

Article

Bilingual Alignments

Liliana Sanchez

Department of Spanish and Portuguese, Rutgers University-New Brunswick, New Brunswick, NJ 08901, USA; lsanchezrutgers@gmail.com

Received: 17 June 2019; Accepted: 16 October 2019; Published: 31 October 2019



Abstract: The issue of how to distinguish bilingual syntactic representations from processing preferences or strategies is addressed by postulating the concept of permeable bilingual alignments as memory storage devices that include information from different language components. Supporting evidence from phenomena such as the emergence of innovative mappings across different components (phonology, morphology, syntax, the lexicon, and information structure), bidirectional transfer, and frequency effects is presented, and some possible consequences of adopting this proposal are discussed.

Keywords: bilingual; alignment; interface; cross-linguistic influence

1. Introduction

One of the major issues facing researchers in the field of bilingualism is how to model the complex and dynamic nature of bilingual syntactic representations as distinct from processing preferences or strategies. While previous work in the area of distinguishing representation at the lexical level and processing has become mainstream (Kroll and Tokowicz 2005; Brysbaert and Duyck 2010), it has not been met with a counterpart in terms of syntactic approaches. We are still in need of a hypothesis that allows us to distinguish between storage and retrieval phenomena and what appear to be unstable grammatical representations in bilinguals. This article focuses on some preliminary ideas on how to incorporate the role of storage and retrieval of units from different language components in two languages into our understanding of apparent variability in grammatical representations in bilinguals. It is important to state from the start that this proposal does not preclude the existence of gradient grammatical representations in bilinguals, understood as differences in coactivation of such representations (Goldrick et al. 2016).¹ Rather, it focuses on how elements from different language components may be linked for storage purposes in the mind of the bilingual, although they may not necessarily reflect grammatical representations.

The proposal put forth in this paper is centered around the idea that elements from different language components such as phonological form, morphology, syntax, and lexical meaning create what I will call alignments in the speaker-hearer's mind that act as linkings for these elements and as storage devices accessed for production or comprehension purposes.^{2,3} These alignments do not exist by necessity of the computational system, but are a byproduct of the need to store and retrieve linguistic information even when fixed or stable grammatical representations are not yet available. In bilinguals, alignments may sometimes arise in an unstable or transient fashion, although they may

¹ For a detailed proposal on the effect of coactivation on bilingual grammatical representations, see Goldrick et al. (2016).

² Not all components are represented in these linkings, especially at earlier stages of L2 acquisition, for example, when features remain unstable or not specified. In that sense, alignments, though they may interface with language components, are not necessarily stable representations.

³ An anonymous reviewer considers the notion of storage devices to be too broad. One possible way of conceptualizing alignments is as belonging to the interface between long term memory (LTM) and working memory (which involves storage and manipulation), as proposed by Baddeley (2012).

become stable. They may incorporate elements from components of the two languages generating greater flexibility in acceptability judgments among bilinguals. Furthermore, as alignments may not necessarily reflect stable representations, they allow us to account for mismatches in production and comprehension, as they may be the result of the grouping of different sets of features from different language components for each purpose. In this article, I discuss evidence from previous studies that supports positing bilingual alignments as storage mechanisms and as a way to better understand variability, differences between comprehension and production data, and bidirectional and lexical frequency effects. The organization of the article is as follows. In the next section, I present some of the main assumptions behind this proposal. In Section 3, I present data from previous studies as evidence in favor of adopting the notion of permeable bilingual alignments, and in Section 4, I present the discussion of the data.

2. Main Issues and Assumptions

One of the central puzzles that sequential and simultaneous bilinguals face is the mapping of syntactic features onto phonological form, morphology, and meaning (Hopp 2013; Montrul 2015; Prévost and White 2000; Polinsky 2018; Slabakova 2008; Putnam and Sánchez 2013; Putnam et al. 2019; Sánchez 2015; Sorace 2011). This is especially the case when the two languages spoken by a bilingual individual differ typologically in terms of their morphological configurations. One such case is that of bilingualism in a highly agglutinative language and a language that is not, especially when derivational morphology plays a lesser role in the non-agglutinative language than in the agglutinative one. The following examples from Quechua and Spanish illustrate this type of difference. While in sentence (1) in Spanish, the adverb of manner *repetidamente* ‘repeatedly’ conveys the meaning of repeated action, in sentence (2) in Cuzco Quechua, the derivative suffix *-paya* conveys that meaning. Notice that it is not the absence of derivational morphology in Spanish that makes the configuration in (3) not acceptable. The prefix *re-* is part of the words with meanings involving repeated actions such as *re-iniciar*, ‘to start again’, and while it can be used in some varieties with an intensifier meaning, it cannot be used with the intended meaning in (1), as shown in (3):

- | | | | | | |
|----|-----------------------------------|---------|---------------------------------|----|-------------|
| 1. | María | va | repetidamente | a | Cuzco. |
| | Maria | goes | repeatedly | to | Cuzco |
| | 'Maria repeatedly goes to Cuzco.' | | | | |
| 2. | Mariya-m | | Qusqu-tari-paya-n. ⁴ | | |
| | Mariya-FOC | | Cusco-ACC | | go-FREQ-3.S |
| | 'María goes repeatedly to Cuzco.' | | | | |
| 3. | * María | re-va | a | | Cusco. |
| | María | re-goes | to | | Cusco |
| | 'Maria goes repeatedly to Cusco.' | | | | |

At first glance, the mappings of lexical semantics, morphology, and syntactic configurations involved in the Spanish structure and the Quechua structures do not seem to be radically different, as in both cases there is an overt external argument, a verb, and a DP, and at the syntactic level, both sentences could receive a similar analysis. However, while the Spanish structure has a manner adverb that is phonologically an independent word and syntactically an adjunct, the Quechua sentence in (2) involves a lexical derivation at the word level (Figure 1a). Furthermore, a sentence like (1) also

⁴ Abbreviations used in this article: ACC = accusative, ANIM = animate, ASP = aspect, CAUS = causative, DEF = definite, DES = desiderative, DOM = differential object marker, ERG = ergative, FEM = feminine, FREQ = frequentative, GER = gerund, IMM = imminent, IND = indicative, INF = infinitive, NOM = nominative, P = present Q = interrogative particle, PERF = perfective, PL = plural, PROG = progressive, PST = past, REP = reportative, S = singular, SUBJ = subjunctive, 1 = first person, 3 = third person.

involves verb raising to T.⁵ This contrasts with the fact that Quechua is a verb-final language, as shown in (2), and that the relevant adjunct is a suffix at the word-level configuration in Quechua, also shown in Figure 1b.⁶

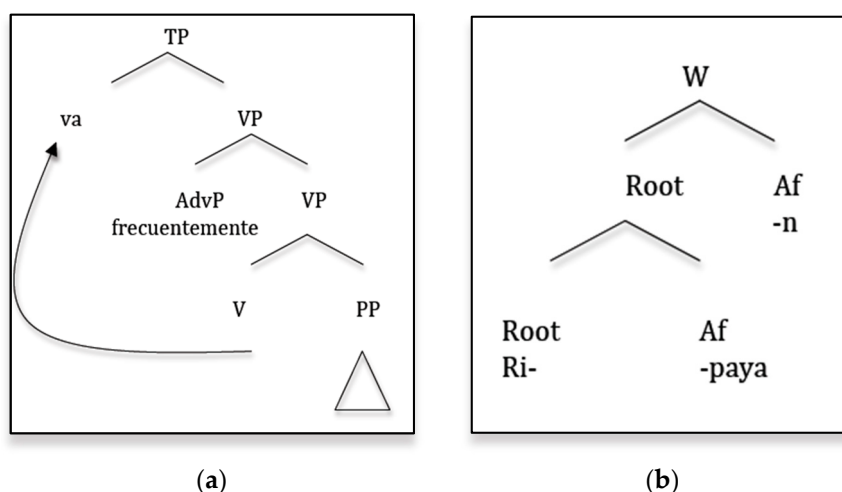


Figure 1. (a) Independent words in the Spanish syntactic structure; (b) suffixes at the Quechua word-level configuration.

For Quechua-Spanish bilinguals, this may prove to be a challenge in terms of having to deal with two different levels of structures: one involving derivational morphology and another one involving a separate lexical item, the adverb. Bilingualism in language pairs such as Quechua and Spanish raises the general question of how bilinguals in the process of acquiring typologically different mappings of syntax, lexical semantics, and morphology deal with two different sets of features across components. This type of bilingualism in typologically divergent languages highlights the role that factors such as co-activation of lexical items from two languages in competition (Colomé 2001; Costa et al. 1999; Marian and Spivey 2003), differences in levels of input between lexical items from the two languages (Pearson et al. 1997; Unsworth 2016), and frequency of lexical activation (Schwartz and Kroll 2006) play in bilingual acquisition. At the same time, it raises the question of how such factors may affect the development of bilingual grammars. Recently, these issues have been brought to the fore by researchers working on fields such as heritage language acquisition (Goldrick et al. 2016; Sánchez 2017), attrition (Schmid and Köpke 2017), and second language acquisition (Kroll and Sunderman 2003; Tokowicz 2015).

In an attempt to explore this question from the perspective of language contact situations, I will present in the next section findings from previous studies that support the idea that bilinguals do resort to alternative patterns of linking elements from different language components. I will use the term alignment to refer to these links, and I will define them in more detail below. In some cases, these alternative alignments work as an intermediate pattern between the alignments of their two languages. Postulating the existence of such transient alignments may help us understand phenomena that, until now, have been considered unrelated, such as bidirectional transfer effects (Pavlenko and Jarvis 2002), frequency effects (Giancaspro 2017; Giancaspro forthcoming; Hur forthcoming), and levels of consistency in apparently unstable systems (Mayer and Sánchez 2016, 2017, 2018). Another advantage of positing the existence of alignments as storage devices is that, unlike representations, alignments can be conceived as more dynamic and subject to variation and do not lead us to the path

⁵ Figure 1 does not include the external argument for brevity.

⁶ An anonymous reviewer points out that the syntactic structures may not differ radically if one assumes a syntactic analysis of adverbs for both languages similar to that of Cinque's (2010). While this is indeed a quite feasible syntactic analysis for Quechua, the point of this example is not to argue for different syntactic structures in both languages, but to show that Spanish morphology requires multiple phonological independent words, while Quechua morphology does not.

of postulating conflicting representations on the basis of differences in bilinguals' results in receptive and productive tasks (Putnam and Sánchez 2013; Perez Cortes et al., forthcoming). Of course, it is possible that frequently activated alignments become part of a stable representation, and it is also possible that an alignment with low levels of activation may coexist with a stable representation. In the next section, I will discuss these issues.

Before presenting the evidence for this proposal, I would like to introduce some of the main assumptions behind it. The first one is the notion that there is a role for experience, variation, and principles not specific to the faculty of language in the process of language acquisition even if we assume that language is a genetic endowment (Chomsky 2005). Secondly, I assume that there are interfaces between different components of language such that some phenomena are at the interface of these components (Jackendoff 1997, 2011). This assumption has resulted in the exploration of how syntactic and morphological features are related to the organization of the lexicon, how functional features are linked to lexical items (Chomsky 1995; Jackendoff 2002), and how functional features/values are mapped onto morphology and/or intonational patterns (Cheng and Rooryck 2000; McFadden 2004; Adger and Svenonius 2011) and to informational structure (Adger 2003; Cinque 1999; Rizzi 1997). In studies of simultaneous, early, and late bilingualism, the focus on interfaces has provided evidence of cross-linguistic influence at the interfaces between the computational system and other components such as pragmatics, semantics, and phonological form (PF) (Hulk and Müller 2000; Montrul 2010; Sorace 2011; White 2011; Pladevall 2010; Serratrice et al. 2004; Sorace and Serratrice 2009; inter alia). Evidence of crosslinguistic influence has also been found at the lexical–functional interface (Liceras et al. 2005; Fuertes and Liceras 2010; Austin 2009; Liceras et al. 2008; Cuza et al. 2013; Bruhn de Garavito and Valenzuela 2008; Montrul 2009; inter alia), and at the semantics/morphology interface (Slabakova 2008). The present article takes as a departing point a new direction with respect to interfaces presented in Jackendoff's (2007):

“A word is itself a kind of interface rule that plays a role in the composition of sentence structure. It says that in building the structure for a sentence, this piece of phonology can be matched with this piece of meaning and these syntactic features.” (Jackendoff 2007, p. 9)

Jackendoff (2011) elaborates this proposal further:

“... words are long-term memory linkings of structured sound, syntactic features, and structured meaning. That is, FLN includes the capacity to learn words in profusion and to apply recursion to them.” (Jackendoff 2011, p. 599)⁷

In Jackendoff's view, the narrow faculty of language that he defines as the “unlearned capacities specific to the linguistic modality” includes the capacity to learn linkings of elements from different language components and have them stored in long-term memory.⁸ On the basis of this idea, I propose that in bilinguals, a set of at least two linkings can be stored in the mind as alignments. These alignments may include information from different language components (phonological form, lexical, semantic, syntactic, and information structure features), although not necessarily from each and/or all components, especially in cases of reduced exposure to one of the languages or at earlier stages of acquisition.⁹ Furthermore, alignments usually differ in terms of the feature values for each

⁷ Jackendoff uses FLN to refer to the “narrow language faculty” (Jackendoff 2011, p. 587).

⁸ An important difference between Jackendoff's view of words as long-term memory linkings and alignments is the fact that alignments may be transient and not necessarily representational, in that they are conceived as belonging to the interface between working memory and long-term memory.

⁹ An anonymous reviewer points out that alignments differ from Jackendoff's interface rules in that they involve more features and that alignments seem closer to feature structures in head-driven phrase structure grammar (HPSG) models (Pollard and Sag 1994). The present proposal is similar to Jackendoff's not in the exact internal configuration of the alignments, but in adopting the notion that there are linkings of elements from different language components stored in memory. Alignments differ from HPSG structures in that they are not conceived of as fixed representations, but mostly as storage devices at the interface between long-term memory and short-term memory.

language. Figure 2 shows the configuration of these alignments. It illustrates in an idealized way how in each language, features from different components (phonology, morphology, syntax, and information structure) may be linked and stored in memory in such a way that retrieval of features from one language component may trigger retrieval of feature values from other language components as part of the linking. It also shows that features may or may not have the same value in each language.

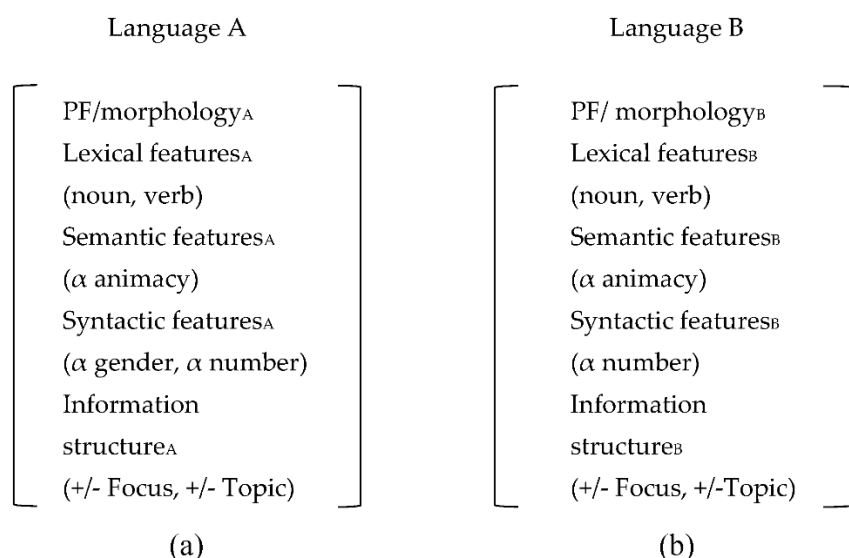


Figure 2. (a) Alignment in Language A; (b) alignment in Language B.

The fact that word-level or even bigger chunks of language units involve alignments that are stored in memory must not be interpreted as meaning that they are themselves fixed representations. The proposal is that alignments are units that exist in the speaker-hearer mind by virtue of being stored in memory, not by necessity in the computational system. In other words, the existence of alignments is a result of the need to store and retrieve units formed by different language components for production and comprehension purposes.¹⁰ The bundles of features from different language components may be more or less stable, namely, able to maintain a specific configuration of the linking, depending on how frequently they are activated. They may become stable and fixed, and access to them may be highly automatized. Their existence is not incompatible with the idea that language components are autonomous, in that features (lexical or syntactic) may be assigned to new PF sequences.¹¹ Alignments, on the other hand, are readily available by virtue of being stored in the mind and are one of the main ways in which we access abstract features for comprehension and production. For that reason, positing these storage units may allow us to understand how access to different alignment configurations may have an impact on the development of bilingual grammars.

An essential characteristic of these bilingual alignments is that they can be permeable. This should not be surprising because they are quite probably subject to the same (co)-activation phenomena that have been studied and documented for the lexicon under the assumption that lexical items are units comprising PF and lexical meaning, as well as categorial and syntactic information. There is evidence that proficiency modulates the type of access that bilinguals have to the lexical items (Luo et al. 2010). While proficient bilinguals develop language-specific selection mechanisms (Luk and Bialystok 2013),

¹⁰ An anonymous reviewer suggests that, if alignments are needed for memory storage, we should expect working memory effects during retrieval. In fact, [Cummings \(2017\)](#) proposes that late bilinguals exhibit higher levels of interference in sentence processing when accessing information from memory. As we will see below, this is expected if there is competition between alignments in the two languages during retrieval.

¹¹ Another reviewer points out that in Jackendoff's system, there are independent phonological and semantic components. Alignments are not incompatible either with this notion.

there is also evidence that non-target language lemmas (lexical items) compete for selection in lower proficiency learners (Costa et al. 1999; Costa and Santesteban 2004; Costa et al. 2006). As noted by Jiang (2000), at the early stages of L2 acquisition, there is permeability in the formation of lexical units such that the phonological and morphological units (lexemes) may be assembled with L1 syntactic and semantic features (lemmas, in Jiang's terminology). Furthermore, even highly proficient bilinguals show evidence that local control (restricted to lexical items previously used) requires additional cognitive resources (Branzi et al. 2016). Competition requires inhibition that may or may not be successful. The configuration of bilingual alignments as storage units may be affected by different levels of proficiency, so that more alignments in the language with lower-level proficiency may be affected than those in the language with higher levels of proficiency, but alignments may be permeable even in highly proficient bilinguals.

Language experience is another factor involved in permeability for bilinguals. As noted by Dussias et al. (2017), processing studies have shown evidence of permeability in bilinguals with high proficiency in both languages that is generated by training in a specific processing strategy, irrespective of the language used in training.¹² Long-term language experience has also been proposed to modulate patterns of processing among bilinguals. Code-switching bilinguals, as well as non-switchers, exhibit differences in sensitivity to frequent versus infrequent switches (Beatty-Martínez and Dussias 2017). Permeability in alignments may also be modulated by differences in language experience.¹³

Additional evidence for permeability in bilinguals is convergence in functional features among contact bilinguals (Sánchez 2004). As contact bilinguals live in communities where there is access to two languages in society (not restricted to an instructional context), they are more likely to be exposed to and/or interact with speakers of two languages. As a consequence of this exposure, contact bilinguals are more likely to activate alignments either for receptive only or for receptive and productive purposes in both languages more frequently and in a wider variety of contexts, making permeability also more likely.

Given the previously existing evidence of permeability in the configuration of lexical items at different levels of proficiency and in processing in relation to language experience as well as the evidence of convergence in contact bilinguals, permeability in bilingual alignments is to be expected. In the next section, I will illustrate the explanatory capacity of the notion of alignments by analyzing results from previous studies.

3. Review of Selected Studies

In this section, I review previous studies with results that can be better understood through the lens of our proposal. Some pertain to the relationship between the lexicon, morphology, and syntax, while others are related to contact phenomena such as the pervasive nature of null objects in contact situations, bidirectional transfer effects, and the emergence of more stable alignments despite variability. Participants in the studies reviewed in this section are bilinguals living in a contact situation, which means their access to the two languages is not limited to instructional contexts.¹⁴ Some of the studies have participants grouped according to proficiency, while others have them grouped according to differences in context of exposure and life experiences, including adult and childhood bilingualism in contact situations.

¹² Dussias et al. (2017) point out that bilinguals with a preference for a certain type of attachment in relative clauses (high or low) can switch their attachment preference after training.

¹³ As suggested by an anonymous reviewer, the notion of permeability in alignments is not restricted to bilingual individuals. Monolinguals exposed to multiple varieties or dialects of a language may also experience permeability in alignments.

¹⁴ The literature reviewed in this section does not include studies with participants who are second language learners whose acquisition takes place mostly in instructional settings. While they may experience permeability in alignments, the focus of this paper is on bilinguals (simultaneous or sequential/second language acquirers) who live in a contact situation. In contact bilinguals, bidirectional permeability of alignments can be better observed.

3.1. The Organization of the Lexicon, Morphology, and Syntax

One of the main challenges to the understanding of how the lexicon, morphology, and syntax interact in bilinguals who speak typologically different languages is the issue of how bilinguals move from a language with heavy reliance on derivational morphology to one in which such reliance is not as strong. Examples (4a) and (4b) illustrate how derivational morphology is crucial in the formation of causative structures in a language like Quechua, while in a language such as Spanish, the difference resides in the lexical root (5a, b). While in both cases, there is an additional argument in the b examples, in the case of Spanish, this information is not encoded in morphology, but in the lexicon.

Quechua (Heavier reliance on derivational morphology)

4. a Wañu-sqa.
die-PST.REP.3S
'(They say) s/he died.'
- b Wañu-chi-sqa.
die-CAUS-PST.REP.3.S
'(They say) s/he killed
(him/her/it).'

Spanish (Lighter reliance on derivational morphology).

- 5 a Mur-ió.
Die-PST.3.S
'(S/he) died.'
- b Mat-ó.
kill-PST.3.S
'(S/he) killed.'

Cross-linguistic differences also arise in the division of labor across language components. While in some languages, the mapping of functional features onto morphemes may be constructed as closer to a *one-to-one* mapping, as illustrated in example (6) from Southern Quechua, where each suffix corresponds to a grammatical feature (aspect, person, number), in languages such as Spanish, the mapping is closer to a *many-to-one* distribution, as shown in example (7). In the latter, the verbal inflection on the auxiliary involves person, number, and indicative mood, and the gerund together with the auxiliary form a verbal periphrasis with a progressive interpretation.

- 6 Mikhu-chka-n-ku.
Eat-PROG-3-PL
'They are eating.'
- 7 Est-án com-iendo.
Be-3.PL.IND eat-GER
'They are eating.'

Bilingualism in languages with diverging lexical/morphological/syntactic patterns shows evidence of how bilinguals deal with the contrasting alignments of language components in each of the languages. In a study on narratives produced in both languages by 30 Lamas Kechwa and Spanish bilingual children, [Sánchez \(2006\)](#) found evidence of a periphrastic form of imminence used with eventive verbs that is usually restricted to climate verbs in other varieties of Spanish ([Sánchez 2011](#)). The periphrasis is shown in (8):

- 8 Un wamrillu (e)stá quer-iendo agarr-ar
A boy be.ASP-3.S.P.IND want-GER grasp-INF
su sapo.
his toad
'A boy is about to grab his toad.' ([Sánchez 2006](#), p. 545)

Sánchez (2006) points out that this structure was found more prominently in the Kechwa and Spanish narratives of three participants with high levels of interaction in Kechwa with family members at home. It was elicited using a picture-based oral narrative elicitation task based on Mayer and Mayer (1992) frog stories. Sánchez notes that it was most frequent with eventive verbs such as *agarrar*, *morder/comer*, *brincar*, and *ir/salir* in Spanish and with eventive verbs such as *mikunayaykan*, *apinayaykan*, *yukanayakan/brinkanayaykan*, and *mañanayaykan* in Kechwa. Sánchez (2006) proposes this as a case of functional convergence in features such that the desiderative/imminent feature has become part of the grammatical representation of this bilinguals' Spanish. What I would like to propose now is an account of how the periphrasis *está queriendo agarrar*, 'is about to grab', becomes available through contact by analyzing it through the lens of the concept of bilingual alignments. In the Lamas Kechwa structure in (9), we observe the typical morphological structure described by Cerrón-Palomino (1987), where derivational and inflectional affixes follow a root (10).

- 9 Miku-naya-yka-n.
 Eat-DES-PROG-3.S
 '(S/he) wants/is about to feed (him/her/it).'
- 10 Root + Derivational + Inflectional
 (Cerrón-Palomino 1987, p. 267)

Notice that in Quechua languages—and this is also the case for Lamas Kechwa—a sentence such as (9) constitutes a single phonological word, as shown by the pattern of regular stress that falls on the penultimate syllable, as shown in examples (11)–(13). The first line corresponds to the division of the word in syllables:

- 11 Mí.kun.
 Miku-n
 Eat-3.S
- 12 Mi.ku.ná.yan.
 Miku-naya-n
 Eat-IMM-3.S
 '(S/he) wants to eat.'
- 13 Mi.khu.na.yáy.kan.
 Miku-naya-yka-n
 Eat-IMM-PROG-3.S
 '(S/he) is about to eat.'

In Spanish, on the other hand, the equivalent expression involves a periphrasis with phonologically independent words involving verb lexical roots with suffixes and prepositions, as shown in (14):

- 14 Est-á a punto de/por comer.
 Be.ASP-3S.P.IND PREP point P/ about P/ about
 '(S/he) is about to eat.'

If we think of these expressions in terms of the alignments or linkings of elements from the different language components that they involve, we can see that the Lamas Kechwa alignment has a single phonological word aligned with the lexical root *miku*, its lexical meaning, as well as derivational and functional suffixes, as shown in Figure 3.

PF	'Mi.ku.na.yáy.kan'
Lexical f.	Miku-
	[v]
Semantic f.	<i>Eat</i>
Derivational	-naya (DES/IMM)
	[v]
Functional	-yka (PROG)
	-n (3.S)

Figure 3. Alignment for *mikunayanmi* in Lamas Kechwa.¹⁵

Spanish, on the other hand, involves a complex array of alignments. These include verbal roots and suffixes like the auxiliary *está*, 'is', and the infinitival form *comer*, 'eat', as well as a complementizer that precedes the infinitival form. This complementizer is homophonous with the preposition *de* and the expression *a punto*, 'about', that has two phonologically independent words, but a single meaning associated with it at the level of lexical semantics, as shown in Figure 4.

PF est-á	PF	a	punto
Lex est-	Lex	a	punto
[v]		[P]	[N]
Sem. <i>be</i>	Sem.	<i>imminent</i>	
F 3.S			

PF de	PF com-er
Lex de	Lex. com-
[C]	[v]
Sem. <i>to</i>	Sem. <i>Eat</i>
	F INF

Figure 4. Alignment for *está a punto de comer* in Spanish.

If we think of these alignments as being driven by the need to store information from different language components to make them available for production and comprehension purposes, the challenge of accessing different ways of aligning them becomes apparent. Under this view, the formation of alignments that keep some level of similarity in the distribution of phonological form, lexical category, morphological structure, and meaning in both languages seems more manageable for bilinguals who are more dominant in Kechwa. Similarity to Kechwa alignments is understood in this case as a pattern in Spanish in which lexical roots are followed by suffixes, as opposed to the Spanish periphrastic form with the uninflected prepositions *a* and *de*. In that respect, the periphrasis in (8) shows some similarity in alignments in both languages, as it maintains the Kechwa alignment (a lexical root followed by suffixes) and the Spanish alignments with multiple phonologically independent words, as shown in Figure 5.

¹⁵ PF forms are marked with single quotation marks rather than in the international phonetic alphabet.

PF 'est-á'	PF 'quer-iendo'	PF 'com-er'
Lex. <i>est-</i>	Lex. <i>want</i>	Lex. <i>com-</i>
[v]	[v]	[v]
Sem. <i>be</i>	Sem. Imminent	Sem. <i>eat</i>
F 3.S.P	F GER	F INF

Figure 5. Alignment for *está queriendo comer* in Spanish.

Furthermore, in one of these alignments, the feature [+imminent], grammaticalized in Kechwa, is part of the alignment associated with the PF of 'queriendo', making the imminent reading possible. For these alignments to emerge, elements from different components in both languages must be co-activated to create the new storage device. Notice that the resulting structure cannot be analyzed as a 'calque' or a 'loan', because the bilingual Spanish expression is a verbal periphrasis with no correspondent structure in Kechwa.

The emergence of these new alignments in bilinguals is quite likely the result of a reorganization of how language components are aligned in the input. This reorganization allows for similarities in the storage of lexical items in both languages. If these alignments become constantly activated and accessed, they may lead to a restructuring of the syntax such that the new periphrastic form becomes part of the grammatical representation. In that sense, alignments are not an alternative to the notion of gradient grammars understood as differential coactivation of grammatical representations in different language components (Goldrick et al. 2016). They are a storage device that may generate new grammatical representations such as the possible grammaticalization of the +imminent feature.

3.2. The Role of Alignments at the Interface of Syntax and Informational Structure

Alignments may not be limited to the core language components (phonological form, morphology, the lexicon, and syntax). They may also include features relevant to information structure. One such case is the association of null objects with topics or previously introduced antecedents. There is ample evidence of the pervasiveness of null objects in language contact situations in which one language allows for them while the other language has overt pronominal forms (Na Ranong and Leung 2009; Putnam and Lipski 2015). In the case of Spanish, varieties of the language in contact with Basque, Guaraní, and Quechua (all null object languages) have been shown to exhibit null objects in contexts in which other varieties of Spanish have pronominal clitics (Choi 1998, 2000; Franco and Landa 2003; Yépez 1986), as shown in the following:

15	Juanha	venido	esta	mañana	pero no	he	visto	Ø
	Juanhas	come	this	morning	but	NEG	have	seen
	'Juan came this morning but I haven't seen (him)' (Franco and Landa 2003, p. 312)							

In a study on heritage speakers of Chinese (simultaneous bilinguals and childhood immigrants) with advanced levels of proficiency and adult Chinese immigrants in Peru with intermediate levels of proficiency who acquired Spanish at different ages, Cuza et al. (2013) found evidence of acceptance and production of null objects in the results of the three groups, but with different levels of frequency across tasks and across groups. In the production task in Spanish (a question-after-story task that aimed at eliciting clitic pronouns), the adult immigrants' results were significantly different from those in the Spanish control group, in that they showed the highest frequency of null objects in anaphoric contexts among all groups. They also exhibited overt DPs and a very low frequency of clitics. The childhood immigrant group differed too from the control group but not with respect to null objects. Instead of null objects, they exhibited some production of overt DPs. The simultaneous bilingual group did not differ from the controls.

On the other hand, in the receptive task (a truth-value judgment task, also in Spanish), the group with the highest level of acceptance of null objects in a referential context where a definite interpretation is expected was the group of childhood immigrants, followed by the group of adult immigrants. Again, the simultaneous bilinguals' results were not significantly different from those of the control group. [Cuza et al. \(2013\)](#) analyze these results, especially those of the childhood immigrants, as gaps in their knowledge of what they term their "knowledge of the morphosemantic conditions" that underlies null objects in Spanish, namely, that they must not be referential. They point out that this is the case even though they live in a contact situation and have high levels of exposure to Spanish. They argue that these speakers have retained a contextually identified null object. I propose that the complexity of these facts can be better accounted for if we resort to the notion of permeable bilingual alignments. As is well known, in Chinese, null objects are licensed by a topic, as shown in (16) and (17):

- 16 a Zhangsan kanjian Lisi le ma?
 Zhangsan see Lisi ASP Q
 'Did Zhangsan see Lisi?'
 b Ta kanjian le.
 He see (he) ASP
 'He saw (him).' ([Huang 1984](#))
- 17 Neige ren_i, Zhangsan shuo Lisi bu renshi e_i
 That man, Zhangsan say Lisi not know
 'That man, Zhangsan said Lisi didn't know.'

In Spanish, on the other hand, null objects are conditioned by factors that some identify as definiteness and others as specificity, as shown in (18):

- 18 a ¿Compra-ste la revista?
 Buy-2.PST the magazine
 'Did you buy the magazine?'
 b Sí, la compr-é.
 Yes, FEM buy-1.PST
 'Yes, I bought it.'

Null objects are restricted ([Campos 1986](#); [Sánchez 1998, 1999](#)), and they are preferred in contexts in which the antecedent is not referential, as shown in (19).¹⁶

- 19 a ¿Compr-aste café?
 Buy-2.PST coffee
 'Did you buy coffee?'
 b Sí, compr-é.
 Yes, buy-1.PST
 'Yes, I bought (it).'

In terms of alignments, one can hypothesize that, while null objects in Mandarin are stored with no specific restriction on definiteness or specificity at the lexical level, but are conditioned by their topicality in terms of information structure, Spanish null objects have the opposite configuration in that they are restricted in terms of definiteness and specificity, but not with respect to topicality, as shown in Figure 6.

¹⁶ If the antecedent is definite, then a clitic is required irrespective of whether the antecedent is the topic, as in the following:

- (i) a. Compr-aste el libro?
 Buy-2.PST DEF.M.S book
 'Did you buy the book?'
 b. Sí, *(lo) compr-é.
 Yes, DEF.M.S buy-1.PST
 'Yes, I bought it.'

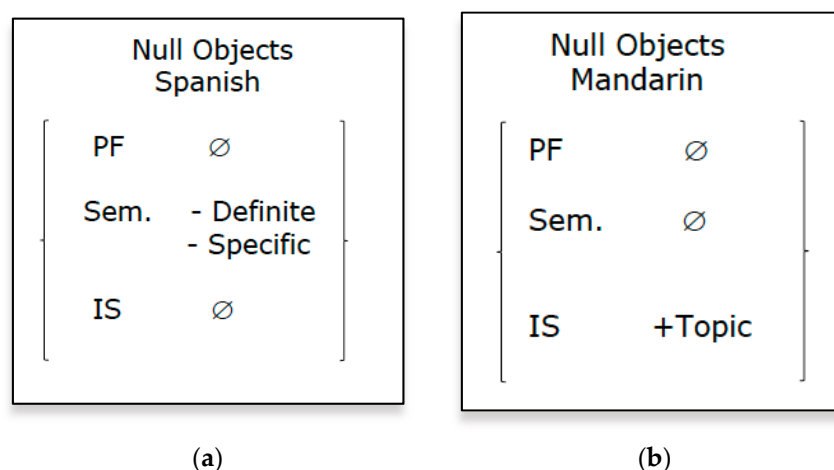


Figure 6. (a) Alignment for *null objects* in Mandarin; (b) alignment for *null objects* in Spanish.

While the simultaneous bilingual group in [Cuza et al. \(2013\)](#) showed no evidence of permeability in these alignments in Spanish (the socially dominant language), both the childhood and the adult immigrant group showed evidence of alignments that include the pairing of a null phonological form with topicality and no sensitivity to definiteness or specificity in the receptive task. In other words, an alignment as in [Figure 7](#).

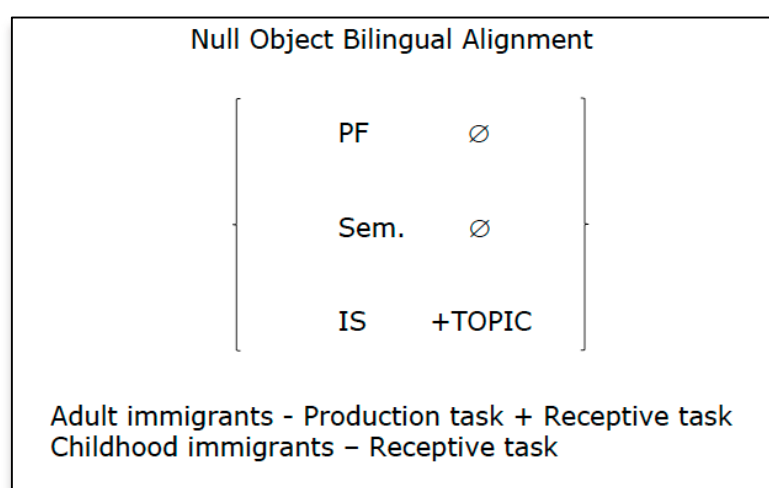


Figure 7. Null object bilingual alignments.

For the adults, both their lower level of proficiency (intermediate) as well as their greater language experience with Mandarin than with Spanish may have played a role in the directionality of the permeability of their alignments when they produced null objects. It is important to highlight that their production had both null objects and overt DPs and, therefore, it is not clear that at the representational level, they only have null objects.

The childhood immigrants did have access to the alignment in [Figure 7](#) in the receptive task, but were able in production to overcome their difficulty in accessing a representation involving pronominal clitics and replaced it with one involving DPs as part of an avoidance strategy. If we were to assume that their results in the receptive task are strong indicators of a categorical representation of the grammar, we would be missing an interpretation of their avoidance strategy in the production data, which seems to indicate awareness of an alternative alignment that has not yet become sufficiently stable. Despite having the same level of proficiency as the simultaneous group, they performed differently in the receptive task, which can be taken as an indication that their experience as sequential bilinguals played

a greater role than their proficiency in their results in the receptive task. Notice also that, irrespectively of their different levels of proficiency, the childhood and the adult immigrants shared the availability of the permeable alignment.

In sum, these bilinguals have access to multiple alignments as storage devices, depending on the task. Notice that this proposal does not preclude a view in which these bilinguals' representations are evolving and may include different stages at the representational level or gradient representations. Its goal is to account for why results in the receptive task are partially different from those in the productive task without assuming different grammars for each type of task. The analysis proposed posits the existence of an alignment that is permeable and easy to access and an alternative alignment that is not yet fully integrated (the one with the clitic), and is thus difficult to access. The storing of multiple alignments requires some level of co-activation of elements of different language components in both languages, but does not necessarily involve multiple grammars. This view is compatible with the notion that the production task requires more resources than the receptive task, even among populations considered less heterogeneous than those living in dynamic contact situations (Beatty-Martínez and Dussias 2019; De Bruin 2019; Fricke et al. 2019; Takahesu Tabori et al. 2018). Notice that adult immigrants continue to show evidence of access to the alignment with topicality as central to its information structure component in both tasks.

3.3. Bidirectional Transfer Effects and Alignments

Another set of facts that can be accounted for by positing bilingual alignments as flexible storage units is the existence of bidirectional effects in language contact situations. Bidirectional transfer, defined as evidence of transfer of some aspects of the L1 to the L2 and from the L2 to the L1, has been found mostly in cases of semantic transfer (Pavlenko and Jarvis 2002; Brown and Gullberg 2011). There are, however, some cases that present evidence of bidirectional transfer that involve phenomena at the interface of syntax and semantics. One such case is that of bidirectional effects in differential object marking (DOM) among Romanian-Spanish bilinguals living in Spain discussed by Lopez-Otero (2019, unpublished manuscript). As is well known, Spanish DOM is sensitive to *animacy* and definiteness (Aissen 2003; Leonetti 2004, 2008), as shown in (20):

20	La	mujer	cuida	a	la	
	The	woman	takes care	DOM	DEF.F.S	
	niña [+anim, +def]]/		(*a)		la	casa. [-anim, +def]
	girl		DOM		DEF.F.S	house
	'The woman takes care of the girl/ the house.'					

Like Spanish, Romanian DOM is also sensitive to animacy and definiteness, but optionally (Cornilescu 2000; Dobrovie-Sorin 1994; Mardale 2008). It is mandatory with proper nouns, as well as demonstrative, personal, and relative pronouns. It is triggered by *referential stability*, understood as the property that a nominal expression has of keeping the same referent (Ciovârache and Avram 2013; Farkas and Von Heusinger 2003; Mardale 2008; Ticio and Avram 2015; Tigău 2012). As (21) illustrates, a demonstrative pronoun in Romanian must receive DOM, even if it is inanimate.

21	Aceste	picturi	sunt		foarte	greu
	These	pictures-FEM-NOM	are		very	difficult
	de	recunoscute,	dar	Mihai	a	recunoscute.
	to	recognize,	but	Mihai	has	recognized
	*(pe)	aceasta.			[-animate, +definite]	
	(DOM)	this one-FEM-ACC				
	'These paintings are difficult to recognize, but Mihai recognized that one.'					

A comparison between the Spanish and Romanian alignments of demonstrative pronouns is shown in Figure 8.

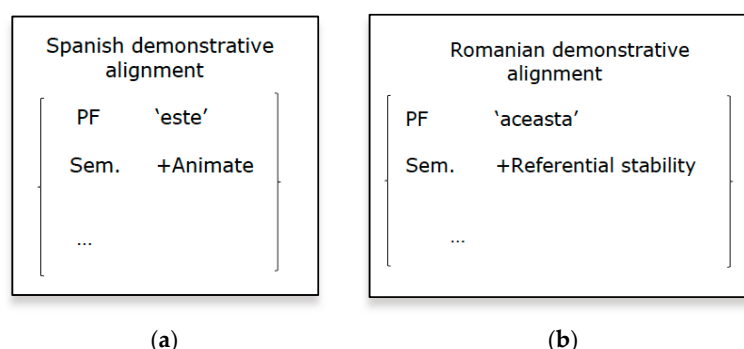


Figure 8. (a) Alignment for *demonstrative pronouns* in Spanish; (b) alignment for *demonstrative pronouns* in Romanian.

Lopez-Otero (2019, unpublished manuscript) found evidence that bilinguals were more likely than monolinguals to *produce* DOM with inanimate demonstratives in Spanish, despite exhibiting high proficiency in Spanish. This type of production was positively correlated with the amount of Romanian spoken daily ($p = 0.02$) and negatively correlated with their level of education. At the same time, this group of bilinguals showed some *acceptance* of sentences lacking DOM with inanimate demonstratives in Romanian, although production data did not show such evidence. These results seem to be indicative of some form of “transfer” from Romanian into Spanish evidenced in the production task, and from Spanish into Romanian in the receptive task. How can this type of variability be accounted for? I propose that alignments accessed for *production* in Spanish are affected by frequent activation of the referential feature as stored in Romanian alignments in these successive bilinguals. This explains the positive correlation with the amount of Romanian spoken daily. The bilingual Spanish alignment has referential stability as a relevant feature, as shown in Figure 9a. On the other hand, alignments accessed for acceptability judgments in Romanian show evidence of permeability in the higher ranking of animacy over referential stability, as is the case in Spanish alignments. The relevant bilingual alignments are shown in Figure 9.

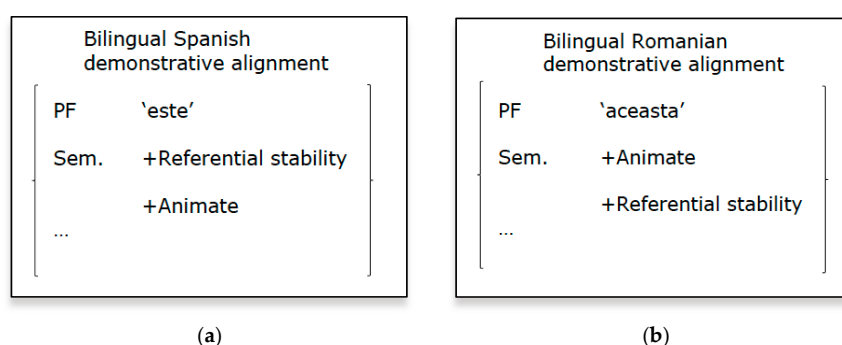


Figure 9. (a) Alignment for *demonstrative pronouns* in bilingual Spanish; (b) alignment for *demonstrative pronouns* in bilingual Romanian.

The fact that acceptability judgments are not categorical can be better accounted for if one considers the frequent activation of Spanish in these bilinguals’ daily life in Spain. If one views alignments as permeable storage devices, these facts become less puzzling. In other words, mismatches between production and comprehension data may not necessarily be evidence of multiple grammars, but rather of activation effects that operate on alignments as storage units.

3.4. Frequency Effects and Alignments

There is ample evidence of exposure effects in bilingual child acquisition (Gathercole 2007; Paradis 2010), as well as evidence of frequency effects in second language acquisition (Gass and Mackey

2002), bilingual child acquisition (De Houwer 2011), and among heritage bilinguals (Giancaspro 2017, unpublished dissertation; Hur forthcoming, unpublished data). Giancaspro (2017, unpublished dissertation) found evidence of verbal lexical frequency effects on the selection of subjunctive versus indicative mood among heritage speakers of Spanish. In a more recent work, Giancaspro (forthcoming) found evidence of verb frequency effects in the production and acceptability judgments of the subjunctive versus indicative contrast among Spanish-English heritage bilinguals with advanced proficiency in Spanish. A contextualized elicited production task with a condition that aimed at eliciting subjunctive in an obligatory context (22) and another condition aimed at eliciting indicative verb forms showed that the heritage bilinguals were more likely to produce subjunctive mood morphology with high frequency verbs than with low frequency verbs in the obligatory context, despite being able to clearly distinguish between the two conditions.¹⁷

- 22 (Context: My uncle collects a lot of books.
He needs an extendable ladder to move the books on the highest shelves of his bookcase.)¹⁸
- | | | | | | | | |
|----------|----------------|----------|------------|--------|------|----|-------|
| Busco | una | escalera | extensible | para | que | mi | tío |
| Look-1.S | a | ladder | extendable | so | that | my | uncle |
| ... | muev-a | | los | libros | | | |
| ... | move-SUBJ.3.S. | | the | books. | | | |
- 'I am looking for an extendable ladder so that my uncle moves-SUBJ the books ... '

This shows that subjunctive forms are not absent in the bilingual's grammatical representation, but may be difficult to access at least for production purposes.

Giancaspro's (forthcoming) results from a receptive task (a contextualized acceptability judgment task) also showed a higher probability among heritage bilinguals with advanced proficiency in Spanish of accepting indicative forms in final subordinates such as the one in (22) with low-frequency verbs (27.7%) than with high frequency verbs (10.4%). The fact that low-frequency verbs were more likely to be accepted in indicative than high frequency verbs seems to reveal that, while subjunctive forms are part of the representation of these bilinguals, the retrieval of infrequent alignments is costly. When provided with an alternative alignment for a low-frequency verb, heritage bilinguals were more likely to accept it than the Spanish-dominant controls in the study. I take this to show that there is not necessarily a difference between the two groups with respect to the grammatical representation of the subjunctive feature, but a difference in how accessible some alignments are for different types of bilinguals. As I mentioned before, positing alignments does not preclude the availability of features, as the high-frequency verbs in this case show, nor the possibility of generating an online mapping for those features as the speaker judges the sentence. It simply shows that if an alternative alignment is presented, it might be accepted as a way out of the difficulty of accessing a 'subjunctive' alignment for a low-frequency verb. This difficulty in accessing a low-frequency alignment is further supported by evidence of more difficulties in lexical retrieval of low-frequency words among bilinguals than monolinguals (Kroll and Gollan 2014).

Importantly, this view does not require us to posit two different grammars: one that surfaces with frequent verbs and another one that surfaces with infrequent verbs. Instead, by positing alignments, we can begin to understand variability in bilingual data as the result of retrieval limitations.

3.5. Integration and the Continuum of Bilingual Grammars

If alignments are not part of the grammatical representation, one could ask, how does the transition between alignments and representations take place? How do we go from positing alignments as storage devices that are subject to permeability in bilinguals to more stable mappings of different modules?

¹⁷ Frequency was determined using Davies' (2006) ranking.

¹⁸ Giancaspro (forthcoming) used a highly contextualized task. Participants read a background story and were asked to complete a sentence.

In this section, I will provide some evidence of how this process might take place by looking at how, despite individual variability, it is possible to find some patterns of stability in groups of bilinguals.

In a series of studies of bilinguals in each of three indigenous languages (Ashaninka, Quechua, and Shipibo) and Spanish, [Mayer and Sánchez \(2016, 2017, 2018\)](#) found evidence of high levels of variability in the direct object pronominal system in contact Spanish. They found a scalar system of preferences for direct object pronominal clitics, such that bilingual speakers exhibit a strong preference for the dative form *le*, unmarked for gender, over the gender-marked forms *lo* (masculine) and *la* (feminine). This was especially true among speakers of Shipibo, Huanuco Quechua, and Cuzco Quechua in order of lower frequency of gender-marked forms ([Mayer and Sánchez 2017](#)). Ashaninka-Spanish bilinguals showed more evidence of gender-marked forms. This is not surprising because the languages differ significantly in terms of their typology. Quechua is an agglutinative language with a nominative-accusative case system, null third person objects (when the subject is a third person), SOV word order, and no morphological marking for gender in the nominal or verbal systems ([Cerrón-Palomino 1987](#)). Shipibo is also agglutinative, has an SOV word order, has the same null object configuration as Quechua, and lacks morphological gender marking ([Valenzuela 2003](#)). Unlike Quechua and Spanish, it has a mostly ergative-absolutive case system. Ashaninka has a nominative-accusative case system with split intransitivity; a VSO word order; and, like Spanish, has overt direct object markers on the verb as well as morphological gender marking. Spanish is a nominative-accusative language, with an SVO word order, and with third person clitics (proclitics with finite verbs and enclitics with non-finite verbs) marked for gender. The following examples show how third person direct objects are marked when the subject is a third person:

Quechua

23 Marka-Ø-n.
cradle-Ø-3SG
'S/He cradles (him, her, it).

Shipibo

24 Nima_i oin-xon-ra Jose-kan kena-Ø_i-ke.
Nima see-SS.TR.PRT.EVID Jose-ERG call-Ø-PERF
'When he saw Nima, José called him.' ([Loriot et al. 1993](#))

Ashaninka

25 n=a-ak-i=ro.
1SG.A=take-PRF-REAL=3N.M.O → 3F
'I took it.' ([Mihás 2010](#))

Spanish

26 Él lo /la/le v-e / quie-re ver-lo /la/le.
DEF.3.M.S DEF.3.S.M/F/3.S see-P.3.S / want.3.S see.INF.3.S.M/F/3.S
'He saw him/her/it/ wants to see him/her/it'

As examples (23)–(25) illustrate in the three indigenous languages, there is no object marking on the verb, nor is an overt third person pronoun required. Quechua and Shipibo are languages with only suffixes, while Ashaninka has subject prefixes and object suffixes. In Spanish, a clitic pronoun is required that appears in the pre-verbal position with inflected verbs. In some varieties of Spanish, the pre verbal clitic exhibits gender marking (*lo* masc. vs. *la* fem), while in some varieties, the dative form *le*, unmarked for gender, shows up under conditions of (+/–animacy, +/–human, and other semantic features).

Here, I will further explore a comparison of the Spanish oral data from 14 Huanuco Quechua-Spanish, 17 Cuzco Quechua-Spanish, 18 Shipibo-Spanish, and 27 Ashaninka-Spanish bilinguals. The data were collected using picture- and figurine-based story narration tasks (see [Mayer and Sánchez \(2016, 2017, 2018\)](#) for more details).

As shown in Figure 10, and noticed in previous works (Mayer and Sánchez 2016, 2017, 2018), the preferred form across groups is *le*, followed by *lo*, null objects (0-marking), the phonologically reduced form *l'* found in the Ashaninka Spanish data, and the *se* form (also unmarked for gender) as a referential non-reflexive or aspectual clitic (the equivalent of *lo* or *la*) found in the Shipibo Spanish data.

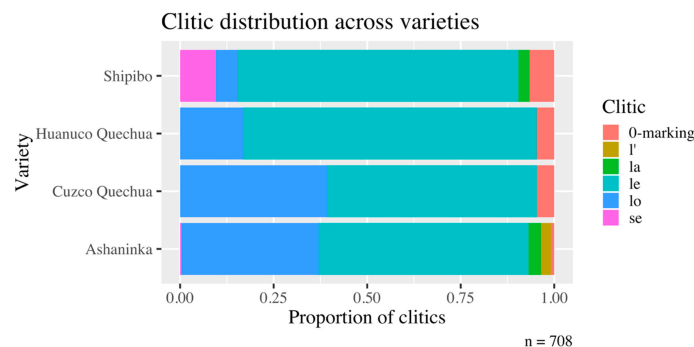


Figure 10. Distribution of clitics across varieties of bilingual Spanish.

The following examples illustrate the preferences for clitics in clitic doubling structures and anaphoric clitic structures:¹⁹

Shipibo-Spanish Bilinguals

- 27 Le sacó un loro.²⁰
 DEFS. took a parrot
 out
 '(He) took out a parrot.'
- 28 De ahí le escondía.
 From there DEF.S hid
 'After that, he hid it (= the parrot).'
- 29 El niño se buscaba.
 The boy 3.S looked for
 'The boy looks for it (= the parrot).'
- 30 Se abrió.
 3.S opened
 '(He) opened it (= the box)'

Huanuco Quechua-Spanish Bilinguals

- 31 Y el Sapo se lo come a la
 And the toad ASP DEF.M.S eat DOM DEF.M.S
 otra rana.
 other.FEM frog
 'And the toad eats the other frog.'

Ashaninka-Spanish Bilinguals

- 32 El niño le mira la caja
 The boy DEF.S looks at DEF.F Box
 'The boy looks at the box.'
- 33 Y luego la hizo dormir en una caja
 And the DEF.S.F made sleep in a box
 'And then (he) put her to bed in a box.'

¹⁹ Clitic doubling structures have an overt DP in the object position and an accusative clitic (see Mayer and Sánchez (2016, 2017) for a more detailed explanation of their distribution in these varieties of bilingual Spanish).

²⁰ This sentence corresponds to the part of the story in which the main character, a boy, takes out a parrot from a box. *Le* in this sentence 'doubles' the parrot and is not a dative clitic.

Mayer and Sánchez (2016, 2017, 2018) take the preference for *le* forms (not conditioned by animacy, human, or any other features as in some monolingual varieties of Spanish, as shown in examples (27), (28), and (32)) over *la* and *lo* forms to be an indication of difficulties in the mapping of gender features and the relevant phonological form of the pronoun. This is also shown in example (31), where *lo* doubles a feminine DP. As *le* and *se* are not associated with gender, they are the ideal candidates to avoid feature specification, as shown in examples (27)–(30) and (32). The production of direct object pronouns in all structures with transitive verbs, including anaphoric and clitic doubling constructions, was analyzed using a general linear model. The distribution of the clitic pronouns *lo* and *la* was analyzed with the gender of the clitic antecedent or the doubled DP as a predictor, as shown in Figures 11 and 12. Despite the variability found in the data, the model showed that the masculine gender of the object is a predictor of *lo* ($p = 0.00$) and feminine gender of the object is a predictor of *la* ($p = 0.03$).



Figure 11. Gender of objects referred to by pronoun *lo*.

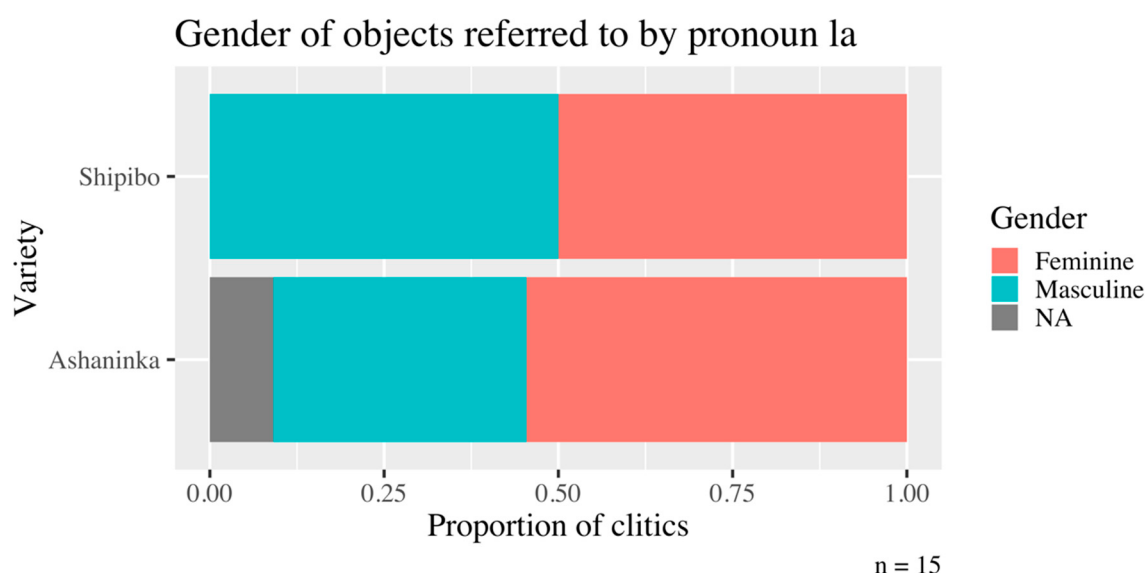


Figure 12. Gender of objects referred to by pronoun *la*.

This shows that, despite a higher frequency of *le* forms (unmarked for gender) in the oral narratives produced by the four groups of bilinguals, the masculine and feminine genders of the object referred to (anaphoric or doubling DP) are predictors of *lo* and *la*, respectively. These facts can be interpreted as

indicating that even in the continuum of alignments with *le* > (*se*) > *lo* > *la*, a pattern of gender marking emerges as part of a continuum of interface rules. Even though permeability in bilingual alignments may result in higher levels of variability evidenced in bilinguals' production and receptive data, it does not preclude the emergence of more stable alignments. In a dynamic model of bilingualism, alignments can help us understand how bilinguals move from higher levels of permeability and instability in their storage of units to more stable alignments that become representations (Sánchez 2017).

4. Discussion

In the previous section, I have presented four types of phenomena found among bilinguals living in contact situations that could be better understood if we adopt the notion of permeable bilingual alignments as storage mechanisms. In this section, I will discuss some of the broader implications this proposal could have. The first type of phenomenon presented involved some level of reorganization of the lexicon that has consequences for the syntax. By adopting the idea that alignments are storage devices different from grammatical representations and can be affected by coactivation as part of the way in which the bilingual lexicon is stored, we can incorporate into our analysis of bilingual syntactic data the observation according to which factors such as proficiency or language experience affect selectivity in access to the lexicon in bilinguals (Luo et al. 2010). For instance, at lower levels of proficiency (Kroll and Sunderman 2003), owing to differences in levels of activation in each language, we would expect bilinguals to engage in some level of lexical reorganization that patterns better with the alignments in their dominant/first language. This reorganization may have long-term effects for syntactic representations if those alignments become stable. It is also possible that those early alignments may be replaced as proficiency increases and alignments that are more compatible with the input become stable. Of course, the prediction that reorganization of the lexicon takes place as a result of higher levels of coactivation at lower levels of proficiency or lower levels of experience with one of the languages is an empirical matter that requires further research.

The notion of alignments can also prove useful in understanding variability in bilingual data at the interface of syntax and informational structure. The Interface Hypotheses (Sorace 2011; Sorace and Serratrice 2009) proposed that the acquisition of phenomena at the interface of syntax and other language components such as pragmatics is more challenging for bilinguals. Subsequent work has explored this hypothesis with data from second language learners, heritage speakers, and other types of bilinguals with different results and high levels of variability in productive and receptive tasks, as shown in Benmamoun et al. (2013) and White (2011). The question of why interface phenomena should be a challenge has been attributed to the fact that they represent a higher cognitive load for the bilingual (Sorace and Serratrice 2009). The issue is why they might involve a higher cognitive load. If we see permeable alignments as related to co-activation of elements from different components in each language, we can better understand why interface phenomena may be challenging for bilinguals in contexts in which levels of proficiency or experience are low in one of the languages and inhibition or selectivity are costly.

Another consequence of the current proposal is that it allows us to posit multiple alignments without having to necessarily postulate multiple grammars at the representational level. While it may be possible that bilinguals do in fact have gradient grammars, not every instance of a mismatch between production and comprehension data in a bilingual individual or group has to be attributed to gradient grammars. This is especially true in cases in which bilinguals appear to have opposite or contradictory values for a feature in different modes (a + value in a production task and a – value in a receptive task or vice versa). Some instances of apparent bidirectional transfer, frequency effects, and differences in production and receptive tasks can now be understood as stemming from the availability of different alignments generated in the mind as storage units, some of which may reflect patterns permeable to specifications from one of the grammars, while others may not. Of course, proposing alignments does not preclude positing stable representations that correspond to a specific stage of reassembly of features, be it among heritage speakers or second language learners (Dominguez and

Hicks 2019; Lardiere 2009; Putnam and Sánchez 2013). In fact, as shown in the previous section, even when there are high levels of variability in production data, a pattern of alignments emerges that matches the phonological forms in the input. Here too, further research is needed to test the extent to which permeable alignments are transient or permanent and how they become stable representations.

5. Concluding Remarks

Bilingual alignments can be understood as units that encompass information from different language components, and are stored in memory. They can be accessed for production and comprehension purposes and allow us to account for phenomena found in bilinguals' data that are otherwise difficult to capture in terms of representations. These include instances of reorganization of the lexicon; new mappings of phonological, morphological, lexical, and information structure features; bidirectional transfer; and frequency effects. The existence of alignments does not preclude the existence of gradient grammars, but allows us to not attribute every single case of mismatch between production and comprehension data to a difference in grammatical representation.

Funding: This research received no external funding.

Acknowledgments: I would like to thank the audiences at the conferences Bilingualism in the Hispanic at Lusophone World at Leiden University (2019) and Spanish in the US and Spanish in Contact with other Languages (2019), David Giancaspro, and two anonymous reviewers for their very valuable comments. Thanks also to Julio Cesar Lopez Otero for his statistical support.

Conflicts of Interest: The author declares no conflict of interest.

References

- Adger, David. 2003. *Core Syntax: A Minimalist Approach*. Oxford: Oxford University Press.
- Adger, David, and Peter Svenonius. 2011. Features in minimalist syntax. In *The Oxford Handbook of Linguistic Minimalism*. Edited by Cedric Boeckx. New York: Oxford University Press, pp. 27–51.
- Aissen, Judith. 2003. Differential Object Marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21: 435–83. [\[CrossRef\]](#)
- Austin, Jennifer. 2009. Delay, interference, and bilingual development: The acquisition of verbal morphology in children learning Basque and Spanish. *International Journal of Bilingualism* 13: 447–79. [\[CrossRef\]](#)
- Baddeley, Alan. 2012. Working memory: Theories, models, and controversies. *Annual Review of Psychology* 63: 1–29. [\[CrossRef\]](#)
- Beatty-Martínez, Anne, and Paola Dussias. 2017. Bilingual experience shapes language processing: Evidence from codeswitching. *Journal of Memory and Language* 95: 173–89. [\[CrossRef\]](#)
- Beatty-Martínez, Anne, and Paola Dussias. 2019. Adaptive control and brain plasticity: A multidimensional account of the bilingual experience and its relation to cognition. In *Bilingualism, Executive Function, and Beyond: Questions and Insights*. Edited by Irina A. Sekerina, Lauren Spradlin and Virginia Valian. Amsterdam: John Benjamins, pp. 49–66.
- Benmamoun, Elabbas, Silvina Montrul, and Maria Polinsky. 2013. Heritage languages and their speakers: Opportunities and challenges for linguistics. *Theoretical Linguistics* 39: 129–81. [\[CrossRef\]](#)
- Branzi, Francesa, Pascuale DellaRosa, Mateo Canini, and Jubin Abutalebi. 2016. Language Control in Bilinguals: Monitoring and Response Selection. *Cerebral Cortex* 26: 2367–80. [\[CrossRef\]](#) [\[PubMed\]](#)
- Brown, Amanda, and Marianne Gullberg. 2011. Bidirectional cross-linguistic influence in event conceptualization? Expressions of Path among Japanese learners of English. *Bilingualism: Language and Cognition* 14: 79–94. [\[CrossRef\]](#)
- Bruhn de Garavito, Joyce, and Elena Valenzuela. 2008. Eventive and stative passives in Spanish L2 acquisition: A matter of aspect. *Bilingualism: Language and Cognition* 11: 323–36. [\[CrossRef\]](#)
- Brysbaert, Marc, and Wouter Duyck. 2010. Is it time to leave behind the Revised Hierarchical Model of bilingual language processing after fifteen years of service? *Bilingualism: Language and Cognition* 13: 359–71. [\[CrossRef\]](#)
- Campos, Hector. 1986. Indefinite Object Drop. *Linguistic Inquiry* 17: 354–59.
- Cerrón-Palomino, Rodolfo. 1987. *Lingüística Quechua*. Cuzco: Centro Bartolomé de las Casas.
- Cheng, Lisa, and Johan Rooryck. 2000. Licensing Wh-in-situ. *Syntax* 3: 1–19. [\[CrossRef\]](#)

- Choi, Jinny. 1998. Languages in Contact: A Morphosyntactic Analysis of Paraguayan Spanish from a Historical and Sociolinguistic Perspective. Ph.D. Dissertation, Georgetown University, Washington, DC, USA.
- Choi, Jinny. 2000. [-Person] direct object drop: The genetic cause of a syntactic feature in Paraguayan Spanish. *Hispania* 83: 531–43. [\[CrossRef\]](#)
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge: MIT Press.
- Chomsky, Noam. 2005. Three Factors in Language Design. *Linguistic Inquiry* 36: 1–22. [\[CrossRef\]](#)
- Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford: Oxford University Press.
- Cinque, Guglielmo. 2010. Mapping Spatial PPs: An Introduction. In *Mapping Spatial PPs. The Cartography of Syntactic Structures*. Edited by Guglielmo Cinque. Oxford: Oxford University Press, pp. 3–25.
- Ciovârache, Cristina, and Larisa Avram. 2013. Specificity and animacy in the acquisition of differential object marking in L2 Persian. *Revue Roumaine de Linguistique* LVIII: 417–36.
- Colomé, Angels. 2001. Lexical activation in bilinguals' speech production: Language-specific or language-independent? *Journal of Memory and Language* 45: 721–36. [\[CrossRef\]](#)
- Cornilescu, Alexandra. 2000. Notes on the interpretation of the prepositional accusative in Romanian. *Bucharest Working Papers in Linguistics* 1: 91–106.
- Costa, Albert, and Mikel Santesteban. 2004. Lexical access in bilingual speech production: Evidence from language switching in highly proficient bilinguals and L2 learners. *Journal of Memory and Language* 50: 491–511. [\[CrossRef\]](#)
- Costa, Albert, Michele Miozzo, and Alfonso Carmazza. 1999. Lexical Selection in Bilinguals: Do Words in the Bilingual's Two Lexicons Compete for Selection? *Journal of Memory and Language* 41: 365–97. [\[CrossRef\]](#)
- Costa, Albert, Mikel Santesteban, and Iva Ivanova. 2006. How do highly proficient bilinguals control their lexicalization process? Inhibitory and language-specific selection mechanisms are both functional. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 32: 1057–74. [\[CrossRef\]](#)
- Cunnings, Ian. 2017. Interference in native and non-native sentence processing. *Bilingualism: Language and Cognition* 20: 712–21. [\[CrossRef\]](#)
- Cuza, Alex, Ana Teresa, Perez-Leroux, and Liliana Sánchez. 2013. The role of semantic transfer in clitic drop among Chinese L1-Spanish L2 bilinguals. *Studies in Second Language Acquisition* 35: 93–125. [\[CrossRef\]](#)
- Davies, Mark. 2006. *A Frequency Dictionary of Spanish: Core Vocabulary for Learners*. New York: Routledge.
- De Bruin, Angela. 2019. Not All Bilinguals Are the Same: A Call for More Detailed Assessments and Descriptions of Bilingual Experiences. *Behavioral Sciences* 9: 33. [\[CrossRef\]](#) [\[PubMed\]](#)
- De Houwer, Annick. 2011. Language input environments and language development in bilingual acquisition. *Applied Linguistics Review* 2: 221–40.
- Dobrovie-Sorin, Carmen. 1994. *The Syntax of Romania: Comparative Studies in Romance*. Berlin and New York: Mouton de Gruyter.
- Dominguez, Laura, and Glyn Hicks. 2019. A model for L1 grammatical attrition. *Second Language Research*. in press.
- Dussias, Paola, Anne Beatty-Martínez, and Lauren Perrotti. 2017. Susceptibility to interference affects the second and the first language. *Bilingualism: Language and Cognition* 20: 681–82. [\[CrossRef\]](#)
- Farkas, Donca, and Klaus Von Heusinger. 2003. Stability of reference and object marking in Romanian. Paper presented at Workshop on Direct Reference and Specificity, ESSLLI, Vienna, Austria, August 18–22.
- Franco, Jon, and Alazne Landa. 2003. Null objects revisited. In *A Romance Perspective on Language Knowledge and Use: Selected Papers from the 31st Linguistic Symposium on Romance Languages (LSRL), Chicago, 19–22 April 2001*. Edited by Rafael Núñez-Cedeño, Luis López and Richard Cameron. Amsterdam: John Benjamins, pp. 311–26.
- Fricke, Melinda, Megan Zirnstein, Christian Navarro-Torres, and Judith Kroll. 2019. Bilingualism reveals fundamental variation in language processing. *Bilingualism: Language and Cognition* 22: 200–7. [\[CrossRef\]](#)
- Fuertes, Raquel F., and Juana Licerias. 2010. Copula omission in the English developing grammar of English/Spanish bilingual children. *International Journal of Bilingual Education and Bilingualism* 13: 525–51. [\[CrossRef\]](#)
- Gass, Susan, and Alice Mackey. 2002. Frequency effects and second language acquisition: A Complex Picture? *Studies in Second Language Acquisition* 24: 249–60. [\[CrossRef\]](#)

- Gathercole, Virginia. 2007. Miami and North Wales, so far and yet so near: A Constructivist Account of Morphosyntactic Development in Bilingual Children. *International Journal of Bilingual Education and Bilingualism* 10: 224–47. [\[CrossRef\]](#)
- Giancaspro, David. 2017. Heritage Speakers' Production and Comprehension of Lexically and Contextually Selected Subjunctive Mood Morphology. Unpublished Ph.D. Dissertation, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA.
- Giancaspro, David. forthcoming. Not in the mood: Frequency effects in heritage speakers' subjunctive knowledge. In *Lost in Transmission*. Edited by Bernhard Brehmer, Jeanine Treffers-Daller and Danny Berndt. Amsterdam: John Benjamins.
- Goldrick, Matthew, Michael Putnam, and Laura Schwarz. 2016. Coactivation in bilingual grammars: A computational account of code mixing. *Bilingualism: Language and Cognition* 19: 857–76. [\[CrossRef\]](#)
- Hopp, Holger. 2013. Grammatical gender in adult L2 acquisition: Relations between lexical and syntactic variability. *Second Language Research* 29: 33–56. [\[CrossRef\]](#)
- Huang, James. 1984. On the Distribution and Reference of Empty Pronouns. *Linguistic Inquiry* 15: 531–75.
- Hulk, Aafke, and Natascha Müller. 2000. Bilingual first language acquisition at the interface between syntax and pragmatics. *Bilingualism: Language and Cognition* 3: 227–44. [\[CrossRef\]](#)
- Hur, Esther. forthcoming. *Verbal Lexical Frequency and DOM in Heritage Speakers of Spanish. The Acquisition of Differential Object Marking*. Amsterdam: John Benjamins, accepted.
- Jackendoff, Ray. 1997. *The Architecture of the Language Faculty*. Cambridge: MIT Press.
- Jackendoff, Ray. 2002. *Foundations of Language*. Oxford: Oxford University Press.
- Jackendoff, Ray. 2007. A Parallel Architecture perspective on language processing. *Brain Research* 1146: 2–22. [\[CrossRef\]](#) [\[PubMed\]](#)
- Jackendoff, Ray. 2011. What is the human language faculty?: Two views. *Language* 87: 586–624. [\[CrossRef\]](#)
- Jiang, Nan. 2000. Lexical representation and development in a second language. *Applied Linguistics* 21: 47–77. [\[CrossRef\]](#)
- Kroll, Judith, and Tamar Gollan. 2014. Speech planning in two languages: What bilinguals tell us about language production. In *The Oxford Handbook of Language Production*. Edited by Victor Ferreira, Matthew Goldrick and Michele Miozzo. Oxford: Oxford University Press, pp. 165–81.
- Kroll, Judith, and Gretchen Sunderman. 2003. Cognitive processes in second language acquisition: The development of lexical and conceptual representations. In *Handbook of Second Language Acquisition*. Edited by Catherine Doughty and Michael Long. Cambridge: Blackwell Publishers, pp. 104–29.
- Kroll, Judith, and Natasha Tokowicz. 2005. Models of Bilingual Representation and Processing Looking Back and to the Future. In *Handbook of Bilingualism—Psycholinguistic Approaches*. Edited by Annette M. B. De Groot and Judith F. Kroll. Oxford: Oxford University Press, pp. 531–53.
- Lardiere, Donna. 2009. Some thoughts on the contrastive analysis of features in second language acquisition. *Second Language Research* 25: 173–227. [\[CrossRef\]](#)
- Leonetti, Manuel. 2004. Specificity and differential object marking in Spanish. *Catalan Journal of Linguistics* 3: 75–114. [\[CrossRef\]](#)
- Leonetti, Manuel. 2008. Specificity in Clitic Doubling and in Differential Object Marking. *Probus* 20: 33–66. [\[CrossRef\]](#)
- Liceras, Juana, Kenton Spradlin, and Raquel Fernández Fuertes. 2005. Bilingual early functional-lexical mixing and the activation of formal features. *International Journal of Bilingualism* 9: 227–52. [\[CrossRef\]](#)
- Liceras, Juana, Fuertes Fernández, Perales Raquel, Pérez-Tattam Rocío Susana, and Kenton Spradlin. 2008. Gender and gender agreement in bilingual native and non-native grammars: A view from child and adult functional-lexical mixings. *Lingua* 118: 827–51. [\[CrossRef\]](#)
- Lopez-Otero, Julio Cesar. 2019. *On the Acceptability of the Spanish DOM among Romanian-Spanish Bilinguals*, New Brunswick: Rutgers University, unpublished manuscript.
- Loriot, James, Erwin Lauriault, and Dwight Day. 1993. *Diccionario Shipibo-Castellano*. Yarinacocha: Ministerio de Educación and Summer Institute of Linguistics.
- Luk, Gigi, and Ellen Bialystok. 2013. Bilingualism is not a categorical variable: Interaction between language proficiency and usage. *Journal of Cognitive Psychology* 25: 605–21. [\[CrossRef\]](#) [\[PubMed\]](#)
- Luo, Lin, Gigi Luk, and Ellen Bialystok. 2010. Effect of language proficiency and executive control on verbal fluency performance in bilinguals. *Cognition* 114: 29–41. [\[CrossRef\]](#) [\[PubMed\]](#)

- Mardale, Alexandru. 2008. Microvariation within differential object marking: Data from Romance. *Revue Roumaine de Linguistique* LIII: 449–67.
- Marian, Viorica, and Michael Spivey. 2003. Competing activation in bilingual language processing: Within- and between-language competition. *Bilingualism: Language and Cognition* 6: 97–115. [\[CrossRef\]](#)
- Mayer, Mercer, and Marianna Mayer. 1992. *One Frog Too Many*. New York: Dial Press.
- Mayer, Elisabeth, and Liliana Sánchez. 2016. Object agreement marking and information structure in monolingual and bilingual Andean Spanish. *Spanish Journal of Applied Linguistics* 29: 544–81.
- Mayer, Elisabeth, and Liliana Sánchez. 2017. Feature variability in the bilingual-monolingual continuum: Clitics in bilingual Quechua-Spanish, bilingual Shipibo-Spanish and in monolingual Limeño Spanish contact varieties. *International Journal of Bilingual Education and Bilingualism*. [\[CrossRef\]](#)
- Mayer, Elisabeth, and Liliana Sánchez. 2018. Typological differences in morphological patterns, gender features, and thematic structure in the L2 acquisition of Ashaninka Spanish. *Languages* 3: 21. [\[CrossRef\]](#)
- McFadden, Thomas. 2004. The Position of Morphological Case in the Derivation: A Study on the Syntax-Morphology Interface. Ph.D. Dissertation, University of Pennsylvania, Philadelphia, PA, USA.
- Mihas, Elena. 2010. Essentials of Ashéninka Perené Grammar. Ph.D. Dissertation, The University of Wisconsin-Milwaukee, Milwaukee, WI, USA, December.
- Montrul, Silvina. 2009. Knowledge of tense-aspect and mood in Spanish heritage speakers. *International Journal of Bilingualism* 13: 239–69. [\[CrossRef\]](#)
- Montrul, Silvina. 2010. Current Issues in Heritage Language Acquisition. *Annual Review of Applied Linguistics* 30: 3–23. [\[CrossRef\]](#)
- Montrul, Silvina. 2015. *The Acquisition of Heritage Languages*. Cambridge: Cambridge University Press.
- Na Ranong, Sirirat, and Yan-kit Ingrid Leung. 2009. Null objects in L1 Thai-L2 English-L3 Chinese: An empirical take on a theoretical problem. In *Third Language Acquisition and Universal Grammar*. Edited by Yan-kit Ingrid Leung. Clevedon: Multilingual Matters, pp. 162–91.
- Paradis, Johanna. 2010. Bilingual children's acquisition of English verb morphology: Effects of language exposure, structure complexity, and task type. *Language Learning* 60: 651–80. [\[CrossRef\]](#)
- Pavlenko, Anette, and Scott Jarvis. 2002. Bidirectional transfer. *Applied Linguistics* 23: 190–214. [\[CrossRef\]](#)
- Pearson, Barbara, Sylvia Fernandez, Vanessa Lewedeg, and D. Kimbrough Oller. 1997. The relation of input factors to lexical learning by bilingual infants. *Applied Psycholinguistics* 18: 41–58. [\[CrossRef\]](#)
- Perez Cortes, Silvia, Michael Putnam, and Liliana Sánchez. forthcoming. Differential Access: Asymmetries in accessing features and representations in Heritage Language production and comprehension.
- Pladevall, Ballester Elisabet. 2010. Child L2 development of syntactic and discourse properties of Spanish subjects. *Bilingualism: Language and Cognition* 13: 185–216. [\[CrossRef\]](#)
- Polinsky, Maria. 2018. *Heritage Languages and Their Speakers*. Cambridge: Cambridge University Press.
- Pollard, Carl, and Ivan Sag. 1994. *Head-Driven Phrase Structure Grammar*. Chicago: University of Chicago Press.
- Prévost, Phillipe, and Lydia White. 2000. Missing Surface Inflection or Impairment in second language acquisition? Evidence from tense and agreement. *Second Language Research* 16: 103–33. [\[CrossRef\]](#)
- Putnam, Michael, and John Lipski. 2015. Null arguments in transitional trilingual grammars: Field observations from Misionero German. *Multilingua* 35: 85–104. [\[CrossRef\]](#)
- Putnam, Michael, and Liliana Sánchez. 2013. What's so *incomplete* about incomplete acquisition?—A prolegomenon to modeling heritage language grammars. *Linguistic Approaches to Bilingualism* 3: 378–504. [\[CrossRef\]](#)
- Putnam, Michael, Silvia Pérez Cortés, and Liliana Sánchez. 2019. Language Attrition and the Feature Reassembly Hypothesis. In *Handbook of Language Attrition*. Edited by Monika Schmid and Barbara Köpke. Oxford: Oxford University Press, pp. 18–24.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of Grammar. Handbook of Generative Syntax*. Edited by Liliane Haegeman. Dordrecht: Kluwer, pp. 281–337.
- Sánchez, Liliana. 1998. Why do Bilingual Spanish and Spanish in Contact Varieties Drop Definite Objects? In *Proceedings of the GALA 97 Conference on Knowledge and Representation*. Edited by Antonella Sorace and Carolyn Sheylock. Edinburgh: University of Edinburgh Press, pp. 148–53.
- Sánchez, Liliana. 1999. Null objects and D0 Features in Contact Spanish. In *Formal Perspectives on Romance Linguistics. Selected Papers from the 28th Linguistic Symposium on Romance Languages*. Edited by Jean Marc Authier, Barbara Bullock and Lisa Reed. Amsterdam: John Benjamins, pp. 227–42.

- Sánchez, Liliana. 2004. Functional convergence in the tense, evidentiality and aspectual systems of Quechua Spanish bilinguals. *Bilingualism: Language and Cognition* 7: 147–62. [\[CrossRef\]](#)
- Sánchez, Liliana. 2006. Kechwa and Spanish Bilingual Grammars: Testing Hypotheses on Functional Interference and Convergence. *International Journal of Bilingual Education and Bilingualism* 9: 535–56. [\[CrossRef\]](#)
- Sánchez, Liliana. 2011. La interfaz léxico-morfosintáctica: Una perífrasis de inminencia en el español andino de Perú. *Cuadernos de la ALFAL* 3: 216–28.
- Sánchez, Liliana. 2015. Crosslinguistic influences in the mapping of functional features in Quechua-Spanish Bilingualism. In *The Acquisition of Spanish in Understudied Language Pairings*. Edited by Tiffany Judy and Silva Perpiñán. Amsterdam: John Benjamins, pp. 21–48.
- Sánchez, Liliana. 2017. The Dynamic Nature of Bilingualism. *Linguistic Approaches to Bilingualism* 7: 754–58. [\[CrossRef\]](#)
- Schmid, Monika, and Barbara Köpke. 2017. The relevance of first language attrition to theories of bilingual development. Epistemological keynote paper with commentaries. *Linguistic Approaches to Bilingualism* 7: 637–67. [\[CrossRef\]](#)
- Schwartz, Ana, and Judith Kroll. 2006. Bilingual lexical activation in sentence context. *Journal of Memory and Language* 55: 197–212. [\[CrossRef\]](#)
- Serratrice, Ludovica, Antonella Sorace, and Sandra Paoli. 2004. Crosslinguistic influence at the syntax–pragmatics interface: Subjects and objects in English–Italian bilingual and monolingual acquisition. *Bilingualism: Language and Cognition* 7: 183–205. [\[CrossRef\]](#)
- Slabakova, Roumyana. 2008. *Meaning in the Second Language*. New York and Berlin: Mouton de Gruyter.
- Sorace, Antonella. 2011. Pinning down the concept of “interface” in bilingualism. *Linguistic Approaches to Bilingualism* 1: 1–33. [\[CrossRef\]](#)
- Sorace, Antonella, and Ludovica Serratrice. 2009. Internal and external interfaces in bilingual language development: Beyond structural overlap. *International Journal of Bilingualism* 13: 195–210. [\[CrossRef\]](#)
- Takahesu Tabori, Andrea, Emily Mech, and Natuski Atagi. 2018. Exploiting Language Variation to Better Understand the Cognitive Consequences of Bilingualism. *Frontiers in Psychology* 9. [\[CrossRef\]](#)
- Ticio, Emma, and Larisa Avram. 2015. The acquisition of differential object marking in Spanish and Romanian: Semantic scales or semantic features? *Revue Roumaine de Linguistique-Romanian Review of Linguistics* 60: 383–401.
- Tigău, Alina. 2012. The accusative morpheme -(y)i in Turkish and differential object marking in Romanian. *Bucharest Working Papers in Linguistics* 14: 57–77.
- Tokowicz, Natasha. 2015. *Lexical Processing and Second Language Acquisition*. New York: Routledge.
- Unsworth, Sharon. 2016. Quantity and quality of language input in bilingual language development. In *Lifespan Perspectives on Bilingualism*. Edited by Elena Nicoladis and Simona Montanari. Berlin: De Gruyter, pp. 136–96.
- Valenzuela, Pilar. 2003. Transitivity in Shipibo-Konibo Grammar. Ph.D. Dissertation, University of Oregon, Eugene, OR, USA.
- White, Lydia. 2011. Second language acquisition at the interfaces. *Lingua* 121: 577–90. [\[CrossRef\]](#)
- Yépez, María. 1986. Direct Object Clitics in Quiteño Spanish. Ph.D. Dissertation, Cornell University, Ithaca, NY, USA.

