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Lexical and functional adpositions: the view from *of* in Old and present-day English

Roxanne Taylor, University of Manchester, UK, roxanne.taylor@manchester.ac.uk

This article addresses the distinction amongst adpositions between those adpositions which are lexical and those which are functional. The article uses a corpus linguistic approach to address outstanding questions: whether there are two distinct subclasses of adposition, whether the distinction is a continuum amongst adpositions, and how— by what properties— lexical and functional adpositions are distinguished. The article argues for a primarily semantic, multifaceted distinction amongst adpositions, best understood as a continuum. The distinction is argued to be quite small, such that lexical and functional adpositions are not strongly differentiated and an argument is made in support of the more functional status of adpositions generally. A "bottom up" approach is used, which builds from the observable differences between two adpositions, one lexical, and one functional, to characterizations about the nature of the lexical versus functional distinction amongst adpositions. The adpositions used as the basis for this approach are Old English of_{OE} and its present-day English counterpart of_{PDE}. *Of* in the history of English offers a uniquely ideal case-study for an investigation into lexical and functional adpositions, given the uncontroversial functional status of of_{PDE} and the accepted lexical status of of_{OE}. The article identifies differences between of_{OE} and of_{PDE} primarily in semantics, in the number of available semantic relations. Syntax, morphophonology, and the possible replacement of an adposition by case are found not to represent areas of major difference between the adpositions. Instead, there is continuity between the adpositions in syntax and semantics. The historical evidence provides an opportunity to explore the grammaticalization of an adposition from lexical to functional. The comparative findings have consequences for the retention of meaning in semantic expansion and contradict notions of coevolution between syntax and semantics in grammaticalization. The context-specific nature of grammaticalization is also questioned on the basis of the comparison between the adpositions.

1 Introduction

A distinction between lexical linguistic items and functional linguistic items has been proposed in multiple forms within various frameworks (for instance Meillet 1912; Kuryłowicz 1965; Lehmann 1982/2015; Hopper & Traugott 2003; Boye & Harder 2012). Psycholinguistic research has supported the cognitive reality of this distinction (for instance, Friederici 1982; Froud 2001; Friedmann 2006; Bastiaanse et al. 2011; Foucambert & Zuniga 2011). However, understanding the nature of this distinction and what constitutes the distinction, and therefore being able to define the grounds on which linguistic items might be identified as lexical or functional has proved difficult. This difficulty is nowhere more apparent than in the case of adpositions. Although the set of adpositions has often been viewed as a heterogeneous group, divided between those which are lexical and those which are functional (van Oosten 1977: 455; Zwarts 1997: 1; Tseng 2001), consensus as to what defines a particular adposition as lexical and another functional has yet to be reached, with some definitions claiming all adpositions as functional and others lacking in the specificity needed to identify a given adposition as functional or lexical.

This article considers the Old English adposition *of* (henceforth of_{OE}) with the present-day English adposition *of* (henceforth of_{PDE}) as a case study for comparison between lexical and functional adpositions, contributing a characterization of the lexical versus functional distinction amongst adpositions. This article takes a "bottom up" approach to the question of what constitutes the lexical versus functional distinction between adpositions by assessing the differences and similarities between a lexical and a functional adposition, without making a prior assumption that certain properties do or do not differentiate the two. Of_{PDE}, an adposition which appears in a wide range of contexts, most notably the marking of possession, has repeatedly been characterized as a functional adposition (Huddleston & Pullum 2002: 601; Zwart 2005: 689, 693; Svenonius 2010: 130; Deacon 2014: 10). Of_{OE} has been identified as a lexical adposition, marking spatial relations similar to the present-day English adposition *from*, with use said to be restricted to ablatival and ablative-like relations (Koike 2004: 14; Allen 2008: 74; Ceolin 2021: 3).

The focus on *of* in English is justified on two counts: firstly, of_{PDE} is one of a set of adpositions given in the literature as being unambiguous examples of functional adpositions, alongside present-day English *to*, French *à*, and French *de* (Cann 2000: 8, 9; Tseng 2001: 16–17, 26, 31), and can therefore shed light on the identification of functional adpositions more generally. The development from of_{OE} to of_{PDE} is accepted as a specific example of a cross-linguistically well-attested grammaticalization path (Harris & Campbell 1995: 339; Heine & Kuteva 2002: 33). The two adpositions can therefore be taken with a measure of confidence as representative of some other lexical and functional adpositions. Secondly, English has a relatively long attestation history, approximately 1250 years, allowing a comparison of two related adpositions at a significant temporal remove from one another. By comparing of_{OE} with of_{PDE} we maximise the

potential to see their differences from one another and hence the potential to determine what constitutes the difference between a lexical and a functional adposition. The historical dimension adds the opportunity to study the changes from a lexical to a functional adposition.

This article first identifies the properties which distinguish the adpositions of_{OE} and of_{PDE}. This comparative approach contributes to the understanding of what is shared and what is different between a lexical and a functional adposition. Based on these properties, the lexical versus functional distinction amongst adpositions generally is characterized as a primarily semantic distinction consisting of multiple different properties. The distinction is found to be minimal and is best viewed as a continuum rather than an absolute distinction. Some of the properties identified by previous studies to constitute the lexical versus functional distinction amongst adpositions are confirmed and others rejected. The comparison between of_{OE} and of_{PDE} gives an insight into the diachronic changes between a lexical to functional adposition, and a revised grammaticalization path for *of* and potentially other similar adpositions is suggested on the basis of the comparative study. The comparison of of_{OE} and of_{PDE} and the characterization of the lexical versus functional distinction amongst adpositions have implications for some aspects of grammaticalization, particularly the definition of semantic bleaching, the coevolution of semantics and syntax, and the notion that grammaticalization occurs in constructional contexts.

Section 2 reviews the literature on the lexical versus functional distinction amongst linguistic items generally (Section 2.1) and adpositions specifically (Section 2.2), and outlines previous study of the English adpositions of_{OE} and of_{PDE} (Section 2.3). The corpora used and the methodology adopted are outlined in Section 3. Section 4 is the comparative study of of_{OE} and of_{PDE}, examining syntax (4.1), morphophonology (4.2), semantics (4.3), and variations (4.4). Section 5 briefly considers the use of *of* in an intermediate period of English, early Middle English, in comparison to the earlier and later data already considered. Section 6 characterizes the lexical versus functional distinction amongst adpositions and considers the implications of some of the findings on *of* for grammaticalization generally and the grammaticalization path of *of* specifically.

2 Background

2.1 The lexical versus functional distinction

The notion that there is a distinction between lexical and functional linguistic items has a long history. Meillet's (1912: 131) early definition of one type of language change, "l'attribution du caractère grammatical", 'grammaticalization', presupposes such a distinction. Grammaticalization is "le passage d'un mot autonome au rôle d'élément grammatical", 'the development of an autonomous word to the role of a grammatical element', with grammatical linguistic items referred to as a distinct class from those items which are autonomous. A distinction between

meaningful and grammatical items has found wide support over time, in studies of language change (Kuryłowicz 1965; Hopper & Traugott 2003; Lehmann 2015) and from synchronic perspectives (Cann 2000; Boye & Harder 2012; Bresnan et al. 2015: 93).[1]

There is psycholinguistic support for such a distinction amongst linguistic items. For example, research has found that individuals with one type of aphasia, Broca's aphasia, experience loss of items identified as serving grammatical and linguistic functions, including inflectional morphology, tense-marking auxiliaries and some pronouns (for example Bastiaanse et. al 2011 and Martínez-Ferreiro et al. 2019), but not loss of other items. These findings indicate a cognitive reality to the differentiation between functional items and lexical items, even if there remains debate as to the motivation for these losses with Broca's aphasia (see Friedmann 2006 and references therein).

The lexical versus functional distinction amongst linguistic items has been defined with reference to various features. A number of properties have been proposed as relevant: membership of an open or closed category (Lehmann 2015: 36); heavier or lighter phonological weight (Hopper & Traugott 2003: 98; Lehmann 2015: 134ff.); variability or invariability in form (Lehmann 2015: 44); real-world reference or procedural, linguistic function (Narrog & Heine 2021: 3); reference to entities or to relations (Hagège 2010: 1; Lehmann 2015: 4); being open or not to positional adjustment (Hopper & Traugott 2003: 149; Lehmann 2015: 167); optionality or obligatoriness (Hopper & Traugott 2003: 57; Lehmann 2015: 148); lower or higher frequency (Sun & Correira Saavedra 2020); available to semantic coercion or unavailable to semantic coercion (Cann 2000: 7); relative distributional freedom or relative distributional restrictedness (Hopper & Traugott 2003: 100; Lehmann 2015: 147–148). A more recent proposal is that of Boye & Harder (2012: 11). Lexical items are those "with the potential for contributing the primary element of utterance meaning", and functional items are those which must be secondary, a distinction Boye & Harder suggest can be tested by focalizability (2012: 14) and by addressability in subsequent discourse (2012: 14).

The nature of the lexical versus functional distinction differs across these various treatments: sometimes the distinction is envisaged as an absolute split of linguistic items into two sets (Boye & Harder 2012); other times, the distinction has been viewed as a continuum (amongst many others, Hopper & Traugott 2003; Lehmann 2015: 15).

[1] There has been a related but distinct interest in classifying categories of linguistic items, not the items themselves, as lexical or functional (with reference to the category of adpositions see Chomsky 1986: 3, van Riemsdijk 1998, Grimshaw 2000). This article is interested primarily in distinctions on an item-by-item basis.

2.2 Adpositions: the lexical versus functional distinction

Applied to adpositions, the properties proposed for distinguishing lexical from functional items are problematic in a way they are not problematic for other linguistic items. This is due to interactions between the properties which define adpositions as a syntactic category and several of the properties used to distinguish lexical from functional linguistic items.[2] Adpositions denote relations between entities: a relation like location underneath might have real world reference, indicating the real world disposition of two entities, but by virtue of marking a relation between linguistic items also has linguistic reference. A distinction between real-world and linguistic reference cannot easily be made in the case of adpositions: as Froud puts it, adpositions are "neither conceptual nor procedural" (2001: 9). Adpositions might be thought to have a greater selectional restriction than nouns and verbs, but greater selection freedom than items like determiners (see for instance Lehmann 2015: 146ff.), rendering selectional freedom and restriction inapplicable.

Some properties of adpositions lead to the generalization that all adpositions are functional. Adpositions serve a linguistic function by marking relations between entities rather than the entities themselves (Hagège 2010: 1, 5–6). Criteria for the lexical versus functional distinction based on the differences between entity-denoting and relation-denoting items lead to the identification of all adpositions as functional items, as do criteria based on formal variability or invariability (Hagège 2010: 138, 147). Adpositions are relatively light in terms of morphophonological weight (Hagège 2010: 128–129) and tend to have a fixed position in relation to their head: on these grounds too all adpositions are functional linguistic items. Boye & Harder's (2012: 11) discourse-based definition of lexical and functional items leads to the same conclusion, since adpositions do not have the potential to be primary in discourse, being secondary to the entities whose relations they denote.[3]

The generalization that all adpositions are functional fails to take account of the evidence from aphasiology that heterogeneity amongst adpositions in terms of the lexical versus functional distinction is a reality which must be accounted for (Freiderici 1982; Froud 2001; Mätzig et al. 2010: 370, 372; Martínez-Ferreiro et al 2019: 507–508). Psycholinguistic research has found that individuals with Broca's aphasia have variable difficulties with some adpositions but not others (Mätzig et al. 2010: 372), and that individuals with and without Broca's aphasia make errors

[2] The definition of an adposition has been much debated (Huddleston & Pullum 2002; Asbury et al. 2006; Hagège 2010; Deacon 2014: 3; Acedo-Matellán et al. 2021). The characterizations of adpositions used here are intended as generalizations.

[3] One position seen in the syntactic literature (van Riemsdijk 1998; Grimshaw 2000) is indeed to treat the category adposition as a functional category. However, this is a specific use of the concept of functional status which applies to categories, not to individual items, and refers to the pairing of functional and lexical categories in the formal syntactic architecture (Abney 1987). Defining the category adposition as functional in this way does not necessarily preclude a lexical versus functional distinction amongst individual adpositional items.

with different sets of adpositions (Martínez-Ferreiro et al. 2019: 507). In addition, defining all adpositions as functional ignores the heterogeneity of adpositions in terms of other properties, like lower or higher frequency, lesser or greater restrictions on use, optionality or obligatoriness, which scholars have sought to capture in exactly the terms of a functional versus lexical distinction (van Oosten 1977; Tseng 2001: 20ff.).

One response to the challenges of applying many of the properties proposed for the lexical versus functional distinction to adpositions has been that adpositions stand outside of a binary distinction between lexical and functional, being neither fully lexical nor fully functional (Zwarts 1997: 2; Mardale 2011: 64). Mardale posits a third class of linguistic items, semilexical, to which all adpositions, by virtue of the problematic properties just mentioned, belong. For Zwarts, adpositions are resistant to the lexical versus functional distinction amongst linguistic items: based on properties like morphophonological invariance, all adpositions must be functional, but since there are reasons to reject this conclusion, adpositions are instead identified as being "nonfunctional, nonlexical". However, designating all adpositions as belonging to a third grouping, neither lexical nor functional does no more than acknowledge the problematic properties of adpositions outlined above. Nor does it seem justified, on the basis of the psycholinguistic evidence, to treat adpositions monolithically, whether as lexical, functional, or semilexical. A rejection of a semilexical definition for all adpositions is vindicated by a careful examination of Mardale's proposal. Although the claim made initially (Mardale 2011: 64) is that all adpositions belong to a special semilexical group, there is shift to the weaker claim that some individual adpositions are lexical, others are functional, and some sit between these two poles, somewhat lexical and a somewhat functional (2011: 69, 70). Mardale's initial claim is abandoned in favour of an approach in line with the psycholinguistic evidence, treating adpositions as a heterogeneous group individually available to classification as lexical or functional.

The more common response to the identification of adpositions as lexical or functional has been to propose a lexical versus functional distinction along lines specific to adpositions (van Oosten 1977: 454; Tseng 2001: 96–100). Adpositions like French *de* and present-day English *to* are thereby distinguished from adpositions like French *pendant* and English *after* (Cann 2000: 9; Tseng 2001: 16–17; Mardale 2011: 67). This distinction has been viewed on the one hand as an absolute split between two types of adposition (Bresnan et al. 2015: 299–300) or between three types of adposition (Abeillé et al. 2006), and on the other as a continuum (Mardale 2011: 69, 70). For Tseng (2001: 19), pre-theoretically at least, "there is a gradient of prepositional uses between Type A and Type B", where Type A adpositions are lexical and Type B functional.

Since some of the properties proposed for the general lexical versus functional distinction cannot be applied to adpositions, alternative properties have been used, including: whether an adposition has spatial or non-spatial meaning (Abeillé et al. 2006: 6; Svenonius 2010: 130–132;

Vincent 2017: 296); is polysyllabic or monosyllabic (Mardale 2011: 65); can be replaced by another adposition or not (Mardale 2011: 67); does not vary with case or does vary with case (Zwart 2005: 689; Cann 2000: 8,9); has lower or higher frequency (Sun & Correia Saavedra 2020); has specific meaning or does not have specific meaning (van Oosten 1977: 454; Tseng 2001: 21; Zwart 2005: 689; Mardale 2011: 65–69; Vincent 2017: 302). In some approaches, combinations of different properties constitute the distinction (Tseng 2001; Mardale 2011: 69); in others, individual properties are privileged to the exclusion of others, notably semantic specificity (van Oosten 1977; Zwart 2005).

However, there are problems with some aspects of these proposals for the lexical versus functional distinction specific to adpositions. Firstly, as Cann (2000: 4) notes with respect to monosyllabicity and polysyllabicity, an individual adposition will potentially be identified as lexical on the basis of some of these properties but functional on the basis of others: the properties proposed in the literature do not align to constitute a lexical versus functional distinction. Secondly, reliance on spatial or non-spatial meanings to differentiate adpositions (Abeillé et al. 2006; Svenonius 2010: 130–132) cannot account for the wide range of literal and metaphorical meanings available to individual adpositions and does not therefore allow classification of a given adposition.[4] Thirdly, some semantic properties do no more than restate the heterogeneity of adpositions and therefore cannot apply to individual adpositions. Mardale (2011: 69) defines functional adpositions with features including the semantic features [-lexical] and [-theta-assigning]. Whilst the property of theta-role assignment (to the complement of the adposition) might be tested, an adposition being [-lexical] is a re-use of the lexical versus functional distinction, and could not be applied to a particular adposition to determine lexical or functional identity.

Outstanding questions which this article addresses are as follows: what properties constitute the distinction which can be used to identify individual adpositions as being lexical or functional? Is the lexical versus functional distinction amongst adpositions best viewed as an absolute split or a continuum? Is there one single property which defines the distinction or many? Why have individual adpositions proven so resistant to classification as lexical or functional?

2.3 The adposition *of*

Of is an adposition of Indo-European origin, with cognates in other Germanic and Indo-European languages: for instance, Gothic *af*, Modern Swedish *av*, Latin *ab*. The adposition is reconstructed for proto-Germanic as **aƀa* or **aba* (Kroonen 2013: 1). The accepted etymology is that **aƀa/*aba*

[4] On the question of polysemy and homonymy in relation to spatial and non-spatial uses of adpositions, see Cann (2000: 9–10).

derives from the ablative case form of an unknown noun not attested in any Indo-European daughter language. In its prehistory, therefore, *of* would seem to have already undergone a process of grammaticalization from noun to adposition. Since this grammaticalization occurs in prehistory, involves an unattested noun, and does not shed light on the lexical versus functional distinction specific to adpositions, it is set aside, and the focus is only on the historically-attested adposition.

The standard history of *of* in English, following the sketch given in influential studies like Mustanoja (1960), Mitchell (1985), and Rosenbach (2002) is that of_{OE} is an infrequently-used spatial adposition approximately equivalent in meaning to present-day English *from*, before grammaticalizing to take over the functions of the genitive case after the Norman Conquest. Some scholars like Mustanoja (1960: 76–77) have seen a causal connection between changes in the use of *of* and the influence of the French possessive-marking adposition *de*. Others, like Allen (2008: 72) argue that contact with *de* coincided with and sped up an existing process of grammaticalization of *of* within English.

A diachronic development whereby an adposition used to mark spatial relations becomes a marker of possessive relations, seen in the history of *of* is paralleled in other languages (Harris & Campbell 1995; Heine & Kuteva 2002). Heine and Kuteva (2002: 33), in their discussion of the development of *de* and *of* identify a grammaticalization path ABLATIVE > POSSESSIVE > PARTITIVE, that proposed by Harris & Campbell (1995: 339) is similar. The data considered in this article on of_{OE} gives reason to doubt the ordering of the development from possessive to partitive. For the time being, it is sufficient to note that the history of *of* has been taken as one example of a grammaticalization path observed cross-linguistically.

Of_{OE} has received far less scholarly attention than its present-day counterpart. Ceolin's (2021: 3) assessment is representative: "although OE already had the preposition *of*, this was limited to partitive readings, and therefore could not be used to express possession or to introduce arguments". Of_{OE} is generally characterized as different from of_{PDE} on two counts (Mitchell 1985: §1199): having spatial semantics, and not being an available variant of the genitive case in expressing possession in the noun phrase. Curme (1913) is a notable exception, dating the use of of_{OE} as a marker of possession to the early Old English period. Curme's argument relies heavily on a small number of textually problematic passages from the Bible, some of which might be interpreted as having a more spatial meaning than Curme allows although the insight that of_{OE} has a range of uses not usually recognised is a valid one supported by this study.

On the other hand of_{PDE} has received a great deal of attention for its part in the so-called genitive alternation of present-day English (amongst others, Rosenbach 2002; Feist 2012; Grafmiller 2014; Szmrecsanyi et al. 2016). These investigations have given a detailed picture of the contexts in which of_{PDE} tends to appear.

3 Data and methodology

3.1 Corpora used to study *of*$_{OE}$ and *of*$_{PDE}$

Data on of *of*$_{OE}$ come from the *York-Toronto-Helsinki Parsed Corpus of Old English Prose* (*YCOE*) (Taylor et al. 2003), a parsed tree bank consisting of 1.5 million words of Old English prose (850CE-1150CE). The later texts in the *YCOE*, dating to the century from 1050CE-1150CE were included in the investigation as part of the Old English data; with respect to *of*, these texts more resemble earlier Old English texts than they do early Middle English texts.[5] The *British National Corpus* (*BNC*) (2007) is used for present-day English, a 96 million word lemmatized corpus dating to the late 20th century. Only the written subcorpus of the *BNC* was used, totalling 8629,9736 words, for a closer comparison with the *YCOE* which contains only written texts.

The corpora differ in temporal range (the *YCOE* covers several centuries, the *BNC* several decades) and sampling. Of greater relevance to the present investigation, texts translated into Old English from Latin make up a sizeable part of the *YCOE* (27% of words are in translated texts). Whilst the *BNC* may contain occasional passages of translation into English, it has no similarly-sized body of translated texts. The concern is that *of*$_{OE}$ in texts translated from Latin might be an unrepresentative use of the adposition (a possibility raised by Mitchell 1985:§1201). *Of*$_{OE}$ might, suggests Mitchell, be used by translators to capture the Latin adpositions *ex* and *de* but not by Old English language users outside of translation contexts. Translated texts are included in this investigation and therefore examples of *of*$_{OE}$ found in texts translated from Latin do appear in the data set. This inclusion is justified on several counts. *Of*$_{OE}$ is observed in non-translated texts with some frequency and in the same uses as are observed in translations. Adpositional phrases headed by *ex* and *de* in Latin source texts are not always translated with *of*$_{OE}$, but are sometimes rendered by relative clauses, adjectives, or adnominal genitive-case-marked noun phrases, and equally, not all instances of *of*$_{OE}$ in translated texts are renderings of a Latin adpositional phrase.[6] Uses of *of*$_{OE}$ in translated texts seem not to be artificial cribs for Latin adpositions and are therefore accepted as relevant to the study of uses of *of*$_{OE}$ generally.

3.2 Retrieving observations of *of* from the corpora

Using *CorpusSearch* 2 (Randall 2003), the *YCOE* was queried for 'P idems <of>', in other words for all instances of <of> tagged as heading a prepositional phrase. To account for possible

[5] A comparison of the latest Old English data and early Middle English data (see Section 5 for the later) shows that these linguistic periods are distinct with relation to the uses of *of*. *Of* is around three times more frequent in the early Middle English data than in the late Old English data; *of* is used to indicate a quantity with the adjective *ful*, or to mark body part relations are observed in the later data but not earlier.

[6] For example, of adnominal part-whole uses of *of*$_{OE}$ in translated texts, 96/145 are renderings of Latin *ex* or *de*, 49/145 are not and either have no direct parallel in the Latin or render some other Latin syntax.

spelling variations, the strings <a>, <æf>, and <off> heading a prepositional phrase were also searched for. There is a single example of the spelling <off>, whilst other spelling variants are unattested in the corpus.

This search of the corpus gives a data set totalling 5788 examples of of_{OE}, meaning that of_{OE} is observed at a rate of 40.94 times per 10,000 words in the *YCOE*.[7] A small number ($n = 6$) of examples of *of* in the *YCOE* are tagged as prepositions but have no complement and are used as verbal particles (see Elenbaas 2007 for more details on the Old English verbal particle *of*). These observations were excluded manually, following the traditional distinction between particles and adpositions and in line with the semantic definition of adpositions as relators between entities.[8] A breakdown of the observations of of_{OE} by time is shown in **Table 1**.[9]

Time period	Raw frequency of *of*	Frequency of *of* per 10000 words
pre 850CE	3	17.11
850CE–950CE	1211	33.50
950CE–1050CE	4252	42.84
1050CE–1150CE	322	55.23

Table 1: Frequency of of_{OE} in the *YCOE* by period.

Observations of of_{OE} in translated and non-translated texts are shown in **Table 2**.[10]

Text a translation from Latin?	Raw frequency of *of*	Frequency of *of* per 10000 words
No	2566	18.15
Yes	2859	20.22
Uncertain	363	2.57

Table 2: Frequency of of_{OE} in translated and non-translated texts in the *YCOE*.

The written subcorpus of the *BNC* was queried for $<of>_{PREP}$, in other words, for instances of <of> tagged as a preposition. The vast majority of instances of the lemma of_{PDE} were retrieved in this manner, but there are exceptions where the *BNC* part-of-speech annotation

[7] The measure of normalised frequency adopted throughout this article is per 10000 words.

[8] The overlap between adpositions and particles is well-known, see Huddleston & Pullum 2002; Hagège 2010 and references therein.

[9] The dating of a text follows the *YCOE* classifications.

[10] The decision whether a text is translated or not follows the *YCOE* classifications.

tags the string as something other than a preposition.[11] These instances of *of* were retrieved by searching for instances of <of> tagged as some part of speech other than a preposition. Since morphophonological reduction of of_{PDE} and loss of word boundaries are cited in the literature as evidence for the grammaticalization of the adposition (Brems & Davidse 2010: 185, 188; but see Joseph 2011: 195), words showing a reduced suffixal form of of_{PDE}, as *-a*, like *kinda* and *sorta* were retrieved separately, by searching the corpus for the relevant strings without any part-of-speech specification.[12] The reduction *o'* was excluded in the data set where it appears in proper names, like *John O'Groats* and archaizing noun phrases like *will o' the wisp*. Instances of *o'* in *o'clock* were also excluded; *o'* which appears as a rendering of spoken of_{PDE} was included in the data set.

Searching the *BNC* gives a data set with 28,34813 examples of of_{PDE}, meaning that of_{PDE} is observed at a rate of 322.49 times per 10,000.The quantitative data in Section 4.1 do not total this figure, because of the inclusion in the total data set of hedges and adverbial phrases like *of course*, which are not included in the consideration of syntactic distribution of of_{PDE}.

4 Comparing of_{OE} and of_{PDE}

The comparison of of_{OE} and of_{PDE} covers syntax (external distribution and complements selected for by *of*), morphophonology (the shape of *of*, its weight, stress, and wordhood), semantics (the relations marked by *of*), and variation between *of* and other forms without a shift in meaning.

4.1 Comparing syntax

Both of_{OE} and of_{PDE} meet the syntactic characteristics—such as they are— for the category adposition. Both take at least nominal complements (Huddleston & Pullum 2002: 598; Hagège 2010: 58) but are not governed by any one category of head (Hagège 2010: 191,232,236,246). There is no change over time in the categories on which *of*-phrases depend, only a change in terms of the frequencies with which *of*-phrases depend on items of these various categories. In terms of internal syntax, of_{PDE} has an expanded range of non-nominal complements compared to of_{OE}, which selects only nominal complements.

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[11] <Of> in the phrase *of course* is tagged as an adverb, in the phrase *matter of fact* as a noun or an adjective, and in the phrase *out of date* as an adjective, but sometimes in all these expressions of_{PDE} is tagged as a preposition. In the expressions *all of a NP sort of a NP*, *hell of a NP*, *sort of*, and *kind of of* is sometimes tagged as an adposition, sometimes as an adverb.

[12] Other items known to show this suffixal form of *of* are *lotsa* and *typa*. Items in *-a* were identified from Margerie (2010) and Andersen (2016: 332). Other reductions of *of* retrieved from the *BNC* include *helluva*.

4.1.1 Heads

Of$_{OE}$-phrases mostly depend on verbal heads (1).[13] *Of*$_{OE}$ phrases are also observed as clause-level adjuncts, like time phrases, not dependent on a specific head (2). Nominal heads (3), adjectival heads (4) and other adpositions, mostly *ut*, 'out', (5), are observed selecting for *of*$_{OE}$-phrases with lower frequency. There are difficulties with determining the dependency relations of an adpositional phrase on the basis of the syntactic parsing scheme provided in *YCOE*. The default in the *YCOE* scheme is to annotate any adpositional phrase as a clausal adjunct, including when this is not a desirable interpretation. The figures given in **Table 3** are based on manual classification.

Head on which *of*$_{OE}$-phrase depends	**Raw frequency of *of***	**Frequency of *of* per 10000 words**
Adjective	10	0.07
Adposition	138	0.98
Noun	671	4.74
Verb	4885	34.55
clause level adjunct	84	0.59

Table 3: Frequency of heads on which *of*$_{OE}$-phrases depend.

(1) *Old English* (cochdrul, ChrodR_1: 29.7.445)[14]
he gehælð his sawle **of** deaðe
3SG.NOM.MASC heal-3SG.NPST 3SG.GEN soul.ACC.SG OF death-DAT.SG
'He salves his soul from death.'

(2) (cogregdC,GD_2_[C]: 14.133.1.1605)
syþþan **of** þære tide he wæs swiðe unwælgrim
after OF DET.DAT.SG time-DAT.SG 3SG.NOM.MASC be.PST. 3SG very gentle.NOM.SG
'Afterwards, from that time, he was very gentle.'

(3) (cowsgosp, Lk_[WSCp]: 24.13.5664)
and þa ferdon twegen **of** him on þæt castel
and then go-PST.PL two OF 3PL.DAT.MASC into DET.ACC.SG fortification.ACC.SG
'And then two of them went to the fortification.'

[13] Separating those *of*$_{OE}$-phrases selected for by verbs as arguments and those appearing as adverbial adjuncts is difficult; *of*$_{OE}$-phrases are not obligatory with any Old English verb. No attempt is made to quantify these two classes of *of*$_{OE}$-phrase given the number of debatable examples, but the different relationship between an *of*$_{OE}$-phrase and a verb in individual examples is accepted.

[14] (cochdrul, ChrodR_1: 29.7.445) is the *YCOE* token identifier.

(4) (coaelhom, æ Hom_5: 7.680)
Se Hælend þa sæt þær **of** ðam siðfæte
DET.NOM.SG Saviour.NOM.SG then sit.3SG.PST there OF DET.DAT.SG journey-DAT.SG
werig wið ðone wæterpytt
weary.NOM.SG against DET.ACC.SG wellACC.SG
'The Saviour then sat down there against the well, weary from the journey'

(5) (cochdrul, ChrodR_1: 27.11.413)
þonne he ut **of** þam cwearterne gange
then 3SG.NOM.MASC out OF DET.DAT.SG prison-DAT.SG go-NPST.3SG.SBJV
'then he may go out of the prison'

Of$_{PDE}$-phrases depend on nouns, verbs, adjectives, and other adpositions, as shown in **Table 4**. *Of*$_{PDE}$-phrases do not appear as clausal adjuncts. *Of*$_{PDE}$-phrases are predominantly adnominal (83% of observations), whereas adnominal *of*$_{OE}$-phrases are in a minority (12% of observations).

Head on which *of*$_{PDE}$-phrase depends	**Raw frequency of *of***	**Frequency of *of* per 10000 words**
Verb	51016	5.80
Adjective	267085	30.38
Noun	2341113	266.33
Adposition	64850	7.38

Table 4: Frequency of heads on which *of*$_{PDE}$-phrases depend.

The different categories of heads are considered in turn, beginning with adpositions.

When selected for by another adposition, *of*$_{OE}$-phrases are only observed governed by *ut*, 'out', and *up*, 'up', the frequencies of which are given in **Table 5**.

Adposition head	**Raw frequency of *of***	**Frequency of *of* per 10000 words**
ut, 'out'	158	1.18
up, 'up'	33	0.23

Table 5: Frequency of adpositions selecting for *of*$_{OE}$-phrases.

The sequence *ut of*$_{OE}$ persists into PDE as *out of*, with the latter analysed in various ways (see Elenbaas 2014). There is a four-fold increase in the frequency of *out* + *of*$_{PDE}$-phrase compared to *ut* + *of*$_{OE}$-phrase, although in both data sets these uses of *of* are relatively infrequent (see **Table 6**).

The sequence *up of* is absent from PDE (although *up of* is observed in eME as well as OE, see Section 5). The use of *of* to mark a place of departure is shared between *ut of* and *out of* with *up of*. *Up out of* is however observed in the *BNC*. There are more types of adpositions selecting for of_{PDE}-phrases, including *as*, *because*, *despite*, and *instead* (see **Table 6**). *Because* and *instead* are taken as adpositions since they are historically combinations of adposition and noun, like the unambiguously adpositional *despite*, and remain parallel in some uses in PDE to complex adpositional phrases like *in spite of*, *by virtue of*. The minority characteristic of an *of*-phrase selected for by another adposition has not altered substantially over time, with a similar proportion of the total observations of *of*-phrases selected for by other adpositions in both corpora.

(6) but because **of** the happening of it (J40 172)

(7) And company cars are to be taxed according to price instead **of** engine size. (K1H 541)

(8) A boat called Dodo's Delight sailed out **of** Falmouth harbour. (K21 189)

(9) He takes the cup off **of** the table. (A74 2122)

(10) Tug swam up out **of** the horrors of the darkness. (A74 2372)

Adjectival heads which select for of_{OE}-phrases number only three in the corpus data: *æðelboren*, 'noble-born', *werig*, 'tired', and *freo*, 'free'. There is some lexical continuity between the adjectives which select for an *of*-phrase in OE and their PDE counterparts: *born*, *weary*, and *free* can select for either an of_{PDE}-phrase or a *from*-phrase, with of_{PDE}-phrases the more frequent variant for all three adjectives. The data presented in **Table 7** is also of relevance to variation between of_{PDE} and other adpositions, discussed further in Section 4.4.1.

Adposition head	**Raw frequency of *of***	**Frequency of *of* per 10000 words**
as	749	0.085
because	16096	1.83
despite	2	0.0002
instead	6124	0.70
off	120	0.014
out	42238	4.80
up out	142	0.016

Table 6: Frequency of adposition heads selecting for of_{PDE}-phrases.

Adjective	Adpositional phrase selected for	Raw frequency	frequency per 10,000 words
born	of	225	0.02
born	from	30	0.003
free	of	1365	0.15
free	from	962	0.11
tired	of	591	0.07
tired	from	21	0.002
weary	of	72	0.008
weary	from	5	0.0005

Table 7: Frequency of adjectives (counterparts of those OE adjectives which select for *of*$_{OE}$-phrases) selecting for *of*$_{PDE}$-phrases and *from*-phrases.

Other adjectives observed to select for *of*$_{PDE}$-phrases indicate content and parts, like *empty, full, devoid, inclusive*, attitudes like *aware, sure, critical*, *supportive*, *sceptical* and indicators of experienced emotions like *afraid, jealous*, *desirous proud, reminiscent*. Causation and source are relevant for both *of*$_{OE}$-phrases and *of*$_{PDE}$-phrases dependent on an adjective.

Most frequently, *of*$_{OE}$-phrases are observed dependent on verbal heads, often of verbs of motion, and those indicating removal, like *arisan*, 'arise', *niman*, 'take', and *gewitan*, 'depart'. Many of these verbs, like *take*, *rise up* appear with *from* phrases in PDE or with *out of*. However, different verbs from these do in fact select for *of*$_{PDE}$-phrases. These include verbs of removal like *cleanse*, *dispose* (11) and *rid*, where the use of *of*$_{PDE}$ preserves the sense of separation evident in examples (1) of adverbial *of*$_{OE}$-phrases). Other verbs observed selecting for *of*$_{PDE}$-phrases specify the relations between parts and wholes like *make, consist*, or are perception predicates: *beware, think, hear, learn*, and *read*, with the adposition marking the source or stimulus of perception. There is no direct persistence of the individual verbal heads frequently observed selecting for *of*$_{OE}$-phrases into the present-day but there is continuity of the semantic relations marked by *of* in adverbial contexts.

(11) The British government decides how to dispose **of** high level nuclear waste. (B76 188)

(12) We read **of** Wellington's distress at the terrible losses at Badajoz. (AHA 941)

Adnominal contexts are by far the most frequent for *of*$_{PDE}$-phrases and an important point of difference between *of*$_{OE}$ and *of*$_{PDE}$.

4.1.2 Complements

The complements taken by of_{OE} and of_{PDE} are predominantly nominal, as shown in **Table 8**. There are no non-nominal complements of of_{OE} at all.[15]

Type of NP complement	Raw frequency	per 10000 words
NP headed by common noun	4405	31.46
NP headed by proper noun	513	3.63
NP headed by pronoun	767	5.42
NP headed by nominalized adjectives, relatives, and other nominal forms	103	0.73

Table 8: Frequency of NP complements of of_{OE}.

A significant majority of the complements of of_{PDE} are nominal (see **Table 9**). There are non-nominal complements too: clauses, and other adposition phrases. The frequency of *course* in the phrase *of course* is given separately, as a reflection of the fact that in this expression, *course* is not the complement of the adposition but is instead an inseparable part of an adverbial phrase.

Complement category	Raw frequency of *of*	Frequency of *of* per 10000 words
noun phrase (of which proper noun)	2448847 (275538)	278.58 (31.34)
adposition phrase	178	0.02
clause	16459	1.87
of course	24001	2.73

Table 9: Frequency of different categories of complement of of_{PDE}.

Adposition phrase complements of of_{PDE} are limited in practice to the context of *instead* + of_{PDE}-phrase, when the adposition phrase is conjoined by way of *instead of* with another adposition phrase elsewhere in the clause. Of_{PDE} with adpositional complements outside the context of *instead of* are extremely rare ($n = 5$) and the corpus examples may be considered ungrammatical. These include:

(13) vice-chair Wolfgang Langnitschke and former treasurer Wolfgang Pohl were charged **of** with breach of trust (HL7 1430)

[15] There is ongoing debate as to whether Old English has Determiner Phrases (DPs); the designation Noun Phrase (NP) is used here without passing comment on this question.

(14) But now the naturists are coming out **of** from behind the bushes (K97 2202)

Clausal complements of of_{PDE}, headed by complementizers occur when the of_{PDE}-phrase is itself a complement of a perception predicate, like *think*, *say*, *wary*, or the nouns indicating perception, like *question*, and *point*. Clausal complements are seen when of_{PDE} depends on *regardless* or *irrespective*; here too there is a semantic association with perception, signifying a dismissal of consideration.

(15) His clear understanding **of** how the electrical 'capacity' of a conductor was increased. (GTA 177)

(16) He is sceptical **of** whether illusions 'hold the key to unlock the mysteries of vision'. (B73 1671)

(17) It wasn't a matter **of** if they would return. (G0P 3039)

Non-nominal complements of of_{PDE} appear in fixed expressions, like *of course*, and *instead of*, or in semantically identifiable and limited contexts, like with perception predicates. Nominal complements are not limited in this way.

4.2 Comparing morphophonological form

Of is formally stable in the history of English, with two exceptions. The etymon of *of*, **aƀa/*aba*, is also the etymon of the Old English verbal prefix *a(f)-*, seen in verbs like *a-flieman*, 'banish'. The prefix adds a meaning of motion away from a source (Campbell 1959:§73; see also Elenbaas 2007: 135). In the prehistoric period, the adposition *of* and the prefix *a(f)-* have become phonologically distinct. A second change is seen in the formal split of *off*, from *of*, an adposition, in the post-Conquest history of English (Elenbaas 2007). The adposition, adverb, and particle off_{PDE} is morphophonologically and historically related to of_{OE}, and the difference in form between the two has traditionally been ascribed to stress (OED online, 2022).

Of_{PDE} can be reduced phonologically, represented in writing as the *-a* in forms like *lotsa*. Also observed in *BNC* is the representation of phonologically reduced of_{PDE} as *-uv-* in the form *helluva* (Pierce 2017). These forms also represent loss of word boundaries between heads and of_{PDE}, another important indicator of formal reduction.

In the Old English data there is no orthographic evidence to indicate loss of word boundaries before or after of_{OE} or phonological reduction. The view found in handbooks and grammars, based partly on assumptions about stress and partly on metrical evidence from poetry (Campbell 1959: §96–97), is that of_{OE}, like other Old English adpositions, is unstressed in most contexts, in other words, showing relative phonological reduction compared to non-adpositional items in its immediate context, but has full stress more commonly applicable to nouns, verbs, and

adjectives, when it appears in the syntactic context of preposition stranding. However, verifying these claims about stress and reduction in Old English prose is not possible. *Of*$_{\text{PDE}}$ has undergone some loss of form and phonological integrity, but there is no evidence in the corpus data to allow comment on whether or not *of*$_{\text{OE}}$ was subject to similar processes.

Of$_{\text{PDE}}$ is also phonologically reduced in the context of the hedges *kind of* and *sort of*, which are grammaticalizations from *(a) kind of* and *(a) sort of* constructions (for the development of the hedges, see for instance Brems & Davidse 2010, Margerie 2010). In *kind of* and *sort of* hedges, the element *of*$_{\text{PDE}}$ no longer marks a relation between entities.

(18) My legs **kinda** left me. (K97 16408)

The reduced forms *kinda, sorta* are sometimes observed in noun phrases where there is a part-whole or classification relation between the nouns *sort* and *kind* and the nominal complement of *of*$_{\text{PDE}}$, whilst the unreduced forms *sort of*, *kind of* are less frequently observed as hedges, as shown in **Table 10**. Nevertheless, in the *BNC*, there is a statistically significant correlation between the phonological reduction of *of*$_{\text{PDE}}$ to *-a* and the hedge function of *kind of* and *sort of* ($\chi^2 = 949.501$, $df = 1$, $p < 0.00001$). This is a distribution also observed in Joseph (2011: 195) and used there to criticize associations between morphophonological reduction and grammaticalization.

Form	Frequency as NP of NP	Frequency per 10000 words	Frequency as hedge	Frequency per 10000 words
kinda	8	0.001	115	0.01
sorta	3	0.0003	12	0.001
total reduced forms	11		127	
kind of	12059	1.37	1151	0.13
sort of	9545	1.08	1342	0.15
total non-reduced forms	21604		2493	

Table 10: Frequency of reduced and non-reduced forms of *kind of* and *sort of* by syntactic function.

Morphophonological reduction is one of the few instances of difference and discontinuity between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$, evidence for the relatively small differences between this lexical and functional adposition.

Already at this stage in the comparison between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ it is clear that the distinction between the adposition cannot be simplified to a single difference. There are differences in the dimensions considered thus far, syntax and morphophonology, and as Section 4.3 will show,

differences in semantics too. On this basis, it is suggested that the lexical versus functional distinction amongst adpositions generally consists of multiple properties. This finding is not unexpected given previous assessments, and is in the line with the arguments of Zwarts (1997: 1), Tseng (2001: 34), and Mardale (2011: 69).

4.3 Comparing semantics

Of$_{\text{OE}}$ marks the following relations: cause (19), repeated from (4); the point from which something is removed or separated (20), repeated from (1); parts of wholes (21), repeated from (3); the origin point of movement (22); the material from which something is made (23); agents of passives and in the eventive noun phrase (24); stimulus or theme arguments in the clause and eventive noun phrase (25); the place or space over which someone has control (26); the social group to which someone belongs (27). Several of the relations which have been taken to support the semantic non-specificity of *of*$_{\text{PDE}}$ are in fact already in evidence in the Old English period. These include possessive relations like part-whole marking, which are taken as evidence of non-specificity by van Oosten (1977: 456) and Zwart (2005: 689), and argument marking in the eventive noun phrase, which has been taken as evidence of the semantic non-specificity by Ceolin (2021: 3) and in some studies of the genitive alternation (Feist 2012: 266).

(19) (coaelhom, ÆHom_5: 7.680)
Se Hælend þa sæt þær **of** ðam siðfæte
DET.NOM.SG Saviour.NOM.SG then sit.3SG.PST there OF DET.DAT.SG journey-DAT.SG
werig
weary.NOM.SG
'The Saviour then sat down there weary from the journey.'

(20) (cochdrul,ChrodR_1: 29.7.445)
he gehælð his sawle **of** deaðe.
3SG.NOM.MASC heal-3SG.NPST 3SG.GEN soul.ACC.SG OF death-DAT.SG
'He salves his soul from death.'

(21) (cowsgosp, Lk_[WSCp]: 24.13.5664)
and þa ferdon twegen **of** him on þæt castel
and then go-PST.PL two OF 3PL.DAT.MASC into DET.ACC.SG fortification.ACC.SG
'And then two of them went to the fortification.'

(22) (cootest, Gen: 37.17.1449)
gll
Hi ferdon **of** ðisse stowe
3PL.NOM go-3PL.PST OF DEM.DAT.SG place-DAT.SG
'They went from this place.'

(23) (coorosiu, Or_4: 13.112.2.2343)
hie worhton sume **of** seolfre sume **of** treowum
3PL.NOM make-3PL.PST some-ACC.PL OF silver-DAT.SG some-ACC.PL OF tree-DAT.PL
'They made some from silver and some from timber.'

(24) (cocura, CP:53.417.6.2891)
hit oft gebyreð ðæt ðæt mod
3SG.NOM.SG.NEUT often happen-NPST.3SG COMP DET.NOM.SG mind.NOM.SG
wyrð gecostod **of** ðæs flæsces
become-NPST.3SG tempt-PASS.PTCP.NOM.SG OF DET.GEN.SG flesh-GEN.SG
lustfulnesse
lustfulness-DAT.SG
'It often happens that the mind becomes tempted by the lustfulness of the flesh'

(25) (cowsgosp, Lk_[WSCp]: 12.15.4663)
nys nanes mannes lif on gytsunge **of**
NEG-be-NPST.3SG none-GEN.SG man-GEN.SG life-NOM.SG ADP coveting-OBL.SG OF
þam þe he ah
DET.DAT.SG REL 3SG.NOM.MASC own.NPST.3SG
'the life of no man is in coveting of that which he owns'

What is coveted is the source of the covetousness; again a sense of origin is relevant.

(26) (cochronE,ChronE_[Plummer]: 1108.5.3467)
se cyng **of** France Philippus forðferde
DET.NOM.SG king.NOM.SG OF France Philip.NOM.SG die-3SG.PST
'Philip the king of France died.'

Philip is the king who rules over France, he is himself of French birth, providing an association between landed control and social origin.

(27) (cobede, Bede_4: 17.302.17.3058)
Wæs þær sum munuc **of** Scotta cynne, se
be.PST.3SG there some.NOM.SG monk.NOM.SG OF Scot-GEN.PL kin.DAT.SG REL
wæs Dicul haten
be.PST.3SG Dicul named
'There was a certain monk of the Scottish race who was called Dicul'

The relations of kinship (28) and alienable possession (29) are observed marked by *of*$_{OE}$, in 1 example each.

(28) (coorosiu, Or_3: 11.82.32.1664)
gefriend beon þe wæron gebroðor **of** fæder 7 **of** meder
friend be.INF REL be-3PL.PST brother OF father-DAT.SG and OF mother
'to be friends, those who were brothers by father or mother'

(29) (cootest, Deut: 32.32.5097)
Hyra wingeard is **of** Sodomwara winearde 7 **of**
3PL.GEN vineyard.NOM.SG be.NPST.3SG OF Sodomite-GEN.PL vineyard-DAT.SG and OF
Gomorra underburgum
Gomorrah.GEN.SG suburb-DAT.PL
'Their vineyard is like the Sodomites' vineyard and like the vineyard of Gomorra's suburbanites'

Of$_{PDE}$ can be used to mark all these relations, although for the origin point of movement (22), *of*$_{PDE}$ is only observed as a complement to *out* (8) or *off* (9) (Huddleston & Pullum 2002: 639). *Of*$_{PDE}$ marking removal and the stimulus of perception is exemplified above (11), (12). The following examples show *of*$_{PDE}$ marking subsets (30), material (31), agents (32), cause (33), control (34), and social origin (35).

(30) Only three **of** the eleven members were peasants. (A64 694)

(31) She always wears floor-length dresses **of** silk brocade. (G2E 555)

(32) An unlikely coalition ... pressured the government to take firm action to resist the invasion **of** the drift-netters. (ABC 1259)

(33) Racehorses have been known to die **of** eating chocolate. (FU2 1299)

(34) Aebbe (Eafe), daughter of Eormenred and now abbess **of** Minster-in-Thanet (G0G660)

(35) He seems to have taught the men **of** Lewes and Bramber how to fish. (CB6 390)

Of$_{PDE}$ marks relations not observed marked by *of*$_{OE}$, or in the case of alienable possession and kinship, marked by *of*$_{OE}$ in two examples: alienable possession (36); all and any kinship relations (37); characteristics of various sorts (38); topics of discourse (39); body parts (40); what is represented in an image or artistic depiction (41); the author or creator of a work (42); place (43).

(36) taking care of the cat **of** an elderly hospitalised lady (BNL 1597)

(37) The carpet was acquired from Morris & Co. by the uncle **of** the present owner. (EBS 2639)

(38) a public sector borrowing requirement **of** heroic proportions (K5A 3176)

(39) The epic **of** human redemption was now recast. (CCE 316)

(40) He aimed a can of tinc benz spray at the foot **of** a young blonde WRAC girl. (A77 1804)

(41) the portrait **of** a man whose face is obscured by a fried egg (FBM 259)

(42) a constant theme through the novels **of** D. H. Lawrence. (AS4 167)

(43) the fine church of Altarnun, the 'Cathedral **of** Bodmin Moor' (B0G 620)

As further evidence that of_{OE} has a smaller semantic range than of_{PDE}, the specific case of part-whole relations between entities is now considered. The semantic notion of part-whole relations can be divided up into various types of semantic relations, when viewed in more granular detail. In the remainder of this discussion of semantic relations, "part-whole" is used as an umbrella term to refer to a group of different but interrelated semantic relations, following the distinctions between part-whole relations and the labels applied to the different relations used by Payne et al. (2013) to describe of_{PDE}. The finding is that of_{OE} marks fewer of these part-whole relations than does of_{PDE}. Of_{OE} is observed marking subsets (3), membership (44), and the contents of collections (45). **Table 11** gives the frequencies with which of_{OE} is observed marking these relations.

Type of part-whole relation	**Raw frequency of *of***	**per 10000 words**
Subset	158	1.12
Member	38	0.27
Inherent	7	0.05
Collection	16	0.11

Table 11: Frequency of different types of part-whole relations marked by of_{OE}.

(44) (coaelive, ÆLS_[Martin]: 244.6120)
sum ungesælig man hine sylfne ahenge **of**
some.NOM.SG unhappy.NOM.SG man.NOM.SG himself.ACC.SG hang-3SG.PST OF
þære hiwrædene
DET.DAT.SG household.DAT.SG
'Some unhappy man of the household hung himself'

(45) (cocathom1, ÆCHom_I, _36: 486.7.7138)
Ic geseah swa miccle meniu swa nan
1SG.NOM see.2SG.PST so great.ACC.SG multitude.ACC.SG as NEG-one.NOM.SG
man geriman ne mæg **of** eallum þeodum
man.NOM.SG count-INF NEG be-able.3SG.NPST OF eall-DAT.PL people-DAT.PL
'I saw so great a multitude of all peoples, such that no-one could count it'

The set of part-whole relations marked by of_{PDE} likewise includes subsets (30), membership, (46), and the contents of collections (47).

(46) He was a member **of** the town council of Lincoln. (GTD 18)

(47) A small army **of** frogs croaked a hoarse descant. (FU8 1401)

Of_{PDE} is also observed marking part-whole relations not marked by of_{OE}: body parts of animate beings (40), non-bodily inherent parts (48), sub-periods of time (49), and indications of measures and quantities (50).

(48) He was back behind the wheel **of** his Ferrari. (EX1 485)

(49) The first hour **of** the last day saw five wickets crash for 78. (ABR 192)

(50) 'Aye,' Bull replied laconically, accepting a glass **of** whisky. (ALL 1705)

Part-whole relations are an instance of semantic continuity uniting the two adpositions, but there is also difference insofar as the functional adposition of_{PDE} marks a greater number of relations covering a greater semantic range than does the lexical adposition of_{OE}.

Some semantically-oriented characterizations of the lexical versus functional distinction amongst adpositions have stated the distinction as being between adpositions which have a limited number of specific meanings, and adpositions which lack specific meaning. For van Oosten (1977: 456), for instance, the distinction is between meaningful and "colourless" adpositions; for Tseng (2001: 21) it constitutes a continuum from "minimal to maximal" meaningfulness; for Mardale (2011: 69), the distinction is captured by feature [$\pm$theta assigning]. It has been established that of_{PDE} marks more relations than does of_{OE}, and might be tempting to take this difference in available relations as equivalent to characterizations of the lexical versus function distinction as being between specific and non-specific meaning. The distinction would therefore be between of_{PDE} which has no specific meaning, marking multiple dependency relations, and of_{OE} which has a specific meaning, origin. The relations marked by of_{OE}, such as like materials, causes, and departure points, all relate to literal and metaphorical origins. However, interpreting the fewer and greater relations marked by of_{OE} and of_{PDE} in this way ignores the possibility of identifying specific points of semantic difference and similarity. For example, if a collection relation is between a container or group noun and the contents of the collection, of_{OE} can be used, but not if the relation is between a unit of measurement and the contexts. On the other hand, of_{PDE} can be used in both circumstances. Likewise, of_{OE} marks the material from which something is made, but is not observed marking other characteristics of objects like size; of_{PDE} is observed marking both relations. If of_{PDE} as a functional adposition is described as having minimal meaningfulness or being semantically colourless these insights into the semantic connections between the relations available to of_{PDE} are missed. Rather than characterize semantic differences between lexical and functional adpositions in terms of limited meaning versus no particular meaning, it is therefore proposed that a characterization more

open to semantic similarities and only small semantic differences between lexical and functional adpositions is adopted instead. This entails a language-specific relative distinction between smaller and greater numbers of discrete, identifiable semantic relations. The semantic distinction between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$, and perhaps the lexical versus functional distinction amongst adpositions more widely, can be characterized as a difference between an adposition able to mark *n* relations and an adposition able to mark *n-plus* relations, allowing for a situation like that of *of*$_{\text{PDE}}$, in which a functional adposition retains the uses of its earlier lexical counterpart.

4.4 Comparing *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ with respect to variation

One of the most commented-upon properties *of*$_{\text{PDE}}$ is its participation in variation with the *s*-possessive, the so-called "genitive alternation" of PDE illustrated in (51); by contrast a comparable variation between *of*$_{\text{OE}}$-phrases and genitive-case-marked noun phrases in OE has been routinely dismissed in the literature (Allen 2008: 73–74; Ceolin 2021: 8). Any examination of *of*$_{\text{PDE}}$ must acknowledge the genitive alternation as an important aspect of the use of the adposition, and this investigation has also found that there is variation between genitive-case-marked noun phrases and *of*$_{\text{OE}}$-phrases.

(51) a. **Henry VI's** son, Frederick, should act in the interests of the Church (HPW 1065)
b. Charles married Desiderata, the daughter **of Desiderius** (ALT 150)

4.4.1 Variation between an *of*-phrase and an adpositional phrase headed by an adposition other than *of*

Of$_{\text{OE}}$ varies with other adpositions in all the syntactic contexts in which it appears, and adposition-adposition variation is a more complex phenomenon than this overview can do justice to. Various verbal (compare (1) with (52)) or adjectival heads (53a), (53b) are observed in some instances with a dependent adpositional phrase headed by *of*$_{\text{OE}}$ and by other adpositional phrases, most often *fram*-phrases, 'from'. These adpositional phrases mark relations of departure, separation, and removal.

(52) (cogregdC, GDPref_and_4_[C]: 60.348.18.5342)
þeos gesægednes gehæleð synderlice þa sawle
DEM.NOM.SG offering.NOM.SG heal.NPST.3SG especially DET.ACC.SG soul.ACC.SG
fram þære ecan forwyrde
from DET.DAT.SG eternal.DAT.SG perdition.DAT.SG
'this offering especially heals the soul from eternal perdition.'

(53) a. (cobede, Bede_1: 16.88.23.814)
he bið freo **of** þære soðfæstnesse
3SG.NOM.MASC be.NPST.3SG free OF DET.DAT.SG truth-DAT.SG
'he is free from truth'

b. (cogregdH, GD_2_[H]: 2.102.7.1021)
he wæs þa freoh **fram** leahtre þære
3SG.NOM.MASC be.PST.3SG then free from vice DET.GEN.SG
costnunge
temptation-GEN.SG
'He was then free from the vice of temptation.'

Marking agents of passives is another context of variation between *of*$_{OE}$ and other adpositions, namely *æt*, 'at', *fram*, 'from', and *þurh*, 'through' (Mitchell 1985:§809). The same applies to *of*$_{OE}$ marking agents of eventive nouns.

(54) (coverhom, HomS_38_[ScraggVerc_20]: 145.G.2631)
gyf he cepð idelre herunge **of** mannum
if 3SG.NOM.MASC heed-3SG.NPST idle-ACC.SG praising-ACC.SG OF man-DAT.PL
'if he heeds the idle praise of mortal men'

(55) (cocathom1, ÆCHom_I, _28: 412.80.5516)
ðeos todræfednys getacnode þa toweardan
DET.NOM.SG expulsion.NOM.SG signify-3SG.PST DET.ACC.SG future-ACC.SG
toworpennysse **þurh** romaniscum here
destruction-ACC.SG ADP Roman-DAT.SG army.DAT.SG
'This expulsion signified the coming destruction by the Roman army.'

Some individual adjectival and verbal heads are observed in the *BNC* selecting for adpositional phrases other than *of*$_{PDE}$-phrases, but such selectional possibilities appear to be on a lexeme-by-lexeme basis. For instance, whilst *jealous* can appear with an *of*$_{PDE}$-phrase, an *about*-phrase, or an *at*-phrase, no adpositional phrases other than *of*$_{PDE}$-phrases are observed with the semantically similar adjective *envious*. Variation between *of*$_{PDE}$-phrases and *from*-phrases was demonstrated above in **Table 7** with a small sample of adjectives. In the eventive noun phrase, *of*$_{PDE}$ marking agents varies with the agentive adposition *by* (compare (32) with (56)), just as *of*$_{OE}$ varies with the agentive adpositions *fram* and *þurh*.

(56) What did spur them was the invasion **by** foreign drug multinationals. (ABF 2344)

Of$_{PDE}$ is not outside variation with other adpositions; variation between *of* and another adposition does not separate *of*$_{OE}$ from *of*$_{PDE}$.

4.4.2 Variation between an *of*-phrase and a case-marked noun phrase

Variation between *of*$_{OE}$ or *of*$_{PDE}$ and case raises definitional issues of case. There is an assumption underlying associations between functional adpositions and case that "case" means Indo-European-style cases marking grammatical relations (Cann 2000: 8,9; Zwart 2005; Huddlestone

& Pullum 2002: 601; Svenonius 2010). Inflectional forms can mark specific semantic relations and therefore pattern with lexical adpositions but such forms are not the kinds of case referred to in studies equating case with functional adpositions. The *s*-possessive is not a case under this definition; present-day English does not have a case system, but Old English does, of which the genitive is just one component (Allen 2008: 63). Nevertheless, because the genitive alternation has been used to identify of_{PDE} as a functional adposition and because the *s*-possessive shows formal and functional continuity with some genitive case forms of Old English (Allen 2008: 223ff.), the variation of of_{PDE}-phrases and the *s*-possessive is discussed here in terms of case.

Of_{PDE}-phrases vary with the *s*-possessor only where of_{PDE} appears within the noun phrase and with a nominal complement; of_{OE}-phrases vary with the genitive when they depend on a noun, or on a verb or adjective.[16] Variation between an adverbial of_{PDE}-phrase and the *s*-possessor, or between an ad-adjectival of_{PDE}-phrase and the *s*-possessor is unavailable because the *s*-possessor is restricted to adnominal dependency.

The semantic contexts in which an of_{OE}-phrase varies with the genitive-case-marked noun phrases are different in number and identity from the semantic contexts in which an of_{PDE}-phrase varies with the *s*-possessor. Only adnominal of_{OE}-phrases are considered to provide a more direct comparison with present-day English.

Of_{OE} and the genitive vary in the marking of part-whole relations (57a), (57b), and in the marking of agents (compare (54) with (58)) and stimulus arguments (compare (25) with (59)) in the eventive noun phrase. These findings run contrary to the claims made in Ceolin (2021: 3) that of_{OE} "is used as a locative preposition, that in some cases can have a partitive reading overlapping with the meaning of a postnominal genitive".

(57) a. (cochronE, ChronE_[Plummer]: 1087.30.2998)
Roger het an **of** heom
Roger name.PASS.3SG.PST one.NOM.SG OF 3PL.DAT
'One of them was called Roger.'

b. (cochronC, ChronC_[Rositzke]: 461.1.67)
heora þær wearð an ofslegen, þam wæs
3PL.GEN there become.3SG.PST one.NOM.SG slain REL.DAT be.3SG.PST
nama Wipped.
name.NOM.SG Wipped
'There one of them was killed, whose name was Wipped'.

[16] A number of the verbs which select for of_{OE}-phrases can also take genitive-case-marked complements standing in an identical semantic relation to the head as an of_{OE}-phrase. These verbs include *hælan*, 'to heal', and *asceadan*, 'to segregate'— although the attested examples fall outside the *YCOE* and appear in Old English poetry (Koike 2004: 29). Whether or not any variation is observed is on a lexeme-by-lexeme basis.

(58) (cobede, Bede_3: 18.238.7.2428)
and generede from þære feondlican hergunge **ðara**
and defend.PST.3SG ADP DET.DAT.SG hostile-OBL.SG harrowing-OBL.SG DET.GEN.PL
hæðenra
heathen-GEN.PL
'And he defended against the heathens' hostile harrowing.'

(59) (cocathom1, ÆCHom_I, _27: 405.142.5366)
seo gitsung **ðæra æhta** his willan ne
DET.NOM.SG coveting DET.GEN.PL possession-GEN.PL 3SG.GEN.MASC will.ACC.SG NEG
hremde
turn-3SG.PST
'The covetousness of possessions did not shake his resolve.'

An adnominal genitive-case-marked noun phrase is the usual means of marking alienable possession (29) and kinship (28) in Old English.

The semantic contexts in which a variation between the *s*-possessor and an *of*$_{\text{PDE}}$ phrase is possible include the marking of relations of kinship, alienable possession (60), authorship (compare (42) with (61)), characteristics, depictions (62), and arguments in eventive noun phrases.

(60) a. The timbered town house **of the marquesses of Huntly** (ECS 1730)
b. as a guest to **the family's** town house in Bristol (B0R 719)

(61) **Anita Brookner's** novels are London-based (CKN 1064)

(62) a. They've got a picture **of Mrs Thatcher** on them. (A3T 453)
b. My father had been a great admirer of Kemal Ataturk ... and **Ataturk's** picture hung in the living-room. (ANU 524)

Variation between case and adposition, as well as the variation between adpositions considered in Section 4.4.1, marks an important continuity between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$. Two previously-proposed criteria for distinguishing lexical from functional adpositions are found not to differentiate *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$, which emerge as remarkably similar to one another despite differences in the nature of case and the inventory of adpositions between OE and PDE.

4.5 Overview of findings

Table 12 summarises the outcomes of the comparison of *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$.

Dimension of comparison	Overview of findings	Type of distinction	Section
External syntax	*of*$_{OE}$ mostly adverbial; *of*$_{PDE}$ mostly adnominal	change in which context is most frequent	4.1.1
	Of$_{PDE}$-phrases depend on verbs, nouns, adjectives, adpositions		
	Of$_{PDE}$-phrases depend on verbs, nouns, adjectives, adpositions	continuity	
	Of$_{OE}$-phrases, but not *of*$_{PDE}$-phrases, observed as clausal adjuncts	reduction in contexts	
Internal syntax	*of*$_{OE}$ has only nominal complements		4.1.2
	of$_{PDE}$ has nominal complements or clausal complements	some expansion	
	of$_{PDE}$ has adpositional complements but very limited	minimal expansion	
Morpho-phonology	No evidence for reduction of *of*$_{OE}$		4.2
	Of$_{PDE}$ reduction to *-a*	reduction	
	In the *BNC* reduction and hedge uses correlate but not absolute association		
Semantic relations	*of*$_{PDE}$ marks more relations than *of*$_{OE}$	expansion	4.3
	of$_{PDE}$ marks relations not marked by *of*$_{OE}$ quantities, depictions, characteristics, body parts.	expansion	
	of$_{PDE}$ as used with verbs and adjectives close to spatial semantics of *of*$_{OE}$	continuity	
	Both adpositions can mark kinship, alienable possession	continuity	
	Both adpositions can mark spatial relations	continuity	
Variations	*of*$_{OE}$ and *of*$_{PDE}$ vary with other adpositions	continuity	4.4
	of$_{OE}$ and *of*$_{PDE}$ vary with genitive case	expansion of semantic contexts for case variation	

Table 12: Summary of comparison.

5 Evidence from early Middle English

A survey of the uses of *of* in early Middle English (1150CE-1250CE), the period of English immediately following Old English, supports claims made in the previous section, concerning continuity in the use of *of* between Old and present-day English, and differences in the number of semantic relations available to *of* over time.[17] *Of* in early Middle English (henceforth of_{eME}) appears in this data set 160 times per 10,000 words.

Of_{eME} is used to mark some semantic relations not observed in the Old English data. These are body part relations and non-bodily inherent parts (63); quantity relations, both with nouns and the adjective *ful*, 'full', (64); qualities (65); inalienable possession (66). Unlike of_{PDE}, of_{eME} is not observed marking quantity relations where the noun on which the *of*-phrase depends is a unit of measurement (50).

(63) *early Middle English* (cmlambx1.133)
ðeo steorren **of** heuene
DET star.PL OF heaven
'the stars of heaven'

(64) (cmvices1.145)
sand ane drope **of** þire swete mildsce
send.PST.3SG one drop OF your sweet mercy
'Send one drop of your sweet mercy.'

(65) (cmsawles.181)
þe swetnesse **of** hare song
DET sweetness OF 3SG.POSS.FEM song
'the sweetness of her song'

(66) (cmlambx1.43)
to brekene þa erming licome **of** þa ilca men
TO break-INF DET poor body OF DET same man
'to break the poor body of that same man'

Of_{eME} selects for nominal complements in the vast majority of observations, but clausal complements, with the complementizer *hu*, 'how', are observed. Items selecting for of_{eME}-phrases represent both expansion and continuity from the Old English period. Nouns and verbs select for of_{eME}-phrases; there are a greater number of prepositions and adjectives observed with *of* than in the Old English period. Adjectives observed include *afered*, 'afraid', *freo*, 'free', *ful*, 'full', and

[17] Early Middle English data was retrieved from the texts of the M1 subcorpus of the *Penn-Helsinki Parsed Corpus of Middle English* (PPCME2) (Kroch et al. 2000), numbering 212464 words, and comprising the texts of the Kentish, Lambeth, and Trinity Homilies, the Katherine Group, *Vices and Virtues*, and the *Ormulum*.

imindie, 'mindful', the adpositions observed are *adun*, 'downwards', *forþ* , 'forth', *fur*, 'for', *up*, *ut*. Some of these items are also observed selecting for of_{OE} or for *of*-phrases in PDE. Examples of *of* in combination with *her* and *þer*, as *þerof* and *herof* are also observed in the eME data.

Of_{eME}-phrases are mostly adverbial, like of_{OE}-phrases, as **Table 13** shows, but there is a more than ten-fold increase in adnominal examples of *of* compared to the Old English period.

Head on which of_{eME}-phrase depends	**Raw frequency of *of***	**Frequency of *of* per 10000 words**
Adjective	260	12.24
Adposition	248	11.67
Noun	1262	59.40
Verb	1383	65.09
herof or *þerof*	171	8.05
clause level adjunct	70	3.30

Table 13: Frequency of of_{eME} in the *PPCME* M1 period.

6 Discussion

The comparison of of_{OE} and of_{PDE} has a number of consequences for the characterization of the lexical versus functional distinction amongst adpositions, indicating that this is best viewed as distinction comprising multiple properties, a continual rather than absolute distinction. There are also consequences for how the category of adpoisitions is composed, containing lexical and functional adpositions with minimal differences existing between them. The differences and similarities between of_{OE} and of_{PDE} have implications too for certain aspects of grammaticalization generally and for the grammaticalization path proposed for *of* and similar adpositions in particular.

6.1 Characterizing the lexical versus functional distinction

One of the open questions in the literature concerns whether the lexical versus functional distinction amongst adpositions can best be characterized as an absolute split between lexical adpositions on the one hand and functional adpositions on the other or as a continuum between lexical and functional poles. Firstly, the degree of continuity between of_{OE} and of_{PDE} suggests that the distinction between the adpositions is not an absolute split. Continuity is evident with respect to variation with case (4.4.2), the predominance of nominal complements, and some semantic relations (4.3). Secondly, there are only a few dimensions in which of_{PDE} has some property of_{OE} lacks. These are morphophonological reduction, and taking non-nominal complements, yet in these areas the differences between of_{OE} and of_{PDE} have been shown to

be contextually limited. Other differences between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ are differences in which *of*$_{\text{OE}}$ has a property to an extent, and *of*$_{\text{PDE}}$ has the same property to a different, greater extent. It is possible that the properties which constitute the lexical versus functional distinction amongst adpositions are continual whilst the underlying distinction itself is absolute; the nature of the properties and the nature of the distinction need not be identical. However, the predominance of continual properties is suggestive of a continuum distinction, especially combined with the evidence that *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ have properties in common. A continual distinction between lexical and functional adpositions would not only mean that the category of adpositions can contain items of various lexial or functional status, but also that any individual adposition, like *of*$_{\text{eME}}$ might be identified as more or less lexical or functional relative to other adpositions.

The findings of continuity between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ seem to support the view of the relationship between the lexical versus functional distinction and the category of adpositions arrived at in Mardale's final assessment (2011: 69–70), also voiced by Tseng (2001: 19). Some adpositions are lexical, others are functional, and some, perhaps like *of*$_{\text{eME}}$ are more or less lexical or functional. The fact that *of*$_{\text{eME}}$ shows some differences from *of*$_{\text{OE}}$ but is similar to *of*$_{\text{OE}}$ in ways that *of*$_{\text{PDE}}$ is not supports this assessment of adpositions as a mixed set of lexical, functional, and partly functional, partly lexical items.

However, the differences between these different sorts of adposition are minimal. The differences between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ are found to be slight, with the similarities between them sometimes more striking than the differences. This is especially the case in terms of variations, where there is no difference between the adpositions. Those differences that exist are mostly questions of degree (the number of semantic relations marked, the proportion of adverbial and adnominal uses, the number of distinct heads selecting for an *of*-phrase). It is not unreasonable to suppose that the lexical versus functional distinction amongst adpositions more widely is also a relatively small or close distinction. Items belonging to the category adposition emerge as more functional than items of other categories like nouns and verbs, by virtue of some of the few available definitional properties of adpositions like morphological invariance, a role marking relations, and the inability to have discourse primacy (see Section 2.2). A close distinction between lexical and functional adpositions follows from the fact that even lexical adpositions are more functional than lexical items belonging to other categories. The lexical or functional status either of adpositions generally or the category adposition would therefore seem to be best resolved as functional: the sometimes quite limited differences between a lexical and a functional adposition evidenced by *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ speak to this conclusion. Some of the features of *of*$_{\text{OE}}$, like variation with case and non-spatial semantics, which have sometimes been assumed to indicate the functional status of an adposition, lead to the same conclusion that even lexical adpositions are in fact rather functional, and in this sense adpositions generally might be termed

"semilexical" (Mardale 2011). The apparent smallness of these distinctions also offers a general explanation why adpositions generally and some individual adpositions in particular have proven resistant to definitions of lexical and functional status.

Following on from the characterization of the lexical versus distinction amongst adpositions as continual and small, the category adposition can be said to consist of some members which are functional items and some members which are lexical items, and some items which are more or less functional or lexical. In this respect the category adposition would seem to be relatively similar to some other major categories, like the category verb in containing items with differing statuses relative to the lexical versus functional distinction. Nevertheless, the category adposition may well be distinctive insofar as the differences between lexical and functional items are not prominent. On the evidence of of_{OE} and of_{PDE}, the extent of semantic relations marked is a major difference between a lexical and a functional adposition (4.3). The importance of semantic relations in the lexical versus functional distinction might also be specific to the category adposition in contrast to other major categories. All adpositions are more functional than lexical in respect to some non-semantic properties, like morphological invariance and light weight, such that semantics is one of a relatively small number of dimensions in which individual adpositions might differ from one another. One of the definitional properties of an adposition is marking relations between entities, and as such it is unsurprising that the number and nature of the relations marked should be important in classifying individual adpositions with respect to the lexical versus functional distinction. The property, marking relations between entities, which is one of the small number of properties which might unite the otherwise hetergeneous category adposition can also be used to draw distinctions amongst adpositions (Asbury et al. 2006; Hagège 2010: 259–261; Deacon 2014: 3).

Of_{OE} and of_{PDE} have been found to differ in multiple dimensions, such as the semantic relations marked, types of heads, types of complements. Although semantics is the dimension in which there are the most obvious and greatest differences between Of_{OE} and of_{PDE}, there is no single property by which this lexical and functional adposition can be distinguished. Neither variation with case nor spatial semantics, properties previously proposed as distinguishing a lexical from a functional adposition can be used to successfully differentitate textitof$_{OE}$ and of_{PDE}, indicating that these properties have no special status for the lexical versus functional distinction amongst adpositions. The lexical versus functional distinction established here comprises multiple properties, in line with the positions taken by Zwarts (1997), Tseng (2001), and Mardale (2011). What the comparison of of_{OE} and of_{PDE} also shows is that the multifaceted nature of the distinction is neither an epiphenomenon of making multiple comparisons between different adpositions (as in Tseng 2001) nor a result of drawing together findings from multiple previous assessments (evident in Mardale 2011).

6.2 Grammaticalization

The comparison of *of*$_{OE}$ and $_{PDE}$ has implications too for some descriptions of grammaticalization. The following discussion assumes that *of*$_{PDE}$ is the outcome of a grammaticalization process which involves some morphophonological reduction as well as expansion in semantics and to an extent in syntax.

Semantic bleaching, defined in terms of the lowered prominence but retention of core meanings of a lexical item (Hopper & Traugott 2003: 98; Narrog & Heine 2021: 84ff.) aligns with the semantic differences identified between *of*$_{OE}$ and *Of*$_{PDE}$ (see Section 4.3). *Of*$_{PDE}$ can mark relations associated with space and origins but these are less prominent than the corresponding relations in the Old English period. The term semantic bleaching has sometimes been defined in terms of the loss of earlier meaning, not just as the lowered prominence of earlier meaning, as has the term generalization (Lehmann 2015: 34, 88). However, *of* does not show evidence for this sort of loss of meaning as part of grammaticalization. The relations marked by *of*$_{OE}$ are a subset of those marked by *of*$_{PDE}$, such that any relation *of*$_{OE}$ marks, *of*$_{PDE}$ also marks.

Following the notion that semantic expansion and syntactic context extension occur in parallel (Lehmann 2015: 35; Bybee 2015: 133, 239), it is anticipated that an expansion in the number of available semantic relations will be accompanied by a commensurate expansion in terms of the syntactic contexts in which *of* is observed. This expectation is not met in the case of *of*: there is semantic expansion and syntactic differences which seem to be motivated by semantic expansion, but the syntactic differences are not themselves expansions and are not motivated by the general fact of semantic expansion itself but rather by specific semantic relations. What syntactic distinction there is between *of*$_{OE}$ and *of*$_{PDE}$ consists of a shift in which syntactic context is most common, although the relevant contexts are common to both adpositions: *of*$_{OE}$-phrases are predominantly selected for by verbs, but *of*$_{PDE}$-phrases are predominantly adnominal (see **Tables 3** and **4**). This distinction would seem to be related to the semantic expansion of *of* to mark relations associated more with the noun phrase than the verb phrase or clause, like alienable possession, kinship, and body-part relations (36), (37), (40), (48). Nouns (in English, at least) are the core means of referring to body parts, property, and family members. The syntactic distinction between adverbial *of*$_{OE}$ and adnominal *of*$_{PDE}$ would therefore seem to be a consequence of the identity of a number of particular semantic relations involved in the semantic expansion of the adposition. The evidence that *of*$_{eME}$ can mark more possessive and part-whole relations (64), (65), (66) than can *of*$_{OE}$ and is also more frequent as an adnominal adposition than *of*$_{OE}$ supports this position (see **Tables 3** and **13**). Such associations mean that it is possible to link syntactic distinctions between *of*$_{OE}$ and *of*$_{PDE}$ to individual semantic relations available to *of*$_{PDE}$. However, there is no requirement to link syntactic distinctions between the adpositions to the general fact that *of*$_{PDE}$ marks a greater number of relations than does *of*$_{OE}$.

The finding that syntax is not a major differentiating dimension between *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ as compared with semantics contradicts some proposals concerning grammaticalization in constructional contexts. Both within and beyond the framework of Construction Grammar, it has been suggested that linguistic items do not undergo grammaticalization in isolation, but grammaticalize within constructions (Traugott 2003: 643ff.; Noël 2007; Lehmann 2015: 194; Bybee 2015: 132). Grammaticalization is said to apply to an item in "highly constrained pragmatic and morphosyntactic contexts" (Traugott 2003: 645). The reduction and semantic changes to *of* in the context of the hedges *kinda* (18) and *sorta* are an illustrative example of the adposition undergoing change as part of a grammaticalizing construction (see Section 4.2). There is no constructional context, however, for other changes to *of*. The syntactic contexts in which *of* is observed remain relatively stable over time, an initial indicator that the mostly semantic grammaticalization of *of* does not occur in any particular construction (see Section 4.1). The noun phrase is the environment in which the most obvious semantic changes impact *of* (see Section 4.3). Therefore, identifying adnominal dependency as a construction in which *of* grammaticalizes might be a possibility. However, no "highly constrained" (Traugott 2003: 645) noun phrase or set of noun phrases in which *of* grammaticalizes is identifiable. For instance, no individual lexemes or noun phrases fulfilling particular roles are the context for changes to *of*. Moreover, given that *of*$_{\text{OE}}$-phrases are observed as adnominal dependents with several of the same semantic relations as are observed with *of*$_{\text{PDE}}$-phrases in the noun phrase, describing the changes to *of* in terms of an adnominal construction offers no analytical advantage. An understanding of grammaticalization as occurring within a construction misses the fact that it is the possible range of relations which can be marked by *of* which differs between the Old English noun phrase and its present-day English counterpart. The noun phrase has not grammaticalized and the set of possible relations holding between head and dependent (however these are marked) has not altered. *Of* represents an interesting example of grammaticalization seeming to affect an item not limited to a particular context.

The change from *of*$_{\text{OE}}$ to *of*$_{\text{PDE}}$ does not require two distinct categories, one for the lexical adposition and one for the functional. The grammaticalized status of *of*$_{\text{PDE}}$ does not seem to have any consequences for the categorial status of the adposition. *Of*$_{\text{PDE}}$ remains an adposition in the majority of these uses. This is attested, for example, by the fact that nominal complements of *of* remain in the majority over time (see **Tables 8** and **9**), nominal complemention being a common but not consistent property of adpositions (Huddleston & Pullum 2002: 598–599). The view of the category adposition proposed in light of the evidence from *of* is that the category contains functional, lexical, and more or less functional and lexical items allows for *of*$_{\text{OE}}$ and *of*$_{\text{PDE}}$ to belong to the same category. A grammaticalizing adposition in this case has not undergone decategorialization presumably because the category adposition is already more functional than lexical.

Determining whether lexical *of*$_{OE}$ or functional *of*$_{PDE}$ is the more prototypical is challenging given the well-known difficulties in identifying a prototypical adposition at all (Huddleston & Pullum 2002; Hagège 2010). *Of*$_{PDE}$ more frequently marks a relation between two NPs and might therefore be considered the more protoypically relation marking (see **Tables 4** and **9**), yet *of*$_{OE}$ has a stronger association with spatial relations (22) (27), and might therefore be considered the more prototypical. It has been concluded here that adpositions are more functional than lexical, in which case *of*$_{PDE}$ would be considered the more prototypical. Such a conclusion would entail positing a change from a less to a more prototypical adposition, contrary to some previous characterizations of grammaticalization (Hopper & Traugott 2003:106).

In relation to the categorial status of *of*$_{PDE}$, the evidence that *of*$_{OE}$ varies with the genitive case (see Section 4.4.2), comparable to how *of*$_{PDE}$ varies with the *s*-possessive, combined with the evidence that *of*$_{PDE}$ varies with other adpositions, including lexical adpositions (see Section 4.4.1), suggest that analysing *of*$_{PDE}$ as a case marker, heading a Kase Phrase (as per Svenonious 2010) is not appropriate. The contexts in which the form *of* is not an adposition in present-day English are adverbial qualifiers: hedges and, the phrase *of course*. There is therefore an association between category change and grammaticalization of *of*, but in a small number of contexts, and where there is some evidence of loss of word boundaries.

Finally, the consideration of *of* in the history of English also has consequences for the specific grammaticalization path proposed for adpositions like English *of* and Latin and French *de*. Harris & Campbell (1995: 339) and Heine & Kuteva (2002: 33) propose grammaticalization paths in which partitive uses arise from possessive uses (more accurately, for Harris & Campbell 1995: 339 both possessive and ablatival relations feed into partitive relations). *Of*$_{OE}$ is far more frequently observed marking part-whole relations (45), (46) than marking possessive relations (26). The same is true of *of*$_{eME}$, although the set of possessive relations marked by *of*$_{eME}$ is larger. In addition the part-whole uses of *of*$_{OE}$ chronologically precede the expansion into greater numbers of possessive uses of the adposition evident from the early Middle English (65), (66) and present-day English data (36), (38), (42). There is sufficient evidence to challenge at least the consensus that marking part-whole relations is a development further along in grammaticalization than the marking of possessive relations. *Of*$_{OE}$ can mark some part-whole and some possessive relations, *of*$_{eME}$ can mark more part-whole and some possessive relations, and *of*$_{PDE}$ can mark a greater number of part-whole and possessive relations. It therefore seems that the interaction between partitive and possessive meanings are more complex than existing accounts allow for.

7 Concluding remarks

The lexical versus functional distinction amongst adpositions, as evidenced by *of*$_{OE}$ and *of*$_{PDE}$ is a continual distinction consisting of multiple properties. The distinction has been found to be greatest in the area of semantics. Some properties previously proposed as constituting the lexical

versus functional distinction amongst adpositions, notably variation with case, and variation with other adpositions have been shown not to offer a distinction. The multifaceted nature of the lexical versus functional distinction and the importance of semantics are confirmations of pre-existing claims, but in this study these conclusions have been arrived at not by selecting evidence to support assumed distinctions or by comparing the assumed properties of unrelated adpositions but rather by comparing the corpus-based usage of of_{OE} and of_{PDE}. The lexical and functional adposition examined here have been found to be similar in multiple ways, sometimes unexpectedly so, and the continuity between the adpositions in terms of syntax is high. Similarity and minimal differences between lexical and functional adpositions may explain why adpositions have proven so contentious in the classification of linguistic items and categories as lexical or functional. The evidence of of_{OE} and of_{PDE} points to a lexical versus functional distinction amongst adpositions consisting primarily of a difference between lesser and greater semantic range, and this too may account for the difficult classification of adpositions as a class and the category adposition as lexical or functional. The category adposition seems to best be viewed as more functional than lexical given some of the properties common to all adpositions and the minimal differences between a lexical and a functional adposition identified in this case study.

Abbreviations

ACC = accusative, ADP = adposition, COMP = complementiser, DAT = dative, DEM = demonstrative, DET = determiner, FEM = feminine, GEN = genitive INF = infinitive, MASC = masculine, NEG = negation, NOM = nominative, NPST = non-past, NEUT = neuter, OBL = indeterminate non-nominative case, OF = $of_{OE/eME}$, PASS = passive, PL = plural, PST = past, PTCP = participle, REL = relativizer, SBJV = subjunctive, SG = singular

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The author has no competing interests to declare.

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