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L1 attrition in Spanish speakers of English:
split intransitivity and the syntax–semantics
interface

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Abstract

Research on bilingual linguistic development has demonstrated that, after prolonged use of a second language (L2), syntactic structures from the first language (L1) that interface with extralinguistic factors (i.e. syntax–discourse interface) may be vulnerable to attrition. This dissertation presents data from an experimental study intended to test whether syntactic structures that interface with other linguistic aspects (i.e. syntax–semantics interface) are also affected by attrition. Split intransitivity, an understudied phenomenon in L1 attrition, was chosen to evaluate this possibility. An experimental group of Spanish speakers who presented conditions conducive to L1 attrition, as well as a control group of non-attrited Spanish speakers, performed an Acceptability Judgment Task. The results revealed no significant differences between the two groups, suggesting that language structures dependent on syntax–semantics interface conditions have greater stability and are, therefore, unaffected in L1 attrition.

Keywords: L1 attrition, syntax–semantics interface, Spanish, split intransitivity, unergative, unaccusative.

Resumen

La investigación sobre el desarrollo lingüístico bilingüe ha demostrado que, tras el uso prolongado de una segunda lengua (L2), las estructuras sintácticas de la primera lengua (L1) que interactúan con factores extralingüísticos (i.e. interfaz sintáctico-discursiva) pueden resultar vulnerables a atrición. Este trabajo presenta datos de un estudio experimental destinado a comprobar si las estructuras sintácticas que interactúan con otros aspectos lingüísticos (i.e. interfaz sintáctico-semántica) también experimentan efectos de atrición. El fenómeno de intransitividad escindida, poco estudiado en atrición de la L1, fue escogido para evaluar dicha posibilidad. Un grupo experimental de hablantes españoles en condiciones que conducen a la atrición, así como un grupo control de hablantes españoles sin atrición, realizaron una prueba de juicios de aceptabilidad. Los resultados no revelaron ninguna diferencia significativa entre los dos grupos, lo que sugiere que las estructuras lingüísticas en la interfaz sintáctico-semántica son más estables y no se ven, por tanto, afectadas por la atrición de la L1.

Palabras clave: atrición de la L1, interfaz sintáctico-semántica, español, intransitividad escindida, inergativo, inacusativo.

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1. Introduction

Learning an L2 in adulthood is often an arduous process, largely hindered by the strong influence of the learner's L1. Research in the last decades has explored this issue, revealing that the L1 continues to affect the L2 even at near-native stages of L2 acquisition. A similar phenomenon has been observed in the opposite direction: the acquisition and prolonged use of an L2 can affect the learner's L1. This is known as L1 attrition, the focus of this dissertation.

The Interface Hypothesis (IH), put forward by Sorace and Filiaci (2006), has inspired an extensive body of research on both L2 acquisition and L1 attrition, as well as other areas in the field of bilingual language development (e.g. simultaneous bilingual acquisition, incomplete acquisition). It states that language structures whose felicitous use requires the integration of syntax with other domains are unstable and present indeterminacy in bilingual grammars.

While the IH has received considerable support since its original formulation, a notable concentration of work has been limited to the study of syntactic structures that are constrained by discourse factors (i.e. those at the syntax–discourse interface). In fact, only a relatively small number of studies have explored syntactic structures that do not require the integration of extralinguistic information (i.e. those at the syntax–semantics interface). The study presented in this dissertation has sought to test the IH with regards to an understudied phenomenon in L1 attrition, split intransitivity.

Split intransitivity is characterized by a distinction between two classes of intransitive verbs: unergative and unaccusative. This has a syntactic reflection, as exemplified by languages like Italian, where the selection of perfective auxiliary depends on whether a given verb is unaccusative or unergative – *essere* for unaccusative verbs and *avere* for unergative verbs. However, what determines the unergative–unaccusative syntactic behavior of the verb is its lexical–semantic properties. Thus, split intransitivity makes an ideal ground for testing the IH in relation to the syntax–semantics interface.

Previous research has highlighted asymmetries in the syntactic behavior of unergative and unaccusative verbs, with some verbs displaying systematic unergative or unaccusative behavior and others, variable behavior. Sorace's (1993, 2000) Auxiliary Selection Hierarchy (ASH), conceived to account for this finding in auxiliary-selection languages, postulates that unergative and unaccusative verbs are distributed along a

hierarchy of lexical–semantic verb subclasses, where the farther one moves from the ends towards the center, the more variable syntactic behavior verbs display.

The ASH, therefore, captures the syntax and semantics of split intransitivity, and offers a successful account of the variable syntactic behavior of unergative and unaccusative verbs in auxiliary-selection languages. However, there is, as of yet, a lack of research on the possibility that a hierarchy like the ASH regulates split intransitivity in languages that do not support auxiliary selection. The present study intends to explore this possibility in relation to Spanish, where auxiliary selection is not available as a syntactic reflection of split intransitivity.

To address these issues, an experimental group of speakers under conditions typically leading to L1 attrition, as well as a control group of non-attributed speakers, participated in this study. All of them had been raised in a monolingual Spanish-speaking environment and had started learning English as an L2 in school. Their intuitions about split intransitivity in Spanish were tested using an Acceptability Judgment Task involving unergative and unaccusative verbs of several lexical–semantic subclasses.

The dissertation is organized as follows. Section 2 presents the original formulation of the IH, reviews seminal studies on L2 acquisition and L1 attrition, and provides evidence for differential interface conditions. Section 3 introduces split intransitivity, the phenomenon under investigation, and reviews evidence and theories that it is syntactically represented but semantically determined. Section 4 reviews previous research on bilingual development in the domain of split intransitivity in Spanish. Section 5 explains the research questions to be examined and hypotheses to be tested. Section 6 describes the details of the present experiment and Section 7 reports the results. Finally, sections 8 and 9 discuss how the results inform the research questions and what can be concluded from them.

2. Interface Hypothesis

2.1. L2 acquisition

For decades, research in L2 acquisition has attempted to answer the question of why adult L2 learners diverge from native speakers of the target language even at advanced stages of L2 acquisition. Recent years have witnessed major progress in this field as studies have begun to investigate near-native L2 speakers as a group of bilingual speakers different from the average L2 learner. One such study is that of Sorace and Filiaci (2006),

motivated by the emerging picture that the locus of indeterminacy (i.e. non-target-like behavior) found in non-native grammars is in syntactic structures that interface with other cognitive systems (e.g. Belletti *et al.*, 2007). Based on this idea, they put forward the IH, claiming that, while structures requiring purely syntactic computations (‘narrow syntax’) pose no difficulties to L2 learners, interface structures between syntax and other domains (e.g. semantics, discourse) may not be completely acquirable in L2 acquisition (Sorace & Filiaci, 2006).

To test this hypothesis, Sorace and Filiaci examined the interpretation of Italian anaphoric pronouns in near-native speakers of L2 Italian who spoke English as their L1, a phenomenon that involves an interface between syntax and discourse. In null-subject languages like Italian, null pronouns are considered the default option, which is syntactically licensed, and overt pronouns, the “marked” option, which depends on discourse factors such as topic shift. For instance, in topic continuity contexts ([– topic shift]) such as (1a) below, where the discourse topic is the same for both the main clause and the subordinate clause (i.e. Paola), the subject of the subordinate clause must be dropped, as the use of a null pronoun (*pro*) illustrates. Conversely, if an overt pronoun (*lei*) were used in this context, as in (1b), the discourse topic would shift from the subject of the main clause (*Paola*) to an external referent (i.e. an entity different from Paola), changing the meaning of the sentence (‘Paola has not telephoned because someone left early’). Therefore, the use of an overt subject is acceptable in [+ topic shift] conditions but infelicitous in [– topic shift] conditions (Tsimplici *et al.*, 2004), as the hash sign in the example indicates.

- (1) a. Paola_i non ha telefonato perché *pro*_i/#*lei*_i è uscita presto ([– topic shift])
 b. Paola_i non ha telefonato perché *lei*_j è uscita presto ([+ topic shift])
 ‘Paola has not telephoned because she has left early’

(adapted from Sorace & Filiaci, 2006, p. 342)

The distribution of pronominal subjects in Italian is thus dependent on interface conditions, which has direct consequences for how anaphoric pronominal subjects are interpreted by Italian speakers. Null pronouns, on the one hand, have a strong preference for antecedents in subject position, as illustrated in (2a), where an anaphoric null pronoun (*pro*) would be interpreted as coreferential with the subject (*il portiere*) – rather than the object (*il postino*) – of the main clause. For overt pronouns, on the other hand, antecedent assignment is sensitive to contextual factors. Where there is potential for ambiguity, as in

the examples in (2), in which the two same-gender referents are plausible antecedents, an overt pronoun cannot be assigned an antecedent in subject position, since null pronouns are systematically associated with this position. Instead, an overt pronoun should refer to the object of the main clause to avoid miscommunication, as shown in (2b). Nonetheless, it can be coreferential with the subject in unambiguous sentences like (3), where number agreement is enough to correctly identify the antecedent (Sorace & Filiaci, 2006).

- (2) a. Il portiere_i saluta il postino_j mentre *pro*_{i/#j} apre la porta
 b. Il portiere_i saluta il postino_j mentre lui_{#i/j} apre la porta
 ‘The porter_i greets the postman_j while he_{i/j} opens the door’

(adapted from Sorace & Filiaci, 2006, pp. 342,

- (3) Quando Gianni_i ha salutato i nonni_j, lui_{i/*j} era veramente triste
 ‘When Gianni_i said goodbye to his grandparents_j, he_{i/*j} was very sad’

348)

The participants from the study were tested using a Picture Verification Task (PVT). In each trial, they were presented with a sentence along with three pictures and were asked to indicate which one corresponded to the meaning of the sentence. This required participants to identify the main-clause antecedent of anaphoric null and overt pronouns in ambiguous contexts like (2) above. Sorace and Filiaci predicted that, due to the presence of interface conditions, near-native speakers would differ from native speakers in their interpretation of overt subject pronouns, but they were expected to perform native-like with respect to null subject pronouns, as the latter are only subject to syntactic conditions. This prediction was confirmed by the finding that near-natives were more likely than their native peers to allow an interpretation where overt pronouns were coreferential with the subject of the main clause, as in (4). Moreover, they found that both groups performed similarly in terms of null subjects, showing a preference for subject referents, especially in sentences like (5) where the subordinate clause preceded the main clause. These findings are in line with the IH, suggesting that near-natives can fully acquire the syntactic constraints on Italian pronominal subjects and yet present indeterminacy in interpretation strategies involving interface conditions.

- (4) La mamma_i dà un bacio alla figlia mentre lei_i si mette il cappotto
 ‘The mother gives a kiss to the daughter while she is wearing her coat’
 (5) Mentre *pro*_i si mette il cappotto, la mamma_i dà un bacio alla figlia

‘While she is wearing her coat, the mother kisses the daughter’

(adapted from Sorace & Filiaci, 2006, p. 352)

2.2. L1 attrition

As noted earlier, the IH was conceived as an account of the *residual* indeterminacy observed in adult L2 acquisition, but it has been found to be applicable to other areas of bilingual language development such as L1 attrition, the subject of this dissertation. Studies with near-native L2 speakers have revealed that, in situations of prolonged use of the L2 (often in immigration contexts), certain aspects of the L1 may be vulnerable to *emerging* indeterminacy; namely, those located at the interface between syntax and discourse (e.g. Helland, 2004 for L1 Catalan; Montrul, 2004 for L1 Spanish).

In an influential study, Tsimpli, Sorace, Heycock and Filiaci (2004) also found evidence of indeterminacy in the interpretation of Italian pronominal subjects, but in the opposite direction of Sorace and Filiaci (2006), i.e. in native (L1) rather than near-native (L2) grammars. The participants were Italian native speakers who had been British residents for several years and had attained near-native competence in the L2 (English). They performed a PVT similar to that employed in the previous study, designed to examine their interpretation of null and overt pronouns in ambiguous anaphoric dependencies in Italian, the participants’ L1. Tsimpli *et al.* reported that attrited speakers interpreted overt pronouns as coreferential with the subject of the main clause significantly more often than the monolingual controls, accepting anaphoric dependencies like (4) above. With regard to null subjects, neither group misinterpreted null pronouns as referring to the object of the main clause (Tsimpli *et al.*, 2004).

Thus, the results of the study are in line with the findings concerning near-native speakers of Italian. In particular, the attrited speakers from this study also exhibited indeterminacy in the interpretation of overt – but not null – pronouns in ambiguous anaphoric dependencies. This lends further support to the IH, suggesting that interface constraints on anaphora resolution are problematic in L2 acquisition as well as in L1 attrition, whereas purely syntactic constraints are fully acquirable in the former and impervious to the latter.

2.3. *Internal vs external interfaces*

As discussed in section 2.1., the original formulation of the IH distinguished between structures involving narrow syntactic properties and properties constrained by interface conditions, assuming that all interfaces are equally unstable (Sorace, 2011). This has generated much research on bilingual development in phenomena at the syntax–discourse interface, as the studies reviewed above illustrate; however, other types of interfaces have been overlooked. Recent studies have addressed this problem, suggesting that, in fact, not all interfaces display the same degree of instability.

One such study is that by Tsimplici and Sorace (2006), who found evidence of a split between what they call “internal” and “external” interfaces such as syntax–semantics and syntax–discourse, respectively. They argue that differences between them stem from the particular challenges they pose:

The distinction between the two interfaces is based on the assumption that the syntax-discourse interface is a ‘higher’ level of language use, integrating properties of language and pragmatic processing, whereas syntax-semantics involve formal properties of the language system alone (p. 653).

To test this hypothesis, they examined the distribution of pronominal subjects and focus fronting in the production data of Russian learners of L2 Greek who were first generation immigrants in Greece. As a null subject language, Greek behaves similarly to Italian with respect to pronominal subjects: while null pronouns obey to purely syntactic constraints, overt pronouns are regulated by discursive conditions. For instance, in canonical utterances like speaker A’s in (6), overt pronouns are considered redundant, as they provide information about the discourse topic (i.e. speaker B, A’s interlocutor) that is implicit in the verb morphology (2nd person singular). Nonetheless, their use is felicitous in contexts like (6B), where the overt pronoun *esi* introduces a new discourse topic (i.e. speaker A) bearing a contrastive reading (‘B did not meet Maria, A did’), as the underlining indicates. Thus, the distribution of null and overt subjects in Greek is dependent on syntax–discourse interface conditions, as is the case in Italian.

- (6) A: Xthes *pro/#esi* sinandises ti Maria (canonical sentence)
 yesterday *pro/* you met-2S the Maria
 ‘Yesterday you met Maria’
- B: Ochi, esi sinandises ti Maria (oxi ego) (contrastive topic)
 no you met-2S the Maria (not I)

‘No, you met Maria (not I)’

Contrary to contrastive topic, focus fronting in sentences like (7) is not constrained by external, but rather internal, conditions. As shown in the example, the element bearing focal stress (*TON PETRO*) moves from its canonical position, represented by *t*, to the left periphery, introducing new information *with respect* to the discourse topic (‘it was Petro whom she met’), as opposed to a new discourse topic, as in the previous example (Rizzi, 1997). Thus, focus fronting is constrained by syntax–semantic conditions.

- (7) TON PETRO_i sinandise *t*_i i adhelpi mu. (focus fronting)
 the-ACC Petro met-3S the-NOM sister my
 ‘It was Petro that my sister met’

(Tsimpli & Sorace, 2006, p. 655)

Tsimpli and Sorace found that, while participants showed target-like performance with respect to focus fronting, even the most advanced among them overextended the use of overt subject pronouns to discursively inappropriate contexts (see example (6A) above). This finding suggests that there are important differences between interfaces: structures involving external interfaces (e.g. syntax–discourse) are the locus of indeterminacy in bilingual development, but those involving internal interfaces (e.g. syntax–semantics) are relatively stable.

3. Split intransitivity

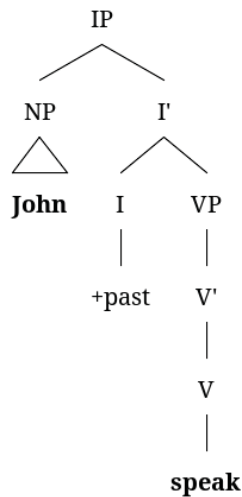
3.1. Unaccusativity Hypothesis

Since Perlmutter’s (1978) Unaccusativity Hypothesis (UH), it is generally assumed in generative grammar that intransitive verbs can be classified into two types – unergative and unaccusative – according to the syntactic position in which their only argument originates. For unergative verbs, it generates pre-verbally in subject position, <Spec, IP>, as in (8a); for unaccusative verbs, it initially occupies a post-verbal position, <V, NP>, as in (8b), but is then promoted to <Spec, IP> in order to meet Case requirements¹ and satisfy

¹ The Case Filter (Government and Binding / Minimalist framework) establishes that every overt (i.e. phonologically realized) noun-phrase (NP) argument must have Case. Case is assigned to an NP when its case features are checked off, which requires the NP to be in specifier (Spec) position. An NP in Spec will receive nominative Case (NOM) if the head is I (inflection) (<Spec, IP>) and accusative Case (ACC) if the

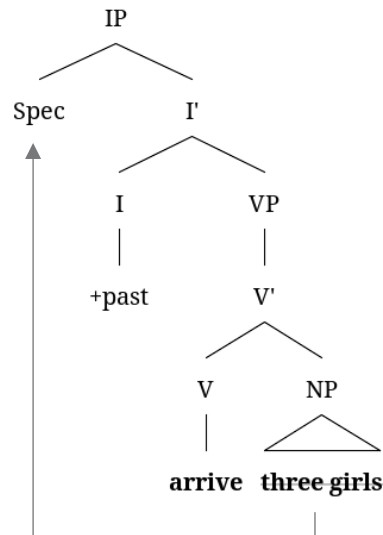
the condition that clauses must have a subject in <Spec, IP> (Extended Projection Principle (EPP); Chomsky, 1981). Arguments in <Spec, IP> and <V, NP> are referred to as external and internal, respectively (Williams, 1981).

(8) a. unergative



‘John spoke’

b. unaccusative



‘Three girls arrived’

(adapted from Lozano & Mendikoetxea, 2010, p. 8)

This syntactic distinction correlates with a semantic distinction. Unergative verbs like *speak* in (8a) (also *run*, *work*, *dance*) entail volition, i.e. they denote an activity controlled by an agent. Unaccusative verbs like *arrive* in (8b) (also *fall*, *appear*, *exist*), on the contrary, are non-volitional, lacking an agent, and are instead associated with the role of patient or theme, i.e. the being or thing affected by the action denoted by the verb (e.g. Lozano & Mendikoetxea, 2010). In line with Baker’s (1988) Uniformity of Theta-Assignment Hypothesis (UTAH), which proposes that certain thematic roles are systematically assigned to certain syntactic positions, the original formulation of the UH claims that agents are mapped onto the external argument of unergative verbs, and patients or themes are mapped onto the internal argument of unaccusative verbs (Perlmutter, 1978).

head is V (verb) (<Spec, VP>) (Chomsky, 1981). NP-movement to <Spec, IP> in (1b) results in NOM Case assignment, satisfying the Case Filter.

Thus, the UH captures both the syntax and semantics of split intransitivity in a conceptually simple way, making two important assumptions: (a) unergativity and unaccusativity constitute separate categories, each of which containing intransitive verbs that share similar syntactic and semantic properties; (b) syntax and semantics are completely aligned for both verb types, such that a verb's syntactic behavior (unergative or unaccusative) can be predicted from its semantic characteristics (agentivity or patienthood) and vice versa. However, several lines of research (see Levin & Rappaport Hovav, 1995 for a review) have presented evidence against these claims, thereby challenging the UH. One piece of evidence suggests that unergative and unaccusative verbs do not represent homogenous categories, as some verbs systematically behave as unergative or unaccusative while others display variable syntactic behavior. Another suggests that inconsistencies can be found in the syntax–semantics alignment proposed by the UH, since verbs with similar semantics can have different syntactic behavior across languages (Levin & Rappaport Hovav, 1995).

3.2. *Theories of split intransitivity*

To account for these findings, research on split intransitivity in the last decades has studied how the lexical–semantic characterization of intransitive verbs is mapped onto the syntactic configurations in which they appear. This issue has been approached from two main perspectives: constructional and projectionist. First, constructional models (e.g. Borer, 1994, 1998) posit that unergativity and unaccusativity are a property of the predicate, rather than the verb, whose “bare” lexical entries contain no specification of whether arguments are external or internal. Thus, verbs can appear in both unergative and unaccusative syntactic configurations, which in turn determines their aspectual reading (roughly, their semantics). For instance, the verb *melt* in (9) can be interpreted as both telic (completed event) and atelic (process) depending on the syntactic realization of its argument – internal in (9a) and external in (9b).

- (9) a. At that temperature, the ice melted in a few hours (telic)
 b. The ice melted for a few hours before becoming water (atelic)

Despite being able to account for syntactic variation, constructional models are incompatible with the fact that not all intransitive verbs display variable syntactic behavior, since they assume that *any* verb can appear in both unergative and unaccusative syntactic configurations (Sorace, 2004). Moreover, constructional models place syntax at

the core of the distinction between unergativity and unaccusativity, claiming that a verb’s aspectual properties are the result of its syntactic behavior, rather than the former being what determines the latter (Sorace, 2004).

In contrast, projectionist models are built on the premise that split intransitivity is syntactically encoded but semantically determined (Levin & Rappaport Hovav, 1995). They maintain that unergativity and unaccusativity are lexical–semantic properties of the verb, as opposed to properties of the predicate. Under this assumption, what determines a verb’s unergative or unaccusative status is how lexical entries project onto syntactic positions, which is governed by a universal linking mechanism that maps arguments onto particular syntactic positions. For example, in their model, Levin and Rappaport Hovav (1995) propose three linking principles: (a) the ‘Immediate Cause’ Linking Rule maps an argument denoting the immediate cause of the event described by the verb onto an external argument, (b) the ‘Directed Change’ Linking Rule maps an argument denoting an entity affected by the change described by the verb onto an internal argument, (c) the ‘Existence’ Linking Rule maps an argument whose existence is asserted onto an internal argument. The first linking rule, therefore, produces unergative verbs like *tossire* (‘to cough’) in (10a), as evidenced by the selection of auxiliary HAVE over BE (*avere* in Italian). The other two, on the other hand, produce unaccusative verbs like *devenir* (‘to become’) in (10b) and *esistere* (‘to exist’) in (10c), as shown by the selection of auxiliary BE over HAVE (*être* in French; *essere* in Italian). To account for variable syntactic behavior, projectionist models argue that certain verbs have two sets of lexical–semantic representations, each containing a lexical entry that projects onto a different syntactic position (Levin & Rappaport Hovav, 1995).

- (10) a. Mario ha /*é tossito (immediate cause)
 Mario has/ is coughed
 ‘Mario coughed.’
 (Sorace, 2000, pp. 877,
- b. L’enfant est/*a devenu triste (directed change)
 the child is / has become sad
 ‘The child became sad.’
- c. I dinosauri sono esistiti / ?hanno esistito 65 (existence)
 the dinosaurs are existed/ have existed 65

866,

milioni di anni fa
 millions of years ago

‘The dinosaurs existed 65 million years ago.’

899)

The projectionist approach to split intransitivity also presents some problems (see Sorace, 2004 for a full discussion). First, rather than universal, linking rules are language-specific. The Existence Linking Rule, for instance, is associated with unaccusative verbs in Italian, as in (10c) above, but not in German, as illustrated in (11), where the verb *existieren* selects auxiliary HAVE over BE (*haben* in German). Second, although double lexical–semantic representations solve the problem of optionality, this solution is only practicable in as long as verbs for which variation exists constitute the exception to a general rule. If optionality were instead the rule, the number of lexical entries in the lexicon would increase to the extent of potentially becoming unlearnable (Sorace, 2004).

- (11) Die Dinosaurier haben/*sind wirklich existiert
 the dinosaurs have / were really existed
 ‘The dinosaurs really existed.’

(Sorace, 2004, p. 246)

In another front, projectionist models succeed in providing an account of the relationship between the syntax and semantics of split intransitivity. Contrary to constructional models, where a verb’s semantics becomes a by-product of its syntactic behavior, in the projectionist view, the verb’s lexical–semantic properties are what determines whether it should behave as unergative or unaccusative, since linking principles are sensitive to the semantic notions of immediate cause, directed change and existence laid above.

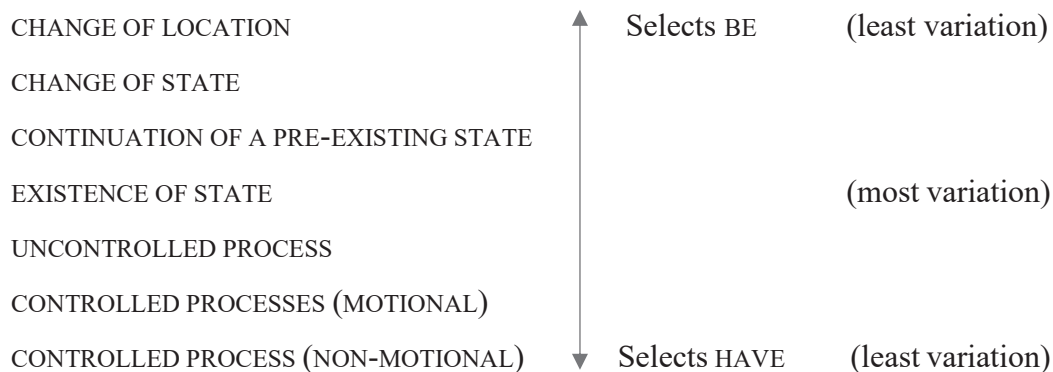
3.3. Auxiliary Selection Hierarchy

Further support to the view that split intransitivity is both syntactic and semantic in nature has come from research on auxiliary selection in Western European languages like Italian, French and German, all of which have a choice between the counterparts of English perfective auxiliaries HAVE and BE (see examples in (10) and (11) above) (e.g. Sorace, 1993, 2000). This line of research has provided a sound empirical basis for the facts presented above that, while some verbs have consistent unergative–unaccusative behavior both within and across languages, others do not, and has found that native

speakers’ judgments on auxiliary selection tend to be categorical for some verbs, but less determinate for others (Sorace, 2004).

Sorace (1993, 2000, 2004) has suggested that these findings can be accommodated within a theory of split intransitivity that does not represent unergativity and unaccusativity as homogenous verb classes but as being made up of multiple subclasses organized along a language-specific hierarchy, as illustrated in (12) below. This hierarchy, referred to as the Auxiliary Selection Hierarchy (ASH), distinguishes “core” from “peripheral” verbs: the former, situated at the ends, show consistent syntactic behavior (unergative or unaccusative) both within and across languages and elicit categorical judgments (auxiliary BE or HAVE); the latter, found toward the center, show increasing variation as they move away from the ends, and elicit less determinate judgments than core verbs (Sorace, 2004).

(12) Auxiliary Selection Hierarchy (ASH)



(adapted from Sorace, 2004, p. 256)

The position a given verb occupies in the hierarchy is mainly dependent on its lexical–semantic properties; more specifically, whether a verb is located at the BE end or the HAVE end is determined by the aspectual and thematic notions of telicity and agentivity, both of which have been argued to be somehow related to verb syntactic behavior by earlier accounts of split intransitivity, as mentioned earlier in this section. Thus, verbs denoting telic events strongly correlate with BE, while those denoting an agentive process strongly correlate with HAVE (Sorace, 2000). In contrast with core verbs, peripheral verbs are inherently underspecified with respect to one or both dimensions, which is the source of their variable syntactic behavior. Sorace (2004) makes the following claim:

Intermediate [peripheral] verbs, which are neither telic nor agentive, are the most variable and least determinate in many languages; unlike core verbs, they vary in

their syntactic behaviour depending on the properties of the predicate in which they appear. (p. 265)

To give an example, the verb *correre* in Italian ('to run') belongs to the unergative periphery (motional controlled process in (12) above) and shows sensitivity to the contribution of aspectual and thematic properties of the predicate. Thus, if the sentence yields a telic interpretation, the verb displays unaccusative behavior, selecting the auxiliary *essere* (BE), as in (13b), where the directional prepositional phrase (PP) *to pharmacy* gives the verb an inherent goal or endpoint. Similarly, when used with a non-agentive subject, as in (13c), the verb also selects *essere*, as is the case of core unaccusative verbs, although *avere* (HAVE) is not categorically rejected (Sorace, 2000).

- (13) a. Maria è corsa/ha corso velocemente (underspecified)
 Maria is run /has run fast
 'Maria ran fast'
- b. Maria è corsa/*ha corso in farmacia (telic)
 Maria is run / has run to pharmacy
 'Maria ran to the pharmacy'
- c. È corsa/#ha corso voce che Maria si sposa (non-agentive)
 is run / has run rumor that Maria self-marries
 'The rumor spread that Maria is getting married'

(Sorace, 2000, p. 876)

Sorace's ASH, unlike constructional and projectionist models, captures the complexity of split intransitivity in its entirety. It is able to predict what verbs are likely to have variable syntactic behavior and to what extent, and is compatible with the fact that some verbs do have categorical unergative–unaccusative behavior. Moreover, it can account for different behavior across languages, as the distribution of verbs along the hierarchy is hypothesized to be language-specific. The ASH, then, provides a theory of split intransitivity that is consistent with the view that the distinction between unergative and unaccusative verbs is both a syntactic and semantic phenomenon, as already expressed by Perlmutter (1978). Nonetheless, research in languages that do not support auxiliary selection such as Spanish is needed to determine whether a hierarchy like the ASH also underlies split intransitivity in these languages.

4. Previous studies on split intransitivity

As noted in the introduction, the main motivation for this dissertation was the lack of research on the possibility of L1 attrition in split intransitivity. To the best of our knowledge, only one researcher has come near this issue – Montrul (2005a, 2005b) to be discussed below. The IH can be applied to the study of several bilingual populations, as argued in section 2. These include L2 learners and heritage speakers (see below for a definition), whose knowledge of split intransitivity in Spanish was tested by Montrul, as well as L1 attriters, who participated in the present experiment. Thus, the findings reported in this section, although concerning different types of bilingual speakers, can also be interpreted in relation to the IH, and are of importance to the present study.

Before proceeding to discuss Montrul’s work, it is worthwhile to clarify the following issues: (a) how the unergative–unaccusative status of intransitive verbs can be diagnosed in the Spanish language; (b) what is understood by “heritage speaker” and how this profile of bilingual speaker differs from L1 attriters. Unlike other Romance languages like Italian and French, Spanish lacks a choice of perfective auxiliaries – there is only one auxiliary in Spanish (*haber*). As a result, auxiliary selection, which offers a clear syntactic diagnostic of unergativity and unaccusativity (see examples in (10) and (13) above), is unavailable in Spanish. An alternative to this strategy is provided by structures with “bare” plurals as post-verbal subjects and participial absolute constructions, both of which can appear with unaccusative – but not unergative – verbs (Montrul, 2005a, 2005b). As (14) shows, the first type consists of post-verbal plural nouns without a determiner; the second corresponds to the postposed subordinate clause in sentences like (15), which involves a past participle verb and a post-verbal noun.

(14) a. Han pasado camiones (unaccusative)
‘Trucks have passed by’

b. *Han dormido animales (unergative)
‘Animals have slept’

(Torrego, 1989, p. 254)

(15) a. Muerto el perro, se acabó la rabia (unaccusative)
‘Once the dog died, the rabbies stopped’

b. *Nadado Juan, se sintió mejor (unergative)
‘Once Juan swam, he felt better’

(Montrul, 2005a, p. 1156)

As for the term “heritage speaker”, it typically refers to a sequential bilingual child who is raised in an environment where the L1 corresponds to the heritage or minority language, often spoken just in the home context, and the L2 to the majority language, spoken by most people in the community (Montrul, 2005b). Heritage speakers, like speakers under L1 attrition, can experience language loss, “the temporary or permanent loss of language ability” in the L1 (Seliger, 1996, p. 606), but unlike them, it is often due to incomplete or interrupted language acquisition (Polinsky, 2000). This is where the main difference between these groups lies. For L1 attriters, it can be safely assumed that the L1 had been completely acquired before the onset of exposure to the L2. This is the case of first generation immigrants, who normally learn the L2 in adulthood. For heritage speakers, on the other hand, exposure to the L2 starts in childhood, which causes a significant reduction of input and use in the L1 before it (the L1) reaches a state of complete acquisition (Montrul, 2005b).

Montrul tested L2 learners and heritage speakers of Spanish on their knowledge of split intransitivity using an Acceptability Judgment Task (AJT) that included both bare-plural and absolutive constructions. These were presented to participants with either unergative or unaccusative verbs, which were in turn divided into core and peripheral verbs as per Sorace’s ASH (see (12) above). Participants were asked to rate sentences from 1 (totally unacceptable) to 5 (totally acceptable), which allowed them to express different degrees of acceptability. This test was designed to investigate whether split intransitivity can be vulnerable to residual or emerging indeterminacy in the grammatical representations of L2 learners and heritage speakers, given it is a phenomenon regulated by interface conditions (syntax–semantics interface). Moreover, the experiment aimed to test the possibility that a hierarchy like the ASH in languages that allow for auxiliary selection may also operate in languages that do not, like Spanish.

Besides bare-plural and absolutive constructions, the task contained sentences involving pre-verbal and post-verbal subjects, which can serve as a syntactic diagnostic of unergativity and unaccusativity in certain contexts. More specifically, when introduced by a broad-focus question like *¿Qué pasó?* (‘What happened?’), the internal argument of unaccusative verbs remains in its original syntactic position as a post-verbal subject, but this is not true of unergative verbs, since their external argument is considered infelicitous in this position. This contrast is shown in (16) below. On the other hand, in response to

narrow-focus questions like *¿Quién...?* ('Who...?') in (17), the focused subject appears in post-verbal position regardless of the verb's unergative–unaccusative classification, with pre-verbal subjects of both verb classes being infelicitous in this context (Lozano & Mendikoetxea, 2010).

- (16) A: *¿Qué pasó anoche?* (broad focus)
 'What happened last night?'
 B: *Vino **Juan** / #**Juan** vino* (unaccusative)
 'Juan arrived'
 B': *#Lloró **Juan** / **Juan** lloró* (unergative)
 'Juan cried'
- (17) A: *¿Quién ha llegado/hablado?* (narrow focus)
 'Who has arrived/spoken?'
 B: *Ha llegado/hablado **Juan*** (unaccusative/unergative)
 B': *#**Juan** ha llegado/hablado* (unaccusative/unergative)
 'Juan has arrived/spoken'

(Lozano & Mendikoetxea, 2010, p. 11)

Thus, although the distribution of pre-verbal and post-verbal subjects is constrained by interface conditions, these vary according to the context: in broad-focus contexts, the felicitous use of post-verbal subjects requires knowledge of split intransitivity and thus depends on syntax–semantics interface conditions, whereas in narrow-focus contexts, it is subject to syntax–discourse interface conditions. Unfortunately, Montrul did not take this difference into account in the design of the experimental test, presenting sentences with pre-verbal and post-verbal subjects without a preceding broad- or narrow-focus question. As a result, it cannot be determined from participants' performance whether they were aware of the unergative–unaccusative distinction, since it is unclear whether they interpreted these sentences discursively or semantically. Therefore, only the results regarding bare plural and absolute constructions are reported here.

First, L2 learners performed differently depending on their proficiency level. Low-proficiency learners, on the one hand, did not discriminate between unergative and unaccusative verbs, giving similar ratings to both bare-plural and absolute constructions regardless of what class of verb they appeared with. Advanced learners, on the other hand, patterned like the native control group, showing a clear preference for unaccusative verbs

in both types of constructions. Similarly, heritage speakers correctly discriminated between verb types for the same syntactic constructions. This suggests that advanced L2 learners had fully acquired the interface constraints on split intransitivity and heritage speakers were still sensitive to the unergative–unaccusative distinction in spite of early exposure to the L2 (English).

Second, regarding the application of an ASH-like hierarchy to split intransitivity in Spanish, the results pointed in the opposite direction: for absolutive constructions, the Spanish monolingual controls gave determinate ratings to both core and peripheral verbs; for bare-plural constructions, peripheral unergative verbs received significantly more determinate ratings than core unergative verbs. This is in contradiction with the prediction of the ASH that native speakers' judgments about peripheral verbs should be more indeterminate than those about core verbs. On a different note, they did discriminate telic from atelic unaccusatives, of which only the former are acceptable in absolutive constructions (see (19a) and (20) in section 6.3.).

Montrul also analyzed the performance of both bilingual groups on core and peripheral verbs, claiming that, if insensitive to verb subclass, “more errors or indeterminate judgments” would be expected with peripheral than with core verbs (Montrul, 2005a, p. 1169). This prediction reveals a misconception of Sorace's ASH. Due to their variable syntactic behavior, it should be expected that peripheral unergatives would potentially behave like unaccusatives (and viceversa), being more acceptable than their core counterparts in bare-plural and absolutive constructions. This, however, would not reflect an error, being instead indicative of sensitivity to verb subclass. By the same token, if the bilingual speakers' judgments were more indeterminate for peripheral than core verbs, this would not mean that they had difficulties with verb subclasses, as the ASH predicts more indeterminacy in the periphery.

Complicating this issue even further, Montrul reduced the data from all three proficiency groups into a single mean representing all the L2 learners. Note that low-proficiency learners did not discriminate between unergative and unaccusative verbs, whereas advanced learners did. Thus, by averaging performance over proficiency groups, between-group differences are minimized and obscured. Consistent with this, the author found that “the L2 learners gave weaker judgments than the monolinguals” (Montrul, 2005b, p. 229), which is not representative of indeterminacy in the L2 learners' knowledge of split intransitivity, but a consequence of an inaccurate data analysis.

This being said, the L2 learners (possibly the intermediate and advanced among them) appeared to reject atelic unaccusative verbs with absolutive constructions, as observed in the native and heritage groups. Heritage speakers displayed the most variable performance between verb subclasses, with significantly different ratings for all core and peripheral unaccusative verbs. Interestingly, both bilingual groups rated peripheral unergatives higher than the native controls, showing more acceptance of this verb subclass in absolutive constructions. For bare-plural constructions, their performance was similar to the control group: peripheral unergative verbs were more determinately rejected than core unergatives.

In sum, advanced L2 learners and heritage speakers showed target-like discrimination between unergative and unaccusative verbs, in line with the view that structures at the syntax–semantics interface exhibit greater stability in bilingual development than those constrained by the syntax–discourse interface. Regarding the issue of whether Spanish split intransitivity can be explained by a hierarchy like the ASH in Italian, the results point in a different direction. Overall, the control group gave determinate ratings to both core and peripheral verbs, the only exception being peripheral unergative verbs in bare-plural constructions, which contrary to what the ASH predicts, received more determinate judgments than core unergatives. L2 learners and heritage speakers followed a similar trend, although the performance of the former seemed more indeterminate due to an inappropriate averaging of the data. As noted, they differed from the control group in that they showed more acceptance of peripheral unergatives in absolutive constructions, which is line with the ASH. Moreover, all groups rejected atelic unaccusative verbs in absolutive constructions. Thus, even though it remains unclear whether a hierarchy like the ASH operates in Spanish split intransitivity, the bilingual groups showed native-like sensitivity to lexical–semantic distinctions within unergative and unaccusative verbs, especially with regards to atelic unaccusative verbs.

5. Research questions and hypotheses

In view of the information presented so far, the research questions addressed by this dissertation, along with the relevant hypotheses, are described in this section.

As discussed in section 2, the IH provides a unifying framework for the study of bilingual development, making testable predictions about L1 attrition. It holds that speakers under L1 attrition may display emerging indeterminacy in L1 phenomena that

involve interface conditions. This prediction has been confirmed by numerous studies with respect to the syntax–discourse interface, which requires the integration of syntax with extralinguistic factors (discourse). It is less clear, however, whether L1 attrition effects can be found in syntactic aspects that do not interface with external, but with internal factors such as semantics.

The present study intends to clarify this picture by presenting evidence from split intransitivity in Spanish. As argued in section 3, split intransitivity is represented syntactically but determined by verb lexical–semantic properties, which places this phenomenon at an interface involving syntax and semantics. This provides an ideal ground for testing the IH in relation the syntax–semantics interface, as expressed by the first research question (RQ₁):

RQ₁: Do speakers under L1 attrition show signs of emerging indeterminacy in their grammatical representations regarding split intransitivity, a phenomenon dependent on syntax–semantics interface conditions?

For this research question, the following hypothesis (H₁) was formulated:

H₁: If attrition effects were to be found in the grammatical representations of L1 attriters, the experimental group would be expected to perform differently from the control group (see section 6.1. for a detailed description of the groups that took part in the study) in the experimental task. More specifically, the former should show less discrimination than the latter between unergative and unaccusative verbs, giving similar acceptability ratings (see section 6.2. for the methodology employed in the study) to both verb classes regardless of the syntactic construction in which they appeared. If, on the contrary, no effects were to be found, the experimental group would be expected to perform similarly to the control group, rejecting unergative verbs in bare-plural and absolute constructions.

Furthermore, evidence was presented in section 3 which suggested that the distribution of unergative and unaccusative verbs in languages like Italian or French, which support auxiliary selection, can be captured by the ASH. This generalization successfully accounts for the fact that some verbs do not always behave as unergative or unaccusative and often elicit indeterminate judgments from native speakers. These verbs are situated in the periphery of the hierarchy, and their syntactic behavior differs from their core counterparts, which can be categorically classified as unergative or

unaccusative. Despite being able to explain split intransitivity in auxiliary-selection languages, it is yet to be confirmed whether a hierarchy like the ASH can also account for the unergative–unaccusative split in Spanish.

The only study that has addressed this issue, reviewed in section 4, did not find conclusive evidence that a hierarchy sensitive to verb lexical–semantics regulates split intransitivity in Spanish. Thus, the present study seeks to provide evidence capable of supporting or rejecting this possibility. The second research question (RQ₂) reflects this objective:

RQ₂: Is split intransitivity in Spanish governed by a hierarchy of core and peripheral lexical–semantic verb subclasses, as is the case in languages like Italian or French?

Regarding this question, the following prediction (H₂) was made:

H₂: If unergative and unaccusative verbs were distributed along a hierarchy with core verbs at the extremes and peripheral verbs in the middle, Spanish speakers' intuitions about the former should be more determinate. In other words, the non-attributed controls should categorically reject core unergatives and accept core unaccusatives in both bare-plural and absolutive constructions, while peripheral verbs should elicit more indeterminate judgments – they should not be categorically rejected or accepted, since they are inherently unspecified for telicity and agentivity.

The study at issue also examined whether verbs in particular positions along the hierarchy presented difficulties to L2 learners and heritage speakers, which would stand in contradiction with the assumption that syntax–semantics interface conditions do not pose any challenges to bilingual speakers. As discussed earlier, both groups performed like the monolingual speakers with the only exception of peripheral uncontrolled process unergatives in bare-plural constructions, which seemed to be less rejected by both bilingual groups. Note, however, that conclusions regarding the performance of the L2 learners were not reliable due to inaccuracies in the data analysis (see full explanation in section 4). Thus, evidence from L1 attriters may help to understand whether verb lexical semantics in the periphery constitutes an unstable domain in bilingual grammars. This corresponds to the third and final research question (RQ₃) to be addressed by this study:

RQ3: Are the grammatical representations of speakers under L1 attrition vulnerable to emerging insensitivity to lexical–semantic contrasts between peripheral subclasses of verbs?

The following hypothesis (H₃) was formulated for this question:

H₃: If, given the lack of aspectual and thematic specification, peripheral verbs were likely to undergo attrition effects in the L1 grammar of attrited speakers, the experimental group would be expected to rate them differently from the control group. Insensitivity to lexical–semantic contrasts in the periphery may, for instance, cause the experimental group to accept peripheral unergative verbs in bare-plural constructions to a greater extent than the control group. Conversely, if L1 attriters were not vulnerable to such loss of sensitivity, the experimental group should perform like the non-attrited controls.

6. Methods

6.1. Participants

A total of 64 native Spanish speakers participated in the study, but the data from 24 of them were excluded from the analysis due mainly to three reasons: participants misunderstood the survey instructions, they spoke English as an additional L1 (simultaneous bilinguals) or had learned it early in childhood (early sequential bilinguals), and their spoken proficiency in English or their residency in an English-speaking environment was insufficient to include them in the experimental group. The remaining 40 participants had all grown up in Spain and did not report learning English until at least the age of 6 through academic instruction. They were divided into two groups: experimental and control.

The experimental group contained 20 participants (3 males, 17 females) between the ages of 19 and 47 ($M = 32.25$, $SD = 8.06$), all of whom had resided in the United Kingdom and/or other English-speaking countries (e.g. the United States, Canada) for a minimum of 36 months (3 years) before the time of testing ($M = 62$, $SD = 27$). Their English proficiency level was not tested for, but rather assessed by the participants themselves. Self-assessment of L2 oral expression has been found to be a moderate predictor of standardized test scores (Marian, Blumenfeld & Kaushanskaya, 2007). On a scale from 0 (lowest) to 10 (highest), members of the experimental group rated their English-speaking

proficiency 8.4 on average ($SD = 1.23$). They also reported being exposed to English significantly more than Spanish, $t(19) = -5.85$, $p < .001$, with an average exposure of 67.95% ($SD = 14.34\%$) and 29.7% ($SD = 15.28\%$), respectively.

The control group consisted of another 20 participants (3 males, 17 females) between the ages of 18 and 45 ($M = 25.05$, $SD = 6.39$), none of whom had spent more than 6 months in an English-speaking environment at the time of testing ($M = 2.05$, $SD = 2.44$). They self-assessed their speaking proficiency in English as 7.28 on average ($SD = 1.13$). This was statistically different from the experimental group, $t(36) = -2.92$, $p = .006$. Moreover, the control group reported being exposed to English significantly less than Spanish, $t(17) = 3.17$, $p = .006$, with an average exposure to English of 27.83% ($SD = 27.71\%$) and to Spanish of 69.67% ($SD = 28.71\%$).

Therefore, the experimental group presented all the conditions that typically lead to L1 attrition: a high proficiency level in the L2, reduced exposure to the L1 and increased exposure to the L2 over a prolonged period of time. Conversely, the limited residency of the control group in an L2-speaking environment together with regular exposure to the L1 suggests a lack of L1 attrition in this group.

6.2. Procedure

To test the hypotheses laid out above, participants had to complete an AJT. As is often the case of studies adopting a similar methodology (e.g. Montrul, 2005a, 2005b; Sorace, 1993, 2000), acceptability judgments were taken to be representative of the speaker's underlying grammatical representations. After the experimental task, participants took a brief linguistic background questionnaire, used to collect the information reported above on language history, as well as exposure and proficiency in the languages they spoke. It was adapted from the UVALAL language background questionnaire for adults, provided by Prof. Fernández Fuertes from the University of Valladolid.

Both the AJT and the linguistic background questionnaire were conducted via Qualtrics, an advanced online survey platform. After giving consent for their data to be used in this dissertation, participants were shown the question “¿Cómo de natural le suenan las siguientes oraciones?” (‘How natural do the following sentences sound to you?’), followed by the task sentences presented in a randomized order. Their responses were logged along a four-point scale from 1 to 4, where 1 corresponded to “nada natural” (‘not natural at all’) and 4 to “totalmente natural” (‘totally natural’). Once they finished the task, participants were asked to complete the questionnaire. Finally, they were shown

a brief description of the purpose of the study and the phenomenon under investigation. All responses were exported to a PDF file saved with the participant’s number for the subsequent analysis.

6.3. Sentences for the AJT

Participants were presented with a total of 100 sentences, 60 experimental and 40 fillers (see Appendix A for the complete list of sentences). The experimental set included sentences with unergative and unaccusative verbs. 15 verbs of each class were chosen for a total of 30 verbs. They were selected from the core and periphery of Sorace’s ASH, ranging from most unaccusative to most unergative (see (12) above). All the verbs employed in the task are shown in Tables 1 and 2 below.

Unaccusatives		
Change of location	Change of state	Existence
<i>llegar</i> (‘to arrive’)	<i>morir</i> (‘to die’)	<i>existir</i> (‘to exist’)
<i>salir</i> (‘to leave’)	<i>aparecer</i> (‘to appear’)	<i>quedar</i> (‘to remain’)
<i>caer</i> (‘to fall’)	<i>desaparecer</i> (‘to disappear’)	<i>faltar</i> (‘to lack’)
<i>volver</i> (‘to come back’)	<i>adelgazar</i> (‘to lose weight’)	<i>vivir</i> (‘to live’)
<i>huir</i> (‘to run away’)	<i>surgir</i> (‘to emerge’)	<i>crecer</i> (‘to grow’)
Most unaccusative	—————▶	Least unaccusative

Table 1. Unaccusative verbs included in the AJT. From left to right, ‘change of location’, ‘change of state’ and ‘existence’ correspond to each lexical–semantic subclass, in order of most (core) to least (peripheral) unaccusative.

Unergatives		
Uncontrolled process	Controlled process (motional)	Controlled process (non-motional)
<i>sonreír</i> (‘to smile’)	<i>correr</i> (‘to run’)	<i>hablar</i> (‘to speak’)
<i>toser</i> (‘to cough’)	<i>caminar</i> (‘to walk’)	<i>cantar</i> (‘to sing’)
<i>llorar</i> (‘to cry’)	<i>bailar</i> (‘to dance’)	<i>vocear</i> (‘to shout’)
<i>bostezar</i> (‘to yawn’)	<i>saltar</i> (‘to jump’)	<i>trabajar</i> (‘to work’)
<i>temblar</i> (‘to tremble’)	<i>nadar</i> (‘to swim’)	<i>vaguear</i> (‘to loaf’)
Least unergative	—————▶	Most unergative

Table 2. Unergative verbs included in the AJT. From left to right, ‘uncontrolled process’, ‘controlled process (motional)’ and ‘controlled process (non-motional)’ correspond to each lexical–semantic subclass, in order of least (peripheral) to most unergative (core).

Following Montrul's (2005a, 2005b) methodology, all 30 verbs appeared twice: in bare-plural and absolutive constructions. As discussed earlier, neither type of construction is acceptable with unergative verbs, as (18) illustrates, whereas both can occur with telic unaccusative verbs (change of location and change of state), as shown in (19) below.

- (18) a. *Bostezados los alumnos, el profesor terminó la lección
 'Once students yawned, the teacher finished the lesson'
 (absolutive, unergative)
- b. *Bostezaron alumnos durante la lección
 '(Some) students yawned during the lesson'
 (bare plural, unergative)
- (19) a. Llegados los bañistas, la playa quedó atestada
 'Once swimmers arrived, the beach was full'
 (absolutive, telic unaccusative)
- b. Llegaron bañistas a la playa
 '(Some) swimmers arrived at the beach'
 (bare plural, telic unaccusative)

Atelic unaccusatives (existence), in contrast, are not allowed in absolutive constructions, as in (20), which caused a mismatch between the number of grammatical and ungrammatical sentences – 25 to 35, respectively. To compensate for this, more grammatical fillers were included in the task – 25 grammatical and 15 ungrammatical. Thus, of the 60 experimental sentences, half were grammatical and half, ungrammatical.

- (20) *Existidos los conflictos, el gobierno tomó medidas
 'Once conflicts existed, the government took measures'
 (absolutive, atelic unaccusative)

Studies employing a similar methodology have suggested an effect of verb aspect on acceptability judgments. For instance, Montrul (2005a) noted that participants rated bare plural constructions with unergative verbs significantly more acceptable when these were in the present perfect than when in the preterite. To control for potential confounds, all verbs in bare plural constructions were conjugated in the preterite, as in (18b) and (19b) above. Furthermore, reflexive *se* variants of alternating unaccusative verbs (*caerse* 'to

fall’, *morirse* ‘to die’) have been argued to differ from non-reflexive *se*-less variants (*caer* ‘to fall’, *morir* ‘to die’) in their semantic and morphosyntactic properties (Cuervo, 2014). Therefore, only the latter were included in bare-plural constructions. Absolute constructions, on the other hand, comprised verbs conjugated in the past participle.

Verbs in bare-plural constructions were followed by a subject NP without a determiner plus an adjunct PP. Potentially misleading subject NPs as in (21a) below, where the subject NP (*pacientes*) can be interpreted as a predicative adjective phrase modifying a null subject (*pro*), as illustrated in (21b), were identified and replaced by unambiguous NPs.

- (21) a. [VP Llegaron [NP pacientes] [PP a la sala de espera]]
 Arrived patients at the waiting room
 ‘(Some) patients arrived at the waiting room’
- b. [NP *pro*_i] [VP Llegaron [AP pacientes_i] [PP a la sala de espera]]
pro arrived patient at the waiting room
 ‘They arrived patiently at the waiting room’

On the contrary, verbs in absolute constructions were followed by a definite subject NP with which they agreed in gender and number. An independent clause then followed completing the meaning of the sentence. Semantic relatedness between different sentence elements was controlled for via the collocates tool of the Spanish corpus *Corpus del Español* (Davies, 2016). In addition, to minimize possible variability, verbs were assigned a single subject NP, such that each of the 30 selected verbs appeared with the same subject NP in both bare-plural and absolute constructions, as the sentence pairs in (18) and (19) illustrate.

Finally, since the experimental set of sentences included intransitive verbs (unergative and unaccusative), fillers ($N = 40$) were designed using transitive verbs. As mentioned above, both grammatical ($n = 25$) and ungrammatical fillers ($n = 15$) were employed in the task. Among the ungrammatical set, errors included lack of subject-verb agreement as in (22), and lack of determiner-noun number and gender agreement, as in (23) and (24), respectively.

- (22) *Los turistas sacó fotografías de la ciudad
 The tourists-PL took-3S pictures of the city
 ‘The tourists took pictures of the city’

- (23) *El enfermero cuidó a los paciente en el hospital
 The nurse looked after the-PL patient-S at the hospital
 ‘The nurse looked after the patients at the hospital’
- (24) *La jueza dictó un sentencia al mediodía
 The judge passed a-M sentence-F at noon
 ‘The judge passed a sentence at noon’

7. Results

The results of the AJT are now presented in the following order. First, the performance of both experimental and control groups is compared in terms of discrimination between verb classes. This is followed by an analysis of the control group’s performance with core and peripheral verb subclasses, which is then compared to that of the experimental group.

To look at each group’s discrimination of unergative and unaccusative verbs, a Two-Way Repeated Measures ANOVA was run for each group with the within-participant factors construction (bare-plural and absolutive) and verb class (unergative and unaccusative). Note that, since atelic unaccusative verbs (existence) are not acceptable in absolutive constructions, only telic unaccusative verbs (change of location and change of state) were included in the analysis. A significant main effect of construction was found for both control, $F(1, 19) = 289.79, p < .001$, and experimental groups, $F(1, 19) = 38.85, p < .001$, indicating that their mean acceptability ratings were higher for bare-plural constructions (control: $M = 3.15, SD = 0.11$; experimental: $M = 3.03, SD = 0.11$) than absolutive constructions (control: $M = 1.9, SD = 0.08$; experimental: $M = 1.97, SD = 0.12$). A significant main effect of verb class was also revealed: control, $F(1, 19) = 178.86, p < .001$, and experimental, $F(1, 19) = 46.44, p < .001$. This result was due to higher acceptability ratings in test sentences with unaccusative verbs (control: $M = 2.93, SD = 0.1$; experimental: $M = 2.86, SD = 0.08$) than unergative verbs (control: $M = 2.12, SD = 0.01$; experimental: $M = 2.13, SD = 0.11$). Furthermore, a significant construction by verb class interaction was found in the control group, $F(1, 19) = 14.21, p = .001$.

Paired sample *t*-tests were then conducted to examine main effects in isolation. A significant effect for verb class was observed in both groups for bare-plural (control: $t(19) = 7.77, p < .001$; experimental: $t(19) = 5.98, p < .001$) and absolutive constructions

(control: $t(19) = 10.93, p < .001$; experimental: $t(19) = 5.46, p < .001$). Construction was also significant for both unergative (control: $t(19) = 12.49, p < .001$; experimental: $t(19) = 5.94, p < .001$) and unaccusative verbs (control: $t(19) = 13.89, p < .001$; experimental: $t(19) = 5.44, p < .001$). This shows that both groups rated unergative verbs significantly lower than unaccusative verbs in both types of constructions, and that their ratings were significantly lower for absolutive constructions than for bare-plural constructions, which suggests a lack of between-group differences. This is represented in Figure 1 below.

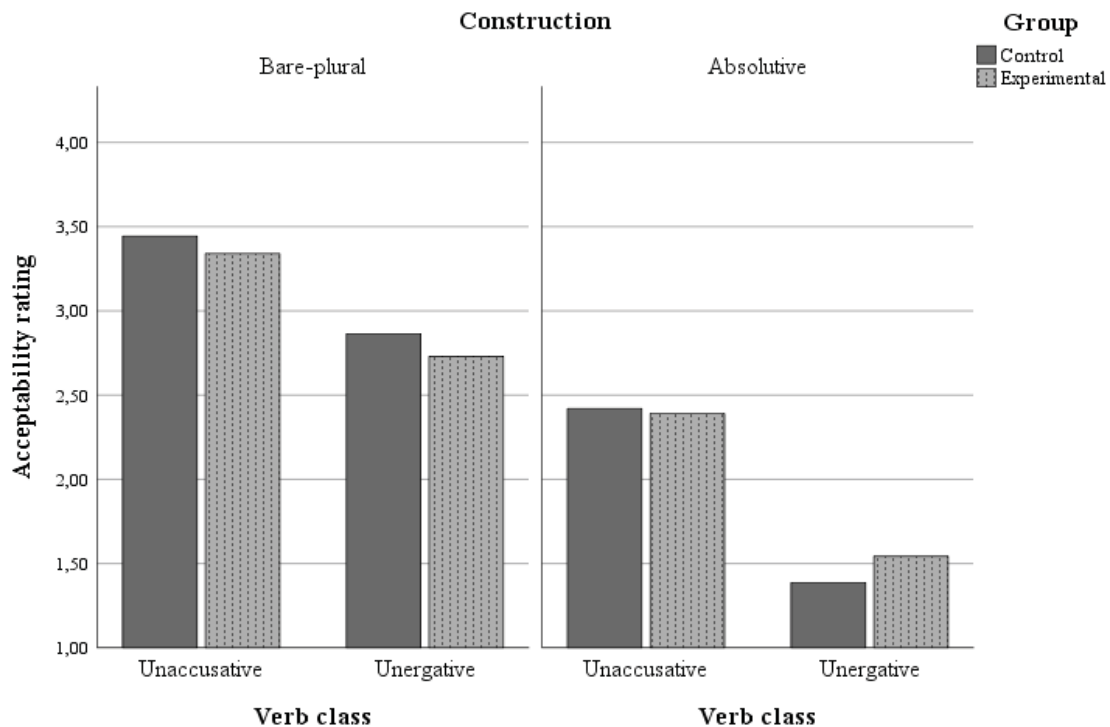


Figure 1. Mean acceptability ratings by group, verb class and construction type.

To confirm that there were no group differences, a Two-Way Mixed ANOVA was run with the within-participant factors above as well as the between-participant factor group. Neither a main effect of group, $F(1, 38) = 0.03, p = .82$, nor any interaction effects were found (verb class by group: $F(1, 38) = 0.41, p = .52$; construction by group: $F(1, 38) = 0.95, p = .34$; verb class by construction by group: $F(1, 38) = 1.24, p = .27$). These results indicate that, in fact, both groups' acceptability ratings were strongly similar.

In order to examine performance by verb subclass, a Two-Way Repeated Measures ANOVA was performed with the within-participant factors construction (bare-plural and absolutive) and verb subclass (change of location, change of state, existence, uncontrolled process, motional controlled process and non-motional controlled process). To control for

potential attrition effects on sensitivity to verb lexical–semantic contrasts, only the non-attrited controls were included in this analysis. Consistent with the analysis above, a main effect of construction was found, $F(1, 19) = 371.26, p < .001$, due to higher acceptability ratings for bare-plural constructions than for absolutive constructions (see means reported above). Moreover, a main effect of verb subclass was observed, $F(5, 95) = 45.84, p < .001$, as well as a construction by verb subclass interaction, $F(5, 95) = 16.04, p < .001$, indicating that different subclasses were rated differently depending on which construction they appeared with.

Paired sample *t*-tests revealed a significant effect for construction, with all verb subclasses in absolutive constructions rated significantly lower than their counterparts in bare-plural constructions ($p < .001$). Mean ratings per construction per verb subclass are summarized in Table 3 below.

Verb class	Verb subclass	Bare-plural	Absolutive
Unaccusative	<i>Change of location</i>	3.19 (0.6)	2.29 (0.53)
	<i>Change of state</i>	3.54 (0.56)	2.55 (0.55)
	<i>Existence</i>	3.60 (0.47)	1.31 (0.36)
Unergative	<i>Uncontrolled process</i>	2.57 (0.84)	1.26 (0.37)
	<i>Controlled process (motional)</i>	3.24 (0.56)	1.50 (0.55)
	<i>Controlled process (non-motional)</i>	2.78 (0.66)	1.40 (0.54)

Table 3. Mean acceptability ratings (standard deviations between parentheses) of the control group by construction type for each verb subclass (from most unaccusative to most unergative).

Significant differences were also found between verb subclasses. Looking first at bare-plural constructions, core unaccusatives (change of location) were rated significantly lower than peripheral unaccusatives (existence), $t(19) = -4.06, p = .001$, and peripheral unergatives (uncontrolled process) were not statistically different from core unergatives (non-motional controlled process), $t(19) = -1.3, p = .21$. Intermediate peripheral unergatives (motional controlled process) were given significantly higher ratings than core unergatives, $t(19) = -4.06, p = .001$, but did not differ from core unaccusatives, $t(19) = -0.36, p = .72$. These results bear no resemblance to the ASH, as will be discussed in the next section. Similarly, in absolutive constructions, core unaccusatives were rated lower than intermediate peripheral unaccusatives (change of state), although this difference did not reach significance levels, $t(19) = -1.97, p = .06$. Peripheral unergatives

did not differ from core unergatives in this construction either, $t(19) = -1.06$, $p = .30$, and intermediate peripheral unergatives were also rated significantly higher than core unergatives, $t(19) = -2.7$, $p = .014$. Moreover, atelic unaccusative verbs (existence) received significantly lower ratings than telic unaccusative verbs (change of location, change of state) ($p < .001$). These differences can be seen in Figure 2 below.

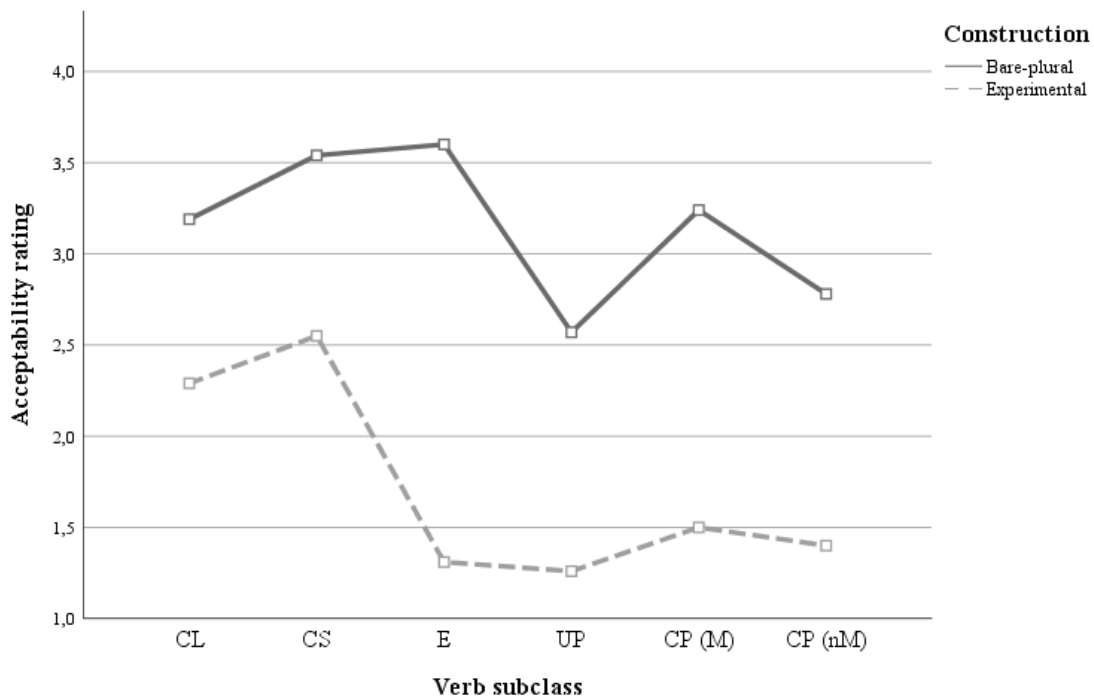


Figure 2. Mean acceptability ratings of the control group by verb subclass and construction type. On the X-axis, from most unaccusative to most unergative, CL=Change of location, CS=Change of state, E=Existence, UP=Uncontrolled process, CP(M)=Controlled process (motional), CP(nM)=Controlled process (non-motional).

Finally, to test for the possibility of group differences, a Two-Way Mixed ANOVA was then run with the above within-participant factors (construction and verb subclass) and the between-participant factor group. No significant main effect of group was found, $F(1, 38) = .001$, $p = .98$. Mauchly's test was significant for verb subclass, $\chi^2(14) = 33.2$, $p = .003$, violating the assumption of sphericity. To compensate for this, degrees of freedom were corrected using Green-Geisser estimates of sphericity ($\epsilon = 0.70$). The results showed that the interaction between verb class and group neared, but did not reach, significance, $F(3.52, 133.67) = 2.15$, $p = .08$. None of the remaining group interactions was significant (construction by group: $F(1, 38) = 1.68$, $p = .20$; construction by verb

subclass by group, $F(5, 190) = 1.2, p = .31$). This suggests that the experimental group performed much like the control group with respect to verb subclasses.

A One-Way ANOVA was conducted to examine group differences for each verb subclass. No significant differences were found, but existence unaccusative verbs in absolutive constructions almost reached significance, $F(1, 38) = 4, p = .053$, with existence unaccusatives receiving higher mean ratings from the experimental group ($M = 1.65, SD = 0.15$) than the control group ($M = 1.31, SD = 0.08$), as can be appreciated in Figure 3 below.



Figure 3. Mean acceptability ratings by group, verb subclass and construction type. On the X-axis, from most unaccusative to most unergative, CL=Change of location, CS=Change of state, E=Existence, UP=Uncontrolled process, CP(M)=Controlled process (motional), CP(nM)=Controlled process (non-motional).

The implications of these results in relation to the research questions (RQ₁₋₃) and hypotheses (H₁₋₃) laid out in section 5 are discussed in the following section.

8. Discussion

The main goal of the present experiment was to answer RQ₁ – whether split intransitivity, a phenomenon dependent on syntax–semantics interface conditions, is vulnerable to grammatical change in L1 attrition.

The relevant hypothesis, H₁, stated that, should there be no attrition effects, the experimental group who participated in the study would not differ from the non-attrited controls in their ability to discriminate between unergative and unaccusative verbs. Both groups were thus expected to rate unergative verbs lower than unaccusative verbs, since only the latter were acceptable in the constructions employed in the AJT. The overall results confirmed this hypothesis.

As reported above, the two groups rated unergative verbs significantly lower than unaccusative verbs in both bare-plural and absolutive constructions. This shows that, like the non-attrited controls, the L1 attriters tended to accept unaccusative verbs to a greater extent than unergative verbs. Moreover, no significant group interactions or main effects were found, suggesting that both groups showed the same degree of acceptance for either verb class. From these findings, it can be concluded that no attrition in the grammatical representations of the attrited group had occurred.

This is in line with Montrul's (2005a, 2005b) findings that L2 learners can fully acquire the interface constraints on the unergative–unaccusative distinction and that these are not affected by incomplete acquisition in heritage speakers. In addition, they lend support to Tsimplici *et al.*'s (2004) claim that internal interfaces like syntax–semantics, which do not require the integration of syntax with discursive factors, exhibit greater stability than those that do (i.e. syntax–discourse).

Second, this experiment was designed to examine RQ₂ – whether split intransitivity in Spanish can be explained through a hierarchy like the ASH, a successful account in languages that, unlike Spanish, have a choice of perfective auxiliaries (e.g. *avere* or *essere* in Italian).

This account predicts that native speakers' intuitions about core verbs should be more determinate than those about peripheral verbs, since only the former are inherently specified for telicity and agentivity, correlates of unaccusative and unergative syntactic behavior, respectively. Thus, under this account, H₂ stated that the non-attrited controls would make categorical judgments about core unergatives and unaccusatives (i.e. 'totally

unacceptable' and 'totally acceptable', respectively), but not about their peripheral counterparts, expected to raise more indeterminate judgments.

As noted in the analysis, however, core unaccusatives were given significantly lower ratings than peripheral unaccusatives in both bare-plural and absolutive constructions. This suggests that, contrary to what the ASH predicates, the latter were more categorical than the former. As for unergative verbs, those from the core of the hierarchy received similar ratings to their peripheral counterparts in both constructions, with the exception of motional controlled process verbs, which were considered acceptable in bare-plural constructions (see below for a discussion). Participants' intuitions about peripheral unergatives, therefore, were not less determinate than those about core unergatives. This is reminiscent of Montrul's finding concerning the monolingual controls from her experiment, who overall expressed equal degrees of determinacy for both core and peripheral verbs. Consequently, these findings not only do not support the ASH but are in contradiction with it, rejecting H₂ and the possibility that this generalization may apply to languages like Spanish, which do not support auxiliary selection.

It is worth highlighting the fact that, in contrast with Montrul's study, motional process verbs, located in the unergative periphery, were rated as acceptable as core unaccusatives in bare-plural constructions. Recall that, since this verb subclass is underspecified for telicity, it is sensitive to the aspectual contribution of the predicate. Thus, motional process verbs might have been telicized by the sentences in which they appeared (see (13b) above for an example), which would account for their unaccusative behavior. Nonetheless, closer examination of the sentences employed in the AJT revealed that this was not the case – none of the sentence components yielded a telic interpretation of the verb. Furthermore, motional process verbs behaved as categorical unergatives in absolutive constructions, ruling out the possibility that this finding was due to methodological issues. Instead, it is more likely that, much like existence unaccusatives in absolutive constructions, motional process unergatives behave exceptionally in bare-plural constructions. To the best of our knowledge, this finding is, as of yet, not instantiated in the literature.

The results reported above also diverge from Montrul's in that notable differences were found between the two construction types, as the observed main effect of construction indicates. Absolutive constructions were considerably less accepted than bare-plural constructions regardless of whether they appeared with unergative or unaccusative verbs. This was substantiated by the finding that, in fact, all core and

peripheral verb subclasses received significantly lower acceptability ratings in absolutive constructions, suggesting that each construction has its own particular nature. Potentially, this could stem from the fact that absolutive constructions, unlike bare-plural constructions, are more frequent in written discourse (Montrul, 2005a).

All in all, these findings are of special importance in relation to the assumption that the two constructions are reliable indicators of whether a given verb should be classified as unergative or unaccusative. Presumably, both bare-plural and absolutive constructions can occur with unaccusative, but not unergative, verbs. The results from this experiment, however, suggest that this may not be entirely accurate. First, both types of constructions present exceptions – motional process unergatives are allowed in bare-plural constructions and existence unaccusatives are rejected in absolutive constructions. Second, absolutive constructions are overall less acceptable than bare-plural constructions, resulting in unaccusative verbs not being fully accepted in the former and unergative verbs not being fully rejected in the latter.

Finally, RQ₃ concerned the possibility that speakers under attrition may lose sensitivity to certain lexical–semantic verb subclasses. In this respect, H₃ predicted that, should this be the case, the experimental group would give different acceptability ratings from the control group to verbs from the periphery of the ASH, as these are underspecified along the aspectual and thematic dimensions and, therefore, more susceptible to indeterminacy. As discussed in section 4, Montrul found no evidence of between-group differences in participants' ratings for peripheral verbs, except for uncontrolled process unergatives, which were rated significantly higher by both L2 learners and heritage speakers. The results presented here, however, did not replicate this finding.

No group interactions or main effects were found in the analysis. This was confirmed by the fact that the two groups gave very similar ratings to all verb subclasses in both types of constructions, which points in the opposite direction of H₃. As mentioned earlier, only the between-group difference for existence unaccusatives in absolutive constructions neared significance levels ($p = .053$). Although still dispreferred in comparison with the other unaccusative verbs (change of location, change of state), the experimental group rated them higher than the control group, suggesting that their intuitions about this verb subclass were somewhat more indeterminate than those of the non-attrited controls. This finding was unexpected, as it is well established in the literature that existence verbs are strongly ungrammatical in absolutive constructions.

Moreover, it is uncertain what the reason for this mismatch may be. Existence verbs received the most categorical judgments in bare-plural constructions (almost completely acceptable), with a similar performance by both experimental and control groups. Thus, it is unlikely that the between-group difference observed in absolute constructions may be explained by a loss of sensitivity to verb lexical–semantic contrasts in the periphery. It seems more plausible that this difference may emerge from the distinct nature of absolute constructions. As noted above, this type of construction is infrequent in Spanish spoken discourse, so the participants from the experimental group, all of whom reported being considerably more exposed to the L2 (English) than the L1 (Spanish), may very rarely encounter instances of existence verbs in this particular construction.

9. Conclusion

The study presented here has focused on L1 attrition. More specifically, it has investigated whether split intransitivity in Spanish, a phenomenon constrained by syntax–semantics interface conditions, is vulnerable to change in the L1 grammar of Spanish speakers under attrition.

The IH predicts that interface-constrained linguistic phenomena display instability in bilingual grammars. This prediction has been confirmed by numerous studies with regards to syntax–discourse interfaces, but other interfaces have received much less attention. Furthermore, research has shown that internal interfaces like syntax–semantics have greater stability in bilingual development than syntax–discourse ones.

The experiment results, in combination with those from previous studies on split intransitivity in L2 learners and heritage speakers, provide evidence in favor of this view. After prolonged use and exposure to the L2 (English), Spanish speakers maintained robust representations of the interface constraints on the appropriate use of unergative and unaccusative verbs in the L1 (Spanish). Thus, it can be concluded that split intransitivity is not vulnerable to attrition effects.

The experimental task employed in the study allowed us to test the application of the ASH to Spanish, which unlike languages such as Italian or French for which it was conceived, lacks a system of auxiliary selection, a reliable syntactic diagnostic of unergativity and unaccusativity. The results are incompatible with the ASH, with verbs belonging to the periphery of the hierarchy being equally or more determinate than those

from the core, but not more indeterminate. Therefore, the present study provides evidence against the application of an ASH-like hierarchy to split intransitivity in Spanish.

The results do evidence sensitivity to verb lexical–semantics: native speakers' intuitions about existence unaccusatives in absolutive constructions and motional controlled process unergatives in bare-plural constructions showed rejection of the former and acceptance of the latter, contrary to the assumption that only unaccusative verbs are acceptable in either construction.

Furthermore, absolutive constructions were found to be considerably less acceptable than bare-plural constructions regardless of which verb class they appeared with. As a result, native speakers did neither fully accept unaccusative verbs in the former nor fully reject unergative verbs in the latter. This brings into question the assumption that these constructions are reliable indicators of unergativity and unaccusativity in Spanish. A possible explanation for this comes from the availability of these constructions in the L1 input of Spanish speakers: while bare-plural constructions are frequent in spoken discourse, absolutive constructions are not, being instead limited to written discourse. Hence, the relative unavailability of the latter in the spoken production of Spanish speakers may cause more indeterminate intuitions regarding how acceptable this construction is. Nonetheless, further research is needed in order to examine the potential effects of differential types of input on the grammatical intuitions of native speakers.

The performance of the attrited group was also investigated in relation to their sensitivity to verb lexical–semantic subclasses in the periphery. The results showed that the L1 attriters had robust intuitions about peripheral verbs as did the non-attriters. Existence verbs, however, did raise somewhat more indeterminate judgments in absolutive constructions, an unexpected finding given the well-established fact that atelic unaccusatives (existence verbs) are strongly unacceptable in these constructions, which was the pattern of responses of the control group. A potential explanation might have to do with the possibility that this type of constructions is less available in the L1 input of the experimental group than the control group. Alternatively, this finding might have been due to chance, since the relevant group difference only neared, but did not reach, significance levels. Further research is needed to determine whether this finding is, in fact, replicable.

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Appendix A: Sentences in the AJTEXPERIMENTAL SENTENCES ($N = 60$):• **Bare-plural constructions** ($n = 30$):○ UNACCUSATIVE VERBS ($n = 15$):*Change of location*

1. Llegaron bañistas a la playa
2. Salieron obreros de la fábrica
3. Cayeron hojas del árbol
4. Volvieron trabajadores a la oficina
5. Huyeron ladrones tras el robo

Change of state

6. Murieron civiles en la batalla
7. Aparecieron noticias en los periódicos
8. Desaparecieron cuadros de la galería
9. Adelgazaron clientes durante el entrenamiento
10. Surgieron problemas tras las elecciones

Existence

11. Existieron conflictos tras la revuelta
12. Quedaron manchas en la camisa
13. Faltaron familiares en la celebración
14. Vivieron escritores en el edificio
15. Crecieron flores en el jardín

○ UNERGATIVE VERBS ($n = 15$):*Uncontrolled process*

16. Sonrieron empresarios tras el éxito
17. Tosieron personas en la sala de espera
18. Lloraron maestros en la representación
19. Bostezaron alumnos durante la lección

20. Temblaron animales durante la tormenta

Controlled process (motional)

21. Corrieron atletas en las olimpiadas

22. Caminaron modelos por la pasarela

23. Bailaron parejas en la graduación

24. Saltaron gimnastas en la competición

25. Nadaron jóvenes en el río

Controlled process (non-motional)

26. Hablaron artistas en la inauguración

27. Cantaron niños en la actuación

28. Vocearon políticos en el debate

29. Trabajaron empleados en la oficina

30. Vaguearon estudiantes en el aula

• **Absolutive constructions** ($n = 30$):

○ UNACCUSATIVE VERBS ($n = 15$):

Change of location

31. Llegados los bañistas, la playa quedó atestada

32. Salidos los obreros, el guarda cerró la fábrica

33. Caídas las hojas, el árbol perdió su encanto

34. Vueltos los trabajadores, la jornada siguió su curso

35. Huidos los ladrones, la policía fue en su busca

Change of state

36. Muertos los civiles, la localidad quedó devastada

37. Aparecidas las noticias, el pueblo habló del suceso

38. Desaparecidos los cuadros, la galería indemnizó al dueño

39. Adelgazados los clientes, el entrenador premió su esfuerzo

40. Surgidos los problemas, la nación exigió soluciones

Existence

41. *Existidos los conflictos, el gobierno tomó medidas

42. *Quedadas las manchas, el tintorero tiñó la camisa
43. *Faltados los familiares, la camarera retiró los platos
44. *Vividos los escritores, la editorial ganó popularidad
45. *Crecidas las flores, el jardinero regaba a diario

○ UNERGATIVE VERBS ($n = 15$):

Uncontrolled process

46. *Sonreídos los empresarios, el director dio un discurso
47. *Tosidas las personas, el médico pasó consulta
48. *Llorados los maestros, la función llegó a su fin
49. *Bostezados los alumnos, el profesor finalizó la lección
50. *Temblados los animales, la tormenta se disipó por completo

Controlled process (motional)

51. *Corridos los atletas, la pista quedó despejada
52. *Caminados los modelos, el diseñador sonrió alegremente
53. *Bailadas las parejas, el ganador subió al escenario
54. *Saltados los gimnastas, el juez valoró su actuación
55. *Nadados los jóvenes, el sol brilló entre las nubes

Controlled process (non-motional)

56. *Hablados los artistas, la exposición se abrió al público
57. *Cantados los niños, el público dio un fuerte aplauso
58. *Voceados los políticos, el facilitador pidió orden
59. *Trabajados los empleados, la jefa se mostró amigable
60. *Vagueados los estudiantes, el profesor habló con sus padres

FILLERS ($N = 40$):

• **Ungrammatical** ($n = 15$):

Subject-verb agreement (lack thereof)

61. *Los turistas sacó fotografías de la ciudad
62. *El actor miraron la hora antes de la actuación
63. *El director buscaron los pantalones del traje

64. *El cumpleañosero soplaron las velas de la tarta
 65. *Los niños pidió juguetes a los Reyes Magos

Determiner–noun number agreement (lack thereof)

66. *El enfermero cuidó a los paciente en el hospital
 67. *La madre tuvo un mellizos el año pasado
 68. *La inquilina pagó los alquiler el mes pasado
 69. *Los alumnos leyeron los libro de lectura
 70. *La abuela escuchó las noticia al mediodía

Determiner–noun gender agreement (lack thereof)

71. *Los gamberros rompieron el ventana de nuevo
 72. *El padre decoró la apartamento por Navidad
 73. *La granjera sembró los semillas después del invierno
 74. *La jueza dictó un sentencia al mediodía
 75. *Los músicos tocaron el trompeta en el recital

• **Grammatical** ($n = 25$):

76. La licenciada escribió un libro en abril
 77. El presentador felicitó a los ganadores en televisión
 78. El solicitante firmó el documento a tiempo
 79. La becaria entregó los papeles a la directora
 80. El carterista robó a cinco personas esta mañana
 81. La portera vio la televisión durante toda la tarde
 82. La joven bailó una sevillana en la plaza
 83. El vecino compró huevos en el supermercado
 84. El fontanero reparó el grifo el día anterior
 85. Los amigos contaron historias aquella noche
 86. El dependiente cambió la bombilla de la tienda
 87. La panadera preparó el pan la noche anterior
 88. El pastelero vendió roscón en Navidad
 89. La actriz recibió una llamada de su representante
 90. El chef regañó a los cocineros una vez más
 91. Los padres abrazaron a su hija en el aeropuerto

92. El padre acompañó a su hijo al colegio
93. El matrimonio alquiló el chalé durante el invierno
94. La editorial publicó el libro esta misma semana
95. La directora expulsó a los estudiantes por su actitud
96. La campeona recogió el premio con orgullo
97. El anfitrión fregó los platos después de la cena
98. El pirata escondió el tesoro bajo una palmera
99. El estafador garantizó el funcionamiento del producto
100. El guerrero juró lealtad al rey en la ceremonia

Appendix B: List of acronyms and abbreviations²

L2:	Second language
L1:	First language
IH:	Interface Hypothesis
ASH:	Auxiliary Selection Hierarchy
PVT:	Picture Verification Task
S:	Singular
ACC:	Accusative
NOM:	Nominative
UH:	Unaccusativity Hypothesis
Spec:	Specifier
IP:	Inflectional phrase
V:	Verb
NP:	Noun phrase
I:	Inflection
EPP:	Extended Projection Principle
UTAH:	Uniformity of Theta-Assignment Hypothesis
PP:	Prepositional phrase
AJT:	Acceptability Judgment Task
M:	Mean
SD:	Standard deviation
AP:	Adjective phrase
VP:	Verb phrase

² Listed in order of appearance.

PL: Plural

M: Masculine

F: Feminine