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The adaptation of native language construal patterns in second language acquisition

First language attrition occurs when a bilingual's native language shows evidence of language change due to the predominant use of a second language. Recent research in first language attrition has shown that lexical retrieval and word choice are more vulnerable to reduced native language use than are grammatical constructions. However, some research has shown that grammar can also be affected, especially for constructions which exist in both languages but have different distributions in their usage. Taking concepts from cognitive linguistics, we attempt to describe how this research may provide insight into how language construal from the second language can affect the stability of the construals that make up the native language.

Keywords: cross-linguistic influence, syntax, bilingualism, construal, schemas

1   Introduction

The study of language transfer in second language acquisition has been of interest to researchers for decades. The characteristic interlanguage forms of speakers with specific native languages unmistakably point to some level of correspondence between the first language (L1) and the second language (L2), indicating that second language learners tend to utilize what they already know from the first language in their production of the new language. However, debates have centered around how to explain why transfer occurs in some contexts but not others, as well as what the underlying mechanism or function of transfer is and whether its utility is the same at different levels of L2 attainment (see Gass & Selinker 1983 and Odlin 1989 for the most thorough overviews of these issues).

More recently, researchers have begun to investigate transfer phenomena in the other direction, namely the influence of the L2 structures on L1 processing. Native language changes in bilinguals have been found in a variety of linguistic domains, including phonetics (Mayr, Price & Mennen 2012), phonology (Tamminen, Peltola, Toivonen, Kujala & Näätänen 2013), lexical choice (Olshtain & Barzilay 1991), semantic category boundaries (Pavlenko & Malt 2011), speed of lexical access (e.g. Ivanova & Costa 2008), sentence interpretation (e.g. Dussias 2003, 2004), verb subcategorization frames (Pavlenko & Jarvis 2002), and syntax (e.g. Ribbert & Kuiken 2010). These findings challenge the view that the native language of adults is a stable and unchanging system (Lenneberg 1967), instead suggesting that the native language is dynamic and adaptable (de Bot, Lowie & Verspoor 2007).

This article reviews some of the recent findings on the differences between the syntactic constructions of bilinguals and monolinguals in their native language. These findings are then interpreted in terms of changes in the bilinguals'"construal" of syntactic information in their L1 as a result of L2 acquisition.

2   Cross-linguistic influence from L2 to L1 in the domain of syntax

Typically, cross-linguistic influence at the level of syntax has been observed when the two languages of a bilingual share a grammatical form to some degree, but optionality in employment of this form, or distribution of the form, differs between the two languages. L1 syntactic constructions that do not have an analogue in the L2 are not vulnerable to L2-induced language change (Gürel & Yilmaz 2011). For example, Ribbert and Kuiken (2010) analyzed acceptability judgments of German-Dutch bilinguals

regarding the distribution of the complementizer *um* in L1 German. Dutch has a very similar complementizer, *om*, which is inserted before certain infinitival clauses, as in German. The distribution of contexts in which the complementizer is allowed, however, differs in the two languages. German has a more restricted distribution in which the complementizer is obligatorily expressed to indicate the purpose or goal of the proposition in the main clause (similar to *in order to* in English in the sentence *John runs every morning in order to stay in shape*) as well as an optional usage to indicate that the infinitive clause is the consequence of the statement made in the main clause (as in English, *Christine is mature enough to know what to do*). Dutch *om* shares these two contextual constraints with German, but also allows the complementizer in several other optional contexts, such as in contexts in which the action of the infinitival phrase is expected to be realized. However, the use of the complementizer in these optional contexts is subject to "speaker subjectivity," incorporating both syntactic rules and pragmatic factors. The researchers found that the German-Dutch bilinguals judged significantly more German sentences as acceptable compared to the German control group only for those sentences classified as ungrammatical in German and optional in Dutch. Thus, it appears that, for these individuals, the internal representation of syntactic rules governing acceptable use of the complementizer in German has been modified to resemble that of its Dutch equivalent.

Another example of a more rigid L1 rule taking on the flexibility allowed in the L2 comes from a study by Flores (2012). In this study, she analyzed the productive speech of Portuguese-German bilinguals who had previously been dominant in German but had become dominant in Portuguese after moving to Portugal as children. These bilinguals were found to omit direct object pronouns in their German production, a feature which is allowed in Portuguese when the direct object refers to the discourse topic, but which is always ungrammatical in German. There was also some evidence showing that the rigidity of German verb placement constraints had given way to a more flexible word order, but this was only observed in the bilinguals who had left the German-speaking environment at a younger age (between 7 and 10 years of age). In sum, both of these studies demonstrate that a syntactic structure with a more restrictive domain of usage has been influenced by the more flexible domain in the L2, leading to a representation of that grammatical feature that incorporates features from both languages.

Cross-linguistic influence has also been found to affect the interpretation of sentence ambiguities. An interesting example is the interpretation of which of two noun phrases a relative clause is meant to modify. For example, in the sentence *The man spoke to the sister of his neighbor who had just returned from vacation* the interpretation of who returned from vacation (the sister or the neighbor) is ambiguous. Despite the structural ambiguity of this kind of sentence, most people are able to interpret these sentences

as the speakers intend them due to the conventions that exist in their languages. For instance, English speakers tend to interpret the relative clause as describing the second noun phrase, i.e., the one closest to the relative clause. Spanish speakers, on the other hand, prefer an interpretation that attaches the relative clause to the first noun phrase, which is one of the main arguments of the sentence. Dussias (2003, 2004) and Dussias and Sagarra (2007) investigated how Spanish-English bilinguals interpreted these types of ambiguous sentences in both of their languages. They found that, for both languages, the bilinguals preferred to interpret the relative clause as modifying the second noun phrase, a feature typical of English. Thus, these findings suggest that exposure to English and English speakers' preference regarding the interpretation of ambiguous relative clause attachment has modified these bilinguals' sentence parsing strategies in the native language. The authors point out that the language of the environment may play an important role in this process as Spanish-English bilinguals who remained in the L1 environment did not show this effect.

Changes in the interpretation of sentential elements have also been found in the way Italian-English and Greek-English bilinguals interpret subject pronouns in their L1 (Tsimpli, Sorace, Heycock & Filiaci 2004). Greek-English bilinguals showed a stronger preference for preverbal over postverbal subjects in Greek compared to a Greek control group. This pattern reflects the one seen in English, suggesting that these bilinguals, unlike the ones in Ribbert and Kuiken (2010) and Flores (2012), show a change from a less restricted to a more restricted distribution of this feature. In addition, the data showed that the bilinguals appeared to use definiteness as a feature determining subject placement, with definite nouns preferred in preverbal position and indefinite nouns preferred in postverbal position. The Greek control group showed no effect of definiteness on subject placement. The researchers also found that the Greek-English bilinguals were less decisive in how they interpreted the referential noun of pre- and postverbal pronominal subjects, choosing "both" possible referents significantly more often than Greek controls. This suggests that the Greek controls were using some kind of information in the sentence to guide a decision to choose the "new" or "old" referent, whereas bilinguals, apparently not using the same cues, instead chose not to commit to one or the other interpretation. Thus, it appears that the cues typically used by Greek speakers to interpret the referents of pronouns have been lost by these Greek-English bilinguals – or perhaps abandoned as they may be aware that there are two options – while another cue, definiteness, has become part of their sentence parsing strategies as a feature of pronoun placement.

In the same study, a group of Italian-English bilinguals was compared to an Italian control group on their interpretation of null and overt subject pronouns. The findings showed that the two groups utilized pronoun realization and clausal order differently

in determining the referent of the pronoun. The two groups showed similar patterns in two conditions: when the dependent clause preceded the main clause (e.g., *When [pro] is crossing the street, **the old woman** greets the girl*), a null subject in the dependent clause was interpreted as referring to the subject of the main clause. Secondly, when the dependent clause followed the main clause, an *overt* subject pronoun in the dependent clause was interpreted by both groups as referring to the complement of the main clause (e.g., *The old woman greets **the girl** when **she** is crossing the street*). The differences found between the groups lay in the other two conditions: the interpretation of overt pronouns in forward anaphora sentences (when the dependent clause precedes the main clause) and the interpretation of null pronouns in backward anaphora sentences. When an overt pronoun was used in forward anaphora sentences, Italian controls interpreted this as indicating the introduction of a new subject rather than referring to one of the two possible nouns in the main clause. Italian-English bilinguals, however, were inconsistent in their choices, choosing equally between the three choices, "subject," "complement," or "other." In backward anaphora conditions, Italian-English bilinguals interpreted null pronouns the same way they did for forward anaphora sentences: as the subject of the main clause. Italian controls, on the other hand, chose equally between "subject" and "complement." Two conclusions can be drawn regarding this set of findings. As the authors maintain, Italian-English bilinguals showed a stronger preference than Italian controls to interpret null pronouns as the subject of the main clause, an interpretation that is forced in English for nonfinite subordinate clauses such as *The old woman greets the girl when crossing the street* suggesting an influence of L2 English sentence parsing strategies. Secondly, we observe that the Italian-English bilinguals appear to have lost the distinction made by Italian controls for when a pronoun represents a continued topic or a change of topic, preferring to interpret overt pronouns as continued topics. In English, pronouns typically refer to existing information, with new topics introduced with an indefinite article and noun phrase.

As can be seen so far, syntactic processing in the native language of bilinguals can be affected by L2 processes by either becoming more or less restrictive in their scope of application or by subtly changing how these constructions are interpreted. One more set of findings is pertinent here to show how lexical choices in syntactic constructions are subject to cross-linguistic influence. Languages differ in how they describe motion events. Talmy (2000) proposes a typology for classifying languages depending on how they frame motion events. Those languages that map the Path of the motion (i.e., directionality) onto the main verb are called "verb-framed" languages, while languages that indicate Path of motion through an add-on to the main verb (such as a prefix or a particle) are called "satellite-framed" languages. While languages typically show a strong preference for one or another of these framing patterns, some languages, like English,

while preferring the satellite framing pattern, do have a number of verbs that can be used to make verb-framed syntactic constructions. For example, a typical satellite-framed construction in English would be *He ran into the room* where the preposition *into* indicates the Path of motion. However, an alternative construction in the verb-framed pattern would be *He entered the room running* in which the main verb, *enter*, contains the Path of motion information.

Brown and Gullberg (2010) tested whether bilinguals would show distinct framing patterns in their two languages if those languages belonged to two different motion framing typologies. Japanese-English bilinguals were asked to narrate the events of a cartoon story in their native Japanese, and their narratives were compared to those of monolingual Japanese and monolingual English speakers. The findings indicated that the Japanese-English bilinguals did not differ from Japanese monolinguals in the mean number of Path verbs per clause, whereas monolingual English speakers used significantly fewer Path verbs per clause. However, Japanese-English bilinguals were found to use significantly more Path satellites per clause than Japanese monolinguals, but significantly fewer than English monolinguals. Apparently the Japanese-English bilinguals are combining lexicalization strategies from both languages in their Japanese production. This conclusion is corroborated by the finding that the Japanese-English bilinguals had significantly more Path expressions (either verb or satellite) per clause than both monolingual Japanese and monolingual English speakers.

In a follow-up study, Brown and Gullberg (2013) investigated how often Japanese-English bilinguals included two components of the motion event in the same clause: Path of motion and Manner of motion. While the researchers had predicted differences between the two monolingual groups in their concatenation of these two components in the same clause, they found that the Japanese and English monolingual groups did not differ in the proportion of clauses containing both Path and Manner of motion. Nevertheless, a difference was found when bilinguals were compared to these two groups, showing that bilinguals package Path and Manner of motion in the same clause significantly less often than both monolingual groups. The authors suggest that crosslinguistic influence is occurring at the level of lexical choice in the native language. Unlike English, Japanese verbs that indicate Manner of motion do not allow a Path satellite in the same clause. If bilinguals are choosing to lexicalize Manner of motion on the main verbs in their native Japanese, a pattern that is typical of English, the grammatical constraints of Japanese require that Path be lexicalized in a separate clause, leading to less concatenation of these two aspects in their production.

Taken together, these two studies indicate that the way motion events are constructed in the L1 through the lexical choices of the speaker is vulnerable to influence from the L2. In addition, as the Japanese-English bilinguals in these two studies did not

show any significant differences between their production in the L1 and the L2 on these measures, it appears that their conceptualization of how motion events are lexicalized has merged in both of their languages.

As these studies indicate, native language syntactic processing is subject to a certain amount of influence from the non-native language. However, in order to fully understand the nature of this interaction, it is important to consider examples where no cross-linguistic influence has been observed. Bar-Shalom and Zaretsky (2008), for instance, analyzed the use of aspectual verbal prefixes in the Russian production of Russian-English bilinguals and found almost no deviant patterns, despite the complexity of the Russian aspectual system. Scherag, Demuth, Rösler, Neville and Röder (2004) tested German-English bilinguals› sensitivity to grammatical gender violations in German and found no differences between long-term U.S. residents, short-term U.S. residents, and bilinguals living in Germany on this measure. One explanation for the lack of cross-linguistic influence in these cases might be the degree of typological distance between the two languages of the bilinguals for the syntactic construction in question. The Russian aspectual system is not only more complicated than that of English, with two imperfective forms and one perfective form (Schmiedtová, von Stutterheim & Carroll 2011), it is also realized in a different manner from that of English, typically through prefixation of the verb, of which there are between 19–21 polysemous perfective prefixes that can mark not only perfectivity, but can also create idiosyncratic meanings of the verb (Slabakova 2005). Thus, while both languages can convey Aspect, they do so in different ways and with different considerations. Regarding grammatical gender, since the bilinguals› L2 (English) does not encode grammatical gender, there is no L2 equivalent for this grammatical property, and thus no influence on this L1 feature. In sum, cross-linguistic influence in the domain of syntax seems to be limited to properties that are highly overlapping in the two languages but not identical; it does not obtain when analogous structures share fewer features across the languages and are thus more distinctive.

3   Construal as a mechanism motivating cross-linguistic influence

Language consists not only of words and rules, but also includes speakers' choices regarding the selection of conceptual content to convey the intended meaning and the way this content is combined to form the speakers' intended perspective. The selection of conceptual content and the combinatorial choices regarding that content are what Langacker (2008) describes as "construal". Different languages have different

conventions for what content is considered necessary or important for inclusion in utterances, what content should be placed at the head of a sentence, and what level of detail to provide. L2 learners are not only required to learn a whole new lexical system, a variety of new articulatory gestures, and a list of rules governing which combinations of words are licensed and which are not; they also need to master the subtler aspects of the language involving how native speakers of that language construe events, situations, and relationships. The latter is typically not taught to learners in foreign language classrooms, requiring them to pick up on these subtleties through language use. Thus usage-based models of L2 acquisition predict that construal patterns in the L2 will be acquired through the statistical learning mechanism which forms abstractions from numerous examples of a structure (Ellis 2011; Peterson & Ellis 2008). L1 usage patterns that have become automatized by the L1 learner necessarily provide certain expectations about linguistic structures and thus bias the learners' attention to these structures, leading to forms that are generally considered "L1 transfer" (Odlin 2008). Additional attentional resources and input can help the learner overcome these original biases and acquire the target-like L2 forms. True target-like acquisition of syntactic forms in the L2, however, requires a familiarization with the native-like construals that map those forms to particular meanings and distribution patterns. This may involve new ways of conceptualizing common states, scenes or events such as caused motion events, spatial relationships, event completion, and even abstract thought (Odlin 2008).

While successful acquisition of L2 structures is desirable, few researchers have considered what this means for the L1 linguistic system. As we described in the previous section, the L1 can adapt itself to converge with the L2 when the structures are quite similar to each other (Pavlenko 2003). While construal is a language-specific phenomenon, its foundation lies in the conceptual system of the language user. Thus, a readjustment of a form-meaning mapping at the conceptual level has the potential (and even the likelihood) to affect any and all linguistic systems of the speaker. Pavlenko (2003) suggests that L2 influence on the L1 can involve a simple borrowing of L2 elements, a loss of L1 elements, the incorporation of new L2 elements into the L1, a shift of L1 structures toward the L2 forms, or a convergence of L1 and L2 forms into a new, hybrid structure. The relationship between L2 conceptualization and L1 language use has been demonstrated in studies investigating the influence of grammatical aspect on conceptualization patterns in bilinguals. L2 patterns of event conceptualization (namely, whether the event is perceived as bounded or ongoing) have been shown to influence L1 usage patterns, suggesting an interplay between the two languages at the conceptual level that has influence over language choices in both languages (Bylund 2011; Bylund & Jarvis 2011; Schmiedtová *et al*. 2011). We propose that by restructuring the way certain events or objects are construed in order to acquire the native-like

construal patterns of the L2, bilinguals have not only modified their L2 linguistic system, but this change feeds backward to the L1 system as well.

A specific instance of construal is the concept of schemas. Schemas are abstractions of more specific elaborations of a concept, involving the common characteristics of the subcases, but omitting the details that distinguish between them. Each language has its own set of schemas, which are essential to every aspect of its linguistic structure (Langacker 2008). In the domain of grammar, schemas consist of form-meaning pairs that are generally agreed upon by the linguistic community and aid in the successful rapid, transmission of language from speaker to hearer. Schemas include structures that are considered grammatical, or well-formed, as well as structures that are considered preferable. For instance, the structure *V + not + ADJ* is a schema in English involving the qualitative description of a subject, as in the example *John is not intelligent*. In Spanish the same conceptualization is expressed using the schema *no + V + ADJ* as in *Juan no es inteligente*. These schemas represent well-formed expressions in their respective languages. Preferred schemas in English include the dative form *NP's NP* as in *John's brother* over the less frequent, but still grammatical form *NP of NP*, *the brother of John*. Schemas become entrenched in the language user's mind through the repetition of these form-meaning pairings, making their co-activation more automatic and their conventionality among other users of the language well established (Tuggy 2007).

The set of findings on cross-linguistic influence in bilinguals appears to exemplify how the modification of conceptualization schemas during L2 acquisition and use leads to a modification of the L1 schema as well. In the first two studies discussed in this article (in section 2), the L1 schema representing a particular form with its distribution of contexts has been broadened to include the larger or more flexible distribution found in the L2. The German-Dutch bilinguals in Ribbert and Kuiken (2010) have modified the German schema representing context distribution of *um* to include contexts of expected realization of the infinitive in addition to its previous contexts. Thus, the frequency of the Dutch complementizer *om* in this new context updated the bilinguals' shared schema of *um/om* affecting the way the German complementizer *um* is used. Similarly, the schema representing verb position in the L1, German, by the Portuguese-German speakers reported in Flores (2012) has been modified to accommodate a freer word order in Portuguese. Additionally, in that study, the Portuguese schema that includes the option of dropping the direct object pronoun when it represents the discourse topic has influenced the corresponding schema in German, which previously restricted direct object pronouns to being overtly expressed.

The studies on interpretation are also explicable within the framework of modified schemas. The Spanish-English bilinguals seem to have modified their schemas representing how relative clauses are interpreted (Dussias 2003, 2004; Dussias & Sagarra

2007). The Greek-English bilinguals in Tsimpli *et al.* (2004) demonstrate a modified schema that pairs preverbal noun position with the interpretation of the noun as the subject. Similarly, the Italian-English bilinguals' modified schema interprets null pronouns as the subject. All of these represent the adaptation of the native language schema to accommodate second language schemas of these forms.

The studies on event construal (Brown & Gullberg 2010, 2013) also demonstrate the schemas involved in lexicalization of motion events and their merged representation in Japanese-English bilinguals. As Brown and Gullberg (2013) demonstrate, schemas include not only surface form contingencies but also lexical choices and, as seen in Tsimpli *et al.* (2004), discourse/pragmatic influences. Corresponding schemas in the two languages of a bilingual speaker may be able to interact on any of these levels. The study of motion event construal described in Brown and Gullberg (2013) points to an influence of lexical choice rather than syntactic changes. However, this may be due to the particular language pair investigated, the type of bilinguals in the study (with intermediate proficiency in the L2), or because influence at other levels was too subtle to detect with the given task. One of the current challenges of this area of research involves defining at what levels and under what conditions cross-linguistic interaction in bilinguals can be observed, as well as what kinds of extralinguistic factors may be particularly relevant in this regard, such as age of L2 acquisition, proficiency achieved in both languages, and language usage patterns.

By viewing patterns of cross-linguistic influence in terms of the adaptation of schemas, we gain a view of the phenomenon as a bidirectional process rather than as two separate processes involving "first language transfer" and "first language attrition." This aligns with the view of the bilingual linguistic system as a single multicompetence involving multiple language systems which are interdependent rather than independent (Cook 1992). Moreover, we may discover that the native language system is much more malleable than previously thought, calling into question exactly how a native speaker is defined (Han 2004). Research into this area can also provide a clearer understanding of the relationship between language and conceptualization by elucidating which aspects of language use are language-specific (not vulnerable to cross-linguistic influence) and which aspects are shared between languages or more readily influenced (see Bylund 2011). Further empirical data analysis is required to see whether the adaptation of native language schemas can account for all instances of L2 influence on the L1.

4   Conclusion

In sum, we would argue that the influence of the L2 on the L1 is not as striking as that seen in L1 transfer to the L2 in early stages of L2 acquisition. Nevertheless, it is possible that the application of schemas from one language to the other results in transfer effects in both directions. What the studies discussed herein have shown is that L2 effects on the L1 can be seen in the pragmatic aspect of speakers' construal patterns, particularly when optionality of similar forms or similar content differ across a pair of languages. In such instances – ranging from markers of infinitival verbs to a predisposition toward a particular interpretation of a pronoun – subtle influences appear to occur in the schema representing those forms in the native language.

It is unclear if these subtle differences should be considered attrition of the L1. Strictly speaking, the speaker who manifests them no longer speaks exactly like a native-speaker monolingual of the L1, thus the term could apply. Indeed, they may simply be different degrees of the same process, as Schmid (2011: 12) considers that "[i]t is … conceivable that part of the phenomenon which we refer to as 'language attrition' … may only be the somewhat more visible tip of the iceberg of L2 influence on the L1 – something which all bilingual speakers experience, but which has become noticeably pronounced in the speech of some." This is an interesting possibility and one that warrants further research to be understood more fully.

What should be evident from the studies reviewed here is that highly overlapping schemas in the two languages of a bilingual have the tendency to merge. This observation raises a number of interesting questions, such as: Why do schemas merge rather than being represented separately? What is the degree of overlap necessary for a shared representation to emerge? Do changes to the L1 schema occur only after complete acquisition of the L2 schema properties or at some earlier point in their acquisition? Are there any differences between the way schemas are used by simultaneous versus sequential bilinguals? Indeed, there are many other intriguing lines of inquiry that these findings suggest which can provide a better understanding not only of the nature of the acquisition of L2 schemas but also of their possible effect on schemas in the L1.

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