# Auxiliary selection: gradience and gradualness

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Book of abstracts

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#### On the irrealis effect on auxiliary selection

Artemis Alexiadou (Universität Stuttgart)

In this talk, I will first discuss evidence from diachronic studies of Germanic and Romance languages that modal factors influence auxiliary selection, favoring HAVE instead of BE with unaccusative predicates (see e.g. McFadden & Alexiadou 2010, Stolova 2006, Shannon 1995 among others). I will then proceed to offer an explanation for this phenomenon that is based on the morpho-syntactic composition of the BE perfect periphrasis. I will finally attempt to address the question why HAVE did not replace BE in Early High German, although an irrealis effect is observed in Middle Low German (Sapp 2011, Shannon 1995).

# Aspectual and thematic constraints on auxiliary selection and split intransitivity in Italo-Romance: synchronic and diachronic aspects

Michela Cennamo (University of Naples Federico II)

In this talk I shall discuss the system of auxiliary selection and split intransitivity in some (northern and southern) Italian varieties, and I shall compare the patterns of invariance and variation emerging from the synchronic analysis of the distribution of HAVE and BE with intransitive verbs in the perfect and the pluperfect, with the (ir)regularities appearing from the investigation of analogous data from 14th and 15th century texts.

The contemporary varieties examined show considerable fluctuation in auxiliary selection, with HAVE being the main auxiliary, and BE having a restricted range of occurrences, confined to some verb classes and some grammatical persons (Ledgeway 2000, Manzini & Savoia 2005, Bentley 2006, Cennamo 2008, 2010, Cerrone & Miola 2010). Variable auxiliary selection characterizes also some early vernaculars, clearly revealing a change in progress in Old Neapolitan, leading to the gradual spread of HAVE as a perfective auxiliary, to the detriment of BE, and the ensuing elimination of the original distinction between two subclasses of intransitives marked through auxiliary selection (respectively BE with unaccusatives and HAVE with unergatives) (Cennamo 2008, 2010).

I will show that, although auxiliary distribution does not clearly identify two subclasses of intransitives in the varieties investigated, corresponding to the well-known distinction of unergatives-class  $S_A$  verbs/unaccusatives-class  $S_O$  verbs, either synchronically or diachronically, the variation is nevertheless structured, neatly accountable within the gradient model of split intransitivity put forward by Sorace (2000; 2004), and sensitive to the interplay of a number of aspectual and thematic parameters, instantiated by Sorace's Auxiliary Selection Hierarchy (ASH).

More specifically, I will argue that a gradient approach to split intransitivity not only accounts in a principled manner for the synchronic and diachronic alternations in auxiliary selection observable in the varieties investigated, but also offers an explanation for the striking convergence between their synchronic distribution and the diachronic path of development.

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#### Auxiliary selection with intransitive and reflexive verbs: the limits of gradience

Pierre-Don Giancarli (Université Poitiers)

The term *gradience* may be applied to a discontinuous objective situation, or to a representation.

As a discontinuous objective situation within a language, *gradience* can be used to refer to three different cases: we face gradience as soon as a choice is to be made between several options (see Traugott & Trousdale 2010), with a totally constrained choice between two mutually exclusive sub-classes. Or when the choice is totally free between several auxiliaries competing for one and the same verb. Or when the locutor's choice is only partly free.

Gradience can also be a scalar representation set up by the linguist by means of a hierarchy, and it is on this sense that we shall focus: firstly gradience as the particular representation developed by the Auxiliary Selection Hierarchy (ASH), which is a well-known gradient model especially dedicated to auxiliary selection, then gradience in general, always with the aim of assessing their adequacy when dealing with auxiliary selection.

Four main types of graduated scales can be conceived of, according to the number of classes involved, the internal organization of the scale, and the relationship between the poles of the scale: a subjective scale (Aart's subjective gradience), an intersective scale (Aart's intersective gradience), a monodimensional scale, and a bi-polar scale, summarized in the table below:

	Mono-gradience	Bi-gradience
qnt	monodimensional scale	bi-polar scale
qnt + qlt	subjective scale	intersective scale

Mono-gradience involves a single class of elements, bi-gradience involves two classes of elements. *Qnt only* refers to a scale deprived of any qualitative centre(s), merely a gradient made up of elements that are quantitatively different but qualitatively identical. Qnt + qlt denotes a scale built on one (or more) prototypical occurrence(s), a scale made up of elements that are both quantitatively and qualitatively different: some belong to the core(s) and are closer to the prototype(s), others belong to the periphery(ies).

The ASH looks most like an intersective scale, but questions arise as to the choice of the properties on the scale and the relationship between them, their scope, the location of the zero point, the relationship between certain levels of the hierarchy and the predictions in terms of gradualness, as well as the absence of reflexive verbs.

As for gradience in general, we shall take the example of Corsican to show that some phenomena escape any reliable prediction made from a gradient scale, then we shall bring up the problem of a crosslinguistic scale on the basis of the example of Acadian French.

Finally, drawing upon Corsican, we shall highlight the advantages of a non-scalar representation of auxiliaries, enabling us to account not only for its BE-intransitive verbs (more than three times as many as in Italian) but also for its BE-reflexive verbs (bearing in mind that Corsican displays a split auxiliary system among its reflexive verbs as well), in a unified way.

## Gradience in Auxiliary Selection within closely related languages: The case of German and Dutch

Melitta Gillmann (Universität Hamburg)

Unlike English or Swedish, German and Dutch have retained their split auxiliary system. However, they differ considerably with respect to the choice of the perfective auxiliary. Telicity, for instance, seems to be the crucial factor for auxiliary selection with intransitive verbs in Dutch (van Hout 2004), whereas German appears to be less sensitive for verbal aspect (Gillmann 2011). Interestingly, in Dutch BE also occurs in transitive sentences, which is impossible in German (GERM *Der Politiker hat seine Rede begonnen* vs. Du *De politicus is zijn rede begonnen* 'The politician has initiated his speech'). These differences can be traced back to diverging diachronic shifts and host-class expansions in the history of both languages. Studies concerned with auxiliary selection mostly provide synchronic explanations for the distribution of HAVE and BE. They either take a syntactic point of view (e.g. Haider/Rindler-Schjerve 1987, Hoekstra 1999) or present a semantic account (e.g. Abraham 1993). Unfortunately, neither the syntactic nor the semantic approach is capable of explaining intralinguistic or regional variation as well as gradual differences between (closely related) languages.

Recently, the typological works of Sorace (2000) have pointed out that auxiliary selection is crosslinguistically characterized by gradience. She proposes an Auxiliary Selection Hierarchy based on lexical semantic classes. As crosslinguistic variation often reflects language change, this hierarchy is expected to offer a model for diachronic studies.

My presentation approaches the differences in auxiliary selection between German and Dutch from a historical perspective. Diachronic shifts will be examined as well as the factors influencing the change of auxiliary selection. It will be argued, that, although the constructions derive from the same resultative source domain, the grammaticalization process and the extension to new contexts are not completely identical. On the one hand this can be traced back to particular typological properties of both languages. On the other hand the influence of formally and functionally related constructions as well as frequency effects have to be taken into account.

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# Remarks on the conventionalization and restriction of French *être* 'be' as a perfect auxiliary: intransitive motion verbs in the 16th, 17th and 18th century

Steffen Heidinger (KFU Graz)

French has two perfect auxiliaries: être 'be' and avoir 'have'. In present-day (hexagon) French, transitive verbs select avoir and reflexive verbs select être. The vast majority of intransitive verbs select avoir. Only a restricted number of intransitive verbs select être; Mackenzie (2006: 104), for example, lists aller 'go', apparaître 'appear', arriver 'arrive', descendre 'go down', devenir 'become', entrer 'enter', intervenir 'intervene', monter 'go up', mourir 'die', naître 'be born', partir 'leave', rentrer 'come back', rester 'remain', retourner 'return', revenir 'return', sortir 'go out', survenir 'arise', tomber 'fall', venir 'come'.

During the history of French, the auxiliary selection of intransitive verbs has changed considerably. Mackenzie (2006) distinguishes three stages in this development: In the first stage, the sequence  $\hat{e}tre+V_{past,participle}$  was not used to express the perfect, but was a resultative copula describing the resultant state after an event. Because of the semantics of the construction, only telic verbs could appear in this construction. In the second stage, the construction was interpreted as a perfect tense (without losing the possibility to be interpreted as a resultative copula) and  $\hat{e}tre$  was grammaticalized as a perfect auxiliary. In the early period of being a perfect auxiliary only telic verbs selected  $\hat{e}tre$  (a heritage of the aspectual restriction of the resultative copula). In the third stage, the auxiliary selection was conventionalized independently of the aspectual properties of verbs. This dissociation of the auxiliary  $\hat{e}tre$  and the resultant state constraint led to an increase of verbs selecting avoir, and to a decrease of verbs selecting  $\hat{e}tre$ .

In my paper I focus on the latter stage of the change: the conventionalization and restriction of the verbs selecting être. Gougenheim (1973: 119) notes that in the 16th century the possibility to choose between être and avoir existed for more verbs than in present-day French. As examples, he cites amongst others voler 'fly', marcher 'march' and courir 'run' (cf. Gougenheim 1973: 119f.). What is interesting about these verbs is that they do not select être in present-day French and that their meaning does not contain a resultant state component. Similar examples can be found in Fournier's (1998) grammar of Classical French (~16th to 18th century). This suggests that the conventionalization and restriction of être was not a linear process from the large set of telic intransitive verbs to a very small and semantically heterogeneous set of verbs; there must have been a period when être was used with a larger set of non-telic verbs than today. In order to find out more about the auxiliary selection (and its underlying principles) during this period, I investigate intransitive motion verbs in the 16th, 17th and 18th century.

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#### BE or HAVE in Contemporary Standard French - Residua of semantic motivation

Rolf Kailuweit, Albert-Ludwigs-Universität Freiburg

In my presentation, I shall revisit the Auxiliary Selection Hierarchy (ASH) put forward in Sorace (2000). An exhaustive overview over Contemporary Standard French verbs, permitting the choice of BE in compound tenses, will lay the groundwork for discussing the residua of semantic motivation in a language that generally tends to regularize the morphosyntactic paradigms in purely syntactic terms. As far as Sorace's seven semantic classes of monadic intransitive verbs are concerned, I claim that these classes are not just an arbitrary reflection of the given data as Mateu (2009) suspects. The classes can be broken down into semantic features that allow for a data-independent semantic motivation of their order. My proposal differs from that of Legendre / Sorace (2003) and Legendre (2007), brought forward in the framework of the Optimality Theory, in that it is based on weighing the semantic features. It will be shown that 'change' or 'transition' is the driving force leading to BE-selection, independently of telicity. Nonetheless, I shall point out that several exceptional cases cannot be easily explained with the ASH. The choice of BE or HAVE in Contemporary Standard French necessitates a multifactorial analysis, taking into account semantics, syntax and frequency effects.

## The HAVE/BE alternation in the history of Scandinavian - tense, aspect and unaccusatives

Ida Larsson (Stockholm University)

The early development of the perfect tense in Germanic is largely parallel in the different languages, and it can be understood as involving the reanalysis of possessive HAVE as a temporal auxiliary, and the emergence of a tensed participle. However, the subsequent development of the perfect is partly different in the different languages, and the distribution of preterite forms, perfects, perfectives and resultatives varies both within and between languages. Among other things, we can note that there is considerable variation in the distribution of HAVE and BE in perfects and resultatives in the present-day Scandinavian languages. BE is used to form perfects only in Danish, and resultatives with BE are more restricted in Swedish than in Icelandic with respect to which verbs are possible; cf. Icelandic in (1) and Swedish in (2).

- (1) a. Hann er nýlega kominn hingað. (Icelandic)

  he is recently come here

  'He has recently come here.'

  b. Pað er byriað
  - b. Pað er byrjað. it is begun 'It has begun.'
- (2) a. Han är nyligen hitkommen. (Swedish) he is recently here.come 'He has recently come here.'
  - b. \* Det är börjat.

    it is begun

In older Scandinavian, it was the other way around: BE was less restricted in Swedish than in Icelandic, and Swedish patterned with Danish up until the 16th century. Examples like (3) can be found in older Swedish, but not in older Icelandic or in the present-day languages (except Danish). It has often been assumed that older Swedish had an alternation between HAVE and BE in perfects.

(3) Thet är offta skeedt, at [...] (16th century Swedish) it is often happened that 'It has often happened that...'

In other words, the use of BE was extended in Swedish and Danish in the 16<sup>th</sup> century, but perfects with HAVE still occurred. In Danish, the development continued and BE developed into a temporal auxiliary, whereas in Swedish, the construction with HAVE took over.

In this talk, I will review the historical development, and propose additional syntactic-semantic distinctions among perfects and resultatives to account for the observed variation. I will suggest that the difference between older Swedish and Icelandic relates to aspect and not tense, and that the development of perfects with BE in Danish involves further reanalysis of HAVE, and a concomitant change in the semantics of the perfect.

#### Variation and change in Romance perfective auxiliation: syntax and semantics

Michele Loporcarco (Universität Zürich)

In work in Romance syntactic variation over the past few years, it has been argued repeatedly that perfective auxiliary selection is best accounted for in terms of semantically-based generalizations (e.g. Bentley & Eythórsson 2003, Bentley 2006, Cennamo & Sorace 2007). Consider for instance Cennamo (1999:303), who asks "se il fenomeno [i.e. unaccusativity] sia sintattico (rifletta cioè la relazione sintattica del soggetto in un livello non finale della rappresentazione), semantico (determinato dal ruolo tematico del soggetto e dall'aspetto sintattico-semantico (determinato semanticamente ma sintatticamente [...]). In questo lavoro seguiremo l'approccio semantico e sintatticosemantico". The answer to the question, she argues, is that unaccusativity is, at the very least, semantically determined: it may be, then, syntactically encoded, but it is explicitly excluded that its nature may be that of an autonomously syntactic generalization. Perhaps the most radical stance along those lines is the one taken by Aranovich (2003) who, analyzing Old Spanish data, claims that the gradual retreat of auxiliary ser 'to be' depends exclusively on the semantics of the lexical predicate. From this empirical conclusion, he derives a more general argument against a syntactic view of unaccusativity (cf. Perlmutter 1989, Rosen 1984) on which the syntactic accounts of Romance auxiliary selection rest.

In my opinion, this kind of dismissal of syntactic accounts of unaccusativity, in general, and Romance perfective auxiliation, in particular, is on wrong track; instead, a syntactic approach to perfective auxiliation and a syntactic notion of unaccusativity are needed. I have already argued (cf. Loporcaro 2008, 2011) that Aranovich's Old Spanish data themselves are amenable to a syntactic generalization, and that comparison with Old Italo-Romance varieties such as Old Florentine, Old Romanesco, Old Sicilian and Old Neapolitan (as analyzed by La Fauci 2004, 1992; Formentin 2002; and Formentin 2001, Vecchio 2006 respectively) strengthens the point, since in all of those medieval dialects auxiliation (a well-investigated phenomenon, in spite of Cennamo's 2008:126 claim that auxiliary selection in "early Italian vernaculars [...] still awaits investigation") obeys a syntactic rule, even if in some of them the distribution of auxiliaries closely resembles the Old Spanish one. Note that in Loporcaro (2011) I argue that, for Old Spanish, Aranovich is right in claiming that the semantics of the lexical predicate plays a role in determining (change in) auxiliation (his Semantic Displacement Hypothesis: Aranovich 2003:11). Only, he way overstates his case when he claims (2003:29) "that the distribution of the two perfect auxiliaries with reflexive verbs in Old Spanish [...] gives evidence against a syntactic analysis".

In the present paper, I will take a closer look at mediaeval Italo-Romance texts, focusing especially on the behaviour of reflexive predicates, in order to check whether semantic properties of the verbal predicate (in terms of Aktionsart, or, more specifically, in terms of Sorace's 2000 semantically based auxiliary selection hierarchy [ASH] or of Aranovich's 2003 elaboration on Sorace's ASH) have an influence on auxiliary selection in those Romance varieties too.

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## Diachronic and Synchronic Evidence for a Constructional Approach to Auxiliary Selection

Jaume Mateu (Universitat Autònoma de Barcelona)

In this talk I will discuss some advantages of adopting a variant of the constructional approach to 'auxiliary selection' that incorporates a mechanism for checking possible and impossible pairings of meanings and structural configurations (Sorace 2004: 268). The discussion will include diachronic and synchronic data like the following ones:

The results obtained from studying auxiliary selection in Old Catalan (OC) via the CICA corpus (Massanell & Mateu (in progress)) show that OC verbs like venir 'come' select BE quite systematically in those cases that contain a definite subject (e.g., La marquesa és ja vinguda 'The marchioness IS already come') but can select HAVE in examples that contain a postverbal indefinite argument (e.g., Los ha vingut gran dan a lur molí 'Them<sub>dat</sub> HAS come great damage to their mill'). Similarly, examples like La marquesa ha arribat 'The marchioness HAS arrived' are not found in OC, although examples like Avui ha arribat correu 'Today has arrived mail' can be found, along with Avui és arribat correu. These alternations can be said to be apparently problematic for Sorace's (2000) Auxiliary Selection Hierarchy (ASH) since core unaccusative verbs like OC venir or arribar are predicted to select BE quite systematically. However, under the present constructional approach we'll be able to account for these alternations by allowing venir or arribar to be compatible with different argument structure constructions provided that they be compatible with the relevant constructional meanings. In particular, the abovementioned constructions where HAVE is selected are associated with a presentational meaning which can be considered/located as "intermediate" in ASH: cf. the unstable cut-off point associated with "appearance of state" in Mateu (2009).

Syncronically, it is well-known that auxiliary selection can be motivated by features of constructions: e.g., cf. It. *Maria ha corso per ore / Maria è corsa alla cucina*. However, as pointed out in the literature, this process appears to be lexically restricted: cf. It. *Maria ha ballato / \*Maria è ballata alla cucina* (cf. German). Similarly, I will review some interesting synchronic data from Centineo (1996) (cf. It. *Ce ne {??ha nuotato/nuotò} molta di gente in quella piscina*) which offer some non-trivial problems for non-constructional approaches to auxiliary selection.

Finally, constructional approaches to auxiliary selection can be argued to be more compatible with those accounts that posit the intervention of non-lexical level factors. For example, I'll show that they are more adequate to account for the following contrasts from Quebec French (QF), drawn from Manente (2008): cf. Jean a arrivé/parti/entré à huit heures vs. Jean est arrivé (= là)/parti (= absent)/entré (= dedans)). Interestingly, this use of BE in QF can be related to the stative resultative interpretation that McFadden and Alexiadou (2010) attribute to Earlier English I am come. Similarly, the following contrast given by Manente (2008: 43) QF. Maintenant qu'il {\*a/est} arrivé/entré chez lui, il ne voudra plus jamais ressortir can be explained on the basis that BE is related to a perfect-of-result reading where the target state holds of the subject, as in Earlier English.

#### The interplay of auxiliaries and participial structures in Old English

Thomas McFadden (Universitetet i Tromsø)

Old English had periphrastic constructions consisting of a past participle and a form of either auxiliary 'have' or auxiliary 'be'. In addition to the familiar alternation between the two auxiliaries, we find an alternation in the participles between forms with and without a prefix. The primary prefix that is relevant here is ge-, which is cognate with German ge-, but differs from it in its distribution in puzzling ways. German ge- is an obligatory part of the past participles used in the perfect (modulo an entirely regular restriction on the phonology of the verbal stem), and outside of that appears as a non-productive (and often semantically opaque) derivational prefix. OE ge-, on the other hand, is extremely common in the past participle, but by no means obligatory, and it is found quite commonly on other forms of the verb in a pattern that looks far more productive than what is found in German. The function and distribution of ge- in OE has proven extremely difficult to characterize, and remains only incompletely understood. However, existing approaches typically relate it to aspectual categories like perfectivity, telicity and resultativity, categories which have been implicated in auxiliary selection patterns in a number of languages. It will thus be of interest to investigate the interactions between the appearance of ge- on verbal participles and the choice of auxiliaries. If both are sensitive to the same kind of distinction, e.g. resultativity, we should expect them to pattern together. If they are instead sensitive to related but distinct semantic or syntactic properties of the clause, then they could be fruitfully used to tease these properties apart. In my talk, I will present findings from an ongoing, large-scale study based on the York-Toronto-Helsink Parsed Corpus of Old English. I will detail the attested patterns in the co-occurrence of the different auxiliaries with participles with and without the ge- prefix in various contexts and discuss the relevance of these findings for the description and analysis of both auxiliary selection and the ge- prefix in OE.

## Periphrasis as precursor of analytic inflection. BE and HAVE in the (pre-)history of German

Peter Öhl (Albert-Ludwigs-Universität Freiburg)

There are two recent mainstream explanations of grammaticalisation processes: functionalist approaches focus on performance, arguing that speakers tend to either improve expressiveness or economise speech production by varying the application of the rules of grammar. This may result in conventionalisation and finally even change the rules of grammar or create new functional elements. The formalist generative account regards grammaticalisation as reflecting structural reanalysis through parametric change during language acquisition, resulting in recategorisation of lexical elements as functional heads in syntactic structure. This paper is intended to integrate the advantages of both approaches. Basically, it is argued that performance based conventionalisation plays a central role for grammaticalisation by providing the linguistic preconditions for recategorisation of lexical elements as functional ones, or semi-functional elements as fully functional ones. We claim that changes of the basic rule system of grammar, which includes the parametric lexicalisation of functional heads in syntactic structure, cannot occur but through structural reanalysis during language acquisition. On the other hand, the input for language acquisition is speech, which may be created through manipulation of the functional rules of the grammatical system by the speaker. The part of grammar that is accessible to manipulation by the speaker is called 'fringe-grammar' in generative theory. Thus the central claim will be: in processes of grammaticalisation, change of the core grammar is often initialised by functional variation at the fringe. The whole process may include several steps of alternate performance based and parametric changes, the prime example being the rise of analytic inflection via periphrastic constructions. Our model will be exemplified by the case study of periphrastic perfect tense in Germanic and Romance.

#### The spread of HAVE-perfects in Old Spanish

Javier Rodríguez Molina (University Carlos III, Madrid)

Ever since Benzing's (1931) seminal study, split auxiliary selection has been a research topic in Spanish Historical Linguistics. Researchers have mainly focused on the theoretical implications of auxiliary selection both at the semantic and syntactic level. Studies devoted to split auxiliary selection in Old Spanish claim that the spread of HAVE proceeded along semantic lines and was sensitive to lexical properties of verbs (Elvira 2001, Aranovich 2003, Romani 2006, Mateu 2009). Most of these studies rely on the data raised by Benzing, who traced back the chronology of the disappearance of SER in a large group of verbs from the 12<sup>th</sup> century onwards and determined the latest date of attested occurrence with SER of many verbs. Few or no new quantitative evidence has been alleged since Benzing's paper.

In this paper I will focus on the spread of HAVE-perfects in Old Spanish, both in terms of gradience and frequency. I will make three main claims: (a) Auxiliary selection should be analyzed in a controlled corpus, since the use of bad data has biased the conclusions previous studies have reached (Rodríguez Molina 2006): new and better quantitative evidence is still needed; (b) The spread of HAVE-perfects must take into account geographical variation, because it casts new light not only at the chronological level, but at the theoretical one as well (Rodríguez Molina 2010); (c) Auxiliary selection should be related to the general spread of HAVE-perfects along the history of Spanish. I will show that the spread of HAVE was a gradual process showing some restrictions not previously noticed in the literature (I will focus on the spread of HAVE to modal and stative verbs, passives and reflexives).

Data taken from a large corpus of medieval texts support a gradience approach of auxiliary selection in Old Spanish along the lines of Sorace's (2000) Auxiliary Selection Hierarchy, suggest that the spread of HAVE-perfect was constrained by both grammatical and geographical factors and call for a more fine-grained analysis of chronological issues concerning the HAVE / BE split.

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# How frequency generates frequency: conserving effects in the history of Spanish auxiliary selection

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In this talk, a usage-based account to linguistic disappearances will be proposed. It will be argued that the frequency effects of entrenchment (Bybee & Hopper 2001; Bybee 2006; Bybee 2010), as well as persistence or syntactic priming (Gries 2005; Szmrecsanyi 2005; 2006) are crucial to an understanding of the systematic retention of grammatical patterns that are declining in usage frequency. As an example of the correlation of these processes, compound tense auxiliary selection in Spanish will be evaluated. Variationist methodology is used to demonstrate the interaction between semantic and frequency-related factors in the disappearance of Old Spanish BE + PP. Thus, it will be shown that (a) the absolute frequency of a verb in the BE + PP construction is a predictor of its longevity in this construction. The paradigmatic link of highly frequent BE + PP syntagms to their mother construction becomes weaker over time, such that they are less affected by the change operating on that construction. In addition, it will be shown that (b), persistence works as a conserving effect in the development of Spanish auxiliary selection. The rarer BE + PP tokens become, the more probable they are to be preceded by other BE + PP tokens in the immediate co-text. In this fashion, entrenched BE + PP syntagms can raise the probability of BE-selection even for verbs which have become rare in the BE + PP construction. Entrenchment and persistence thus work hand in hand in conservation processes.

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#### The gradualness of change in auxiliary selection: Evidence from Spanish

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The main goals of this study are to present quantitative evidence for the gradualness of change as it occurs in auxiliary selection in Spanish perfect constructions, and to inquire into the factors and mechanisms relevant to explain such development on the basis of such evidence. This study draws both on previous analyses of this question and on the analysis of frequency data in order to achieve a deeper understanding of the nature of the gradualness of change in auxiliary selection.

It is a well known fact that in Modern Spanish haber ,have' is the only auxiliary used to express the perfect; whereas in Old Spanish both haber + past participle and ser, be' + past participle were used to express perfect eventualities. Presumably by the 17th century, haber has already replaced ser across all its uses as a perfect. Previous analyses claim that the patient-like properties of the subject and/or its degree of affectedness are the relevant factors to explain the nature of this change (see Aranovich 2003, Mateu 2006). In this study I evaluate existing hypotheses and refine them in the light of quantitative data. Based on the analysis of frequency counts of all auxiliary-past participle combinations in a diachronic corpus of Spanish (including a variety of texts from the 12th to the 20th century and containing more than 40 million words), I will present evidence that the extension of haber as the only perfect auxiliary takes place already since the earliest centuries in a gradual and orderly way, in that it spreads from some types of predicates to others and it is constrained by certain semantic properties. In particular, the replacement of ser by haber takes place first through dynamic atelic eventualities like caminar, walk', llorar, cry' or correr, run', and lastly through verbs denoting a scalar change of state like aumentar, increase', acortar ,shorten' or *florecer* ,blossom'. To account for these facts, I propose that the mechanism relevant to explain the loss of ser and its replacement by haber in the Spanish perfect is analogy and the key factors are telicity and scalar structure of the base verbs (in the sense of Gawron 2009 and Koontz-Garboden 2010). Specifically the particular direction of this change can be modelled through constrained analogical relations created on the basis of the semantic and morphological affinities between the arguments of possessive haber and the base verbs appearing first and more frequently with auxiliary haber.

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# The cognitive complexity of auxiliary selection: from online processing to grammaticality judgments

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The selection of perfective auxiliaries avere/haben ('have') and essere/sein ('be') with intransitive verbs in languages such as Italian and German has traditionally been regarded as a syntactic diagnostic of unaccusativity (Perlmutter 1978, Burzio 1986). Much recent research, however, has shown that notion of a categorical distinction between unaccusative and unergative verbs is difficult to maintain, since preferences for one auxiliary or the other systematically vary in strength along a hierarchy defined by the aspectual type of the verb and other characteristics of the context in which the auxiliary-verb combination appears (Cennamo & Sorace, 2007; Keller & Sorace, 2003; Legendre, 2007; Legendre & Sorace, 2003; Sorace 2000, 2004, to appear). But what determines the different likelihood of a verb being accepted with a given auxiliary, and what are the processes leading to specific judgments? Based on experiments using ERP and eye-tracking methods (Bard, Frenck Mestre & Sorace 2010; Roehm, Sorace & Bornkessel-Schlesewsky, in press; Sorace, Ferreira & Vernice, forthcoming), I will show some previously unrevealed interactions among the event structure complexity of verbs, the capacity of individual speakers to apply aspectual coercion, and the determinacy of grammaticality judgments on auxiliary-verb combinations in context.