la combinación de algunas adposiciones y 4) La organización sintáctica interna que estas adposiciones complejas presentan.

En un plano más general, este artículo también tiene en cuenta la evolución diacrónica de las adposiciones complejas analizadas. Específicamente, intento desvelar los factores semánticos que han conducido a la desaparición de algunas de estas adposiciones.

Desde un punto de vista general, el objetivo principal de este trabajo es demostrar que la explicación de las propiedades combinatorias de los primitivos espaciales puede servir para aclarar aspectos de la gramática espacial que no han recibido atención dentro marcos tan orientados al estudio de este tipo de lenguaje como la Lingüística Cognitiva.

Palabras clave: Metalenguaje semántico natural, adposiciones complejas, procesos composicionales.

1. INTRODUCTION

The last decades have witnessed the production of an extensive body of descriptive semantics of prepositions, specifically within the Cognitive Linguistics framework. The centrality of these elements within this school is based on the belief that space plays a pivotal role in shaping a myriad of abstract, less apprehensible concepts. However, this extensive literature has given rise to little consensus, first, on what methodology should be used to explicate the meaning of prepositions, and second, perhaps a consequence of the first, whether their semantic content is reducible to a single general meaning, or, on the contrary, whether they are highly polysemous. Then, there is also the fundamental issue of universality. Cognitive linguists propound the existence of conceptualization processes that arise from the interaction of our bodies in our environment. As such, they are claimed to be universal and this universality is to be reflected in the language, underlying the idiosyncrasies of each lexicon and grammatical constructions. The vast majority of these analyses have stayed within the realm of one language, namely English, and one period of this language, present-day.

Up to this point, diagrammatic and propositional representations have competed for the ability to come to grips with a description of English prepositions. However, despite the large amount of methods developed, and

although some have proved to be considerably explanatory for their purposes, none has stood out as the panacea for the description of the lexical content of prepositions. Furthermore, I cannot help but wonder why prepositions, being the subject of such a large amount of scholarly scrutiny, almost no attention has been paid to their diachronic evolution.

In this paper, I attempt to explore the role of semantic primitives in the evolution of complex adpositions based on the prepositions *in*, *on* and *at* of Old English. In other words, I seek to understand the way that the semantic primes present in *in*, *on*, and *at* interact with other semantic primes as well as the type of semantic relationships that they are able to generate, through different patterns of interaction, in the new complex adpositions. Upon analyzing the data in this language period, I believe it is possible to establish predictive rules that anticipate the state of affairs in present-day English (Martín Arista forthcoming-a). The analysis of the internal semantics of the adpositions *in*, *on* and *at* is a substantial enterprise as they show an identifiable tendency to participate in processes of word formation with members of the same category to yield, as one might expect, other adpositions. The hypothesis that has fleshed this work up is the model of universal grammar proposed by Wierzbicka and Goddard (2002) and Wierzbicka (2002). Specifically, the inventory of primes that constitute their natural semantic metalanguage (henceforth NSM) will be used in the analysis presented in this paper.

In Section 2, I introduce the inventory of data under analysis and explain how the NSM hypothesis is relevant to the study of the compositional processes involving Old English adpositions and the understanding of the changes that the data have undergone, when contrasted with the present-day situation (Martín Arista 2005; de la Cruz 2006). In Section 3, I describe the meaning of the adpositions under analysis using the applicable semantic primes. In Section 4, I extrapolate rules that define the combinatorial properties of the English adpositions *in*, *on* and *at* at the semantic and the morphological levels (Martín Arista forthcoming-b). Because most of the complex adpositions have fallen into disuse, I also attempt to establish principles that predict their disappearance from later stages of the language. If the evolution of a substantial proportion of the data studied can be subsumed under identical compositional rules, I may reasonably hope to have characterized a significant aspect of the behavior of locative adpositions in English, i.e. the compatibility problem in the compositional processes of these elements and its effects in a theory of semantically changing words used to express spatial relations in English.

2. COMPLEX ADPOSITIONS IN OLD ENGLISH AND THE NATURAL SEMANTIC METALANGUAGE APPROACH

The adpositions *in*, *on* and *at* in Old English occur as single words and in composition with other adpositions. While it should also be pointed out that they can be found as bound morphemes or prefixed to different parts of speech, in this paper I am concerned only with the cases in which they give rise to complex adpositions, i.e. elements that belong to the same category as the component parts. Additionally, I will include, in the data to be examined, the complex adpositions *onemn*, *æthindan* and *ongemong* which are compounded of an adposition and an adjective, an adverb and a noun respectively.

These lexical items examined in this paper also function as categories other than adpositions, i.e. adverbs. The meaning of these parts of speech will also be included in this analysis, in case they can shed some light upon this work. Finally, it must be noted that I will only include as part of the data the complex adpositions where *in*, *on* and *at* occur in first position, as I believe that the internal syntactic configuration of the adpositions has consequences in their resulting semantic content.

For the purpose of enumerating the adpositions which will be analysed in this work, it is more instructive to look at a tabular presentation, as in Table 2.1, in which the Old English complex adpositions are arranged into three groups according to the adpositions that occur in initial position in the compound elements, i.e. *in*, *on* or *at*. (This is not the only possible scheme for grouping these adpositions; but it is a helpful one for expository purposes).¹

<i>In</i>	Categories associated	Meaning
In	Preposition	In, into, upon, on, at, to, among, about, towards, during, to
Innan	Adverb	Into, inwards, within, inside of
	Preposition	In, among, in the interior of
	Adverb	Inside

¹ The data used for the analysis reported in this paper has been extracted from the online lexical database of Old English, *Nerthus* (Martín Arista, Caballero, González, Ibáñez, & Torre 2009).

On	Categories associated	Meaning
On	Preposition	upon, on to, up, to, among, in, into, within, against, towards, according to, in accordance with, in respect to, for, in exchange for
Onbutan	Preposition Adverb	about about, roundabout
Onemn	Preposition Adverb	abreast of, alongside of, by, near, during together, exactly, directly
Onforan	Preposition Adverb	before, at the beginning of before, in front of
Ongean	Preposition	against, opposite to, contrary to, in exchange for
Ongemong	Preposition Adverb	among during this period, meanwhile, at the same time
Oninnan	Preposition	inside
Onufan	Adverb	above, upon, on, beyond, after
Onuppan	Preposition Adverb	above, upon, on, beyond upon, on in addition, besides
At	Categories associated	Meaning
Æt	Preposition	at, near, by, in, on, upon, with, before, next to, as far as, up to, into, toward, at the time of, near, through, from, by
Ætforan	Preposition Adverb	before, in the presence of, in front of, close by
Æthindan	Preposition	beforehand behind, after

Table 2.1: The adpositions *in*, *on* and *at* and the compounds where they occur

The crucial analytical question is whether or not there are fixed tendencies in the combinatorial properties of these adpositions. Observing the tabular information, one can see that a myriad of meanings is attributed to most of the categories presented. This evokes a dogging problem in the study of prepositions; being elements endowed with *semantic flexibility*, they are able to “negotiate” their meanings into an almost infinite number of contexts. This has prompted linguists to try to figure out a central sense, or a number of more or less sharply defined senses that can account for all the contextual variation. Therefore, I can expect that all the meanings that are attributed to these categories in dictionaries very much hinge upon the contexts where these elements occurred in the Old English period.

The prototypical meaning of these adpositions is particularly hard to disentangle, primarily because, for obvious reasons, there are not Old English speakers alive, and secondly, because their occurrences are limited to the number of extant records. The difficulties are increased by the fact that these adpositions are complex, made up of two, even three, adpositions, leading us to establish a set of fundamental questions that become the axis of the present paper: 1) Can one claim that one of the elements is dominant in the outcome meaning of the compound adposition? 2) Is the resulting sense an “amalgamation” of the senses related to each of the component elements? 3) Should one claim that there exist *Compatibility Rules* operating in the compounding process? In other words, after examining the compound adpositions, can we venture to affirm that there exist elements that would never co-occur in a complex adposition? 4) Finally, can the make and behavior of these lexical forms anticipate their diachronic evolution? I am referring to the disappearance of some of them out of the linguistic scene of English versus the successful survival of others.

Answering all these four questions implies unveiling the compositional processes that are in operation in the creation of new adpositions, through composition in Old English. In our view, there exist two basic manners in which to tackle them. One would attempt to analyze all the expressions where these compound elements occur in order to account for all their senses. This is partially done by dictionaries, which have based the senses ascribed to these elements on the different contexts where they have been found. Said data, however, can be hard to handle since it would also require the same extensive analysis of the component elements, and also, it is highly subject to the interpretation of the linguist doing the translation. This is to say that sometimes the use of a preposition depends on a matter of perspective, thus one can say both *he stood in the forest* and *he stood among the trees*. Looking back at Table 2.1, one can see that most of these complex adpositions have been ascribed a large number of distinct and, on occasions, apparently unrelated meanings. This indicates that the meaning of these elements is quite sensitive to contextual

dynamics and that the reader had to determine the appropriate sense out of each particular occurrence.

Then, common sense would force us to pick out a prototypical meaning for these compound elements. This could not possibly be based on our knowledge of present-day English as most of these compound adpositions are no longer in use. Thus, we might decide to use frequency as a parameter to determine prototypicality. This presents a drawback in that the scarcity of extant texts and the reduced frequency of these complex lexical items might yield a very unreliable version of the alleged prototype. Moreover, it is the question of all the semantic components of the complex adpositions. The lexical database checked assigns to them a remarkable list of senses, which is very much in tune with their use and the way they are defined in present-day English. Thus, two insurmountable obstacles arise: 1) What sense of each of the semantic components should be considered as performing a role in the compositional process leading to the content of the resulting lexical item? 2) Which criteria should be used to identify this sense? These complications are exacerbated by the impossibility of explaining the prototype or central sense in the complex lexical items themselves. It would even take a combinatorial analysis to test the probability that the senses would qualify as central.

In my view, the NSM is instrumental in allowing us to steer clear of these obstacles. As intimated above, this theory propounds the existence of lexical units that are indefinable and can be found in all languages, thus making them universal. These lexical units are denominated *primes*. As their name implies, they can no longer be reduced or rephrased in terms of other lexical items. Their morphological substantiation in each specific language may vary. For example, one of the primes found by Goddard and Wierzbicka (2002) is TIME, in English. In this language, this prime is encoded by a nominal, but this form is not extrapolable to all the existing languages; it could take any other form, such as phraseme or a bound morpheme. To put it roughly, a semantic prime does not necessarily correspond to a single lexical form.

The advantage of using the NSM program in the study of highly polysemous lexical items such as adpositions, and more particularly, prepositions has been recently demonstrated by Goddard's analysis of the preposition *on* (Goddard 2002). In the study of prepositions, this program of semantic research permits to delineate where the line runs between what is intrinsic to the meaning of the preposition and what is "accidental" or context-specific.

Even though not all linguists would subscribe the localist view, there seems to be a common ground that most prepositions originally encoded spatial relations. Therefore, for the analysis of the data presented above, I will use the

spatial primes identified by Wierzbicka and Goddard (2002:14) that I include below:

Space: WHERE/PLACE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE.

To this list, I will add the semantic prime TOUCHING, proposed by Goddard's analysis of the preposition *on* that was mentioned above.

Considering the primacy of the concept of time and the pervasive tendency, attested in a set of diverse languages, to express temporal relations in terms of spatial notions, I will also consider the use of the temporal primes, if necessary (Wierzbicka and Goddard 2002:14):

Time: WHEN/TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME

The universality of the semantic primes helps to avoid a major problem in the analysis intended here: The extensive polyfunctionality of adpositions, and particularly of prepositions. One has to decide which of the several senses that an adposition has is in force when acting as a component element in a complex category. As mentioned earlier, the cognitive linguistics framework has given rise to a large body of literature on prepositions. In most of these works, even though following different criteria, scholars posit either the existence of a central or prototypical sense of the preposition, or a schematic meaning in the sense of Langacker (1987), which is instantiated in all the uses of that preposition. Goddard (2002) makes the important observation that a large amount of these formulations present two drawbacks. First, they are obscure to the lay speaker and second, they include notions which lack equivalents in other languages, thus are not suitable for cross-linguistic semantic description. This constitutes a problem particularly in the domain of spatial relations which are one of the most universal semantic domains.

On the other hand, the explanatory value of the exponents of semantic primes is based on their universality, which has been tested cross-linguistically. Thus, extrapolating this feature to a diachronic analysis, one can find positive evidence for the continuity of the presence of these primes in these prepositions. Table 2.1 shows that the prepositions *in*, *on* and *at* have maintained their meaning to present-day English with very slight changes, which might be motivated by pragmatic implications. It would be easy to assume that the same situation applies to the other component lexical items. This assumption is confirmed by the data included in Table 2.2 below:

Adposition	Categories associated	Meaning
<i>Butan</i>	Preposition	out of, outside of, off, round, about, except, without, all but, but only, besides, in addition, to, in spite of, without
	Conjunction	except, except that, but only, unless, save that
	Adverb	without, outside
<i>Efen</i>	Adjective	even, equal, like, level, just, true, calm, harmonious, equable
	Adverb	evenly, equally, exactly, just as
<i>Foran</i>	Preposition	before, opposite, in the presence of, in favour of, in preference to
	Adverb	before, in front, forward, to the front, at some earlier time, previously
<i>Gean</i>	Adverb	yet, now, still, again, further, besides, also, moreover, hitherto
	Adjective	Direct
<i>Hindan</i>	Adverb	from behind, behind
<i>Ufan</i>	Adverb	from above
<i>Uppan</i>	Preposition	on, upon, up to, against, on (temporal), after

Table 2.2 Lexical components of the adpositions studied

To establish my previous claim is not difficult. Being structural elements, expressing in most cases spatial relationships, these lexical items are less likely to undergo abrupt semantic changes.

To close this section, I would like to suggest that reducing the semantic content of these adpositions in terms of semantic primes presents the advantage that, despite being invariant meanings, they are compatible with all their examples of use. Semantic primes should also serve the purpose of extracting combinatorial rules involving the production of complex adpositions. This theme will be further pursued in the next sections through the analysis of the data indicated above and the discussion of the results.

3. METHODOLOGY AND ANALYSIS OF DATA

The basic adpositions analyzed in this paper, *in*, *on* and *at* have been defined in terms of semantic primes. Then, the complex adpositions have been divided into its component elements and I have proceeded in the same fashion as with *in*, *on* and *at*, i.e. I have explained them using the semantic primes approach. One of the problems that this analysis has raised is related to the fact that adpositions constitute an extremely complex lexical class whose basic meaning is spatial but mark temporal and abstracts relationships as well. Thus, very often I have been faced with lexical items that corresponded to more than one semantic prime, which only comes to confirm the polysemic nature of adpositions. The multiplication of domains where these adpositions operate is not the only complication; some of them also show distinct meanings in a single domain, particularly the spatial. Also, when it comes to the complex adpositions involving components that belong to other parts of speech, (*efen* ‘even’; *gemong* ‘crowd’; *hindan* ‘from behind’; *gean* ‘yet’), I have applied the same methodology, as I am concerned with extracting rules that restrict the compounding process generating closed set items.

Finally, when one of the components of the complex adpositions constitutes a case of categorial polysemy and each of the categories exhibits unrelated senses, only the sense and category that clearly participates in the compound can be considered as qualifying for our descriptive analysis. This is the case of *gean* that as an adverb means *yet*, *now*, *still*, *again*, *further*, *besides*, *also*, *moreover*, and *hitherto*. On the other hand, as an adjective it is defined as *direct*, having no straightforward connection with the definitions exposed above. The table below illustrates the primes that underlie the adpositions presented in Table 2.1. After that, there is a justification of the reasons that have

inclined me to ascribe a specific prime to an adposition in cases that can be subject to discussion:

In 1) Spatial prime: PLACE/WHERE 2) Spatial prime: INSIDE

3) Temporal prime: WHEN/TIME 4) Temporal prime: FOR SOME TIME

Innan on 1) Spatial prime: PLACE/WHERE 2) Spatial prime: TOUCHING

(in + an) 3) Spatial prime: ABOVE 4) Temporal prime: WHEN/TIME

• innan

Preposition & Adverb: 1) Spatial prime: INSIDE

On 1) Spatial prime: PLACE/WHERE 2) Spatial prime: TOUCHING

3) Spatial prime: ABOVE 4) Temporal prime: WHEN/TIME

Onbutan butan Preposition: 1) Spatial and logical primes: NOT + INSIDE

(on-butan) 2) Spatial prime: NEAR

3) Logical prime: NOT

4) Spatial prime: ABOVE

Conjunction: 1) Logical prime: NOT

Adverb: 1) Spatial and logical primes: NOT + INSIDE

• onbutanPreposition: 1) Spatial prime: TOUCHING 2) Spatial prime: NEAR

Adverb: 1) Spatial prime: TOUCHING 2) Spatial prime: NEAR

Onemmn efen Adjective: 1) Similarity prime: LIKE

(on-efen) Adverb: 1) Similarity prime: LIKE

• onemmn Preposition: 1) Movement prime: NEAR

Adverb: 1) Quantifier prime: TWO 2) Similarity prime: LIKE

3) Temporal prime: FOR SOME TIME

Onforan foran Preposition: 1) Spatial prime: NEAR 2) Temporal prime: BEFORE

(on-foran) Adverb: 1) Temporal prime: BEFORE 2) Movement prime: MOVE

• onforan Preposition: 1) Temporal prime: BEFORE

Adverb: 1) Temporal prime: BEFORE 2) Spatial prime: WHERE
/PLACE

3) Spatial prime: TOUCHING

Ongean gean Adverb: 1) Temporal prime: AFTER 2) Temporal prime: NOW

Adjective: 1) Spatial prime: WHERE/PLACE

(on-gean) • ongean Preposition: 1) Spatial prime: TOUCHING

	Adverb:	1) Spatial prime: SIDE
<i>Ongemong</i>	gemong	Noun: 1) Substantive: PEOPLE
(on-gemong)	• ongemong	Preposition: 1) Spatial prime: INSIDE
		Adverb: 1) Temporal prime: FOR SOME TIME
		2) Temporal prime: WHEN/TIME
<i>Oninnan</i>	• oninnan	Preposition: 1) Spatial prime: INSIDE
(on-in-an)		
<i>Onufan</i>	ufan	Adverb: 1) Spatial prime: ABOVE 2) Movement prime: MOVE
(on-ufan)	• onufan	Preposition: 1) Spatial prime: ABOVE 2) Temporal prime: AFTER
<i>Onuppan</i>	uppan	Preposition: 1) Spatial prime: ABOVE 2) Movement prime: MOVE
(on-uppan)		3) Temporal prime: AFTER + NOW
	• onuppan	Preposition: 1) Spatial prime: ABOVE
<i>Æt</i>		1) Spatial prime: WHERE/PLACE 2) Temporal prime: WHEN/TIME
<i>Ætforan</i>	foran	Preposition: 1) Spatial prime: NEAR 2) Temporal prime: BEFORE
(Æt + foran)		Adverb: 1) Temporal prime: BEFORE
	• Ætforan	Preposition: 1) Spatial prime: NEAR 2) Temporal prime: BEFORE
		Adverb: 1) Temporal prime: BEFORE
<i>Æthindan</i>	hindan	Adverb: 1) Spatial prime: BEHIND 2) Movement prime: MOVE
(Æt + hindan)	• Æthindan	Preposition: 1) Spatial prime: BEHIND

Table 3.1 Primes expounded by the adpositions under analysis

As mentioned earlier, it appears that most adpositions are exponents of spatial and temporal primes. On one hand, this highlights the intrinsic polysemy of these elements. This polysemy can be explicated in terms of the experiential grounding that the concept of space provides for the understanding of temporal relations (Wierzbicka 1993). On the other hand, rather than considering this abstract claim a key answer for the lexical questions that may arise in this regard, I will explore the consequences of this polysemy in terms of compositional semantics (Martín Arista & Martín de la Rosa 2006).

The first aspect that I will take into consideration is to which extent the primes of each of the components are present in the resulting complex adposition. The semantic analysis of each complex lexical item will be presented in the same order as they appear in Table 3.1:

1 *Innan*: The component adpositions *in* and *on* are both exponents of the spatial prime WHERE/PLACE. This indicates that there exists a certain degree of synonymy between them. In fact, in Old English their use was not regulated by the same selection restrictions that apply nowadays. They both occurred in expressions locating entities in regions, countries, and even buildings. Guarddon (2006) explains that they were not randomly used, instead their labor was regulated by complex discourse dynamics affecting the narrator's perspective of a scene. However, as this study is devoid of contextual implications, I will stick to the lexical content of the preposition. When one observes Table 2.1, s/he can see that both words are used to define each other. This is because both were used in locative expressions which did not profile specific geometric configurations like containment within limits, or contact between two surfaces. However, both prepositions are also exponents of semantic primes which differentiate them. While *on* is exponent of the semantic prime TOUCHING, the preposition *in* has been ascribed the semantic prime INSIDE.

These prepositions are supposed to express static location. The dynamic meanings that are assigned to them in some definitions are, in our view, a consequence of the linguistic context where they occur with a motion verb (Bennett 1975). Therefore, I do not consider this dynamic component part of their lexical content, as it, for example, would not be viable to regard them as exponents of the semantic prime MOVE. Both prepositions constitute a clear case of polysemy since they also express relationships in the temporal domain. In this sense, they are exponents of the temporal prime: TIME/WHEN.

There is nothing very surprising about the fact that these two adpositions combine to yield a complex element, keeping in mind they have in common semantic primes. The most outstanding consequence of their combination is that a fundamental part of their polysemous nature has been lost; *innan* does not express temporal relations. One might say that this compound has undergone a restriction in semantic scope when compared to its component elements. The question that remains to be tackled is whether this is a reflection of the alleged primacy of the spatial domain over the temporal concepts.

2 *Onbutan*: Concerning the senses of the component adposition *butan*, I will adopt a polysemy interpretation, since they all are connected with the spatial notion: *out of*. This notion is not explicitly represented in the NSM primes list. Thus, this adposition is analyzed as a portmanteau, including the semantic primes NOT and INSIDE. In English the relationship expressed by *butan* can be phrased in terms of a negative injunction such as *not in*. The categorial polysemy of this term emphasizes the negative value present in the senses of *butan*. As an adverb and a conjunction *butan* is exponent of the semantic prime

NOT, whose adverbial function constitutes also a portmanteau, i.e. a combination of NOT + INSIDE.

As a preposition we also find the meaning *round about*, associated to the semantic prime NEAR. The existence of a sense which is exponent of NEAR can be explained in terms of the semantic relationship that holds between this meaning and *out of*; for the location of an entity to be expressed as *out of*, it must be located relevantly *near* the reference object. Finally, *butan* presents a sense that is explained by the prime ABOVE: *besides* or *in addition to*.

Coming to the predicative meaning of the compound *onbutan*, it seems that the semantic effect of *on* highlights the locative meaning of *butan*, as shown in Table 2.1. Again, as in the case of *innan*, *onbutan* is restricted to indicating spatial relations and is supported by the categorial polysemy of the term; when it functions as a preposition as well as when it functions as an adverb it has a spatial meaning. The presence of *on* in the compound seems to reinforce this spatial sense, while *butan* defines the exact relationship existing between the trajector and the landmark.²

3 *Onemn*: This complex preposition is not compounded of two adpositions; the second element, *efen* functions as an adjective as well as an adverb. While *efen* does not have spatial or temporal meanings, it is an exponent of the similarity prime LIKE. Thus its combination with *on* results in a more complex category than the others analyzed so far. As a preposition, the compound *Onemn* is polysemous, expressing relationships in the spatial as well as the temporal domain. One of its senses, ‘abreast of’ or ‘alongside of’, converts it into an exponent of the semantic prime NEAR. This sense can be easily traced back to the meanings of the component elements. The combination of *efen*, exponent of the prime LIKE, and the intrinsic locational meaning conveyed by the preposition *on* explains the *quasi* coincidence of the places occupied by the trajector and the landmark in the scenes referred to by this particular spatial sense.

As a temporal adposition, *onemn* means *during*. This temporal sense is consistent with the explanations provided above for the spatial senses, as temporal duration establishes identification between the development of an action and the time span it occupies. The implication is an overlap between the time needed and the action carried out. The semantic prime that defines duration

² The concepts *trajector* and *landmark* were coined by Langacker (1987) and will be used in this paper to refer to the subject and the object of a preposition respectively. The *trajector* is a mobile element whose localization is relevant in a certain context. This localization is effected in connection with the *landmark*, a stable and static entity that constitutes a convenient reference.

is FOR SOME TIME. The senses outlined above are also related to the adverbial meaning of *onemn*: ‘exactly’.

4 *Onforan*: The component adposition *foran* is also polysemous. The semantic interrelationship between its senses is briefly explored here. Linked by the spatial notion *in front of*, an interesting property of this concept is that despite being spatial, it is defined by a temporal prime: BEFORE. This is due to a discrepancy between the dominant meaning of present-day English *before* and its etymology. Originally, it served to express spatial location and the temporal meaning was a metaphoric extension of that use. On the contrary, nowadays, *before* is above all used to express temporal relationships. For this reason, Wierzbicka (1989) proposed that the word represents a temporal prime, reflecting the intimated link between time, space and motion. Considering the horizontal organization of objects in a line, we will perceive *before* those objects which are located closer to us and precede other objects. Thus, there exists a strong temporal implication in the spatial use of *before*: if somebody runs before me, she will reach her destination earlier, etc.

The compound keeps the basic meanings of *foran*, but, as usual, with some restrictions. Above all, it has lost the metaphoric meanings such as *in preference to* or *in support of*, which occur in the prepositional use of this compound as well as in its adverbial use. The temporal meaning already present in *foran*, however, is maintained in the compound but it acquires a more sophisticated dimension; for instance, as a preposition *onforan* presents the meaning *at the beginning of*.

5 *Ongean*: The semantics of this compound is highly complex. Let us focus first on *gean*, which functions as an adverb and as an adjective. As an adverb, this word is an exponent of the semantic primes AFTER and NOW. As an adjective it means ‘direct’, therefore, I have assigned to it the semantic prime WHERE/PLACE. I have distinguished two groups into the set of senses that constitute each category: one, whose members are connected to the prime NOW, all show a sense of immediacy; another, in which the senses of the category are exponents of AFTER, expresses an idea of addition.

When it comes to the compound, *ongean*, as a preposition, its senses belong to the realm of spatial meanings. After checking Table 2.1, one finds that it has other metaphoric meanings extended from the basic spatial senses *against* and *opposite to*. The sense *against* implies motion towards a given landmark, thus, is analyzed as a portmanteau-type agglutination of the primes MOVE and TOUCHING. The other relevant sense that this category has as a preposition is *opposite to*. This is a case of location, in which the trajector is separated from the landmark with a specific orientation that makes the separation a relationship of physical opposition. When it functions as an adverb, it carries a meaning

which is also deictically anchored but taking as a reference the opposite side of the landmark *back* and it is exponent of the prime SIDE. On the whole, the most substantial development that has occurred in the compound is the loss of the temporal meanings expressed by *ongean*.

6 *Ongemong*: *Ongemong* is another complex adposition which does not result from the combination of two adpositions. As Table 3.1 shows, *gemong* means ‘group’ or ‘crowd’, thus, not being an adposition I will not focus further on this element. The construction *on gemonge* underwent a process of grammaticalization. The loss of lexical content yielded the more general spatial meaning *in the middle of*, which lately acquired a temporal dimension, *meanwhile*, *at the same time*, running parallel to the development of two functional categories: an adverb and a preposition. There is a clear boundary between the lexical contents that this word has in its two functional facets. As an adverb, the semantic content of this word displays a higher complexity than as a preposition, which is an exponent of INSIDE. Furthermore, the two adverbial meanings that *ongemong* has associate this word to two temporal primes: One expresses duration, FOR SOME TIME, and the second expresses temporal location, WHEN/TIME.

7 *Oninnan*: The elements that make up this complex preposition have already been analyzed, therefore, I will focus on the meaning of the compound. The semantic prime that underlies its meaning is INSIDE, as in the case of *innan*. However, even though *oninnan* and *innan* have related meanings, there are differences that define the distinct contexts in which they occur. While *innan* is defined as *in* or *among*, the meaning assigned to *oninnan* is ‘inside’ corresponding exactly with the word that is proposed as the spatial prime INSIDE. To a certain extent, one can claim that the first element of the compound *on* is endowing the compound with a more physical force, as *inside* is endowed with an idea of containment which is not necessarily present in *in*, and definitely not present in *among*.

8 *Onufan*: There exists a large amount of overlapping in the meanings of the components of this adposition. As Table 3.1 shows, one feature of *ufan* that is inherited by the compound is the prime ABOVE. However, there is a crucial element that differentiates *ufan* and the compound under analysis; the dynamic component present in the former.

Onufan is a polysemous term. Some of its senses need to be explained by primes other than ABOVE, such as *beyond* and *after*. *After* originally had a local meaning, therefore, we are confronted with a case that resembles *onforan*; a temporal prime that is used to define a word that has a local meaning. An entity that is “beyond” another entity is located *after* the latter. As in the case of

before, there is a discrepancy between the current use of the word and its etymology.

9 *Onuppan*: On checking the meaning of the two compounding elements combined in this complex adposition, one finds that there is again a great deal of overlapping between them. Both elements are exponents of the semantic prime ABOVE. However, there is a considerable simplification of the meaning of the compound when compared to *uppan*. This simplification is explained, in the first place, by the loss of the dynamic component conveyed by one of the senses of *uppan*, ‘against’, which is a portmanteau comprising the primes TOUCHING and MOVE. In the second place, a simplification has taken place in regards to the realm of meaning where *uppan* and *onuppan* operate. *Uppan* has temporal meanings that have not been inherited by the compound. These meanings are *on* and *after*, which expound the temporal primes WHEN/TIME and AFTER respectively.

This compound adposition also functions as an adverb. Its meaning, *besides* or *in addition to*, is not present in either of the compounding elements, but can be metaphorically derived from the prime that defines both: ABOVE. One can conclude that this adverbial meaning is also an example of the semantic prime ABOVE, through support by the English usage of *top* in the phrase *on top of that*.

10 *Ætforan*: An interesting property of this adposition and one of the elements that built it up is that their spatial meanings are explained by a temporal prime: BEFORE. As in the case of *onforan*, we have a temporal prime explaining a term whose primary meaning is spatial. Despite the fact that BEFORE is expounded by the component element *foran* and the compound *ætforan*, as it is to be expected, there are also remarkable differences which follow patterns that have already been identified in other compounds analyzed before. For instance, there is a reduction in the number of semantic primes that have *foran* as an exponent. As a preposition *foran* has metaphoric senses that are not inherited by the complex adposition, when it functions as a preposition. With regards to their adverbial function, the movement prime MOVE, present in *foran*, is not found any longer in *ætforan*. The sense *forward*, similarly, which is part of the lexical content of *foran*, is lost in the compound that it forms with *æt*. Then, as an adverb, *ætforan* also shows a reduction in the number of senses in comparison to *foran*. While *foran* has spatial, temporal and other metaphoric senses, *ætforan*, as an adverb, only has a temporal meaning: *beforehand*.

11 *Æthindan*: As usual with other complex adpositions analyzed here, the compound and the second component element share the spatial prime that defines one of their primary senses, i.e. BEHIND. As it recurrently happens with other compounds analyzed previously, the complex adposition, *æthindan*, does

not include the sense of motion conveyed by the second member. *Hindan* is a polysemous category and one of its senses, *from behind*, has a dynamic meaning which does not occur as part of the semantic content of *æthindan*. As a result, *hindan* is an exponent of MOVE, a prime that is not expounded by *æthindan*.

4. RESULTS AND DISCUSSION

Identifying the semantic properties of complex adpositions is not a simple task because of the polysemous nature of the component elements. As Table 3.1 displays, a remarkable part of them are exponents of two or even more primes. The heuristics behind this fact has two relevant dimensions; one which is connected with the meaning of the complex adposition and the other concerning the process leading to the compounds. In the first, case, we have to figure out which primes of the component elements are still active in the semantic content of the resulting complex adposition. As well, we have to look into whether new semantic primes are generated in the compound, i.e. primes which were not present in either of the component adpositions. As for the process of compounding that underlies a complex adposition, there are two basic questions to be answered: One is related to semantic compatibility: What are the conditions that join two specific adpositions and not others? The second concerns the internal syntactic rules present in these complex elements that determine a specific order, i.e. the fact that establishes the element that controls the construction.³

Let us start off by dealing with the question of the internal syntactic behavior of these adpositions. This choice is not arbitrary; tackling this aspect first will be very helpful to shed light upon the remaining questions. To begin with, I will account for the motivation to select the compounds of *in*, *on* and *at* as our field of analysis. The answer is straightforward: There are a remarkable number of compounds that have one of these adpositions as their first element, while the cases of complex adpositions in which other elements occur in the first place are quite restricted, i.e. *between* ‘between’. Also worth noting is the fact that there are very few cases where they occur in the second position, such as *upon* or *within*.

³ We consider the first adposition to be the controller of the constructions because in Old English, as a rule, the preposition precedes the element to which it belongs, even if exceptionally we find the arrangement of object + preposition.

When seeking one shared trait in these elements that can be assessed as the cause for this situation, the picture is immediately clear, they all are exponents of the same primitive locational meaning, PLACE/WHERE. This meaning is less elaborate from a configurational point of view than that of the adpositions that are controlled by *in*, *on* and *at*. This is due to the fact that topological prepositions, because of the spatial adaptability with which they are endowed, are subject to obtain specific features from the context in which they occur. This “adaptability” explains that in Old English they were used in similar contexts. In present-day English this adaptability has been limited, because their occurrence is constrained by the geometrical features of the landmarks with which they are combined.

Therefore, the vagueness of the prime PLACE/WHERE that is exemplified by these prepositions can explain the combinatorial patterns in which they take part. In this specific case, they control elements that are exponents of primes which are less likely to be affected by contextual contingencies such as ABOVE. For instance, I have not found adpositions compounded of two projective items. Projective spatial elements, such as *above*, express the speakers’ perspective and other deictic factors (Herskovits 1986; Levinson 2003; Bierwisch 1967). This means they encode spatial relations that are highly defined in comparison to the relations expressed by topological prepositions. I hypothesize that this semantic specificity is the factor that prevents the combination of two primes with projective meaning.

This situation hinges upon the issue of semantic compatibility. The equation to solve is whether there are combinations which might be *impossible* on semantic grounds. Table 3.1 shows that *in*, *on* and *at* share the spatial prime PLACE/WHERE. At first blush, it can appear as if these adpositions, being exponents of the same prime, can combine with the same elements. On close examination, however, this impression disappears, as polysemy is at the basis of the distinct combinatorial patterns that we find.

In order to understand the information presented in Table 3.1, some knowledge of Old English is necessary, particularly in regards to the adpositions *in*, *on* and *at*. We see that the preposition *on* is the one that is involved in a notably higher number of complex adpositions. The crucial point is that this preposition showed a greater degree of flexibility in Old English allowing it to express location in cases in which nowadays we would expect to have the prepositions *in* or *at*. For example, *on* is used to refer to spatial scenes involving continents, seas, countries, regions, provinces, as well as other geophysical divisions, such as cities, etc (Lundskær-Nielsen 1993). Thus, the primes TOUCHING and ABOVE were not as representative in the semantic content of this adposition as they are in present-day English. The fact that in the texts where they co-occur, *in* profiled a sense of containment indicating that the

prime INSIDE was already notably relevant at the time and as a result this adposition had very distinctive semantic restrictions. Specifically, it only combines with the more neutral *on* as in *innan* and *oninnan*. Analogously, very often, *on* mediated the spatio-functional relation in some spatial scenes involving objects, which nowadays are typically expressed by the preposition *at* (e.g.: *at the table*).

Finally, the preposition *at* in Old English, as in present-day English, was used when a remote perspective of a location was implied. However, in spatial scenes involving the locative relationship with a functional meaning, i.e. *at the table*, *at* was eventually substituted for by *on*.

Therefore, in this regard, it can be concluded that adpositions which are highly specific, as the primes that they represent show, are not likely to be combined to constitute a single morphological unit. This explains, as pointed out earlier, the inexistence of complex adpositions composed of two projective adpositions, for instance. Thus, the number of combinations that can be entertained as candidates to compounds is rather small.

Another question which remains to be tackled is that of finding recurrent trends in the semantic content of the resulting adpositions. When predicates occur with arguments, they see their meaning specified. A similar situation can be identified here as long as we can consider the second element to be functioning, to a certain extent, as an argument. This explains that all the compounds inherit the meaning of the second component element. At the same time, this meaning is affected in several manners when it becomes integrated into the compound. Upon checking Table 3.1, one finds that when the semantic prime MOVE is present in one of the controlled adpositions, it is not maintained in the compounds. For instance, *hindan* and *ufan* convey a relationship of motion which is not longer kept by the complex adpositions where they are integrated. This can be attributed to the dominant locative meaning of *on* and *at*. Besides, very few compounds do present a meaning which is not already present in the second component element. These compounds are *onbutan* and *ongean*, a fact that justifies the disappearance of most of them, which have not survived to present-day English. It should be noted that even if the meaning of these complex adpositions is different from that of its component elements, the primes that are used to explain this resulting meaning were already present in the components.

Another fact that can explain the disappearance of these complex adpositions is that the second components see their meaning simplified in favor of spatial meanings. Thus, sometimes they lose metaphorical extensions in the process that makes them part of the compound, for example, *onuppan* does not keep the temporal meaning expressed by *uppan*. This is consistent with the loss

of the motional meaning, already indicated, that points as well to the simplification of the meaning of the controlled elements. Hence, the speakers could find the original simple elements substantially more useful from the point of view of linguistic economy.

In fact, in the diachronic evolution undergone by these complex adpositions, there exists a tendency for them to fall in disuse when the controlled element, which provides the complex adposition with a more specific meaning, loses part of its semantic content just to see more emphasis placed on one of its senses, as the adpositions listed in Table 2.1 above show (e.g. *onuppan*). As to be expected, in view of these facts, the three complex adpositions that have survived to present-day English share a feature; they had one sense which, at the time, was not present in either of the components, i.e. *onbutan* ‘about’; *onforan* ‘at the beginning of’; *ongean* ‘against’.⁴

Interestingly enough, *ongean*, *onbutan* and *onforan* are exponents of one of the primes that characterize the first dominating adposition: TOUCHING. However, the contexts where they are used contrast with those where the preposition *on* occurs, due to the integration of the other component elements in the meaning of the resulting adposition. Thus, it can be hypothesized that the complex adpositions that had more possibilities of surviving presented two relevant features: Primarily, they were exponents of one of the specific semantic primes exemplified by the dominant element. Secondly, the compounding process gave rise to at least one sense which constituted an innovation with respect to the component elements.

In the light of these results, I propose a set of rules that explain the combinatorial patterns followed by spatial primes in these complex adpositions:

- 1) The level of specificity of the semantic primes is controlled. Therefore, two primes that define highly specific spatial relations (e.g. projective) are not likely to integrate into a new semantic unit.
- 2) The motion primes are lost in favor of static spatial relations.
- 3) The integration does not generate new semantic primes.

⁴ *Ongemong* ‘among’ is not included in this account because the controlled element is a noun, thus, this compound cannot be subsumed under the explanations provided here for the other complex adpositions.

5. CONCLUSION

The present study has presented an investigation of the combinatorial patterns of spatial semantic primes. Analyzing complex adpositions, which were numerous in Old English, constitutes an excellent means of establishing these patterns, as the component elements and the resulting adpositions are essentially spatial. In my examination of various complex adpositions, I have discovered several rules that define the possible combinations that can occur in a compound, and, that explain their internal syntactic behavior. Particularly, I have explained the syntactic organization of these compounds on the basis of the lexical content of the component adpositions. These findings corroborate one of the main tenets of the NSM: grammar is determined by meaning. Potentially, these rules should be operative in the complex adpositions of other languages, as semantic primes are universal and they keep their grammatical properties cross-linguistically.

From a diachronic point of view, using the semantic primes, I have discovered several generalizations that explain the disappearance of some complex adpositions and the successful permanence of others. Further work in this direction should analyze the remaining Old English complex adpositions in order to check whether these rules are completely without exception.

Finally, I would like to stress the fact that despite the myriad of papers dealing with the language of space within the Cognitive Linguistics model, the combinatorial behavior of spatial elements has not received attention so far. Thus, hopefully, research into this phenomenon can lead to rich and productive interaction between the two schools of thought, with mutual benefit for both.

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