

**Split Intransitivity:  
A Reply to Van Valin (1990)**

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## ABSTRACT

Van Valin (1990) (VV) claims that, universally, split intransitivity (SI) phenomena are explainable in terms of two sufficient parameters – agentivity and inherent lexical aspect (Aktionsart) – and that SI therefore provides no evidence for a multistratal view of syntax. He further claims that the monostratal syntax and aspectual-based semantics of Role and Reference Grammar (RRG) can explain all phenomena alleged to support multistratal syntax, in particular Inversion and Passive, and that in the latter case, for Italian, RRG's analysis is in fact superior. The present critique challenges VV's claims, by demonstrating (1) that agentivity and inherent lexical aspect cannot universally suffice to explain SI because (a) they fall seriously short of explaining SI in French, and (b) they fail even to account for SI in Dutch and Italian, VV's claims notwithstanding; (2) that VV's claims concerning the aspectual basis of Passive in Italian are incorrect; and (3) that VV's universal claims concerning control properties in Inversion clauses are falsified by French. Thus, VV fails to prove not only the superiority of his monostratal approach, but even the adequacy of his RRG treatments of SI, Passive, and Inversion.

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## 1. Introduction

Until recently the prevailing view on the phenomenon of split intransitivity (henceforth SI) has been that the distinction must be syntactically encoded at an underlying syntactic level even though it might be semantically determined (as in Perlmutter 1978, Levin and Rappaport 1989, Zaenen, 1989) or sensitive to some semantic or aspectual factors (Legendre, 1989a). In a 1990 *Language* paper, Van Valin (henceforth VV) challenges this view, arguing that semantic and aspectual considerations are **sufficient** to explain individual phenomena which exhibit SI. In particular, he claims that two parameters underlie SI universally: inherent lexical aspect and agentivity. VV's analysis is couched in Role and Reference Grammar (RRG, Foley and Van Valin, 1984), a monostratal framework<sup>1</sup> which incorporates a particular aspectual theory of verb classification, that of chapter 2 of Dowty (1979), itself based on Vendler's 1967 four-way Aktionsart classification of verbs into States, Achievements, Activities, and Accomplishments. VV adopts Dowty's proposed syntactic and semantic criteria for verb class membership (Table I) and Dowty's formal representation of each class (Table II). The formal representation (Logical Structure or LS) explicitly shows how States, Achievements, and Accomplishments are related (by having a common primitive STATE predicate) and how these three classes are distinct from Activity verbs which have the primitive predicate DO.

CRITERION	STATES	ACTIVITIES	ACCOMPLISHMENTS	ACHIEVEMENTS
(1) meets non-stative tests	no	yes	yes	?
(2) has habitual interpretation in simple present tense	no	yes	yes	yes
(3) $\phi$ for an hour/spend an hour $\phi$ ing	OK	OK	OK	bad
(4) $\phi$ in an hour/take an hour to $\phi$	bad	bad	OK	OK
(5) $\phi$ for an hour entails $\phi$ at all times in the hour	yes	yes	no	d.n.a.
(6) $x$ is $\phi$ ing entails $x$ has $\phi$ ed	d.n.a.	yes	no	d.n.a. <sup>2</sup>
(7) complement of <i>stop</i>	OK	OK	OK	bad
(8) complement of <i>finish</i>	bad	bad	OK	bad
(9) ambiguity with <i>almost</i>	no	no	yes	no
(10) $x$ $\phi$ ed in an hour entails $x$ was $\phi$ ing during that hour	d.n.a.	d.n.a.	yes	no
(11) occurs with <i>studiously</i> , <i>attentively</i> , <i>carefully</i> , etc.	bad	OK	OK	bad

OK = The sentence is grammatical, semantically normal.  
 bad = The sentence is grammatical, semantically anomalous.  
 d.n.a. = The test does not apply to this class of verbs.

TABLE I. Dowty's (1979:60) syntactic and semantic tests for verb class membership.

Table I

Table II

VERB CLASS	LOGICAL STRUCTURE
STATE	predicate' (x) or (x,y)
ACHIEVEMENT	BECOME predicate' (x) or (x,y)
ACTIVITY ( $\pm$ Agentive)	(DO (x)) [predicate' (x) or (x,y)]
ACCOMPLISHMENT	$\phi$ CAUSE $\psi$ , where $\phi$ is normally an activity predicate and $\psi$ an achievement predicate.

VV argues, for example, that the division made explicit in Dowty's formal representation is exactly the one which underlies the distribution of intransitive verbs in two well-known Italian phenomena, i.e. Auxiliary Selection and *ne* cliticization. Verbs which contain a state predicate in their LS (States, Achievements, and Accomplishments) are unaccusative, while those which do not (Activities) are unergative.

VV makes also use of a thematic hierarchy with two poles, Actor and Undergoer: Actor pole = Agent > Effector > Experiencer > Locative > Theme > Patient = Undergoer pole. The participant with thematic role closest to the Actor pole fills the Actor macrorole, while that closest to the Undergoer pole fills the Undergoer macrorole. In RRG, macroroles play both semantic and syntactic roles and are used to reconstruct in most cases the notion of subject and direct object, as used, e.g., in Relational Grammar (RG). For example, VV's condition on *ne*-cliticization, (11), states that the source of *ne* must be the lowest-ranking argument on the Actor-Undergoer hierarchy. Evidence for this comes from transitive clauses in which only the Undergoer (direct object) can be the source of *ne*. Interestingly, the number of macroroles a given verb takes is not *always* the same as the number of arguments it takes. In particular, two-argument Activity verbs such as *John ate spaghetti* have only one macrorole (Actor) – hence they are intransitive for VV – while they take two arguments and are thus considered transitive in RG and in Government-Binding (GB). In contrast to the two-argument Activity verbs, two-argument Accomplishment verbs such as *John ate the spaghetti* have two macroroles (Actor and Undergoer) and are equally transitive in RRG and RG/GB.

This RRG distinction stems from different aspectual properties noted by Dowty (1979): the use of the definite article has consequences for the telicity or boundedness of the event, as demonstrated with the temporal adverbials "for an hour" and "in an hour".

- (1) a. John ate spaghetti for/\*in an hour. (Activity)  
 b. John ate the spaghetti in/\*for an hour. (Accomplishment)

The crucial distinction in transitivity of sentences like (1a) in RRG and RG/GB provides an important testbed where the theories can be shown to make different predictions which can be empirically tested. We shall return to this point shortly.

In assessing VV's proposal, it is important to realize that what is at stake is the continuing debate over the hypothesis that syntax crucially involves an underlying, "deep," abstract level of representation that is not predictable from semantics. VV argues against this multistratal syntax hypothesis (henceforth MSS) in favor of the view that much of the work done by deep syntactic structure in MSS-based accounts can be better done by semantics, operating in conjunction with the monostratal syntax of RRG. His paper focusses on SI, but also touches on other phenomena such as passive and inversion which have been used to argue for MSS.

Note that in most MSS accounts, deep syntactic properties are claimed to be a *necessary* part of the explanation, but there is no claim of *sufficiency*: the proponents of MSS have long held that semantic factors also play a role, as will be explicitly brought out below in the discussion of particular phenomena.

The present paper focuses on two claims made by VV: (1) semantic and aspectual factors are *sufficient* to explain SI diagnostic contexts cross-linguistically and (2) passive phenomena provide evidence against an RG/GB type analysis. The discussion will concentrate on Italian, Dutch, and French and lead to the following empirically based counterclaims:

- SI: Clauses which are equally transitive in RG/GB are split by VV: those involving multiple-argument Activity verbs are intransitive in virtue of having only one Macrorole, and the others are transitive. Thus, VV, but not RG/GB, predicts that *ne*-cliticization is impossible with the direct-object of multiple-argument Activity verbs. This is empirically false. (Section 2.1.)
- SI: VV predicts that behavior in diagnostic contexts should be uniform within a given Aktionsart/agentivity class. This is shown to be false in regard to the split of Italian adjectives on the *ne*-cliticization diagnostic (Cinque, 1990). (Section 2.1.)
- SI: VV cites Zaenen (1989) in support of his claim that Auxiliary Selection in Dutch is determined by telicity. He fails to point out, however, the failure of this analysis with respect to psych verbs, which Zaenen reported and which led her to ultimately reject this analysis in favor of an LFG version of a MSS analysis. (Section 2.2.)
- SI: VV's putative universal semantic parameters of SI, far from being sufficient to account for the behavior of French intransitives in five diagnostic contexts, are incapable of accounting for this behavior in all cases except Activity verbs, which mostly behave unergatively. There are also statistical implications from agentivity and atelicity to behavior in diagnostic contexts, but these are weak and uni-directional. Even consideration of conjunctions of agentivity and aspectual features does not change these conclusions, which are based on an extensive study of 355 intransitive verbs. (Section 2.3.)
- Passive: VV's distinction of multiple-argument Activity verbs from other verbs treated as equally transitive in RG/GB leads him to predict that multiple-argument Activity verbs cannot passivize, a prediction he claims shows the superiority of his account in Italian (p. 238). The facts, however, show that the relevant factors governing passivizability in Italian (and English) are not aspectual in nature. (Section 3.1.)
- Inversion: VV claims that possible controllers of reflexivization and adverbial clauses in Inversion clauses are not determined by subjecthood at some level, as in the traditional RG analyses, but rather by rank in the thematic hierarchy: controllers are universally the highest-ranking core argument. But the facts of French Inversion structures show, on the contrary, that controller are determined by subjecthood at some level, and not thematic roles. (Section 3.2.)

The present critique will also address the problems inherent to VV's classification strategy, in particular issues of discreteness of the classes, choice of defining criteria, and coverage of classification. Indeed, Dowty (1979) ends up rejecting the Vendler four-way Aktionsart classification in chapter 3 of his book, for reasons that have nothing to do with SI; in particular, he is well aware of the problems of defining aspectual classes: "...the syntactic tests for distinguishing the four categories do not give totally consistent results for all examples below. In fact, considerations of some of them will force us to make some revisions in the Vendler-Kenny classification" (pp. 65-66). The Vendler classification should thus be viewed only as the starting point of Dowty's discussion. VV, however, disregards Dowty's rejection and apparently takes Dowty's criteria as definitive. We shall see, however, that a thorough study of French intransitive clauses proves the classification underlying VV's account to be quite problematic.

## 2. Split Intransitivity

The issue of SI goes back at least to Sapir (1917) and his discussion of stative vs. active languages (such as Lakota). The terms *unaccusative* and *unergative* can be taken here to supersede the stative vs. active distinction, a distinction traditionally based on superficial morphological properties of verbs (see Merlan, 1985 and Mithun, 1991 for recent discussions). One contribution of Perlmutter (1978) is to have discovered that SI can be hidden (i.e., not morphological) in many languages and revealed through a systematic study of their syntax. Perlmutter formalized

this idea as the Unaccusative Hypothesis.<sup>2</sup> In his discussion of SI, VV conflates its manifestation at the morphological level (Acehnese, Georgian) and its manifestation at the syntactic level (Italian, Dutch), much as proponents of RG and GB do.

VV's claims concerning SI are proposed as universal:

- (2) Van Valin's universal claims about SI
- (1) "Two semantic parameters, inherent lexical aspect (Aktionsart) and agentivity underlie SI" (VV, 1990:221). "Languages may vary with respect to which parameter governs the split. Within a language, some phenomena may be sensitive to one parameter, others to another."
  - (2) "In all languages [...], agentive Activity verbs will be  $S_A$ " (i.e., unergative).
  - (3) "SI phenomena provide no evidence for analyzing the subject of class- $S_O$  verbs as underlying syntactic objects" (VV, 1990:252).

For example, following Durie (1985), VV claims that SI in Acehnese, which manifests itself in cross-referencing proclitics attached to individual verbs, is sensitive to agentivity.<sup>3</sup> On the other hand, SI in Italian is claimed to be sensitive to inherent lexical aspect, while SI in Dutch is sensitive to both, depending on the phenomena considered (following Zaenen, 1989).

In what follows, I concentrate my discussion of SI on Italian, Dutch, and French.

## 2.1. Italian

The RG and GB discussion of SI in Italian proceeds from two basic observations. First, in several Italian constructions – Auxiliary Selection, *Ne*-cliticization (Rosen, 1981/88; Burzio 1986; Perlmutter, 1989), Participial Absolutives, and Participial Adjectives (Rosen, 1981; Perlmutter, 1989) – intransitive verbs/clauses split into two classes. All examples are from Perlmutter (1989), except where indicated otherwise.

- (3) a. Giorgio ha lavorato/è sparito.  
*Giorgio worked/disappeared.*
- b. Ne sono rimaste due/\*?Ne hanno gridato due.  
*Two (of them) remained/Two (of them) shouted.*
- c. Rimasto senza soldi, son sapevo cosa fare/\*Gridato ai bambini, Giorgio è uscito.  
*Having remained without money, I didn't know what to do/Having shouted to the children, Giorgio left.*
- d. Le persone sparite.../\*Le persone gridate...  
*The people [who] disappeared/The people spoken.*

Secondly, elsewhere in the syntax of Italian, these constructions distinguish subjects from direct objects. That is, only direct objects allow *ne*-cliticization, participial absolutes, and participial adjectives:

- (4) a. Giorgio ne ha comprate due/\*Ne li hanno visti tre.  
*Giorgio bought two (of them)/Three (of them) saw them.*
- b. Scoperta la congiura, bisognava agire/\*Scoperta lo sceicco la congiura,... (Rosen, 1981).  
*The plot having been discovered, action had to be taken/The sheik having discovered the plot, ...*
- c. Le arancie mangiate (dai bambini)/\*I bambini mangiati le arancie.  
*The oranges eaten (by the children)/The children eaten the oranges.*

Arguing from these facts, Burzio, Perlmutter, and Rosen conclude that intransitive verbs which allow *ne*-cliticization and participial absolutes take a deep direct object, while those that do not allow these constructions take a deep subject.

Rosen (1984) takes up the issue of alternatively characterizing the above phenomena in terms of thematic roles such as agent, patient, etc. She shows that sometimes a change of auxiliary is found though a semantic role is held constant, as in (5) where Aldo is an agent; sometimes no change of auxiliary occurs, as in (6) where *el colpo* is a theme/patient.

- (5) a. Aldo ha fuggito ogni tentazione.  
*Aldo fled all temptation.*  
b. Aldo è fuggito.  
*Aldo fled.*
- (6) a. Bertini ha deviato il colpo.  
*Bertini deflected the blow.*  
b. Il colpo ha deviato.  
*The blow went awry.*

Furthermore, agentive as well as non-agentive arguments of intransitive verbs sometimes do allow *ne*-cliticization, and sometimes don't:

- (7) a. Ne sono fuggiti tre. (agentive)  
*Three fled.*  
b. \*Ne hanno reagito tre. (agentive)  
*Three reacted.*
- (8) a. Ne sono svenuti tre. (non-agentive)  
*Three fainted.*  
b. \*Ne hanno deviato tre. (non-agentive)  
*Three went awry.*<sup>4</sup>

Verbs like *cadere* "fall" and *intervenire* "intervene" select *essere*, regardless of agentivity:

- (9) Luigi è/\*ha caduto apposta.  
*Luigi fell on purpose.*

On the other hand, verbs like *fischiare* "whistle" select *avere*, regardless of agentivity, that is, whether it is said of a person or a tea kettle (Rosen, 1981:64).

From such data, Rosen concludes that a semantic role based analysis by itself fails to account for phenomena like Auxiliary Selection and *Ne*-cliticization, that initial GRs are not predictable from thematic roles, and that the unergative/unaccusative distinction must be encoded at an underlying level of syntax.

Based on Centineo (1986), VV reanalyzes two of the diagnostic tests presented above – Italian Auxiliary Selection and *ne*-cliticization – in aspectual terms. He proposes the following two rules:

- (10) Auxiliary Selection with Intransitive Verbs  
Select *essere* if the Logical Structure (LS) of the verb contains a state predicate.
- (11) *ne*-cliticization  
*Ne* realizes the lowest-ranking argument on the Actor-Undergoer hierarchy in the state predicate in the LS of the predicate in the clause.

Verbs whose LS contains a state predicate, in Dowty's terms, belong to three aspectual classes: States, Achievements, and Accomplishments. Activities, by definition, do not contain a state predicate in their LS. Thus, rules (10) and (11) embody the claim that State, Achievement, and Accomplishment verbs select *essere* "be" and allow *ne*-cliticization. At the same time, these rules predicts that Activity verbs select *avere* "have" and do not allow *ne*-cliticization. As VV shows, rule (11) accounts for the *ne* contrast between verbs of motion construed as Activities or Accomplishments:

- (12) a. Ne sono corsi tre a casa in un'ora/\*per un'ora. (Accomplishment)  
*Three of them ran home in an hour!\*/for an hour.*

- b. \*Ne ha corso nel parco per un'ora. (Activity)  
*Three of them ran in the park for an hour.*

Only (12a) allows *ne*-cliticization because the LS of the Accomplishment verb "run home" contains a state predicate while "run in the park" in (12b) is an Activity verb with a different LS.

As noted by VV, an important contribution of Dowty (1979) was to "refine" Vendler's classification by showing that aspectual properties of clauses are not determined simply by their main verb: Specifying extent can turn an Activity into an Accomplishment as well (1b) vs. (1a); an indefinite plural NP or mass NP can turn an Accomplishment verb into an Activity verb in English. VV shows that this is true of Italian as well:

- (13) a. Anna ha mangiato spaghetti/ha bevuto vino per/\*in cinque minuti. (Activity)  
*Anna ate spaghetti/drank wine for five minutes.*  
 b. Anna ha mangiato gli spaghetti/ha bevuto il vino \*per/in cinque minuti. (Accomplishment)  
*Anna ate the spaghetti/drank the wine in five minutes.*

A condition on *ne*-cliticization restricted to verbs whose LS contains a state predicate, as stated in (11), makes a clear prediction: an Activity such as (13a) whose LS, by definition, does not contain a state predicate, should NOT allow *ne*-cliticization. My Italian consultant, however, reports that this prediction is false:

- (14) a. Anna ne ha mangiato per/\*in un'ora.  
*Anna ate some for!/\*in an hour.*  
 b. Anna ne ha bevuto per/\*in un'ora.  
*Anna drank some for!/\*in an hour.*

The acceptability of *per un'ora* establishes the Activity status of "eat/drink an unspecified quantity" and both examples show that *ne* is possible. Thus, (14a-b) provide counterexamples to VV's claim that *ne* cliticization distinguishes verbs whose LS contains a state predicate – States, Accomplishments, and Achievements – from Activities.

Under an RG or a GB analysis, *ne*-cliticization is possible in (14) because the verb is transitive, and the source of *ne* is a direct object ("2" in RG, "internal argument" in GB). The reason why *ne* is possible in (12a) but impossible in (12b) is that "run home" takes an initial 2/internal argument while "run in the park" takes an initial 1/external argument. Among other things, this syntactic distinction accounts for the difference in auxiliary as well.

Another problem for VV comes from facts uncovered by Cinque (1990) who argues that SI in Italian is not limited to intransitive verbs: it is found among adjectives, as the following contrasts under *ne*-cliticization show:

- (15) a. Ne sono oscuri i motivi.  
*Of them are obscure the reasons.*  
 b. Ne sono graditi gli inviti.  
*Of them are welcome the invitations.*  
 c. \*Ne sono pericolosi molti (di viaggi).  
*Of them are dangerous many (of journeys).*  
 d. \*Ne erano riconoscenti pochi (dei suoi amici).  
*Of them were grateful few (of his friends).*  
 e. \*Ne è fedele più d'uno a Carlo (di amico).  
*Of them is faithful more than one to Charles (of friends).*

While adjectives in Italian contrast under *ne*-cliticization,<sup>5</sup> they are all equally atelic, as shown by the possibility of a temporal *per* phrase.

- (16) a. I motivi sono stati oscuri per anni.  
*The reasons have been obscured for years.*  
 b. I suoi inviti sono stati graditi per mesi.  
*His invitations have been welcomed for months.*



- c. I viaggi in Terra Santa sono stati pericolosi per secoli.  
*Journeys to the Holy Land have been dangerous for centuries.*
- d. Pochi amici sono stati riconoscenti per anni.  
*Few friends have been grateful for years.*
- e. Più d'un amico è stato fedele a Carlo per anni.  
*More than one friend has been faithful to Charles for years.*

Cinque introduces several new diagnostic tests, noting that among the tests discussed by Burzio, Rosen, Perlmutter, and VV, only *ne* cliticization is relevant for adjectives. Under a GB or RG analysis, the deep syntactic distinction is extended to adjectives. Under VV's analysis of *ne*, all adjectives are predicted to allow *ne*: they are states since they describe properties (e.g. Chung and Timberlake, 1985) and are atelic yet some don't allow *ne* cliticization. Whatever the conditions on the diagnostic phenomena in Italian may turn out to be under VV's approach, they have to work not only for intransitive verbs, but also for transitive verbs, and adjectives.

## 2.2. Dutch

In Dutch, intransitive verbs split into two classes in several constructions, including Impersonal Passives (Perlmutter, 1978; Levin, 1986), Auxiliary Selection and Prenominal Participles (Hoekstra, 1984). The following examples are from Zaenen (1989).

- (17) a. Er werd hard gewerkt (door de meisjes).  
*There was hard worked (by the girls).*
- b. \*In dat ziekenhuis werd er (door veel patienten) gestorven.  
*In that hospital there was died (by many patients).*

Perlmutter (1978) focuses on Impersonal Passives, arguing that the contrast in (17) follows from several universal principles of RG: the universal characterization of passive (2-1 advancement from a transitive stratum) which the dummy *er* undergoes in the impersonal passive construction, the universal characterization of unaccusativity (2-1 advancement from an intransitive stratum) with verbs taking a patient-like argument and the 1-Advancement Exclusiveness Law (which precludes more than one advancement to 1 in any given clause). Thus, (17b) is ungrammatical because it involves passivization of an unaccusative verb, i.e., two instances of 2-1 advancement, in violation of the 1AEX Law. (17a) is grammatical because it involves passivization of an unergative verb, i.e. one instance of 2-1 advancement. Note that Perlmutter (1978) assumes that initial unergativity vs. unaccusativity is predictable from the semantics of the clause, in particular the thematic properties of the argument.

Rosen (1984) shows that in Dutch there seems to be a direct correlation between protagonist control and initial unergativity. As (18a-b) show, the impersonal construction is possible with "fall" only when done deliberately (all examples from Rosen, 1984):

- (18) a. In het tweede bedrijf werd er door de nieuwe acteur op het juiste ogenblik gevallen.  
*In the second act it was fallen by the new actor at the right moment. (= deliberate falling)*
- b. \*Er werd door twee mensen uit de venster van de tweede verdieping gevallen.  
*It was fallen by two people out of the second story window. (= accidental falling)*

However, she points out exceptions to this correlation: verbs characterized by Perlmutter (1978) as describing processes whose domain is an animate body. For example, "sneeze, snore" appear in Impersonal Passive, regardless of whether the actions denoted are volitional or not.

- (19) Er werd de hele tijd genesd.  
*It was sneezed the whole time.*

Rosen (1984) further shows that this class of verbs is particularly unstable across languages: "sneeze" appears in contexts that pick out unergative verbs in Italian and Dutch, in contexts that pick out unaccusative verbs in Eastern Pomo, and in either contexts in Choctaw.

Zaenen (1989) argues that the three diagnostics proposed in the literature as diagnostics for distinguishing unaccusative verbs from unergatives are in fact sensitive to distinct semantic features: Auxiliary Selection and formation of Prenominal *ge*-Participles are sensitive to the Aktionsart (inherent lexical aspect) of the verb – in particular, telicity – while Impersonal Passive is primarily sensitive to protagonist control and secondarily to the aspect of the sentence as a whole.

- (20) a. Er werd gelopen. (volitional, Activity, atelic)  
*There was run.*  
 b. \*Er werd naar huis gelopen. (volitional, Accomplishment, telic)  
*There is run home.*

Thus, she explains the existence of "mismatches" in Dutch, that is, a situation where distinct diagnostic tests pick out distinct but overlapping sets of intransitive verbs. (For further discussion of mismatches in SI within the GB literature, see L. Levin (1986), B. Levin and M. Rappaport (1989); within the RG literature see Legendre (1989a)). Zaenen mentions that exceptions to her semantically-based generalization on Auxiliary Selection, and remarks that lexical rules are expected, by their very nature, to have exceptions.

In the conclusion of his 1990 paper, VV briefly mentions Zaenen's analysis of Dutch, which, in his words, exemplifies that SI phenomena within a single language may be divided between the two parameters he claims to underlie the distinction universally: inherent lexical aspect and agentivity.

Actually, the facts of Dutch are far more complex than acknowledged in VV, since Zaenen herself shows how these two parameters fail to account for Auxiliary Selection with Dutch psych verbs. In her discussion of unergative vs. unaccusative verbs, Zaenen shows that telic verbs select *zijn* "be" while atelic verbs select *hebben* "have":

- (21) a. ?Hij is urenlang aangekomen. (telic)  
*He (is) arrived for hours.*  
 b. Hij heeft urenlang geniesd. (atelic)  
*He has sneezed for hours.*

Zaenen goes on to discuss three classes of Dutch psych verbs:

- Class I: selects *zijn* Example: *opvallen* "be noticed"
- Class II: selects *hebben* Example: *ergeren* "annoy"
- Class III: selects *hebben* Example: *vrezen* "fear"

Zaenen shows that class I (which she assumes to be intransitive) select *zijn* despite the fact that they are in some cases atelic, thus contradicting the generalization formulated on the basis of her earlier discussion of unergative vs. unaccusative verbs:

- (22) Dat is me jarenlang goed bevallen. (atelic)  
*That has pleased me well for years.*

She argues that the semantic property that distinguishes class I from class II is protagonist control, as demonstrated by her "force" test. Controllable verbs select *hebben*, non-controllable ones select *zijn*.

- (23) a. \*Hij dwong me hem te bevallen. (class I, selects *zijn*, – prot. control)  
*He forced me to please him.*  
 b. Hij dwong me je te ergeren. (class II, selects *hebben*, + prot. control)  
*He forced me to irritate you.*

From VV's perspective, this might simply be a further case of variation which could be handled by positing that Auxiliary Selection in Dutch follows two strategies, one for intransitive verbs, the other for psych verbs. Such an approach is problematic in two ways: (1) psych verbs of Class I are intransitive; Dutch Auxiliary Selection by intransitive verbs would thus be sensitive to different criteria: *zijn* by telic verbs in some cases, non-controllable verbs in others; *hebben* by atelic verbs in some cases, controllable verbs in others. (2) worse, class III (*vrezen* "fear, transitive) select *hebben* even though the verbs are non controllable psych verbs, thus contradicting Zaenen's

preliminary generalization based on classes I and II. Noting further exceptions, Zaenen gives up on formulating a unique semantic property underlying Auxiliary Selection across classes of verbs in Dutch. She ends up with a mixed semantic-syntactic account, with a stipulation of intrinsic classification, roughly the LFG (thus modifying a monostratal framework) equivalent of D-structure in GB and initial level in RG.<sup>6</sup>

The point here is the same as for Italian: whatever the semantic characterization of, say, Auxiliary Selection in Dutch might be, it has to work not only for intransitive verbs, but for all verbs in Dutch, regardless of their transitivity status. While VV cites Dutch in support of his position, in fact, Zaenen's discussion shows that Dutch is far more complicated than VV would have us believe, and that, at this point, a deep syntactic distinction cannot be eliminated.

### 2.3. French

According to Legendre (1989a), the unergative/unaccusative distinction in French manifests itself in several syntactic constructions, including *croire* "believe" constructions, Participial Absolutes, Reduced Relatives, Object Raising, and *on*-interpretation.<sup>7</sup> First, I present the diagnostic constructions and comment on the role of animacy and agentivity, based on Legendre (1989a). I then turn to an extensive discussion of the role of inherent lexical aspect in these constructions.

#### 2.3.1. *Croire* constructions

The relevant *croire* construction (henceforth "CR") involves a participial complement. The nominal that surfaces as direct object of the main verb *croire* (henceforth the "target nominal") is typically the direct object of a complement transitive verb with a passive reading (note the optionality of the *par*-phrase, typical of French passive sentences, and the obligatory absence of the passive auxiliary *être*). The target nominal can never be the deep subject of the complement verb. This contrast is illustrated in (24):

- (24) a. On avait cru l'enfant kidnappé (par son père).  
*We believed the child [to have been] kidnapped (by his father).*  
 b. \*On avait cru le père kidnappé l'enfant.  
*We believed the father [to have] kidnapped the child.*

Intransitive verbs split into two classes with respect to the *croire* construction, as shown in (25) and (26):

- (25) a. On croyait Marie partie/sortie avec sa mère/restée à la maison/innocente.  
*We believed Mary [to have] left/gone out with her mother/remaining at home/innocent.*  
 b. On croyait son père mort d'une crise cardiaque/guéri.  
*We believed his father [to have] died of a heart attack/(to be) cured.*  
 c. On croyait le moment venu/ses blessures cicatrisées/la production ralentie/l'eau jaillie d'une fontaine.  
*We believed the moment [to have] come/his wounds [to have] healed/the production (to have) slowed down/the water [to have] sprung out of a fountain.*
- (26) a. \*On croyait l'homme parlé/agi/téléphoné/médité.  
*We believed the man [to have] spoken/acted/called on the phone/meditated.*  
 b. \*On croyait le vieux roi régné toute sa vie/rêvé.  
*We believed the old king [to have] reigned all his life/dreamt.*  
 c. \*On croyait Pierre souffert/faibli/pelé/frémi d'horreur.  
*We believed Peter [to have] suffered/weakened/peeled/shudder.*  
 d. \*On croyait sa blessure enflée/la pluie continuée/la roue grincée/le froid persisté/l'épidémie sévie.  
*We believed his wound [to have] swollen/the rain [to have] continued/the wheel [to have] grated/the cold weather [to have] persisted/the epidemic [to have] raged.*

Legendre (1989a) analyzes the CR construction as a *union* construction (the collapsing of two clauses into one) and formulates the following condition:

- (27) **Well-formedness Condition on croire Unions** (Legendre, 1989a)  
Only a target nominal bearing the GR 2 at some level in the embedded clause can appear in *croire* unions.

The result is a claim that the intransitive verbs in (25) are unaccusative while the ones in (26) are unergative.

Examples (25) and (26) show that animacy of the target nominal does not differentiate acceptable from unacceptable CR structures. They also show that agentivity by itself does not serve to differentiate them either: in acceptable (25) for example, "leave, go out, remain" are agentive while "(be) innocent, die, cure, heal, slow down, and spring out" are not. In unacceptable (26), we have agentive verbs such as "speak, act, call on the phone, meditate", non-agentive ones such as "suffer, get weaker, peel, shudder" and verbs like "dream" which is agentive only in some of its interpretations (*rêver* can be interpreted as unconscious dreaming during sleep, day-dreaming, or volitional aspiring to a goal).

### 2.3.2. Participial Absolutes

Participial Absolutes (PA) are proposed participial clauses followed by a main clause without a coreferential link between the two clauses, hence the name *absolute*.<sup>8</sup> The participial clause itself is in several ways similar to the participial complement in the CR construction. It must have a passive reading; the understood direct object must precede the participial verb, and the understood subject can only (optionally) appear in a *par*-phrase.

- (28) a. L'enfant kidnappé (par son père), la police mit la région sens dessus dessous.  
*The child [having been] kidnapped (by his father), the police turned the whole area upside down.*  
b. \*Son/le père kidnappé l'enfant, la police mit la région sens dessus dessous.  
*His/the father [having] kidnapped the child, the police turned the whole area upside down.*

Similarly, intransitives split up into two classes:

- (29) a. Les Dupont partis, toute la famille se mit à table.  
*The Duponts gone, the whole family sat down for dinner.*  
b. Le père mort, ils vous retournent le champ. (La Fontaine)  
*Their father dead, they turned over the field.*  
c. Les nuages dispersés, nous décidâmes de partir en promenade.  
*The clouds [having] dispersed, we decided to go for a walk.*  
d. Une fois la plaie cicatrisée, Marie reprit ses exercices physiques réguliers.  
*Once the wound healed, Mary started to exercise regularly again.*  
e. Une fois sa femme guérie, Pierre reprit toutes ses activités.  
*Once his wife cured, Peter became active again.*
- (30) a. \*Une fois the parents réagis/parlés, l'enfant cessa de rouspéter à table.  
*Once the parents reacted/spoke, the child stopped grumbling at the table.*  
b. \*Pierre souffert auparavant d'une crise cardiaque, ses parents contactèrent le docteur dès les premiers malaises.  
*Peter [having] suffered a heart attack before, his parents contacted the doctor as soon as his first symptoms appeared.*  
c. \*La roue grincée de plus en plus fort, Pierre acheta une burette d'huile.  
*The wheel [having] grated louder and louder, Peter bought an oil can.*  
d. \*L'enfant frémi d'horreur, le monstre ricana.  
*The child [having] shuddered, the monster sniggered.*  
e. \*Le plancher vibré, on tendit l'oreille.  
*The wooden floor [having] vibrated, we pricked up our ears.*

Legendre (1989a) argues for a well-formedness condition on PAs which requires the preposed argument in the participial clause to a) bear the GR 2 and b) to advance to 1 (by passive or unaccusative advancement).

- (31) **Well-formedness Condition on Participial Absolutes** (Legendre, 1989a)  
A Participial Absolute clause is well-formed only if there is 2-1 advancement in the clause.

She notes however, that this condition is a *necessary* condition only since an aspectual restriction prevents certain PAs satisfying the syntactic condition from being acceptable:

- (32) a. \*Ses efforts continués, tout le monde crut qu'il réussirait.  
*His efforts [having] continued, everybody thought he would succeed.*  
b. \*(Une fois) l'eau coulée, tout le monde put se désaltérer.  
*(Once) the water [having] flowed, everybody was able to quench their thirst.*  
c. \*(Une fois) l'état du malade empiré, le docteur ordonna son transport à l'hôpital.  
*(Once) his condition [having] worsened, the doctor ordered him to be taken to the hospital.*

The restriction in question is that non-perfective verbs cannot occur in PAs (the same restriction in Italian is discussed in Rosen (1981), and Perlmutter (1989)).

As the examples above show, semantic notions like animacy or volitionality cannot by themselves differentiate unaccusatives from unergatives. We find both volitional and non-volitional participants among acceptable PAs (29) as well as unacceptable ones (30).

### 2.3.3. Reduced Relatives

The Reduced Relative (RR) construction discussed below is yet another participial construction whose meaning corresponds to a full relative clause (with relative pronoun *qui* "who/which" and auxiliary *être* "be" or *avoir* "have"): hence its name here, *reduced relatives*; (Perlmutter (1989) calls the corresponding construction in Italian "Participial Adjectives"). Legendre (1989a) argues that such clauses are well-formed only if they involve a 2-1 advancement, the same syntactic condition as PAs.

- (33) a. La petite fille kidnappée (par un inconnu) le mois dernier n'a jamais été retrouvée.  
*The young girl [who was] kidnapped (by a stranger) last month has never been found.*  
b. \*Le bandit kidnappé l'enfant n'a jamais été arrêté.  
*The bandit [who had] kidnapped the child has never been arrested.*

The contrast between (33a) and (33b) shows that initial 2s must occur in preverbal position in RRs. Initial 1s, if they appear at all, must do so in a *par*-phrase. (34) and (35) show that intransitive verbs, again, split into two classes.

- (34) a. La personne morte hier soir/évanouie/évanouie/évanouie/assise au premier rang....  
*The person [who] died last night/[who] fainted/[who] escaped/[who] sat in the first row....*  
b. Les nuages dispersés/le moment venu/l'eau bouillie/l'eau jaillie de la fontaine...  
*The clouds [which] dispersed/the moment [which] came/the water [which] boiled/the water [which] sprung out of the fountain....*
- (35) a. \*L'homme réagi/ronchonné/sévi/parlé/souffert d'une crise cardiaque/faibli/frémi d'horreur/rêvé....  
*The man [who] reacted/grumbled/acted ruthlessly/spoke (up)/suffered a heart attack/got weaker/shuddered/dreamt....*  
b. \*Sa blessure enflée/la pluie continuée/la roue grincée/le froid persisté/l'épidémie sévie....  
*His wound [which had] swollen/the rain [which had] continued/the wheel [which had] grated/the cold weather [which had] persisted/the epidemic [which had] raged....*

The data in (34) and (35) shows that RRs, just like CR and PAs, are not sensitive to animacy or volitionality.

### 2.3.4. Object Raising

Object Raising (OR) does not share any superficial properties with the participial constructions discussed so far.

- (36) a. Ce genre d'échec est difficile à oublier.  
*This type of failure is difficult to forget.*  
 b. Un adversaire est souvent facile à éliminer.  
*An opponent is often easy to eliminate.*

Legendre (1986, 1989a) argues at length for the following condition:

- (37) **Well-formedness Condition on Object Raising** (Legendre, 1986, 1989a)  
 An Object Raising construction is well-formed only if the raisee bears only the GR 2 in any clause below the raising predicate.

Legendre (1986, 1989a) argues that the only intermediate clauses that can appear under this type of raising are union constructions, in particular causative *faire* constructions. Note that an embedded subject cannot raise in this construction, as shown by the causee "children" in (38b).

- (38) a. La vérité n'est pas facile à faire dire aux enfants.  
*The truth is not easy to make children tell.*  
 b. \*Les enfants ne sont pas faciles à faire dire la vérité.  
*Children are not easy to make tell the truth.*

Interestingly enough, intransitives split into two classes with respect to OR:

- (39) a. L'eau pour le thé sera difficile à faire bouillir.  
*The water for tea will be difficult to make boil.*  
 b. La bombe sera facile à faire exploser.  
*The bomb will be easy to make explode.*  
 c. L'enfant sera facile à faire évanouir/à faire taire/à faire asseoir au premier rang.  
*The child will be easy to make faint/to make keep quiet/to make sit down in the first row.*  
 d. Le prisonnier sera facile à faire parler.  
*The prisoner will be easy to make talk.*
- (40) a. \*L'empereur sera facile à faire régner sur son territoire.  
*The emperor will be easy to make reign over his territory.*  
 b. \*Un homme est facile à faire méditer/réfléchir/rêver.  
*A man is easy to make meditate/reflect or think/dream.*  
 c. \*L'enfant sera facile à faire s'évanouir/à faire se taire/à faire s'asseoir au premier rang.  
*The child will be easy to make faint/to make keep quiet/to make sit down in the first row. [all verbs appear with reflexive morphology]*  
 d. \*La rivière sera impossible à faire geler/un complot sera facile à faire mijoter.  
*The river will be impossible to make freeze/a conspiracy will be easy to make brew.*

Note, in particular, the contrast between (39c) and (40c): unacceptability follows from the presence of the reflexive free morpheme *se*. This contrast is all the more intriguing because of what happens to *se* in other contexts:

- (41) a. L'enfant s'évanouit/\*évanouit.  
*The child is fainting.*  
 b. La peur a fait évanouir/s'évanouir l'enfant.  
*Fright made the child faint.*

In single clauses (41a), *se* is obligatory; in causative constructions (41b), *se* is optional. When a causative

construction is embedded under a raising predicate, *se* is impossible ((39c) vs. (40c)). Legendre (1986), following a proposal made by Rosen concerning Italian, argues that *se* marks a 2-1 advancement for certain verbs, regardless of the semantic content of *se* – *s'évanouir* is inherently reflexive: *se* does not correspond to an argument of the verb –. Evidence for this view comes from contrasting control properties of adverbial clauses: Legendre (1986, 1988) extends observations made in Ruwet (1972) showing that control properties which refer to subjecthood are satisfied only in the above structures with *se*.

- (42) a. La police a fait *se* disperser les étudiants en hurlant.  
 b. La police a fait disperser les étudiants en hurlant.  
*The police made the students disperse while screaming.*

(42a) is ambiguous as to who is doing the screaming, the police or the students; (42b) is not ambiguous, only the police can be screaming. This, and other facts discussed extensively in Legendre's work, shows that *les étudiants* behaves like a subject of the complement clause in (42a) but not in (42b).

Legendre (1986, 1989a) claims that the obligatoriness of *se* in (41a) is the consequence of the Final 1 Law, a principle that requires any final clause to contain a final 1 (its GB counterpart is the Extended Projection Principle). Under a standard union analysis of causative constructions, the complement clause is not a final clause – it has collapsed with the main clause – so the Final 1 Law does not apply. Finally, *se* cannot occur when the causative is embedded under raising (40c) because what it signals, 1-hood of the raisee, violates the well-formedness condition on OR structures in French (see Legendre 1986 for details).

Legendre (1989a) is careful to point out that the condition on OR restricting raisees to be 2s "all the way" is only a necessary condition. Semantic factors interact, with the consequence that sometimes a raising structure satisfying the necessary syntactic condition fails to be acceptable:

- (43) a. \*Des ailes ne sont pas faciles à avoir.  
*Wings are not easy to have.*  
 b. \*Pierre est impossible à faire rester à la maison.  
*Peter is impossible to make stay at home.*  
 c. \*Un ennemi est facile à faire décéder. (NOTE: OK with *mourir* "die")  
*An enemy is easy to make pass away.*

Legendre (1989a) argues that the restriction is not, strictly speaking, a restriction banning stative verbs; rather, the restriction correlates highly with compatibility vs. incompatibility with the progressive aspect, expressed periphrastically in French with *en train de* "in the process of."

- (44) a. \*Il est en train d'avoir des ailes/de rester à la maison/de décéder.  
*He is in the process of having wings/staying at home/passing away.*  
 b. Il est en train de mourir.  
*He is in the process of dying.*

Consider next animacy and volitionality of the raisee. Take (39c) for example: *faint* is non-volitional while *keep quiet*, *sit down* are volitional. What matters here is the absence of *se*. Volitionality is the same in (40c) with *se*; yet the result is unacceptable. At first glance, one factor appears to be pragmatic in nature: the degree to which the understood agent can manipulate the raisee; this is not surprising given the meaning of these OR structures (something that is easy or not to do!). In support of this, one can consider (39d) and the reality of specific methods used to "make prisoners speak", against their will. For my consultants, when *parler* is not predicated of people that can easily be manipulated by force, the corresponding OR structure is comparatively worse:

- (45) a. \*?Le président de la république sera facile à faire parler.  
*The president of the republic will be easy to make speak.*  
 b. \*Le conférencier sera facile à faire parler de politique.  
*The conference speaker will be easy to make speak about politics.*

Under scrutiny, however, it is clear that this pragmatic factor cannot by itself account for all contrasts in OR

structures. First of all, if one uses a stronger causative verb *forcer* "force" (instead of *faire* "make"), OR constructions are unacceptable, regardless of the semantics or pragmatics of the situation:

- (46) a. \*Le prisonnier sera facile à forcer à parler.  
*The prisoner will be easy to force to speak.*  
 b. \*Les enfants seront faciles à forcer à (se) taire.  
*The children will be easy to force to keep quiet.*

Legendre (1986) argues for the following syntactic explanation: *forcer* governs Equi/Control, a bi-clausal structure at all levels: one important property is that the Equi "victim" must head a final 1-arc in the complement (it is required by the Final 1 Law and supported by empirical evidence; see Legendre (1986) for details); consequently, the Equi victim which is also the raisee in (46a-b) violates the condition on OR. *Faire* governs union (i.e. the structure is underlyingly biclausal and superficially monoclausal), rendering the Final 1 Law irrelevant for the complement; the raisee thus satisfies the OR condition (which precludes the raisee from heading any arc other than a 2-arc, prior to raising).

Another reason why semantic properties of the raisee cannot be a sufficient condition for acceptability of OR structures is the unacceptability of (40b), despite the fact that one can readily conceive of contexts where a man could be manipulated into meditating, thinking, or day-dreaming.

A final, and crucial, reason to reject the semantics of the raisee as a crucial factor is that it would leave totally unexplained the contrast between OR structures acceptable without *se* (39c) and unacceptable with *se* (40c). For example, the process of *fainting* does not involve any notion of coreference and there is no difference in meaning in (41b) with or without *se*. In this respect it is important to keep in mind that in simple sentences, *se* is obligatory (if the difference is semantic, why should the absence of *se* lead to an impossible sentence?) and there are reportedly dialects of French which do not allow the *se/no se* alternation under *faire* (why should this be the case if the presence vs. absence of *se* has an important semantic function?). I tentatively conclude from this discussion that semantic properties of the raisee may be a necessary condition for acceptability but it cannot be a sufficient one. There is no doubt that in these constructions, the restriction on *se* – however it might be formulated – overrides any other considerations.<sup>9</sup>

To summarize, the "necessary" (and not "necessary and sufficient") status of at least some of the above syntactic constraints obviously opens the door for alternative analyses based on semantic properties: if semantics plays a role anyway, why not see if it plays a "sufficient" role? This is, of course, an empirical issue, rendered difficult to test, however, because there is, a priori, an indeterminate number of potential relevant semantic notions. Thus, failure to show that semantics is sufficient might be interpreted as simply showing that the wrong kinds of semantic notions have been tested. Fortunately, my goal is not here to demonstrate that there is no possible semantic analysis of the French facts, simply that a particular semantic analysis, that of VV, fails, despite his explicit claims to universality.

I briefly present the last diagnostic test before turning to an appraisal of VV's proposal concerning the role of Aktionsart.

### 2.3.5. *On*-interpretation

French, a non-pro-drop language, has a special third person singular subject pronoun, *on* which allows two distinct interpretations: it can have a definite interpretation, i.e. first person plural "we," or an arbitrary interpretation, referring to an unspecified individual or group of individuals (translated below as "someone"). The property of *on* relevant here, defining the "ON" test, is that the arbitrary interpretation is restricted to initial 1s (of unergative and transitive structures). All data are from Legendre (1989b).

- (47) a. On a téléphoné à Pierre; on a désobéi aux ordres du capitaine.  
*Someone/we called Peter on the phone; someone/we disobeyed [to] the captain's orders.*  
 b. On a chaleureusement félicité la candidate; on lui a confié une tâche délicate.  
*Someone/we warmly congratulated the candidate; someone/we entrusted her with a tricky task.*

On the basis of the previously discussed tests that are claimed to positively identify unaccusativity, *téléphoner* is



unergative (as it fails all those tests); *on* has two interpretations, as shown in the translations. In contrast, passive and unaccusative structures are not ambiguous, as shown next. *On* can only be interpreted to mean "we."

- (48) a. *On a été arrêté (par la police) avant même de franchir la porte d'entrée.*  
*We were [\*someone was] arrested (by the police) before even passing the entrance door.*
- b. *On s'est enfin tu; on était innocent.*  
*We [\*someone] finally shut up; we were [\*someone was] innocent.*

RG, as well as GB, provide a natural explanation for this patterning: in RG, both passive and unaccusative advancement involve 2-1 advancement; in GB, both types of structure involve a failure on the part of the verb to assign Case to its internal argument, thus requiring the argument to move to subject position where it can receive case from INFL. Interpretation of *on* then allows us to positively identify unergative verbs.<sup>10</sup>

Turning to semantic restrictions, humanness is obviously a necessary condition for *on* interpretation (*on* can never be used for non-human subjects) but volitionality is not, as the examples in (48b) demonstrate (*se taire* is volitional, *être innocent* is not). In Table VII below, I summarize the results concerning the role of volitionality in the diagnostic tests presented above.

I now turn to a discussion of the role of Aktionsart (inherent lexical aspect) in the five phenomena identified as diagnostic tests for SI in French. Recall that VV claims that Aktionsart is the sufficient semantic parameter underlying SI in a language closely related to French, namely Italian.

### 2.3.6. Aktionsart

The first step in testing VV's proposal is to establish the validity for French of the criteria (Table I) proposed in Dowty (1979) on the basis of English. Neither Dowty (1979:72) nor VV assume that these criteria are universal (Foley and Van Valin, 1984:28). Indeed, VV relies on a previous RRG analysis of Italian (Centineo, 1986) which reportedly establishes the relevance of these criteria for Italian.<sup>1</sup>

For French, the validity of the criteria are first established for a number of verbs which are taken to exemplify the four classes in Vendler (1967), Dowty (1979) and VV (1990):

- (49) Aspectual classes in English  
 Activities: *run, dance, swim, eat pizza, squeak*  
 States: *know, be broken, have, believe, like*  
 Accomplishments: *teach, break (tr.), kill, eat a piece of pizza, make a chair*  
 Achievements: *learn, break (intr.), die, arrive, notice*

The criteria turn out to be generally valid for French with the noted exception that Accomplishments are telic and thus fail to appear with the duration adverbial *pendant des heures* "for hours".<sup>12</sup> Aspectual classes in French are established on the basis of eight criteria:<sup>2</sup> 1- duration adverbial *pendant des heures* "for hours", 2- duration adverbial *en une heure* "in an hour", 3- progressive *en train de* + infinitive verb, 4- imperative, 5- complement of *achever* "finish", 6- complement of *arrêter* "stop", 7- ambiguity with *presque* "almost"<sup>14</sup>, 8- agentive manner adverbials such as *attentivement* "attentively", *délibérément* "deliberately", *soigneusement* "carefully".

In a 1991 paper, VV proposes to distinguish five aspectual classes, that is to differentiate durative from punctual Achievements (which are, according to VV, wrongly lumped together in Dowty (1979)). He applies this five-way distinction to the phenomenon of Quirky Case in Icelandic. The classification of French verbs below actually follows this five-way distinction, though for the purpose of discussion, Achievement verbs are lumped together, unless the further distinction between durative and punctual is relevant.

Establishing the aspectual class of each individual French verbs gets us into a serious issue: the issue of discreteness of classes defined on the basis of a set of criteria. Clearly, eight criteria, taken as necessary and sufficient define more than four natural classes (in fact  $2^8 = 256$ ), based on binary values of passing or failing individual criteria). VV does not comment on whether all of Dowty's criteria were used to define his aspectual classes but it is clear from Centineo's 1986 discussion of Italian – on which Van Valin bases his own discussion – that she does not use them all. The number of criteria used to define a class becomes a crucial factor when trying to

fit as many verbs as possible into a class. VV (1990) presumably uses 11 criteria (more, in a sense, since criterion 1 corresponds to a set of more specific criteria), but VV Valin (1991) uses (without discussion) only four in his discussion of Quirky Case in Icelandic.<sup>5</sup> Dowty (1979) does not, in fact, propose his aspectual classes as discrete categories; furthermore, he ends up abandoning Vendler's four-way distinction for an eight-way classification whose existence VV does not acknowledge. In a recent paper appearing in *Language*, Dowty (1991) discusses the issue of discreteness, as applied to other semantic entities, namely thematic roles:

"We may have had a hard time pinning down the traditional role types because role types are simply not discrete categories at all, but rather are cluster concepts, like the prototypes of Rosch and her followers ... And when we accept that arguments may have different degrees of membership in a role type, we can see that we really need only two role types to describe argument selection efficiently. I will dub these **Proto-Agent** and **Proto-Patient**" (pp. 571-72).

Dowty (1991) goes on to say:

"I deliberately avoid saying feature decomposition of roles [...] because I believe that the boundaries of these kinds of entailments may never be entirely clearcut and I also would not rule out the desirability of **weighting** some entailments more than others for purposes of argument selection" (p. 574; emphasis mine).

The latter comment is especially interesting in light of a detailed study of unaccusativity in French, conducted independently of Dowty's work, by Legendre, Miyata, and Smolensky (1990, 1991), employing a connectionist-based framework they developed called Harmonic Grammar. In this study, argument selection is performed via a principle involving the weighting of individual semantic and aspectual factors. These weights are computed automatically by a computational model consisting of a network of connecting links among units representing individual intransitive verbs and the features VO (volitional), AN (animate), TE (telic), and PR (occurring in the progressive) – see the references for details. Dowty's remarks are, in my view, extremely important and relevant since the French SI facts point exactly in that direction. Note, however, that the formalization of these ideas require linguists to look for alternative methodologies because the traditional ones are not designed to *formally* accommodate principles of weighting certain factors more than others.

I now return to the aspectual classes themselves, having touched on issues that cannot be ignored in analyses that crucially rely on classifications defined as a set of criteria. To maximize the use of available space, the results, based on a systematic testing of 355 French intransitive verbs,<sup>6</sup> are presented in table form with fairly extensive discussion of each table.

Consider first the number of criteria to be used to define a given aspectual class. Let's compare using eight defining criteria as opposed to using only four. A surprising asymmetry arises among the four Vendler/Dowty classes, as shown in Table III.

Aspectual Classification of French Intransitive Verbs

Class	Eight criteria		Four criteria	
	No. of verbs	% of total	No. of verbs	% of total
Activity	61	17%	74	21%
States	14	4%	29	8%
Achievements	35	10%	109	31%
Accomplishments	0	0%	9	2%
Total	110	31%	221	62%

Table III

Table III shows first the distribution of verbs based on eight defining criteria. Out of 355 verbs, a total of 31% are identified. The actual verbs are listed below in (50). If only four defining criteria are used, a total of 62% are identified. Notice however, that the number of criteria used makes a substantial difference for States (4 to 8%), Achievements (10 to 31%), and Accomplishments (0 to 2%) but not for Activities (17 to 21%). How to interpret this asymmetry is unclear: the four tests excluded from the four criteria, imperative, complement of *achever*, complement of *arrêter*, and interpretation of *presque*, individually target the following properties: a) Occurrence in

the imperative is a criterion based on agentivity. b) Ability to occur as complement of *achever* and *arrêter* focuses on temporal properties of the event. c) The adverb *presque* focuses on the degree of Accomplishment/realization of a particular event. Given that Accomplishments and Achievements are characterized in Vendler (1967) and Dowty (1979) primarily in terms of their temporal properties, it does not seem to make sense to ignore tests that precisely focus on those. On the other hand, if they were simply redundant tests, they would not affect the number of verbs identified in such a major way.<sup>17</sup> This most clearly highlights a problem with classification approaches like these: on what basis does one decide the number of criteria to be used? On independent grounds (of relevance) or according to the degree of success of the enterprise?

(50) Aspectual Classes in French (Eight Defining Criteria)

Activities (+AN)				States (-AN)		Achievements (-AN)	
<i>bavarder</i>	chat	<i>méditer</i>	meditate	<i>briller</i>	shine	<i>arriver</i>	arrive
<i>boiter</i>	limp	<i>mendier</i>	beg	<i>coincider</i>	coincide	<i>brûler</i>	burn
<i>bouger</i>	move	<i>mentir</i>	lie	<i>empester (+)</i>	stink	<i>casser</i>	break
<i>bouquiner</i>	read	<i>murmurer</i>	whisper	<i>étinceller</i>	sparkle	<i>céder</i>	give in
<i>cogner</i>	knock	<i>nager</i>	swim	<i>exister (±)</i>	exist	<i>cesser</i>	cease
<i>continuer</i>	continue	<i>naviguer</i>	navigate	<i>fermer</i>	close	<i>circuler</i>	circulate
<i>contribuer à</i>	contribute to	<i>parlémenter</i>	argue	<i>fonctionner</i>	function	<i>cuire</i>	cook
<i>courir</i>	run	<i>parler</i>	speak	<i>loucher (+)</i>	squint	<i>culbuter (±)</i>	tumble
<i>crier</i>	shout	<i>penser</i>	think	<i>murmurer</i>	whisper	<i>décéder (+)</i>	pass away
<i>danser</i>	dance	<i>persévéver</i>	persevere	<i>ouvrir</i>	open	<i>échouer</i>	fail
<i>déambuler</i>	stroll	<i>persister</i>	persist	<i>puer (+)</i>	stink	<i>éclater</i>	burst
<i>débrayer</i>	stop work	<i>pleurer</i>	cry	<i>sourire à</i>	smile on	<i>expirer (+)</i>	expire
<i>désobéir</i>	disobey	<i>protester</i>	protest	<i>tressaillir</i>	wince	<i>exploser</i>	explode
<i>dormir</i>	sleep	<i>reculer</i>	step back			<i>faiblir (+)</i>	get weaker
<i>écrire à</i>	write to	<i>réfléchir</i>	think over			<i>fermenter</i>	ferment
<i>errer</i>	wander	<i>rire</i>	laugh			<i>fondre</i>	melt
<i>exagérer</i>	exaggerate	<i>ronchonner</i>	grumble			<i>geler</i>	freeze
<i>flâner</i>	stroll	<i>rouspéter</i>	protest			<i>mourir (+)</i>	die
<i>flirter</i>	flirt	<i>sautiller</i>	hop			<i>mûrir</i>	ripen
<i>fumer</i>	smoke	<i>souffler</i>	puff			<i>naître (+)</i>	be born
<i>gesticuler</i>	gesticulate	<i>sourire</i>	smile			<i>périr (+)</i>	perish
<i>gigoter</i>	wriggle	<i>spéculer</i>	speculate			<i>refroidir</i>	cool off
<i>glisser</i>	slide	<i>téléphoner</i>	telephone			<i>résulter</i>	result from
<i>hésiter</i>	hesitate	<i>tourner</i>	turn			<i>rôtir</i>	roast
<i>hurler</i>	howl	<i>tousser</i>	cough			<i>sauter</i>	jump
<i>insister</i>	insist	<i>travailler</i>	work			<i>somber (±)</i>	sink
<i>jaser</i>	gossip	<i>tricher</i>	cheat			<i>tomber</i>	fall
<i>jongler</i>	juggle	<i>trinquer</i>	clink glasses			<i>tourner</i>	turn
<i>jouer</i>	play	<i>trotter</i>	trot			<i>venir</i>	come
<i>klaxonner</i>	hoot	<i>vivre pour</i>	live for			<i>vieillir</i>	get older
<i>marcher dans</i>	walk in						

In these tables, the verbs listed in the "States" column are to be understood as State verbs only when they take a -AN argument, except those indicated with "+," which are State verbs when they take only a +AN argument, and those marked "±," which are State verbs when take either a +AN or a -AN argument. Similar remarks apply to the other columns. There are no Accomplishment verbs defined by eight tests; this is not too surprising, since most Accomplishment verbs are syntactically transitive.

(51) Aspectual Classes in French (Four Defining Criteria)

Activities (+AN)		Accomplishments (+AN)		Achievements (-AN)			
<i>boire</i>	drink	<i>avorter</i>	abort	<i>agir</i>	have an effect	<i>intervenir</i>	intervene
<i>conspirer</i>	conspire	<i>bondir</i>	leap	<i>augmenter</i>	increase	<i>jaillir</i>	gush forth
<i>cracher</i>	spit	<i>changer</i>	change	<i>baisser</i> (±)	go down, drop	<i>jaunir</i>	turn yellow
<i>crachoter</i>	spit	<i>courir à la maison</i>	run home	<i>bouger</i>	move, change	<i>monter</i>	go up
<i>discuter</i>	argue	<i>débrayer</i>	declutch	<i>bouillir</i>	boil	<i>neiger</i>	snow
<i>évoluer</i>	move about	<i>descendre</i>	go down	<i>brunir</i> (±)	get tanned	<i>noircir</i>	blacken
<i>manger</i>	eat	<i>marcher jusqu'à</i>	walk to	<i>cailler</i>	curdle	<i>pâlir</i> (±)	turn pale
<i>miauler</i>	mew	<i>réagir</i>	react	<i>changer</i>	change	<i>paraître</i>	appear in print
<i>pique-niquer</i>	picnic	<i>rougir</i>	blush	<i>chauffer</i>	warm up	<i>partir</i>	go away
<i>ricaner</i>	snigger			<i>cicatriser</i>	heal up	<i>parvenir</i>	reach
<i>rugir</i>	roar			<i>craquer</i> (+)	fall apart	<i>peler</i> (±)	peel
<i>skier</i>	ski			<i>crystalliser</i>	crystallize	<i>pleuvoir</i>	rain
<i>voler</i>	fly			<i>descendre</i>	go down	<i>pousser</i>	grow
		States (-AN)					
		<i>apparaître</i>	appear	<i>disparaître</i>	disappear	<i>progresser</i> (±)	make progress
		<i>culminer</i>	culminate	<i>empirer</i>	worsen	<i>prosperer</i>	prosper
		<i>durer</i> (±)	last	<i>enfler</i>	swell up	<i>ralentir</i>	go slower
		<i>faiblir</i>	weaken	<i>entrer</i>	enter	<i>reculer</i>	back up
		<i>pendre</i>	hang	<i>évoluer</i>	develop	<i>régresser</i>	recede
		<i>puer</i>	stink	<i>faiblir</i>	get weaker	<i>réussir</i> (+)	succeed
		<i>reposer</i> (+)	lie	<i>fermenter</i>	ferment	<i>rougir</i>	turn red
		<i>rester</i>	remain	<i>fondre en larmes</i> (+)	burst into tears	<i>rouiller</i>	rust
		<i>s'appartenir à</i>	belong to	<i>geler</i> (+)	freeze	<i>sécher</i>	dry out
		<i>survivre à</i> (+)	survive	<i>gicler</i>	squirt	<i>sortir</i>	go out
		<i>vaciller</i> (+)	vacillate	<i>gonfler</i>	swell	<i>surgir</i>	appear suddenly
				<i>grandir</i> (±)	grow	<i>travailler</i>	ferment, warp
				<i>grimper</i>	climb	<i>vaciller</i>	flicker
				<i>guérir</i> (±)	heal	<i>vieillir</i>	age

It should be noted that in some instances, a change of animacy leads to a change of aspectual class, while clearly, this is not always the case (see (50) and (51)). Consider for example the following:

(52) Aspectual Classes: Animacy Contrasts

Activities (+AN)		Accomplishments (+AN)		Achievements (-AN)		
				Durative	Punctual	
<i>bouger</i>	move			<i>bouger</i>	move (prices)	
		<i>changer</i>	change			
<i>débrayer</i>	stop working	<i>débrayer</i>	disengage clutch		<i>changer</i>	change (color)
		<i>descendre</i>	go down	<i>descendre</i>	go down (prices, plane)	
<i>évoluer</i>	move about			<i>évoluer</i>	develop (surgery)	
		<i>rougir</i>	blush			
<i>tourner</i>	turn				<i>rougir</i>	turn red (metal)
<i>travailler</i>	work			<i>travailler</i>	ferment (wine)	
					<i>tourner</i>	turn (luck)

Consider next the behavior of individual classes in the individual diagnostic tests. The results are summarized in Table IV.

Diagnostic tests for unaccusativity/unergativity

Class	Eight criteria						Four criteria					
	+ CR	- CR	+ OR	- OR	+ ON	- ON	+ CR	- CR	+ OR	- OR	+ ON	- ON
Activity	0	61	10	49	47	11	0	74	13	58	54	13
States	2	12	5	9	1	2	6	23	9	17	3	4
Achievements	25	10	23	9	0	5	65	44	69	30	2	18
Accomplishments	0	0	0	0	0	0	3	6	5	4	3	5
Non-classified	80	160	96	124	50	55	28	107	40	82	36	33

Table IV

On the basis of eight criteria defining the aspectual classes, no Activity verb passes the CR test. Out of 14 State verbs, 2 pass, 12 fail.<sup>8</sup> Out of 35 Achievement verbs, 25 pass, 10 fail. Finally out of 245 non-classified verbs, 80 pass while 160 fail. The same tendencies basically obtain when only four defining criteria are used: if you are an Accomplishment verb, you are more likely to fail CR (2 to 1); if you are an Achievement verb, you are more likely to pass CR, though the odds are not as great as with eight aspectual criteria; if you are non-classified, you are far more likely to fail CR than pass. The one absolute result here is that Activity verbs systematically fail the CR test.<sup>9</sup> Consider the OR test next. The tendencies are roughly the same, based on 4 or 8 criteria: Activity verbs fail OR by a margin of 5 to 1. Achievements pass OR by a margin of 2 to 1, roughly speaking. Accomplishment verbs equally pass and fail OR. Non-classified verbs are more likely to fail OR (2 to 1). Consider finally the ON test. Again the tendencies are fairly stable, regardless of the number of criteria (eight or four) used to identify individual classes: Activity verbs pass the ON test by a margin of roughly 5 to 1. Accomplishments are more likely to fail ON (almost 2 to 1). Achievements are far more likely to fail ON (5 to 1 or 10 to 1, depending on the number of criteria used). State verbs as well as non-classified verbs equally pass or fail ON.

Consider now verbs which change classification, depending on the type of complement the verb occurs with. Verbs of motion change from Activity to Accomplishment when extent is specified. This is confirmed in French, based on four criteria:

- (53) a. Pierre a marché dans la forêt pendant une heure/\*en une heure. (Activity)  
*Peter walked in the forest for an hour/\*in an hour.*  
 b. Pierre a marché jusqu'à la forêt en une heure/\*pendant une heure. (Accomplishment)  
*Peter walked to the forest in an hour/\*for an hour.*

Interestingly enough, these two types of events pattern exactly alike in all unaccusativity tests while there is some contrast in the unergativity test ON.

- (54) a. \*Je croyais Pierre marché dans la forêt/jusqu'à la forêt.  
*I believed Peter walked in the forest/to the forest.*  
 b. \*Pierre marché dans la forêt/jusqu'à la forêt, les cerfs s'enfuirent.  
*Peter [having] walked in the forest/to the forest, the deer escaped.*  
 c. \*La personne marchée dans la forêt/jusqu'à la forêt...  
*The person [who] walked in the forest/to the forest...*  
 d. \*?L'enfant sera impossible à faire marcher dans la forêt/jusqu'à la forêt.  
*The child will be impossible to make walk in the forest/to the forest.*  
 e. On a marché dans la forêt/jusqu'à la forêt.  
*Someone/we walked in the forest;?someone/we walked to the forest.*

Not surprisingly, the Activity verb behaves as expected of Activity verbs in French: it fails the unaccusativity tests (54a-d) and passes the unergativity test (54e). Why the Accomplishment verb fails the unaccusativity tests is what needs to be explained. Under VV's analysis, if SI has anything to do with aspectual classification (and it does in French as far as Activity verbs go), Accomplishments and Activities are predicted to display clear contrasts; yet, they don't, as (54a-d) show.

Recall that transitive verbs of consumption can be construed as Activities or Accomplishments, depending on whether the direct object is definite or not. This holds in French, as (55) show:

- (55) a. Pierre a bu du vin pendant une heure/\*en une heure. (Activity)  
*Peter drank wine for an hour/\*in an hour.*  
 b. Pierre a bu le vin en une heure/\*pendant une heure. (Accomplishment)  
*Peter drank the wine in an hour/\*for an hour.*

Overall, a non-consistent pattern emerges under the diagnostic tests.

- (56) a. Je croyais tout le vin bu en moins d'une heure/\*?du vin bu pendant des heures.  
*I believed all the wine drunk in less than an hour/\*?wine drunk for hours.*  
 b. Une fois le vin bu/\*?du vin bu,....  
*Once the wine drunk/\*?wine drunk,....*  
 c. Il avait acheté le vin bu hier soir/?du vin bu hier soir chez le vigneron.  
*He had bought the wine drunk last night/ wine drunk last night at the wine grower's.*  
 d. Du vin/?le vin sera facile à faire boire à nos invités.  
*Wine/?the wine will be easy to make our guests drink.*

In two unaccusativity tests, CR and PA, *le vin* is clearly preferred to *du vin*, in accordance with VV's predictions. In RR, *du vin* is only slightly worse; in OR (another unaccusativity test), the situation is reversed with *le vin* much worse than *du vin*.

What can we conclude from the figures and the data just presented about aspectual considerations? Several things: 1) Activity verbs constitute a fairly robust class, both in terms of aspectual class identifiability via defining criteria and in terms of their behavior in the diagnostic tests. Activity verbs absolutely fail CR, PA, and RR, tests proposed earlier to positively identify unaccusativity verbs. On the basis of these three tests, they are thus unambiguously unergative. Their behavior in OR and ON is not absolute; yet they exhibit a strong tendency to fail OR (an unaccusativity test) and pass ON (an unergativity test). A clear and fair conclusion is that Activity verbs are mostly unergative in French, a result consistent with VV's analysis. 2) It is interesting to note that, overall, Accomplishment and Achievements do not pattern alike: Accomplishment verbs (roughly speaking) equally pass or fail all the tests, regardless of whether they are identified on the basis of four or eight criteria (but we are dealing here with a small sample). The situation with Achievement verbs is a bit more complex: on the basis of eight criteria (which identifies a comparatively small class of Achievements), they are more likely to pass the unaccusativity tests and fail the unergativity test. But when the largest identifiable class (i.e. on the basis of four criteria) is considered with respect to the major unaccusativity tests (CR, PA, and RR), 65 pass, 44 fail. It would appear then that being classified as an Accomplishment, an Achievement, or a State verb does not predict by itself a reliable pattern of behavior in unaccusativity tests. Being non-classified fares about as well. 3) Under the best scenario (four criteria instead of eight), 38% of verbs remain non-classified aspectually. Under an aspectual class analysis, then, we have no account of why these verbs pass or fail individual diagnostic tests.

Any conflation of these classes, for example along VV's Undergoer/Actor macrorole distinction yields similar results. This is shown in Table V.

Table V  
 Actor vs. Undergoer

Class	Eight criteria						Four criteria					
	+ CR	- CR	+ OR	- OR	+ ON	- ON	+ CR	- CR	+ OR	- OR	+ ON	- ON
Actor	0	61	10	49	47	11	3	80	18	62	57	18
Undergoer	27	22	28	18	1	7	71	67	78	47	5	22

The class of Actors conflates Activities and Accomplishments while the class of Undergoers conflates States and Achievements. Given that Activity verbs exhibit a strong pattern and that Accomplishments are very few in numbers, previous conclusions are not altered. What remains unexplained is the pattern with Undergoers and Non-classified (which of course do not appear in Table V).

I conclude from this discussion that in French, being an Activity verb tells something about syntactic behavior, whereas not being an Activity verb (including belonging to the three remaining aspectual classes) does not tell much of anything, and does not explain syntactic behavior.

One could respond that if we looked at the influence of individual semantic properties (as opposed to classes) on individual diagnostic tests one might see a pattern which the complication of defining classes obscures. At any rate, we would have the benefit of figures representing 100% of the data. Telicity has been proposed in the literature as eminently relevant to SI, at least in some languages: Dutch (Zaenen, 1989), English (Levin and Rappaport, 1989). Zaenen takes a verb to be telic if it fails the *for* adverbial test and atelic if it passes the test; I use this test in the top half of Table VI which summarizes the results for French.

Telicity						
Test	+ CR	- CR	+ OR	- OR	+ ON	- ON
+ FOR	56	207	88	159	87	44
- FOR	51	39	48	31	11	28
+ IN	91	66	87	54	21	43
- IN	16	180	49	136	77	29

Table VI

Most verbs are atelic, and they fail the major unaccusativity tests (CR, PA, and RR) by a margin of 4 to 1. Their behavior in OR and ON is less clear (margin of 2 to 1) though the pattern is consistent. Thus, atelic verbs tend to be unergative. The problem is with telic verbs: they do not exhibit a strong pattern at all; they pass unaccusativity tests slightly more often than failing them; the pattern with ON is clearer -- they fail it by roughly a margin of 3 to 1. A similar pattern can be observed with respect to the *in* adverbial test: those which fail the *in* test show a fairly strong pattern of failing unaccusativity tests while those which pass the *in* test do not exhibit a very strong pattern. This challenges the view, put forward in particular by Levin and Rappaport (1989), that, generally speaking, telic verbs are unaccusative.<sup>20</sup>

Finally, for the sake of completeness, consider Table VII, which summarizes the role of volitionality.

Volitionality						
Test	+ CR	- CR	+ OR	- OR	+ ON	- ON
+ VO	17	121	31	100	85	41
- VO	88	125	105	91	13	32

Table VII

Ability to occur with a volitional participant correlates strongly with failing unaccusativity tests, less strongly with passing the ON test (2 to 1). The non-volitionality of the participant, however, does not correlate with a clear pattern in unaccusativity tests; the pattern, however, is clearer in the ON test.

Recall a previous conclusion that being an Activity verb is informative about syntactic behavior but not being an Activity verb is not. Taking a volitional argument is also informative, not taking one is not. A similar conclusion can also be reached with respect to the temporal adverbial tests: passing the *for* test is informative, failing it is not; conversely, failing the *in* test is informative, passing it is not, comparatively speaking. More formally, being an Activity verb is a sufficient condition for *failing* unaccusativity tests. Equivalently, not being an Activity verb is a *necessary* condition for passing them. This distinction is important in view of VV's claim that semantic properties of volitionality and inherent lexical aspect are *sufficient* to explain the patterning in unaccusativity tests. This is clearly not the case in French, except for Activity verbs. Semantic conditions are thus formally similar to the

syntactic conditions discussed in Legendre (1989a) and summarized earlier in the present paper: they are necessary but not sufficient for passing a given unaccusativity test (that is, an unaccusative verb can still fail to pass an unaccusativity test, for other reasons). As a result, the semantic analysis fails to be formally superior to the syntactic analysis and cannot be preferred on logical grounds (I return to these issues in Section 4).

Dowty (1991) considers SI within his general approach based on proto-roles; he proposes that the phenomena are best characterized by a conjunction of two of the factors identified by VV, agentivity and telicity. He claims that universally, +agentive/–telic verbs (class 1) are definitely unergative, –agentive/+telic verbs (class 4) are definitely unaccusative, while the two remaining classes, +agentive/+telic (class 2) and –agentive/–telic (class 3) vary across languages, depending on which factor is primary in that language, agentivity or telicity. In French, a conjunction of these two semantic properties does not yield better results: overall, class 1 follows Dowty's prediction but class 4 passes unaccusativity tests only by a ratio of 2 to 1. Class 2 roughly passes and fails equally all the tests while class 3 fails the CR, PA, and RR tests by a margin of 2 to 1 and equally fails and passes the OR and ON tests.

A remaining issue that is often left out of semantic discussions of SI is that of the stability of semantic distinctions over time. In her discussion of SI at the morphological level (the active/stative distinction) in various modern Native American languages, Mithun (1991) paints a complex semantic picture, emphasizing the instability of a semantic basis for SI in many of these languages over time. Perhaps SI in French was originally clean and neat, and was characterizable exclusively in semantic terms. Perhaps diachronic developments (including possibly the notorious influence of the Académie Française!) came to obscure semantically-based distinctions. Even if such a scenario obtains, we are still left with a messy synchronic reality which has to be characterized somewhere in the grammar of Modern French. In other words, an historical account of the loss of a semantic basis does not *replace* an account of the synchronic reality. It would nicely complement it, though.

VV's claim concerning the validity of monostratal syntax coupled with a semantic component based on Aktionsart extends beyond SI. He argues, in particular, that his approach is actually superior for the analysis of passive and can accommodate Inversion structures, phenomena which have been argued to provide independent evidence for a multistratal view of syntax. I now turn to a critical assessment of these claims.

### 3. Other phenomena targeted by VV

#### 3.1. Passive

Perlmutter and Postal (1977/1983) propose a universal syntactic characterization of passive involving promotion of a deep direct object to surface subject and demotion of deep subject to surface *chômeur*. In their seminal paper, they specifically reject alternative universal characterizations in terms of word order, case marking, and verbal morphology, but do not consider alternative semantic characterizations. Perlmutter (1978), however, discusses a thematic role based account of passive in Dutch, claiming that the deep subject can correspond to a variety of semantic roles – Agent, Experiencer, Cognizer, Recipient and "others whose nature remains obscure" – and that the clause may describe non-volitional as well as volitional acts. In other words, he claims that passive in Dutch is semantically non-restricted.

VV's RRG analysis of passivization relies on two macroroles, Actor and Undergoer, which are the "two primary arguments of a transitive predication" (p. 226). In a monostratal theory like RRG, passive (in English) corresponds to a non-Actor being linked to subject while the Actor is linked to a peripheral status or is omitted (p. 230). A crucial distinction between, say, the RG analysis and the RRG analysis is that macroroles are not equivalent to direct core arguments such as subject and direct object in that the "number of direct core arguments need not be the same as that of macroroles; there are never more than two macroroles" (p. 228). Intransitive verbs take a single core argument as well as a single macrorole. Two-argument Activity verbs (*Bill drank beer*) take two core arguments BUT a single macrorole (actor) – see VV for details. Note that VV predicts that such two-argument Activity verbs should not undergo passive since they do not involve a non-Actor macrorole. The RG analysis makes no distinction between activities and other types of events, thus predicting that passive should be possible. VV actually argues that the RRG analysis of passive is superior to the RG-type analysis because in Italian (where only an Undergoer may appear as subject in a passive, according to Duranti and Ochs, 1979), two-argument Accomplishment verbs



passivize while their Activity counterparts do not. The following examples are from VV:

- (57) a. Gli spaghetti sono stati mangiati da Anna in cinque minuti. (Accomplishment)  
*The spaghetti was eaten by Anna in five minutes.*  
 b. \*Spaghetti sono stati mangiati da Anna per cinque minuti. (Activity)  
*Spaghetti was eaten by Anna for five minutes.*

While my Italian consultant agrees with the contrast indicated in (57), she reports, however, that it is incorrect to claim that in Italian, two-argument Activity verbs can never undergo passivization. In particular, she finds the following acceptable:

- (58) a. Della musica molto bella è stata suonata ieri sera dall'orchestra/da Maurizio Pollini per molto tempo/tre ore.  
*Beautiful music was played last night by the orchestra/by Maurizio Pollini for a long time/for three hours.*  
 b. Dell'acqua contaminata è stata bevuta/consumata dalla popolazione/dai miei parenti per cinque anni.  
*Contaminated water was drunk/consumed by the population/by my parents for five years.*  
 c. Per anni, della vernice è stata usata da mio padre per coprire le macchie.  
*For years, paint was used by my father to cover the stains.*

Note that the partitive article *della* does not change the aspectual classification of Activity, as shown by the occurrence of the *per* adverbial phrase. My Italian consultants further report that the reason (57b) is unacceptable is because it is too "abrupt". If one qualifies the spaghetti, the result is much more acceptable:

- (59) a. ?Spaghetti scotti sono stati mangiati da molte persone per cinque minuti.  
*Overcooked spaghetti was eaten by a lot of people for five minutes.*  
 b. Spaghetti, cucinati con del pomodoro fresco, sono stati mangiati da molte persone per cinque minuti.  
*Spaghetti cooked with fresh tomatoes was eaten by a lot of people for five minutes.*

What the contrast between (57b) and (58)-(59) shows is not the significance of the definiteness of the Undergoer (which determines whether the verb describes an Activity or Accomplishment) nor the specificity of the Actor – compare in particular *Anna* in unacceptable (57b) with *Maurizio Pollini* and *mio padre* in acceptable (58a) and (58c), respectively. It shows instead that the elements that precede and follow the passivized verb must be sufficiently salient. This is accomplished through increased individuation, the extent to which the phrase "is particularized and viewed as a concrete entity distinct from its background" (Hopper and Thompson, 1980:287). In the Italian examples above, adding a definite article, a partitive article, a modifier (adjective or temporal phrase) has, I claim, the effect of individuating the surface subject, in turn making it more salient.

Interestingly enough, the same factors operate in English (Paul Smolensky, personal communication). Compare (60a) with (60b).

- (60) a. \*?Spaghetti was eaten by Fred for more than half an hour.  
 b. Bland, overcooked spaghetti was eaten by that idiot, Fred, for more than half an hour!

More examples are given in (61):

- (61) a. \*?Lies were told by Bush for four years.  
 b. ?Lies about nuclear waste were told by Bush for four years.  
 c. Lies about nuclear waste were told by President Bush for four years.  
 d. Lies about nuclear waste were told by Bush and his administration for four long years (claimed to be as good as its active counterpart by my consultant).

It is clear from the English examples that the more individuating information is provided – about the lies or about Bush, and even the temporal phrase – the better the sentence sounds. Interestingly enough, the same saliency requirement seems to operate not just on the foregrounded element but also the backgrounded one.

The conclusion I draw from these Italian and English facts is not that passivization in these two languages is sensitive to an aspectual distinction between Activities and Accomplishments, as proposed by VV, but rather that a promotion from direct object to subject is a necessary but not sufficient condition; a saliency constraint must also be observed.

### 3.2. Inversion

Inversion (or subject to indirect object demotion) has been argued to exist in many languages, in particular with psych verbs occurring with a dative experiencer. Legendre (1989b) argues that this is true of French for a class of psych verbs including *plaire* "please, like", *déplaire* "hate", and *manquer* "lack, miss".

- (62) Les femmes plaisent à Pierre.  
*Women are pleasing to Peter (= Peter likes women).*

The basic evidence in support of inversion with verbs like *plaire* comes from control phenomena that are shown to be sensitive to the notion of subjecthood at some level. For example, the inversion nominal (or dative experiencer) can control various types of participial and gerund clauses (see Legendre, 1989b for details) while standard indirect objects cannot:

- (63) a. Licencié depuis un an, l'argent va lui manquer pour payer sa maison.  
*Laid off for a year, he is going to lack money to pay for his house.*  
 b. Ayant étudié toute sa vie, l'ignorance lui déplaît.  
*Having studied all his life, he hates ignorance.*  
 c. Que certaines femmes lui plaisent sans vraiment les désirer,...  
*That certain women be pleasing to him without really desiring them,...*
- (64) a. \*Critiqué par la presse, le ministre envoya une lettre de démission au président.  
*[the president] criticized by the press, the minister sent a resignation letter to the president.*  
 b. \*Ayant été séduit, la jeune fille fut confiée à son oncle.  
*Having been won over [masculine agreement = her uncle], the girl was entrusted to her uncle.*  
 c. \*La jeune fille avait été confiée à son oncle sans être consulté.  
*The girl had been entrusted to her uncle without being consulted [masculine agreement = her uncle].*

The sentences in (64) are unacceptable under the particular interpretations given in the translations. In each case, the sentence is acceptable with the subject of the main clause as controller.

VV claims that "universally, inversion involves an intransitive state or achievement verb, i.e. one which has only a single macrorole argument" (p. 244). Since the LS of both State and Achievement verbs involve a state predicate, that macrorole is an undergoer. By the Actor-Undergoer hierarchy posited by VV, a theme outranks an experiencer for undergoerhood, so the theme will be the undergoer. The experiencer does not acquire macrorole status and therefore is a nonmacrorole core argument. VV further claims that in such constructions "the default controller is universally the highest-ranking direct core argument in terms of [his thematic] hierarchy" (p. 245) (emphasis mine).

Inversion in French is particularly relevant here because, as Legendre (1989b) shows, the two arguments of a dative experiencer verb can serve as controllers of participial clauses.

- (65) a. S'étant remis à sortir, Marie lui manque terriblement.  
*Having started [masculine agreement] to go out again, he misses Mary terribly.*

- b. S'étant remise à sortir, Marie lui manque terriblement.  
*Having started [feminine agreement] to go out again, he misses Mary terribly.*
- c. Ayant quitté la Californie, nos amis nous manquent.  
*Having left California, we miss our friends.*

In (65a), the controller of the embedded verb is the dative experiencer *lui*, as VV predicts. In (65b), the controller is the theme *Marie*, contrary to VV's prediction. In both examples, the agreement on the embedded verb indicates the controller. (65c), on the other hand, has two interpretations, one where the dative experiencer *nous* is the controller and one where the theme *nos amis* is, again contradicting VV's claim.

VV might respond that French is exceptional in that agents, experiencers, and themes can be controllers. The problem with such a characterization is that in simple transitive sentences, themes cannot be controllers:

- (66) Ayant réussi au concours, je déteste/redoute mon frère.  
*Having passed the competitive exam, I dislike/fear my brother.*

(66) has just one reading: the controller of the embedded verb can only be the experiencer *je*, it cannot be the theme *mon frère*, even though, pragmatically speaking, the feelings experienced by *je* could be the consequence of his having passed the exam.

Consider another prediction. Given that in French, experiencers and themes can sometimes serve as controllers, a thematic-hierarchy-based analysis would predict that locatives – which are intermediate between experiencers and themes on VV's hierarchy – should be able to serve as controllers, at least sometimes. But in fact, locatives can never serve as controllers in French, not even abstract locatives (elsewhere characterized as beneficiaries and recipients or goals):

- (24) Retrouvé par la police, l'enfant avait été confié à son père.  
*Found by the police, the child was entrusted to his father.*

(24) is not ambiguous: the controller must be *l'enfant*; the abstract locative *son père* cannot control the embedded verb though, of course, it is a pragmatically possible referent. See also examples in (64).

Thus, VV's claims concerning control phenomena – which typically constitute the crucial evidence in support of multistratal inversion analyses in the RG literature – cannot be valid universally.

#### 4. Concluding Remarks

To conclude, a detailed analysis of French intransitive clauses reveals that the semantic parameters proposed by VV to universally underlie SI cannot be sufficient to explain the French facts. His accounts of Italian and Dutch SI are problematic as well. Finally, the discussion of passive in Italian and inversion in French shows that his claims to superiority in those areas have also been too premature. VV's account, thus, falls far short of superiority to syntactic accounts advocated in particular by RG and GB proponents.

It is clear that the reason to prefer one to the other has to be external to the issues of SI, passive, and inversion. It is clear what the preference should be if one's (monostratal) view of syntax does not permit the deep syntactic analysis -- this is precisely the situation for VV and incidentally, Dowty, among others. If one's view of syntax not only accommodates the syntactic analysis of SI but is independently motivated by other phenomena, then there is a good reason to reject the semantic analysis. Nothing I have said about French precludes the view (shared by others, in particular Levin & Rappaport, 1989 and Zaenen, 1989) that SI is partially semantically determined but syntactically encoded.

Independently of the issues of multistratal vs. monostratal syntax, some might be tempted to argue for the superiority of the semantic approach on very general grounds of abstractness and parsimony. My objection here is not to arguments concerning abstractness and parsimony per se, but to simplistic a priori prioritizing about these issues. Which is more parsimonious, abstract, or learnable: a grammar involving syntactic structure at a deep level directly paralleling that at the surface level, or a grammar involving eleven semantic features, four categories, and grouping of the categories for syntactic purposes in particular ways? This question must be argued, and the answer is surely

not self-evident. There is a commonly held view that semantics is inherently less abstract than syntax, and that, since knowledge of semantics is a necessary component of linguistic knowledge anyway, the more work done by semantics, the more parsimonious and learnable the theory. However, it must be acknowledged that, just like syntax, different kinds of semantics can be more or less abstract, more or less parsimonious, and more or less learnable. One of the main objectives of empirical science is to identify the joints at which to carve; a linguistic theory that is overall most parsimonious and learnable is one that correctly apportions responsibility to syntax and semantics. Forcing semantics to do work that should be done in syntax can lead to a semantics that is more abstract, less parsimonious, and less learnable. The overarching conclusion of this critique is that VV greatly oversimplifies the target phenomena, and that if the work of multistratal syntax could be done semantically in an empirically adequate way, the semantic notions and conditions required are likely to be much more complex than the simplified image conveyed by VV. So even if the current VV theory were shown to be less abstract, more parsimonious and more learnable than MSS, there is good reason to doubt that it is at all likely to be true of a revised VV approach which repairs the many empirical inadequacies identified above. Like syntax, as semantic analyses such as VV develop further against the constraints of empirical adequacy, they can be expected to become more abstract and complex, and it will be more and more obviously difficult to compare heavily syntactic and heavily semantic alternative analyses with comparable empirical support on grounds of parsimony, abstractness, and learnability.

### Footnotes

1. I use Ladusaw's term *multistratal* to refer to theories like RG, GB, which recognize more than one level of syntax and *monostratal* for other theories (LFG, GPSG, RRG, etc.) which recognize a single level of syntax (See Ladusaw, 1985 for discussion).

2. Hall-(Partee) (1965) is, according to Dowty (1991), the one to be credited for the first syntactic formulation of the Unaccusative Hypothesis.

3. Throughout this paper, I use interchangeably the terms agentivity, volitionality, and protagonist control.

4. (8b) would be ok under the reading "they deflected three."

5. My Italian consultants agree with the existence of a contrast between (15a-b) and (15c-e) although they find the latter rather strained as opposed to unacceptable, as reported by Cinque. According to them, there is no such contrast in (16).

6. For further discussion of deep unaccusativity in LFG, see Bresnan and Zaenen, 1990.

7. Legendre (1989a) presents additional tests which she characterizes as less productive: cliticization of the embedded indirect object in causative constructions, auxiliary selection, nominalizations, parallel transitive structures, and stativity. Legendre (1989a, 1990) discusses additional putative tests, including two which have been widely regarded in the GB literature (including Burzio, 1986, Cinque, 1990) as diagnostic tests: Extraposition of Indefinite and partitive *en* cliticization. She argues that these tests are invalid, at least for her consultants. Some of these tests are also discussed in Ruwet (1989).

8. Legendre (1989a) discusses separately instances of PAs with a coreferential link between the participial and the main clause: *Méprisé par sa famille et ses amis, Pierre tenta de se suicider* "Despised by his family and friends, Peter attempted to commit suicide". She dubs this construction Participial Equi (PE) and argues that it follows the same syntactic condition as PAs (31), though PE is less restricted aspectually.

9. In an appendix to his paper, VV makes a proposal concerning reflexive morphology in Italian. He argues

that "the appearance of *si* signals that the actor argument has been suppressed (p. 257). His proposal has the same flavor as the one put forward by Rosen (1981) and Legendre (1986) – it does not appeal to the notion of coreference, and it involves suppression of an entity – but this is where the similarity stops. In particular, VV does not incorporate so-called inherent reflexives in his analysis (as confirmed by VV, personal communication).

10. To my knowledge, there is only one other unergativity test in French: Impersonal Passive with intransitive verbs that subcategorize for an indirect object or oblique argument. This somewhat peculiar additional restriction makes the number of verbs which actually occur in the impersonal passive construction very small and thus is not a productive test for identifying unergative verbs (see Postal, 1986 and Legendre, 1989b for further discussion).

11. In his discussion of auxiliary selection (pp. 232-233), VV discusses only the duration adverbial test for telicity. An examination of Centineo's paper (pp. 20-23) reveals that Activity and Accomplishment verbs are determined on the basis of 4 of Dowty's criteria (criteria 4a/b, 5, and 6 for Activity; 4, 5, 6, and 10 for Accomplishments), Achievement verbs are determined on the basis of 7 criteria (3a/b, 4a/b, 7, 8, and 10), and States are not discussed in terms of any of the Dowty criteria. The absence of systematicity in testing is not commented upon, nor are we told why only a subset of tests is considered relevant to Italian, and why a distinct number of tests is needed for Achievements. Given the far-reaching conclusions that VV draws based on such classes, this is a serious methodological deficiency.

12. Dowty (1979) does not provide a clear picture of Accomplishments: p. 56 "Accomplishment verbs [...] only very marginally take adverbials with *for*"; p. 58, "although Accomplishments allow both *for*-phrase and *in*-phrase time adverbials with equal success, Achievements are generally quite strange with a *for*-phrase"; his summarizing table (p.60, reproduced under Table I) shows "OK" under Accomplishments for the *for* test. This is adopted in Van Valin (1990, 1991). This is also the position taken in Centineo (1986:21) since she applies to Accomplishments entailment test (5) which presupposes that test (4) "for an hour" applies positively. Zaenen (1989) is much clearer on the issue, pointing to the opposite direction: Accomplishments are telic or bounded and fail to appear with a *for* adverbial, though she does not use Dowty's other syntactic and semantic criteria.

13. Only eight criteria were considered, for two basic reasons: (1) Some tests are not always applicable because they presuppose the passing of another test. (2) The results are already very complex when based on eight criteria, as we will see shortly; adding more criteria would only make them more complex.

14. Dowty (1979) notes that the adverb "almost" has different effects on Activities and Accomplishments: *John almost walked* (Activity) entails that John did not, in fact, walk; *John almost painted a picture* is ambiguous: (1) John had the intention of painting a picture but changed his mind and did nothing at all, or (2) John did begin work on the picture and he almost but not quite finished it. No such ambiguity arises with Achievements: *John almost noticed the painting*.

15. I note the following statement made in Foley and Van Valin (1984), p. 47: "Dowty's theory of verb semantics and classification is a tool [to analyze the grammatical systems of languages and not to propose analyses which are assumed to be valid in every detail for every language], and we are using it as a tool rather than as a straitjacket". If the criteria are used as guidelines to support intuitions rather than as defining criteria in VV (1990), we should be told so because of the very strong claims the author makes, based on classes which the reader must *presume* - in the absence of a statement to the contrary - to have been established on the basis of those criteria.

16. This is the number of non-reflexive intransitive verbs I feel comfortable using. Note that reflexive verbs and adjectives are not part of this set of 355, for reasons having to do with the preliminary status – and a conscious decision to avoid complications at that particular point – of the connectionist-based account of Legendre, Miyata, and Smolensky (1990, 1991). Note, however, that the analysis was separately extended to inherent reflexives and neutrals, without any incidence on the conclusions discussed here. The original analysis of Legendre (1989a) includes reflexives and adjectives. The set of 355 intransitive clauses also include instances of double listing, for

example of verbs which may occur with different types of arguments (such as animate vs. inanimate, volitional vs. non-volitional).

17. For a critical discussion of mixing agentivity- and temporally-based criteria, see Verkuyl (1989).

18. Note that the number of state predicates which pass unaccusativity tests is artificially low because adjectives are not included.

19. The same pattern obtains with PA and RR. In the following discussion, whatever is said of the CR pattern should be interpreted as holding for PA and RR as well.

20. Many verbs in French pass (81) or fail (14) both temporally based adverbial tests. We may want to interpret the ones which pass both tests as lexically ambiguous between Activities and Accomplishments. Note that these verbs equally pass or fail the diagnostic tests: +CR (44) –CR (37); +OR (44) –OR (31); +ON (14) –ON (16). Note again that those which fail both adverbial tests do not get classified in this system!

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