

ANGLO-SAXON VERBS OF SOUND: SEMANTIC ARCHITECTURE,
LEXICAL REPRESENTATION AND CONSTRUCTIONS ¹

FRANCISCO J. CORTÉS RODRÍGUEZ – MARTA GONZÁLEZ ORTA

University of La Laguna – University of A Coruña

ABSTRACT

This paper provides a detailed analysis of the semantic structure of Anglo-Saxon verbs of sound from the point of view of the Lexical Grammar Model (LGM). Firstly, a description of the theoretical foundations of the LGM for the analysis of lexical structures and the specific methodological principles developed for historical vocabularies will be provided. Secondly, the semantic architecture of the verbal domain of Old English sound predicates will be offered. Thirdly, the system of lexical decomposition proposed by the LGM and its application to the lexical class under study will be explained. This system has the format of a lexical template which will be fundamental to understand the linking algorithm that mediates between the semantic representation of sound predicates and their morpho-syntactic realizations. This linking process has two phases: the first one will bind the lexical template of verbs of sound with the representation of the constructions and alternations where these predicates appear whereas the second interface will account for their grammatical behaviour.

1. Introduction

One of the areas of research that still is a challenge for researches in lexicology, grammar or historical linguistics is the (re)construction of the semantic structures of historical lexicons. There are in fact several drawbacks inherent to the study of the early historical periods of any language which have been even held as insurmountable in some occasions. Nevertheless, this situation is reversing and there seems to be a growing interest in the study of historical vocabularies

¹ Financial support for this research has come from the research project HUM2005-07651-C02-01, funded by the Spanish Ministry of Education.

and, in many cases, from innovative perspectives.

This paper provides a detailed analysis of the semantic structure of Anglo-Saxon verbs of sound from the point of view of the so-called Lexical Grammar Model (LGM, henceforth) (Faber – Mairal 1999; Mairal – Faber 2005; Mairal – Van Valin 2001; Marín 1998, etc.). This lexicological model has been extensively used to study the lexicons of languages like Present-Day Spanish, English, German and French, and more recently in some lexical areas of historical languages like Old English, Classical Latin and Ancient Greek (Cortés – Mairal 2002; Cortés – Martín 2003; Cortés – Plaza 2006; Cortés – Plaza in press; González 2003-2004, González 2004a, González 2005a, 2005b, González in press; Martínez 2006, Martínez – Aguiar in press). In doing so, certain methodological adjustments have been made, provided the restrictions imposed by this last type of languages. Section 1 provides a description of the theoretical foundations of the LGM for the analysis of lexical structures and the specific methodological principles developed for historical vocabularies.

A description of the semantic structure of the verbal domain of Old English (henceforth OE) sound predicates is offered in section 2. The study of the organization of content within the domain gives as a result the so-called semantic architecture of the lexical class under study, a hierarchically arranged onomasiological organization of the predicates that share the same central semantic (set of) feature(s).

Section 3 is devoted to the explanation of the system of lexical decomposition proposed by the LGM and how it is applied to OE sound verbs. This system has the format of a lexical template (LT) and it is used for the description of content of every subdomain. LTs are fundamental to understand the linking algorithm that mediates between the semantic representation of a group of predicates and their morpho-syntactic realizations. This linking process has two phases: the first one binds the LT of a subclass of predicates with the representation of the constructions and alternations where those predicates appear. Section 4 describes this first process of linking.

There is a second interface that accounts for the specific morphological and syntactic expression of the sentential constituents of a given construction. In this second phase the LGM follows the linking principles established in Van Valin – LaPolla (1997) and Van Valin (2005)'s Role and Reference Grammar (henceforth RRG). Such principles and the way they account for the grammatical behaviour of OE sound predicates are expounded in section 5 of the paper.

2. Corpus selection and methodological principles

As in any study on lexical semantics, the use of the lexicographical tools available for OE is essential for the ascertainment of meaning, since there is no ac-

cess to native speakers' intuitions. Thus, dictionary definitions are the first and almost only statements about the meanings of words, and in the case of Anglo-Saxon lexicography, the works of Bosworth – Toller (1898 [1973]), Hall (1894 [1960-1996]), the historical part of the *Oxford English dictionary* and the more recent *Thesaurus of Old English* (Roberts – Kay – Grundy 1995; henceforth *TOE*) are to be credited as really authoritative sources for the extraction of semantic descriptions. However, the exclusive use of these would render a very restrictive view of the semantic intricacies of predicates from a lexicological perspective: with the exception of the last one, all other dictionaries are alphabetical, which in the practice involves sacrificing the establishment of any structural organization of the vocabulary based on (psycho)linguistic criteria. The *TOE* is onomasiological, thus rendering an exhaustive classification of lexical units in OE in terms of semantic groupings. However, the approach followed in the design of this thesaurus lacks linguistic grounding: it is based on a loose conception of lexical field, in terms of which words are classified together if they share some bit of meaning (Kay – Chase 1990: 305); that is, lexical units appear clustered associatively, instead of being based on the structural notions of opposition and similarity, fundamental for the organization of lexical fields, as Coseriu and Geckeler demonstrated (Coseriu 1977; Geckeler 1976). Despite this, we cannot deny the utility of this dictionary as a starting point for the selection of the units to be analyzed, but other resources are to be used.

The LGM proposes the description of lexicological structures by combining different types of information along two fundamental axes, the paradigmatic and the syntagmatic axis, and a subsidiary cognitive axis. The first type of analysis (paradigmatic axis) aims at organizing lexical units in a hierarchy based on semantic content. Following the dictates of Structural Semantics (Coseriu 1977; Geckeler 1976), Faber – Mairal (1999: 87) propose the following principle:

“Lexical Domain Membership”: Lexical domain membership is determined by the genus, which constitutes the nucleus of the meaning of a lexeme.

According to this principle, the definitional structure of predicates is the central element for the organization of lexicological structures: words with the same central meaning, *the genus*, will belong to the same (sub)class, and the functional differences within members of the same (sub)class are expressed in terms of some differentiating features, *the differentiae*, which constitute the second half of definitions.

One crucial assumption of the LGM is that definitional paradigmatic structure is not isolated from syntactic information:

... paradigmatic and syntagmatic information are closely interrelated to the extent that a verb's syntax depends on its location on the semantic space. In other words, a verb's combinatorial possibilities and syntactic potential are semantically motivated (Faber – Mairal 1999: 143).

In fact, there is an explicit principle that binds both types of information together:

“Lexical Iconicity”: The greater the semantic scope of a lexeme, the greater its syntactic variation (Faber – Mairal 1999: 187).

Some methodological issues which are of crucial importance for our study stem from these principles. The genus not only delimits the semantic universe for a particular lexical class, it opens the syntactic universe relevant for the members of such a class as well. That is, the members that share a common semantic feature also show striking regularities in their syntactic behaviour. This fact led Cortés – Mairal (2002: 20) to reinterpret the Lexical Iconicity Principle in the following terms:

“Lexical Iconicity Principle (Beta Reading)”: The greater the syntactic coverage of a lexical unit, the higher its position in the semantic hierarchy within a given subdomain.

Thus, the hierarchical organization of predicates within onomasiological structures (lexical classes and subclasses) can be also ascertained to a certain extent if attention is paid to their syntactic properties. There is a parallel between semantic specificity and syntactic *elasticity* (Rappaport – Levin 1998). This last principle is of paramount importance for the study of historical lexicons, since it permits to look for semantic parameters in the syntagmatic axis; in other terms, syntax becomes a symptom of the semantic configuration of a (group of) predicate(s), since the presence or blocking of a certain predicate in a syntactic construction is determined by certain compatibility conditions between the meaning of the lexical unit and the semantics associated to the construction.²

These theoretical stances open a new path of methodological procedures in the analysis of historical vocabulary. The use of textual evidence renders invaluable insights for the reconstruction of the semantic features of Anglo-Saxon

² In this regard, the LGM adopts the view of constructionist theories (Fillmore 1988; Goldberg 1995; Kay 1997, among others) and functional projectionist theories (Dik 1997; Van Valin – LaPolla 1997, Van Valin 2005, etc.) which postulate that syntactic constructions are meaningful and that there is an interface between the lexical and the syntactic components which match a predicate with a given syntactic structure, provided certain conditions, mostly semantic, are met.

verbs, in our case. Now a close scrutiny of the grammatical behaviour of verbal predicates as shown in the remaining OE texts becomes a fundamental tool for lexicological analysis, especially to determine the semantic feature(s) which constitute the genus of a (sub)class. Where both lexicographical and textual resources fall short of is in the determination of the specific semantic features (the *differentiae*) of every single lexical unit.

There is, however, one limitation in the use of corpora, namely their *negative evidence* restriction (Levin – Song – Atkins 1997): the extant texts of a language like OE may not reflect the whole combinatorial potential that a certain lexeme had; therefore, any assertion on its grammatical properties must be framed against this restriction.³

Cortés – Mairal (2002: 18-20) expound one further assumption, we will label it as the “Premise of Lexical Domain Stability”, which is fundamental for clustering lexical units into coherent semantic groups. According to this premise, a domain’s macrostructure remains stable for its most part both diachronically and within languages that show close genetical relation (in the case involved, Western Indo-European languages as they belong to the same “phylum”).

As Cortés and Torres (2003: 19) remark, the same assumption is present in the *TOE*, which follows Roget’s classification for the lexicon of contemporary English. Moreover, the results of previous research concerning the OE lexical classes of action, change, movement, physical perception, and speech have also verified its validity (see Cortés – Mairal 2002; Cortés – Martín 2003; Cortés – Plaza 2006; Cortés – Torres 2003; González 2003-2004, González 2004a, González 2005a, 2005b, González in press).

In consonance with this principle, the lexical class of sound verbs in OE has been constructed by turning firstly the information from the *TOE* on *sound* predicates into the structure of this class within the lexicon of English verbs developed by Faber – Mairal (1999: 287, 289). Once analyzed the information from all the verbs initially selected, the structure of the domain parallels to a great extent the corresponding Present-day English (PDE) class and only certain refinements have been made. These will be shown below.

³ One interesting case of negative evidence is the fact that in the corpus analysed for this paper (*The dictionary of Old English corpus (DOEC)*, *The Helsinki corpus of English texts: Diachronic and dialectal (HSK)*, and the Anglo-Saxon dictionaries by Bosworth – Toller and Toller – Campbell) there are no instances of the caused motion construction, as happens with some PDE verbs of sound emission.

3. Macrostructure of the Old English lexical class of *sound* verbs

Taking into account the information provided by the *TOE*, and once this is checked against the definitions contained in the OE lexicographical sources by Bosworth – Toller (1898 [1973]) (*B&T*), Toller – Campbell (1921 [1973]) (*T&C*) and Hall (1894 [1960-1996]), the architecture of the lexical class of verbs of sound appears divided from the onset into two major subclasses: one corresponding to the verbs that express the emission of sounds, where the vast majority of lexical units are ascribed, and a second one, with a few members that do not primarily denote an activity in terms of which a sound is produced, but merely encode the existence of a sound within, optionally, a certain spatial framework. In fact, this second subclass has been incorporated for the OE class of sound verbs into the macrostructure provided by Faber – Mairal (1999).

The first subclass, to make a sound, is in its turn divided into three main subclasses, that is, “Sounds produced by living creatures”, “by nature” and “by objects”. The first one, “Sounds produced by living creatures”, is characterised by the manner in which the sound is produced, whether by using the phonatory organs, which is the default value, by the intervention of other organs, which usually is related to certain body conditions (breathing, expelling air or gnashing one’s teeth), or like an animal. Precisely, this manner component will enable the existence of relations and overlaps between sound verbs and other lexical classes such as speech or feeling.

Firstly, when a sound is produced by using the vocal organs, which must be understood as the default cognitive scenario for sound emission, there is a subdivision into various groups of verbs, depending on the intensity or pitch of the sound produced, i.e. there are verbs that express the emission of loud sounds and others involve emitting a soft sound; an interesting subdomain is that of verbs that denote the production of sounds indicating an emotion such as unhappiness or happiness; again there is a slight macrostructural variation in comparison with the PDE structuring of the domain provided in Faber – Mairal (1999), instead of the disapproval emotion, codified in the meaning of verbs like *hoot*, *boo* and excluded from the OE architecture since we have not obtained any example for it, there is a small group of Anglo-Saxon sound predicates denoting a feeling of pain *onsican*, *sicettan*, *boterian*.

Secondly, if the sound produced is related to organs affected by certain body conditions, this is due to breathing, expelling air or gnashing one’s teeth. This last subclass, “To make a sound by gnashing one’s teeth”, has been introduced into the architecture of OE sound verbs replacing the original subclass “To make a sound by inhaling air” *sniff*, which our corpus of predicates has been unable to exemplify. Besides, within the second subclass, “To make a sound by expelling air”, the subclass “To make a sound by expelling air through one’s

anus" *fart* has been excluded for the same reason.

Lastly, in the case of "Sounds produced like animals", we have obtained examples for three of the four subclasses which integrate it in the corresponding PDE lexical subclass: "To make a sound like a wild, angry animal", "like a domestic animal", or "like a bird". However, "To make a sound like an insect" *buzz* has been excluded from the OE macrostructure.

In relation to the other two main subclasses, that is, "Sounds produced by nature" and "by objects", they remain for the most part as in the original architecture, except for two subclasses within "Sounds produced by objects", that is, "To make a durative sound" and "Something heavy hitting against liquid". The former has been included within the second major subclass "To sound", whereas the latter has been excluded due to the lack of examples. Again, the subclass "Something hitting against something else" should be located in an overlapping area between the lexical classes of sound and contact.

In sum, the architecture of the OE lexical class of sound verbs will be as follows:

1. To make a sound

1.1. Sounds produced by living creatures

1.1.1. To make a sound

1.1.1.1. To make a loud sound: *berstan*, *bigellan*, *blawan*, *breodian*, *ceallian*, *ciegan*, *cirman* (*cyrman*), *clipian*, *geblawan*, *geciegan*, *geclipian*, *gellan* (*gillan*, *giellan*, *gyllan*), *grimman*, *grymet(t)an*, *hlimman*, *hlowan*, *hlydan*, *hropan*, *hryman* (*hreman*), *oferclipian*, *scrallettan*, *stenan* (*seman*), *styrman*, *þunian*

1.1.1.2. To make a soft sound: *bemurc(n)ian*, *ceorian*, *clum(m)ian*, *gehyrstan*, *hwæstrian*, *hwisprian*, *missprecan*, *runian*, *þwastrian*, *twisprecan*, *wiþercwiddian*

1.1.1.3. To make a sound indicating an emotion

1.1.1.3.1. Unhappiness: *geocsian* (*gicsian*)

1.1.1.3.2. Happiness: *ahliehhan*, *cancettan*, *ceahhetan*, *dryman* (*dreman*), *hliehhan* (*hlehhan*)

1.1.1.3.3. Pain: *onsican*, *sicettan*, *þoterian*

1.1.2. To make a sound related to body conditions

1.1.2.1. To make a sound by breathing: *asican*, *asworetan*, *blawan*, *geblawan*, *hlocettan*, *sican*, *sworetan*

- 1.1.2.1.1. To make a sound by breathing quickly and audibly: *hwosan* (*hwesan*), *orþian*, *stenecian*, *þefian*
- 1.1.2.2. To make a sound by expelling air
 - 1.1.2.2.1. To make a sound by expelling air from one's throat: *bealcettan*, *sugan* (*sucan*)
 - 1.1.2.2.2. To make a sound by expelling air from one's nose: *fnesan*, *gefnesan*, *hrutan*, *snytan*
- 1.1.2.3. To make a sound by gnashing one's teeth: *gnyrran*, *grindan*, *gristan*, *gristbatian*, *gristbitian*, *gryrran*
- 1.1.3. To make a sound like an animal
 - 1.1.3.1. To make a sound like a wild, angry animal: *bellan*, *grymet(t)an*, *gyrran* (*georran*, *gyrrettan*), *rarian*, *ryn*, *rynan*, *þeotan*
 - 1.1.3.2. To make a sound like a domestic animal: *beorcan*, *blætan*, *borcian*, *crawan*, *gecrawan*, *grædan*, *grun(n)ian*, *grymet(t)an*, *hlowan*, *hnægan*
 - 1.1.3.3. To make a sound like a bird: *cloccian*, *crawan*, *galan*, *gecrawan*, *gesingan*, *grædan*, *singan*, *writian*
- 1.2. Sounds produced by nature: *blawan*, *brastlian*, *geblawan*, *hlynnan*, *swegan*, *swogan*
- 1.3. Sounds produced by objects
 - 1.3.1. To make a musical sound: *ablawan*, *aþeotan*, *blawan*, *geblawan*, *geteon*, *gliwian*, *hearpian*, *hringan*, *lacan*, *pipian*, *pleg(i)an*, *salletan*, *sealmian*, *slean*, *swinsian*, *þeotan*, *wræstan*
 - 1.3.2. To make a metallic/frictional sound: *brastlian*, *breahmian*, *cearcian*, *ceorran*, *gnyrran*, *gyrran* (*georran*, *gyrrettan*), *hryscan*, *þunian*
 - 1.3.3. To make a punctual, explosive sound: *berstan*, *cnyllan* (*cnyllsan*), *stunian*
 - 1.3.4. To make a dull, punctual sound
 - 1.3.4.1. Something hitting against something else: *wiþstunian*
 - 1.3.5. To make an iterative, sibilant sound: *ahwistlian*, *bræclian*, *hrutan*, *hwinan*, *hwistlian*

2. To sound: *abraslian, ahleoprian, ahlowan, cracian (cracettan), dynian, grillan, grymet(t)an, hleoprian, hlynsian (hlynnan), hwoþerian (hweoþerian), oncwēþan, onhwelan, onscillan, scyllan, swegan, swogan*

Figure 1. Architecture of the Old English lexical class of sound

4. Lexical subclasses and lexical templates

As stated above, every lexical (sub)class covers a conceptual area which is delimited by the central component of the meaning of its members, i.e. their genus. It has also been explained that the restrictions implicit in historical vocabularies do not permit in many cases to obtain a deeper lexical decomposition of the lexemes within a given subclass, and that specific hierarchical lexical relations like hyper-/hyponymy cannot be reconstructed. Thus, the codification of LTs for the subdomains in a lexical class is of vital importance in the (re)construction of onomasiological structures in OE.

Their theoretical importance is further increased when we consider their other role within the LGM: LTs or entries for the verbal subclasses are also to be taken as the foundational blocks for the explanation of the grammar of the predicates under study.

Given the architecture of the lexical class of sound, two general LTs must be posited:

- 1) sound emission: [CAUS_{1,2} INSTR₃ [[do' (x, [make' (x, y <sound'>))] & [INGR exist' (y)]]]
- 2) sound location: [LOC_{in1} (CAUS_{2,3}) [be-LOC (x, [do' (y, [make' (y, z <sound'>))])]]]

Within the LGM, LTs are conceived as lexical representations which encode syntactic and semantic information within the same format. Thus, the format of a lexical entry or LT consists of two components: a semantic constituent composed of semantic primitives (Wierzbicka 1987, 1996; Goddard – Wierzbicka 2002's Natural Semantic Metalanguage) and/or lexical functions (Mel'čuk 1988, 1989; Mel'čuk – Wanner 1996), together with internal variables which are marked by numerical subscripts, and a semantic-syntactic component encoded by RRG's logical structures (LS).

As regards the semantic-syntactic component, Van Valin – LaPolla (1997) propose a system of lexical representation, by means of LSs which describe verbal predicates in terms of their *Aktionsart* or internal temporal properties. This classification implies a way to capture syntactic and morphological phe-

nomena, characteristic of the different verbal classes. Thus, in Van Valin (2005: 33) six classes of verbal predicates are distinguished: states [+static, -dynamic, -telic, -punctual], activities [-static, +dynamic, -telic, -punctual], achievements [-static, -dynamic, +telic, +punctual], semelfactives [-static, ±dynamic, -telic, +punctual], accomplishments [-static, -dynamic, +telic, -punctual], and active accomplishments [-static, +dynamic, +telic, -punctual], together with their causative counterparts. Table 1 below shows the lexical representations corresponding to the verbal classes mentioned above (Van Valin 2005: 45):

Table 1. Lexical representations for *Aktionsart* classes

Verb Class	Logical Structure
STATE	<i>predicate'</i> (x) or (x, y)
ACTIVITY	<i>do'</i> (x, [<i>predicate'</i> (x) or (x, y)])
ACHIEVEMENT	INGR <i>predicate'</i> (x) or (x, y), or INGR <i>do'</i> (x, [<i>predicate'</i> (x) or (x, y)])
SEMELFACTIVE	SEML <i>predicate'</i> (x) or (x, y) SEML <i>do'</i> (x, [<i>predicate'</i> (x) or (x, y)])
ACCOMPLISHMENT	BECOME <i>predicate'</i> (x) or (x, y), or BECOME <i>do'</i> (x, [<i>predicate'</i> (x) or (x, y)])
ACTIVE ACCOMPLISHMENT	<i>do'</i> (x, [<i>predicate1'</i> (x, (y))]) & INGR <i>predicate2'</i> (z, x) or (y)
CAUSATIVE	α CAUSE β , where α , β are logical structures of any type

By way of illustration, consider the following examples extracted from Van Valin (2004):

- a. STATES
Dana saw the picture. *see'* (Dana, picture)
- b. ACTIVITIES
Carl ate pizza. *do'* (Carl, [*eat'* (Carl, pizza)])
- c. ACHIEVEMENTS
The window *shattered*. INGR *shattered'* (window)
- d. SEMELFACTIVES

- Dana glimpsed the picture. SEML *see'* (Dana, picture)
- e. ACCOMPLISHMENTS
The snow melted. BECOME *melted'* (snow)
- f. ACTIVE ACCOMPLISHMENTS
Carl ate the pizza. *do'* (Carl, [*eat'* (Carl, pizza)]) & INGR *consumed'* (pizza)
- g. CAUSATIVES
- STATE: The dog scared the boy. [*do'* (dog, Ø)] CAUSE [*feel'* (boy, [*afraid'*])]
- ACTIVITY: Felix bounced the ball. [*do'* (Felix, Ø)] CAUSE [*do'* (ball, [*bounce'* (ball)])]
- ACHIEVEMENT: The burglar shattered the window. [*do'* (burglar, Ø)] CAUSE [*INGR shattered'* (window)]
- SEMELFACTIVE: Sam flashed the light. [*do'* (Sam, Ø)] CAUSE [*SEML do'* (light, [*flash'* (light)])]
- ACCOMPLISHMENT: Max melted the ice. [*do'* (Max, Ø)] CAUSE [*BECOME melted'* (ice)]
- ACTIVE
Mary fed the pizza to the child [*do'* (Mary, Ø)]
ACCOMPLISHMENT: CAUSE [*do'* (child, [*eat'* (child, pizza)]) & INGR *consumed'* (pizza)]

As Table 1 shows, LSs follow the conventions of formal semantics. Constants, in boldface followed by a prime, are part of the semantic metalanguage and will be applied to any language. However, lexical items from the language under study will fill variables in normal typeface. Finally, the elements in capitals, such as INGR, SEML, BECOME, or CAUSE, will modify the predicate (Van Valin 2005: 42-49).

However, LSs lack the semantic information characteristic of lexical classes. Therefore, in order to construct a LT, LSs will be complemented by a semantic decomposition in terms of ontological constants or internal variables and semantic primitives corresponding to the different lexical classes. In this regard, Mairal – Faber (in press) propose to combine Wierzbicka (1996)'s inventory of semantic primitives (already integrated in RRG's LSs) with their own adaptation of the lexical functions formulated by Mel'čuk – Wanner (1996), in order to account for lexical domain-specific relations. Thus, the semantic metalanguage used for the codification of the meaning parameters of a LT will be based on Wierzbicka's Natural Semantic Metalanguage, Mel'čuk's lexical functions, and the principles of lexical organization from the LGM. The result will be a procedure of lexical representation where meaning description is encapsulated and interacts with the syntactic behaviour of lexical units:

Lexical templates conflate both syntactic information (those aspects of the meaning of a word which are grammatically relevant) and semantic information (those aspects which act as distinctive parameters within a whole lexical class) into one unified representation (Mairal – Faber 2002: 54).

The syntactic component of the LT in (1) above codifies an active accomplishment LS with two subevents and two external argument positions (x) and (y), marked in Roman letters, which will have a syntactic representation. Therefore, in verbs of sound emission an effector (x) produces a sound (y) and in turn causes the subsequent existence of that sound, as encoded in the terminal subevent with the operator INGR standing for a punctual state of affairs. Furthermore, this LS is modified by the lexical functions CAUS1,2 and INSTR3, which refer to the means (3) by which the effector (1) achieves this sound (2):

- 3) He clypode mid micelre stemne
 NOM-he PRET-cry with DAT-great DAT-voice
 ‘He cried with a loud voice’

(*B&T: Homl. Th. i. 596, 5; Bd. 3, 2; S. 524, 21; Byrht. Th. 132, 33; By. 25: 139, 19; By. 256*).

The LT corresponding to verbs of sound location, see (2) above, expresses a locative relation between a certain place (1) and a sound (3), by means of a stative LS [*be-LOC* (x, [*do'* (y, [*make'* (y, z <sound'>))])]), which involves a subactivity specifying the source of such sound: [*do'* (y, [*make'* (y, z <sound'>))]). Thus, in the semantic component the lexical function LOC_{in1} will modify the event that relates the causing entity (2) and the sound produced (3), that is, LOC_{in1} (CAUS2,3):

- 4) Dyneþ upheofon
 PRES-resound NOM-heaven
 ‘Heaven above shall resound’

(*B&T: Exon. 116 b; Th. 448, 25; Dom. 59: 21 b; Th. 58, 5; Cri. 931*).

Turning to the subclass of sound emission, once the general LT has been described, the hyponymic subclasses will inherit the information provided by the hyperonymic ones. As shown above, this subclass is divided into three parts: “Sounds produced by living creatures”, “Sounds produced by nature” and “Sounds produced by objects”. Firstly, within “Sounds produced by living creatures” the first hyponymic subclass is “To make a sound”, which will enable us to account for loud sounds, soft sounds, or sounds indicating an emotion. This will be reflected in the corresponding LTs below:

- 5) [CAUS_{1(living creature),2} INSTR₃ [[*do'* (x, [*make'* (x, y <MAGN *sound'*>))]]]]
 He hlude stefne ne cirmde
 NOM-he DAT-loud DAT-voice not PRET-cry
 'He did not cry out with a loud voice' (B&T: 113a; *Th.* 432, 20; *Ra.* 49, 3).
- 6) [CAUS_{1(living creature),2} INSTR₃ [[*do'* (x, [*make'* (x, y <ANTI MAGN *sound'*>))]]]]
 Hi clumiap mid ceaflum ðæ hi
 NOM-they PRES-mutter with DAT-jaw where NOM-they
 scoldon clypian
 PRET-should INFIN-speak aloud
 'They mutter with their jaws where they ought to speak aloud'
 (B&T: *Wanl. Catal.* 30, 14).
- 7) [INVOLV SYMPT₁ (FEEL₃) CAUS_{1(living creature),2} ([[*feel.about'* (x, y)]
 CAUSE [*do'* (x, [*make'* (x, z <*sound'*>))]]]]]
 Ða hrymde heo to hire hiwum
 then PRET-cry NOM-she to DAT-her DAT-
 appearance
 'Then she cried out to her appearance' (B&T: *Gen.* 39, 14, 15).

The LTs in (5) and (6) describe the manner in which the sound is produced by means of the lexical functions MAGN and ANTI MAGN, for loud and soft sounds, respectively, whereas the LT in (7) includes a semantic representation with two new functions, INVOLV and SYMPT, which encode a subevent as a causing (CAUS_{1(living creature),2}) state of affairs in the emission of a sound. Therefore, the effector (1) experiences SYMPT₁ an emotional reaction (FEEL₃) such as unhappiness (FEEL₃: unhappiness⁴), happiness (FEEL₃: happiness) or pain (FEEL₃: pain), which causes the emission of a sound]. FEEL appears in capital letters to mark its primitive nature.

The second subclass under "Sounds produced by living creatures", "To make a sound related to body conditions", presents three main LTs describing the instrument by which the effector (1) produces a sound, that is, by breathing (INSTR₁ (breath)), by expelling air (INSTR₁ (expel air)), and by gnashing one's teeth (INSTR₁ (gnash teeth)), respectively:

⁴ The use of italics represents the fact that this component can be further decomposed.

- 8) [CAUS_{1(living creature),2} INSTR₁ (*breath*) [[do' (x, [make' (x, y <sound'>))]]]]
 On minum bedde ic sice and wepe
 on DAT-my DAT-bed NOM-I PRES-sigh and PRES-
 weep
 'On my bed I sigh and weep' (B&T: *Ps. Th.* 6, 5).
- 9) [CAUS_{1(living creature),2} INSTR₁ (*expel air*) [[do' (x, [make' (x, y <sound'>))]]]]
 Ðæt he gelome gefnese
 that NOM-he often PRES-sneeze
 'That he often sneezes' (B&T: *L. M.* 2, 59; *Lchdm.* ii. 282, 27).
- 10) [CAUS_{1(living creature),2} INSTR₁ (*gnash teeth*) [[do' (x, [make' (x, y <sound'>))]]]]
 Ic cearcige oððe gristbitige
 NOM-I PRES-gnash or PRES-grind teeth
 'I gnash or grind the teeth' (B&T: *Ælfc. Gr.* 26; *Som.* 29, 7).

Both (8) and (9) can be further specified as INSTR₁ (MAGN *breath*) as in (11) and INSTR₁ (LOC_{ab1}⁵ (BODY_PART: throat) *expel air*) or (LOC_{ab1} (BODY_PART: nose) *expel air*) in (12) and (13), respectively, with regard to the manner in which the effector breathes, that is, quickly and audibly (e.g. *hwosan*, *orþian*) and the location from which the effector expels air, LOC_{ab1}, in this case from one's throat (e.g. *bealcettan*, *sugan*) or nose (e.g. *fnesan*, *hrutan*):

- 11) [CAUS_{1(living creature),2} INSTR₁ (MAGN *breath*) [[do' (x, [make' (x, y <sound'>))]]]]
 He hefiglice asworette
 NOM-he intensely PRET-sigh
 'He sighed intensely' (B&T: *Bd.* 3, 11; *S.* 536, 33).
- 12) [CAUS_{1(living creature),2} INSTR₁ (LOC_{ab1} (BODY_PART: throat) *expel air*) [[do' (x, [make' (x, y <sound'>))]]]]
 He sceal oft bealcettan

⁵ The lexical function LOC_{ab} has been incorporated into Mel'čuk's list of functions in order to express 'spatial location with directionality "from"'.

NOM-he PRES-will often INFIN-belch
 ‘He will often belch’ (T&C: 236, 14).

- 13) [CAUS_{1(living creature),2} INSTR₁ (LOC_{abl} (BODY_PART: nose) *expel air*) [[do’ (x, [make’ (x, y <sound’>))]]]]
 ða he þæne [{cyrward{] gehyrde ofer
 then NOM-he ACC-the ACC-church-keeper PRET-hear over
 eall hrutan
 ACC-all INFIN-snore
 ‘Then he heard the church-keeper snore over all’
 (HSK: <Coleofri.doc R 31>).

The third subclass corresponding to “Sounds produced by living creatures” takes into account the verbs of sound that involve the effector (1) producing a sound like an animal, which is codified by the semantic restriction (LIKE animal) affecting the internal variable (1) CAUS_{1(LIKE⁶ animal)}:

- 14) [CAUS_{1(LIKE wild animal/domestic animal/bird),2} INSTR₃ [[do’ (x, [make’ (x, y <sound’>))]]]]
 Hwilum hi ðuton eall swa wulfas
 sometimes NOM-they PRET-howl NOM-all like NOM-wolf
 ‘Sometimes all of them howled like wolves’
 (B&T: *Shrn.* 52, 29; *Bt.* 38, 1; *Fox* 194, 36).

Secondly, with regard to the subdomain “Sounds produced by nature”, these predicates only denote an activity, where the effector (1) is a natural force which produces a sound. In the description of the different verbal classes in terms of their *Aktionsart*, the semantic feature which differentiates activities from active accomplishments is the telicity of the latter. In RRG, the telic uses of activity verbs are termed “active accomplishments”. As Van Valin (2004: 30) states, “whether a verb is being used as an activity or active accomplishment is directly a function either of the quantification of the object NP (consumption and creation verbs) or of the PP that accompanies it (motion verbs)”. The rule which captures the alternation between activity and active accomplishment verbs is presented below (2004: 18):

⁶ LIKE is one of Wierzbicka’s semantic primitives denoting ‘similarity’.

Activity [creation] → Active Accomplishment:

$do' (x, [pred' (x, y)]) \rightarrow do' (x, [pred' (x, y)] INGR exist' (y))$

This lack of telicity in “Sounds produced by nature” denotes that the action does not encode in its semantics a terminal point; i.e. there is no indication of the end of the sound production process. Thus the LT in (15) will select from the general LT the first subevent:

- 15) [CAUS_{1(nature), 2} [$do' (x, [make' (x, y <sound'>)]$)]]]
 Se þuner oft egeslice brastlaþ
 NOM-the NOM-thunder often fearfully PRES-crackle
 ‘The thunder often crackles fearfully’ (B&T: *Lchdm.* iii. 280, 13).

Thirdly, as far as the subclass “Sounds produced by objects” is concerned, the LTs for its subordinate groupings will differ in the type of sound produced, that is, metallic, explosive, dull or sibilant, as the examples below illustrate, and in the kind of instrument used:

- 16) [CAUS_{1,2} INSTR_{3(object/LIKE musical instrument)} [[$do' (x, [make' (x, y <sound'>)]$)]] & [INGR exist' (y)]]]
 Næfre monðæs hlude byman ablaweþ
 never NOM-man so loudly ACC-trumpet PRES-blow
 ‘Never does a man blow the trumpet so loudly’
 (B&T: *Exon.* 117b; *Th.* 451, 27; *Dom.* 110).
- 17) [CAUS_{1,2} INSTR_{1,3(object/friction/rub)} [[$do' (x, [make' (x, y <(TYPE: LIKE metal) sound'>)]$)]]]]]
 Strengas gurron
 NOM-rope PRET-creak
 ‘The ropes creaked’ (B&T: *Andr. Kmbl.* 748; *An.* 374).
- 18) [CAUS_{1,2} INSTR_{3(object)} [[$do' (x, [make' (x, y <(TYPE: sibilant) sound'>)]$)]] & [INGR exist' (y)]]]
 He hwystlode stranglic[e] stemne
 NOM-he PRET-hiss ACC-great ACC-voice
 ‘He [the devil] made a great hissing’ (B&T: *Nar.* 43, 17).

The following table will show the hyperonymic and hyponymic LTs of the lexical class of sound:

Table 2: Hyperonymic and hyponymic templates of the lexical class of sound

SOUND VERBS

SOUND EMISSION

[CAUS_{1,2} INSTR₃ [[do' (x, [make' (x, y <sound'>))]] & [INGR exist' (y)]]]

Sound produced by living creatures

To make a sound

a loud sound [CAUS₁(*living creature*)₂ INSTR₃ [[do' (x, [make' (x, y <MAGN sound'>))]] & [INGR exist' (y)]]]

a soft sound [CAUS₁(*living creature*)₂ INSTR₃ [[do' (x, [make' (x, y <ANTI MAGN sound'>))]] & [INGR exist' (y)]]]

a sound indicating an emotion [INVOLV SYMPT₁ (FEEL₃) CAUS₁(*living creature*)₂ ([do' (x, [make' (x, y <sound'>))])]]]

unhappiness [INVOLV SYMPT₁ (FEEL₃: *unhappiness*) CAUS₁(*living creature*)₂ ([do' (x, [make' (x, y <sound'>))])]]]

happiness [INVOLV SYMPT₁ (FEEL₃: *happiness*) CAUS₁(*living creature*)₂ ([do' (x, [make' (x, y <sound'>))])]]]

pain [INVOLV SYMPT₁ (FEEL₃: *pain*) CAUS₁(*living creature*)₂ ([do' (x, [make' (x, y <sound'>))])]]]

To make a sound related to body conditions

by breathing [CAUS₁(*living creature*)₂ INSTR₁ (*breath*) [[do' (x, [make' (x, y <sound'>))]] & [INGR exist' (y)]]]

quickly and audibly [CAUS₁(*living creature*)₂ INSTR₁ (*MAGN breath*) [[do' (x, [make' (x, y <sound'>))]] & [INGR exist' (y)]]]

by expelling air [CAUS₁(*living creature*)₂ INSTR₁ (*expel air*) [[do' (x, [make' (x, y <sound'>))]] & [INGR exist' (y)]]]

from one's throat	[CAUS ₁ (<i>living creature</i>), ₂ INSTR ₁ (LOCab1 (BODY_PART: throat) <i>expel air</i>) [[do' (x, [<i>make</i> ' (x, y < <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]
from one's nose	[CAUS ₁ (<i>living creature</i>), ₂ INSTR ₁ (LOCab1 (BODY_PART: nose) <i>expel air</i>) [[do' (x, [<i>make</i> ' (x, y < <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]
by gnashing one's teeth	[CAUS ₁ (<i>living creature</i>), ₂ INSTR ₁ (<i>gnash teeth</i>) [[do' (x, [<i>make</i> ' (x, y < <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]

To make a sound like an animal

like a wild, angry animal	[CAUS ₁ (<i>LIKE wild animal</i>), ₂ INSTR ₃ [[do' (x, [<i>make</i> ' (x, y < <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]
like a domestic animal	[CAUS ₁ (<i>LIKE domestic animal</i>), ₂ INSTR ₃ [[do' (x, [<i>make</i> ' (x, y < <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]
like a bird	[CAUS ₁ (<i>LIKE bird</i>), ₂ INSTR ₃ [[do' (x, [<i>make</i> ' (x, y < <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]

Sound produced by nature

CAUS₁(*nature*),₂ [[do' (x, [*make*' (x, y <*sound*'>))]]]

Sound produced by objects

To make	a musical sound	[CAUS _{1,2} INSTR ₃ (<i>object/LIKE musical instrument</i>) [[do' (x, [<i>make</i> ' (x, y < <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]
	a metallic frictional sound	[CAUS _{1,2} INSTR _{1,3} (<i>object/friction/rub</i>) [[do' (x, [<i>make</i> ' (x, y <(TYPE: LIKE <i>metal</i>) <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]
	a punctual, explosive sound	[CAUS _{1,2} INSTR ₃ (<i>object</i>) [[do' (x, [<i>make</i> ' (x, y <(TYPE: <i>explosive</i>) <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]
	a dull, punctual sound	[CAUS _{1,2} INSTR ₃ (<i>object</i>) [[do' (x, [<i>make</i> ' (x, y <(TYPE: <i>dull</i>) <i>sound</i> '>))]] & [INGR <i>exist</i> ' (y)]]]

something hitting	[CAUS _{1,2}
against some-	INSTR _{1,3(object)}
thing else	(hit) [[do' (x,
	[make' (x, y <
	(TYPE: dull)
	sound'>))] &
	[INGR exist'
	(y)]]]
an iterative,	[CAUS _{1,2} INSTR _{3(object)} [[do' (x,
sibilant sound	[make' (x, y <(TYPE: sibilant)
	sound'>))] & [INGR exist' (y)]]]

SOUND LOCATION

[LOC_{in1} (CAUS_{2,3}) [*be*-LOC (x, [do' (y, [make' (y, z <sound'>))])]]]

5. First phase of linking: the catalogue of constructions

In the previous section the organization of the verbal domain has been made explicit, and a description of the LTs that encompass the semantic content of each subdomain has been provided. This section will account for the participation of the verbs of the class under study in the different constructions that have been found in our corpus of examples.

According to Goldberg (1995: 4), “a distinct construction is defined to exist if one or more of its properties are not strictly predictable from knowledge of other constructions existing in the grammar”; its definition is as follows:

C is a CONSTRUCTION iff_{def} C is a form-meaning pair <F_i, S_i> such that some aspect of F_i or some aspect of S_i is not strictly predict-able from C's component parts or from other previously established constructions.

In the LGM, the presence of one predicate in a given construction is accounted for by means of an interface mechanism between the semantic representation (LTs) of the verbal subdomains and that corresponding to the semantics of the construction. The semantics of every construction will also be rendered in the format of an LT. Such linking mechanism is termed the “Lexical Template Modeling Process”, which reads as follows:

Lexical templates can be modeled by suppressing external variables, instantiating internal variables, eliminating operators (e.g. CAUSE), or else, by introducing elements resulting from the fusion with other templates iff there is a compatibility between the features in the lexical template and the syntactic construction under scrutiny
(Mairal – Faber 2002: 87).

This principle involves the existence of a set of matching conditions that mediate between the semantics of the predicates and that of the constructions. Such conditions have been expressed with a format of linking rules, among which the following will be relevant for our description (Mairal – Cortés, in press):

1. “Full matching”: There must be a copy/identification of variables, subevents and operators, between both the canonical LT and the constructional LT, e.g. agent-subject construction or instrument construction.
2. “Suppression of variables”: The variables/operators in the canonical LT must accommodate to the number of variables of the constructional template. Canonical LT variables/operators can be suppressed iff the basic interpretation of the canonical LT is not violated, e.g. location-subject construction or instrument-subject construction.
3. “Predicate and operator integration condition”: The constructional template may introduce a new predicate into the canonical lexical template iff the semantics of the added predicate is compatible with the semantic content of the lexical template, e.g. location-subject construction or reaction-object construction.
4. “Partial matching”: The semantics of the constructional template must be compatible with at least one component of the canonical LT, e.g. reaction-object construction (incompatibility with the second subevent [INGR exist’(y)]).

Let us turn now to describe the specificities of each of the constructions that have been revealed in the study of the corpus of verbs that express the location of sounds.

The basic LT for this subclass which was described in (2) is repeated in (19):

19) [LOC_{in1} (CAUS_{2,3}) [*be-LOC* (x, [*do*’ (y, [*make*’ (y, z <*sound*’>))]]]

This entry places the production of (a) sound(s) in a locative coordinate in such a way that the production of the sound is backgrounded semantically and the relevant semantic event is the relation established between the activity and a certain spatial entity. This is the reason why Levin (1993: 253) prefers to describe the PDE equivalent class as a type of verbs of existence and distinguishes it from the other types of sound verbs:

These verbs are often included among the verbs of sound emission [...] but they do not actually seem to belong to this class. Rather than describing the emission of a particular sound, they describe the existence of a sound, although they are vague as to the exact nature of the sound.

The hallmark for this class is the allowance by its members of the so-called “swarm-with” alternation in PDE. Two are the constructions involved in PDE, which following Dowty (2001) are labelled “Agent-Subject (A-Subject) Form” (20) and “Location-Subject (L-Subject) Form” (21):

20) Bees swarm in the garden.

21) The garden swarms with bees.

Dowty (2001: § 1.2.3) describes the “swarm-with” alternation as follows:

The best systematic way to describe the SWARM-WITH construction is via a lexical rule that takes an ordinary intransitive verb as input and alters both its syntactic valence and its meaning... Verbs as found in A-subject sentences are the input to this rule, and the corresponding verbs as found in L-subject sentences are the output.

Therefore, from the general LT in (19) the following constructional LTs can be derived:

22) Agent-subject:

[LOC_{in1} (CAUS_{2,3}) [*be*-LOC (x, [*do*' (y, [*make*' (y, z <sound'>))])]]
 Drihten hleoðraþ of heofonum
 NOM-God PRES-sound from DAT-heaven
 ‘God made a sound from heaven’

(*B&T: Bd. 4, 3; S. 519, 19; Ps. Spl. 17, 15*).

23) Location-subject:

[CULM LOC_{in1} (MANY CAUS_{2,3}) [*be*-LOC (x, [*do*' (y, [*make*' (y, z <sound'>))])]]
 Dyneþ upheofon
 PRES-resound NOM-heaven
 ‘Heaven above shall resound’

(*B&T: Exon. 116 b; Th. 448, 25; Dom. 59: 21 b; Th. 58, 5; Cri. 931*).

The constructional LT in (22) shows a full matching with the subclass LT in (19), whereas in (23) two new operators have been included, CULM and MANY. The former signals ‘the highest point of’ (in this case, the fact that the place appears completely affected), whereas MANY modifying CAUSE will codify the dynamic texture hypothesis mentioned by Dowty (2001: §1.2.2):

Location-subject sentences describe a situation where a kind of event is occurring simultaneously and repetitively throughout all parts of a place or space. (The events are distributed throughout all subregions (or surface, or space).) These subregions of activity are so small, numerous, and homogeneous that the dominant perception they create together is a “texture of movement” in the surface as a whole. That is, the small events and the small agents performing them may not be readily distinguishable as individuals. (...) Likewise, other kinds of L-subject sentences (...) describe situations in which individual (...) sound sources are less salient than the overall effect they produce throughout a region.

Thus, the location-subject construction is associated with what has been called a “holistic” or “affected” interpretation; that is, the location is understood to be in some sense “completely affected by the action” (Levin 1993: 50). This holistic meaning is derived from the construction itself, and will not be directly motivated by the semantics of sound verbs. This supports the view within the LGM when it is postulated that, prior to the assignment of morpho-syntactic rules, there is a linking phase between the LTs of a class and the constructions where the predicates of such a class participate. It would be impossible to specify the holistic meaning of the locative alternation if constructional LTs are not considered independent entities in the model with a capacity to contribute to the final semantic configuration of sentences. This assumption is also shared by Goldberg (1995: 28):

Since the mapping between semantics and syntax is done via constructions, not via lexical entries, that there should be a class of “syntactically relevant aspects of verb meaning” follows from the existence of constructions, which are independently motivated.

With regard to the corpus of verbs which express the emission of a sound, the following constructions will be described: the instrument-subject alternation, the reaction-object construction. The general LT for this subdomain is repeated in (24):

- 24) [CAUS_{1,2} INSTR₃ [[do' (x, [make' (x, y <sound'>))]]] & [INGR exist' (y)]]

As stated above, the LS contained in (24) is modified by the semantic operators CAUS_{1,2} e INSTR₃. INSTR refers to the potential instrument by means of which the effector produces a sound, and together with CAUS they will codify the causal chain linking the effector and the implement (in RRG terms) or intermediary instrument (following Levin’s words). According to Levin (1993: 80), intermediary instruments (e.g. *David broke the window with a hammer*) differ from enabling/facilitating instruments (e.g. *Doug ate the ice cream with a*

spoon) in that only the former may turn up as subjects (cf. *The hammer broke the window* vs. **The spoon ate the ice cream*).

Thus, the LT in (24) will be modulated in order to obtain the constructional LTs below, involving the instrument subject alternation:

25) Instrument construction:

[CAUS1(*living creature*),₂ INSTR₃ [[do' (x, [make' (x, y <MAGN sound'>))]]]]

He clypode mid micelre stemne
 NOM-he PRET-cry with DAT-great DAT-voice
 'He cried with a loud voice'

(*B&T: Homl. Th. i. 596, 5; Bd. 3, 2; S. 524, 21; Byrht. Th. 132, 33; By. 25: 139, 19; By. 256*).

26) Instrument-subject construction:

[CAUS1(*living creature*),₂ INSTR₃ [[do' (x, [make' (x, y <MAGN sound'>))]]]]

Dynedon scildas
 PRET-ring NOM-shield
 'The shields rang'

(*B&T: Judth. 11; Thw. 24, 24; Jud. 204*).

The causative nature of the predicates expressing sound emission is precisely justified by the fact that they can participate in the instrument subject alternation. Therefore, the alternation between both constructions concerns the existence of two potential effectors: the effector in (25) and the implement-effector in (26).

On the other hand, the fact that the verbs of sound appear in the reaction-object construction is a proof of the existence of a network of semantic relations (a Semantic Macronet, following Faber – Mairal 1999: 251-257's terminology⁷) existing between the lexical classes of a given language. Levin (1993: 98) states that "certain intransitive verbs – particularly verbs of manner of speaking and verbs of gestures and signs – take non-subcategorised objects that express a reaction (an emotion or disposition) ... When these verbs take such objects they take on an extended sense which might be paraphrased "express (a reaction) by V-ing", where "V" is the basic sense of the verb; this construction was already present in OE, and the corresponding LT is as follows:

⁷ Within the LGM model the search for the types and the nature of these semantic interconnections constitutes the third type of analysis or axis, the cognitive one.

27) Reaction-object construction:

[INVOLV SYMPT₁ (FEEL₃) CAUS₁(living creature)₂ [[[do' (x, [make' (x, z <sound'>))]]]]]

Ða hrymde heo to hire hiwum

then PRET-cry NOM-she to DAT-her DAT-appearance

'Then she cried out to her appearance'

(B&T: *Gen.* 39, 14, 15).

As shown in (27), this construction will allow OE sound verbs to be linked semantically to the lexical class of feeling. For this reason, the constructional LT requires to encode the semantic subevent [INVOLV SYMPT₁ (FEEL₃)] as a causing state of affairs in the emission of a sound. Again, as occurred in the location-subject construction, the construction itself modulates the general meaning of sound verbs, contributing to their semantics by adding a specific subevent to the basic LT.

Other constructions found in our analysis of verbs of the subclass of sound emission involve the addition of a directional phrase indicating that the entity emitting the sound is also carrying out a motion activity. According to Levin (1993: 105-106) and Mora (2001: § 6.1), when PDE sound emission verbs are complemented by this kind of directionals the implication is that the emission of the sound and the motion are concomitant. Levin paraphrases the meaning of this construction as “go by V-ing” thus involving that the effector entity is also a mover. Mora (2001: § 6.1) indicates a restriction on the emitter argument for the construction to express directed motion, namely that it should not be agentive, and if so the implication is that the noise is not produced by the articulatory organs, but by accessories or clothes that the animate subject is wearing while moving.

This type of construction can be found in Anglo-Saxon sentences of the following type:

28) stunede sio brūne yð wið oðre

PRET-dash NOM-the NOM-dark NOM-wave against ACC-other

'One dark wave dashed against the other'

(B&T: *Met* 26, 29).

Another interesting feature of this construction is the possibility of having variable *Aktionsart* specification, depending on the semantics of the directional complement: if it indicates a goal or destination for the motion, the interpretation is telic, as in the previous example, and the corresponding LT encodes an Active Accomplishment LS:⁸

⁸ Note that this construction involves the addition of a subevent with some constituent shared

- 29) [INVOLV (MOVE1 & LOCad4,1) CAUS1,2 INSTR3 [[do' (x, [make' (x, y <sound'>))]]] & [INGR exist' (y)]]]

Otherwise, the construction is non-telic and, therefore, an activity:⁹

- 30) Ða deoflu [...] ongunnon hryman up on
 NOM-the NOM-devil PRET-begin INFIN-cry upwards to
 ðære lyfte þus cweðende
 DAT-the DAT-sky thus GERUND-say
 'The devils began to cry out upwards to the sky saying as follows'
 (DOEC: *ÆCHom* II, 31-32 B1.2.34).
- 31) Hlydað tosomne, [...] singað ond swinsiaþ
 PRES-make-noise together PRES-sing and PRES-make-pleasing-
 sound
 suþan ond norþan, eastan ond westan
 south and north east and west
 'They make a noise together, sing and make a pleasing sound (from/to)
 south and north, east and west' (HSK: <Cochrist.doc R 822>).

The semantics of non-telic directional phrases in our corpus is in many occasions ambiguous: it is not easy to distinguish always whether it is the sound-emitter that displaces itself from one place or whether it just moves part of its body/constituent parts or the instrument with the intention of orientating the

with the event depicted by the predicate; that is, these are cases of argument-adjunct prepositional phrases (see next section). The implication of motion, not mere location, is even more evident in those cases where the prepositional complements are usually in accusative, not in locative case, since the prepositions are to be interpreted dynamically, as in:

- 27) Ongan ceallian þa ofer cald wæter
 PRET-begin INFIN-cry then across ACC-cold ACC-river
 Byrhtelmes bearn
 GEN-Byrthelm NOM-son
 'The son of Byrthelm began to cry out across the cold river'
 (B&T: *Byrht. Th.* 134, 28; *By.* 91).
- 28) ða he þæne [{}cyrcward{}] gehyrde ofer
 then NOM-he ACC-the ACC-church-keeper PRET-hear over
 eall hrutan
 ACC-all INFIN-snore
 'Then he heard the church-keeper snore over all' (HSK: <Coleofri.doc R 31>).

⁹ The variation in telicity, together with their capability to appear with both agentive and non-agentive subjects, and the fact that some of them are stative (the first subclass of sound location verbs) whereas the rest are dynamic, led to divergent opinions as to their nature within the literature of the Unaccusative Hypothesis, since they show what is termed "variable behaviour" (Levin – Rappaport 1996), that is, they exhibit features of both unaccusative and unergative verbs.

emission of the sound into a certain direction, as if it were actually the entity being displaced (compare (28) and (30) with (31), where it seems more evident that there is no implication of displacement on the part of the emitter). The corresponding LT is as follows:

- 32) [INVOLV (MOVE1/3,4) CAUS1,2 INSTR3 [*do'* (x, [*make'* (x, y <*sound'*>))]]]

Some of the complements indicating motion also involve a meaning of intended contact, thus reminding of a conative interpretation, as in:

- 33) Hi grundon ofer me mid toðum
 NOM-they PRET-grind over ACC-me with DAT-tooth
 heard
 DAT-hard
 'They ground over me with violent teeth'
 (*B&T: Ps. Spl. 34, 19; Andr. Kmbl. 746; An. 373*).
- 34) Hy gristbitoton on me toþum heora
 NOM-they PRET-gnash on ACC/DAT-me DAT-tooth GEN-their
 'They gnashed with their teeth on me' (*T&C: Ps. Rdr. 34, 16*).
- 35) Clyniga þæt dor
 IMPER-knock ACC-the ACC-door
 'Knock at the door' (*T&C: Lk. R. 15, 25*).

In fact, there is an area of overlap between the class of sound verbs and the one of verbs of contact. This is more evident in cases like

- 36) He ymbe ða herehuþe hlemmeþ togædre
 NOM-he around NOM-the NOM-prey PRES-clash together
 grimme goman
 ACC-fierce ACC-jaw
 'He clashes his fierce jaws together around the prey'
 (*B&T: Exon. 97 b; Th. 363, 30; Wal. 61*).
- 37) Tosomne cnyllap
 together PRES-clash
 'They clash together' (*T&C: Wrt. Voc. ii. 134, 66*).

where the two types of meaning are intertwined to the extent that it is impossi-

stituents in the different constructions. Thus, the macrorole assignment principles and case assignment rules will predict the syntactic and morphological behaviour of these verbal predicates from their semantic structure, with the result that the information to be included in the lexical representations will be greatly reduced.

In order to account for the argument structure of a verb, Van Valin – LaPolla (1997: 139) suggest two general semantic relations, the actor and undergoer macroroles, which are “generalizations across the argument-types found with particular verbs which have significant grammatical consequences.” The actor macrorole comprises those arguments whose nature is closer to that of an agent and the undergoer subsumes those patient-like arguments (Van Valin 2005: 6067).

As Kailuweit (2004) points out, macroroles are categories mediating between semantics and syntax. Consequently, they also have morpho-syntactic characteristics: in OE macroroles are only assigned to core arguments, that is, arguments marked by a grammatical case, in opposition to oblique arguments, which are introduced by argument-marking or argument-adjunct prepositions or appear as oblique noun phrases. According to Van Valin – LaPolla (1997: 159), argument-adjunct prepositions are predicates “in their own right,” which “introduce an argument into the clause and share it with the LS of the core”, whereas argument-marking prepositions, as their name states, signal the core arguments of the verb (see also González 2004b). We will show examples of both prepositions in the morpho-syntactic structure of the instrument and the reaction-object constructions below, respectively.

The interaction between arguments and macroroles is established in the macrorole assignment principles (Van Valin 2005: 63):

- a. Number: the number of macroroles a verb takes is less than or equal to the number of arguments in its logical structure,
 1. If a verb has two or more arguments in its LS, it will take two macroroles.
 2. If a verb has one argument in its LS, it will take one macrorole.
- b. Nature: for verbs which take one macrorole,
 1. If the verb has an activity predicate in its LS, the macrorole is actor.
 2. If the verb has no activity predicate in its LS, the macrorole is undergoer.

Moreover, case assignment rules are also related to the assignment of macroroles. Based on Van Valin (2005: 108), we propose the following case assignment rules for OE verbs of sound:

- a. Assign nominative case to the highest ranking macrorole.

- b. Assign accusative case to the other macrorole macrorole.
- c. Assign dative/genitive case to non-macrorole arguments.

Turning to the constructional LTs described above, the following morpho-syntactic structures will be obtained. First, with respect to the “swarm-with” alternation, two constructional templates have been obtained: agent-subject and location-subject constructions. Applying the macrorole and case assignment principles to the constructional LT corresponding to the agent-subject construction, its morpho-syntactic behaviour will be as follows:

- 41) [LOCin1 (CAUS2,3) [*be*-LOC (x, [*do*' (y, [*make*' (y, z <sound'>))])], x = 1,
 y = 2, z = \emptyset
 Drihten hleoðraþ of heofonum
 ‘God made a sound from heaven’
 (B&T: *Bd.* 4, 3; *S.* 519, 19; *Ps. Spl.* 17, 15).
 (x) ↔ non-MR of + locative argument
 (y) ↔ Actor Nominative

As can be seen in (41), (x) cannot take a macrorole since it is the first argument of a locative predicate *be*-LOC, whose second argument will be the rest of the LS, [*do*' (y, [*make*' (y, z <sound'>))]. Van Valin (2005: 63) states that PDE location verbs with two arguments, such as *lie*, are macrorole-intransitive; that is, the first argument will not receive actor status, and only will the second argument be a candidate for macrorole status as an undergoer, provided that it is a phrase. Note that in OE the same restriction holds for the first argument, but as regards the second argument position in (41), which is occupied by an event structure, the possibility of assigning undergoer to this second argument is thus blocked. Because of that, (x) will be realised as an adverbial construction (or adjunct, in RRG's terms) introduced by the preposition *of*. Therefore, the following candidate to receive a macrorole will be (y), first argument of the subactivity [*make*' (y, z <sound'>)], taking the actor macrorole and nominative case. However, Levin (1993: 50) points out the fact that when the locative argument is not expressed by means of a preposition as in (41), then it is associated with the “holistic interpretation” introduced above, which means that the locative element is understood as completely affected by repetitive and simultaneous activities. Applying again RRG's morpho-syntactic rules, given that (x) is the first argument in a locative intransitive structure, it cannot receive macrorole status; however, it will receive nominative case as it is the privileged syntactic argument, which controls verb agreement in the sentence:

- 42) [CULM LOCin1 (MANY CAUS2,3) [*be*-LOC (x, [*do*' (y, [*make*' (y, z <*sound*'>))]]], x = 1, y = \emptyset , z = \emptyset
 Dyneþ upheofon
 'Heaven above shall resound'
 (B&T: *Exon.* 116 b; *Th.* 448, 25; *Dom.* 59: 21 b; *Th.* 58, 5; *Cri.* 931).
 (x) \leftrightarrow non-MR Nominative

Second, as far as the instrument-subject alternation is concerned, two constructions have been analysed: the instrument and the instrument-subject constructions. With respect to the instrument construction in (43), if the effector (1), the first internal variable in the causal chain [CAUS1 (living creature), 2 INSTR3] and therefore with preference to function as actor, is lexically saturated, that is, it is linked to an external variable like (x), then it will take the actor macrorole. In that case, the implement will be introduced by the preposition mid or will take dative or instrumental case. In order to capture this argument-marking preposition, we must apply the rule for assigning mid in OE, based on Van Valin (2005: 114)'s lexical rule for the preposition with in PDE:

Assign mid to non-MR b argument if, given two arguments, a and b, in a logical structure, with (1) both as possible candidates for a particular macrorole and (2) a is equal or higher (to the left of b) on the AUH [Actor Undergoer Hierarchy], b is not selected as that macrorole.

Thus, we obtain the following morpho-syntactic structure:

- 43) [CAUS1(living creature),2 INSTR3 [[*do*' (x, [*make*' (x, y <MAGN *sound*'>))]]], x = 1, y = \emptyset
 He clypode mid micelre stemne
 'He cried out with a great sound'
 (B&T: *Homl. Th.* i. 596, 5; *Bd.* 3, 2; *S.* 524, 21; *Byrht. Th.* 132, 33; *By.* 25: 139, 19; *By.* 256).
 (x) \leftrightarrow Actor Nominative
 (3) \leftrightarrow non-MR mid + instrument argument

On the contrary, if the internal variable (1) is not lexically realised, as in (44), then the implement-effector (3), as the following candidate to function as actor of the subevent [*do*' (x, [*make*' (x, y <MAGN *sound*'>))]], will be linked to the external variable (x):

- 44) [CAUS1(living creature),2 INSTR3 [[*do*' (x, [*make*' (x, y <MAGN *sound*'>))]]], x = 3, y = \emptyset
 Dynedon scildas

'The shields rang' (B&T: *Judth.* 11; *Thw.* 24, 24; *Jud.* 204).
 (x) ↔ Actor Nominative

Third, given the nature of the reaction-object construction, whose object modulates the general meaning of verbs of sound, it must be considered to introduce an argument-adjunct.

In a similar fashion to oblique instruments, reaction objects are the syntactic expression of an internal variable associated to a subevent in the semantic component of a LT which is not linked to an external variable of the LS in the same LT. In fact, we propose the following general linking rule for this type of semantic argument:

Assign oblique case to an internal variable argument if it is not linked to an external variable in the LS; the oblique argument will consequently have the status of an non-Macrorole core argument-adjunct. The exact nature of the oblique marking (case or prepositional expression) will depend of the exact semantic nature of the event the internal variable is associated to.

As shown in (45), this rule explains the realisation of the internal variable FEEL(3); it will be syntactically expressed by a "to + dative" phrase:

- 45) [INVOLV SYMPT1 (FEEL3) CAUS1(living creature),2 [*do'* (x, [*make'* (x, y <*sound'*>))]]], x = 1, y = ∅
 Ða hrymde heo to hire hiwum
 'Then she cried out to her appearance' (B&T: *Gen.* 39, 14, 15).
 (x) ↔ Actor Nominative
 (3) ↔ non-MR to + reaction argument

This rule accounts for the morpho-syntactic realization of directional complements in (46) and (47), the oblique arguments in sound-contact constructions like (48), and also the recipient argument in sound emission as message constructions like (49):

- 46) [INVOLV (MOVE1 & LOCad4,1) CAUS1,2 INSTR3 [*do'* (x, [*make'* (x, y <*sound'*>))]]], x = 1, y = ∅
 stunede sio brūne yð wið oðre
 'One dark wave dashed against the other' (B&T: *Met* 26, 29).
 (x) ↔ Actor Nominative
 (4) ↔ non-MR wið + directional argument
- 47) [INVOLV (MOVE1/3,4) CAUS1,2 INSTR3 [*do'* (x, [*make'* (x, y <*sound'*>))]]], x = 1, y = ∅

Da deoflu [...] ongunnon hryman up on ðære lyfte þus cweðende

‘The devils began to cry out upwards to the sky saying as follows’

(DOEC: *ÆCHom* II, 31-32 B1.2.34).

(x) ↔ Actor Nominative

(4) ↔ non-MR on + directional argument

- 48) [INVOLV (TOUCHING_{1,4}) CAUS_{1,2} INSTR₃ [*do*' (x ^ y, [*make*' (x ^ y , z <*sound*'>))]]], where x = 1/3, z = ∅

Hi grundon ofer me mid toðum heard

‘They ground over me with violent teeth’

(*B&T: Ps. Spl.* 34, 19; *Andr. Kmbl.* 746; *An.* 373).

(x) ↔ Actor Nominative

(3) ↔ non-MR mid + instrument argument

(4) ↔ non-MR ofer + directional argument

- 49) [PURP (SAY_{1,2,4}) CAUS_{1,2} INSTR₃ [[*do*' (x, [*make*' (x, y <*message*'>))]]] & [INGR exist' (y)]]], where x = 1/3, y = 2

Hreoþon friccan, caseres bodan: Eow þeos cwen laþaþ, secga to salore, þæt ge seonodomas rihte reccen

‘The heralds shouted to the emperor’s messenger: “This queen asks you to give a speech to the hall so that you explain the decree of the council correctly”’

(*HSK: <Cocynew.doc R 550>*).

(x) ↔ Actor Nominative

(y) ↔ Undergoer Direct speech sentence

(4) ↔ non-MR recipient argument

7. Conclusions

The aim of the analysis proposed in this paper for the lexical class of Anglo-Saxon sound verbs is to shed light on the relation between their semantic structure and the morphological and syntactic behaviour that they exhibit in particular sentences. In doing so, we have provided a fully-fledged semantic description for the members of this class. This description encodes a semantic scenario in a formal system of representation, the so-called LT structure, following the format proposed in the LGM. Such LT will also enable us to provide an explanation of the syntactic and morphological behaviour of the verbs that belong to this subclass; this involves a dual linking system: in a first phase, a set of linking mechanisms will retrieve from the LT an adequate description of the semantics of the constructions where the verbal lexemes participate; the second phase of linking involves the use of morpho-syntactic rules, of the type devised for different languages in Van Valin – LaPolla’s (1997) and Van Valin’s (2005)

RRG, whose task is to provide the syntactic and morphological structure of the constituents in such constructions.

One of the most interesting aspects of the study is that it shows the efficiency of certain methodological assumptions, as described in section 2, in the task of reconstructing the lexicological configuration of a lexical class (section 3). An extensive analysis of OE verbal vocabulary will yield as a result an onomasiologically organised thesaurus. Furthermore, such a thesaurus can be also integrated as the lexical component in an explanatory model of Anglo-Saxon grammar.

REFERENCES

PRIMARY SOURCES

- Bosworth, Joseph – T. Northcote Toller
 1898 *An Anglo-Saxon dictionary*. London: Oxford University Press.
 [1973]
- Toller, T. Northcote – Alistair Campbell
 1921 *An Anglo-Saxon dictionary. Supplement*. London: Oxford University Press.
 [1973]
- Murray, J.A.H. et al. (eds.)
 1971 *The Oxford English dictionary* (compact edition, vols. 1, 2). Oxford: Clarendon Press.
 [Vol. 3.]
 [1987]
- Rissanen, Matti – Ossi Ihalainen
 1991 *The Helsinki corpus of English texts: Diachronic and dialectal*. Helsinki: University of Helsinki.
- Roberts, Jane – Christian Kay – Lynne Grundy
 1995 *A thesaurus of Old English*. Vols. 1-2. London: King's College Centre for Late Antiquity and Medieval Studies.

SECONDARY SOURCES

- Butt, Miriam – Wilhelm Geuder (eds.)
 1998 *The projection of arguments: Lexical and compositional factors*. Stanford: CSLI.
- Cortés, Francisco J. – Ricardo Mairal
 2002 "A preliminary design for a syntactic dictionary of Old English on semantic principles", in: Javier Díaz (ed.), 3-46.
- Cortés, Francisco J. – M^a Auxiliadora Martín
 2003 "The meaning-syntax interface of writing verbs: templates, constructions and linking rules within a Lexical Grammar of Old English verbal predicates", *Revista Canaria de Estudios Ingleses* 47: 13-35.

- Cortés, Francisco J. – Francisca Plaza
 in press “De la semántica a la sintaxis: La interfaz léxico-gramática en los verbos de cocinar en latín e inglés antiguo”, in: *Actas del VI Congreso de Lingüística General*: 191-204.
- Cortés, Francisco J. – Francisca Plaza
 2006 “Los verbos de contacto-por-impacto en latín e inglés antiguo: Semántica y motivación de estructuras morfo-sintagmáticas”, *Actes de VII Congrès de Lingüística General*. Publicacions i Edicions: Universitat de Barcelona.
- Cortés, Francisco J. – Dolores Torres
 2003 “Old English verbs-of-running: Linking semantic representation and morphosyntactic structure”, *Folia Linguistica Historica* XXIV/1-2: 153-174.
- Coseriu, Eugenio
 1977 *Principios de semántica estructural*. (Spanish version by Marcos Martínez.) Madrid: Gredos.
- Díaz, Javier (ed.)
 2002 *A changing world of words*. Amsterdam: Rodopi.
- Faber, Pamela – Ricardo Mairal
 1999 *Constructing a lexicon of English verbs*. Berlin – New York: Mouton de Gruyter.
- Geckeler, Horst
 1976 *Semántica estructural y teoría del campo léxico*. (Spanish version by Marcos Martínez.) Madrid: Gredos.
- Goddard, Cliff – Anna Wierzbicka
 2002 *Meaning and Universal Grammar: Theory and empirical findings*. Amsterdam – Philadelphia: John Benjamins.
- Goldberg, Adele
 1995 *A Construction Grammar approach to argument structure*. Chicago: University of Chicago.
- González, Marta
 2003-2004 “The Old English verbs of smell perception and emission: Analysis of the interface of their semantic and syntactic representation”, *SELIM* 12: 33-48.
 2004a *Diccionario sintáctico del léxico verbal del inglés antiguo: Verbos de habla*. La Laguna: Universidad de La Laguna: Servicio de Publicaciones.
 2004b “Argument-marking and argument-adjunct prepositions within the lexical domain of speech in Old English”, *Atlantis* 26/1: 11-21.
 2005a “The interrelation of semantic structure and syntactic variation in Old English verb classes: Catalogue of syntactico-semantic constructions”, *RAEI* 18: 111-128.
 2005b “El Modelo de Gramáticas Léxicas y el inglés antiguo: Análisis léxico-sintáctico de la clase verbal que expresa la percepción sensorial táctil”. [Paper presented at the XXIII Congreso Internacional de la Asociación Española de Lingüística Aplicada. Islas Baleares, 10-12 March, 2005].
 in press “The resultative construction in Old English: Towards a semantic network of verb classes”, *Studia Neophilologica* LXXVII/2.
- Kailuweit, Rolf
 2004 “La Gramática de Papeles y Referencia y las lenguas románicas.” [Course lectured at La Laguna University. Tenerife, Spain].
- Kastovsky, Dieter (ed.)
 in press *Lexical change and the history of the English vocabulary*. Berlin: Mouton de Gruyter.

- Kay, Christian – Thomas J.P. Chase
 1990 “Semantic approaches to an historical thesaurus”, in: Jerzy Tomaszczyk – Barbara Lewandowska-Tomaszczyk (eds.), 303-313.
- Lappin, Shalom (ed.)
 1996 *The handbook of contemporary semantic theory*. Cambridge, Mass.: Blackwell.
- Levin, Beth – Malka Rappaport
 1996 “Lexical semantics and syntactic structure”, in: Shalom Lappin (ed.), 487-507.
- Levin, Beth
 1993 *English verb classes and alternations*. Chicago: University of Chicago Press.
- Levin, Beth – Grace Song – Sue Atkins
 1997 “Making sense of corpus data: A case study of verbs of sound”, *International Journal of Corpus Linguistics* 2: 23-64.
- Mairal, Ricardo – Francisco J. Cortés
 in press “Rethinking lexical representations in Role and Referente Grammar”, in: Dieter Kastovsky (ed.).
- Mairal, Ricardo – Pamela Faber
 2002 “Functional Grammar and lexical templates”, in: Ricardo Mairal – M^a Jesús Pérez (eds.), 39-94.
- Mairal, Ricardo – Pamela Faber
 2005 “Decomposing semantic decomposition: Towards a semantic metalanguage in RRG”. [Paper presented at the International Course and Conference on Role and Reference Grammar. Taiwan, 21 June-1 July, 2005].
- Mairal, Ricardo – M^a Jesús Pérez (eds.)
 2002 *New perspectives on argument structure in Functional Grammar*. Berlin: Mouton de Gruyter.
- Mairal, Ricardo – Robert D. Van Valin
 2001 “What Role and Reference Grammar can do for Functional Grammar”, *Revista anaria de Estudios Ingleses* 42 : 137-166.
- Marín, Amalia (ed.)
 1998 *El modelo lexemático-funcional. El legado lingüístico de Leocadio Martín Mingorance*. Granada: Universidad de Granada.
- Martínez, M^a José
 2006 “La interfaz léxico-gramática en los verbos de contacto-por-impacto en griego antiguo”, *Actes de VII Congrès de Lingüística General*. Publicacions i Edicions: Universitat de Barcelona.
- Martínez, M^a José – Maravillas Aguiar
 in press “Interfaces léxico-gramaticales en algunos verbos de cocinar en griego y árabe clásico”, *Actas del VI Congreso de Lingüística General*.
- Mel’čuk, Igor
 1988 “Semantic description or lexical units in an explanatory combinatorial dictionary: Basic principles and heuristic criteria”, *International Journal of Lexicography* 1/3: 165-188.
 1989 “Semantic primitives from the viewpoint of the Meaning-Text Linguistic Theory”, *Quaderni di Semantica* 10/1: 65-102.
- Mel’čuk, Igor – Leo Wanner
 1996 “Lexical functions and lexical inheritance for emotion lexemes in German”, in: Leo Wanner (ed.), 209-227.

Rappaport, Malka – Beth Levin

1998 “Building verb meanings”, in: Miriam Butt – Wilhelm Geuder (eds.), 97-134.

Tomaszczyk, Jerzy – Barbara Lewandowska-Tomaszczyk (eds.)

1990 *Meaning and lexicography*. Amsterdam: John Benjamins.

Van Valin, Robert D. – Randy LaPolla

1997 *Syntax. Structure, meaning and function*. Cambridge: Cambridge University Press.

Van Valin, Robert D.

2005 *Exploring the syntax-semantics interface*. Cambridge: Cambridge University Press.

Wanner, Leo (ed.)

1996 *Recent trends in Meaning-Text Theory*. Amsterdam – Philadelphia: John Benjamins.

Wierzbicka, Anna

1987 *English speech act verbs: A semantic dictionary*. Sydney – New York: Academic Press.

1996 *Semantics: Primes and universals*. Oxford: Oxford University Press.

INTERNET SOURCES

Dowty David

2001 “The semantic asymmetry of ‘argument alternations’ (and why it matters)”, available at <http://www.ling.ohio-state.edu/~dowty/> (date of access: Dec. 2004).

Healey, Antonette di P. (ed.)

The dictionary of Old English corpus,

available at <http://ets.umdl.umich.edu/o/oc/> (date of access: Dec. 2001).

Mora, Juan P.

2001 “Directed motion in English and Spanish”, *Estudios de Lingüística del Español* 11, available at <http://elies.rediris.es/elies11/> (date of access: Dec. 2001).

Van Valin, Robert D.

2004 “Lexical representation, co-composition, and linking syntax and semantics”, available at <http://wings.buffalo.edu/linguistics/rrg/> (date of access: July 2004).