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Auxiliaries and Intransitivity in French and in Romance*

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1. Introduction

The Unaccusative Hypothesis (Burzio 1986, Perlmutter 1978, Rosen 1984)¹ states that intransitive verbs divide into two subsets - unaccusatives and unergatives - which have distinct syntactic properties. The single argument of unaccusative verbs is an underlying or deep direct object, and thus displays many syntactic properties of direct objects of transitive verbs; in contrast, the single argument of unergative verbs is a subject at all levels of representation, and thus displays the same syntactic behavior as the subject of transitive verbs. This syntactic difference is typically represented configurationally as in (1).

- (1) Intransitive structures
- a. Unergative: NP [_{VP} V]
 - b. Unaccusative: ___[_{VP} V NP]

The simplicity and elegance of Perlmutter's Unaccusative Hypothesis stands in sharp contrast with the many, largely unsuccessful, attempts at formulating a solid and systematic semantic basis for such a syntactic distinction and establishing its cross-linguistic validity.

The earliest formulations of the Unaccusative Hypothesis noted that the distinction is systematically related to certain semantic characteristics of the predicate: 'agentivity' tends to correlate with unergativity and 'patienthood' correlates with unaccusativity (Dowty 1991, Perlmutter 1978). Much subsequent research has shown, however, that the alignment between syntactic and semantic properties is not 100%; nor is it as consistent as originally predicted (Rosen 1984). For example, some verbs with similar semantics have different syntactic behavior across languages: for example, *rougir* is unaccusative in Italian but unergative in French (and Dutch), on the basis of their auxiliary selection and appearance in participial constructions. Some verbs are classified as both unaccusative and unergative by the same diagnostic: for example, *continuare* and *parâître* can take both auxiliary *essere/être* and *avere/avoir*. Within a given language syntactic tests do not overlap completely either. This is especially true of French where auxiliary selection identifies only a small subset of unaccusative verbs, compared with participial constructions:

- (1) a. La neige a/*est fondu(e) pendant la nuit.

*Acknowledgements

¹ Several early versions of the Unaccusative Hypothesis actually predate Perlmutter (1978), including Postal (1963) and Hall-Partee (1965). See Pullum (1988) on its history.

b. La neige fondue, toutes les stations de ski ont fermé.

Context too may play a role. It is well-known that *correre* selects *essere* or *avere* in Italian, depending on the presence of a stated goal. Yet the role of context is not systematic across languages. French *courir* selects *avoir*, regardless of whether a goal is specified or not.

(2) Il bambino è corso a scuola.
L'enfant a couru à l'école.

(3) Il bambino ha corso nel giardino.
L'enfant a couru dans le jardin.

Nevertheless, a substantial body of research has shown that these 'unaccusative mismatches' are problematic only to the extent that one expects unaccusative and unergative verbs to represent syntactically AND semantically homogeneous classes. Most of the syntactic diagnostics of unaccusativity/unergativity (e.g. auxiliary selection in Italian, impersonal passives in Dutch, resultative constructions in English) do tend to identify *semantically coherent subsets* of verbs (Levin & Rappaport Hovav 1995).

The challenge has long been the identification of the syntactically relevant components of meaning in different languages and the search for a theory that could account for their reciprocal interaction. The principle underlying this endeavor is that neither a verb's ability to be found in the unaccusative or unergative syntactic configuration, nor the verb's particular semantic characteristics are, by themselves, sufficient conditions to satisfy particular diagnostics: split intransitivity is both *syntactically encoded and semantically determined* (Legendre et al. 1991; Levin & Rappaport Hovav 1995). A syntactic characterization of unaccusativity is necessary to account for phenomena not easily reducible to purely semantic explanations, such as the similarity between unaccusatives and passives, the resultative construction in English, the cliticization of the partitive clitic pronoun *ne* in Italian, etc. The identification of syntactic constraints, however, is not sufficient; it is also crucial to explain how lexical semantic or aspectual representations underlying individual verbs are mapped onto the binary syntactic representations defining the Unaccusative Hypothesis^{2,3}.

A decade and a half of discussion of split intransitivity has revealed that French is a serious challenge to all traditional accounts of the phenomenon (e.g. Cummins 1996, Labelle 1992, Legendre 1989, Ruwet 1988, Zribi-Hertz 1987). It has remained basically unexplained so far. Nor has cross-linguistic variation in auxiliary selection in French and Italian been successfully accounted for. The approach developed in this chapter attempts to remedy both situations.

² Various theories of argument structure (focused on the syntactically relevant properties of verb arguments) and event structure (focused on the temporal and aspectual organization of the event described by a verb) which have been developed in recent years have set out to pursue this goal (Grimshaw 1990, van Hout 1996, Pesetsky 1995, Pustejovsky and Busa 1995, Rappaport Hovav & Levin 1998, among others).

³ For example, the resultative construction in English is subject to a 'Direct Object Restriction' (see Levin & Rappaport Hovav 1995), that is, it can be predicated only of a direct object NP governed by the verb, as shown in

- (4) a. John licked his finger clean. (transitive)
b. The bottle broke open. (unaccusative)
c. *John shouted hoarse. (unergative)

It should come as no surprise that French and Italian dominate the empirical discussion in the present chapter. Among the main Romance languages, French and Italian are the only languages which still make use of two auxiliaries in forming compound tenses.⁴ Most other languages have dropped their counterparts of *être* altogether, replacing it with a counterpart of *avoir* or some other auxiliary at some point in their history (e.g. Spanish *haber*, Catalan (Barcelona) *haver*, Portuguese *tener*). Romanian does make use of two auxiliaries but they do not alternate as markers of one and the same tense. A derived form of its *avoir* counterpart is used in the compound past tense (*a avea*) while the invariable form *fi* is used in the perfect (Avram 1999; Abeillé and Godard, this volume).

Specifically, we argue that we can make genuine headway in understanding the complex facts of French in the context of Romance variation if we adopt the optimality-theoretic premise that well-formedness constraints on the mapping between the lexicon and syntax are universal but soft and highly conflicting. For example, verbs denoting existence of state select different perfect auxiliaries in the two languages: *essere* in Italian vs. *avoir* in French. In our terms, such variation results from re-ranking a single constraint with respect to all others in the universal constraint hierarchy defining (part of) UG. Among other things, our analysis is shown to account for auxiliary selection developments in the history of Spanish.

The chapter is structured as follows. Section 2 introduces the problem of accounting for gradience in the lexicon/syntax mapping and compares existing classes of solutions to the problem. It is argued that only a hierarchical approach to the lexicon/syntax mapping may capture what is common to and what is different in auxiliary selection in Italian and French. The resulting Auxiliary Selection Hierarchy (Sorace 2000) can in turn be shown to derive from an optimization-based approach to constraint interaction.

Section 3 focuses on French and the controversies surrounding the nature of syntactic evidence for an unaccusative/unergative distinction among its intransitive verbs. Several syntactic tests are probed, including impersonal constructions, partitive *en*, unaccusative inversion, auxiliary selection, and participial constructions. Of the reviewed tests, only auxiliary selection and participial constructions are shown to provide reliable evidence for a split among intransitive verbs.

Section 4 returns to the issue of cross-Romance variation in auxiliary selection and offers an optimality-theoretic solution to that long-standing problem. Section 5 summarizes the main contributions of the paper.

2. Solutions to the mapping problem

In very general terms 25 years of research on the semantic basis of the unergative/unaccusative distinction have revealed the primacy of lexico-semantic and aspectual features and emphasized the central role played by telicity in capturing regular patterns both across lexico-semantic verb classes and across languages. What remains are controversies about the significance of other features or feature bundles, the theoretical status of verb classes, as well as the formal apparatus necessary to provide an explicit typology of possible lexicon/syntax mappings. Several classes of approach to the mapping problem have emerged in the last decade or so which we examine in turn. Because Sorace's Auxiliary Selection Hierarchy was designed to solve the Romance problem it is discussed in much greater details than its competitors.

⁴Among less studied Romance languages Occitan, Piedmontese, Sardinian, and Catalan spoken outside of Barcelona maintain two auxiliaries.

2.1. The projectionist approach

Levin & Rappaport Hovav are the leaders of what has become known as the ‘projectionist’ approach (see Sorace, in press, for discussion). They maintain that the lexical semantics of a verb *deterministically* specifies the hierarchical classification of its arguments, and that this in turn produces the syntactic behavior associated with unaccusativity or unergativity (Hale & Keyser 1986, 1993; Levin & Rappaport Hovav 1992, 1994, 1995, in press, among others).

The most comprehensive account of this type is Levin & Rappaport Hovav’s (1995) model based on English, in which a small number of linking rules map lexical semantic components of verb meaning (such as ‘immediate cause’, ‘directed change’ and ‘existence’) onto positions at argument structure. Within this approach, verbs with variable behavior have different meanings, and therefore different lexical semantic representations, each with its own regular argument structure realization.

Confronted with the complexities of Romance auxiliary selection, the projectionist approach faces the challenge of accounting for variation without resorting to systematic duplication in the lexicon.

2.2. The constructional approach

Alternatives to the projectionist view have gained ground in recent years. Collectively they can be identified as ‘constructional’ approaches (Arad 1998a; Borer 1994, 1998; Cummins 1996; van Hout 1996, 2000; McClure 1995; etc.). These models regard unaccusativity and unergativity not as lexical properties of verbs, but rather as clusters of properties derived from the syntactic configurations in which verbs appear, which in turn determine their aspectual interpretation. Since the lexical entry of verbs does not contain any specification of whether an argument is internal or external, any verb is free to enter into more than one syntactic configuration and consequently to receive multiple aspectual interpretations.

Unlike the projectionist model, the constructional approach predicts flexibility in the syntactic realization of arguments, but at the price of overgeneration. Constraints on overgeneration therefore have to be present at other levels (e.g. Cummins 1996, van Hout 1996). The constructional model is also a direct challenge to the Universal Alignment Hypothesis (UAH, Perlmutter 1978) and the Uniformity of Theta Assignment Hypothesis (UTAH, Baker 1988) according to which the mapping between thematic relations (agent, patient, etc.) and underlying syntactic configuration is invariable and universal.

2.3. The Auxiliary Selection Hierarchy (Sorace 2000)

The starting point of Sorace’s Auxiliary Selection Hierarchy (ASH) is a set of facts which characterize split intransitivity in a number of Western European languages⁵: (a) across languages, some verbs tend to show consistent unaccusative/unergative behavior, whereas others do not; (b) within languages, some verbs are invariably unaccusative/unergative regardless of context, whereas others exhibit variation. Sorace (et al.)’s studies provide supporting evidence for these generalizations, mostly based on experiments testing native speakers’ intuitions about auxiliary selection (perhaps the best known diagnostic of unaccusativity) in various languages that have a choice of perfective auxiliaries (such as Dutch, German, Italian, and Paduan). In all these languages -- and to some extent in French, unaccusative verbs tend to select the counterpart of *être* and unergative verbs tend to select the counterpart of *avoir*. However, native intuitions on

⁵ Sorace et al. concentrate on all languages making use of two alternating auxiliaries, including Dutch and German. We by and large omit evidence from Germanic languages in the present discussion.

auxiliaries are categorical and consistent for certain types of verb, but much less determinate for other types. For example, native speakers have a very strong preference for counterparts of *essere* with change of location verbs, but express a weaker preference for the same auxiliary (or have no *preference* at all) with stative verbs.

Sorace's 2000 account of these systematic differences within the syntactic classes of unaccusative and unergative verbs is that there exists a hierarchy which distinguishes 'core' unaccusative and unergative monadic verbs from progressively more 'peripheral' verbs. This hierarchy, which is based on (potentially universal) aspectual parameters, places the notion of *telic dynamic change* at the core of unaccusativity and that of *agentive non-motional activity* at the core of unergativity. The extremes of the hierarchy thus consist of maximally distinct core verbs – verbs of change of location (e.g. *arrivare/ arriver*) and verbs of agentive non-motional activity (e.g. *lavorare/travailler*)- which consistently display the greatest degree of consistency in auxiliary selection. In contrast, peripheral verb types between the extremes are susceptible to variation. The overall hierarchy is represented in (5).

- (5) The Auxiliary Selection Hierarchy
- | | |
|--------------------------------------|--|
| CHANGE OF LOCATION | Selects <i>essere/être</i> (least variation) |
| CHANGE OF STATE | |
| CONTINUATION OF A PRE-EXISTING STATE | |
| EXISTENCE OF STATE | |
| UNCONTROLLED PROCESS | |
| CONTROLLED PROCESSES (MOTIONAL) | |
| CONTROLLED PROCESS (NON MOTIONAL) | Selects <i>avere/avoir</i> (least variation) |

Verbs at the extremes of the hierarchy ('core' verbs) are change of location verbs at the *essere/être* end and non-motional process verbs at the *avere/avoir* end. They are characterized by the following properties:

- categorical/consistent syntactic behaviour across languages
- consistent behaviour within individual languages; insensitivity to compositional properties of the predicate
- determinacy of native speakers' intuitions
- primacy in acquisition
- diachronic stability

Let us examine some evidence in support of these generalizations, focusing in particular on the first three (for a full discussion see Sorace 2000, in press).

2.3.1 Core verbs

Core verbs tend to be categorical and consistent in auxiliary selection across languages/language varieties. This is exemplified in (6)-(7), which show that the auxiliary selected by change of location verbs in the present perfect is *essere/être*, and that selected by non-motional process verbs is *avere/avoir*, in all the languages that have a choice of auxiliaries.

- | | | |
|-----|--|-----------|
| (6) | a. Paolo è venuto / *ha venuto in ritardo. | ITALIAN |
| | b. Ma soeur est arrivée / *a arrivé hier. | FRENCH |
| | c. Maria est / *at arrivata a domo. | SARDINIAN |

- (7) a. I delegati hanno parlato / *sono parlati tutto il giorno.
 b. Les délégués ont parlé / *sont parlés toute la nuit.
 c. Los profesores ont faeddadu / *son faeddados totu su die.

Core verbs display consistent behaviour within individual languages; in particular, they tend to select the same auxiliary regardless of the contribution of other aspectual or thematic elements in the sentence in which they appear. So in (8) *arrivare* selects *essere* even though the predicate is atelic; the verb *cadere* ‘tomber’ in (9a) selects *essere* despite the fact that the event described by the verb clearly denotes intentionality, just as it does when the event is clearly unintentional (9b). Similarly, the verb *lavorare* selects *avere* regardless of the telicity of the predicate, as in (10). Similar remarks apply to their French counterparts.

- (8) a. Sono arrivate lamentele in continuazione. *atelic predicate*
Des plaintes sont arrivées continuellement.
 b. Sono apparse imitazioni per anni.
Des imitations sont apparues depuis des années.
- (9) a. Maria è caduta apposta per non andare a lavorare. *agentive*
Maria est tombée volontairement pour ne pas aller travailler.
 b. Il vaso è caduto dal tavolo. *non-agentive*
Le vase est tombé de la table.
- (10) I poliziotti hanno lavorato fino all'alba. *telic predicate*
Les policiers ont travaillé jusqu'à l'aube.

The data from studies on other languages (e.g. Paduan; see Cennamo & Sorace 1999) confirm that, in general, inherent lexical aspect determines auxiliary choice with core verbs, whereas compositional aspect (i.e. the event structure of the whole predicate) affects auxiliary selection with peripheral verbs. These findings support the conclusion that auxiliary selection with core verb types is a *lexical* phenomenon and is relatively insensitive to compositional factors. The degree of sensitivity to these factors increases for non-core verb types as they get more distant from the core.⁶

Native speakers of languages with auxiliary selection have clear and determinate intuitions on core verbs; they categorically accept sentences in which these verbs appear with the ‘correct’ auxiliary and reject those in which they appear with the ‘wrong’ auxiliary. Evidence of differential judgments is particularly strong for Italian (Sorace 1993a, 1993b, 1995a; Bard, Robertson and Sorace 1996 for experimental evidence). Furthermore, descriptive studies of Italian (e.g. Berruto 1987; Rohlf's 1969) indicate that there is more variation in auxiliary usage for peripheral verbs than for core verbs, which is consistent with the predictions of the hierarchy.

⁶ A reviewer comments that “...ce texte illustre diverses propriétés supposées par des listes de verbes isolés de tout contexte. Mais on sait bien qu’un même verbe peut avoir des propriétés sémantiques différentes selon les contextes. Il me semble que les seuls exemples probants doivent inclure des v. contextualisés, au sein de phrases complètes.” The point is that not all verbs change syntactic behaviour according to context: core verbs select the same auxiliary regardless of context, whereas non-core verbs are sensitive to factors contributed by the sentence in which the verb appears.

The ASH is further supported by developmental data. Auxiliary selection with core verbs is acquired early both in first and second language acquisition. Data from the acquisition of Italian as a non-native language show that the syntactic properties of auxiliary selection are acquired first with core verbs and then are gradually extended to more peripheral verb types (Sorace 1993a, 1995a). Moreover, Italian learners of French find it more difficult to acquire *avoir* as the auxiliary for verbs closer to the core than for peripheral verbs (Sorace 1993b, 1995b), and do not completely overcome this difficulty even at the advanced level. These developmental regularities can be explained by assuming that the acquisition of the syntax of unaccusatives crucially depends on the internalization of two elements: one is the hierarchical ordering of meaning components, and the other is the lexicon-syntax mapping system instantiated by the target language.

A cursory look at the early acquisition of French verbs by young Grégoire (Champaud Corpus, available from the CHILDES Database, McWhinney and Snow 1985) confirms the general findings. In his earliest 4 files (Age: 1;9-1;10) the only intransitive verbs Grégoire uses are unaccusative; he produces passé composé forms with the correct auxiliary (E) with verbs of location first (specifically *tomber*, *monter*, *partir*, in this order). The first unergative verbs to show up in the passé composé (A) are controlled motional processes *bouger* ‘move’ (2;0; file # 5) and *rouler* ‘move for a car’ (2;3; file #7).

Finally, core verbs tend to be diachronically stable. There is evidence from studies on the historical development of auxiliaries in Romance (e.g. Benzing 1931, Tuttle 1986) showing that core verb types tend to be the last to be affected by the replacement of auxiliaries derived from Lat. *esse* with those derived from *habere* whereas peripheral verb types are the most vulnerable to the change (see further discussion in section 4). A recent study by Cennamo (1999) suggests that the development of reflexives *se/sibi* in Late Latin as markers of split intransitivity followed a path largely consistent with the unaccusative/unergative hierarchies.

2.3.2 Intermediate (non-core) verbs

While core verbs tend to be categorical in their auxiliary selection behaviour, non-core verbs show increasing variation. The greater flexibility of these verbs is illustrated here with Italian examples (for cross-linguistic evidence see Sorace 2000).

A class that exhibits regular alternations is that of verbs denoting ‘indefinite change’ in a particular direction (e.g. *monter*), change of condition (e.g. *faner*), appearance (e.g. *apparaître*). *Essere* is strongly preferred by these verbs in Italian, but *avere* is not completely rejected (as in (11b,c)).⁷ The strength of preferences is a function of the (+/-) inherent telicity of the verb: as the Italian sentences in (11)-(12) show, many of these verbs allow two readings, one telic and one atelic, which may be disambiguated by the context.

- (11) a. La popolarità del governo è scesa / ha sceso notevolmente.
La popularité du gouvernement a (visiblement) monté.

⁷ The diacritics in the examples, here and throughout, refer to the degrees of unacceptability of a sentence in terms of strength of preference that native speakers have for one auxiliary over the other. They do not refer to the normative acceptability of sentences in terms of prescriptive grammars. So a sentence marked as “?” may be ungrammatical according to a prescriptive grammar of Italian, but is judged by native speakers as more acceptable than a sentence marked with “*”.

For a discussion on the quantification of relative judgments of linguistic acceptability, and experimental results, see Bard, Robertson and Sorace (1996).

- b. Mia figlia è cresciuta / ?*ha cresciuto molto quest'anno
Ma fille a (beaucoup) grandi (cette année).
- c. Lo spettro è apparso / ?*ha apparso nel castello.
Le fantôme est apparu (dans le château).

- (12) a. La pianta è / ha fiorita due volte quest'anno
La plante a fleuri deux fois cette année.
- b. I pomodori sono marciti /hanno marcito al sole
Les tomates ont pourri au soleil.
- c. Il girasole è / ha finalmente germogliato.
Le tournesol a enfin fleuri.

The gloss reveals that their French counterparts select *avoir* in the same contexts, with two exceptions: *monter* (and *descendre*) select *être* or *avoir* for most speakers depending on the agentivity of its subject. For some speakers either auxiliary is possible in these contexts with a subtle change in meaning. *Etre* emphasizes the fact that the goal is reached; *avoir* conveys more of the difficulty during the ascension and somewhat unexpected success of reaching the summit.

Apparaître typically selects *être* but it is not uncommon to see it with *avoir* (14a). In fact, the class of verbs of appearance is the class that displays the most variation in French. Yet, the change in auxiliary does not seem to correlate with a change in meaning for this class.

- (13) a. Pierre est/a monté jusqu'au sommet.
 b. La température a/est monté(e) pendant la journée.
- (14) a. C'est ici que le petit prince a apparu sur terre. (Saint-Exupéry)
 b. Ambrose Pierce a/est disparu en 1913. (cited by Cummins 1996:39)
 c. Le dernier livre de Chomsky a/est paru en 1995.
 d. Eve a/est passé(e) de la chambre à coucher à la salle de bain. (Ruwet 1988)

Verbs denoting continuation of a pre-existing condition (e.g. *rester*) are less determinate in Italian: *essere* is preferred but *avere* is not ruled out categorically, and is in fact accepted with many of these verbs. The agentivity of the subject correlates with the degree of acceptance of *avere* (see the contrast in (15b,c and 15e,f), suggesting that these verbs, unlike core verbs, are sensitive to the feature contributed at the predicate level.

- (15) a. Ancora una volta sono / ?ho rimasto solo.
Je suis resté seul une fois de plus.
- b. La discussione è / ?ha durato a lungo. *non agentive*
La discussion a duré pendant longtemps.
- c. Il preside è / ha durato in carica tre mesi. *agentive*
Le doyen est resté (lit. a duré) trois mois dans son poste.
- d. I miei genitori sono / ?hanno sopravvissuto alla guerra.
Mes parents ont survécu à la guerre.
- e. Questa atteggiamento è / ?ha persistito per troppo tempo.

- Cette attitude a persisté pendant trop longtemps.*
 f. Gianni *è / ha persistito nella sua ostinazione.
Jean a persisté dans son obstination.

The French counterparts to (15) select *avoir* with one exception: *rester*. In fact, all remaining verb classes discussed below invariably select *avoir*, in sharp contrast to the variation displayed in Italian.

Stative verbs (including both verbs of physical and abstract existence and psychological verbs) are the most indeterminate in Italian, consistent with the findings from other studies. Auxiliary alternations (some restricted to regional or non-standard varieties) are shown in (16), (17).

- (16) a. I primi mammiferi sono esistiti / ??hanno esistito molti milioni di anni fa.
Les premiers mamifères ont existé il ya a des millions d'années.
 b. Lo zucchero non è bastato / ??ha bastato per fare la torta.
Le sucre n'a pas/a suffit pour faire le gateau.
 c. Il film è sembrato / ??ha sembrato troppo violento a tutti gli spettatori.
Le film a semblé trop violent à tous les spectateurs.
- (17) a. Questo palazzo ha appartenuto / è appartenuto alla mia famiglia.
Cet hotel particulier a appartenu à ma famille.
 b. I viveri sono scarseggiati / hanno scarseggiato tra i terremotati.
Les premières nécessités ont beaucoup diminué parmi les victimes du tremblement de terre.
 c. Il partito è / ?ha sussistito senza i contributi dei politici.
Le parti a subsisté sans contributions des politiciens.
 d. La sua dichiarazione non è servita / ?ha servito a nulla
Sa déclaration n'a servi à rien.

The use of *avere* induces an agentive reading, whereas *essere* does not. So in (18), the verb *mancare* is understood as intentional in (b) and non-intentional in (a).

- (18) a. Il soldato è mancato all'appello. *non-agentive*
Le soldat a manqué à l'appel.
 b. Il presidente ha mancato all'appuntamento. *agentive*
Le président a manqué au rendez-vous.

Peripheral verbs closer to the 'unergative' core include verbs denoting motional processes (e.g. *nager*). Native intuitions are less determinate: *avere* is preferred but *essere* is not completely rejected, as shown in (19), (20).⁸

⁸ A reviewer argues that "...J'imagine que 'sauter' doit être rangé dans la même classe que 'nager', étiqueté (p. 14) 'controlled process'. Pourtant dans *Ce bruit m'a fait sauter en l'air*, 'sauter' n'est pas 'contrôlé' du tout." The examples above show that verbs like *saltare* in Italian display a different syntactic behaviour according to whether the subject is agentive or not. *Sauter en l'air* in this context means *sursauter*; it belongs to the subclass of involuntary actions along with *trembler*, etc.

- (19) I bambini hanno saltato / ?*sono saltati in giardino tutto il pomeriggio.
Les enfants ont sauté dans le jardin tout l'après-midi.
- (20) a. Michela ha corso / ? è corsa più velocemente di tutti.
Michèle a couru plus vite que n'importe qui.
 b. Paola ha nuotato / ?*è nuotata fino all'altra sponda.
Paola a nagé jusqu'à l'autre rive.

The effect of agentivity on auxiliary selection are shown in (21), where *avere* is the preferred auxiliary with a human subject, *essere* is the preferred one with an inanimate subject.

- (21) Il pilota ha / ?è atterrato sulla pista di emergenza.
Le pilote a atterri sur la piste d'urgence.
 L'elicottero è / ?ha atterrato sul tetto del grattacielo
L'hélicoptère a atterri sur le toit du gratte-ciel.

Next, the hierarchy includes various types of uncontrolled processes (such as bodily functions (e.g. *suer*), involuntary reaction (e.g. *trembler*) and emission (e.g. *cliqueter*). (for definitions of controlled vs. uncontrolled processes, see Levin & Rappaport Hovav 1995). These verbs are internally caused but tend to be non-volitional.

- (22) a. Il convincimento politico ha tentennato / ? è tentennato anche nei più anziani.
Les convictions politiques ont vacillé même chez les personnes les plus âgées.
 b. Paolo ha tentennato / *è tentennato a lungo prima di prendere una decisione
Paul a vacillé pendant longtemps avant de prendre une decision.
 c. La terra ha tremato / ?e' tremata.
La terre a tremblé.
 d. Mario ha tremato / *?è tremato dallo spavento.
Mario a tremblé de peur.
 e. Il mendicante ha rabbrivido / è rabbrivido dal freddo.
Le mendiant a tremblé de froid.
- (23) a. L'innesto non è attecchito / ha attecchito.
La transplantation n'a pas marché (lit. pris).
 b. L'acqua ha / ?è scarseggiata.
L'eau s'est faite rare.
 c. La bicicletta ha / ?è sbandata senza preavviso.
La bicyclette a soudain dérapé.
- (24) a. La sveglia ha / ?è squillata.
Le réveille-matin a sonné.
 b. L'eco ha / è risuonato.
L'écho a résonné.
 c. Il tuono ha / è rimbombato.
Le tonnerre a grondé.

To sum up, auxiliary selection in Italian displays a gradient sensitivity to the aspectual and lexical-semantic properties of individual verbs, which is uniquely captured by the ASH. Telicity is the main factor that separates verbs which select *essere* from verbs which select *avere*. Agentivity is a secondary factor that further differentiates among verbs selecting *avere*. Core verbs at the extremes of the hierarchy tend to select the same auxiliary categorically both within and across languages; verbs between the extremes are less specified with respect to telicity and agentivity, and it is among these verbs that most cases of ‘unaccusative mismatches’ are found.

French too displays some gradient sensitivity to the aspectual and lexical-semantic properties of individual verbs, with one significant difference. The core unaccusative verbs are a subset of their Italian counterparts and the resulting cut-off point between intransitive verbs selecting *être* and those selecting *avoir* is much higher in the hierarchy, as shown in Table 1 (* indicates variation as discussed above). The high cut-off point in French entails that variation and instability occurs closer to the top, i.e. among change of state verbs. As many verb classes from the bottom up have already switched to *avoir*, there is less variation and gradience than in Italian. Viewed from the perspective of the history of Romance languages, French appears to be relatively close to eliminating *être* as an alternating auxiliary.

Auxiliary	selected	Verb classes
French	Italian	
E	E	Change of location: <i>arrivare/arriver, venire/venire, etc.</i>
E	E	Change of state
E*	E	a. Change of condition: <i>morire/mourir, etc.</i>
E*	E	b. Appearance: <i>apparire/apparaître, etc.</i>
E*	E	c. Indefinite change in a particular direction:
A	E*	<i>salire/monter, scendere/descendre</i> <i>appassire/faner, peggiorare/empirer, etc.</i>
A	E*	Continuation of pre-existing state: <i>durare/durer, etc.</i>
A	E	Existence of state:
A	E*	a. <i>essere/être</i>
		b. <i>esistere/exister, bastare/suffire à</i>
A	A*	Uncontrolled processes
A	A	a. Emission: <i>risuonare/résonner, etc.</i>
A	A*	b. Bodily functions: <i>sudare/suer, etc.</i>
		c. Involuntary actions: <i>tremare, trembler, etc.</i>
A	A*	Motional controlled processes: <i>nuotare/nager, etc.</i>
A	A	Non-motional controlled processes: <i>lavorare/travailler, etc.</i>

Table 1: Auxiliary selection in French and Italian

The ASH challenges existing theories of the syntax-lexicon interface. It cannot be accommodated within a projectionist account because it would entail too much duplication in the lexicon, and it does not fit a constructional account either because the amount of variation is related to specific verb types. At the same time, it has features of both accounts: like the projectionist approach, it assumes a systematic relation between the syntax of auxiliary selection

and the semantics of individual verbs; like the constructional approach, it allows for verbs (though not all) to have multiple syntactic projections.

2.4. An Optimality-Theoretic approach

Establishing that cross-linguistic variation in auxiliary selection is best understood in terms of a hierarchy of lexico-semantic verb classes still leaves important theoretical questions unanswered. The ASH is a generalization which reveals different cut-off points for the unergative/unaccusative distinction in French and Italian. It does not automatically translate into a set of mapping rules referring to the verb classes in Table 1, for two main reasons. A single verb class may not map onto a single auxiliary – as is the case for change of state verbs in French. More important still is the fact that these classes do not by themselves reveal what is common to two verb classes selecting one and the same auxiliary.

We propose that the ASH arises from an optimization-based view of grammar whereby the verb classes listed in Table 1 and the hierarchy itself *emerge* from a competition among soft constraints on mapping a given lexico-semantic or aspectual feature (e.g., telicity, control, etc.) onto a syntactic configuration.

We borrow the features themselves from the existing literature on split intransitivity and propose that a set of five binary features is sufficient to exhaustively describe classes and subclasses in Table 1: +/-telic, +/-motion, +/-directed change, +/- protagonist control (or agentivity), +/- state (see Table 2 in section 4). The mapping rules or constraints that employ these features, however, are novel.

We know that there is a universal tendency for the argument of a verb bearing features like +telic, +motion, +directed change not to map onto an unergative configuration. We can therefore specify a set of constraints against pairing each feature of the verb with its argument in subject position (*subject/telic, *subject/directed change, etc.) and evaluate both auxiliaries against it. Since selecting *avoir* correlates with an unergative configuration, the argument of a +telic, +motion, +directed change verb like *arriver* would violate all these constraints. Note that selecting *être*, which correlates with an unaccusative configuration, would satisfy them all. The fact that not all verbs select *être* means that the above constraints against pairing any feature with an unergative configuration are in conflict with at least one constraint penalizing an unaccusative configuration. The choice of auxiliary depends on the relative priority of that constraint -- whether it's more or less important than the constraints *subject/telic, *subject/directed change, etc. See section 4 for an analysis which implements these ideas.

The key idea is that auxiliary selection is the outcome of a competition between unergative (subject) and unaccusative (object) configurations. The most well-formed configuration wins, as determined by soft or violable mapping constraints. It is not fatal to violate one or more constraints as long as this allows a higher priority constraint to be satisfied.

In Optimality Theory cross-linguistic variation results from re-ranking constraints. As we shall see in section 4, only one constraint needs to be re-ranked to account for both French and Italian patterns of auxiliary selection. The analysis also makes a number of predictions. In fact, a complete typology of auxiliary selection systems is formally predicted, and empirically confirmed.

3. Syntactic tests for unaccusativity in French

We first return to the issue of the limited evidence that auxiliary selection provides for an unergative/unaccusative distinction in French. Because this distinction has far reaching consequences for the study of French syntax in general, it is imperative to re-evaluate the main syntactic tests proposed in the literature. Obviously the issue is also of paramount importance for other Romance languages (e.g. Spanish, Catalan, Portuguese, Romanian) which do not avail themselves of alternating auxiliaries.

We proceed with examining the status of widely accepted syntactic tests in French, namely impersonal constructions, the distribution of partitive *en*, and so-called unaccusative inversion. In section 3.2 we probe the lexico-semantic basis of auxiliary selection in French and the status of reflexive verbs (which we have ignored so far). In section 3.3 we argue that the only reliable independent evidence for unaccusativity in French is provided by the participial constructions exemplified in (25). Where appropriate we present parallel evidence gathered from the existing literature on other Romance languages.

- (25) a. La personne morte hier soir sera enterrée demain matin.
b. On croyait son père mort d'une crise cardiaque.
c. Le père mort, les enfants vendirent la propriété familiale.
d. Mort d'une crise cardiaque à 20 ans, son frère n'avait pu reprendre la direction de la ferme familiale.

3.1. Unreliable syntactic tests

Among the most frequently invoked syntactic tests in the context of unaccusativity in French are (active) impersonal constructions and the distribution of partitive *en*. For example, the syntactic literature is replete with claims that impersonal constructions group together passive and unaccusative verbs while they exclude unergative and transitive verbs, based on examples like (26) (Cinque 1990, Labelle 1992, Marandin 2001, Pollock 1986, Ruwet 1989, etc.). Similar claims have been made for *en*.

- (26) a. Il a été arrêté plusieurs terroristes à la frontière.
b. Il est arrivé trois personnes.
c. *Il a travaillé trois personnes.
d. *Il a mangé de la glace trois enfants.

3.1.1. Impersonal constructions (ICs)

Despite numerous claims to the contrary ICs do not syntactically distinguish two subclasses of intransitives in French. To begin with, a significant number of well-formed examples of ICs (with and without partitive *en*) have been reported which involve verbs classified as unergative on the basis of their ungrammaticality in participial constructions, their selection of *avoir* in the perfect tense, and their low rank on the ASH (Bouchard 1995, Cummins 1996, and Legendre 1989).

- (27) a. Il travaille des milliers d'ouvriers dans cette usine.
b. Pendant des siècles il a régné des tyrans sur cette petite île de l'Atlantique.
c. Il a sauté beaucoup d'otages par la fenêtre.
d. Il a éternué beaucoup d'enfants pendant le concert.

The claim that there are by and large no lexical restrictions on intransitive verbs appearing in ICs is echoed in two large studies of ICs. One is the corpus analysis of Hériau (1980), which forms the basis of the discussion in Cummins (1996). This corpus includes well-formed ICs of 273 monadic verbs, all drawn from Modern French literature of the XIXth and mostly XXth centuries. Hériau points out that the verbs listed below can hardly be subsumed under the existence and appearance classes which are traditionally held to be the verb classes that ICs are restricted to. Yet, they are attested in his corpus: *saigner, rêvasser, répondre, baïller, pleurer, pâlir, crisser, grisonner, frissonner, frémir, baver, poudroyer, palpiter*. These are all unergative in French.⁹ Additional support is provided in Rivière's 1981 analysis of an extensive corpus of elicitations from a large sample of native speakers. A number of examples in this section are drawn from these two corpora.

In the generative literature, the occasional recognition that unergative verbs are not excluded in ICs is typically accompanied of two comments: (a) Only a few unergative verbs display this exceptional behavior, i.e. the pattern is non-productive, (b) These unergative verbs display properties in ICs that are not found in unaccusative verbs. Compared with unaccusatives, unergatives are said to have an existential reading, to be stylistically marked, and less acceptable (e.g. Labelle 1992:381). At first glance, the first restriction appears to be confirmed by the fact that verbs of existence and continuation of state -- which fail all unaccusativity tests -- are extremely common in ICs.

- (28) a. Il est des pays où les gens sont heureux.
 b. Il persiste de nombreuses rumeurs sur le nouveau président.
 c. Il ne demeure aucun doute sur sa culpabilité.

Yet, according to Lambrecht (1994), the function of ICs is not primarily that of asserting the existence of the referent of the postverbal NP. Rather, ICs give a presentational value to a previously unidentifiable entity, as shown by the indefinite restriction on the postverbal NP and the fact that all examples can be paraphrased as presentational clefts [*il y a ... qui*] as in *Il y a du lait qui aigrît dans le frigo*. One may further tease apart presentational ICs proper (often called existential) which serve to introduce a new, not yet pragmatically available entity in the world of discourse to make it available for reference in subsequent discourse from event-reporting ICs which introduce a new referent as an element in some unexpected or surprising piece of information.¹⁰ Thus, examples in (30) – in contrast with (29) – merely introduce a new event; they are all natural answers to: *Que se passe-t-il?* 'What is happening?' Moreover, (29) – in contrast with (30) -- have a generic or habitual reading which explains their affinity with the present and past imperfective tense.

- (29) Presentational:
 a. Il meurt beaucoup d'enfants dans le Tiers-Monde.
 b. Il aigrissait deux litres de lait dans le frigo.
 c. Il gisait un homme sur le trottoir.
 d. Il bourdonnait des milliers d'insectes autour de nous.

⁹ And so are verbs of existence of state. See evidence in section 3.2. and 3.3.

¹⁰Lambrecht (1988:150) notes that it is not always possible to define an utterance as belonging to one rather than to the other type.

- (30) Event-reporting:
- a. Il sort des enfants de partout.
 - b. Il brille mille étoiles dans le ciel ce soir.
 - c. Il dort un chat au coin du feu.
 - d. Il a échappé une bourde au président.
 - e. D’ici peu il voyagera de nombreux millionnaires dans l’espace
 - f. Il est resté beaucoup de vin qu’il faudra maintenant finir.

We find examples of semantically varied verbs in both types of ICs, including directed motion (30a), change of state (29a-b), spatial configuration (29c), emission (29d, 30b), etc. Clearly, these verbs do not correlate with a particular class on the ASH, nor with a particular aspectual property. Some are telic, others are atelic. (29a, 30a) involve unaccusative verbs, (29c,d; 30b-f) unergative verbs (on the basis of auxiliary selection and their behavior in participial constructions). In sum, there is no subclass of ICs that strictly correlates with unaccusative verbs.

Many linguists have pointed out that unergative ICs often sound better with a locative or temporal adjunct. In some cases an adjunct is even required. As it turns out, this constraint does not distinguish unergative from unaccusative ICs either. (31a-e) demonstrate that both syntactic classes can exhibit a strong preference for (or requirement of) an adjunct. The reader may verify that this constraint (whatever its exact nature may be) cross-cuts the presentational vs. event-reporting dimension.

- (31)
- a. Il paraît des nouvelles contradictoires tous les jours / *Il paraît des nouvelles.
 - b. En 1970 il roulait encore quelque trams dans Paris /?*Il roulait quelques trams.
 - c. Il rôtit deux oies dans le four / ?*Il rôtit deux oies.
 - d. Hier à Bobino il chantait un artiste espagnol inconnu en France / ?*Il chantait un artiste espagnol.
 - e. Chaque jour il change des milliers de personnes à la station Châtelet / *Il change des milliers de personnes.

We suspect that there are a number of factors behind the obligatoriness of or strong preference for adjuncts in (31). With alternating (transitive/intransitive) verbs like *changer*, adjuncts may well be necessary to disambiguate the structure (31e). According to Lambrecht (1994) a main function of ICs is to ‘demote’ the agentivity of the referent and ‘promote’ the presentational function of the structure. Further specification of an event in terms of the location or temporality of the universe of discourse (e.g. *chanter à Bobino*) can be understood as serving that main function. It spreads the focus over properties of the event that are typically backgrounded in canonical sentences rather than having to concentrate it on the referent of the postverbal NP in the absence of an adjunct.

That an existential interpretation is also enhanced by a specification of the location or temporality of the universe of discourse is not surprising either. The locative or temporal PP anchors the state of affairs in the universe of discourse, adding a dimension beyond its mere existence. However this account does not straightforwardly account for the fact that the locative clitic pronoun *y* is highly favored in ICs. The question is: why are the ICs in (32) more felicitous with *y* than with their non-pronominal counterparts (which themselves are much more felicitous

than their bare counterparts) if both serve to anchor the state of affairs in the universe of discourse?

- (32) a. Il y circule des voitures. (y = dans les rues pavées de la ville)
b. Il y pousse des fraisiers. (y = le long du sentier)
c. L'autre jour je suis allé à la rivière, il y pêchait des dizaines de personnes.
d. (?*L'autre jour il pêchait des dizaines de personnes dans la rivière)

Following Lambrecht (1994) we tie the preference for *y* to the informational status of ICs. ICs introduce new information. This is particularly clear from the fact that contrastive focus *ne...que* 'only' or *surtout* 'above all' always yields an 'improved' IC:

- (33) a. Dans les rues il ne rôdait que des créatures de rêve.
b. Il y pousse surtout des fraisiers.

Lambrecht relates the *y* preference to a cognitive constraint which limits the number of inactive referents that can be introduced at a time to one. It is well-known that clitic pronouns encode old information. Expressing a locative adjunct as *y* allows to satisfy the cognitive constraint without losing the anchoring function of the locative. As a consequence, *y* does not detract from the focus on the existence of a particular state of affairs.

Summing up our discussion, we have provided empirical evidence that there is no unaccusative restriction on French ICs in general. Nor is there such a restriction on subclasses of French ICs as defined by their discourse function. All the well-known properties pertaining to the postverbal elements in the structure are tied to their presentational function.

3.1.2. Partitive *en* and unaccusative inversion

Marandin (2001) argues that inversion in non-*wh* contexts is restricted to unaccusative verbs, based on the possibility of *en* (in appropriate contexts of referring to old information) and the failure of some intransitive verbs to appear in the construction.

- (34) a. Je voudrais que vienne Marie.
b. Alors sont entrés deux hommes.
c. Quelques minutes plus tard en arrivèrent deux autres.
d. Paul craignait que n'en viennent plus d'autres.

From our previous discussion we know that *en* is ubiquitous in impersonal constructions. Not surprisingly, the partitive clitic pronoun *en* enhances an IC just like *y* does. In fact, most spontaneous illicitations of ICs start as *Il en V ...* and many examples in Hériau (1980) involve *en* rather than a full postverbal NP when it is the quantifier which has the status of new information. Given that ICs impose no restrictions on their intransitive verbs, the presence of *en* cannot be tied to a particular type of verb, unaccusative or otherwise.

Based on an observation by Abeillé (1997) that object NPs are the only constituents which trigger *en* and take the form *de N* in negative contexts (see 35b), Marandin argues that *en* reveals the function (object) rather than the position (postverbal) of its referential source. If Marandin is right, then all verbs which appear in ICs are unaccusative because *en* is possible with all. Yet, this conclusion cannot be correct because some verbs in (35) –in particular

bourdonner, voyager -- are among the lowest on the ASH and they do not pattern syntactically like verbs at the top of the hierarchy, both with respect to auxiliary selection and appearance in PCs.

- (35) a. Il en meurt beaucoup dans le Tiers-Monde.
b. Il n'en rôtit que deux dans le four.
c. Il en gisait un sur le trottoir.
d. Il en bourdonnait des milliers autour de nous.
e. D'ici peu il en voyagera de nombreux dans l'espace.

The distribution of Italian *ne* is significantly more restricted than that of French *en*. In the standard language, the well-known pattern associated with unaccusativity obtains: *ne* occurs with transitive, passive, and unaccusative verbs; unergative verbs do not allow *ne*, as shown in (36).

- (36) a. Gianni ne ha mangiato tre (di mele).
Gianni en a mangé trois (pommes).
b. Ne sono stati venduti molti (di appartamenti).
Beaucoup en ont été vendus (d'appartements).
c. Ne sono arrivati trenta (di studenti).
Trente en sont arrivés (étudiants).
d. *Ne hanno lavorato molti (di impiegati).
**Beaucoup en ont travaillé (d'employés).*

Yet, the comparison is not as simple as (35)-(36) might first suggest because (36d) is equally ungrammatical in Italian and French. The correct generalization about partitive *en* is this: *en* does not distinguish unaccusative from unergative verbs. Rather *en* provides evidence for the structure of ICs themselves, independently of the lexical verb they may contain. To the best of our knowledge, Cummins (1996) is the first one to have zeroed in on the necessity of distinguishing the unaccusative structure of ICs (the post-verbal NP occupies a position within V') and the distribution of the verbs that occur in ICs.

Marandin further claims that among intransitive verbs, only verbs denoting a 'non-Actor' relation may appear in unaccusative inversion. He defines 'Actor' in terms of immediate cause of an eventuality (Levin & Rappaport Hovav 1995:135) which covers both internally and externally caused events. The following ungrammatical examples of agentive verbs are offered in support of his claim.

- (37) a. *Alors passa à l'action le commando.
b. *Alors commencèrent à travailler les candidates.

We reject this claim on the basis of two observations. First, the verbal structures in (37) are complex. *Passer à l'action* is an idiomatic expression while *commencer à travailler* is an aspectual construction. The length/heaviness of the verbal string relative to that of the subject affects the overall acceptability of the sentence. Compare (37) with examples in which the subject NP is lengthened (38a) or the unergative verb is shortened (38b,c).

- (38) a. ?Alors se mirent à rire trois joyeux lurons.
 b. Ainsi parlait Zarathoustra.
 c. Alors sonna le glas.

Levin & Rappaport Hovav (1995) cite Italian *sorridere* ‘sourire’, *scherzare* ‘blaguer’, *chiaccherare* ‘bavarder’, etc.; English *cough*, *shiver*, *sleep*, *snore*, etc., verbs of emission as well as verbs of spatial configuration as examples of the immediate cause of eventuality subclass of unergative verbs. Note that (38) squarely fall under Levin & Rappaport Hovav’s subclass.

Second, the type of inversion exemplified in (38) is a highly ‘recherché’ construction that is found almost exclusively in literary French. A quick look at Le Bidois’s study of inversion in 20th Century prose yields many examples of such inversion after a temporal adverbial. Many involve unaccusative verbs denoting motion or appearance but a surprising number of examples involve unergative verbs (39) and even some transitive verbs (40). For additional examples in both main and non-*wh* complement clauses see Le Bidois (1950:132-37).

- (39) a. Parfois retentissait la sirène comme un appel déchirant de Walkyrie. (Proust)
 b. Déjà régnait en ce matin de juillet une chaleur sulfureuse. (Desqueyroux)
 d. Déjà depuis longtemps sommeillait ma tête lassée. (Gide)
 e. De nouveau soufflait le grand vent du premier soir. (Fournier)
 f. Enfin glissa lentement, entre les rideaux, la face... d’un long pierrot. (Fournier)
- (40) a. Alors m’envahit plus complètement la tristesse. (Gide)
 b. Alors avait dû exercer sur elle un grand prestige la femme pour laquelle Rachel avait été quittée. (Proust)

The evidence is overwhelming. Among unergative verbs we find a variety of semantic classes, including verbs of existence, verbs of sound and substance emission, manner of motion, spatial configuration, and activity verbs. If we add these to the lexico-semantic classes which map onto an unaccusative configuration, we have examples of so-called unaccusative inversion with all intransitive verbs (including reflexive ones).

It is tempting to suggest that the label ‘unaccusative’ inversion may in fact pertain to its structure rather than the distribution of relevant verbs -- on a par with the conclusion reached for ICs above. The main argument Cummins (1996) invokes for the unaccusativity of IC structures is the complete ban against having transitive verbs in ICs.

- (41) a. *Il y guette Pierre des renards. (vs. Des renards guettent Pierre)
 b. *Il les y guette des renards. (vs. Des renards les guettent)

To the extent that transitive verbs may occur at all in unaccusative inversion (see (40)) extending the IC analysis to unaccusative inversion is surely premature.

3.2. Auxiliary selection

In a nutshell there are two auxiliary selection patterns in French, an easy one and a challenging one. The easy pattern is that all verbs occurring with reflexive morphology -- regardless of the function/meaning of the reflexive clitic, and without any exceptions -- select *être*. Among non-reflexive verbs however, there is a split in auxiliary selection which – as we shall see – is best

analyzed in terms of a hierarchical approach. We start with the complex pattern of split intransitivity which follows the ASH.

3.2.1. Auxiliary selection with non-reflexive verbs

In French only about 20 non-reflexive verbs obligatorily select *être* (Cumming 1996), compared with large numbers (hundred or so) in Italian. They include *advenir* ‘occur’, *aller* ‘go’, *arriver* ‘arrive’, *apparaître* ‘appear’, *décéder* ‘die’, *devenir* ‘become’, *entrer* ‘enter’, *intervenir* ‘happen, intervene’, *mourir* ‘die’, *naître* ‘be born’, *partir* ‘leave’, *parvenir* ‘reach’, *provenir* ‘arise’, *rester* ‘remain’, *retourner* ‘return’, *sortir* ‘go out’, *survenir* ‘happen’, *tomber* ‘fall’, *venir* ‘come’ (see also Grévisse 1975).

In terms of the ASH most of these verbs are at the very top of the hierarchy (as predicted). They include verbs of change of location (*arriver(à)* ‘arrive’, *partir* ‘leave’, *venir (à)*, *parvenir à*, *accourir*, *sortir*, *tomber*) and change of state (*mourir*, *naître*, etc.) which are inherently telic and express a directed change rather than a change of location. Telicity is an aspectual property widely associated with unaccusativity (cf. Zaenen 1993 on Dutch; Zribi-Hertz 1987 on French). Yet, telicity alone (either inherent or contextual) is not sufficient to predict *être* in French. As Melis (1985) notes, agentive *aller* ‘go’ denotes a non-directed motion process with an atelic reading (*aller vers la gare*) or with an endpoint and a telic reading (*aller à la gare*). Regardless of context, it selects *être*. Nordhal (1977) reports that *aller* could appear with both auxiliaries in Old French. This typically resulted in an activity reading (with *avoir*) or an achievement reading (with *être*). In Modern French *aller* has to be further specified with *à pied* ‘on foot’, *en voiture* ‘by car’, *à skis* ‘on skis’, etc. to express manner and denote an activity rather than motion. Because activity is conveyed by the adverbial phrase, the basic lexico-semantic properties of *aller* are retained and *être* is still the auxiliary of choice. This shows that contextual meaning does not necessarily entail auxiliary change.

In general, a combination of telicity and directed motional change is required for selection of *être*, but some aspectual properties are common to verbs that select *être* and those that select *avoir* (see also Cummins 1996). This in turn necessitates a more elaborate and fine-grained analysis than traditional analyses based on telicity alone are able to provide.

A few telic change of state verbs focusing on the end state select *être*: *mourir* ‘die’, *décéder* ‘pass away’, *naître*. Many telic verbs of the same narrowly defined class however select *avoir*: *expirer*, *succomber à*, *périr*, *trépasser* ‘pass away’ for no obvious semantic reason. An anonymous reviewer remarks that *expirer* behaves like *inspirer/respirer*, which occupy a lower position on the ASH. *Périr* (from Lat. *per-ire*) and *trépasser* appear to behave like *traverser*. Finally, *succomber* may be etymologically related to *suc-cumbere* (*tomber sous*) but this does not explain its auxiliary choice, *avoir*. The same reviewer suggests a structural analogy: *succomber à NP* selects *avoir* in analogy with *résister à NP*. In sum, a number of exceptions defy any lexico-semantic account, possibly due to mere analogical processes.

The ASH predicts that as we move down the hierarchy we find more variability. This is indeed the case. Among verbs of appearance denoting a transition to a state and emphasizing the beginning of the event, we find a few verbs which select *être*: *apparaître* and verbs derived from *venir*: *parvenir*, *survenir*, *intervenir*.¹¹ Others (*transparaître*, *surgir*, *émerger* etc.) select *avoir*. Yet others select either auxiliary, sometimes without any detectable change in meaning

¹¹ *Convenir* selects *avoir* in Modern French (*être* in Old French). Note that it denotes a state rather than a transition of state. All existence of state verbs select *avoir* in French.

(Cummins 1996; Grévisse 1975; Ruwet 1989): *paraître, disparaître, passer*. See examples given earlier in (14).

Overall, verbs of appearance are [+inherent telicity], [-motional displacement]¹², i.e. less specified than core verbs which select *être* which in turn means that they are more variable.

Most verbs of indefinite change in a particular direction, regardless of their telicity status in context, select *avoir* (unless they are reflexive).¹³ This large class of verbs denotes degree achievements (Dowty 1979) and display variable aspectual behavior (Hay et al. 1999). Depending on whether their affected argument undergoes a change to a closed-range or open-range state, their interpretation is telic or atelic. *Rancir, verdir, rougir*, etc. are in fact ambiguous between a telic reading: *rougir = devenir rouge* and an atelic one = *être plus rouge*. Verbs with a typical telic reading includes deadjectival verbs like *sécher, noircir, refroidir, durcir* which denote processes leading to a non-gradable final state. The verbs themselves are modifiable by the temporal adverbial *en x heures* and the resulting state by *complètement* ‘completely’: *sec, froid, noir, dur*, etc. Verbs which have the same aspectual properties but are not derived from adjectives include *bouillir, fondre, faner, flétrir, moisir, pourir, tarir*, etc.¹⁴ The verbs denoting processes leading to an open-ended state are typically atelic; they include deadjectival *grandir* ‘grow taller’, *grossir, rétrécir, rapetisser, embellir*, and non-deadjectival verbs like *empirer, baisser, fermenter, augmenter, diminuer, décliner*, etc. All can be modified by the temporal adverbial *pendant des heures* and *se mettre à* ‘to start V-ing’, *petit à petit* ‘little by little’ (Zribi-Hertz 1987).

Verbs of spatial configuration include atelic maintenance of position verbs (*reposer, gésir*, etc.) as well as assuming position verbs which denote a directed change of state: *reculer, rebondir*. They are stative in their basic meaning and they select *avoir* which is the auxiliary of choice for existence of state in general: *survivre (à), persister, stagner, languir, durer, exister, appartenir à*, etc. Surprisingly, a few atelic verbs denoting absence of change select *être*: *rester* and *demeurer*. One might impute their selecting *être* to the fact that *rester* and *demeurer* express continued presence therefore existence. But *être* itself expresses continued presence and existence; yet it selects *avoir* (*essere* in Italian).¹⁵

- (42) a. Il reste/est resté à l’université.
b. Il est/a été à l’université.
c. Il est/a été des nôtres.

The fact that most verbs of existence of state select *avoir* was a puzzle in traditional accounts typically requiring some extra rule to explain their choice of auxiliary (e.g. Legendre 1989). On the present account, they occupy the midpoint in the ASH and are amongst the most peripheral of both unaccusative and unergative verb classes. We predict significant variation

¹²The meaning of *apparaître* does not include motional displacement on the part of the person who is said to appear. It only requires that the person becomes visible to the speaker.

¹³ One exception is *monter* and *descendre* discussed in section 2.3.

¹⁴ In the present tense, some change of state verbs including *bouillir, sécher, durcir*, etc. are in fact ambiguous between being in the state of boiling (atelic) and coming to boil (telic).

¹⁵ The real reason behind *être* selection may have been lost in the history of French. In his dictionary of Old French, Greimas (1989) gives *rester* (Lat. *restare*) as originally meaning *s’arrêter* ‘come to a stop’, *se lever* ‘get up’, and *résister* ‘stand up against’. Note that all three are directed motion verbs.

cross-linguistically as well as variation within a given a language. This is very much what we observe both in French and Italian. See section 2.3. for examples.

Going still further down the ASH, the remaining classes select *avoir*. They include uncontrolled bodily processes (*trembler, éternuer, suer, rougir, suffoquer, dormir* etc.) and verbs of emission (*briller, luire, résonner, jaillir, couler, rugir, éclabousser*, etc.) as well as manner of motion verbs typically used with an agentive argument (*courir (à), marcher, sauter, nager, rouler*, etc.), and activity verbs (*travailler, jouer, parler*,. Most are atelic but some are telic: *trionpher, réussir à, capituler*, etc. As Sorace (2000) shows, non-core ‘unergative achievement verbs’ (McClure 1995) such as *trionpher, réussir à, capituler* are strongly agentive (i.e. they imply intentionality) but they also imply a permanent change of state for the subject argument (unlike core unergatives such as *travailler* which don’t have this implication). However, this change of state is not the endpoint of the action, but rather the logical consequence of the event.

It is clear that more traditional proposals have failed for French because none have explicitly focused on the *interaction* of eventive factors. For example, event-structure based analyses relating selection of *être* singlehandedly to a state component in the logical structure of a verb (Van Valin 1990), or to an affected argument of a stative predicate in logical structure, as proposed for Italian in Centineo (1996) cannot account for French. Verbs of existence and achievement verbs meet this definition; yet, they select *avoir*.

3.2.2. Auxiliary selection with reflexive verbs

The one verb class for which auxiliary selection in French can be predicted without any regard for their event structure is a morpho-syntactically defined class: reflexive verbs. (See Abeillé and Godard 2002, this volume for a similar claim). As we shall see, every single class of verbs considered in our survey includes reflexive members whose morphology overrides any of their event structure properties. These include change of state verbs which alternate between transitive and reflexive including (*s'*) *améliorer*, (*s'*) *assombrir*, (*s'*) *obscurcir*, etc. At first glance one might be tempted to ascribe their selecting *être* to the fact that they are telic verbs. The following list of verb classes organized around their lexico-semantic properties shows however that telicity is irrelevant when the morphology is reflexive.

(43) Aspectual classes of reflexive intransitive verbs (all selecting *être*):

- d. Telic verbs of directed motion with the focus on the end point: *se rendre à, se transporter à*, or the departure point: *s'en aller*; atelic *se promener* ‘go leisurely’ and telic *se déplacer (à)*.
- e. Telic change of state verbs focusing on the end state: *s'éteindre, s'anéantir*.
- f. Telic verbs of change of state like *s'évaporer* as well as (atelic) verbs denoting processes leading to a open-ended state like deadjectival *s'élargir, s'enrichir, s'assombrir, s'obscurcir* and non-deadjectival verbs like *s'étouffer, se détériorer*, etc.
- g. Verbs of (dis)appearance denoting a transition to a state: *se dissiper, se volatiliser, s'envoler, se manifester, se produire, se montrer, se révéler*.
- h. Inherently reflexive verbs including telic verbs like *s'emparer de, , s'envoler, se repentir*, etc. and atelic ones which typically denote a psychological state (*se moquer de, se pâmer, se douter de, se souvenir de, se méfier de*). In other syntactic contexts (e.g. participial constructions discussed in section 3.3) many behave like non-reflexive unergative verbs.

- i. Atelic verbs describing a continuation of state such as *s'éterniser*, *s'attarder*, *se maintenir*.
- j. Verbs of spatial configuration including imperfective maintenance of position verbs (*se tenir*, *se trouver*) as well as assuming position which are typically perfective: *se blottir*, *se recroqueviller*, *s'avancer*, *se cabrer*, *se lever*, *s'asseoir*, *se tasser*, *s'affaler*, *s'effondrer*, *s'écrouler*, *s'affaïsser*.
- k. Verbs of uncontrolled bodily processes (*s'évanouir*), verbs of emission (*s'illuminer*, *s'embraser*), agentive manner of motion (*se retourner*, *se pavaner* 'strut about'), and activity verbs. Most are atelic: *se garder de*, *s'apercevoir de*, *s'adonner à*, *s'efforcer de*, *se crever à*, *s'employer à*, etc.; others are telic: *s'écrier*, etc.

All morphologically reflexive verbs without any exception select *être* whether *se* is a marker of semantic reflexivity/reciprocity, inalienable possession, middle/passive, or does not have a semantic content (inherent *se*).¹⁶ Note that novel intransitive verbs entering the language are likely to be reflexive: e.g. *s'afghaniser*, *s'iraniser*, by analogy to fairly recent *s'américaniser* with a transitive causative counterpart but no intransitive inchoative like **américaniser*, **afghaniser*, **iraniser*.

In fact, both the absolute character of *être* selection by reflexives and its productivity -- the class of reflexive verbs is huge and expanding -- point to a morphosyntactic explanation. Early on, Perlmutter (1989) and Rosen ([1981] 1988) identified these properties as providing one of the two main arguments in favor of a syntactic representation of (underlying) unaccusativity.

Their other well-known argument for a syntactic encoding of the unergative/unaccusative distinction is grounded in the well-known parallelism between (personal) passive and unaccusative verbs. Passive operates on transitive verbs whereby an internal argument (direct object) surfaces as the subject of the verb endowed with passive morphology. Under Perlmutter's 1978 RG analysis or Burzio's 1986 GB version, both passive and unaccusative receive essentially the same syntactic analysis. In Burzio's terms, these verbs fail to assign a theta-role to their subject position and Case to their internal argument (thereby accounting for their intransitivity). The internal argument moves to subject position to receive Case.

In addition, passive verbs share several eventive properties of reflexive verbs. First, their surface subject is semantically unrestricted. Passive applies to activities (*arrêter*), change of state (*casser*, *briser*), and psychological states (*aimer*, *connaître*) alike, as long as they involve two core arguments. Second, reflexives and passive are morphologically marked. Zribi-Hertz (1987) argues that it is the non-reflexive member of an alternating pair which is idiosyncratic and this receives confirmation from novel verbs entering the language, as discussed earlier. That is, inchoativity is typically expressed by *se* just like passive is expressed by special morphology. Third, the event structure corresponding to a passive verb is similar to that of an unaccusative verb like *se casser*: The entity undergoing change is a passive participant of a process brought about by external factors; the focus is on the end of the process. In sum, we see no reason to abandon the parallelism between passive, reflexive, and unaccusative constructions on which the syntactic analysis of unaccusative verbs rests.

¹⁶ On factual grounds we reject the view put forward by Zribi-Hertz (1987) that *se* is a marker of perfectivity. Nor should *se* be analyzed as a marker of low elaboration of an event (Cummins 1996). We side with Grimshaw (1982) and many others in claiming that *se* is fundamentally a valency reducing morpheme.

Summing up, our discussion of auxiliary selection has revealed the extent to which two main factors underlie the choice of *être* in French. One is reflexive morphology which overrides any other consideration. All French reflexive verbs regardless of argument structure or lexico-semantic properties select *être*. Similarly, all Italian reflexive verbs select *essere*.

The other factor is a verb's placement on the ASH on the basis of which French and Italian establish two different syntactic subclasses, so-called unaccusative and unergative classes. The French cut-off point is high with the consequence that few unaccusative verbs select *être* today, compared with their Italian counterparts.

Crucially, the ASH reveals that the split into two subclasses is not random across the two languages. The French unaccusative class is merely a subset of the Italian unaccusative class. In fact the systematicity of the mapping argues against analyses which assimilate auxiliary selection in French to an idiosyncratic property of individual verbs requiring a stipulation in the lexicon (Cummins, 1996). On the contrary, auxiliary selection is a reliable test for unaccusativity in Romance -- notwithstanding the small size of the resulting unaccusative class in French.

Our conclusion runs against other claims made in the literature. Labelle (1992) states that selecting *être* is a test for unaccusativity and selecting *avoir* a test for unergativity based on the fact that verbs of change of state like *casser* alternate between selecting *avoir* (as opposed to *essere* in Italian) when used in the intransitive inchoative construction and *être* in the reflexive construction.

- (44) a. Le vase a cassé.
b. Le vase s'est cassé.

We reject the claim that verbs selecting *avoir* are unergative once-and-for-all in French, for three main reasons. First, the subclass which select *être* is only a subset of the unaccusative class (see discussion in section 3.3.). Second, part of Labelle's evidence relies on assuming that ICs are a reliable test for unaccusativity in French, which they are not (see discussion above and below in section 4.2.). Third, Labelle's claim entails that Spanish and Romanian with their single perfect auxiliary *avoir* do not have *any* unaccusative verbs. However, occurrence in participial absolute constructions, adnominal participial adjectives (45), and bare NP subject constructions (46) positively identifies unaccusative verbs in Spanish (Aranovich 2000, Mendikoetxea 1999, and Torrego 1989). Romanian unaccusative (but not unergative) verbs also productively occur in participial absolute constructions (Dobrovie-Sorin 1994:182).

- (45) a. Los chicos salidos de la casa a las nueve no han llamado.
Les enfants partis de la maison à neuf heures n'ont pas téléphoné.
b. *Los chicos gritados a las nueve no han llamado.
Les enfants hurlés à neuf heures n'ont pas téléphoné.

- (46) a. Llegaron invitados a la fiesta.
Des invités sont arrivés à la soirée.
d. *Hablen representativos mañana.
Des représentants parlent demain.

3.3. A reliable diagnostic test for unaccusativity: participial constructions

The strongest and most productive evidence in favor of a syntactic distinction among French intransitive verbs comes from participial constructions (PCs for short). These include adnominal participial adjectives (APAs), *croire* ‘believe’ unions (CRs), participial absolute (PA), and participial equi (PE) constructions -- all discussed at length in Legendre (1989). APAs function like a reduced relative modifying a noun (33a). *Croire* unions are representative of biclausal structures in which the complement clause consists of an argument modified by a participial adjective.¹⁷ They are ‘unions’ (a term borrowed from RG) because they trigger clitic climbing, as shown in (47b). PAs are different from CR in two respects. They are adjunct clauses (i.e. they are not governed by a class of main verbs); and they must precede the main clause (47c). PEs are the control counterpart of PAs (47d): their non-overt argument is in a control relation to (i.e. coreferential with) the subject of the main clause. Targeting the object of a transitive verb in PCs (47) as opposed to its subject (48) always yields an absolute contrast in grammaticality.

- (47) a. L’athlète éliminé en quart de finale a décidé de prendre sa retraite.
 b. On le croyait éliminé en quart de finale.
 c. Son compatriote éliminé en quart de finale, l’athlète américain reprit espoir.
 d. Éliminé en quart de finale, l’athlète américain reprit espoir.
- (48) a. *L’athlète américain éliminé son compatriote en quart de finale a perdu en demi-finale.
 b. *On le croyait éliminé son compatriote en quart de finale.
 c. *L’athlète américain éliminé son compatriote en quart de finale, le champion de la coupe du monde reprit espoir.
 d. *Éliminé son compatriote en quart de finale, l’athlète américain reprit espoir.

(Non-reflexive) intransitives display a split highly reminiscent of the one found in auxiliary selection. The verbs which may appear in PCs are high on the ASH (i.e. telic change of location verbs), the ones that invariably fail are lowest (e.g. non-motional activity verbs). (49)-(50) illustrate the split.

- (49) a. La personne morte hier soir sera enterrée demain matin
 b. On croyait son père mort d’une crise cardiaque.
 c. Le père mort, les enfants vendirent la propriété familiale.
 d. Mort d’une crise cardiaque à 20 ans, son frère n’avait pu reprendre la direction de la ferme familiale.
- (50) a. *Le candidat hésité trop longtemps a été rejeté.
 b. *On considérait le candidat hésité trop longtemps.
 c. *Le premier candidat hésité trop longtemps, ...
 d. *Hésité trop longtemps, ...

¹⁷ Other verbs of the same type include *juger* ‘judge’, *supposer* ‘suppose’, and *considérer* ‘consider’. See Abeillé and Godard (this volume) for a general discussion.

As we move down the ASH from change of location verbs we encounter the predicted pattern as well as a different cut-off point, compared with auxiliary selection.¹⁸ First, we encounter some variation within the larger class of change of state verbs: *expirer*, *fondre*, *refroidir*, *moisir*, *durcir*, *tarir*, etc. yield well-formed PCs, but *succomber à*, *trépasser*, *empirer*, *rétrécir*, etc. do not. Among verbs of (dis)appearance, some non-reflexive ones appear in PCs): *apparaître*, *disparaître*, *paraître*, etc.; some don't: *transparaître*.

Most of these change of state verbs select *avoir* in the perfect tense. Hence the class of verbs which may appear in PCs is a superset of those which select *être*. In other words, their behavior in PCs classify more French verbs as unaccusative than auxiliary selection does. In particular, these include the large class of verbs of indefinite change in a particular direction, an example of which is given in (51). Note that this class too displays some variation. For example, *empirer* 'worsen', *rougir* 'redden', *pâlier* 'become pale', etc. are by-and-large not acceptable in PCs. See (55) below.

- (51) a. La neige fondue pendant la journée...
 b. On croyait la neige fondue dans toutes les stations de ski.
 c. La neige fondue, toutes les stations ont fermé.
 d. Fondue, la neige tournait en boue.

The remaining non-reflexive verbs selecting *avoir*, including verbs of spatial configuration *reposer*, of assuming position *reculer*, *rebondir*, of existence *être*, *sembler*, *exister*, *survivre*, *persister* are ungrammatical in PCs (as are lower classes on the ASH).

There appears to be no aspectual restriction on either APAs and CR unions. Both telic and atelic participles are grammatical.

- (52) a. Un poulet mariné en moins de deux heures est bien meilleur.
 b. Les documents disparus pendant des semaines ont été retrouvés.
 c. On le croyait évadé de prison en moins d'une journée.
 d. On imaginait Marie restée seule à la maison pendant des heures.

This is not the case for participial adjunct clauses where the secondary event denoted by the adjunct clause stands in a cause-effect relation with the main event. In particular, the secondary event must be completed prior to or overlap with the main event described by a PC. In fact, in PAs the secondary event must be completed prior to the main event. This temporal relation is often rendered explicit or improved by the addition of *une fois* 'once' to the participial clause, an indication of the relevance of telicity: *Une fois le lait bouilli, la neige fondue*, ... This is also true of Italian (Perlmutter 1989, Rosen 1984). The form of the participle -- identical to that found in compound tenses like the *passé composé* and passives -- provides additional evidence for a telicity restriction on PAs. Contra Labelle (1992), these aspectual restrictions do not invalidate PAs as a test for unaccusativity, let alone invalidate the remaining PCs. It simply means that appearing in a PA is a sufficient condition but not a necessary one (Legendre 1989).

The second restriction is one of event dynamicity. The state denoted by the adjunct clause must be the result of a change, as revealed by a comparison between copular constructions and

¹⁸ The pattern starts with *aller* which selects *être* but is ungrammatical in PCs, either in a telic or atelic context: **allé à/vers la gare*. Note that *aller* denotes motion along a path rather than a directed change of location. This is possibly why *aller* (unlike *arriver* but like manner of motion verbs *nager*, *errer*) is ungrammatical in participial contexts.

PAs. While adjectives and nominals are standard in copular constructions, they are ungrammatical in PAs. In contrast, their dynamic counterparts are fine. The fact that *rester*, *demeurer* are not acceptable confirms the existence of a dynamicity restriction on PAs.

- (53) a. * Son mari innocent, Marie refusa de divorcer.
b. Son mari innocenté, Marie refusa de divorcer.
c. *Son père (un) héro de la résistance, Pierre était respecté de tous.
d. Son père devenu un héro de la résistance, Pierre était respecté de tous.
e. *?Sa fille restée/demeurée (seule) à la maison, Marie écourta sa visite.

In PEs, these aspectual restrictions are clearly relaxed. The secondary event need only overlap with the main event. It need not even be a state resulting from a change. It is not surprising then that *rester* and *demeurer* are perfectly acceptable in PEs.

- (54) a. Assis au premier rang, les enfants ne quittaient pas la scène des yeux.
b. Jaillie d'on ne sait où, l'eau coulait claire et limpide.
c. Innocent/innocenté, Pierre refusa de
d. Héro de la résistance, ...
e. Restée/demeurée seule à la maison, Marie se mit à pleurer.

Telicity and dynamicity together appear to impose a necessary condition for appearance in PAs. However, the combination of telicity and dynamicity is not a sufficient condition for appearing in PAs: it cannot rescue a verb otherwise doomed in PAs. In particular, selecting unergative participles denoting more dynamic processes (e.g. uncontrolled bodily processes and some activities) and adding the aspectual adverbial *une fois* to force a completed reading does not render them acceptable in PAs (or any PC):

- (55) a. *Une fois pâli, rougi, baillé, sué, Pierre se dissimula derrière un pare-à-vent.
b. *Une fois réagi, triomphé, résisté, Pierre embrassa sa femme et ses enfants.

This shows that the primary condition on PAs is not aspectual in nature. Rather, the primary condition is one which splits the classes of verbs into two main subclasses, those that are grammatical in PAs as long as they are also [+telic], [+dynamic], and those that are ungrammatical, regardless of their aspectual properties. Hence the class of verbs that appear in PAs is a subset of the class that appear in other PCs. By characterizing both classes as syntactically unaccusative we can formulate a generalization which cuts across aspectual restrictions. Nevertheless, the subset-superset relation among unaccusativity tests is confirmed: auxiliary selection (selects the fewest number of unaccusatives at the small class at the top of the ASH) < PAs (selects a larger class anchored at the top of the ASH) < other PCs (select the largest class also anchored at the top of the ASH).

All intransitive verbs which appear in PCs turn out to have an important common property. They are intransitive verbs whose participle alternatively appears in a predicative structure with the copula *être*. The predicative form is homophonous with the passé composé form of only the small class of non-reflexive verbs selecting *être*: *est parti*, *est monté*, *est mort*, *est apparu*, *est resté*, etc. For all other verbs, the copular construction is clearly distinct from the passé composé (because of a different auxiliary or absence of reflexive morphology): *est fondu*,

expiré, moisi, refroidi, blotti, évanoui, etc. In all cases, the copular construction denotes a state resulting from change or motion.

Stative, uncontrolled processes, manner of motion, and activity verbs typically fail in the copular construction: **est existé, relui, résonné, pâmé, rougi*¹⁹, *pâli, grandi, nagé, couru, hésité, travaillé*, etc. They also fail in all PCs. Note that *survivre* conveys a result, yet it is ungrammatical. In sum, appearance in a copular construction is in fact as much a separate test as any of the PCs discussed above. Like them, it follows the prediction made by our analysis.

- (56) a. **Ils sont survécus.*
 b. **Les personnes survécues ...*
 c. **On les croyait tous survécus.*
 d. **Ses parents survécus,*
 c. **Survécus, ses parents*

Abeillé and Godard (2002) have demonstrated that copula/passive *être* is not syntactically identical to perfect tense *être*. Hence, to say that only the verbs appearing in the copula construction may also appear in PCs -- and thereby be identified as unaccusative (as one reviewer suggests) -- is distinct from claiming that a subset of unaccusative verbs select *être* as an auxiliary.

Our earlier comparative discussion of partitive *en* and *ne* in section 3.1.2 highlighted the fact that the existence of similar structures with similar meanings in both languages does not translate into similar distributional properties. A similar point is made by Loporcaro (2002) concerning participial constructions. Loporcaro notes that one subtype of PCs, namely PEs (unlike PAs) are not restricted to unaccusative and passive verbs in Italian. He provides the following examples including unergative and transitive verbs (57a-d) which are all absolutely ungrammatical in French.

- (57) a. *Vendemmiato, i contadini lasciarono il paese.*
**Vendangés, les fermiers quittèrent le village.*
 b. *Bussato alla porta, Gianni entrò.*
**Frappé à la porte, Gianni entra.*
 c. *Maltrattato Gianni, Carla partì.*
**Maltraité Gianni, Carla partit.*
 d. *Arrestatili, la polizia poté sedare il tumulto.*
**Les arrêtés, la police a pu mettre fin à l'émeute.*
 e. *Svegliatasi Maria, la festa poté cominciare.*
**Se réveillée Maria, la fête pouvait commencer.*

Returning to French, one significant difference between auxiliary selection and PCs is that reflexive morphology is irrelevant to the latter.²⁰ Yet, not all reflexive verbs appear in PCs

¹⁹ A reviewer mentions that some accept *est rougi* and *est pâmé* as in *ses mains rougies, une femme pâmée*. We suggest that *rougi* is a passive participle in this context: *ses mains rougies par le froid*.

²⁰ The reflexive clitic *se* like any other clitic in French never appears attached to a participle form, hence reflexive verbs that appear in PCs appear without the reflexive clitic. In Standard Italian and Franco-Provençal, pronominal clitics do encliticize to some participials (Loporcaro 2002). See example (57d-e) in Standard Italian and Miller and Monachesi (this volume).

despite the fact that they select *être* and (at least some of them) can have a telic interpretation. Many are ungrammatical in PCs, including verbs of (dis)appearance: *se volatiliser*, *se manifester*, *se produire*, *se montrer*, *se révéler*; stative *s'éterniser*, change of state (*s'empirer*), inherently reflexive *s'emparer de*, *se souvenir de*, *se moquer de*, *se pâmer*, and spatial configuration verbs like *se tenir*, *se trouver*, etc. Because reflexive morphology is relevant to auxiliary selection but not to PCs, the conclusion seems inevitable that intransitive verbs which appear in PCs constitute neither a subset nor a superset of verbs that select *être*.

An important consequence of motivating PCs as productive unaccusativity tests is that it leads to an unergative classification of some reflexive verbs. Recall that auxiliary selection does not tell us anything about the unaccusativity status of reflexive verbs because the reflexive morphology constraint overrides any constraint pertaining to aspectual features mapping onto an object position in the syntax. Reflexive verbs may or may not appear in PCs without any obvious aspectual restriction to explain the difference in grammaticality. Ungrammatical reflexive verbs in unrestricted and restricted PCs include atelic maintenance of position verbs: *se tenir droit*, *se trouver sans ressources*; stative *s'éterniser à réviser*, *se révéler contraire*, uncontrolled processes *s'embraser*, *s'évaporer*, *s'étouffer*, as well as psychological states *s'apercevoir de qqch*, *se souvenir de qqch*, *se douter de qqch*, and activities *s'adonner à la politique*; *s'engager sans la bataille*, etc.

To sum up, we have argued that PCs (with or without aspectual restrictions) provide substantial evidence for identifying a subclass of intransitive verbs as unaccusative in French.²¹ The fact that PCs identify a superset of the non-reflexive unaccusative verbs classified as such on the basis of selecting *être* in the perfect tense following the ASH provides an important confirmation of our hierarchy-based approach.

More generally speaking, our discussion so far leads to several far-reaching claims:

- The empirical difficulties of reducing auxiliary selection in French and Italian to a simple verb class based distribution argues against traditional analyses, in favor of a hierarchical feature-based approach.
- Though this is hardly news, it bears to repeat that selection of *être* cannot be taken to define the entire unaccusative verb class in French. It only characterizes core unaccusative verbs (the ones figuring at the top of the ASH). To the best of our knowledge, only participial constructions taken as whole define the class of non-reflexive unaccusative verbs.
- Our detailed discussion reveals that auxiliary selection and participial constructions stand in a subset-superset relation with respect to non-reflexive unaccusative verbs in French. This accords well with our basic hierarchical analysis and its outcome -- the ASH. Participial constructions further define the scope of the unaccusative subclass in other languages, in particular languages which do not have alternating auxiliaries.
- Across Romance languages participial constructions overall constitute the most reliable and common syntactic test for unaccusativity.
- We hope that our reexamination of other tests cited in the literature on French unaccusativity, in particular impersonal constructions, partitive *en* cliticization, and unaccusative inversion will serve to dispel the belief that these structures positively contribute to identifying the subclass of unaccusative verbs.

²¹ Note that all the unaccusativity tests discussed so far identify weather verbs as unergative in French, contra Ruwet (1988).

4. Optimizing auxiliary selection

In the remainder of this chapter we informally sketch an analysis which rests on the concept of optimization, as defined in Optimality Theory (Prince and Smolensky 1993) and adapted to syntax (e.g. Grimshaw 1997; Legendre et al. 1998; 2001). The main idea of this alternative to Principles-and-Parameter Theory (Chomsky 1981) is that constraints are universal but they are soft or surface-violable.²² In other words, a grammatical structure generated by a language-particular grammar is likely to violate some universal constraint(s). This is fine, as long as all alternative structural representations of the same input to the grammar (a specification of argument structure, lexical items, and lexico-semantic features in the case at hand) fare worse, i.e. violate at least one constraint which outranks the constraint(s) violated by the grammatical structure.

Such a general approach has two important advantages. One is that universal constraints can be stated in simple and general terms, thereby avoiding disjunctions and other formal complications needed to insure their universal inviolability. The other is that OT is in fact a theory of typology which constrains the typological space to language-particular re-rankings of the same set of constraints. Thus, the difference between say French, Italian, and Spanish auxiliary selection is fundamentally one of re-ranking a single set of mapping constraints.

The first step is to provide the material for the constraints themselves based on a featural decomposition of all relevant subclasses.

Aux	Aux	Semantic/aspectual features →	TE	MO	DIR	CON	ST
Fr	Ital	emergent verb classes ↓					
E	E	Change of location:	+	+	+	+/-	-
E	E	<i>arriver/arrivare</i>	+	+	+	+/-	-
E	E	<i>aller/andare</i>	+	+	+	+/-	-
		<i>venir/venire</i>					
E	E	Change of state					
		a) change of condition					
		<i>mourir/morire</i>	+	-	+	-	-
E	E	b) appearance:					
		<i>apparaître/ apparire</i>	+	-	+	-	-
E	E	c) indefinite change in a particular direction:					
		<i>monter/salire , descendre/scendere</i>	-	+/-	+	+/-	-
A	E	<i>faner/appassire, empirer/peggiorare</i>	-	-	+	-	-
A	E	Continuation of a pre-existing state:					
		<i>durer/ durare</i>	-	-	-	-	+
A	E	Existence of state:					
		<i>être/essere</i>	-	-	-	-	+
A	E	<i>exister/esistere, suffire/ bastare</i>	-	-	-	-	+
A	A	Uncontrolled processes:					
		a) bodily functions: <i>suer/sudare</i>	-	-	-	-	-
A	A	b) involuntary actions: <i>trembler/tremare</i>	-	-	-	-	-

²² Analyses of unaccusativity mismatches and gradience in the ASH in terms of soft constraints go back to Legendre et al. (1991). Some technical differences exist between the model of Harmonic Grammar proposed in 1991 and the Optimality Theory analysis sketched here which we need not go into.

A	A	c) emission: <i>résonner/risuonare</i>	-	-	-	-	-
A	A	Controlled processes (motional): <i>nager/nuotare</i>	-	+	-	+	-
A	A	Controlled processes (non-motional): <i>travailler/lavorare</i>	-	-	-	+	-

Table 2: Featural composition of monadic intransitive verbs in French and Italian

Table 2 combines Table 1²³ (from section 2.3) with an exhaustive decomposition of each subclass into binary features borrowed from the existing literature: +/- inherent telicity (TE), +/- motional displacement(MO), +/-directed change (DIR), +/-protagonist control (CON), and +/-state (ST, i.e. no change).

Suppose UG includes not only the well known relational scale from the typological-functional literature: Subject > (Direct) Object (Bresnan 1994, Croft 1990, Jakobson [1965] 1995, Keenan & Comrie 1977, Perlmutter 1983, Silverstein 1976) but also scales that pertain to each feature/property listed in Table 2: atelic > telic (Dowty 1979, Grimshaw 1990, Vendler 1967, etc.); non-directed change > directed change; no motion > motion, etc. By aligning two scales at a time we come up with a set of relations which express how marked the mapping of a certain feature – say [+telic] -- is with a certain grammatical relation – say Object:

$$(58) \quad O/[+telic] \succ S/[+telic]$$

‘The mapping of [+telic] onto an Object configuration is less marked than (>) the mapping of [+telic] onto a Subject configuration’

These mappings turn into a hierarchy of constraints or filters once their polarity is reversed (note the change in symbol). See Aissen (2001) for analyses of cross-linguistic voice patterns relying on formally similar constraints.²⁴

$$(59) \quad *S/[+telic] \gg *O/[+telic]$$

‘Don’t map [+telic] onto a Subject configuration’ outranks/ has priority over (>>) ‘Don’t map [+telic] onto an Object configuration’

Putting all mapping constraints pertaining to a Subject configuration together, we obtain a hierarchy or *ranking* of constraints which is hypothesized to be universally fixed (see Smolensky 1995; Legendre et al. 1998 for a formal demonstration). (60) reads as follows, starting from the bottom constraint. It is bad to map the feature [+motional displacement/+MO] onto a Subject configuration but it is worse to map the feature [-protagonist control/-CON] onto a Subject configuration.²⁵ It’s even worse to map the feature [+state/+ST] onto a Subject configuration, etc. In other words, the leftmost constraint has priority over the next one to the right of its

²³ Indications of variation in auxiliary selection are absent in Table 2 because an analysis of such variation within a language goes beyond the simpler analysis of cross-linguistic variation discussed below. Such an analysis requires, among other things, *partial* constraint rankings (as opposed to *total* constraint rankings illustrated below) of the type found in young children’s developing grammars (Legendre et al. 2002). They are needed to account for free variation of auxiliaries. Variation tied to register or regional varieties involves re-rankings of the type discussed below.

²⁴As is customary in Optimality Theory, the constraints in (59) and (60) are stated as negative constraints. Restating them as positive constraints is possible and unlikely to yield different results.

²⁵ In order to maintain constraint uniformity (in the sense of penalizing the mapping of all feature values onto a Subject configuration), it is necessary to use the value – (minus) for [protagonist control]. This captures the well-known generalization that unergative verbs tend to be agentive.

neighboring double arrow (>>) which in turn has priority over the next constraint to the right of its neighboring double arrow, etc.

(60) Universal hierarchy: *S/[+TE] >> *S/[+DIR] >> *S/[+ST] >> *S/[-CON] >> *S/[+MO]

Obviously, if no constraint against mapping onto an Object configuration ever entered the picture, Object configurations would always be optimal and we would never encounter any cross-linguistic mismatches. That is, all languages would reflect the ranking in (60) and exhibit no split intransitivity effects. Since mapping onto a Subject configuration ranks from bad to worse, all verb classes would be syntactically unaccusative. The fact that at least some languages do show split intransitivity effects is evidence that a *O constraint is at work, universally speaking.

(61) *O ‘don’t map onto an Object configuration’

We propose that this *O constraint universally slides along the hierarchy of the mapping constraints in (60), resulting in a cut-off point which is movable cross-linguistically. The difference between French and Italian, we claim, results from a distinct constraint interaction due to the fact that the same constraint *O is interposed in different locations on the same hierarchy, as shown in (62). The cut-off point determines unergative/unaccusative subclasses.

(62) a. French: *S/[+TE] >> *O >> *S/[+DIR] >> *S/[+ST] >> *S/[-CON] >> *S/[+MO]
 b. Italian: *S/[+TE] >> *S/[+DIR] >> *S/[+ST] >> *O >> *S/[-CON] >> *S/[+MO]

The need to interpose *O in different locations on a single hierarchy of individual *S/[X] constraints in turn provides theoretical evidence that a solution to unaccusativity mismatches relying on mapping rules cannot be stated in terms of verb classes themselves (contra Levin and Rappaport Hovav 1995).

How particular verbs are evaluated against this hierarchy is discussed next. Consider verbs at the top of the ASH like *arriver/arrivare* first. Their featural description is as follows (from Table 2): [+TE, +DIR, -ST, +/-CON (depending on the context), and +MO]. Hence the constraints relevant to this particular optimization are: *O, *S/[+TE], *S/[+DIR], (*S/[-CON] if the argument is non-agentive), and *S/[+MO]. *S/[+ST] is irrelevant – technically vacuously satisfied – because *arriver/arrivare* has the value –(minus) for the feature [ST].

A direct mapping from Object and Subject configuration to auxiliary choice *être* and *avoir* respectively is assumed. This means that selecting *être* always results in violating *O, while selecting *avoir* results in violations of *S/X, where X stands for the relevant features (of a given verb) and polarity, as stated in the universal constraint hierarchy (60). In both French and Italian, selecting *être/essere* with *arriver/arrivare* violates the *O constraint. However, selecting *avoir/avere* violates three constraints: *S/[+TE], *S/[+DIR], *S/[+MO]. As shown in (62), two of these constraints (*S/[+TE], *S/[+DIR]) outrank the *O constraint in Italian, and one (*S/[+TE]) outranks *O in French. Since only *O is violated if *être/essere* is selected, selecting *avoir/avere* is worse than selecting *être/essere* for a verb like *arriver/arrivare*; *être/essere* is the grammatical choice in both languages.

Note that the different position of the *O constraint on the constraint hierarchy in the two languages yields different results for verbs that are neither telic nor express directed motion. For existence of state verbs like *être* and *exister* [-TE, -DIR, +ST, -CON, -MO], three constraints are

active: *O, *S/[+ST], and *S/[-CON]. Selecting *être* entails a worse violation (of *O) than selecting *avoir*, which entails violations of lower-ranked constraints (*S/[+ST], *S/[-CON]) only. For *être* and *exister*, selecting *avoir* is thus the optimal choice. The reverse is true for Italian *essere* and *esistere*. Because of the relative ranking of *S/[+ST] and *O in Italian (S/[+ST] outranks *O; see (62)) it is more costly -- therefore non-optimal -- to select *avoir* than *être*.

Significantly, the proposed general OT analysis does *not* predict total, unconstrained variation in auxiliary selection. Rather, it predicts a very specific typology of languages including languages in which all verb classes are syntactically unaccusative, languages in which all verb classes are unergative, and languages which display a split.

First of all, languages in which all verb classes select *être* and languages in which all verb classes select *avoir* are predicted to exist. The latter formally result from *O outranking all *S/[X] constraints and the former from all *S/[X] constraints outranking *O. Both are found within Romance languages: Spanish (to name only one) uses only *haber* and the central Italian dialect Terracinese has only one auxiliary derived from Latin *esse*, as discussed in Tuttle (1986).

Another correct prediction made by the present analysis is that further languages have different cut-offs along the universal hierarchy. Besides Standard Italian and its low cut-off point, Standard French with its high cut-off point, we find Dutch and German with a cut-off point somewhere in between those of Italian and French. In both these Germanic languages, change of location and change of state verb classes select *être* while the remaining verb classes -- continuation of a pre-existing state, existence of state, uncontrolled processes, as well as controlled processes -- select *avoir*.

A remarkable example is provided by Spanish through the course of its history, as described in Aranovich (2000). In Old Spanish, verbs like *trabajar* ‘travailler’ and *pecar* ‘pécher’ never occurred with *ser* ‘être’. Change from *ser* to *haber* started with the peripheral classes as predicted by our analysis. The first to go were verbs of manner of motion like *errar* ‘errer’ and verbs of existence of state *rastar* ‘rester’ (XIV century). Next to change were dynamic verbs of existence and appearance (*aparecer* ‘apparaître’, *desaparecer* ‘disparaître’, etc.) in the XV century. *Morir* ‘mourir’ and *ir* ‘aller’ were the last ones to give up *ser* (XVII century).

Our OT analysis also predicts some languages to be impossible. For example, there couldn’t be a language where existence of state verbs select *être* but change of state verbs select *avoir*. As far as we know this is a correct prediction.

Summing up, we have proposed that the ASH derives from alignment of simple scales referring to lexico-semantic and aspectual features and syntactic configuration. In other words, verb classes like ‘change of state’, etc. (cf. vertical axis in Table 2) have no theoretical status in our OT analysis. They are *emergent classes*. Yet, they serve the important function of making explicit how, given a set of constraints stated on relatively fine-grained lexico-semantic and aspectual features, and given a (typically binary) choice between two auxiliaries, *être* or *avoir* are alternatively selected, albeit differently in the two languages.

Another property of the OT analysis worth emphasizing is that the constraints are the same in different languages. What varies is the position of a single constraint (*O) relative to all others in the hierarchy of *S/[X] constraints. Thus, variation results from different interactions of the same set of mapping constraints. This stands in contrast with an analysis like Bentley & Eyrthórsson (2002) which is grounded in the ASH but posits different mapping rules in different languages.

4.2. Beyond the ASH

Our analysis can be straightforwardly extended to formalize overriding effects, as the following sketch demonstrates. Formally, if reflexive morphology overrides any other constraint it is because there is a constraint *S/REFL²⁶ outranking all *S/[X] constraints in French.

(63) *S/REFL >> *S/[+TE] >> *O >> *S/[+DIR] >> *S/[+ST] >> *S/[-CON] >> *S/[+MO]

Compare *arriver* with *se rendre à*, both verbs of directed location. In both cases, selecting *avoir* entails worse violations (of all relevant *S/[X] constraints) than selecting *être* (which incurs only a violation of *O). Hence *être* is the auxiliary of choice. Note that *S/REFL is vacuously satisfied when the morphology is non-reflexive. Hence the constraints violated by *arriver* are a subset of the constraints violated by *se rendre à* and the fatal constraint violation is a different one in the two optimizations.

The more interesting case is when a different auxiliary is selected based on difference in morphology. Take for example two agentive manner of motion verbs [-TE, -DIR, -ST, +CON, +MO]: *errer* vs. *se pavaner*. *S/REFL is relevant only to *se pavaner*. Selecting *avoir* means violating this high-ranked constraint. It is therefore preferable to select *être*. The same high-ranked constraint is irrelevant to (i.e., vacuously satisfied by) non-reflexive *errer*. A violation of *O, in turn, eliminates *être* because selecting *avoir* in this case is less costly: only a violation of lower-ranked *S/+MO is incurred.

A main advantage of the OT analysis lies in its typological predictions. In an other language *S/REFL might be overridden by *O. As a result, all reflexive verbs would select *avoir*. This is the case in Spanish. In a third language, *S/REFL might outrank *O which in turn outranks all *S/[X] constraints. The result is that all reflexive verbs would select *être*, all non-reflexive verbs would select *avoir*.

Our OT analysis also predicts the following scenario of diachronic change. Suppose a constraint ranking starts with *S/REFL at the bottom of the ranking: then all reflexive verbs select *être*. As *S/REFL rises up the universally fixed constraint hierarchy step by step over time, *être* disappears, being replaced by *avoir*, starting with lower classes on the ASH and ending with the top classes. Remarkably, this is precisely what happened in Spanish, as documented by Aranovich (2000:33). Volitional achievement verbs like *vengarse* ‘se venger’ and verbs of existence and appearance (*demostrarse* ‘se montrer’, *quedarse* ‘demeurer’, etc.) were the first to drop *être*, followed by assume-position verbs (*levantarse* ‘se lever’), and finally directed motion (*salirse* ‘s’échapper’, *irse* ‘s’en aller’) and change of state (*afogarse* ‘se noyer’, *desencasarse* ‘se séparer/divorcer’) roughly at the same time.

Note that the analysis does not entail that all reflexives are unaccusative in French (contra Grimshaw 1990 who claims that *se* is a marker of absorption of the external argument). Some reflexive verbs might be unergative and still select *être* because of the high ranking of *S/REFL. In particular, reflexive verbs belonging to the lower classes on the ASH select are predicted to

²⁶ Obviously, the label REFL will need to be refined, possibly in terms of Case. *S/REFL is not part of the *S/[X] hierarchy because REFL is not a lexico-semantic feature.

select *être* despite denoting controlled and uncontrolled processes. This is indeed a correct prediction for activity verbs (e.g. *s'écrier*, *s'efforcer de*, etc.) and manner of motion verbs (e.g. *se retourner*, *se pavaner*). Evidence for classifying these reflexive verbs as unergative was presented in section 3.2.2.

5. Concluding remarks

In our terms, to say that a verb is unaccusative or unergative is to make the following claims:

- Intransitive verbs split into exactly two subclasses which differ with respect to their distributional properties.
- Important generalizations across passives, reflexives, and only a subset of intransitive verbs can be stated in a precise and simple way.
- What is common to French and Italian in the absence of a complete distributional overlap can be stated in a simple and elegant way. Although the ASH reveals that the existing overlap is not of a random kind, event semantics are by themselves not sufficient to account for the distributional properties of the phenomena associated with split intransitivity. For example, the subclass of verbs which select *être/essere* in French and Italian do not constitute a single class of verbs defined in lexico-semantic terms but only an overlapping one.
- For a given verb in both French and Italian the particular choice of auxiliary is the result of resolving a conflict among lexicon/syntax mapping constraints favoring one or the other auxiliary, based on the verb's semantic decomposition. Thus, semantics of events do play a crucial role in our analysis because they provide half the content of the constraints which govern the lexicon/syntax interface.

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