# THE ACQUISITION OF CORRELATES OF
## UNACCUSATIVITY IN L2 FRENCH[*]

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## 1.     Introduction

The Unaccusative Hypothesis (Perlmutter 1978) maintains that there are two
types of intransitive verbs: unergative, where the grammatical subject is the
Agent and the verb describes an activity (*laugh, run*) and unaccusative, where
the grammatical subject is the Theme and the verb describes an achievement,
accomplishment or state (*open, arrive, exist*). Levin and Rappaport Hovav
(1995) argued that unaccusatives are not a monolithic class but rather can be
divided into distinct sub-classes based on syntactic and semantic criteria:
alternating change-of-state verbs such as *break* (henceforth "CS verbs"), verbs
of inherently directed motion such as *arrive* (henceforth "IDM verbs"), verbs
of appearance, disappearance and existence such as *appear* and *die*, and verbs of
occurrence such as *happen*. While there is much overlap cross-linguistically,
languages differ as to what aspect of meaning—telicity for unaccusatives or
agentivity for unergatives—determines class membership (Dowty, 1991; Levin
and Rappaport Hovav, 1995; Van Valin, 1990 for example).
     Research in the L2 acquisition of unaccusativity in English has shown
that learners with different L1s and at different levels of proficiency produce
and accept inappropriate passive morphology with unaccusative verbs, although
their production and/or judgements may become native-like. However, some
learners fossilize before having attained native-like performance (Han, 1998).
Sorace (1993a) showed that near-native Francophone and Anglophone learners
of Italian fell short of native-like performance, but that they were sensitive to an
unaccusative hierarchy.  Subjects' performance was more accurate with verbs of
change of location such as *andare* ('go') and *venire* ('come'), which are high on
the unaccusativity hierarchy, and less consistent with alternating change-of-state
verbs, which are at the lower end of the hierarchy.[1]
     Oshita (2001), based on previous research on the L2 acquisition of
unaccusativity in English, Italian and Chinese put forth the Unaccusative Trap
Hypothesis (UTH). Under the UTH, beginning learners do not distinguish
unergative and unaccusative verbs, both of which are subject to the same
"single-argument linking rule". Based on the input, intermediate learners begin
to distinguish the two classes and may eventually sort them out, though some
remain in the "unaccusative trap", that is they fossilize. Montrul (2005) tested
Sorace's (2000) Auxiliary Selection Hierarchy (ASH) and the UTH in the L2
acquisition of Spanish using a judgement task including diagnostics of

[1] In subsequent work, with some modifications, it is referred to as the Auxiliary Selection
Hierarchy (Sorace, 2000).

unaccusativity in Spanish. She found that the beginners did not distinguish unaccusatives and unergatives, supporting the UTH, and that the intermediate and advanced learners were sensitive to the ASH.

To the best of my knowledge the only experimental study on the acquisition of unaccusativity in L2 French is Sorace (1993b).[2] She found that Italian learners had difficulty acquiring appropriate auxiliary use, which she suggested was due to its "greater inconsistency" (p. 72) in French. However, learners' performance on the task was better with change-of-location verbs than with alternating change-of-state verbs, which provided further empirical support for the unaccusativity hierarchy proposed in Sorace (1993a). Sorace did not distinguish between pronominal and non-pronominal change-of-state verbs, which as will be seen in the following section, may have influenced the results.

## 1.1 Unaccusativity in French

Labelle (1992:380) maintained that "there is no reason to stipulate *a priori* that if a verb is unaccusative in Italian, it must be so in French". She provided syntactic and semantic arguments to make the case that while some CS verbs in French are unaccusative, others are unergative, contra Bouchard (1992), Burzio, (1986) and Legendre, (1994) for example.

Labelle argued that pronominal CS verbs are unaccusative while CS verbs occurring without *se* are unergative, since the former are conjugated with *être* (1a), as are IDM verbs (1b), while CS verbs without *se* are conjugated with *avoir* (2a) like unergative activity verbs (2b).

(1)    a.    Le vase s'est brisé.
             The vase SE is broken.

         b.    Marie est arrivée.
             Mary is arrived.

(2)    a.    La neige a fondu.
             The snow has melted.

         b.    Marie a ri.
             Marie has laughed.

And while both pronominal CS verbs and IDM verbs occur in impersonal constructions (3a) and (3b), CS verbs without *se* are ungrammatical in such constructions (4a), as are other unergatives (4b).

(3)    a.    Il s'est brisé plusieurs vases.
             There SE is broken several vases.
         b.    Il est arrivé trois femmes.
             There is arrived three women.

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[2] Knaus and Nadasdi (2001) conducted a variationist analysis of auxiliary use based on a corpus of the spontaneous speech of French Immersion students.

(4) a. *Il$_{impersonnel}$ a fondu trois boules de neige.
     There has melted three snowballs.

  b. *Il a ri plusieurs femmes.
     There has laughed several women.

Another characteristic of pronominal CS verbs is their ability to occur as embedded infinitival relatives (Pollock, 1985) as in (5a), like the IDM verb in (5b), contrasted with the ungrammatical CS verb without *se* in (6a) and the unergative activity verb in (6b).

(5) a. Le vase que tu croyais s'être brisé
     The vase which you believed SE to be broken

  b. La personne que je croyais être arrivé
     The person whom I believed to be arrived

(6) a. *Le vase$_i$ que tu croyais PRO$_i$ avoir cassé
     The vase which you believed to have broken

  b. *La personne que je croyais avoir ri
     The person whom I believed to have laughed

I cannot do justice to the meticulous semantic analysis in Labelle (1992), but will give a brief sketch. She provided a number of semantic arguments to show that unergative CS verbs differ from unaccusative CS verbs. With unergative CS verbs, "the process involves a physical, internally driven transformation of an entity" (Labelle, 1992:392), rather than an externally driven change, as is the case with unaccusative CS verbs. Unergative CS verbs describe a process which is internally driven and where the subject is responsible for the process, while unaccusative CS verbs focus on the final state and the event is externally controlled. I will refer to these verbs as IntCS and ExCS respectively.
   English and French also differ in regard to DPs in PP. Borgonovo and Cummins (1999) showed the past participles of IDM verbs can modify DPs in French (7a), a structure which is ungrammatical in English (7b). They attribute their grammaticality in French to the fact that they are conjugated with *être*.[3]

 (7) a. [$_{DP}$Les participants [partis après 4 heures]] étaient fâchés.
   b. *[$_{DP}$The participants [left after 4 o'clock]] were angry.

Table 1 summarizes the differences between English and French unergative and unaccusative verbs. Lexical entries are based on Levin and Rappaport Hovav (1995).

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[3] They argued that all PPs in DP are licensed by *be* or *être*, which means past participles of transitive verbs describing states, punctual or durative processes, and transitions are grammatical in both English and French..

**Table 1:** Certain differences between French and English intransitive verbs

| French | English |
|---|---|
| IDM: [$y$ BECOME/BE AT $z$] + *être* <br> ExCS: [[$x$ CAUSE] [$y$ *se* BECOME AT STATE]] + *être* <br> IntCS: [$x$ PREDICATE] <br> *casser, cuire, fondre* etc./*moisir, pourrir, rouiller* etc. + *avoir* | IDM: [$y$ BECOME/BE AT $z$] + *have* <br> ExCS: [[$x$ CAUSE] [$y$ BECOME AT STATE]] + *have* <br> IntCS: [$x$ PREDICATE] <br> *\*break, cook, melt, etc./mould, rot, rust* etc. + *have* |
| *Immediate Cause Linking Rule:* The argument denoting the immediate cause is the external argument. | *Directed Change Linking Rule*: The argument undergoing a directed change is the direct internal argument. |
| *Directed Change Linking Rule*: The argument undergoing a directed change is the direct internal argument. | *Immediate Cause Linking Rule:* The argument denoting the immediate cause is the external argument. |
| Expletive subject with IDM verbs and ExCS verbs | Expletive subject restricted to IDM verbs |
| Infinitival relatives with *croire* | Infinitival relatives with *believe* |
| Limited to IDM and ExCS verbs, passive and adjectival passives | Grammatical with all verb classes |
| PP in DP with passive participles and IDM verbs | PP in DP with passive participles not IDM verbs |
| Unaccusatives marked with *être* (IDM) and *s' être* (ExCS) | Unaccusatives not marked morphologically |

Note: Shaded areas indicate where French and English differ.

In both English and French IDM verbs have one direct internal argument and another argument $z$ specifying a location, which may be implicit. They select auxiliary *être* in French, and *have* in English.

ExCS verbs are underlyingly causative in both languages. There are two participants: $x$ (the external causer of the event) and a direct internal argument $y$ (the entity undergoing a change). The intransitive is derived from the causative by detransitivization, a lexical rule which removes the external cause (Levin and Rappaport Hovav, 1995). This process is triggered by *se* in French (Labelle, 1992; Reinhart and Siloni, 2005 and references cited therein).

Both English and French also have IntCS verbs. Some are internally caused in both languages (*mould, rot, rust*) while others belong to different classes in the two languages. For example *cuire* and *fondre* are IntCS verbs (in the unmarked case) but *cook* and *melt* are ExCS verbs. Based on the semantic distinctions described in Labelle (1992), Levin and Rappaport-Hovav (1995) suggested that the ordering of linking rules might be different in French and English. In English the DCLR is ordered before the ICLR, but in French the ICLR takes precedence so that IntCS verbs are unergative.

Turning to syntactic correlates of unaccusativity in French, while both languages have can have expletive subjects with IDM verbs, only French allows them with ExCS verbs. Similarly, both have embedded infinitival relatives with

*croire/believe*, but they are more restricted in French, being licensed by *être* (Pollock, 1985), and in English ExCS verbs would not occur with *s'être*. Finally French, but not English, has PPs in DP with IDM verbs.

## 1.3 Research Questions

The research reported here was guided by two research questions: what are the roles of universals and the L1 in the L2 acquisition of unaccusativity in French by Anglophones? More specifically, can L2 learners acquire:

- elements which are not present in the L1, i.e. the clitic *se* with unaccusative CS verbs, and perfective auxiliary *être* with two subclasses of unaccusative verbs, IDM and ExCS verbs?
- elements which are rare in the input and/or differ from the L1, i.e. embedded infinitival relatives, impersonal constructions with ExCS verbs, and PPs in DP with IDM verbs?
- a semantically determined verb classification which differs from the L1, i.e. IntCS verbs in French which are ExCS verbs in English?

## 2. Materials

The research design comprised a sentence-matching task and an acceptability judgment task. The judgement task was envisaged as an adjunct to the sentence-matching task, and contained a subset of the verbs in the sentence-matching task.

## 2.1 Sentence-matching task

The sentence-matching task (henceforth SM task) has been used successfully in a number of studies in L2 acquisition (Bley-Vroman and Masterson, 1989; Duffield and White, 1999; Duffield et al., 2002; Eubank, 1993), although Gass (2001) raised questions about its validity. Pairs of sentences are presented on a computer screen, one pair at a time. Subjects are asked to indicate whether the two sentences are the same (matched) or different (unmatched). Although subjects are attending to whether or not the sentences are the same, research has shown that their responses are significantly faster with matched grammatical sentences than with matched ungrammatical sentences. Thus it has been assumed that response latencies can serve as a measure of subjects' implicit linguistic knowledge.

The SM task in this study was generated using *E-Prime*®, a suite of software applications for developing, running and analysing timed experiments. It consisted of 15 verbs and 4 conditions. Each verb occurred in each condition in a grammatical and ungrammatical sentence, for a total of 120 pairs of test sentences. The ratio of unmatched to matched pairs of sentences was 3:1, giving 42 unmatched sentences, and 21 grammatical and 21 ungrammatical. Thus there were a total of 162 sentences, 120 matched and 42 unmatched. The verbs used in the task included three IDM verbs, three ExCS verbs, three IntCS verbs, two unaccusative verbs of appearance and disappearance, two unergative activity verbs and two transitive verbs. Examples of each condition are given

below, auxiliary (8a), impersonal construction (8b), embedded infinitival relative (8c) and PP in DP (8d).

(8)  a.  Je suis tombé par terre en grimpant l'échelle.
        I am fallen to the ground while climbing the ladder.

     b   Il est tombé cinq centimètres de neige en Floride.
         There is fallen five centimetres of snow in Florida.

     c.  Les pommes que je croyais être tombées ont été mangées.
         The apples that I believed to be fallen have been eaten.

     d   On ne retrouva pas les clés tombées dans le lac.
         We will not find the keys fallen into the lake.

Based on the description set down in Duffield and White (1999), the procedure was as follows. A fixation point was displayed in the centre of the computer screen for 500 ms. The first sentence was then presented at the top left-hand side of the monitor. After 2000 ms., a second sentence was presented in the bottom half of the screen, approximately 3cm to the right of the first sentence. The appearance of the second sentence activated a timer, which stopped when the subject tapped a computer key (1 for "same" and 2 for "different"). After the subject tapped the key or after 2500 ms. had passed, both sentences disappeared from the screen. The procedure began again  after 750 ms.

There was practice session of 15 sentences, and a break after the first 80 sentences. Two versions of the experiment were prepared and subjects were randomly assigned to one or the other. Sentences which were grammatical in one version were ungrammatical in the other and vice versa. In both versions sentences were randomized for every subject. The task took 20-25 minutes to complete.

## 2.2 Acceptability judgements

The acceptability judgement task, which consisted of a subset of the verbs used in the SM task, was administered after subjects completed the SM task.  Each verb occurred in a sentence with a grammatical auxiliary (9a), an ungrammatical auxiliary (9b), an impersonal construction (9c) an embedded infinitival relative (9d) and a PP in DP (9e).

(9)  a.  Le succulent chocolat noir a fondu dans ma bouche.
        The succulent dark chocolate has melted in my mouth.

     b.  Toute la neige s'est fondue pendant la journée.
         All the snow SE is melted during the day.

     c.  Il s'est fondu beaucoup de métal pour faire des armes.
         There SE is melted much of metal to make weapons.

      d.      Pauline a retiré du feu le caramel qu'elle croyait être fondu.
                Pauline has removed from the burner the caramel which she
                believed to be melted.

      e.      Le fromage fondu est une excellente collation du midi.
                The cheese melted is an excellent mid-day snack.

The verbs which will be discussed in what follows are the IDM verbs *arriver* ('arrive') and *tomber* ('fall'); the ExCS verbs *se briser* ('break') and *se transformer* ('change'/'be transformed'); and the IntCS verbs *cuire* ('cook') and *fondre* ('melt'). Subjects were asked to indicate if the sentences were acceptable, unacceptable or if they were not sure, and to correct any sentence they considered unacceptable.

## 3.     Subjects

Half of the French L2 learners were students in an intensive summer programme and the other half in what is called *groupe pont* ('bridge group'), a program which prepares Anglophone students to study in French at university. There were 14 females and 2 males, ranging in age from 17-49 (mean 21.94). They had studied from between 2 and 16 years of French (mean 10.31). All were advanced to very advanced learners of French, based on a cloze passage, one sub-test of the French L2 proficiency test at the Second Language Institute, University of Ottawa.[4] There was also a control group of 16 Francophone students at the same institution. There were 12 females and 4 males, ranging in age from 19-50 (mean 24.31).

## 4.     Results

### 4.1     Sentence Matching

Following the protocol established in previous research, only matched sentences which subjects correctly identified as being the same were analysed. Cut-off values for response latencies were set at two standard deviations above and below each subject's mean response time, and responses with longer latencies were adjusted to the cut-off value. After administering the task to 32 subjects the results were trimmed and analysed using SPSS. No significant differences were found for any condition. The presentation times and response times were increased by 500 ms. each, and the modified experiment administered to a further 10 subjects. Again, there were no significant differences in response latencies between grammatical and ungrammatical sentences for any condition. The results will not be discussed further in this paper.

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[4] I would like to thank Doreen Bayliss, former head of Evaluation and Research at the Second Language Institute, University of Ottawa, for making this test available to me for the purposes of this research.

## 4.2 Acceptability judgement task

Table 2 gives the results for the learners (L) and controls (C) on the acceptability judgment task. There were two verbs for each verb class, so the maximum possible score was 2.0.

**Table 2:** Mean accurate judgements for different verb classes by sentence type

| Verb class | Gramm. Aux. | | Ungram. Aux. | | Impersonal | | Infinitival | | Past Part. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | C | L | C | L | C | L | C | L | C |
| IDM | 1.8 | 1.9 | 1.4 | 1.3 | 0.9 | 1.0 | 1.5 | 1.9 | 1.4 | 1.9 * |
| ExCS | 1.6 | 1.9 | 1.4 | 1.9 * | 0.3 | 0.9 * | 0.6 | 1.3 * | 2.0 | 2.0 |
| IntCS | 1.4 | 1.8 | 0.9 | 1.5 * | 1.3 | 0.8 | 1.3 | 1.8 * | 2.0 | 2.0 |

Note:  * $p \leq 0.05$.  Shaded areas indicate where French and English differ.

There were no significant differences between the groups with grammatical auxiliaries with any class of verb. Both learners and controls were quite accurate in their judgements of sentences with IDM and ExCS verbs conjugated with *être*, and with IntCS verbs conjugated with *avoir*. There were, however, significant differences between the groups with ungrammatical auxiliaries with ExCS and IntCS verbs. In both cases the learners were significantly less likely to correct the ungrammatical auxiliary. There were no significant differences with ungrammatical auxiliaries with IDM verbs: all subjects corrected *avoir* to *être,* although both groups had a tendency to accept *avoir* with *tomber* ('fall'). With impersonal constructions there were no significant differences between the groups except with ExCS verbs: the learners rejected grammatical sentences. Turning to sentences with embedded infinitival relatives, there were significant differences between the groups with ExCS and IntCS verbs. Finally, with sentences containing PPs in DP there were no significant differences in judgements with ExCS or IntCS verbs, but there were with IDM verbs.

To summarize the results briefly, all significant differences between the learners and controls were with ExCS and IntCS verbs, with the exception of sentences containing PPs in DP, where the significant differences were with the IDM verbs.

I will now look more closely at the linguistic phenomena for which there were significant differences between the learners and the controls. In the tables which follow, an "acceptable" response means the subject judged the sentence to be acceptable, and an "unacceptable" response means the subject identified the sentence as unacceptable and corrected the phenomenon under study.

Table 3 gives the responses to ungrammatical auxiliaries with CS verbs. Learners accepted ungrammatical *s'avoir* with ExCS verbs significantly more

frequently than the controls ($Chi^2 = 9.73$, 1 df, p = 0.05).[5] Learners also accepted ungrammatical *s'être* with IntCS verbs significantly more than the controls ($Chi^2 = 9.73$, 1 df, p = 0.02).

**Table 3**: Responses to ungrammatical auxiliaries With CS verbs

| Verb | Acceptable | | Unacceptable | | Not sure | |
|---|---|---|---|---|---|---|
| | L | C | L | C | L | C |
| *s' a brisé | 2 | 0 | 13 | 16 | 1 | 0 |
| *s'a transformé | 6 | 1 | 10 | 14 | 0 | 1 |
| *s'est cuit | 6 | 4 | 8 | 12 | 2 | 0 |
| *s'est fondu | 9 | 4 | 6 | 12 | 1 | 0 |
| **TOTAL** | **23** | **9** | **37** | **54** | **4** | **1** |

Table 4 gives responses to impersonal constructions with CS verbs. With ExCS verbs they grammatical but with IntCS verbs they are ungrammatical.

**Table 4**: Responses to impersonal constructions with CS verbs

| Verb | Acceptable | | Unacceptable | | Not sure | |
|---|---|---|---|---|---|---|
| | L | C | L | C | L | C |
| Il s' est brisé | 3 | 7 | 11 | 9 | 2 | 0 |
| Il s'est trans. | 1 | 8 | 11 | 5 | 4 | 3 |
| **TOTAL** | **4** | **15** | **22** | **14** | **6** | **3** |
| *Il s'est cuit | 3 | 8 | 11 | 7 | 2 | 1 |
| *Il s'est fondu | 4 | 8 | 9 | 7 | 3 | 1 |
| **TOTAL** | **7** | **16** | **20** | **14** | **5** | **2** |

Learners were significantly less likely than controls to accept impersonal constructions with *s'est* in both grammatical and ungrammatical sentences ($Chi^2 = 9.07$, 2 df, p = 0.01). There were no significant differences in either group's responses to impersonal constructions with ExCS and IntCS verbs.

Table 5 shows that learners rejected grammatical embedded infinitival relatives with ExCS and IntCS verbs significantly more than controls ($Chi^2 = 6.26$, 1 df, p = 0.01 and $Chi^2 = 4.48$, 1 df, p = 0.03 respectively).

In their corrections, learners changed ExCS verbs in embedded infinitival relatives (*s'être brisé/s'être transformé*) by deleting *se* (*être brisé),* deleting *s'être* to give a PP in DP, or by changing the auxiliary (*avoir transformé*). The IntCS verbs appeared as adjective passives in the task (*être cuit/être fondu*), but learners rejected them as well, corrected them by changing the auxiliary to *avoir* or deleting the copula, giving a PP in DP. There were no significant differences between groups with IDM verbs ($Chi^2 = 2.96$, 1 df, p = 0.08).

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[5] The Chi-square test is designed for frequency counts. All calculations were done using the web facility (Preacher, 2001 April).

**Table 5:** Responses to embedded infinitival relatives by verb class

| Verb Class | Acceptable | | Unacceptable | | Not sure | |
|---|---|---|---|---|---|---|
| | L | C | L | C | L | C |
| IDM | 23 | 30 | 6 | 1 | 3 | 1 |
| ExCS | 10 | 21 | 19 | 7 | 3 | 4 |
| IntCS | 21 | 29 | 8 | 2 | 3 | 1 |
| **TOTAL** | 54 | 80 | 33 | 10 | 9 | 6 |

Table 6 gives subjects' responses to sentences with PPs in DP. The only significant difference was with IDM verbs, with learners judging them acceptable significantly less than the controls (Chi$^2$ = 3.95, 1 df, p = 0.046).

**Table 6:** Responses to sentences with PPs in DP by verb class

| Verb Class | Acceptable | | Unacceptable | | Not sure | |
|---|---|---|---|---|---|---|
| | L | C | L | C | L | C |
| IDM | 23 | 30 | 7 | 2 | 2 | 0 |
| ExCS | 30 | 32 | 0 | 0 | 0 | 2 |
| IntCS | 32 | 31 | 0 | 0 | 1 | 0 |

## 5.       Discussion and Conclusion

I will now respond to the research questions posed in Section 1.3. The L2 learners in this study have acquired perfective *être* with IDM verbs.  This is consistent with other studies, and is likely due to explicit instruction (Knaus and Nadasdi, 2001) and the verbs' high position on the ASH (Sorace, 1993b). The subjects also accepted grammatical auxiliaries with both ExCS and IntCS verbs. They were fairly successful at correcting ungrammatical *s'avoir* with ExCS verbs but had a strong tendency to accept ungrammatical *s'être* with IntCS verbs. This suggests that they have acquired the properties of the functional category *se* but have not yet realized that certain CS verbs which are externally caused in English are internally caused in French (*cuire* and *fondre*), possibly assuming all are externally caused as they are in English. This over-rides the morphological evidence that there are two different classes in French.

Although learners have acquired *être* with IDM verbs and *s'être* with CS verbs--elements which are not present in the L1--they have not yet acquired related structures with CS verbs. With impersonal constructions there were no significant differences between the learners' responses to the two types of CS verbs, which again suggests they have not distinguished ExCS and IntCS in French.[6] Turning to embedded infinitival relatives, learners did not accept them with adjectival passives of IntCS verbs, although they are grammatical in English.  As noted above, they changed copula *être* to *avoir* or deleted it with both ExCS and IntCS verbs. These corrections suggest that learners do not

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[6] For the controls, the lack of difference may be due to the fact that *se fondre* and *se cuire* are marked forms in French  (Labelle, 1992).

distinguish ExCS and IntCS verbs in French. The results with impersonal constructions and embedded infinitival relatives again support the ASH, since there were no significant differences between the learners and controls with IDM verbs in these structures, but there were with CS verbs.

While there were no significant differences between learners and controls with IDM verbs with auxiliaries, impersonal constructions or infinitival relatives, there were with PP in DP, an unexpected result since they are licensed by *être*. It may be that learners have acquired auxiliary selection with IDM verbs on a verb-by-verb basis but have not acquired its licensing property. L1 transfer may also be a factor in this structure.

To conclude, advanced learners of L2 French have acquired certain correlates of unaccusativity with IDM verbs but not CS verbs, providing further empirical support for the ASH. They have not yet acquired the distinction between ExCS and IntCS verbs, and research with native-like learners would be required to see if this distinction is learnable. It is too early to say if L2 learners of French ever extricate themselves from the unaccusative trap.

The lack of significant results in the SM task is consistent with Gass' (2001) study, which showed that grammaticality did not result in quicker reaction times. According to Roumyana Slabakova (p.c.) the SM task is more sensitive to violations of word order and agreement than to semantic violations. In future research I will explore the possible reasons for the lack of significant results with the SM task reported here, including Gass' suggestion that it may be learners' notion of grammaticality rather than the native speaker's which is at play in the task.

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