

Digitizing the syntax-semantics interface: The case of aux-selection in Italian and French

I. GOAL. The main purpose of this paper is to provide a relational semantic explanation of Sorace's (2000) "gradiency effects" (*sic*) involved in auxiliary selection. I show that her descriptive approach can be formalized in quite an adequate way within the theory of argument structure put forward by Mateu (1999) and Mateu & Adas (2001).

II. INTRODUCTION. As shown by Sorace (2000), Western European languages like Italian, French, Dutch or German appear to vary, *but in an orderly way*, concerning aux-selection with intransitive verbs. For example, Sorace shows that in Italian some intransitive verbs (e.g., cf. (1a-b) and (1h)) require a given auxiliary categorically, whereas others (e.g., cf. (1c-g)) allow both auxiliaries to a greater or lesser extent depending on their position on the hierarchy of aspectual/thematic verb types in (2). The former are called "core verbs", while the latter "non-core verbs". Moreover, Sorace claims that the crosslinguistic variation involved in Italian and French depends on the location of the relevant cut-off point along the hierarchy in (2). [*Caveat*: Following Sorace, I put pronominal verbs aside here because there is an *additional* morphosyntactic condition involved in Romance, but not in Germanic: cf. the so-called 'cliticization parameter' discussed in Haider & Rindler-Schjerve (1987)].

III. AUX-SELECTION REVISITED. Despite her descriptive merits, Sorace (2000) made no attempt to formalize her semantic account. Indeed, one would like to know which is/are the *formal* constraint/s 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. At this non-trivial point of discussion, I would like to emphasize the importance of drawing the theoretical distinction involved in the (oversimplified) picture of the syntax-semantics interface depicted in (3): Meaning is a function of both conceptual content and semantic construal (M&A 2001).

Assuming (3), 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. Given (3), it seems then more plausible to start with drawing the much more limited syntactically transparent notions of semantic construal: the possible combinations of relational semantic features that can be drawn from the syntactic argument structures of unaccusative verbs (cf. (4a)) and unergative verbs (cf. (4b)) turn out to be *formally* limited/reduced to the ones in (5).

The formally defined combinations of semantic features in (5) allow one to make some interesting predictions concerning the *digital* semantic determinants involved in aux-selection with intransitive verbs. In the present framework, core unaccusative and unergative verbs are defined as involving the *positively specified* relational semantic features $[[+T] [+r]]$ and $+[R]$, respectively. While the former combination is argued to hold for telic change of location verbs (cf. (1a)) or telic change of state verbs (cf. (1b)), the latter feature is argued to hold for internally caused verbs involving a volitional controller (cf. (1h)). By contrast, non-core verbs are represented by the remaining combinations of relational semantic features that at least contain one *negatively specified* value. Notice that it is precisely the formal restrictions of the present approach that force me to hypothesize that there must be no significant differences between so-called 'continuation of condition verbs' (cf. (1d)) and 'existence of state verbs' (cf. (1e)): as noted by one of Sorace's (2000: 870-871; fn.17) referees, in French, Dutch, and German, there are no differences between these two lexical semantic classes as far as gradiency effects is concerned. I will argue that the same can be argued to hold for Italian as well. Accordingly, *both* continuation of condition verbs and existence of state verbs are to be formally identified with the $[[-T] [-r]]$ combination. On the other hand, non-core unergative verbs like non-agentive verbs of sound (cf. (1f)) are to be associated to the $[-R]$ feature. Concerning Sorace's contrast in (1g), *essere*-selection can be argued to be sanctioned on the basis of the *full* grammaticality of It. *Il aereo è atterrato sulla pista* 'the plane IS landed on the runway', which is associated to the $[[+T] [+r]]$ combination.

Furthermore, the present analysis provides an explanation to the well-known fact that the aux-selection test is typically considered to be a more reliable 'unaccusative diagnostic' in Italian rather than in French. It is the case that in Italian aux-selection with intransitive verbs is to be decided on a purely *structural* basis: it is the syntactic argument structure without external argument/Originator that is relevant to *essere*-selection, whereas it is the configuration with external argument/Originator that is relevant to *avere*-selection. In contrast, in French it is the case that aux-selection with intransitive verbs is not to be decided from such a pure structural criterion, hence its particular status as 'unaccusative diagnostic': as shown in (5), there is only one relational semantic combination that is involved in *être*-selection, i.e., the $[[+T] [+r]]$ combination. Since the $[[+T] [-r]]$ combination can be argued to be involved in those "indefinite change of state verbs" that select *avoir* (e.g., *vieillir*), we can conclude that it is the $+[r]$ feature that crucially determines *être*-selection. Finally, one caveat is in order concerning the exceptional verb *rester*: Being inspired by Sorace's (2000: 868; fn. 14) review of Dahl's (1987: 153) claim that "*rester* can be regarded as intermediate between location and direction", I will argue that such a "neutrality", which is presumably related to the exceptionality of the fact that *rester* selects *être*, can be explained by assuming that this verb is assigned the $[[T] [r]]$ combination, its binary features being unspecified (i.e., "neutralized"): such an exceptional assignment is not related to HAVE- but BE-selection on the basis that the latter is the unmarked auxiliary for unaccusative verbs.

IV. CONCLUSION. In striking contrast to Sorace's gradiency approach (cf. her statement: "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)), the present framework provides an explanation of why some relational semantic determinants of aux-selection are more important than others. Such an explanation has been shown to crucially depend on our adopting the theoretical distinction in (3): quite interestingly, the most important determinants coincide with the positively valued (discrete) semantic features associated to the syntactically transparent argument structure configurations argued for by Mateu (1999) and M&A (2001).

- (1) a. Gianni è/*ha arrivato. (Italian)
 b. Gianni è/*ha morto.
 c. Le mele sono marcite/?hanno marcito al sole.
 the apples are rotted/ have rotted in-the sun
 d. I miei nonni sono sopravvissuti/?hanno sopravvissuto al terremoto.
 my grandparents are survived /have survived to-the earthquake
 e. I dinosauri sono esistiti/??hanno esistito 65 milioni di anni fa.
 the dinosaurs are existed/have existed 65 millions of years ago
 f. La campana ha rintoccato/?è rintoccata.
 the bell has tolled / is tolled
 g. Il pilota ha/?è atterrato sulla pista di emergenza.
 the pilot has/is landed on-the runway of emergency
 h. Gianni ha lavorato/*è lavorato.
 Gianni has worked/is worked

- (2) The Auxiliary Selection Hierarchy (ASH)
 CHANGE OF LOCATION selects BE --least variation
 TELIC CHANGE OF STATE
 ----- "cut-off point" (French)
 ATELIC CHANGE OF STATE
 CONTINUATION OF A PRE-EXISTING STATE
 EXISTENCE OF STATE
 ----- "cut-off point" (Italian)
 UNCONTROLLED PROCESS
 CONTROLLED PROCESS (MOTIONAL)
 CONTROLLED PROCESS (NONMOTIONAL) selects HAVE --least variation

- (3) Non-syntactically transparent conceptual content → no discreteness
 Syntactically transparent semantic construal → discreteness

- (4) a. $[_v v [_{X1} X_{1[±T]} [_{X2} Z_2 [_{X2} X_{2[±R]} Y_2]]]]$ (Unaccusative argument structure)
 b. $[_v Z_1 [_v v [_{X1} X_{1[±R]} Y_1]]]]$ (Unergative argument structure)

Nota bene: Mateu (1999) argued that the [+T] and [-T] features associated to the unaccusative verbal head X_1 in (4a) encode the BECOME and BE functions, respectively. Moreover, the [+r] and [-r] features are correlated to Hale & Keyser's (1993f.) 'terminal coincidence relation' and 'central coincidence relation', respectively: the birelational element X_2 relates two non-relational elements Z_2 and Y_2 , 'Figure' and 'Ground', respectively. On the other hand, in (4b) the [+R] feature encodes the agentive DO function, while the [-R] feature subsumes whatever function assigned to non-agentive unergative verbs. While the non-relational element Z_1 is interpreted as 'Originator', Y_1 is the created object typically conflated into the unergative verbal head X_1 : cf. Hale & Keyser 1993f. Y_1 can also be interpreted as an 'Incremental Theme': cf. Harley 2002.

- (5) a. $[[+T] [+r]]$ selects BE
 ----- "cut-off point" (French)
 b. $[[+T] [-r]]$
 c. $[[-T] [-r]]$
 ----- "cut-off point" (Italian)
 d. $[-R]$
 e. $[+R]$ selects HAVE

Nota bene: The $[[-T] [+r]]$ combination turns out to be excluded in virtue of the fact that all telic unaccusative verbs involving [+r] are argued to involve a *positive* Transition. By contrast, $[[+T] [-r]]$ appears to be an idoneous combination in order for us to deal with Levin & Rappaport Hovav's (1995) 'verbs of indefinite change of state' like It. *invecchiare*/Fr. *vieillir* 'to age' (cf. Dowty's (1979) 'degree achievements'): It. *Gianni è invecchiato* / Fr. *Jean a vieilli* (cf. also (1c) above).

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