

Gradience and Auxiliary Selection in Old Catalan and Old Spanish*

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Abstract

Gradience can be identified as an important factor of linguistic change. We show how this alleged performance factor, which is in principle *external* to what is often referred to as ‘core grammar’, appears to influence speaker’s *internal* linguistic competence, giving then rise to the relevant historical change. In particular, one of our main concerns is to provide an explanation of Sorace’s (2000, 2004) gradient factors involved in the selection of perfective auxiliary with intransitive verbs in Old Catalan and Old Spanish. We also put forward the reasons why the relevant change evolved the way it did, i.e., why the gradual replacement of BE by HAVE started with some lexical semantic classes (e.g., appearance and existence verbs) rather than with others (e.g., telic change of state/location verbs).

Like Bentley & Eythórsson (2003), we show that Sorace’s (2000) gradient factors involved in auxiliary selection can not only be worked out from synchronic data but from diachronic ones as well. However, unlike them, we show that auxiliary selection is not only determined by semantics: we argue that auxiliary selection is not just a matter of lexical semantics but of syntactic argument structure as well.

1. Introduction

As is well-known, in Romance languages like Italian and French, or in Germanic languages like German or Dutch, there is an important division or split between the class of intransitive verbs, which is clearly shown in their auxiliary selection: some verbs select HAVE (It. *avere*, Fr. *avoir*; Germ. *haben*, Dutch *hebben*), while others select BE (It. *essere*, Fr. *être*; Germ. *sein*, Dutch *zijn*). Although this split cannot be exemplified in Contemporary Catalan or Spanish, it is well known that this double possibility in the formation of perfective tenses did exist in the old stages of these two Romance languages.¹ See, for example, the data in (1) and (2) from Old Catalan and Old Spanish, respectively.

- (1) a. *Als pares guardià i custodi bese les mans i folgue que*
To-the parents guardian and custodian kisses the hands and likes that
sien estats aquí perquè haurà vostra senyoria descansat ab ells
are been here because **has-fut** your lordship **rested** with them
(*Epistolari d’Estefania de Requesens*, p. 105; XVI c.)

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¹ Here we will not deal with the reasons why the opposition *HAVE/BE* in the formation of perfective tenses has disappeared in Catalan or Spanish, this not being the case in French or Italian (cf. Vincent (1982), Pérez Saldanya (1998), and Batlle (2002)). Concerning Catalan, it must be recalled that *ésser* (*BE*) remains as perfective auxiliary in some dialectal varieties: mainly, Balearic, Rossellonian, and Alguerese: cf. the appendix of Batlle (2002).

- b. *Y après és mort en Castella*
 And then **is died** in Castilla (F. Despalau, p. 15; XVI c.)
 Ex. from Batlle (2002: 54/70)
- (2) a. *El Rey le dixo que antes allí avía descansado con mucho placer*
 The king him told that before there **had rested** with much pleasure
 (1482-1492) [CORDE]
- b. (...) *digo que su Rey es muerto no en la batalla (...) sino en su cama,*
 say-I that their king **is died** not in the battle (...) but in his bed
de enfermedad natural
 from illness natural (1659-1664) [CORDE]
 Ex. from Castillo (2002: 44/50)

In this paper, we provide a syntactic explanation of some interesting observations and descriptions found in Batlle's (2002) work on Old Catalan and in Aranovich's (2003) or Castillo's (2002) works on Old Spanish. In particular, we show how Mateu's (2003) comparative syntactic proposal for languages like Italian, French, German, and Dutch can also be naturally extended to account for Batlle's (2002) diachronic data from Old Catalan and Aranovich's (2003) and Castillo's (2002) data from Old Spanish. In so doing, we will also argue for a syntactic explanation of those semantic determinants involved in auxiliary selection with intransitive verbs, which have been worked out in excellent descriptive works like Sorace's (2000, 2004) gradience approach to auxiliary selection.²

Quite importantly, we will put forward a non-casual correlation whose supporting generalizations have already been reached independently in both synchronically-oriented works (Sorace 2000; 2004) and diachronically-oriented ones (Batlle 2002; Aranovich 2003): namely, it is the general case that those intransitive verbs that are more variable synchronically with respect to BE selection in Italian are the ones that earlier lost the BE auxiliary in both Old Catalan and Old Spanish. As noted, we do not believe this correlation to be a mere coincidence; rather we want to argue that there is a principled explanation accounting for it.

2. The *gradual* process of replacement of auxiliary BE by HAVE in Old Catalan and Old Spanish

Concerning auxiliary selection with intransitive verbs in Old Catalan, we will provide an explanation of the following facts which are nicely summarized by Batlle (2002: 30) in (3):

- (3) *Ésser* (BE) generally remains quite stable in those domains that are of its own. Nonetheless, *have* (HAVE) can sporadically appear in medieval texts. According to the data from our corpora, it is not the case that all verbs and verbal constructions present the same capacity to accept *haver* (HAVE), because some are more conservative than others. The most innovative behavior seems to take place in verbs of appearance and existence (e.g., *ocórrer*, *succeir*, *esdevenir* <'occur', 'happen', 'become'>), in copulative verbs (e.g., *estar*, *restar*, *romandre* <'stand', 'rest', 'remain'>) and in pronominal constructions with inanimate subject and with a clitic functioning as direct object. In contrast, the most conservative behavior

² Following Sorace (2000: 861), we have put pronominal/reflexive verbs aside because there is an additional morphosyntactic condition involved in Romance, but not in Germanic: e.g., cf. the so-called "cliticization parameter" discussed by Haider & Rindler-Schjerve (1987).

appears with the verb *ésser* <'be'>, in intransitive verbs of change of state, in intransitive verbs of movement and in constructions with *poder* <'can'> and *voler* <'want'> when followed by infinitive.

Batlle's (2002) corpus was compiled from twelve extensive texts ranging from XIV to XVII centuries, whose selection was made on the criterion of covering "all varieties of Catalan" (Batlle 2002: 17). As noted in (3), she points out that the process of replacement of the auxiliary *ésser* (BE) by *haver* (HAVE) followed a gradual and slow evolution and did not take place in an arbitrary way: quite typically, some lexical semantic classes appeared to be affected earlier than others. In particular, Batlle shows that it is the case that appearance and existence verbs (cf. the Old Cat. examples in (4)) and stative verbs (cf. the Old Cat. examples in (5)) were the first unaccusative verbs to accept the HAVE auxiliary.

- (4) a. *Lo matín les monges demanaren al dit baron si neguna res*
 The morning the nuns asked to-the called man if any thing
avia esdevengut al emfant
had happened to-the child. (*Diàlegs*, vol. 1: 245; XV c.)
- b. *Y scrigueren los capitans cartaginesos a Cartago lo que avie passat*
 And wrote the captains Carthaginian to Carthago what **had happened**
per poder proseguir y passar avant contra Spanya
 to be-able-to continue and pass ahead against Spain
 (*L. Ponç d'Icard*: 141; XVI c.)
- (5) a. *no-m ha res romàs de dubte*
 not-me **has** (any)thing **remained** of doubt (*Diàlegs*, vol. 1: 64; XV c.)
- b. *y destruirà tot quant haia restat salvo en sa casa*
 and destroy-fut. all what **has rested** save in his house
 (*Llibre de Job*: 64; XVI c.)

Putting pronominal and reflexive constructions aside, which are not the topic of our present paper, one interesting question to be solved here is *why* it is the case that there appear to be many uses of *haver* (HAVE) with appearance and existence verbs in Batlle's (2002) corpus, this behavior being not attested with those verbs expressing telic change of location/state, which continue to select *ésser* (BE) quite consistently in her corpus.

Following Hopper & Thompson's (1980) classic work on prototypes and transitivity, Batlle (2002: 140) points out that the solution to this question could have to do with the fact that appearance and existence verbs have some features which are related to high transitivity,³ because, according to her, these verbs present the semantic schema CAUSE-EFFECT which is typical of prototypical transitivity. However, this solution cannot be correct, since, as shown by Levin & Rappaport Hovav (1995) and Mateu (2002), among others, appearance and existence verbs are not to be found in transitive contexts precisely because the semantic function CAUSE is not involved in these unaccusative verbs.

³ Batlle's (2002: 140f) proposal is the following one: "The higher the number of features of prototypical transitivity in non-prototypical constructions, the more frequent the auxiliary *haver* (HAVE) will be selected in these constructions" («Com més alt és el nombre de trets propis de la transitivitat prototípica presents en una construcció no prototípica, més oportunitats presenta l'auxiliar *haver* d'aparèixer»).

Before arguing for an alternative explanation to Batlle's (2002) observation, it is interesting to show that the very same process of gradual replacement of BE by HAVE that has been proposed for Old Catalan by Batlle, is also found in Old Spanish, as shown by Aranovich's (2003) or Castillo's (2002) diachronic works. Accordingly, it is important to realize that it cannot be a mere coincidence that in these two Old Romance languages, both stative verbs and appearance verbs were the first verbs to admit the HAVE auxiliary, the rest of unaccusative verbs being more reluctant to accept it.

The table in (6) taken from Aranovich (2003: 6), which is in turn based on Benzing's (1931) work ("the most comprehensive study of split auxiliary selection in Spanish"; RA: p. 3)), contains a classification of the lexical semantic classes of intransitive verbs and the date/century of their last attested occurrence with auxiliary *ser* (BE).

(6)

Century	13th	14th	15th	16th	17th
<i>Stative appearance & existence</i>	fincar rastar quedar	holgar			
<i>Dynamic appearance & existència</i>	cuntir		aparecer acaecer desaparecer		
<i>Manner of motion</i>		errar	correr	caminar	
<i>Directed change of location</i>	exir desviar viar	arribar	descender tornar	venir llegar caer entrar salir huir escapar volver subir avenir	pasar ir partir
<i>Change of state</i>	cenar yantar	transir	fallir despertar	fallecer finar fenecer adormir adormecer amanecer anocheecer acabar	nacer crecer morir

Aranovich (2003: 6)

In (7) there is a literal quote taken from Aranovich (2003: 5-6), which is worth being taken into account since it makes evident a happy coincidence with Batlle's (2002) observations regarding the gradual process of replacement of BE by HAVE in the history of the Catalan language: interestingly, in both Old Catalan and Old Spanish, the process replacement of BE by HAVE started affecting verbs of appearance and existence and concluded by affecting the so-called prototypical unaccusative verbs, i.e., telic verbs of change of motion or change of state.

- (7) A quick glance at the verbs in these groups <cf. (6)> reveals that the degree of **affectedness** of the subject is a factor in the displacement of *ser* by *haber* as the perfect auxiliary. At one end of the continuum are the subjects of stative verbs of existence and appearance like *quedar* 'remain'. The subjects of these verbs do not suffer any changes in state or location, hence they are not affected in any way by the event. This is the first class to lose its ability to select *ser*. At the opposite end are subjects of verbs of directed motion and verbs of change of state. These subjects are affected since they are in a new location or state as a consequence of the event. These classes are the last ones for which *haber* displaces *ser* as the perfect auxiliary of choice. In between these two extremes are verbs of manner of motion like *correr* 'run', and dynamic verbs of existence and appearance like *desaparecer* 'disappear'. [...] The chronology of split auxiliary selection in Spanish, then, falls under the generalization that **the less affected the subject, the earlier a verb lost its ability to select auxiliary *ser*.**

Aranovich (2003: 5-6)

While Batlle (2002) attempted to explain the relevant gradual process by relating it to certain insights from Hopper & Thompson's (1980) work on prototypical transitivity, Aranovich (2003) based his semantic analysis of replacement of BE by HAVE on Dowty's (1991) theory of Proto-Roles, where it is claimed that split intransitivity is gradable, i.e., a verb can be more or less unaccusative depending on whether its subject is more or less of a Proto-Patient. According to Aranovich (2003: 11), the hypothesis that Proto-Patient properties characterize the class of verbs that select *ser* (BE) serves to make the notion of *affectedness* or *affected subject* in (7) more precise. By framing such a notion into Dowty's semantic Proto-Role theory, Aranovich argues that an affected subject is a subject that has a greater proportion of Proto-Patient properties than Proto-Agent properties.⁴ According to Aranovich, the explanation of the gradual replacement of *ser* by *haber* is crucially related to the relevant semantic principle in (8).

⁴ According to Dowty (1991), the relevant Proto-Agent and Proto-Patient properties are the following:

(i)	<i>Proto-Agent Properties</i> volitionality sentience causally active moving relative to other argument existence independent of event	<i>Proto-Patient Properties</i> changes state incremental theme causally affected stationary relative to other argument existence dependent on event
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Dowty (1991), *apud* Aranovich (2003: 7)

- (8) *Semantic Displacement Hypothesis*: In the diachronic development of the Spanish perfect auxiliary system, the closer the subject is to being a prototypical patient, the longer the predicate resists the displacement of *ser* by *haber*.

Aranovich (2003: 11)

Our main objection to Aranovich's hypothesis in (8) is related to the lack of formal constraints of Dowty's Proto-role theory: i.e., if theta-roles are to be regarded as clusters of concepts relevant to the external conception of human life (cf. Dowty (1991: 575)), we would like to know which are the formal constraints that limit the number of the relevant semantic entailments. For example, why five (external) semantic entailments and not ten or twenty-five for each Proto-Role? Indeed, if the relevant formal restrictions concerning 'volition', 'sentience', etc. or 'change of state', 'incremental theme', etc. are not explained, it seems to us that Dowty's Proto-Role theory and Aranovich's Semantic Displacement Hypothesis in (8) turn out to be hard to test and falsify. In fact, notice that it is absolutely crucial for Dowty's approach to work that precise limits be given to the relevant number of semantic entailments that will enter into Argument Selection. However, Dowty (1991: 572) offers a "preliminary list of entailments (...) without implying that these lists are necessarily exhaustive or that they could not perhaps eventually be better partitioned in some other way". However, despite Dowty's claim, notice that *exhaustiveness* should be taken as a fundamental property of his system if one wants to attribute explanatory value to statements such as "X has more {agent/patient} properties than Y, so X is selected". Indeed, we think that *exhaustiveness* should be taken as a crucial property of any theory of theta roles in order to avoid to fall into an open-ended list of properties, which would invalidate Dowty's approach completely.

In striking contrast to Dowty's (1991) or Aranovich's (2003) non-configurational semantic theory, in Hale & Keyser's (1993, 2002) syntactic theory of argument structure, the number and the nature of (syntactically relevant) 'theta-roles' are clearly delimited: i.e., (syntactically relevant) 'theta-roles' are few since few are the specifier and complement positions of the syntactic argument structure relations involved. Accordingly, in section 4 we will show how Hale & Keyser's (1993, 2002) and Mateu's (2002) configurational theories can provide us with a more explanatory account of the argument structure relations involved in auxiliary selection with intransitive verbs, and, in particular, of those ones involved in the replacement of BE by HAVE in Old Catalan and Old Spanish. However, before dealing with that syntactic approach, it will be very helpful to review some of the most interesting descriptive insights from Sorace's (2000, 2004) semantic account of auxiliary selection.

3. Intransitive verbs and the Auxiliary Selection Hierarchy in Old Catalan and Old Spanish

In spite of the abovementioned shortcomings of Batlle's (2002) and Aranovich's (2003) descriptive semantic approaches, it is important to bear in mind that in both works it is recognized that there is a crucial property involved in the process of replacement of BE by HAVE, i.e., *gradience*. Interestingly enough, this property is not only relevant to the diachronic process of replacement of BE by HAVE in Old Catalan and Old Spanish, but has also been shown by Sorace (2000, 2004) to be relevant synchronically in languages like Italian, French, German or Dutch.⁵ For example, she shows that in Italian some intransitive verbs (e.g., those in (9a-9b) and (9k)) select an auxiliary more categorically than other verbs do (e.g., see those in (9c) through those in (9j)). The former are called "core verbs", while the latter are called "non-core verbs".

⁵ Unfortunately, Sorace's (2000) important work on gradience in auxiliary selection with intransitive verbs is not mentioned by Batlle (2002) nor by Aranovich (2003).

- (9)
- a. Gianni è/*ha arrivato.
 - b. Gianni è/*ha morto.
 - c. Le mele sono marcite/?hanno marcito al sole.
 - d. I miei nonni sono sopravvissuti/?hanno sopravvissuto al terremoto.
 - e. Ancora una volta sono/?ho rimasto solo.
 - f. La guerra è durata/?ha durato a lungo.
 - g. I dinosauri sono esistiti/??hanno esistito 65 milioni di anni fa.
 - h. Il nuovo ballo brasiliano è/ha attecchito anche in Italia.
 - i. La campana ha rintoccato/?è rintoccata.
 - j. Maria è corsa/*ha corso in farmacia.
 - j'. È corsa/?ha corso voce che Maria si sposa.
 - j''. Gli atleti svedesi hanno corso/?sono corsi alle Olimpiadi.
 - k. Gianni ha lavorato/*è lavorato.

Ex. from Sorace (2000)

There is then an important observation that should be made: when applied to auxiliary selection, prototypicality and gradience are semantic notions that appear to be relevant not only diachronically but also synchronically; more particularly, the first intransitive verbs to admit the replacement of BE by HAVE in Old Catalan and Old Spanish (e.g., verbs of appearance and existence) are precisely those verbs that show a more variable behavior regarding auxiliary selection in Italian. Moreover, as shown by Sorace's recent works, both native and non-native speakers of Italian can have more doubts when establishing grammaticality judgements of non-prototypical intransitive verbs (e.g., verbs of appearance and existence) than when establishing those of prototypical verbs (e.g., verbs of telic change of location/state).

In (10) is depicted the relevant Auxiliary Selection Hierarchy argued for by Sorace (2000: 863; 2004) and Keller & Sorace (2003), which basically embodies two main factors: *telicity* and *agentivity*.⁶

(10) *The Auxiliary Selection Hierarchy (ASH)*

CHANGE OF LOCATION	selects BE	-- least variation
CHANGE OF STATE		
CONTINUATION OF A PRE-EXISTING STATE		
EXISTENCE OF STATE		
UNCONTROLLED PROCESS		
CONTROLLED PROCESS (MOTIONAL)		
CONTROLLED PROCESS (NONMOTIONAL)	selects HAVE	-- least variation

Sorace (2000: 863)

⁶ According to Keller & Sorace (2003: 60-61), “verbs at the BE end of the ASH <i.e., ‘Auxiliary Selection Hierarchy’> are core unaccusatives and denote telic change; verbs at the HAVE end are core unergatives and denote agentive activity in which the subject is unaffected. Intermediate verbs between the two extremes incorporate telicity and agentivity to lesser degrees, and tend to have a less specified (basically stative) event structure [...]. Core verbs are those on which native grammaticality judgments are maximally consistent, and are acquired early by both first and second language learners. In contrast, intermediate verbs are subject to crosslinguistic differences and exhibit gradient auxiliary selection preferences”.

As shown by Zaenen (1993), Sorace (2000, 2004) or van Hout (2004), among others, *telicity* is the semantic notion that appears to be present in core unaccusative verbs, this being absent from non-core or intermediate unaccusative verbs like those ones expressing appearance and existence. As noticed by Aranovich (2003: 12), the ungrammaticality of Spanish examples like those in (11) can be taken as evidence that there is no real change of state entailed by these verbs.

- (11) a. *Los pasajeros están quedados.
 The passangers are stayed
 b. *Las palomas están aparecidas.
 The doves are appeared

Aranovich (2003: 12)

On the other hand, as shown by Batlle’s (2002), Castillo’s (2002), and Aranovich’s (2003) diachronic works, it is important to note that the so-called *cut-off points* between the lexical-semantic classes involved in auxiliary selection were fixed gradually. Accordingly, following Sorace’s (2000, 2004) work, we want to argue for the preliminary descriptive proposal in (12) for both Old Catalan and Old Spanish. Although the process of replacement of BE by HAVE took place earlier in Old Spanish than in Old Catalan, the steps of such a process were essentially the same: as noted in Section 2, verbs of existence and appearance were the first ones to accept the HAVE auxiliary, verbs of telic change being the last ones to do so.

- (12) *The Auxiliary Selection Hierarchy* in Old Catalan and Old Spanish
- | | |
|-----------------------------------|---|
| TELIC CHANGE OF {LOCATION/STATE} | selects <i>ésser/ser</i> -- least variation |
| ----- | stable cut-off point |
| ATELIC CHANGE OF {LOCATION/STATE} | |
| ----- | unstable cut-off point |
| APPEARANCE OF STATE | |
| ----- | unstable cut-off point |
| EXISTENCE OF STATE | |
| ----- | unstable cut-off point |
| UNCONTROLLED PROCESS | |
| CONTROLLED PROCESS (MOTIONAL) | |
| CONTROLLED PROCESS (NONMOTIONAL) | selects <i>haver/haber</i> -- least variation |

Next we exemplify the relevant cut-off points in (12) with data from Old Catalan, which are all taken from Batlle’s (2002) corpus (cf. the examples in (13) to (15)). Indeed, the fact that gradience is involved in auxiliary selection makes it natural to find both auxiliaries HAVE and BE for those verbs that appear to be affected by an unstable cut-off point in (12). For example, we argue that the fact that verbs of appearance accept both auxiliaries in Batlle’s (2002) corpus is not to be related to their having features of “high transitivity” (*sic*), as argued by Batlle, but rather to the fact that these verbs can be regarded as intermediate ones in the Auxiliary Selection Hierarchy described in (12). Some relevant examples of coexistence of both auxiliaries for the same verb are given in (13) through (15):

- (13) a. *A 14 de yuliol, per les noves que heren vingudes que los tortosins havien*
 At 14 of July, by the news that **were come-pl** that the Tortosians had
 deixat pasar lo conseller per Tortosa,... (F. Desplau: 110; XVI c.)
 let pass the consultant through Tortosa,

- b. *Vuy, que contam a 3 de desembre, ha vingut nova com don Alonso no*
 Today, that count at 3 of December, **has come-sg** new(s) how Mr. Alonso not
havie ynnovat alguna cosa (F. Desplau: 114; XVI c.)
 had innovated some thing

As pointed out by Batlle (2002: 76), during the XVI and XVII centuries, the verb *venir* ‘to come’ often selects *haver* (HAVE) when it means ‘to happen’ or ‘to supervene’, a kind of meaning which is more related to appearance rather than to directional movement. Accordingly, when *venir* ‘to come’ is used in its prototypical use (i.e., directional movement), the typical auxiliary is *ésser* (BE) (cf. Batlle (2002: 74)).

Similarly, although *arribar* ‘arrive’ selects *ésser* quite systematically, the coexistence of both auxiliaries is only documented in Batlle’s (2002) corpus in its appearance sense:⁷

- (14) a. *Vui ha arribat correu de Sa Majestat, que l deixà molt bo*
 Today **has arrived mail** from Her Majesty, which him left very good
 (*Epistolari d’Estefania de Requesens*, p. 161; XVI c.)
- b. *Vui és arribat correu de Barcelona ab la nova que era ja arribada l’armada*
 Today **is arrived mail** from Barcelona with the new(s) that was arrived the navy
 (*Epistolari d’Estefania de Requesens*, p. 134; XVI c.)

Finally, stative verbs like those in (15) can also be argued to be affected by an unstable cut-off point (cf. (12)):

- (15) a. *Aquel poc d’oli qui era romasut en lo monestir* (*Diàlegs*, vol. 1: 65-66; XV c.)
 That little of oil that **was remained** in the monastery
- b. *que-n avia un poc romàs* (*Diàlegs*, vol. 1: 74; XV c.)
 that-part.pron **had** a little **remained**
- c. *y alguns que són restats per lo bosh* (*Memorial*: 79; XVI c.)
 that some who **are rested** along the forest
- d. *y he restat ab sols la pell de les dents mies* (*Llibre de Job*: 62; XVI c.)
 and **have-I rested** with only the skin of the teeth mine
- e. *y destruirà tot quant haia restat salvo en sa casa* (*Llibre de Job*: 64; XVI c.)
 and destroy-fut. all what **has rested** save in his house

4. Towards an explanation of auxiliary selection in Old Catalan and Old Spanish

In section 3 we have seen how Sorace’s (2000, 2004) Auxiliary Selection Hierarchy allowed us to describe some important diachronic facts of auxiliary selection from Old Catalan and Old Spanish. However, her non-syntactic model has its own limitations and it is important to

⁷ Notice that the definiteness of the subject is not necessarily involved when BE is selected (cf. also (13a) with (ia) or (14b)):

- (i) a. *Se’n passà en Portugal, parecent-li que allí estarie segur fins que de Àfrica*
 Refl.cl passed in Portugal, seeming-him that there he-was save until from Africa
li fos vengut socorro (L.Ponç d’Icard: 149; XVI c.)
 him-dat **was come help**
- b. (...) *Ab lo socorro que també de Roma los era vengut*
 With **the help** that also from Rome them-dat **was come**
 (L.Ponç d’Icard: 150; XVI c.)

keep them in mind. For example, it is not clear how one can provide an explanation of why the lexical semantics involved in change of location or change of state is to be regarded as “more reluctant” to the replacement of BE by HAVE than the one involved in those predicates expressing appearance or existence.⁸ We strongly believe that this problem cannot be solved unless a major degree of formalization is pursued. Although we have shown the usefulness of Sorace’s (2000, 2004) lexical semantic model when describing some relevant data from Old Catalan and Old Spanish, it is correct to point out that it is not clear which are the *formal* and/or *explanatory* constraints that led her to posit seven or eight (but not nineteen or twenty!) lexical semantic classes of verbs when dealing with the aux-selection problem.⁹

Given the shortcomings of non-syntactic approaches to verb meaning, it seems then appropriate to emphasize the importance of drawing the theoretical distinction in (16), which is put forward by Mateu (2002) when dealing with the relational semantics associated to Hale & Keyser’s (1993, 2002) syntactic argument structures:

- (16) Meaning is a function of both (syntactically non-transparent) *conceptual content* and (syntactically transparent) *semantic construal*.

Assuming the important distinction in (16), our first step should consist of trying to work out which *discrete* semantic determinants can be argued to be syntactically transparent and which *non-discrete* ones cannot. Indeed, it seems more plausible to start with drawing the much more limited syntactically transparent notions of semantic construal: in particular, we want to argue that the *formal* limits involved in the semantic determinants of aux-selection are precisely dictated by those bits of semantics that can be argued to be encoded in a syntactic argument structure representation. In other words, we follow Hoekstra’s (1999: 83) proposal of “expressing LCS-type information in a syntactic format”. In particular, we want to argue that our syntactic approach can account for the data from Old Catalan and Old Spanish in a more explanatory way than non-syntactic approaches like Batlle’s (2002), Castillo’s (2002) or Aranovich’s (2003).

Mateu’s (2002) Hale&Keyserian approach to thematic structure, which we have no space to review in its detail here, allows us to provide some explanatory constraints to those allegedly

⁸ Sorace (2000: 861) is aware of this problem and acknowledges it when saying:

- (i) [...] there are some important questions that I do not attempt to address. First, the reader will not find an *explanation* of why particular semantic components are more crucial to the selection of particular auxiliaries than others. Sorace (2000: 861)

⁹ Indeed, the lack of explanatory power of Sorace’s system has to do with the fact that the very same notion of *lexical semantic class* seems appropriate to describe the linguistic facts, but it is not clear which status this descriptive notion has in linguistic theory. It seems that it can be regarded as a descriptive artifact as many others (like, for example, the notion of *affected subject* in Aranovich’s (2003) work). Accordingly, we think that the criticism put forward by Rosen (1996: 193-194) (cf. (i)) against models based on lexical semantic classes can also be applied to Sorace’s model:

- (i) Because the verb-class approach neither describes the syntactic facts adequately nor solves the learning problem, I conclude that verb classes do not exist as a cognitive or linguistic organizing mechanism but are instead an epiphenomenon of descriptive work on lexical semantics, argument structure, and verbal alternations. Verb classes are inventions of linguists that describe (in some cases incorrectly) the behavior of verbs. Because work on verb semantics provides us with a descriptive tool that helps us understand the mechanisms that govern verbal behavior, the work on verb classes has been invaluable. However, *verb classes have no explanatory power, and therefore they do not help us understand the computational system*. Rosen (1996: 193-194)

relevant lexical semantic classes in Sorace's Auxiliary Selection Hierarchy: it is important to notice that meaning components like *process*, *change* or *existence* (cf. 10)/(12)) turn to be relevant at the syntax-semantics interface precisely because it is those notions that can be argued to be filtered into the abstract relational semantics associated to the syntactic argument structure configurations: the unaccusative one is depicted in (17a), and the unergative one in (17b). Syntactically speaking, in (17a) an eventive head X_I subcategorizes for a birelational non-eventive head X_2 , which relates two non-relational elements, Z_2 and Y_2 ; in (17b) an eventive head X_I selects a non-relational element Y_I as its complement, the external non-relational element Z_I being introduced by the relevant functional projection (v ; Chomsky 1995f.). The relational semantics corresponding to the relational syntactic heads in (17) can be formalized as follows: the $[+T]$ and $[-T]$ features associated to the unaccusative verbal head X_I in (17a) encode the *BECOME* and *BE* semantic functions, respectively. Moreover, the $[+r]$ and $[-r]$ features are correlated to Hale & Keyser's (1993, 2002) 'terminal coincidence relation' and 'central coincidence relation', respectively:¹⁰ the birelational element X_2 relates two non-relational elements Z_2 and Y_2 , 'Figure' and 'Ground', respectively (Talmy 2000).

On the other hand, in (17b) the $[+R]$ feature encodes the agentive *DO* function, while the $[-R]$ feature subsumes whatever function assigned to non-agentive unergative verbs. The non-relational elements Z_I and Y_I are interpreted as 'Originator' and 'Incremental Theme', respectively. Y_I is the created object that can be typically conflated into the unergative verbal head X_I (cf. Hale & Keyser 1993, 2002; Mateu 2002).

- (17) a. $[_v v [_{X_1} X_{I[±T]} [_{X_2} Z_2 [_{X_2} X_{2[±r]} Y_2]]]]$ (Unaccusative argument structure)
 b. $[_v Z_I [_v v [_{X_1} X_{I[±R]} Y_I]]]$ (Unergative argument structure)

As emphasized by Mateu (2002), the relational semantic features $[T]$ and $[R]$ are configurational in the sense that they can be read off from the mere syntactic argument structure: i.e., it is important to point out that X_I is the very same eventive head in both (17a) and (17b). It is just the case that this head is realized as $[R]$ if there is an external argument (cf. Z_I in 17b); otherwise, it is realized as $[T]$, as in (17a).

In contrast to the lack of formal constraints involved in Sorace's lexical semantic classes (recall that their number is not formally limited), we argue that the possible combinations of relational semantic features that can be drawn from the syntactic argument structures of unaccusative verbs (cf. (17a)) and unergative verbs (cf. (17b)) turn out to be formally limited or reduced to the ones in (18):¹¹

- (18) a. $[[+T] [+r]]$ (cf. 'telic change of {location/state}')
 b. $[[+T] [-r]]$ (cf. 'atelic change of {location/state}')
 c. $[[−T] [−r]]$ (cf. '{continuation of a pre-existing state' / 'existence of state'})

¹⁰ See Hale (1986) for relevant discussion on the semantic notions associated to {terminal/central} coincidence relations. Basically, a terminal coincidence relation involves a coincidence between one edge or *terminus* of the theme's path and the place, while a central relation involves a coincidence between the center of the theme and the center of the place. See also Mateu (2002) for some relevant correlations between 'terminal coincidence' and '(lexical) telicity', and between 'central coincidence' and '(lexical) atelicity'.

¹¹ The $[[−T] [+r]]$ combination can be argued to be excluded in virtue of the fact that all telic unaccusative verbs involving $[+r]$ are always associated to a *positive* Transition (i.e., $[+T]$). In contrast, $[[+T] [-r]]$ appears to be an idoneous combination in order for us to deal with Sorace's (2000) 'verbs of indefinite change of state' (i.e., Dowty's (1979) 'degree achievements'): e.g., cf. It. *Mio figlio è cresciuto molto quest'anno* 'My son has grown a lot this year'.

- d. [-R] (cf. 'non-volitional internal cause')
- e. [+R] (cf. 'volitional internal cause')

The relational semantic features in (18) are then associated to the syntactic argument structures as depicted in (19), where the “cut-off points” relevant to languages like French, German, Dutch or Italian, have been represented as well (Mateu 2003).

- (19) a. $[_v \nu [X_1 X_{1[+T]} [X_2 Z_2 [X_2 X_{2[+T]} Y_2]]]$ selects BE
 -----"cut-off point" (French)
- b. $[_v \nu [X_1 X_{1[+T]} [X_2 Z_2 [X_2 X_{2[-T]} Y_2]]]$
 -----“cut-off point” (German/Dutch)
- c. $[_v \nu [X_1 X_{1[-T]} [X_2 Z_2 [X_2 X_{2[-T]} Y_2]]]$
 -----"cut-off point" (Italian)
- d. $[_v Z_1 [_v \nu [X_1 X_{1[-R]} Y_1]]]$
- e. $[_v Z_1 [_v \nu [X_1 X_{1[+R]} Y_1]]]$ selects HAVE

Mateu (2003)

Thus, for example, in (19) is depicted the fact that in French the use of *être* (BE) as perfective auxiliary with intransitive/unaccusative verbs is much more reduced than in Italian, where there are more unaccusative verbs selecting *essere* (BE): quite typically, while *être* is reduced to the domain of telic verbs of change of location or state (e.g., Fr. *sortir* ‘to go out’ or *mourir* ‘to die’), *essere* is not only used with these prototypical unaccusative verbs (e.g., It. *uscire* or *morire*), but also with verbs expressing atelic or indefinite change of state (e.g., *crescere* ‘to grow’) or with verbs of existence (e.g., *esistere* ‘to exist’). In contrast, in French it is the case that indefinite change of state verbs and existence verbs (e.g., cf. *grandir* and *exister*) select *avoir*. On the other hand, in German and Dutch, verbs of existence behave as in French and, typically, select HAVE. However, unlike in French, in these two Germanic languages, atelic or indefinite change of state verbs select BE, and then behave like in Italian (cf. Lieber & Baayen (1997), Sorace (2000, 2004), Keller & Sorace (2003), and Mateu (2003), among others).

Going back to Old Catalan and Old Spanish, we argue that our preliminary descriptive proposal depicted in (12), repeated in (20), can be formalized with the syntactic argument structure representations given in (21).

- (20) *The Auxiliary Selection Hierarchy* in Old Catalan and Old Spanish
- | | |
|-----------------------------------|---|
| TELIC CHANGE OF {LOCATION/STATE} | selects <i>ésser/ser</i> -- least variation |
| ----- | stable cut-off point |
| ATELIC CHANGE OF {LOCATION/STATE} | |
| ----- | unstable cut-off point |
| APPEARANCE OF STATE | |
| ----- | unstable cut-off point |
| EXISTENCE OF STATE | |
| ----- | unstable cut-off point |
| UNCONTROLLED PROCESS | |
| CONTROLLED PROCESS (MOTIONAL) | |
| CONTROLLED PROCESS (NONMOTIONAL) | selects <i>haver/haber</i> -- least variation |

- (21) a. $[_v \nu [_{X1} X_{1[+T]}] [_{X2} Z_2 [_{X2} X_{2[+r]}] Y_2]]]$ selects *ésser/ser* -- least variation
 ----- stable cut-off point
 b. $[_v \nu [_{X1} X_{1[+T]}] [_{X2} Z_2 [_{X2} X_{2[-r]}] Y_2]]]$
 ----- unstable cut-off point
 c. $[_v \nu [_{X1} X_{1[-T]}] [_{X2} Z_2 [_{X2} X_{2[-r]}] Y_2]]]$
 ----- unstable cut-off point
 d. $[_v Z_1 [_v \nu [_{X1} X_{1[-R]}] Y_1]]]$
 e. $[_v Z_1 [_v \nu [_{X1} X_{1[+R]}] Y_1]]]$ selects *haver/haber* -- least variation

In both Old Catalan and Old Spanish, telic verbs of change of location/state select BE quite systematically and form the more stable class of unaccusative verbs, that is, the class that was more reluctant to accept the replacement of BE by HAVE. Our proposal is that these unaccusative verbs (e.g., Cat. *anar* / Sp. *ir* ‘to go’, Cat. *néixer* / Sp. *nacer* ‘to be born’, Cat./Sp. *morir* ‘to die’, etc.) are associated with the feature combination $[[+T] [+r]]$, that is, they involve a positive transition (i.e., there is a change involved) and, additionally, there is a *telos* or a resulting state involved.

On the other hand, as shown by Batlle (2002), Castillo (2002) and Aranovich (2003), verbs expressing appearance (e.g., Old Cat. *passar* / Old Sp. *passar*) or existence (e.g., Old Cat. *romandre/restar* / Old Sp. *quedar*, ‘to remain’, etc.) behave in a less stable way than telic change verbs. Our proposal is that these classes can be formalized in the present syntactic approach as follows: verbs of appearance and verbs of indefinite change of state are associated with the feature combination $[[+T] [-r]]$, since they involve a transition or change, but there is no resulting state involved (cf. Aranovich (2003: 12); cf. (11) above). Finally, verbs of existence are associated with the feature combination $[[-T] [-r]]$, since they do not involve any transition nor final endpoint or resulting state.

This said, next let us show how the present relational theory of auxiliary selection with intransitive verbs could account for the gradient effects noted in the descriptive works briefly reviewed above. The feature combination $[[+T] [+r]]$ can be argued to form the “prototypical” meaning associated to unaccusative verbs (cf. Sorace’s (2000, 2004) *core* unaccusative verbs); in contrast, the feature combinations $[[+T] [-r]]$ and $[[-T] [-r]]$ can be argued to form “peripheral” meanings (i.e., Sorace’s (2000, 2004) *non-core* or *intermediate* unaccusative verbs). Accordingly, given our present relational approach, core unaccusative and unergative verbs are defined via a fully positive feature specification: cf. $[[+T] [+r]]$ and $[+R]$, respectively. The former holds for all those verbs involving a telic change, while the latter holds for those verbs involving an internal cause whose external argument is also interpreted as a volitional agent. On the other hand, non-core or intermediate verbs, i.e., those standing in the “periphery” of the class, are provided with at least one negatively specified relational feature.

In other words, the feature combination $[[+T] [+r]]$ and the feature $[+R]$ express maximally different situations, hence they are placed at the edges of the hierarchy. In contrast, the feature combination $[[-T] [-r]]$ and the feature $[-R]$ express minimally different situations, hence they touch each other in the middle of the hierarchy. In fact, a fully negative feature specification could be regarded as involving a neutralization of the minimal differences that separate both classes. Finally, the feature combination $[[+T] [-r]]$, the one which is related to Dowty’s (1979) “degree achievements”, can actually be regarded as the truly “intermediate” one, due to its combining a positive relational feature ($[+T]$) with a negative one ($[-r]$).

5. Towards a reconciliation of different approaches to “auxiliary selection”

Let us conclude this paper by replying to the apparently lethal criticism against approaches based on semantic features (the present one included):

- (22) “In Lieber & Baayen’s <1997> approach, the statement that [+IEPS]-verbs <[+Inferable Eventual Position or State]> go with *zijn* is, but for fact, similar to the statement that they would go with *hebben*. In other words, Lieber & Baayen’s analysis in no way *explains* the selection of auxiliaries”

Hoekstra (1999: 82)

Mutatis mutandis, one could say:

- (23) “In the present approach, the statement that [*T*(ransition)]-verbs in Old Catalan and Old Spanish initially go with BE is, but for fact, similar to the statement that they would go with HAVE. In other words, the present analysis in no way *explains* the selection of auxiliaries”.

Our reply to the criticism in (23) is as follows: first, it should be clear that in this paper we have limited ourselves to providing a formal explanation to Sorace’s (2000, 2004) insightful observations on semantic and/or aspectual determinants of auxiliary selection, while at the same time assuming, unlike Lieber & Baayen (1997), that the unaccusative/unergative distinction is syntactic (cf. 24)):

- (24) a. $[_v v [_{X_1} X_{1[±T]}] [_{X_2} Z_2 [_{X_2} X_{2[±r]}] Y_2]]]$ (Unaccusative argument structure)
 b. $[_v Z_1 [_v v [_{X_1} X_{1[±R]}] Y_1]]]$ (Unergative argument structure)
 c. $[_v Z_1 [_v v [_{X_1} X_{1[±R]}] [_{X_2} Z_2 [_{X_2} X_{2[±r]}] Y_2]]]]]$ (Transitive argument structure)

Second, there is a well-known diachronic explanation of why HAVE is initially associated to transitives (and then to unergatives) and BE to unaccusatives (cf. Vincent 1982; Pérez Saldanya 1998; Batlle 2002, among others). Our proposal of why BE is initially associated to (24a) and HAVE to (24b)-(24c) in Old Catalan and Old Spanish is both based on the traditional historical explanation and at the same time on Hoekstra’s synchronic observation in (25): we claim that a plausible explanation of “auxiliary selection” could be that the extended (that is, functional) argument structure projected by the auxiliary verb is initially a *mirror image* of the basic (that is, lexical) argument structure projected by the verbal head: i.e., in the formation of compound tenses unaccusative verbs associated with the eventive head $X_{I[T]}$ would initially project onto an extended $BE_{[T]}$, while unergative and transitive verbs associated with the eventive head $X_{I[R]}$ would initially project onto an extended $HAVE_{[R]}$.¹² Quite importantly, in our present account BE and HAVE should not be regarded as two different primitive auxiliaries but rather as two different (pure) instantiations of the very same extended eventive head: i.e., auxiliary BE is the initial realization of the functional extension of X_I when there is no external argument, while auxiliary HAVE is the initial realization of the very same head when there is an external argument.¹³

¹² Following Moro (1997), we do *not* assume that HAVE is BE plus *P/X*, but see Kayne (1993) or den Dikken (1994), among others.

¹³ As emphasized in Section 4 above, recall that the relational semantic features [*T*] and [*R*] in (24) are configurational in the sense that they are read off from the mere syntactic argument structure: i.e., X_I is the very same eventive head in both (24a) and (24b,c). It is just the case that this head is realized as [*R*] if there is an external argument; otherwise, it is realized as [*T*].

- (25) “The starting point of that endeavor is the observation that the verb *zijn* <BE> is similar to unaccusatives in a way in which the verb *hebben* <HAVE> is similar to transitives and unergatives”.

Hoekstra (1999: 82)

In (26) are depicted the extended argument structures of both auxiliaries:

- (26) a. “BE-selection”

... [BE_[T] [Prtcpl Z_i [Prtcpl Participle [v v [X₁ X_{1[±T]} [X₂ Z_i [X₂ X_{2[±r]} Y]]]]]]]]]]

- b. “HAVE-selection”

... [Z_i [HAVE_[R] [Prtcpl Ø [Prtcpl Prtcpl { [v PRO_i [v v [X X_[±R] Y]]]]]]] [v PRO_i [v v [X₁ X_{1[±R]} [X₂ Z [X₂ X_{2[±r]} Y]]]]]]]]] }

As noted, the extended argument structures in (26) account for the initial “isomorphic” situation where *all* unaccusative verbs would select BE and *only* transitive or unergative verbs would select HAVE. The subsequent stages whereby BE is gradually being replaced by HAVE can also be argued to be dealt with via a local percolation device: the relevant relational features (cf. [[±T] [-r]] in (21)) are licensed to percolate up (locally, from head to head), determining the “non-isomorphic” realization of the upper functional head as HAVE instead of its more “isomorphic” realization as BE. For reasons of space, we must leave exploring the technical details for further work.¹⁴

Pending then a final decision on the correct diachronic and synchronic¹⁵ syntactic analyses of the distribution of BE and HAVE as auxiliary verbs, it should be clear that we agree with proponents of the syntactic approach that the explanation of the unergative/unaccusative distinction *is* syntactic. This notwithstanding, we have shown that we *must* appeal to lexical semantics (in particular, to relational semantics) if we want to explain important empirical

¹⁴ We also leave it for further research to analyze “hybrid” examples like the following one, where HAVE is selected in spite of the agreement between the participle and the internal subject (cf. the example in (13b), where there is no agreement between them):

(i) I, com començaven les festes i saraus, **ha venguda nova** que era mort lo fill menor del rei de Portugal
And when began the parties and noises **has come-fem.sg new(s)-fem.sg.** that was died the son younger
of king of Portugal (*Epistolari d’Estefania de Requesens*: 253; XVIc.; *apud* Batlle (2002: 75; ex. 88))

¹⁵ For example, when dealing with the syntax of auxiliary *avere*, Moro (1997: 294; fn. 34) argues that “in such a case <(i)>, *telefonato* would play the role of the predicate of the small clause [_{SC} PRO_j/t_j telefonato] which is the subject of the small clause complement of *avere*. Now, in Standard Italian *ci* cannot occur with auxiliary *avere* but this structure is in fact overtly realized in many Italian dialects (...).”

(i) Gianni_j [ci_i ha] [_{SC} [_{SC} PRO_j/t_j telefonato] t_i]
Gianni loc.cl. has PRO telephoned
‘Gianni has telephoned’.

facts like the diachronic ones described by Batlle (2002), Castillo (2002), and Aranovich (2003), or the synchronic ones described by Sorace (2000, 2004) (cf. also Bentley & Eythórsson (2003)). Hopefully, encoding the relevant semantic features into the syntactic argument structures in (26) could be regarded as a first step towards making compatible the insights of the semantic approach with those of the syntactic one.

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