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Old English verbs of learning in Role and Reference Grammar. Argumental Effector and peripheral Source

Miguel Lacalle Palacios

Universidad de La Rioja, Spain

Abstract: The aim of this article is to explain the syntax and semantics of Old English verbs of learning. The theoretical basis of this work is Role and Reference Grammar and, more specifically, internal aspect, lexical representation, logical structures, and the semantics-syntax interface as posited by this theory of language. The corpus of analysis, which has been extracted from both textual and lexicographical sources, is comprised of 715 tokens, in which the following verbs are found: *(ge)cneordlǣcan*, *gefrāgian*, *(ge)fricgan*, *(ge)frignan*, *(ge)leornian*, *ofācsian*, and *onfindan*. The main conclusions are, firstly, that a semantic explanation is needed for verbs of learning, in contradistinction to the position currently held by Role and Reference Grammar, which is based on the distinction between compulsory and optional syntactic constituents; and, secondly, that Old English verbs of learning may represent states of affairs corresponding to Accomplishments and Achievements but also to the causative versions of these *Aktionsarten*.

Keywords: *old english, verbs of learning, role and reference grammar, linking, causativity.*

Verbos de aprendizaje en inglés antiguo según la Gramática del Papel y la Referencia. Realizador argumental y Fuente periférica

Resumen: El objetivo de este artículo es explicar la sintaxis y la semántica de los verbos de aprendizaje en inglés antiguo. La base teórica de este trabajo es la Gramática del Papel y la Referencia y, más específicamente, el aspecto interno, la representación léxica, las estructuras lógicas y la interfaz semántica-sintaxis, tal y como son propuestas por esta teoría del lenguaje. El corpus para el análisis, que ha sido obtenido tanto de fuentes textuales como lexicográficas, está formado por 715 muestras, que se corresponden con los siguientes verbos: *(ge)cneordlǣcan*, *gefrāgian*, *(ge)fricgan*, *(ge)frignan*, *(ge)leornian*, *ofācsian* y *onfindan*. Las principales conclusiones que se extraen del análisis son, en primer lugar, que una explicación semántica es necesaria para los verbos de aprendizaje, en contraste con la actual postura mantenida por la Gramática del Papel y la Referencia, la cual se basa en la distinción entre constituyentes sintácticos obligatorios y opcionales; y, en segundo lugar, que los verbos de aprendizaje en inglés antiguo pueden representar estados de cosas que se corresponden no solo con Realizaciones y Logros sino también con las versiones causativas de estos *Aktionsarten*.

Palabras clave: *inglés antiguo, verbos de aprendizaje, gramática del papel y la referencia, enlace, causatividad.*

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*Corresponding author: miguel.lacalle@unirioja.es

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1. Introduction

This article intends to contribute to the synchronic study of Old English. More concretely, its aim is to explain the syntax and semantics of Old English verbs of learning. This study draws on the theoretical framework provided by Role and Reference Grammar (henceforth RRG). As it turns out, the analysis of this verbal set raises some questions relevant for the RRG analysis of two-place and three-place state predicates, as well as for the scope in this theory of derived predications based on nominalizations. The method of the present study is based on the analysis of Old English verbs of learning as to their *Aktionsart*, thematic roles, macrorole assignment, and Privileged Syntactic Argument (PSA). Ultimately, the goal of the research program in which this work belongs is to synchronically describe the lexicon of Old English on a principled and theoretically up-to-date linguistic basis.

Verbs of learning code states of affairs such as the ones depicted in *Laura learned how to swim butterfly style* or in *Laura learned how to swim butterfly style thanks to her instructor*. Thus described, verbs of learning raise the question of causativity. That is to say, must the segment *thanks to her instructor's lessons* be analyzed as representing a non-induced change of state or as entailing an induced (causative) change of state? In its current state, RRG considers *thanks to her instructor* in a context like *Laura learned how to swim butterfly style thanks to her instructor* an optional constituent captured by means of a Periphery that is attached to the Core. As is explained below, the Core contains the predicate and the compulsory arguments, while the Periphery is the clausal slot where optional adjuncts are placed. The position held in this article is that this analysis is oriented towards syntax, rather than towards semantics. This is not in disagreement with the outline of RRG, which provides semantic explanation for syntactic structure. As a result, theoretical and empirical evidence is given to analyze some knowledge transfer events, like *Laura learned how to swim butterfly style thanks to her instructor,* as a causative change of state and a Causative Accomplishment logical structure. When it is a Core argument the initiator receives the macrorole Actor in the syntax-semantics linking, becoming the PSA of the construction at the same time; on the other hand, if it is an adjunct in the Periphery, then it is realized by a prepositional phrase. This solution has the advantages of allowing for a similar analysis of verbs of teaching and learning and, furthermore, of relating nominal phrases to derived predications. On the other hand, it calls for additional semantic distinctions, including, for instance, the one holding between animate and inanimate initiators of the knowledge transfer event.

The article is structured as follows. Section 2 reviews former studies dealing with Old English syntax and semantics. The relevant aspects of RRG are presented in Section 3. Section 4 draws the semantic distinctions necessary for a semantically oriented analysis of Old English verbs of learning. Section 5 describes the sources, methodological steps and data of this study. Section 6 explains the syntax-semantics linking with Old English verbs of learning and gathers empirical evidence in favor of distinguishing between argumental Effector and peripheral Source depending on the type and participants of the

change of state. Section 7 turns to more theoretical questions and discusses the typology of knowledge and information transfer events proposed in Section 4 from the perspective of derived predications. Section 8 summarizes the main conclusions of the article.

2. Previous research in Old English syntax and semantics

Old English syntax has received more attention in scholarly research (for example, Campbell, 1987; Denison, 1993; Hogg & Fulk, 2011; McLaughlin, 1983; Mitchell, 1985; Quirk & Wrenn, 1994; Traugott, 1992; Visser, 1963-1973;), than semantics, which has been studied most frequently without examining its connection with syntax (Kastovsky, 1992; Martín Arista, 2018; Weman, 1933). Still, there are studies which deal with verbal classes and actually consider the relation between syntax and semantics. Some put the spotlight on semantics by analyzing verbs of sensory perception (Penttilä, 1956), movement (Ogura, 2002; Weman ,1933), knowledge (Ono, 1989), thinking (Ogura, 1986b), sentiment (Ogura, 2013), taste (Ogura, 2008), and impersonal verbs (Ogura, 1986a; Möhlig-Falke, 2012); while other studies focus on syntax, with reference to constructions with *self* (Ogura, 1989), verbal complementation (Denison, 1993; Molencki, 1991), oblique case marking (Allen, 1995), non-finite constructions (Timofeeva, 2010) and periphrastic constructions (Ogura, 2018).

The works of researchers that have examined the semantic motivation of English syntax on the basis of current linguistic theories imply a further development in the field. Martín Arista (2000a, 2000b) has analyzed the internal aspect of Old English verbs according to the *Aktionsart* types proposed by RRG (Van Valin & LaPolla, 1997). On its part, the Lexematic Functional Approach has proposed an inventory of lexical templates and mapping principles which are grounded on the system of lexical representation of RRG. Verbs of feeling (C. García Pacheco, 2013), verbs of existence (L. García Pacheco, 2013) and many others have been studied using this framework with the application of the Lexematic Functional Approach to Old English verbal classes. Some recent works, which aim to reassess the configuration of the verbal lexicon of Old English, have evaluated how consistent verbal classes are from semantic and syntactic perspectives by considering *Aktionsart* types, logical structures, constructions and alternations. Inaction verbs (Ojanguren López, 2019a, 2021), verbs of prohibition (Ojanguren López, 2019b), end verbs (Ojanguren López, 2020), rejoice verbs (Martín Arista, 2020), verbs of depriving (Lacalle Palacios, 2022), and verbs of increasing (Lacalle Palacios, 2021) have hitherto been addressed in this line of investigation. The present paper has been devised as a contribution to this research avenue.

3. Theoretical basis: Role and Reference Grammar

The theoretical foundations of this research paper correspond with the functional framework of RRG (Foley & Van Valin, 1984; Van Valin, 2005, 2014; Van Valin & LaPolla, 1997). This section examines the most significant aspects of this approach with regards to the discussion presented in Sections 6 and 7.

The semantic representations devised by RRG are based on four *Aktionsart* classes proposed by Vendler (1967): States, Achievements, Accomplishments, and Activities. The number of classes has increased with the addition of Active Accomplishments, Semelfactives, and the causative counterparts of all *Aktionsart* types (Van Valin, 2005; Van Valin & LaPolla, 1997). Figure 1 provides examples of every *Aktionsart* class together with their causative versions.

a. State:	The boy is afraid.
a'. Causative state:	The dog frightens/scares the boy.
b. Achievement:	The balloon popped.
b'. Causative achievement:	The cat popped the balloon.
c. Semelfactive:	The pencil tapped on the table.
c'. Causative semelfactive:	The teacher tapped the pencil on the table.
d. Accomplishment:	The ice melted.
d'. Causative accomplishment:	The hot water melted the ice.
e. Activity:	The soldiers marched in the park.
e'. Causative activity:	The sergeant marched the soldiers in the park.
f. Active accomplishment:	The soldiers marched to the park.
f'. Causative active accomplishment:	The sergeant marched the soldiers to the park.

Figure 1. Instances of the Aktionsart types included in RRG (Van Valin, 2005, p. 34).

The six classes are based on four different semantic features: [±static], [±dynamic], [±telic], and [±punctual]. The most basic feature [± static] makes a distinction between verbs coding a 'happening' from others coding a 'non-happening'. [± dynamic] makes reference to a state of affairs in which there is action or not. The feature [± telic] refers to an event with an inherent terminal point or not. Finally, events that have internal duration are distinguished from others which lack it through the feature [± punctual]. The correspondence between *Aktionsart* class and semantic features is shown in Figure 2.

a. State:	[+ static], [− dynamic], [− telic], [− punctual]
b. Activity:	[− static], [+ dynamic], [− telic], [− punctual]
c. Achievement:	[− static], [− dynamic], [+ telic], [+ punctual]
d. Semelfactive:	[− static], [± dynamic], [− telic], [+ punctual]
e. Accomplishment:	[− static], [− dynamic], [+ telic], [− punctual]
f. Active accomplishment:	[− static], [+ dynamic], [+ telic], [− punctual]

Figure 2. Aktionsart types and semantic features (Van Valin, 2005, p. 33).

In RRG, the semantics-syntax and the syntax-semantics linking are determined by logical structures, which guarantee the projection from clausal semantics onto clausal syntax (Van Valin & LaPolla, 1997, p. 102). Logical structures discern stative (**predicate´**) from non-stative (**do´**) verbs whose argument variants are represented by *x*, *y* and *z*. The metalinguistic predicates INGR(essive), SEM(e)L(factive), BECOME, and CAUSE mark ingressives, semelfactives, accomplishments, and causatives, respectively. Figure 3 illustrates each *Aktionsart* class along with its respective logical structure.

Aktionsart class	Logical Structure
STATE	**predicate´** (x) or (x, y)
ACTIVITY	**do´** (x, [**predicate´** (x) or (x, y)])
ACHIEVEMENT	INGR **predicate´** (x) or (x, y), or
	INGR **do´** (x, [**predicate´** (x) or (x, y)])
SEMELFACTIVE	SEML **predicate´** (x) or (x, y)
	SEML **do´** (x, [**predicate´** (x) or (x, y)])
ACCOMPLISHMENT	BECOME **predicate´** (x) or (x, y), or
	BECOME **do´** (x, [**predicate´** (x) or (x, y)])
ACTIVE ACCOMPLISHMENT	**do´** (x, [**predicate$_1$´** (x, (y))])
	& INGR **predicate$_2$´** (z, x) or (y)
CAUSATIVE	α CAUSE β, where α, β are logical structures of any type

Figure 3. Lexical representations for Aktionsart classes (Van Valin, 2005, p. 45).

RRG includes a catalogue of thematic roles that 'are defined in terms of the argument positions in the decomposed logical structure representations' (Van Valin, 2005, p. 53); e.g. the thematic roles of verbs of learning are Effector, Cognizer and Content. Conversely, Actor and Undergoer are the generalized semantic macroroles around which RRG centers its semantic analysis and which make grammatical generalizations across sets of thematic roles. Agentive verbs have an Actor as first argument whereas the only argument of stative verbs is an Undergoer, which is also the second argument of transitive verbs. The Actor-Undergoer Hierarchy determines the relation between macrorole and argument position, the Actor being the leftmost argument of the hierarchy in contrast to the Undergoer, which is the rightmost one. Macrorole transitivity establishes the number of explicit macroroles that can be taken by predicates (Van Valin & LaPolla, 1997, pp. 150-151) and classifies them into transitive (2 macroroles), intransitive (1 macrorole) and atransitive (0 macroroles).

RRG makes use of the concept of Privileged Syntactic Argument (PSA) rather than the grammatical notions of subject and object, which are not considered universal. The PSA, which controls agreement with finite verbs, is the first argument in active constructions and the second one in passive constructions. Any remaining arguments in the clause can be direct core arguments or oblique core arguments.

The connection between semantics and syntax, called linking in RRG, is defined from semantics to syntax (production) and from syntax to semantics (comprehension), guaranteeing that what is included in the semantics is also coded in the syntax. Verb agreement, case assignment, and prepositional government are salient components of linking, whose interaction is summed up this way: accusative languages like English set the highest-ranking core macrorole as controller of finite verb agreement and case-mark it nominative; the other core macrorole takes accusative, while non-macrorole direct core arguments receive dative case; however, in ergative languages, "the lowest-ranking argument is the default choice" (Van Valin & LaPolla, 1997, p. 317).

To finish this review, the Layered Structure of the Clause describes how clausal semantics is projected onto clausal syntax (Van Valin & LaPolla, 1997, pp. 26-29). This hierarchical structure is composed of a number of semantic layers that are needed to reflect the scope of operators (grammatical features including, among others, tense, aspect, and modality) in a suitable way. The Layered Structure of the Clause is divided into the Core, which contains the predicate or verbal nucleus along with its arguments (as in *They are buying a gift for John*); and the Periphery, which includes non-arguments of the predicate, also named adjuncts (as *tomorrow at Maggie's shop*). When two or more units are combined at Clause level, they make up a Sentence, as in *The baby started to cry so his mother gave him a pacifier*. All these components are also the main constituents of complex sentences in RRG.

4. Knowledge and information transfer events in RRG

This section delves into the semantics of verbs of learning and, more specifically, it classifies the events which can be represented by verbs of learning, discusses verbs of learning as semantically intertwined with verbs of teaching, puts forward a classification of the thematic roles licensed by verbs of learning and teaching, and describes the logical structures of verbs of learning as consisting of either a derived construction that entails a causative predication or a clausal Periphery attached to a two-argument Core. For the sake of clarity, the discussion is illustrated with Present-Day English. Sections 6 and 7 focus on the Old English counterparts of the categories and functions presented in Section 4.

First of all, a distinction must be drawn between knowledge transfer events and information transfer events. Knowledge transfer events are gradual processes of transfer of large sets of data that typically represent structured bodies of knowledge. Teaching or learning classical languages or physics are prototypical examples of knowledge transfer events. Information transfer events, on the other hand, are punctual happenings of transfer of small sets of data which do not constitute structured fields of knowledge. Learning that one´s neighbor has given birth to a baby girl or that someone has been awarded the Nobel prize are information transfer events. In other words, the outcome of both knowledge transfer events and information transfer events is that a receiver gets to know something. The difference lies in what the receiver gets to know and in how long it takes the receiver to become aware of the transferred contents. Therefore, the distinction between knowledge

and information transfer correlates with the difference between durative and punctual *Aktionsart*. The transfer of knowledge implies a durative change of state that entails a learning process represented by verbs such as *learn, memorize*, and *study*. The relevant *Aktionsart*, therefore, is the Accomplishment. In contrast, the transfer of information conveys a punctual change of state, does not involve a previous learning process and is represented by verbs such as *realize*, *discover*, *find out*, and *get to know.* The *Aktionsart* of these verbs is the Achievement. (1) shows the logical structures of Accomplishments and Achievements besides two representative examples adapted from Van Valin and LaPolla (1997, p. 105).

(1)

a. Alfred learned English phonology.
BECOME **know´** (Alfred, English phonology)

b. Martha found out the incredible news.
INGR **discover´** (Martha, the incredible news)

Figure 4 shows the corresponding tree diagram analyses of the Accomplishment (1a) and Achievement (1b).

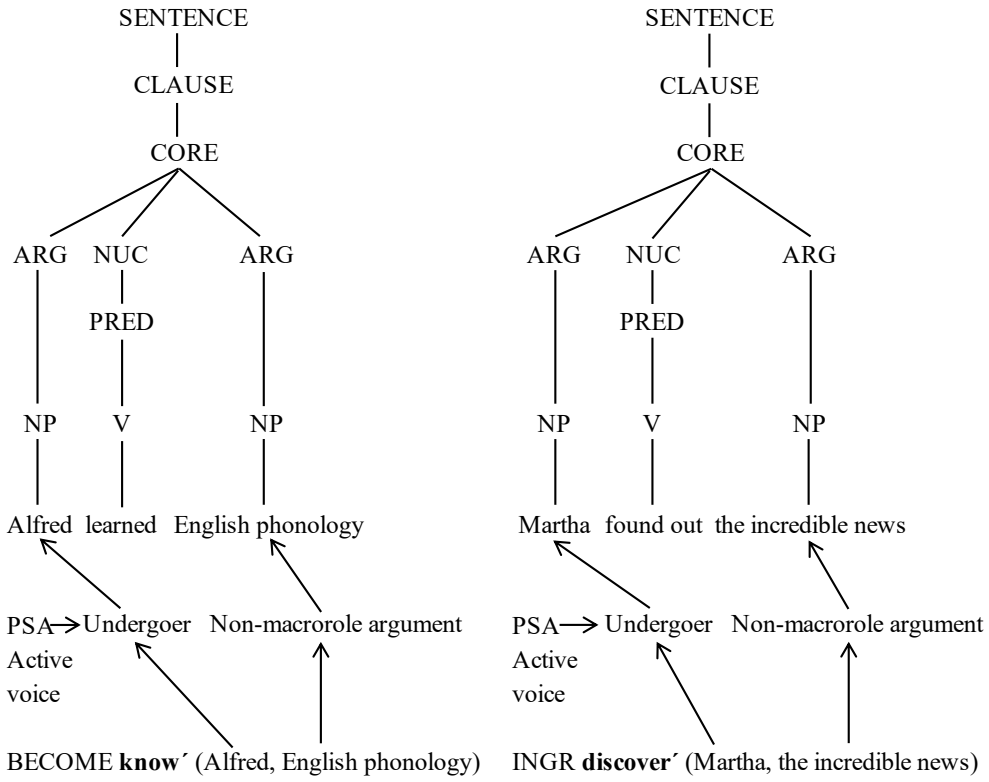


Figure 4. Tree diagram analyses of the Accomplishment in (1a) and the Achievement in (1b).

As is explained below, the Core contains the predicate and the compulsory arguments, while the Periphery is the clausal slot where optional adjuncts are placed. In the argumental realization of Laura learned how to swim butterfly style thanks to her instructor, the participant Laura undergoes a change of state whereby she becomes able to swim. However, the origin of the ability of the participant that undergoes the change of state is expressed by means of oblique syntax: an adjunct, rather than a core argument, that is modified by a prepositional phrase. Put in other words, while a causal chain can be identified in the semantics between the ability to swim of the participant her instructor and the participant Laura; the syntax expresses such causal chain rather loosely. In this respect, the position held in this article is that the current analysis of RRG of instances like Laura learned how to swim butterfly style thanks to her instructor is more oriented towards syntax than towards semantics. This is not in tune with the general profile of RRG, which, as a functional theory of language, seeks semantic explanation for syntactic structure. Therefore, theoretical and empirical reasons are provided in favor of an analysis of some knowledge transfer events, like Laura learned how to swim butterfly style thanks to her instructor, as involving an induced change of state and a Causative Accomplishment logical structure. In the syntax-semantics linking, the initiator receives the macrorole Actor and becomes the PSA of the construction, when it is a Core argument; and it is realized by a prepositional phrase when it is an adjunct in the Periphery. This solution is inspired by Van Valin´s (2013, p. 80) treatment of instruments, which depends on whether there is a causal chain in the event or not: instruments can serve as actors if the event can be described in terms of a causal chain, as in *The burglar shattered the window with the crowbar / The crowbar shattered the window* (Van Valin, 2013, p. 80). Along with being compatible with the analysis of instruments cited above, the solution proposed in this article has the advantages of allowing for a similar analysis of verbs of teaching and learning and, furthermore, of relating nominal phrases to derived predications. On the other hand, it calls for additional semantic distinctions, including, for instance, the one holding between animate and inanimate initiators of the knowledge transfer event.

Verbs of knowledge and information transfer can be found in two versions: one version selects two semantic participants, the other three semantic participants. The version with two semantic participants displays the receiver and the transferred content, whereas the one with three semantic participants, stages the initiator along with the receiver and the transferred content. (2a) is an instance of the two-participant version while (2b) illustrates the version with three semantic participants.

(2)

a. Jill learned ice skating.

b. Jack taught chess to the pupils.

In a syntax-centered analysis, the difference between (2a) and (2b) is attributed to the prepositional phrase *to the pupils*, which can also be realized as a post-verbal noun phrase: *Jack taught the pupils chess*. In an analysis of semantic persuasion such as the one posited by RRG, both (2a) and (2b) show syntactic transitivity 2 (the Core takes two arguments, *Jill-ice skating* and *Jack-chess*) but (2a) presents macrorole transitivity 1 (in a change of state there is just one macrorole, the Undergoer), whereas the macrorole transitivity of (2b) is 2 (*Jack* receives Actor and *chess* gets the macrorole Undergoer). This analysis has two shortcomings, though. On the syntactic side, *ice skating* in (2a) is a non-macrorole direct core argument and *to the pupils* in (2b) is considered an oblique core argument, as it is realized by a prepositional phrase.

This analysis raises two issues. Firstly, a different function is assigned to two segments that are similar in being realized as a post-verbal noun phrase and, moreover, that can be the target of passivization (*Ice skating was learned that winter, Chess was taught at university*). Secondly, this analysis offers no solution for the version with three semantic participants of (2a), that is, *Jill learned ice skating from her brother*. No dative alternation is possible on (2a) like the one compatible with (2b), thus *Jack taught the pupils chess* is grammatical whereas **Jill learned her brother ice skating* is not. Therefore, the participant *her brother* cannot be realized as an oblique core argument and, consequently, it belongs in the clausal Periphery. From the semantic point of view, however, *her brother* in *Jill learned ice skating from her brother* is the initiator of the process of change of state, exactly as *Jack* in *Jack taught chess to the pupils*.

To solve these issues, the line is taken in the present study that teaching and learning events represent two complementary processes of change of state and, as such, must be described as involving the same *Aktionsart* and as giving rise to the same logical structures. Given a pair such as (3a) and (3b), which depicts a state of affairs in which knowledge is transferred between two participants, the relevant *Aktionsart* corresponds to a causative gradual change of state, namely the Accomplishment. Considering that the participant *Martha* is the initiator of the process depicted by (3a) and (3b), both expressions constitute the causative version of the Accomplishment.

(3)

a. Martha taught Jill knitting.

b. Jill learned knitting from Martha.

The differences between the fully volitional process coded by *to teach* and the less explicitly volitional process to which *to learn* makes reference are captured in terms of thematic role assignment. The participant *Martha* is a prototypical Agent in (3a), whereas it gets the thematic role Effector (the non-prototypical initiator of an action, process, or event in RRG) in (3b). Furthermore, with verbs of teaching and learning the initiator must be human or, at least, animate. For this reason, (4a) does not make sense, while the prepositional phrases *from a book* in (4b) and *with a book* in (4c) realize the thematic role Source (*from*) or Instrument (*with*) and belong in the clausal Periphery.

(4)

a. ???A book taught Jill how to knit.

b. Jill learned knitting from a book.

c. Jill learned knitting with a book.

To summarize, the processes of knowledge or information transfer that code two semantic participants are represented by means of clauses in which the first argument realizes the thematic role Cognizer and receives the macrorole Undergoer. The Undergoer is the PSA of the construction. The processes of knowledge or information transfer that code three participants correspond to two different syntactic configurations that result from the semantics of the event. Human or animate participants that initiate processes of knowledge or information transfer can be realized in the clausal Core, whereas inanimate participants must be realized in the Periphery of the clause. The former receives the thematic role Agent with verbs of teaching and the thematic role Effector with verbs of learning; the latter play the thematic roles Source or Instrument. As has been pointed out above, knowledge transfer events are Accomplishments, whereas the *Aktionsart* of information transfer events is the Achievement. The causative versions of these *Aktionsarten* require an Actor or an Effector initiator. If the initiator belongs in the Core, it receives the macrorole Actor, which gets the PSA of the construction. If it belongs in the Periphery, it is realized by a prepositional phrase. The logical structures of verbs of learning according to this typology are presented in (5).

(5)

a. The disciples learned humility.
[BECOME **know´** (the disciples, humility)]

b. The disciples learned humility from Jesus.
[**do´** (Jesus)] CAUSE [BECOME **know´** (the disciples, humility)]

c. The president got to know the agreement signed with the rebels.
[INGR **discover´** (the president, the agreement signed with the rebels)]

d. The president learned from the press that an agreement had been signed with the rebels.
[**be-from´** (the press)] [INGR **discover´** (the president, that an agreement had been signed with the rebels)]

Examples (5a) and (5b) display logical structures corresponding to durative changes of state, thus Accomplishments. In (5a), the Cognizer (*the disciples*) gets to know the Content (*humility*), the Cognizer receiving Undergoer and PSA. In (5b), the Effector (*Jesus*) causes the Cognizer (*the disciples*) to learn the Content (*humility*), in such a way that the Effector gets the macrorole Actor and becomes the PSA of the construction. (5c) and (5d) show logical structures describing a punctual change of state or Achievement. In (5c), the Cognizer (*the president*) undergoes a change of state whereby it gets to know the Content (*the agreement*

signed with the rebels). The Undergoer is assigned to the thematic role Cognizer, and so is the PSA of the construction. The initiator of (5d), in contradistinction to (5a) and (5b), is not animate and, consequently, cannot play the thematic role Effector. It is Source, instead. These logical structures are discussed from the empirical perspective in Section 6 and from the theoretical side in Section 7.

5. Sources, data, and steps for the analysis

The main textual sources in this research include the *Dictionary of Old English Corpus* (henceforth DOEC), the *York-Toronto-Helsinki Parsed Corpus of Old English Poetry*, and the *York-Toronto-Helsinki Parsed Corpus of Old English Prose* (YCOE refers to both York corpora henceforward). Both the textual fragments and numbers have been drawn from the DOEC whereas, if available, the YCOE parsing has been used for the morpho-syntactic analysis of said fragments. Additionally, lexicographical sources have been examined as well. Old English dictionaries comprise Bosworth-Toller, Clark Hall-Meritt, and Sweet as well as the *Dictionary of Old English* (henceforth DOE) for the verbs that begin with the letters A-I. Likewise, the *Thesaurus of Old English* and the *Historical Thesaurus of the Oxford English Dictionary* have also been consulted for the specific meanings and senses. Lastly, the lexical database of Old English *Nerthus*, containing around 32,000 entries, has provided the lexical and morphological data as well as meaning definitions.

Two methodological steps have been followed to carry out the analysis in this work. First of all, a sub-corpus of Old English verbs of learning has been compiled. Then, the attested inflectional forms of the verbs have been searched in the textual sources so as to analyze their *Aktionsart*, thematic roles, macrorole assignment, and PSA according to the theoretical framework of RRG presented in Section 3.

The design of the sub-corpus has been conducted by the classification of lexical domains proposed by Faber and Mairal (1999), which considers the internal aspect of verbs, as well as notions like causativity, relevant for the present study. 'Cognition (to become aware through one's mind)' is the corresponding lexical domain of verbs of learning, whereas 'To come to know something' is their lexical subdomain (Faber & Mairal, 1999, p. 286). This lexical subdomain serves as the onset for the compilation of potential verbs of learning, which have been subsequently searched both in the *Thesaurus of Old English* and the lexical database *Nerthus*. After putting aside polysemic verbs whose primary meaning is not *to learn*, an initial list of twenty-six has been cut down to fourteen verbs which convey 'to become aware through one's mind' as their lexical domain and 'to come to know something' as their lexical subdomain.

The inflectional forms of the verbs beginning with the letters A-I found in the DOE have been searched for in the DOEC. On the other hand, the canonical inflectional forms of the verbs beginning with the letters L-Y corresponding to the morphological paradigms found in Campbell (1987) and Hogg & Fulk (2011) have been searched in the DOEC. This has evidenced that the canonical inflectional forms of some verbs are not found in the

DOEC. For this reason, the lemmatized lists given by Metola Rodríguez (2015), García Fernández (2018), and Tío Sáenz (2019) have been checked and manual revision has also been required.

Seven verbs make up the sub-corpus of verbs of learning for the analysis, namely *(ge)cneordlǣcan*, *gefrāgian*, *(ge)fricgan*, *(ge)frignan*, *(ge)leornian*, *ofācsian*, and *onfindan* corresponding with a total of 715 tokens or textual attestations. The list of verbs along with their inflectional forms and number of occurrences can be seen in Appendix.

The analysis carried out in Sections 6 and 7 follows the DOEC, as it is illustrated in Figure 5; and the morphological classification and syntactic parsing in the YCOE, as Figure 6 shows. The references between brackets show the sources of Present-Day English translations.

[CP 235100 (58.441.28)]
Leornað ðonne to lufianne ðæt he ær forhogde.
'He then learns to love what he formerly despised' (Sweet, 1871, p. 440).

Figure 5. The organization of examples presented in the analysis.

```
(IP-MAT (NP-NOM *con*)
        (VBPI Leornað)
        (ADVP-TMP (ADV^T ðonne))
        (IP-INF (TO to)
                (VB^D lufianne)
                (CP-FRL (WNP-ACC-1 (D^A ðæt))
                        (C 0)
                        (IP-SUB (NP-ACC *T*-1)
                                (NP-NOM (PRO^N he))
                                (ADVP-TMP (ADV^T ær))
                                (VBD forhogde))))
```

Figure 6. The syntactic description provided by an example from the YCOE.[1]

[1] The following abbreviations for categories and features are included in this example. Syntactic categories: ADVP-TMP (adverb phrase, temporal), NP (noun phrase), WNP (wh-noun phrase); lexical categories: ADV (adverb), D (determiner), PRO (personal pronoun), TO (infinitival TO), VB (verb, inflected infinitive), VBD (verb, past tense indicative/subjunctive ambiguous); VBPI (verb, present indicative); morphological case at word level: ^A (accusative), ^D (dative), ^N (nominative); morphological case at phrase level: -ACC (accusative), -NOM (nominative).

6. The syntax-semantics linking in Old English verbs of learning

This section turns to the analysis of Old English verbs of learning based on the notions of RRG reviewed in Section 3 and the knowledge and information transfer events described in Section 4. Particularly, it focuses on the *Aktionsart* (internal aspect) and logical structures (lexical representations) as well as the thematic roles, macrorole assignment, and PSA that these verbs may license.

Old English verbs of learning comprise two types of *Aktionsart* directly related to the type of content transfer and the duration of the events. The *Aktionsart* of states of affairs in which a Cognizer gradually learns the content (knowledge transfer) is the Accomplishment. Conversely, there are also punctual states of affairs in which the Cognizer gets to know the content without any prior learning process (information transfer) which correspond to the Achievement. In other words, these two *Aktionsarten* describe non-induced changes of state in which a Cognizer either learns or becomes aware of some content. Figure 7 presents the logical structure of Accomplishments and Achievements with Old English verbs of learning.

BECOME **know´** (x, y)
INGR **discover´** (x, y)

Figure 7. The logical structures of Accomplishments and Achievements with verbs of learning.

(6) illustrates Accomplishments and Achievements and their corresponding logical structures.

(6)

a. [HomS 47 (BlHom 12) 000200 (3)]
swa we on Godes bocum leornodan, þæt Drihten sylfa to his gingrum cwæde.
'As we have learned in God's book that the Lord himself said to his disciples' (Morris, 1967, p. 130).
BECOME **know´** (*we, þæt Drihten sylfa to his gingrum cwæde*)

b. [HomS 1 (ScraggVerc 5) 005000 (135)]
Þæt mon leornað on gewritum þæt monige arison of deaðe.
'One learns that in the writings that many arose from death' (Nicholson, 1991, p. 51).
INGR **discover´** (*mon, þæt monige arison of deaðe*)

The tree diagram analysis of (6a) can be seen in Figure 8.

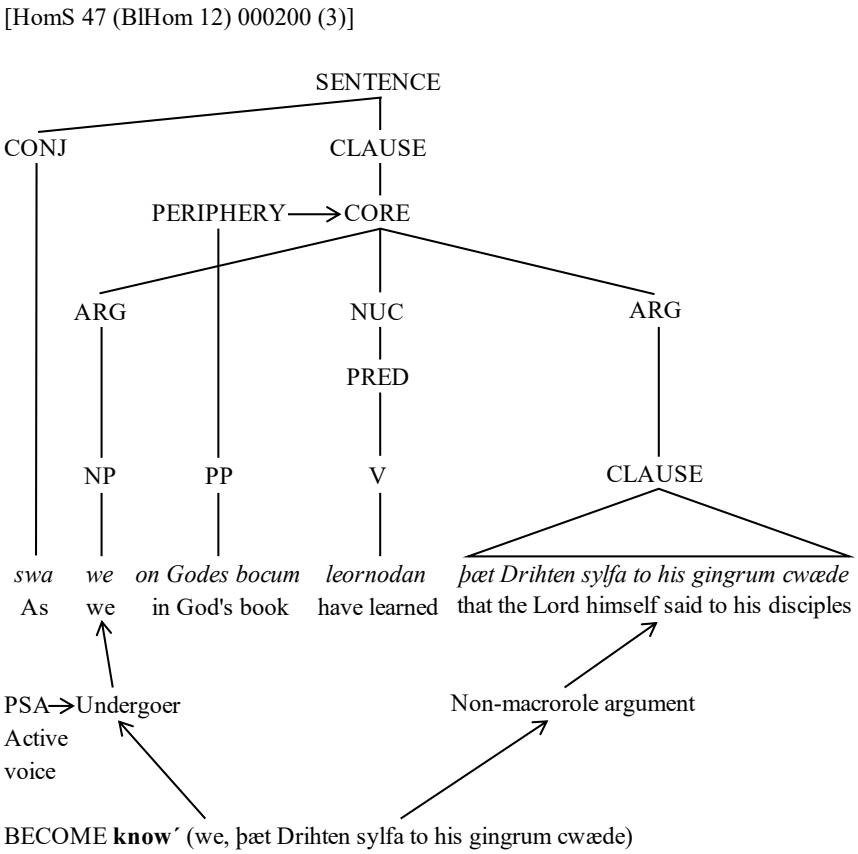


Figure 8. Tree diagram analysis of the Accomplishment in (6a).

However, in a similar way to verbs of teaching, Old English verbs of learning may depict causative states, that is to say, induced changes of state in which an initiator makes the Cognizer learn or get to know some content. The corresponding *Aktionsarten* in these states of affairs are also distinguished on the basis of the type of transferred content and the duration of the depicted events, thus matching Causative Accomplishments and Causative Achievements, whose logical structures are included in Figure 9.

[**do´** (x)] CAUSE [BECOME **know´** (y, z)]
[**do´** (x)] CAUSE [INGR **discover´** (y, z)]

Figure 9. The logical structures of Causative Accomplishments and Causative Achievements with verbs of learning.

Instances of Causative Accomplishments and Causative Achievements and their logical structures are presented in (7).[2]

[2] The whole fragment and translation of (7b) is as follows: [GDPref 2 (C) 001200 (96.8)] *& eac swylce ic hit gehyrde fram Ualentine, se manega gær wæs fore þam mynstre æt Latrane, & fram Simplicio, se wæs þrydde þe rihte æfter him Benedicte his gesomnunge, & eac ic hit gefrægn æt Honorate, se nu gyt todæge is fore þam ylcan mynstre, in þam se ylca wer wæs drohtniende.* 'And likewise, I heard it from Valentine, who was many years in charge of the monastery of Latrun, and from Simplicius, who was the third superior of the Benedictine order after him. And likewise, I learned it from Honoratus, who is now Abbot of the same monastery in which the same man was living' (own translation).

(7)

a. [ÆCHom I, 26 012600 (396.222)]

Ne leornode ic þas lare æt nanum eorðlicum men.
'I learned not this lore of any earthly man' (Thorpe, 1844, p. 379).
[do´ (*nanum eorðlicum menn*)] CAUSE [BECOME **know´** (*ic*, *þas lare*)]

b. [GDPref 2 (C) 001200 (96.8)]

& eac ic hit gefrægn æt Honorate.
'And likewise, I learned it from Honoratus' (own translation).
[do´ (*Honorate*)] CAUSE [INGR **discover´** (*ic*, *hit*)]

The tree diagram analyses of (7a) and (7b) are respectively shown in Figures 10 and 11.

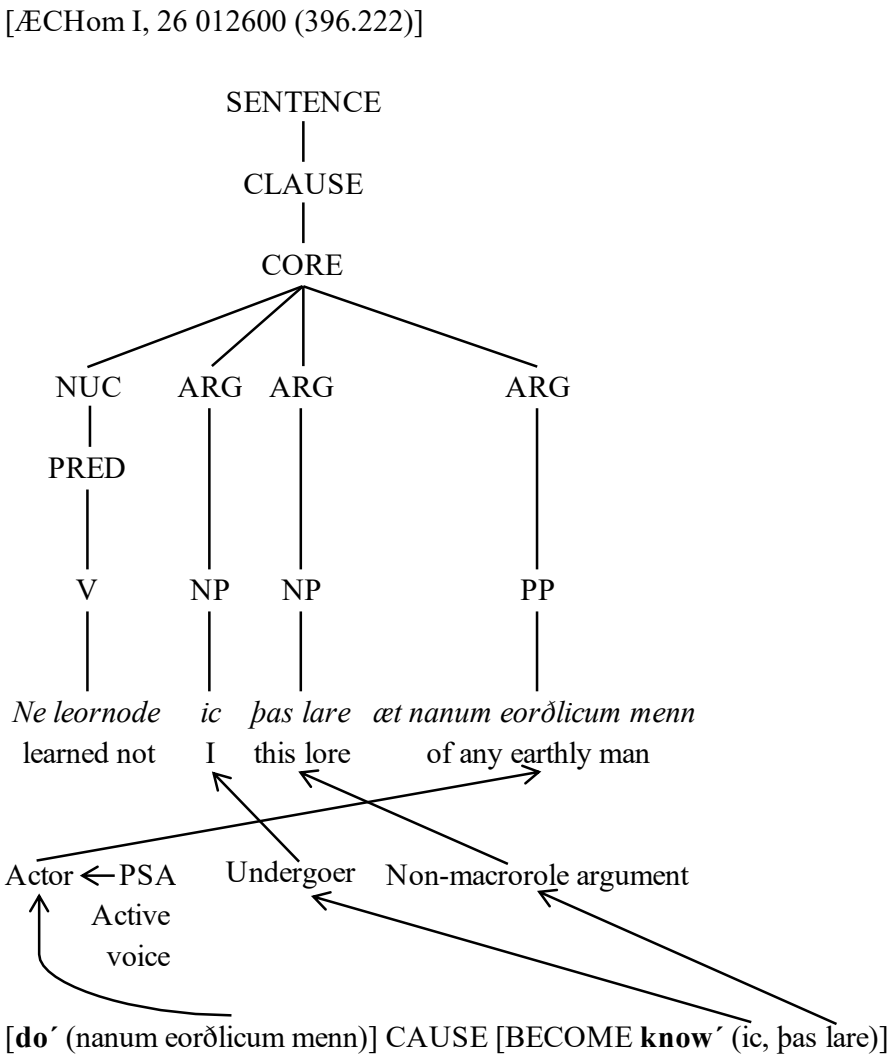


Figure 10. Tree diagram analysis of the Causative Accomplishment in (7a).

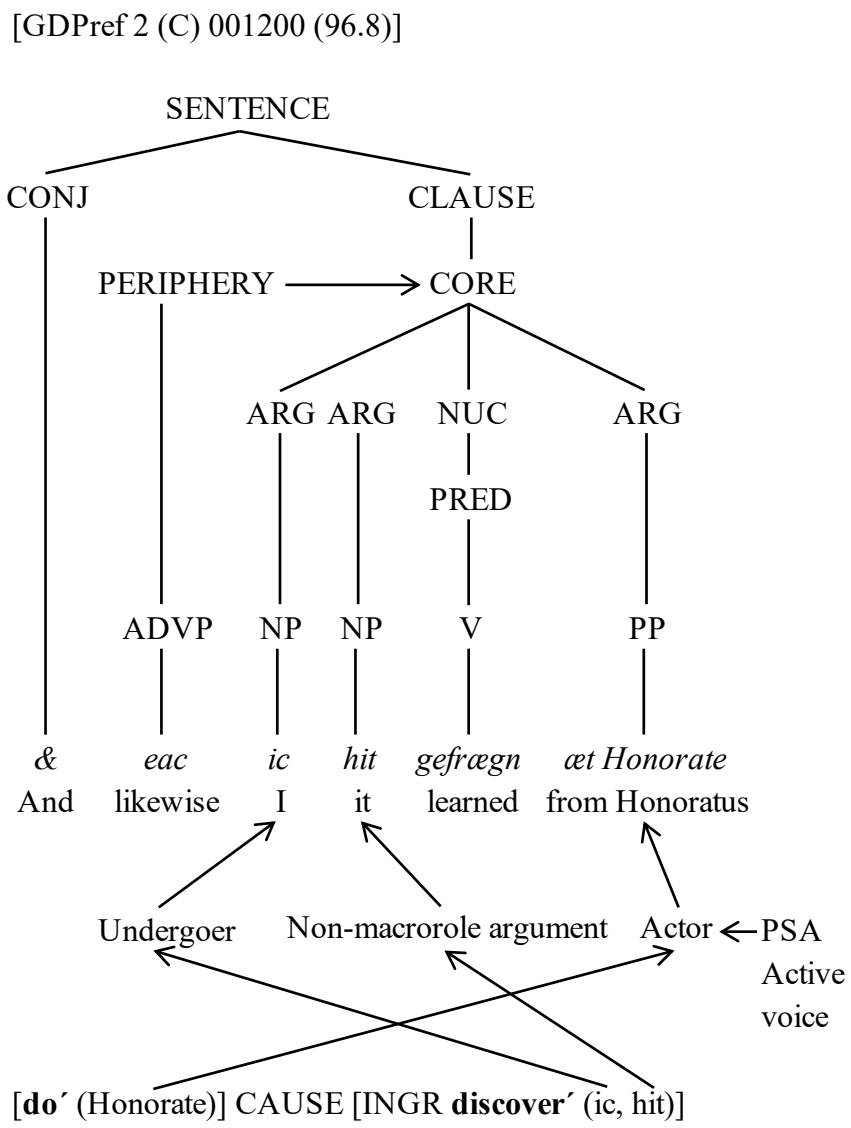


Figure 11. Tree diagram analysis of the Causative Achievement in (7b).

The thematic roles played by the arguments *x* and *y* in Accomplishments and Achievements, and by *y* and *z* in Causative Accomplishments and Causative Achievements are Cognizer and Content. Cognizers, most frequently human participants, as *he* 'he' in (8a) and (8c), *þa Romani* 'the Romans' in (8b), and *þæs ciningas þegnas* 'the king's thanes' in (8d), undergo a state of cognition through which they acquire some Content. As is explained in Section 4, Contents distinguish knowledge transfer, which implies large sets of data normally representing structured bodies of knowledge and a gradual learning process, as *godcundne wisdom* 'heavenly wisdom' in the Accomplishment of (8a) and *þa seofon crœftas* 'the seven parts of knowledge' in the Causative Accomplishment of (8c); from information transfer, which conveys small sets of data which do not constitute structured fields of

knowledge and a punctual change of state in which there is not a previous learning process involved, as *þæt* 'that' in the Achievement in (8b) and *þa unstilnessa* 'the disturbance' in the Causative Achievement in (8d).

(8)

a. [Or 1 022700 (5.23.31)]
& he sæde þæt he of þæm drycræfte geleornode godcundne wisdom.
'And he said that by magic he had learned heavenly wisdom' (Bosworth, 1857, pp. 267, 269).
BECOME **know´** (*he*, *godcundne wisdom*)

b. [ChronD (Cubbin) 001600 (60BC.11)]
Ða þæt onfundon þa Romani, þa noldon hig faran ofer þone ford.
'When the Romans found that, they would not pass over the ford' (Thorpe, 1861, p. 6).
INGR **discover´** (*þa Romani*, *þæt*)

c. [Mart 2.1 (Herzfeld-Kotzor) 014600 (No 28, B.2)]
þæt he æt þam leornode þa seofon cræftas.
'That he might learn from him the seven parts of knowledge' (Herzfeld, 1973, p. 213).
[**do´** (*þam*)] CAUSE [BECOME **know´** (*he*, *þa seofon cræftas*)]

d. [Æ HomM 14 (Ass 8) 004300 (138)]
and he hæfde ofaxod æt oðrum mannum ær, þæt he wæs Iudeisca.
'And he had found out from other men before, that he was Jewish' (own translation).
[**do´** (*oðrum mannum*)] CAUSE [INGR **discover´** (*he*, *þæt he wæs Iudeisca*)]

Additionally, the thematic role of the third semantic participant or initiator in Causative Accomplishments and Causative Achievements is Effector, which is represented by the argument *x*. Effectors are human participants almost exclusively, as *þam* 'him' in (8c) and *Alexandre* 'Alexander' in (9a) or at least animate, as *godes gast* 'the Spirit of God' in (9b). When initiators are not animate, the thematic role Effector cannot be licensed and, in its place, they play Source, as *lancsumere mynsteres drohtnunge* 'their long practice of the monastic life' in (9c) and *soþan* 'a truth' in (9d).

(9)

a. [Or 3 037200 (11.82.25)]
Þa wæs seo sibb & seo mildheortnes geendad þe hie æt Alexandre geleornedon.

‘Then that peace and mercy which they had learned from Alexander, were ended’ (Bosworth, 1857, p. 379).

[do´ (*Alexandre*)] CAUSE [BECOME **know´** (*hie*, *seo sibb & seo mildheortnes*)]

b. [ÆCHom II, 10 011600 (90.327)]

swa swa hi on life. ær geleornodon. þurh godes gast. mid godum willan.

‘As they in life had before been informed, through the Spirit of God, with good will’ (Thorpe, 1846, p. 153).

[do´ (*godes gast*)] CAUSE [INGR **discover´** (*hi*, Ø)]

c. [BenR 010900 (1.9.5)]

ac on lancsumere mynsteres drohtnunge geleorniað, þæt hie anstandonde mid Godes fultume þurh broðra getrymnesse ongean deofol.

‘Rather, they have learned through their long practice of the monastic life how they, standing alone, can fight against the devil’ (Riyeff, 2017, p. 38).

[be-from´ (*lancsumere mynsteres drohtnunge*)] [BECOME **know´** (*hie*, *þæt hie anstandonde mid Godes fultume þurh broðra getrymnesse ongean deofol*)]

d. [Æ LS (Cecilia) 006700 (230)]

swa swa we leornodon to soþan.

‘As we have learned of a truth’ (Skeat, 1966b, p. 369).

[be-from´ (*soþan*)] [INGR **discover´** (*we*, Ø)]

As far as macrorole assignment is concerned, Accomplishments and Achievements present macrorole transitivity 1. Thus, Cognizers get the macrorole Undergoer, as it is illustrated by *ic* ‘I’ in (10a) and *he* ‘he’ in (10b). On the other hand, the macrorole transitivity of Causative Accomplishments and Causative Achievements is 2. Accordingly, Effectors receive the macrorole Actor, as *Plegmunde minum ærcebiscepe* ‘Plegmund my archbishop’ in (10c) and *Pehthelme ðæm arwyrðan biscope* ‘the venerable bishop Pehthelm’ in (10d) while Cognizers get Undergoer, as *ic* ‘I’ in (10c) and *ic* ‘I’ in (10d).

(10)

a. [ÆColl 001000 (12)]

ac þeahhwæþere ic wolde betwenan leornian sprecan on ledengereorde.

‘But nevertheless, between-times I want to learn to speak the Latin language’ (Swanton, 1975, p. 108).

BECOME **know´** (*ic*, *sprecan on ledengereorde*)

b. [Bo 080300 (29.66.25)]

þa he þa onfunde þæt he dead bion <*sceolde*>.

'When, therefore, he found that he must die' (Fox, 1999, p. 57).

INGR **discover´** (*he*, *he dead bion sceolde*)

c. [CPLetWærf 002600 (58)]

swæ swæ ic hie geliornode æt Plegmunde minum ærcebiscepe.

'As I had learnt it from Plegmund my archbishop' (Sweet, 1871, p. 7).

[**do´** (*Plegmunde minum ærcebiscepe*)] CAUSE [BECOME **know´** (*ic*, *hie*)]

d. [Bede 5 035500 (14.442.6)]

Þis spell ic leornade fram Pehthelme ðæm arwyrðan biscope.

'I heard this story from the venerable bishop Pehthelm' (Miller, 1959b, p. 443).

[**do´** (*Pehthelme ðæm arwyrðan biscope*)] CAUSE [INGR **discover´** (*ic*, *Þis spell*)]

Finally, PSA is assigned to Undergoers in Accomplishments, as *hi* 'they (your priests)' in (11a); Achievements, as *landweard* 'the coast guard' in (11b); Causative Accomplishments and Causative Achievements, as *he* 'he' in (11c) and (11d).

(11)

a. [ChrodR 1 074600 (80.48)]

Nyd eac þine preostas þæt hi geornlice leornion and rædan halige gewrytu.

'Make also all your priests study zealously and read holy writings' (Langefeld, 1985, p. 387).

BECOME **know´** (*hi*, *halige gewrytu*)

b. [Beo 053200 (1890)]

Landweard onfand eftsið eorla, swa he ær dyde.

'The coast guard observed the return of the earls, just as before he had seen them' (Hostetter, 2015).

INGR **discover´** (*landweard*, *eftsið eorla*)

c. [Æ LS (Basil) 000200 (4)]

butan he wisdom ær ðam lange leornode æt gelæredum uðwytum.

'Unless he had learned wisdom for a long time beforehand of learned philosophers' (Skeat, 1966a, p. 51).

[**do´** (*gelæredum uðwytum*)] CAUSE [BECOME **know´** (*he*, *wisdom*)]

d. [ÆCHom II, 3 014800 (27.287)]

Is nu for ði micel neod gehwam þæt he leornige æt his lareowe hu he his cristendom healdan sceole. mid þam soðan geleafan.

'It is now, therefore, very needful to every one to learn of his teacher, how he shall hold his christianity with the true belief' (Thorpe, 1846, p. 53).

> [**do**´ (*his lareowe*)] CAUSE [INGR **discover**´ (*he, hu he his cristendom healdan sceole mid þam soðan geleafan*)]

As has been shown in this section, fine-grained semantic distinctions can be made on the basis of the typology of information transfer and knowledge transfer events and the associated Aktionsart types, thematic roles, as well as macrorole and PSA assignment. This syntax-semantics linking gives pride of place to semantic categories and functions, which are prioritized when it comes to explaining the constructions in which verbs of learning appear. A clear advantage of the syntax-semantics linking as presented in this section is that it allows to relate verbs of learning to verbs of teaching, which have been explained as giving rise to the same syntax-semantics linking. Another advantage is that the solution adopted in this section also relates derived predications to their corresponding basic predications. This question is addressed in Section 7, which provides additional evidence in favor of the applicability of the typology of information transfer and knowledge transfer events.

7. Derived predications with verbs of learning

As has been explained in Section 4, the causative changes of state conveyed by knowledge and information transfer events are restricted to predications with an animate or a human initiator which performs the thematic role Effector, inanimate initiators playing the thematic role Source. In this section, an additional source of causativity is considered, to wit, nominalizations from clauses that result in noun phrases that entail verbal predications. Such nominalizations allow us to assess the typology of knowledge and information transfer events as well as the syntax-semantics linking presented in Section 6. This is so because nominalizations that entail verbal predications constitute borderline cases between animate and inanimate initiators: from the formal point of view, inanimate initiators belong to the class of abstract nouns; from the functional point of view, inanimate initiators frequently preserve the syntax of the verbal counterpart and, therefore, keep an argumental position that is taken up by the initiator (most frequently the Effector), which is case-marked genitive. This section briefly reviews the treatment of deverbal derived predications in RRG and then deals with the Old English data.

RRG considers some prepositional phrases as derived from a unit of the clausal level. For instance, *The arrest of John by FBI agents in New York City* has a clausal correlate like *FBI agents arrested John in New York City* that can be attributed to a nominal such as *arrest* which is derived from a verb (Van Valin & LaPolla, 1997, p. 186), and, like the verbal basis of derivation, takes two semantic arguments (the 'arrester' and the 'arrestee'). In the case of *instructor*, the noun is morphologically related to the verb *to instruct*, whose lexical representation can be put down informally as *someone teaches someone else to do something*. In other words, while the causative status of *Laura learned how to swim butterfly style thanks to her instructor* is not explicit in the syntax, its semantics, as mapped on the formation of the derived nominal *instructor*, entails

a predication causing another predication: the change of state whereby *Laura learned how to swim butterfly style* was caused by the process through which *Laura´s instructor taught her how to swim butterfly style*.

In Old English, the noun phrase can entail a verbal predication too (Ojanguren López, 2019a, p. 254). In (12a), there is a nominalization of the verbal predication because *æhtan* is morphologically related to the strong verb base *āgan* 'to possess'. The same can be said of (12b), in which *weorces* derives from the weak verb *wyrcan* 'to work'; (12c), in which *rynes* is a derivative from the strong verb base *yrnan* 'to run'; and of (12d), in which *tintregena* is morphologically related to the weak verb *tintegrian* 'to torment'. According to Ojanguren López (2019a, p. 254), the constituent inflected for the genitive case in these examples gets the macrorole Actor.

(12) (from Ojanguren López, 2019a, pp. 254-255)

a. [LS 8 (Eust) 38]

Placidas ða lange stod, and beheold þone heort, and wundrode his micelnysse, and ablan his æhtan.

'Then Placidas stood long and beheld the hart, and wondered at its size, and ceased his pursuit.'

b. [LS 17.1 (MartinMor) 277]

Þa wæs he dagas wel manige mid þære feforadle swiþe gestanden, ah he þeah næfre Godes weorces ne ablon.

'He was afflicted by a fever for many days, yet he never ceased from God's work.'

c. [ÆLS (Martin) 1060]

Ða ofhreow þam halgan þæs haran frecednyss, and þam hundum bebead þæt hi ablunnon þæs rynes.

'Then the saint rued the hare's peril, and commanded the hounds to desist from running.'

d. [ÆCHom I, 29 428.274]

Witodlice Decius egeslice awedde & binnon þrim dagum mid feondlicere stemne singallice hrymde: ic halsie þe Laurentius. Ablin hwæthwega þæra tintregena.

'But Decius became horribly frantic, and for three days, with fiendlike voice, constantly cried "I beseech thee, Lawrence, cease somewhat of those torments".'

Leaving morphological case aside, both in Old English and in Present-Day English, some oblique constituents (governed by preposition in Present-Day English instances like *the arrest of John*; and marked by the oblique case genitive in Old English, in instances such

as *his æhtan* 'of his pursuit') can be related to a direct constituent in a clausal counterpart that, moreover, receives semantic macrorole. As it turns out, deverbal nominalizations resulting in noun phrases that entail a verbal predication can also help to distinguish between causative and non-causative changes of state. Before dealing with this aspect, the question of prepositional government is addressed.

The noun phrases headed by deverbal nominals are, as a general rule, governed by a preposition. The preposition *þurh* 'through' is chosen in a vast majority of the cases, as can be seen in (13).

(13)

[BedePref 001800 (4.21)]

& þæt on Lindese geworden wæs ymbe Cristes geleafan, þurh gesegene ðæs arwurðan biscopes Cynebyrhtes [...] we geleornodon.

'The progress of Christ's faith in Lindsey we have learnt from the statements of the venerable bishop Cyneberht' (Miller, 1959a, p. 5).

It is worth mentioning, in this respect, that *þurh* also governs the demoted Actor of passives, as is illustrated in (14). This might be an additional link of nominalizations with the corresponding verbal expressions.

(14)

[Mart 5 (Kotzor) 061200 (Ju 22, B.3)]

Ðurh *sumne preost he wæs gelæred to godes geleafan.*

'By a priest he was instructed in the faith of God' (Herzfeld, 1973, p. 101).

The noun phrases headed by deverbal nominals show a remarkable degree of variation as regards prepositional government. On the one hand, the noun phrases headed by deverbal nominals are not governed by preposition in some instances. In the absence of a preposition, they are inflected for the dative, as is the case with *monungum* 'admonitions' in (15).

(15)

[Bede 4 027500 (14.296.32)]

Þa wæs se Godes mon bebyrged in Sancte Paules cirican þæs apostoles, þæs monungum he gelæred wæs & geleornade, þæt he ða heofonlecan eadignesse gehyhte.

'Then the man of God was buried in the church of the apostle St. Paul, by whose admonitions he had been taught and instructed to hope for heavenly bliss' (Miller, 1959b, p. 297).

On the other hand, a variety of prepositions can govern the noun case-marked dative, including *fram*, as in (16a), *æt*, as in (16b), and *of*, as in (16c).

(16)

a. [LS 10.1 (Guth) 001400 (0.44)]

Þas þingc, þe ic her onwrite, ic geleornode fram gesegenum þæs arwyrðan abbodes Wilfrides.

'The things which I here write, I learned from the relation of the venerable abbot Wilfrid' (Goodwin, 1848, p. 7).

b. [GDPref 1 (H) 004300 (9.18)]

Ic geleornode æt gesægene swiðe arwurðra witena þæt þæt ic secge.

'I learned from the conversation of very honourable wise men that which I say now' (own translation).

c. [Æ LS (Mark) 004200 (147)]

ac he leornode swaðeah of Petres bodunge hu he ða boc gesette.

'But he learned, nevertheless, from Peter's preaching, how he should write the book' (Skeat, 1966a, p. 331).

Deverbal nominalizations with Old English verbs of learning can make reference to information transfer events, as in (17a) and (17b), and to knowledge transfer events, as is the case with (17c) and (17d).

(17)

a. [ChronE (Irvine) 039100 (755.15)]

& þa on ðęs wifes gebœron onfundon þæs ciningas þegnas þa unstilnessa.

'And when from the woman's cries the king's thanes became aware of the disturbance' (Garmonsway, 1975, p. 48).

b. [Bede 3 060400 (19.244.8)]

Forðon he þurh gesyhð geleornade, ge hwæs he God bœd & to him wilnade, & þæt þe his bene gehyrede wœron.

'For by a vision he had learnt, both what he prayed God and desired, and that his prayers were heard' (Miller, 1959b, p. 245).

c. [ChronF (Baker) 016700 (694.16)]

of uran ealdran fœderan gesetnesse ic habbe ðœt geleornod ðœt nan lœwede man nah mid rihte to stingan hine a nanre cirican na a nan ðara ðingan ðe to cyrcan belimpð.

'I [...] have learned from the institutes of our forefathers, that no layman has a right to possess himself of a church, nor of any of the things which belong to a church' (Giles, 1914, p. 30).

d. [El 006600 (153)]
þa þe snyttro cræft Þurh fyrngewrito gefrigen hæfdon.
'Those who had acquired a knowledge of wisdom from ancient writings' (Bradley, 1982, p. 169).

Examples (17a) and (17c) can be described as causative because the semantic initiator (*ðęs wifes* 'of the woman' in (17a) and *uran ealdran fæderan* 'of our forefathers' in (17c)) plays the role of Effector in the basic predication. This can be seen in the tree diagrams in Figures 12 and 13.

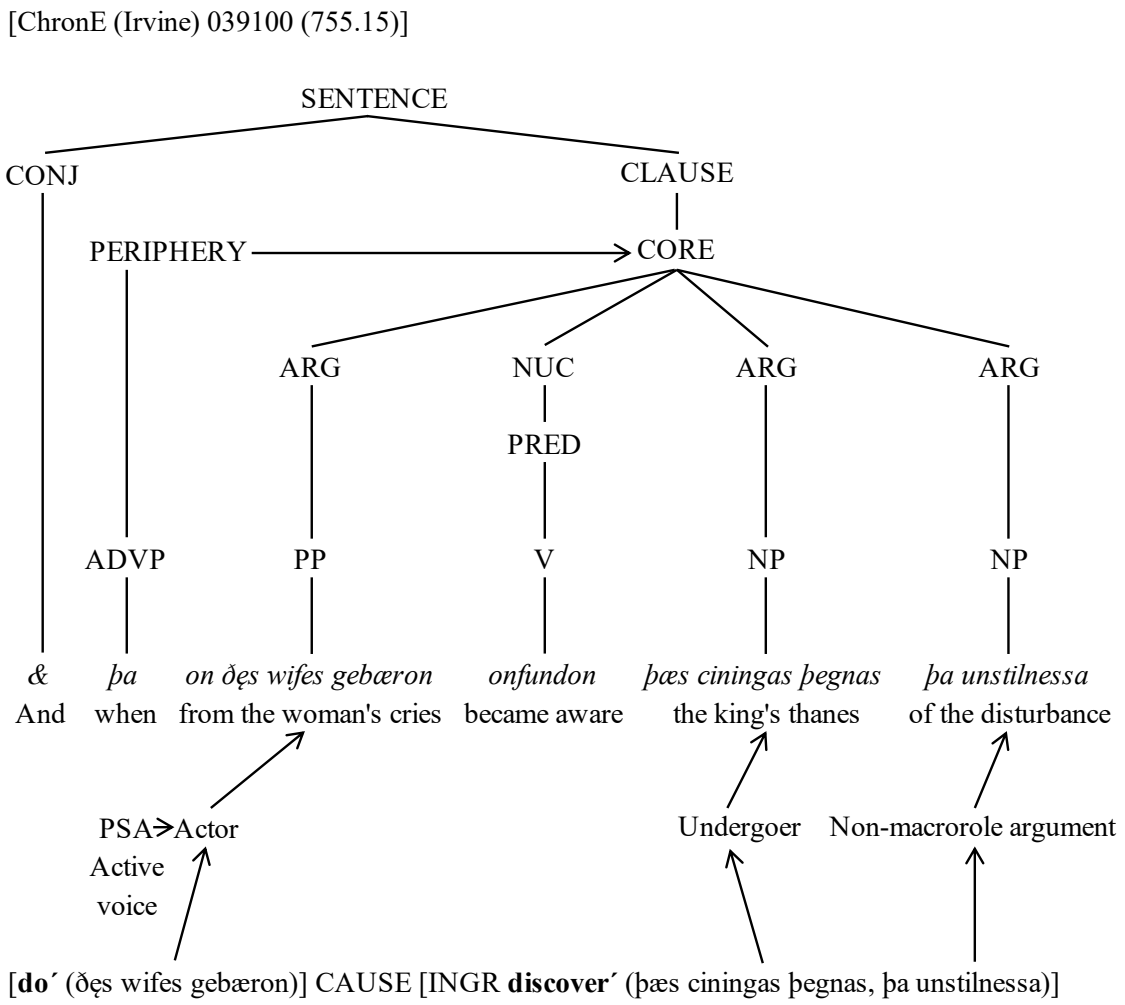


Figure 12. Tree diagram analysis of the Causative Achievement in (17a).

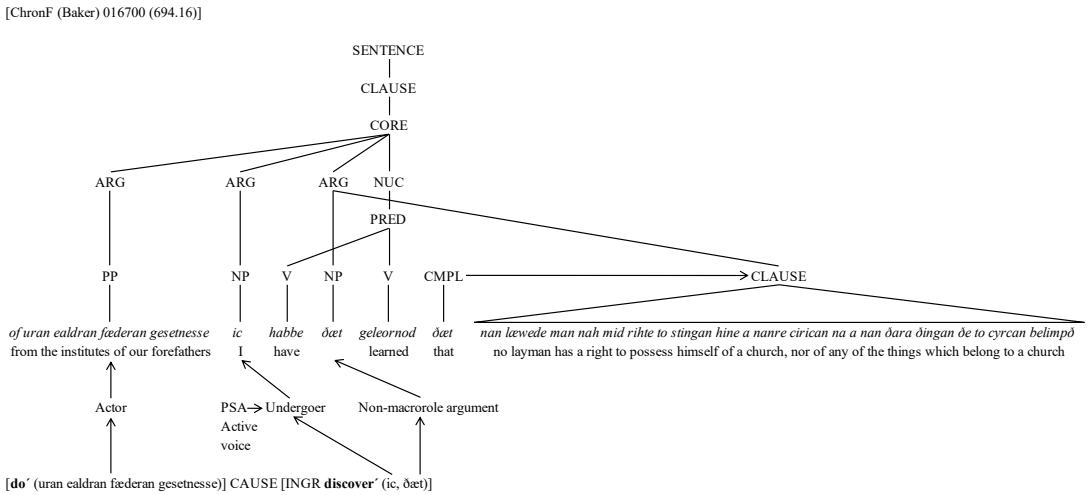


Figure 13. Tree diagram analysis of the Causative Achievement in (17c).

In the nominalization, the Effector is realized as an oblique argument that is case-marked genitive. Examples (17b) and (17d), in contradistinction, do not realize an animate semantic initiator and, consequently, the deverbal noun is governed by a preposition, in such a way that the prepositional phrase that plays the thematic role Source belongs in the Periphery of the Clause. The nominalization with the genitive, therefore, gives rise to less oblique syntax than the peripheral Source. The tree diagrams corresponding to examples (17b) and (17d) are shown in Figures 14 and 15.

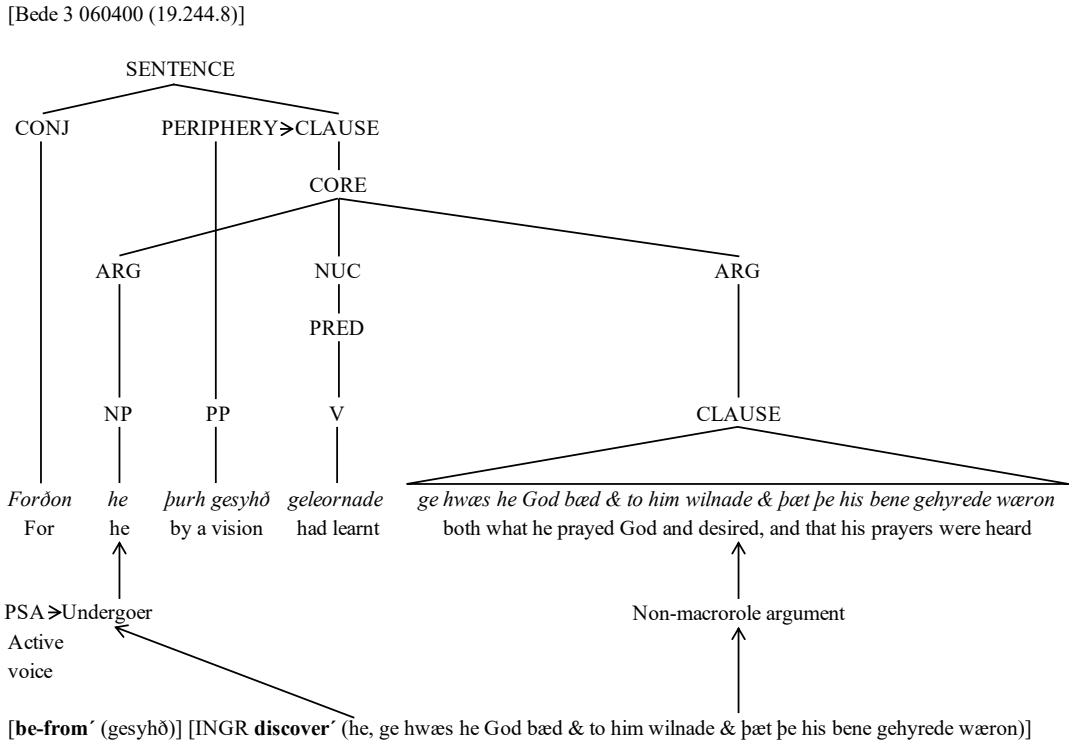


Figure 14. Tree diagram analysis of the Causative Achievement in (17b).

[El 006600 (153)]

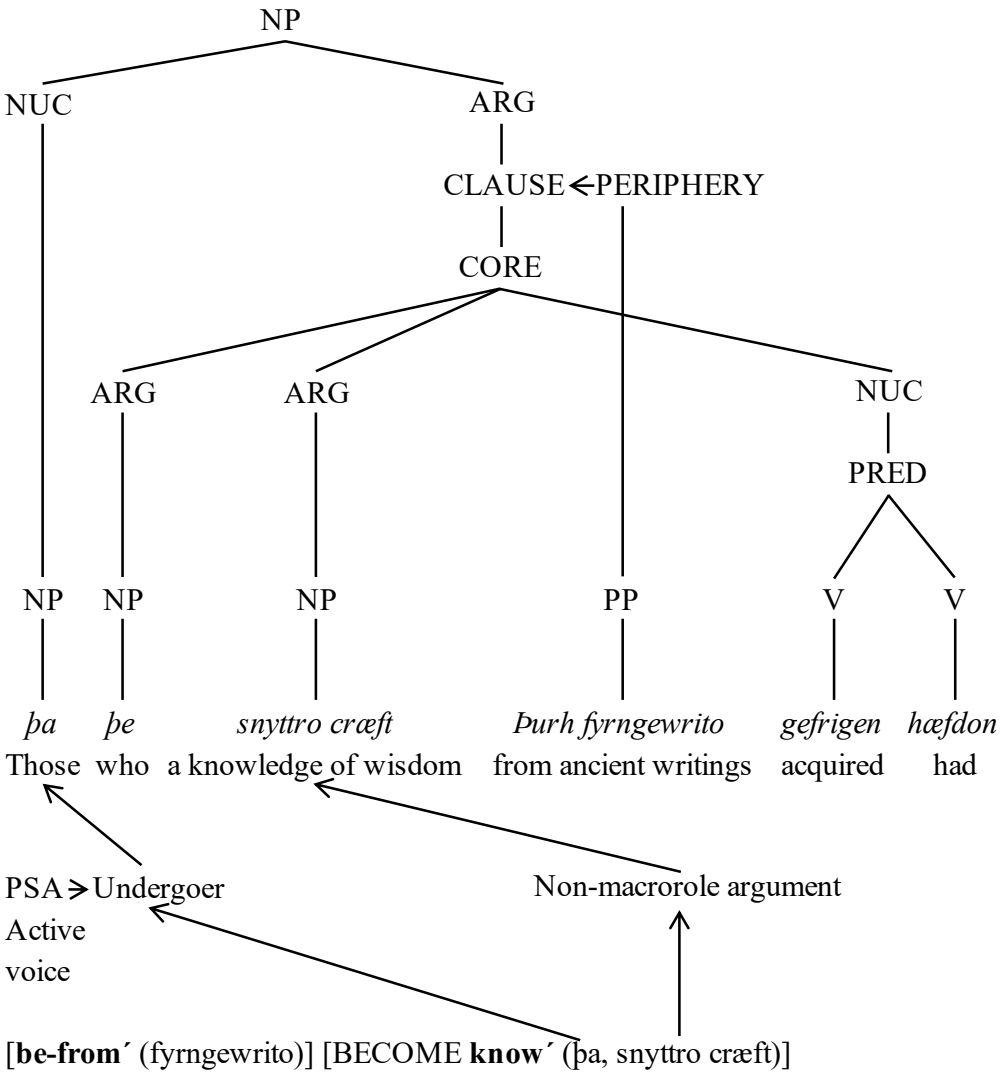


Figure 15. Tree diagram analysis of the Causative Achievement in (17d).

If we consider the evidence gathered in this section, it is the case that the typology of knowledge and information transfer events as well as the syntax-semantics linking presented in Section 6 can be successfully applied to deverbal nominalizations that keep argumental positions that are filled up by a noun phrase inflected for the genitive. Conversely, the coding of the third participant in the knowledge or information transfer event as an argumental Effector or as a peripheral Source draws a well-motivated distinction between causative and non-causative logical structures, independently of the fact that it applies to a basic or to a derived predication.

8. Conclusions

Fine-grained semantic analysis has often been considered as a hindrance to computation. This article has shown that in the specific area of Old English verbs of learning it is possible to make syntactic generalizations on the basis of internal verbal aspect, thematic role licensing, semantic macrorole transitivity, and PSA assignment. Such generalizations include the licensing of the Effector in the Core of the causative version of an Achievement or an Accomplishment and the Source in the Periphery of the non-causative version of these *Aktionsarten*, both with Old English verbs of learning. Furthermore, the oblique argument of a deverbal nominal that is case-marked genitive gets the macrorole Actor in the derived predication. And last, but not least, this analysis allows for a similar analysis of verbs of teaching and learning. The solution proposed in this article has a theoretical cost, too. It is necessary to draw additional semantic distinctions, such as between animate and inanimate initiators in knowledge or information transfer events; and to accept oblique macroroles in derived predications. These aspects will deserve further attention in future research.

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Appendix

The following include the verbs selected for this study; the number of inflectional forms (tokens) of each of the verbs (types) is given between brackets.

(ge)cneordlǣcan (16): *cneorðlæcendum* (1), *gecneordlæcan* (1), *gecneordlæcaþ* (2), *gecneordlæce* (4), *gecneordlæcen* (1), *gecneordlæcende* (1), *gecneordlæcon* (1), *gecneordlæhte* (1), *gecnyrdlæcað* (1), *gecnyrdlæce* (3).

gefrāgian (1): gefragade (1).

(ge)fricgan (19): *frige* (5), *gefrægen* (7), *gefregen* (2), *gefrigen* (5).

(ge)frignan (50): *fregnan* (1), *fregnanne* (1), *frin* (3), *frinan* (1), *gefrægn* (27), *gefran* (2), *gefregn* (1), *gefrugnen* (3), *gefrugnon* (1), *gefrunan* (2), *gefrunen* (3), *gefrunon* (5).

(ge)leornian (482): *geleornad* (5), *geleornade* (21), *geleornað* (3), *geleornedon* (5), *geleornian* (28), *geleornianne* (1), *geleorniað* (1), *geleornie* (1), *geleornigan* (1), *geleornige* (17), *geleornigen* (3), *geleornion* (1), *geleornod* (10), *geleornode* (44), *geleornodest* (1), *geleornodon* (20), *geliorned* (1), *geliornod* (3), *geliornode* (2), *geliornodon* (2), *leornade* (16), *leornað* (6), *leornde* (1), *leornedon* (9), *leornedost* (1), *leornege* (1), *leornendum* (1), *leorneodes* (1), *leorniæn* (2), *leornian* (57), *leornianne* (2), *leorniað* (36), *leorniaþ* (11), *leornie* (1), *leornienne* (5), *leornigan* (1), *leornigað* (2), *leornige* (41), *leornigeað* (1), *leornigeaþ* (1), *leornigen* (6), *leornigeð* (2), *leornion* (7), *leornod* (4), *leornodan* (3), *leornode* (58), *leornodes* (1), *leornodest* (6), *leornodon* (21), *leornudan* (1), *liorna* (2), *liornode* (2), *liornodest* (1), *liornodon* (2).

ofācsian (33): *ofacsian* (1), *ofahsade* (1), *ofahsian* (1), *ofahsode* (1), *ofaxade* (1), *ofaxian* (11), *ofaxie* (2), *ofaxod* (2), *ofaxode* (12), *ofaxxie* (1).

onfindan (114): *anfindan* (1), *anfunde* (8), *onfand* (18), *onfindað* (2), *onfindan* (1), *onfindaþ* (1), *onfinde* (6), *onfindeð* (3), *onfinden* (3), *onfindende* (3), *onfindest* (1), *onfindeþ* (1), *onfond* (4), *onfunde* (20), *onfunden* (20), *onfundene* (2), *onfundon* (20).