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Mixed Verbs in Code-Switching: The Syntax of Light Verbs

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Academic Editors: Usha Lakshmanan, Osmer Balam and Tej K. Bhatia
Received: 5 October 2015; Accepted: 13 May 2016; Published: 17 June 2016

Abstract: This study investigates word order variation in Korean-English and Japanese-English code-switching, with specific focus on the relative placement of the object and the verb in two contrasting word orders, Object-Verb (OV) *vs.* Verb-Object (VO). The results of an experiment eliciting code-switching judgment data provides strong evidence indicating that the distinction between heavy *vs.* light verbs plays a major role in deriving different word orders in mixed verb constructions in Korean-English and Japanese-English code-switching. In particular, an explanation pursued in this research supports the hypothesis that parametric variation is attributed to differences in the features of a functional category in the lexicon, as assumed in Minimalist Syntax.

Keywords: code-switching; light verbs; light verb constructions; word order; feature inheritance; idioms

1. Introduction

The present study investigates code-switching (CS), the concurrent use of more than one language in a conversation, commonly observed in bilingual speech. Under the assumption that CS is not random but subject to universal principles [1–9], just like monolingual grammars, this study provides a grammatical account of CS, with particular emphasis on OV~VO variation in two typologically similar language pairs, Korean-English (KE) and Japanese-English (JE), which exhibit a number of interesting features that need to be explained. Due to their canonical word order difference, Korean and Japanese being SOV (Subject-Object-Verb) and English SVO (Subject-Verb-Object), a code-switched sentence can take, in principle, either OV or VO order, both of which are attested in the KE and JE CS literature [10–17]. One immediate question that arises is how these two orders, OV and VO, are distributed in code-switched utterances. To account for OV~VO variation in CS, several researchers have proposed similar structural analyses based on the head parameter, whose main claim is summarized in (1).

1. The language of the verb determines the position of the object in both monolingual and bilingual contexts [5–7].

Under this view, it is predicted that when the verb comes from an OV language, such as Korean or Japanese, the order would be OV. On the other hand, if the verb were provided from a VO language like English, VO order would be obtained. The KE and JE CS examples in (2) and (3) seem to confirm this prediction.

2. a. Wonderful ideas-*lul* *manhi* *naynoh-un* *kes* *kath-ayo*
-ACC a lot present-REL thing seem-DECL
'(They) seem to present many wonderful ideas' [17] (p. 121)

b. Only small prizes *moratta-ne*
get.PAST
'(We) got only small prizes' [14] (p. 128)

3. a. I like *koki*. *Koki*'s good
meat
'I like meat. Meat's good' [10] (p. 886)

b. We never knew *anna koto nanka*
such thing sarcasm
'We never knew such a thing as sarcasm' [13] (p. 76)

In (2), the verb comes from either Korean (*naynoh* 'present' in (2a)) or Japanese (*moratta* 'got' in (2b)), and the word order is OV, as predicted by (1). In contrast, in the examples in (3) where the verb is from English (*like* in (3a) and *knew* in (3b)), the resulting word order is VO. However, the proposal in (1) fails to account for the word order in (4), where the verb comes from English (*apply* in (4a) and *mark* in (4b)). According to (1), VO order is predicted, but the surface order is OV.

4. a. assistantship apply *hay* *noh-ass-eyo*
DO.LNK put-PAST-DECL
'(I) applied for an assistantship' [17] (p. 189)

b. one algebra question-*o* mark-*shite*
-ACC -DO
'(You) mark one algebra question' [15] (p. 135)

The limitations of the head parameter approach to CS were noticed by Chan [1,2], who proposes an alternative account to capture a broader range of cross-linguistic CS data. Chan notes that the problematic cases that do not seem to be justified by (1) involve light verbs. He calls constructions of the type in (4) 'mixed compound verbs', where the complex verb consists of a host verb (*apply* and *mark*) and a light verb (*ha* and *su*), coming from different languages. Based on his observations, Chan proposes the following:

5. The complex verb of the light verb constructions behaves the same way as a simplex or a compound verb from the language of the light verb.

Chan's hypothesis correctly predicts the OV order of the code-switched utterances in (4): the light verb comes from either Korean or Japanese, which are OV languages, and the complex verbs, *apply-ha* in (4a) and *mark-su* in (4b), follow the grammar of the light verb, resulting in OV order. However, as Chan has himself acknowledged, whether these complex verbs are genuine compounds is controversial. For example, (sentential) negation, *an* 'not', can intervene between the lexical verb, *apply*, and the Korean light verb, *ha*, as shown in (6a). In fact, the only possible position of the negation marker, *an*, is between the two verbs, *apply* and *ha*: it cannot precede the verb, *apply*, as in (6b).

6. a. assistantship apply *an* *hay* *noh-ass-eyo*
NEG DO.LNK put-PAST-DECL
'(I) did not apply for an assistantship'

b. * assistantship *an* apply *hay* *noh-ass-eyo*
NEG DO.LNK put-PAST-DECL

The placement of *an* with respect to the lexical verb, *apply*, in KE CS in (6) contrasts with that in (7), where two verbs, *ssip* 'chew' and *mek* 'eat', form a compound and the negation marker, *an*, cannot appear between them. The example in (7) from Korean is called a serial verb construction, in which two verbs form a single predicate and share the argument structure. This disproves Chan's claim that the complex verb of the light verb constructions functions similar to a compound verb in the language of the light verb.

7. a. Kibo-ka kimchi-lul an ssip-e mek-ess-ta
   -NOM kimchi-ACC NEG chew-LNK eat-PAST-DECL
   'Kibo did not chew-and-eat kimchi'

   b. * Kibo-ka kimchi-lul ssip-e an mek-ess-ta
   -NOM kimchi-ACC chew-LNK NEG eat-PAST-DECL

Additionally, Chan's prediction that the verbal complex in light verb constructions obeys the grammar of the language of the light verb is not always borne out. In (8), the verb comes from English, *catch* in (8a) and *keep* in (8b), and the light verb is selected from either Korean, *ha* in (8a), or Japanese, *su* in (8b). Yet, the sentences exhibit the English-style VO order, not the grammar of the language of the light verb.

8. a. catch up cold *ha-myen*
   DO-if
   'If (you) catch a cold . . . ' [17] (p. 136)

   b. *yooshi* keep an eye *suru-zo*
   well I'm going to DO-PRT
   'Well, I'm really going to keep an eye on you' [12] (p. 24)

Chan treats examples such as (8) as exceptions whose word order is not predicted by (5). He reasons that corpus data for CS between OV and VO languages show that the VO sequence in light verb constructions in CS is rarer than the OV pattern in a similar environment, and does not offer an account of the unexpected VO pattern. However, the less frequent occurrence of VO order *per se* does not justify his decision to consider them as not being subject to universal principles. The CS literature clearly shows that both OV and VO patterns exist in various OV-VO language pairs (e.g., Hindi-English, Punjabi-English, Tamil-English, and so on) and OV~VO variation in CS should be accounted for. Although Chan's analysis fails to correctly account for OV~VO variation documented in the CS corpus data, he rightly points out that the code-switched sentences varying between OV and VO order involve a light verb in diverse language pairs, which was not noticed in previous research.

Shim [8] analyzes KE and JE CS corpus data and suggests that the OV and VO contrast is closely related to the *heavy vs. light* distinction of the verb within the code-switched constituent: while the verbs in (4), *apply* and *mark*, are *heavy* in the sense that they deliver full semantic information to their clausal structure, those in (8), *catch* and *keep*, are *light* and have little semantic content of their own but only deliver aspectual information. In addition, Shim also postulates that OV~VO variation in CS could also be related to the compositionality of the code-switched phrase: the verb and the internal argument are code-switched into English separately in (4), without changing the OV order of Korean or Japanese. On the other hand, idioms such as *catch a cold* or *keep an eye (on)* in (8) may be listed in the lexicon and switched as a chunk, maintaining the VO order of English. The two hypotheses, namely, selection of light verbs and idiomaticity, were tested against the judgments solicited from a small number of KE and JE bilingual speakers, and the following conclusions were made in Shim.

9. a. Selection of light verbs results in OV~VO variation in both non-idiomatic (literal) phrases and compositional idioms. More specifically, when light verbs are selected from Korean or Japanese, OV is generated, following the grammar of Korean or Japanese. On the contrary, selection of English light verbs results in the English-style VO order in the derivation.
   b. Compositional idioms undergo aspectual composition, similar to non-idiomatic phrases, while non-compositional idioms do not undergo aspectual composition in the syntactic derivation.
   c. Non-compositional idioms undergo code-switching as a unit, and the internal order of the code-switched phrase is maintained throughout the derivation.

Although (9) seems to correctly describe OV~VO variation in KE and JE CS, several questions arise regarding the design of the study and the analyses provided. First, the distinction between heavy and light verbs and also between light verbs and light verb constructions needs to be clarified. Failure to provide a clear distinction between light verbs and light verb constructions resulted in the mis-categorization of the verb in a few instances in the study. For instance, the verb *catch* in the phrase *catch a cold* was analyzed as a light verb, based on the assumption that the verb does not have its manner component, and thus conveys less idiosyncratic lexical meaning of its own. However, the verb *catch* clearly plays a role in determining the aspect of the phrase *catch a cold*, along with the object, which is distinguished from *keep an eye*, for instance, in which the aspectual properties of the verb phrase are not decided by the verb *keep* and its complement combined. Instead the aspectual constitution of *keep an eye* is the same as that of the corresponding 'simple' verb construction, in which the light verb's complement is used as the verb, (*to*) *eye*.

Also, the notion of compositionality of idioms, which Shim adopts, has been contested by a number of researchers despite the fact that it is widely cited for studies on idioms. According to Nunberg, Sag, and Wasow [18], idioms are divided into two groups based on their semantic compositionality. Most idioms (e.g., *take advantage of*, *pull strings*) are in fact relatively 'compositional' in the sense that the idiomatic reading is composed fairly transparently from the sub-parts of the idiom. 'Non-compositional' idioms (e.g., *kick the bucket*, *shoot the breeze*), on the other hand, do not compose their meanings from those of their components, but the idiomatic meaning is assigned to the whole phrase. Nunberg, Sag, and Wasow propose that, while compositional idioms have the syntax of non-idiomatic expressions, non-compositional idioms are stored in the lexicon as complete phrases [18] (p. 497, 515). Following their proposal, Shim [8] argues that compositional idioms and non-compositional idioms are predicted to behave differently in CS and derive different word orders: while compositional idioms are not frozen as a chunk and their internal arguments are subject to CS, just like non-idiomatic/literal phrases, non-compositional idioms are listed in the lexicon and undergo CS as a whole.

However, the distinction between compositional and non-compositional (or similarly, decomposable *vs.* non-decomposable) idioms does not hold uniformly among researchers [19–22]. While the view on the semantic properties of idioms varies to a large extent from researcher to researcher, it seems that the syntactic behavior of idioms is less of a contentious issue. Researchers converge on the view that idiomatic expressions can be categorized into three groups based on their syntactic behavior: syntactically fully flexible, less flexible, and frozen, as shown by the examples in (10)–(12), taken from Horn [22] and Schenk [23]. The symbol # indicates the sentence is grammatical, but the idiomatic reading is unavailable.

10. a. Care was taken care of all of the orphans
    b. Great care seemed to be taken of the refugees by the government
    c. The care that they took of the infants was more than adequate
    d. How much care did they take of the infants?

11. a. The beans were spilled (by Stefanie)
    b. The beans appeared to be spilled when he opened his mouth
    c. # The beans that Joe spilled caused us a lot of trouble
    d. # Which beans did Joe spill?

12. a. # The bucket was kicked by all of the bad guys
    b. # The bucket seems to be kicked by John
    c. # The bucket John kicked was astonishing
    d. # Which bucket did John kick?

In (10), the idiom *take care of* undergoes various syntactic operations such as passivization (10a), raising (10b), relativization (10c), and *wh*-question formation (10d). On the other hand, *spill the beans* may partake only in a limited number of syntactic operations such as passivization (11a) and raising (11b), and the idiomatic interpretation is no longer available in (11c) and (11d). In contrast, the degree of syntactic flexibility of *kick the bucket* is heavily restricted, thus none of the sentences in (12) delivers its figurative reading 'die'. Although speakers may vary in the extent to which they accept each sentence in (10) through (12) under an idiomatic reading, it is clear that the degree of syntactic flexibility varies from idiom to idiom, which in turn suggests that, while some idioms may be derived in the syntax, others may not. In light of these considerations, new working definitions of light verbs and light verb constructions, and VP (Verb Phrase) idioms are provided below (For a detailed description of LVs and LVCs, see Section 2).

13. a. A **Light Verb** (LV) never has idiosyncratic lexical meaning of its own, but only lexicalizes an abstract functional head.

    b. In a **Light Verb Construction** (LVC), the verb itself does not contribute any lexical semantic information and the semantic meaning of the verbal phrase comes from its complement. Both heavy and light verbs may participate in LVCs.

14. The term **VP idiom** refers to a VP in which the verb takes an object and the two together deliver a non-literal, idiosyncratic reading.

Departing from the assumption that linguistic parameterization is attributed to the morpho-syntactic contents of *functional* categories, not those of lexical roots [24,25], the role of functional or light verbs in mixed verb constructions in KE and JE CS was investigated in the present study. In comparison with that of lexical or heavy verbs, the role of functional or light verbs was tested against 28 KE and 8 JE bilingual speakers' introspective judgments of the CS patterns, which were presented to them in the form of a questionnaire. In addition, this study also investigates various idiomatic expressions in English and how they contribute to word order variation in KE and JE CS. The two research questions addressed in the study are provided below.

15. a. What is a role of light verbs in CS? How is OV~VO variation in CS related to the choice between light verbs and heavy or lexical verbs?
    b. Does syntactic flexibility play a role in deriving word order in CS? Are both syntactically flexible and less flexible phrases subject to CS?

These two research questions were explored in an experimental study on KE and JE CS, and the following hypotheses were formulated based on the results from a pilot study conducted by Shim [8].

16. a. Assuming that word order is determined by feature specifications on a functional category, not a lexical category, feature specifications on an LV in Korean, Japanese, and English and how these features are valued in syntactic derivations may determine word order in CS. More specifically, the choice between functional or light verbs and lexical or heavy verbs is expected to result in different word order.
    b. Syntactically flexible phrases and inflexible phrases will behave differently with respect to word order derivation in CS. More specifically, while the internal argument of the syntactically flexible phrase can be switched, the syntactically inflexible phrase is frozen and undergoes CS as a unit. Hence, the internal order of the phrase is maintained throughout the derivation.

The remainder of the paper proceeds as follows. Section 2 examines LVs and LVCs in the languages of investigation, English, Korean, and Japanese, based on which the new definitions of LVs and LVCs in (13) were proposed. In addition, a syntactic analysis of LVs in these three languages is proposed. Section 3 presents an experimental study consisting of three interrelated tasks that elicited judgment data from Korean-English and Japanese-English bilingual speakers to explore the two research questions listed in (15). Task 1 was a code-switching judgment task that focused on word order distinctions (*i.e.*, OV *versus* VO) in code-switched utterances. Task 2 and Task 3 tested the participants' judgments on syntactic flexibility and meanings of idioms, respectively. The *v*-Asp structure for English, Korean, and Japanese proposed in Section 2 is further developed under the FEATURE INHERITANCE system in the framework of the Minimalist Program in Section 4, based on which the OV~VO variation in KE and JE CS is accounted for. Section 5 concludes the paper.

2. Light Verbs and Light Verb Constructions

2.1. English

The term LIGHT VERB was first introduced by Jespersen [26], to refer to the verbs in English V + NP constructions such as *have a look*, *take a walk*, *make a plunge*, *give a sigh*, *get a move on*, *do a bunk* 'run away', *etc.* Since Jespersen's original coinage, the terms LIGHT VERBS and LIGHT VERB CONSTRUCTIONS have been adopted by a number of researchers to analyze various forms of complex predicates in many languages (e.g., see [27–29] for English; [30,31] for Korean; [32,33] for Japanese; Urdu [34] and Persian [35]).

In addition to those verbs identified as LVs by Jespersen, other verbs such as *pay*, *offer*, and *put* may also participate in LVCs, such as in *offer an apology*, *pay attention*, and *put the blame (on)*, according to Huddleston and Pullum [36] (p. 296 and p. 1093). Huddleston and Pullum refer to LVs as 'light uses of verbs', differing from their heavy uses (p. 290). To put it differently, a verb may be used either as a heavy verb (HV) or as a light verb (LV), participating in LVCs. In recent years, however, a subset of verbs forming LVCs has been reanalyzed as true LVs, which represent one or more abstract functional heads in all of their uses. Examples are provided in (17) [37–44].

17. a. *have* = BE + TO [37–39]
    have = P $_{\text{HAVE}}$ [40]
    have = *v* $_{\text{BE}}$ + APPL(CATIVE) [41]
    b. *get* = BECOME [42]
    get = INCH(OATIVE) [43]
    c. give = CAUSE (*v* $_{\text{CAUSE}}$) + P $_{\text{HAVE}}$ [44]

All of the syntactic analyses given in (17) and other similar accounts adopt the so-called lexical decompositional theory in generative semantics, championed by Dowty [45], and assume that the abstract operators such as CAUS(E), DO, and BECOME, which do not directly correspond to the English verbs, *cause*, *do*, and *become* but represent abstract semantic units, also characterize abstract elements in

the syntax as well. Thus, while verbs like *cause*, *do*, and *become* are categorized as V, a lexical category, abstract elements such as CAUS(E), DO, and BECOME represent a functional category, and are variants of *v* in the structure.

Assuming that the analyses in (17) successfully capture the core properties of these verbs as true LVs, we now face the task of distinguishing verbs like these, which are inherently LVs, from the verbs that are normally HVs but have additional light uses. As Butt [46] points out, there exists a great diversity of analyses and terminology on LVs and their complex predicate formation in the vast literature on this topic. In this regard, we need to clarify the terms Light Verbs, Light uses of Verbs, and Light Verb Constructions, which have been used interchangeably in the literature. Thus, new working definitions of LVs and LVCs are provided in (18), repeated from (13).

18. a. A **Light Verb** (LV) never has idiosyncratic lexical meaning of its own, but only lexicalizes an abstract functional head.

    b. In a **Light Verb Construction** (LVC), the verb may not contribute any lexical semantic information but only its complement does. Both heavy and light verbs may participate in LVCs.

Based on the definitions given in (18), the eight English verbs listed in (19) were considered as LVs in order to investigate the contribution of LVs *vis-à-vis* HVs for determining word order in CS in the present study. However, the list is not intended to be exhaustive.

19. *have* = BE + TO
    give = CAUS [BE + TO]
    get = BECOME or INCH
    take = BECOME or INCH
    make = CAUS + exist
    keep = CAUS + BE
    hold = CAUS + BE
    raise = CAUS + GO (up)

2.2. Korean and Japanese

In languages with LVCs, one of the most productive forms involves the verb meaning 'do'. Korean and Japanese also have LVCs with *ha* 'do' and *su* 'do', as shown by the sentences in (20), in which *ha* and *su* attach to the Chinese-origin verbal noun (VN), *aiseki* and *hapsek* 'table-sharing', respectively.

20. a. Kibo-nun Dana-wa hapsek-hayss-ta Korean
       -TOP -with table-sharing-DO.PAST-DECL

    b. Kibo-wa Dana-to aiseki-shita Japanese
       -TOP -with table-sharing-DO.PAST
       'Kibo shared a table with Dana'

Adapted from Grimshaw & Mester [33] (p. 206)

The Korean and Japanese LVCs have been extensively discussed in the literature, and a large body of the literature on this topic discusses the argument structure of the LV, focusing on the fact that the verbal noun that the LV attaches to may be marked with the accusative marker -(*l*)*ul* in Korean or -*o* in Japanese [30,32,33,47–54].

21. a. Kibo-nun Dana-wa hapsek-ul hayss-ta
-TOP -with table-sharing-ACC DO.PAST-DECL

b. Kibo-wa Dana-to aiseki-o shita
-TOP -with table-sharing-ACC DO.PAST
'Kibo shared a table with Dana'

Researchers differ on how to analyze the contrast between (20), (bare VN + *ha/su)*, and (21), (accusative marked VN + *ha/su)*. As extensively discussed in Shim [9], researchers have continued to debate as to whether *ha/su* is an LV or a HV in the [accusative-marked VN + *ha/su*] form in (21). This is in contrast to the converging view that *ha/su* is used as an LV in the [bare VN + *ha/su*] construction in (20). To conclude, *ha* in Korean and *su* in Japanese of the type in (20) are LVs, which were included in the CS judgment tasks of the present study.

2.3. The Syntax of Light Verbs

Researchers have argued that LVs must be acknowledged as a separate syntactic category cross-linguistically, such as *v*, and the precise syntax of LVs varies across languages [46,55]. In the Minimalist Program, *v* has a hybrid status: on the one hand, *v* replaces the functional category AgrO. On the other hand, *v* takes a thematic argument as its external argument in its specifier position, which shows its lexical status. In light of its striking resemblance to an LV, which is neither fully a lexical verb nor completely devoid of semantics, *v* is in fact a good candidate to represent LVs in the syntax. However, there is no clear consensus of the content and properties of *v*.

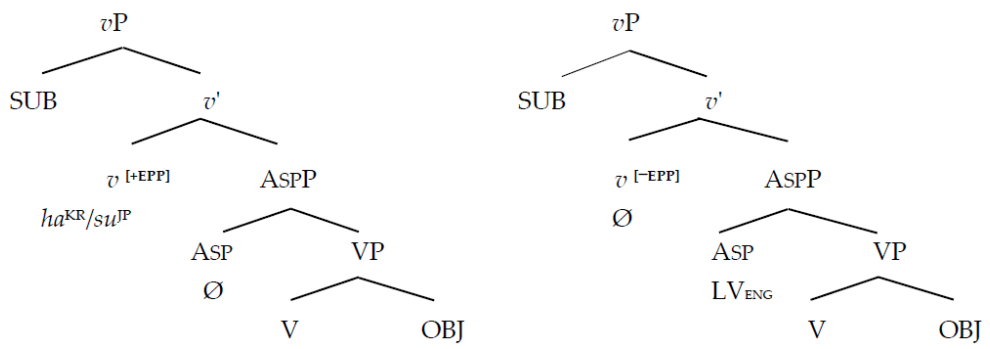
Some researchers consider the syntactic category *v* as a purely abstract term, and do not assume that the projection of *v* is an instantiation of a particular LV [56]. Others, such as Folli and Harley [57] have proposed different types of *v*, such as v_{DO}, v_{CAUS}, v_{BE}, v_{BECOME}, which may or may not be lexicalized across languages. In the framework of Distributed Morphology, where word formation occurs at the level of syntax, *v* functions as a verbalizer, taking a category-neutral root and transforming it to a verb (e.g., $v + \sqrt{\text{walk}} \rightarrow$ /walk/ (V)) [58]. *v* has been also exploited in event semantics, with *v*P corresponding to various projections such as VoiceP [59–64].

I adopt the original proposal on *v* by Chomsky in the Minimalist Program [25], viewing *v* as a Case-checking/assigning LV. Assuming that *v* is one of the possible heads of LVs, which can be projected as other verbal functional categories, I propose that the syntax of Korean and Japanese LVs differs from the syntax of English LVs in the following manner (Detailed proposals and supporting arguments of the syntactic structure of LVs in these languages are provided by Shim [9]).

22. a. The Korean and Japanese LVs *ha* and *su* in the [bare VN + *ha/su*] construction lexicalize the functional category *v*.
b. In English, *v* is never overtly lexicalized (*cf.* Chomsky [25] (p. 351)). Instead, English LVs merge under ASP(ECT).

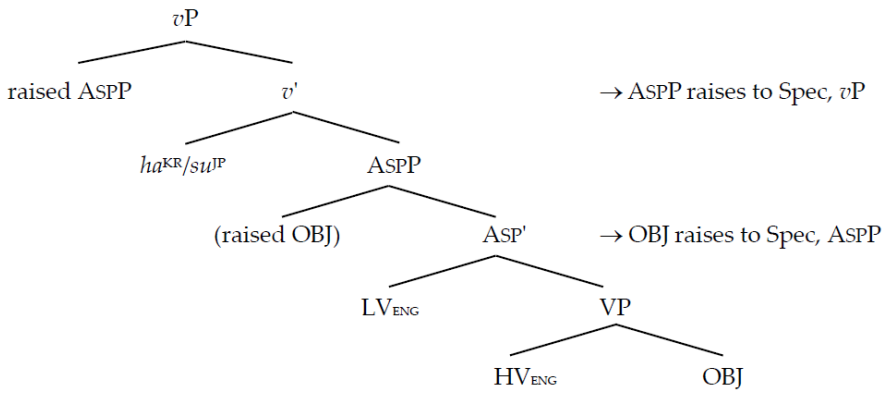
I further assume that LVs in English, a VO language, do not have the EPP (Extended Projection Principle) feature, whereas LVs in Korean and Japanese, which are OV languages, are specified for the EPP, triggering overt movement of the object to the left of the verb from its underlying VO order [65]. Based on these assumptions, I propose the underlying *v*P structures for Korean/Japanese and English in (23).

23. a. Korean and Japanese b. English



The structures in (23) assume that (a) VO is universally the underlying structure for both VO and OV order, as argued by Kayne [66]; (b) *v* in Korean and Japanese, OV languages, is specified for the EPP, which requires that its specifier position be filled by raising an element with a matching feature; and (c) Korean and Japanese LVs merge under *v*, whereas English LVs lexicalize Aspect (ASP). Based on (23), I propose (24) as the underlying structure for deriving OV and VO order in KE and JE CS.

24.



The OV~VO variation in KE and JE CS is explained as a result of object raising to Spec, ASPP; when object shift occurs, OV order is derived within ASPP. If the object stays *in situ*, VO is derived. Regardless of object shift, the entire ASPP always raises to Spec, *v*P whenever *v* is Korean or Japanese, and the surface word order would be either OV-*ha/su* or VO-*ha/su* in KE and JE CS. All these movements are a consequence of feature checking and EPP specifications on a functional head, as assumed in the Minimalist Program.

3. Experimental Section

Data for the quantitative analyses were obtained via (a) a CS judgment task, (b) a syntactic flexibility judgment task, and (c) an idiom familiarity task. The study aimed to elicit evidence to shed light on the role of LVs and compositionality in determining OV~VO variation in CS where an English VP is incorporated into utterances in Korean or Japanese. The evidence comprises acceptability judgments elicited using contextually appropriate materials from KE and JE bilingual speakers, whose competence and experience in their two languages made them familiar with CS behavior. The participant populations of interest are exemplified by the bilingual communities of the New York City area, where daily use of each of the speakers' languages is common, as is switching between languages within a conversation (*cf.* the work of Chung [67]). The study, therefore, made crucial use of a language-history questionnaire and an exit interview probing experience in CS, to screen participants recruited from these communities. All participants gave their informed consent for inclusion before they participated in the study.

3.1. Code-Switching Judgment Task

For each of a series of items, the code-switching task asked participants to select between two utterances considered as a (near-)minimal pair. Both utterances included an English-sourced VP, which took OV order in one utterance and VO order in the other. The participants were asked to choose the more natural sounding one in the pair of code-switched utterances presented. Because many of the critical items incorporated VP idioms or LVCs, the protocol was designed to provide strong contextual support of the intended interpretation. Each item presentation therefore had three parts:

(a) A brief scenario that introduced two characters (Kibo and Donna) to establish a discourse context. This introductory material was always presented, in written form, in English, and always ended by asking what the character named Donna would say in the situation just presented.
(b) A cartoon depicting the content of Donna's statement. The cartoon was presented immediately prior to Donna's statement, and remained visible on the computer screen while the participants listened to two versions of her statement.
(c) The code-switched pair of utterances, presented in spoken form.

By presenting each code-switched sentence not only in an appropriate context but also with a matching cartoon, the intended meaning of the code-switched phrase in the sentence, whether literal or non-literal, was delivered without ambiguity. Instructions emphasized that the participants should attend to the cartoon while they were listening to the sentences. As an illustration of this protocol, (25a) below offers an example of the brief introductory scenario, and (25b) and (25c) show in turn the accompanying cartoon and the pair of KE-CS sentences which the participants were asked to choose from.

25. a. Kibo told Donna that his roommate had an extra iPod to give away, and later asked Donna
whether she called and got it. What does Donna say?

b.

c. (i) nwu-ka mence cenhawhayse, ***boat-lul miss*** hayss-e
someone-NOM before call.because DO.PAST-DECL

(ii) nwu-ka mence cenhawhayse, ***miss the boat*** hayss-e
someone-NOM before call.because DO.PAST-DECL
"Someone else called first, so (I) missed the boat."

3.1.1. Materials and Methods

To assess the role of heavy *vs.* light verb status in CS in both literal and non-literal/idiomatic phrases, materials were constructed in accordance with a 2 × 2 factorial design, combining Verb Type (heavy *vs.* light) and Interpretation (literal *vs.* non-literal).

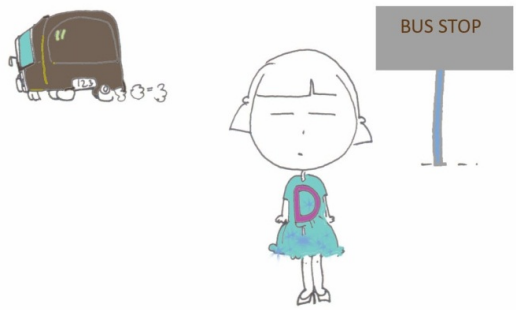
26. a. HV, literal interpretation e.g., *miss the bus*, *lend some money*, *play basketball*
    b. HV, non-literal interpretation e.g., *miss the boat*, *lend an ear, play hooky*
    c. LV, literal interpretation e.g., *give the job*, *have a small head*, *get cold sores*
    d. LV, non-literal interpretation e.g., *give the axe*, *have a big mouth*, *get cold feet*

For each verb within a given type, items instantiating literal *vs.* non-literal interpretations were constructed as a closely matched pair, with appropriate and relevant modifications to the introductory scenario, the interpretation-supporting cartoon, and the code-switched sentences which the participants were asked to choose from.

There were 16 such matched items constructed for each verb type, which were distributed to form two versions of the experiment, with each consisting of 8 items per condition. The counterbalancing of items across versions meant that every participant saw examples of each of the experimental conditions, without repetition of lexical or discourse context. The item shown in (27) exemplifies a closely matched pair to (25); both (27) and (25) include the same HV *miss* in a non-literal and a literal phrase (*miss the boat* and *miss the bus*), respectively.

27. a. Kibo was disappointed that Donna didn't show up at the party he had told her about, and asked her what happened. What does Donna say?

    b.



    c. (i) cengmal ka-ko siph-ess-nuntey, ***bus-lul miss*** hayss-e
       really go-COMP wish-PAST-but DO.PAST-DECL

       (ii) cengmal ka-ko siph-ess-nuntey, ***miss the bus*** hayss-e
       really go-COMP wish-PAST-but DO.PAST-DECL
       "(I) really wanted to go, but (I) missed the bus"

The function of heavy *vs.* light verbs in CS was also evaluated in LVCs, and materials were constructed in accordance with a 2 × 1 factorial design, combining Verb Type (heavy *vs.* light) and Construction (light verb construction).

28. a. HV, LVC e.g., *pay a visit*, *cast blame*
    b. LV, LVC e.g., *have a look, keep track*

For each construction, 16 items consisting of 8 verbs were designed. For each verb, two similar items were constructed as a closely matched pair, limiting any necessary changes to the introductory scenario, the interpretation-supporting cartoon, and the ensuing code-switched sentences. Those matched items in each construction were distributed to form two versions of the experiment, each with 8 items per condition. This allowed the participant taking either version of the experiment to view the same set of verbs for each of the experimental conditions, in closely matching content.

For both the Korean and Japanese versions of the experiment, materials were constructed so as to produce two subsets, each of which included 48 critical items and 24 filler items. An additional set of 10 items, ranging across item types, served as practice trials.

3.1.2. Item Implementation

As illustrated in (26) and (28), the object within the code-switched phrase included various types of nouns, such as an indefinite noun (e.g., *some money, an ear*), a definite noun (e.g., *the boat*, *the stairs*), and a bare noun (e.g., *basketball*, *cold feet*). The definiteness and length of the objects were controlled for in all the closely matched items throughout the conditions, to prevent various linguistic and non-linguistic factors, such as definiteness, from influencing the selection of a particular order, either OV or VO.

All code-switched VPs of English were constructed in two orders, OV and VO, and followed by either the Korean LV, *ha*, or the Japanese LV, *su*, and the final form of the code-switched sentence in OV order was slightly different from the one in VO order.

First, various function words preceding the object, such as articles (*a*(*n*), *the*), possessors (*my*, *your*, *his*, *he r*, *etc*.), were omitted from the OV order sentences, based on the results of a pilot study that revealed that many KE and JE bilingual speakers judged the code-switched sentences as sounding more natural without the article in the OV order but not the VO order. Though the exact reason still needs to be investigated, it is speculated that since both Korean and Japanese lack articles, article omission also seems to be preferred (following the grammar of Korean or Japanese) when the code-switched sentence preserves the structure of Korean or Japanese, exhibiting their canonical OV order.

Besides determiners, English-type pronominal possessors also do not exist in either Korean or Japanese. Instead, a possessive pronoun is expressed as a phrasal form in which a personal pronoun or a noun takes a genitive suffix realized as *-uy* in Korean and *-no* in Japanese, respectively. Thus, English-type pronominal possessors were also omitted when the code-switched phrase was constructed in OV order. On the other hand, all other noun-modifying elements such as lexical adjectives (*i.e.*, *big* in *a big present*) and quantifiers (*i.e.*, *a few* in *a few brow s*) were kept intact in both OV and VO orders of the code-switched sentences.

Additionally, when a code-switched phase was constructed in OV order, the accusative Case marker, *-(l)ul* in Korean and *-o* in Japanese, was inserted after the object, following the grammar of Korean and Japanese, as exemplified in (25c) and (27c). As a reviewer points out, it has been noted that overt morphological accusative markers, such as Korean *-(l)ul* and Japanese *-o*, may be used as focus particles, hence the presence of the overt accusative marker on the object in OV order, but not in VO order, may cause the participants to choose the focused element in OV order in their CS judgment task. However, the results showed that VO order was strongly preferred over OV order in certain contexts, despite the systematic presence of the accusative marker. This suggests that the presence of the overt accusative marker in the code-switched phrase in OV order does not seem to lead to a word order bias towards OV in KE and JE CS. Other detailed procedures of how CS items were implemented are provided in Shim [9].

3.1.3. Procedure

The experiment was conducted via a Power Point slide show. At the beginning of the experiment, participants received instructions about the task procedures before the trial began. The trial session included 6 practice questions (out of a total of 10) in order for the participants to familiarize themselves with the task. After half of the test items were presented, the participants were encouraged to take a five-minute break. The experiment either continued or resumed, depending on the need of each participant. After the break, 4 additional practice items were covertly presented prior to the rest of the test materials, allowing the participants to recover their own pace in performance after taking a short break.

As described earlier, each question consisted of three subparts framed in two frames; the brief introductory scenario (Frame1) and the interpretation-supporting cartoon and the code-switched pair of utterances (Frame 2). The participants heard each utterance only once, and the pace of the experiment was pre-programmed by the investigator. The duration of each and every frame was preset, and the transition from Frame 1 to 2 was automatic. However, the transition from one question to another (Frame 2 to next Frame 1) was fully controlled by the participants, allowing them to take as

much time as they needed to answer each question. The next question began only when the participant clicked the mouse.

A separate answer sheet was provided, consisting of an abbreviated version of the scenario, a reduced size of the cartoon, and two checkboxes numbered 1 and 2 corresponding to each code-switched sentence the participant heard. No time limit was imposed on the task, and the participants, on average, took 30 min to complete the experiment.

3.1.4. Participants

A total of 28 KE bilingual speakers (age range 18-27; mean age 21.1; 19 females) and 8 JE bilingual speakers (age range 25–38; mean age 31.9; 7 females) successfully completed the experiment. The age at onset of learning Korean and English was 0.9 and 4.6 years for the KE bilinguals, respectively, and the age at onset of learning Japanese and English was 0 and 5.3 years for the JE bilinguals, respectively.

Initially 34 KE and 12 JE bilingual speakers in total participated in the experiment, but 6 KE and 4 JE participants were excluded from the data analysis after three screening procedures. First, 4 KE and 2 JE bilingual participants were excluded because the information provided in the language history questionnaire revealed that they had begun learning one of their two languages, either English or Korean/Japanese, after the age of 12, suggesting they were not early bilinguals, the target population that is the focus of this study. The rationale for including only early bilingual speakers was based on the fact that CS is a property of highly proficient bilinguals, and the delayed acquisition of one of their languages indicates that the speaker may have not reached native or near-native proficiency for one of the languages they speak.

Second, 1 KE bilingual speaker was excluded due to the high error rate in her performance (25%) in filler type I, where she chose OV rather than VO as the natural order of a full English sentence, in 4 out of 16 trials. It turned out that this participant also failed to meet the criteria for inclusion based on the information given in the language history questionnaire. In addition, 2 KE and 2 JE bilingual participants were excluded, because they exhibited a strongly biased word order preference for the code-switched sentences, either OV or VO, regardless of item types. Except for 1 KE bilingual who chose OV order in 77% of his trials, the 3 other participants who were excluded selected VO order predominantly, in 79%–95% of their responses. Excluding these 4 participants, the average distribution of VO *vs.* OV word order preference of the 28 KE and 8 JE bilingual speakers in the study was 47.4% *vs.* 52.6% and 56.7% *vs.* 43.3%, respectively.

In sum, 3 KE bilinguals and 2 JE bilinguals who took Version A of the experiment, and 3 KE bilinguals and 2 JE bilinguals who took Version B of the experiment were excluded from subsequent data analysis.

3.1.5. Results and Discussion

Korean-English CS

Figure 1 shows the percentage of VO order preference by Verb Type (heavy *vs.* light) and Interpretation (literal *vs.* non-literal) in KE CS.

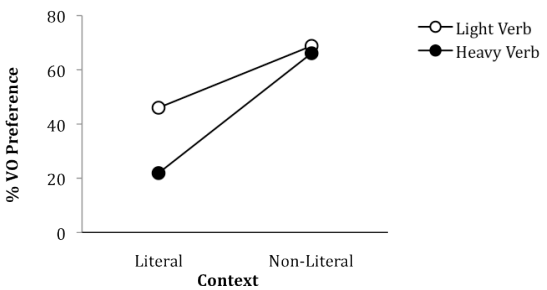


Figure 1. %VO preference by Verb Type and Interpretation in KE CS.

All analyses were conducted both by-participants (F_1) and by-items (F_2). In the former (F_1), ANOVAs were conducted with Verb Type (heavy *vs.* light) and Interpretation (literal *vs.* non-literal) as within-subjects variables. In the latter (F_2), Interpretation (literal *vs.* non-literal) was treated as within-items variables and Verb Type (heavy *vs.* light) as between-items variables.

In the overall analysis, a main effect of Verb Type was found. The effect was significant, although only when considering subjects as a random factor, $F_1(1,26) = 25.49$, $p < 0.001$; $F_2(1,28) = 3.07$, $p = 0.075$. The preference for VO order in a code-switched phrase involving a HV and a LV was 44.0% and 57.4%, respectively. A main effect of Interpretation was also found. The preference for VO order in a code-switched phrase with a literal *vs.* non-literal interpretation was 33.9% and 67.4% ($F_1(1,26) = 25.49$, $p < 0.001$; $F_2(1,28) = 52.35$, $p < 0.001$). These results replicate the previous findings of Shim [8] that both verb type and interpretation play a role in word order variation in CS.

In addition, an interaction between Verb Type and Interpretation was found ($F_1(1,26) = 8.95$, $p < 0.01$; $F_2(1,28) = 5.36$, $p < 0.05$). The source of the interaction between Verb Type and Interpretation is not clear. It could be a ceiling effect of the test for both HVs and LVs. Alternatively, the interaction could be explained by the fact that not all verbs in (19), which were initially categorized as English LVs in this study, behave in a uniform way. The analyses of individual items reveal that a subset of these verbs (e.g., *hold*) or their uses follow the pattern of HVs with respect to word order preference in the KE and JE CS data, showing that OV was strongly preferred. Thus, an inclusion of HVs or heavy uses of LVs in the group of LVs may have resulted in a lower percentage of VO preference, as observed in the interaction between HVs and LVs in the non-literal interpretation. Detailed item-based analyses of individual LVs listed in (19) are provided in Section 4.7.

The sub-analyses revealed that with HVs, the percentage of VO order preference was significantly lower in relation to literal interpretation than in relation to non-literal interpretation, 21.9% *vs.* 66.1% ($F_1(1,26) = 86.73$, $p < 0.001$; $F_2(1,14) = 41.88$, $p < 0.001$). A similar pattern has emerged with LVs; the percentage of VO order preference was significantly lower in the case of the literal interpretation than in the case of the non-literal interpretation, 46.0% *vs.* 68.8% ($F_1(1,26) = 25.21$, $p < 0.001$; $F_2(1,14) = 13.29$, $p < 0.005$). The difference between HVs and LVs was also found in LVCs, as shown in Figure 2.

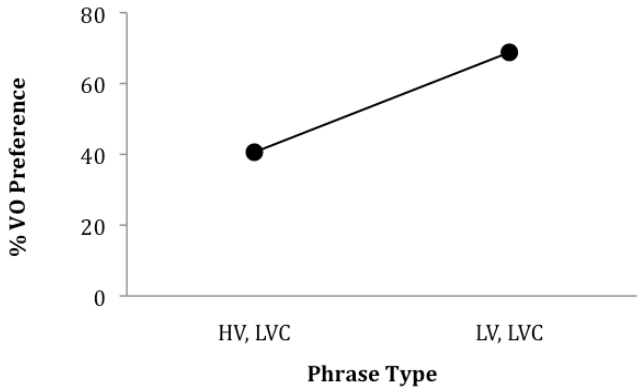


Figure 2. %VO (Verb-Object) preference by Verb Type and Construction in KE (Korean-English) CS (code-switching).

A one-way ANOVA comparing heavy *vs.* light verbs in LVCs showed that while the preference of VO order was 40.6% with HVs, it was 63.8% with LVs ($F_1(1,26) = 29.10$, $p < 0.001$; $F_2(1,14) = 6.51$, $p < 0.025$), which indicates that HVs and LVs behave differently in LVCs.

Japanese-English CS

In general, the JE CS data did not yield statistically significant results due to the small number of participants. Nonetheless, there was a clearly emerging pattern found in both KE and JE CS, as shown in Figure 3.

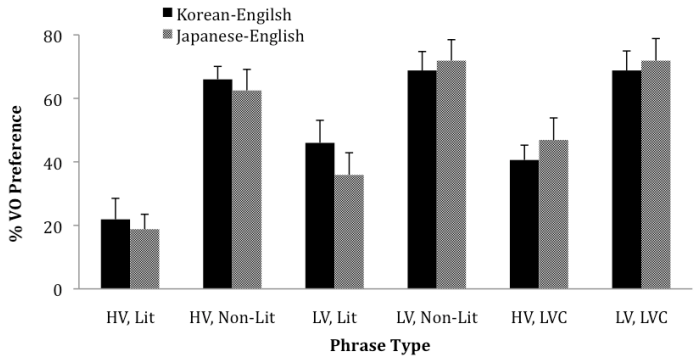


Figure 3. %VO preference, overall, as a function of Phrase Type and Speaker Group.

Similar to the results based on the KE CS data, the overall results revealed that the preference of VO order was higher with LVs than HVs in the case of the literal interpretation and LVCs, while this difference disappeared in the case of a non-literal interpretation, where VO order was strongly preferred regardless of verb type.

In sum, the overall pattern of results found in the CS judgment task provides evidence to support the hypothesis that the selection of an English LV or HV within a code-switched phrase would lead to word order variation in CS; while LVs lead to VO order, HVs derive OV order. Yet, this difference was only observed in the VPs with literal interpretations and LVCs, but not in non-literal or idiomatic interpretations.

3.2. Syntactic Flexibility Judgment Task

The results from the CS judgment task showed that the distinction between HVs and LVs did not make a difference in relation to the non-literal interpretation; regardless of verb type there was a strong preference for VO order. Yet, a microscopic analysis of each code-switched phrase with a non-literal or idiomatic interpretation revealed some variations, suggesting that not all idioms behave in the same way. Under the assumption that the internal argument of the syntactically flexible phrase is subject to CS, while the internal argument of the less flexible or inflexible phrase may not undergo CS, the syntactic flexibility judgment task was designed to examine whether word order variation in CS is related to the syntactic flexibility of the code-switched phrase, especially in the case of non-literal interpretations.

3.2.1. Materials and Methods

To determine whether different degrees of syntactic flexibility of idiomatic expressions would play a role in deriving different word orders in CS, VP idioms that were included in the CS judgment task were selected as critical material. The items were inserted in an appropriate sentential context and syntactically manipulated with three different operations: (a) passivization; (b) relative clause formation; and (c) *wh*-question formation, as shown in (29).

29. At a conference participants can <u>rub shoulders</u> with many leading figures in the field.
    a. At a conference shoulders can be rubbed with many leading figures in the field.
    b. Naïve participants are only interested in the shoulders that they rub with famous people at a conference.
    c. How many shoulders did you rub with famous people at the conference?

In addition, 32 filler items were added, which consisted of LVCs with 16 HVs and 16 LVs from the CS judgment task. The filler items were also inserted in an appropriate context and were syntactically manipulated using passivization, relativization, and *wh*-movement, similar to critical materials. However, there were also several items involving verb-object combinations that generally are not subject to passivization, including 1 critical item (*have a big mouth*) and 4 filler items (*have a look*, *have a try*, *get a suntan*, and *get a sense*). Thus, these items were only provided in relative clause formation and *wh*-question formation only.

3.2.2. Procedure

The experiment was a self-paced pencil-and-paper task. On the first page of the questionnaire, given in (30), participants were instructed to read each sentence and judge to what extent the meaning associated with the underscored phrase is available in the two or three sentences that followed the target sentence, using a 4-point Likert scale, as follows (30).

30. In this task, sentences are presented in groups. Within each group, the first sentence is the "standard", and it contains an underscored expression. Two or three further sentences in the group use something similar to that expression, but in slightly varied forms. Your task is to decide whether ***the meaning of the underscored expression*** in the standard sentence remains available in the sentences that follow.

To give your opinion, please choose the best-fitting value on the scale below. Value 1 is used to say that the expression's meaning is no longer available at all, and Value 4 to say that exactly the original meaning remains available. Values 2 and 3 are used for intermediate judgments.

Meaning not available			**Same meaning, exactly**
1	**2**	**3**	**4**

Let's practice a few questions first.

1.	Can you <u>get a suntan</u> through a glass window?	**1**	**2**	**3**	**4**
a.	That's a great suntan that you've got through a glass window!	□	□	□	□
b.	How much of a suntan can you get through a glass window?	□	□	□	□
2.	The company <u>made a request</u> for the workers to return to their jobs immediately.	**1**	**2**	**3**	**4**
a.	A request was made for the workers to return to their jobs immediately.	□	□	□	□
b.	The request the company made to the workers is their immediate return to their jobs.	□	□	□	□
c.	What request did the company make of the workers?	□	□	□	□

After the participants read the written instructions and completed the first 2 practice items, the participants were offered a verbal clarification of the instructions by the investigator before the experiment began. The participants were allowed to take a break whenever needed. However, every participant chose to complete the task without taking a break.

3.2.3. Participants

28 KE and 8 JE bilinguals whose data were analyzed for the CS judgment task were also included for the data analysis of this task. In addition, 7 monolingual English speakers (age range 23–57; mean age 32.6; 3 female) participated as a control group. The results from the bilingual speakers were compared to those obtained from the monolingual native speakers of English. The time the participants spent to finish the experiment varied from less than an hour to 90 min, but on average, they took approximately 60 min.

3.2.4. Results and Discussion

Figure 4 below shows the mean syntactic flexibility scores for different types of code-switched phrases by Speaker Group.

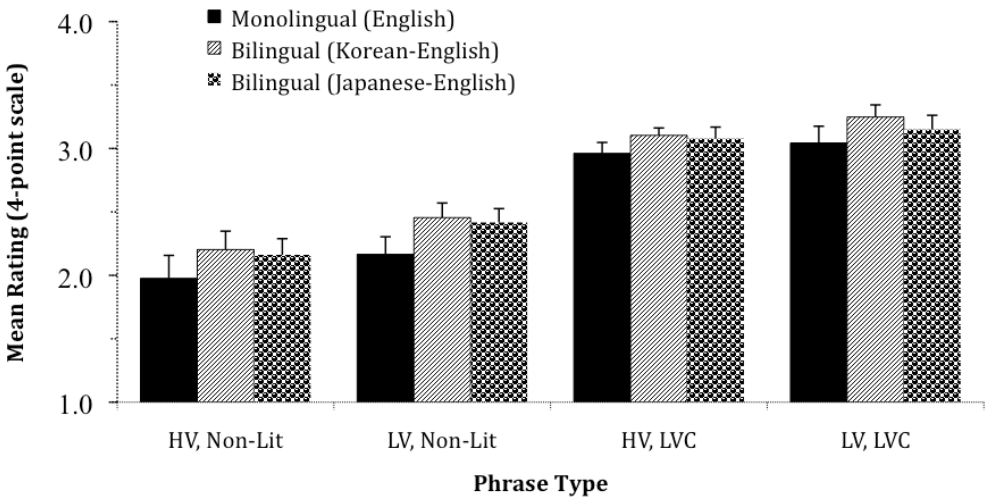


Figure 4. Mean syntactic flexibility rating as a function of Phrase Type and Speaker Group.

The results showed that idioms (HV, Non-Lit and LV, Non-Lit) were judged by all three speaker groups as being less syntactically flexible than the non-idiomatic expressions (HV, LVC and LV, LVC), as predicted. A minor difference between the English monolingual group and the KE and JE bilingual groups was that, regardless of phrase type, the scores for flexibility assigned by the two bilingual groups were slightly higher than those assigned by the monolingual group.

To examine whether syntactic flexibility plays a role in deriving word order in CS, the results obtained from the KE/JE bilingual speakers in the syntactic flexibility judgment task was compared to the results from the CS judgment task, as illustrated in Figure 5 below.

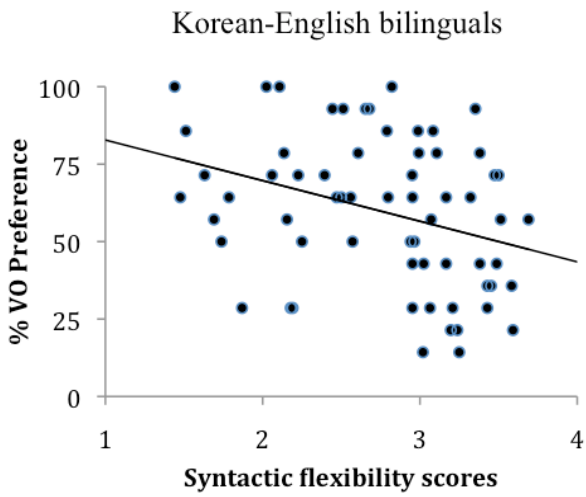


Figure 5. *Cont.*

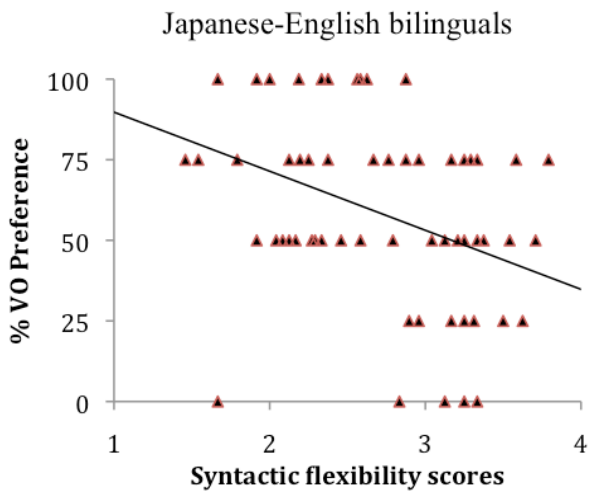


Figure 5. Percentages of VO order preference predicted by syntactic flexibility scores assigned by KE (Korean-English) and JE (Japanese-English) bilingual speakers.

Figure 5 shows that the more flexible a phrase was judged as being, the less likely it was to be favored in VO order in CS by both KE and JE bilingual groups. For instance, the syntactic flexibility score for the idiom *take a hike*, meaning 'leave', was 1.44, which was much lower than the overall mean syntactic flexibility score of 2.75, indicating that the phrase was judged much less flexible than most phrases included. In addition, it was preferred in VO order in 100% of the instances in the CS judgment task by KE bilinguals. On the other hand, when the same phrase *take a hike* was interpreted literally, it was judged as being much more flexible and scored 3.32 in the syntactic flexibility judgment task. Also, the VO preference of the literal phrase *take a hike* was 64% by the same group of bilinguals. In other words, the more syntactically flexible code-switched phrase was preferred in OV order in CS.

The overall pattern of results supports the hypothesis that syntactically flexible and less flexible phrases behave differently with respect to word order derivation in CS, leading to OV and VO order, respectively. This can be further corroborated by the argument that, while the internal argument of the syntactically flexible phrase is subject to CS, the syntactically less flexible or inflexible phrase is frozen and undergoes CS as a unit. Hence, the internal order of the phrase is maintained throughout the derivation.

However, the correlation between the preferred word order and the syntactic flexibility of a code-switched phrase was found to be rather weak in both groups ($r = -0.033$ for KE and $r = -0.38$ for JE), revealing that there are variations found among the idiomatic phrases. The weak correlation between the syntactic flexibility of the code-switched phrase and word order variation found in KE and JE CS may be accounted for by the fact that the three syntactic operations (*i.e.*, passivization, relative clause formation, and *wh*-question formation) that were experimentally investigated in the syntactic flexibility judgment task, may not be directly related to the syntactic phenomenon of OV~VO word order variation, under the assumption that OV is derived from VO via object shift. Although it is true that the results from passivization, relative clause formation, and *wh*-question formation revealed different degrees of syntactic flexibility of the code-switched phrases, the nature of these three syntactic operations is different from that of object shift leading to OV~VO variation in CS, summarized in (31).

31. a. Object shift is object movement caused by the EPP property on *v*
$[_{vP}$ OBJ$_i$ *v* $[_{VP}$ V t$_i]]$

b. Passivization is motivated by the Case requirement: the underlying object is assigned nominative Case from T, which is specified for EPP
$[_{TP}$ OBJ$_i$ T $[_{vP}$ *v* $[_{VP}$ V t$_i]]]$

c. (Object) Relativization is a syntactic dependency between the head noun in the matrix clause and the gap in the embedded clause (no movement involved)
... head noun$_i$ ... $[_{CP}$ C $[_{TP}$ T $[_{vP}$ *v* $[_{VP}$ V gap$_i]]]]$

d. (Object) *Wh*-question is movement caused by *Wh*-feature on C, which is specified for EPP
$[_{CP}$ OBJ$_i$ C $[_{TP}$ T $[_{vP}$ *v* $[_{VP}$ V t$_i]]]]$

We see in (31) that neither relativization nor *wh*-movement have the same driving force as object shift, whereas syntactic procedures for object shift and passivization appear to be similar; the object raises to a specifier of a functional head, such as *v* and T, due to the EPP specification on it. Yet, there are additional properties found in passive constructions cross-linguistically that serve to distinguish them from object shift. The grammatical subject of a passive sentence is the internal argument of the verb, which gets nominative case, and the external argument of the verb is not projected as an argument but may be realized as an adjunct phrase (the *by*-phrase in English and the dative phrase in Korean and Japanese, for instance). Most importantly, the demotion of the external argument coupled with the accusative case absorption brings about a decrease in valency, which is reflected through a change in the morphological form of the verb. In this regard, the passive construction differs from object shift, for it involves a valency-reducing operation on the verb in addition to object raising. It is likely that the valency-changing morphological operation involved in passivization is subject to restrictions that constrain the applicability of the passive *beyond* the restrictions imposed by object raising *per se*. For that reason, it is to be expected that object shift and passives will not have an identical distribution.

None of the three syntactic procedures included in the syntactic flexibility task (*i.e.*, passivization, relativization, and *wh*-questions), involve the same syntactic process, namely, object shift, which is a source of OV~VO variation in CS.

3.3. Idiom Familiarity Task

The test items of the CS judgment task included a number of idiomatic expressions; thus an idiom familiarity task was designed to measure the bilingual participants' familiarity with the English idioms included in the CS judgment task and the syntactic flexibility judgment task.

3.3.1. Materials and Methods

A total of 32 VP idioms tested in the CS judgment task and the syntactic flexibility judgment task were included in the idiom familiarity task. In the syntactic flexibility task, each idiom was inserted in an appropriate sentential context and used as an input sentence. These sentences continued to serve as the test items of the present task. Since the idiom familiarity task was originally designed to be used as a screening tool, no additional filler materials were added.

The experiment was a self-paced pencil-and-paper task. Each idiom was incorporated in a sentence and underscored. Participants were asked to read each sentence and write down the meaning of the underscored phrase of the sentence in their own words. To prevent the two judgment tasks (*i.e.*, CS and syntactic flexibility) from being affected by lexical and contextual redundancy, the idiom familiarity task was administered *after* the participants completed the two judgment tasks.

The same group of 28 KE and 8 JE bilinguals, and 7 native speakers of English that participated in the syntactic flexibility task continued to participate in the idiomatic familiarity task. No time limit was imposed on the task, and the participants, on average, took 30 min or less to finish it.

3.3.2. Results and Discussion

All responses provided by the participants were analyzed into 5 categories: (a) a correct description or interpretation of the phrase; (b) no response; (c) wrong interpretation of the phrase; (d) a literal interpretation of the phrase; and (e) an approximate description of the phrase, yet not correct. For each speaker group, a correct answer response rate was calculated based only on (a), a correct description/interpretation of the phrase, among the answer types.

Overall, the percentage of correct answers provided by the English monolingual, KE bilingual and JE bilingual groups were 95%, 84%, and 85%, respectively, indicating that the two bilingual groups were slightly less familiar with English idioms than the monolingual native speakers of English. However, this difference between the monolingual and the bilingual speakers' performance was limited to the idioms involving HVs, especially those in which the usual meaning of a lexical verb is not available at all in the idiomatic phrase. Figure 6 lists 5 idiomatic phrases that were most frequently interpreted incorrectly by the KE and JE bilingual speakers.

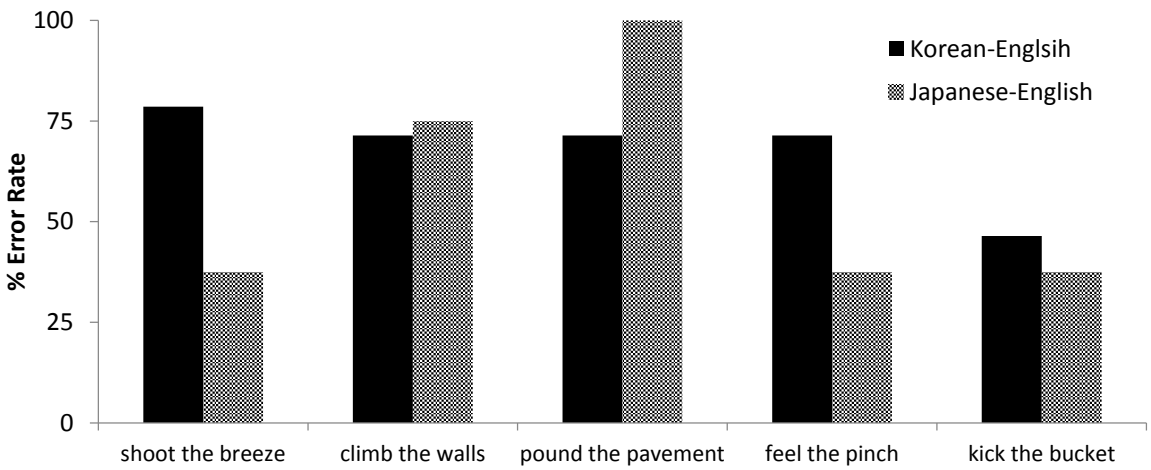


Figure 6. Idioms of the highest error rates obtained from the bilingual speakers.

Among the 5 idioms listed in Figure 6 above, *shoot the breeze* 'to talk aimlessly' and *climb the walls* 'to be anxious or frantic' were interpreted close to their literal sense by some speakers, such as 'to feel the breeze' and 'to promote', respectively. While either the object or the verb seemed to be literally interpreted in the idioms *shoot the breeze* and *climb the walls*, the idiom *pound the pavement* 'to look for a job' was interpreted literally in its iterative aspectual sense (*i.e.*, 'to do something repeatedly') by a majority of the KE and JE bilingual speakers.

Interestingly, *pound the pavement* was strongly preferred in OV order in the CS judgment task, suggesting the possibility that the emergence of an aspectually literal meaning leads to OV order, parallel to the predominant OV order with a HV associated with a literal interpretation. However, other idioms interpreted close to their literal sense, such as *shoot the breeze* and *climb the walls*, were both favored in VO order in both KE and JE CS. Thus, it seems that the unexpected order of the idiom, *pound the pavement*, unlike other idioms, was not related to the failure of its idiomatic reading.

The findings of this task suggest that, despite the fact that bilinguals may not be familiar with the figurative readings of idiomatic expressions, they seem to create new meanings for the expressions, based on the semantic or syntactic nature of the lexicon involved and the contexts in which these expressions are used. And this may also be reflected in their CS grammar.

3.4. Section Summary and Conclusion

The results of the CS judgment task and the syntactic flexibility judgment task completed by the 28 KE and 8 JE bilingual speakers confirm the two research hypotheses that *(i)* the selection of an

English HV or LV within a code-switched constituent leads to OV~VO variation, and *(ii)* syntactically flexible and inflexible phrases also lead to OV~VO variation in CS.

Based on the results obtained in the CS judgment task, Section 4 provides a syntactic account of deriving OV and VO order in KE and JE CS within the framework of the Minimalist Program.

4. Mixed Verb Constructions in Code-Switching

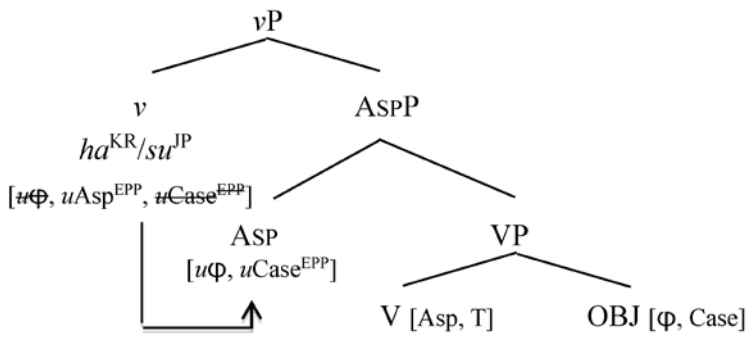
The overall outcome of the experimental study on KE and JE CS supports the hypothesis that the selection between English HVs and LVs within a code-switched phrase would lead to OV~VO variation. However, this difference was only observed in phrases involving a literal interpretation and in LVCs, but not in phrases with non-literal/idiomatic interpretations. Given these results, I propose a grammatical account of OV~VO variations in KE and JE CS within the framework of the Minimalist Program, especially based upon the feature inheritance system developed by Shim [9].

In Section 2.3., I proposed the underlying structure for deriving OV and VO order in KE and JE CS, shown in (24), where the respective LVs (Korean *ha* and Japanese *su)* lexicalize *v* with the EPP feature, in contrast to English LVs, which merge under Asp. Prior to discussing how (24) accounts for the results from the CS judgment task, I begin with a consideration of key theoretical assumptions.

One of the key concepts is FEATURE INHERITANCE (FI henceforth), primarily proposed for the C(omp)-T(ense) domain by Chomsky [68,69]. In Shim [9], I further extended and applied FI to the *v*-Asp domain, parallel to C-T, and developed it into a fully-fledged mechanism that accounts for various theoretical issues such as word order and Case/case. I argue that, how the EPP properties are encoded in the feature geometry on C and *v*, and how these features, including the EPP, are valued in C-T and *v*-Asp domains, are the source for parametric variations, including word order in both monolingual and bilingual grammars.

Chomsky [70] considers C, T, and *v* to be core functional categories, but the probing features (or Agree or edge features in Chomsky's term) and the EPP feature belong to phase heads only, C and *v* (p. 102). T inherently lacks these features and its probing and EPP features are inherited from C, the phase head, via FI. As a result, T serves as a probe at the phase level CP. Analogous to the C-T relation, I propose that *v* selects a functional category, Asp, and transmits its probing features to Asp via FI. Thus, all probing features on Asp are inherited from its selecting phase head, *v*. The structure in (32) illustrates FI from *v* to Asp in Korean and Japanese, proposed in Shim [9].

32.



(i) feature matching between Asp and OBJ: [$u\phi$, uCase^{EPP}] are valued
(ii) feature matching between *v* and V: [uAsp^{EPP}] is valued

In (32), Asp inherits [$u\phi$, uCase^{EPP}] from *v*, after which it enters into a probe-goal relationship with the object. The feature [uCase^{EPP}] on Asp triggers movement of the maximal projection of a goal with the corresponding feature, and the object raises to Spec, AspP, delivering OV order within AspP. Then, the entire AspP raises to Spec, *v*P, resulting in OV-*ha* order in Korean and OV-*su* order in Japanese.

The structure in (32) will also be used as a basic templet for OV-*ha*/*su* order in KE and JE CS. Yet, we will see that there are cases in which FI from $v = ha^{KR}/su^{JP}$ to Asp is blocked, and the object

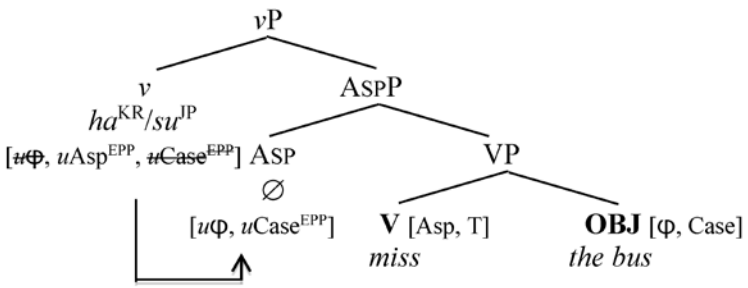
fails to undergo movement to Spec, ASPP when a lexical category is inserted in Asp, preventing Asp from being a beneficiary of FI. This is precisely when English LVs are merged directly under Asp as lexical roots. As a result, object raising does not occur whenever an English LV is merged under Asp, deriving VO-*ha*/*su* order in KE and JE CS. Thus, OV~VO variation in KE and JE CS is explained as a result of object raising to Spec, ASPP; when object shift occurs, OV order is derived within ASPP. If the object stays *in situ*, VO is derived. Regardless of object shift, the entire ASPP always raises to Spec, *v*P whenever *v* is Korean or Japanese, and the surface word order would be either OV-*ha/su* or VO-*ha/su* in KE and JE CS. All these movements are a consequence of feature checking and EPP specification on a functional head, as assumed in the Minimalist Program.

In the following sub-sections (Sections 4.1–4.6), I will provide a FI-based account of OV and VO order in *ha*/*su* LVCs in KE and JE CS, a finding based on the CS judgment task reported in Section 3.1. Sections 4.1–4.6 provide a descriptive analysis of OV~VO variation in KE and JE CS. For a detailed discussion of the mechanisms and operations of FI and derivational accounts of OV and VO word order variation, readers are asked to refer to previous work by Shim [9].

4.1. OV with an English Heavy Verb in Literal Interpretation

In the code-switched phrase in which an English HV takes an object with a literal interpretation, such as *miss the bus*, OV order was strongly preferred (the percentage of VO occurrence was 22% for KE CS and 19% for JE CS). The structure in (33) represents the underlying structure for the phrase *miss the bus*, for instance, which was favored in OV order in KE and JE CS.

33.



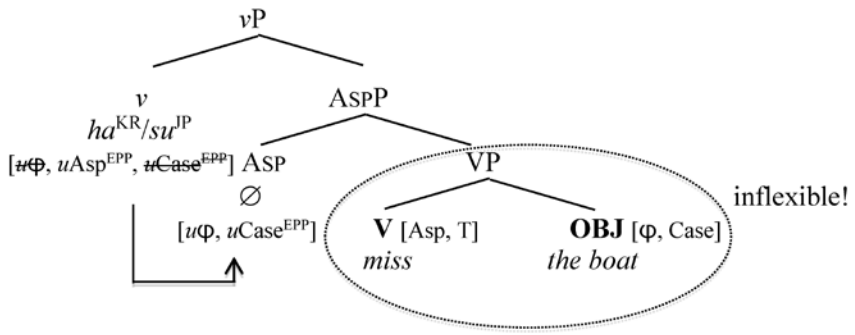
The null-headed Asp does not bear any formal features of its own, and is selected by $v = ha^{KR}/su^{JP}$, a Case-checking LV with EPP specifications in Korean/Japanese. Via FI, Asp is endowed with [*u*ϕ, *u*Case^{EPP}] from $v = ha^{KR}/su^{JP}$ and agrees with the object bearing the matching features. The object raises to Spec, ASPP caused by the EPP property of [*u*Case] on Asp, delivering OV order within ASPP. ASPP further raises to Spec, *v*P, as a result of which OV-*ha* and OV-*su* orders are derived in KE and JE CS, respectively.

4.2. VO with an English Heavy Verb in Non-Literal Interpretation

While OV order was strongly preferred when an English HV was included in a phrase with a literal interpretation, VO order was favored when an English HV takes an object in non-literal or idiomatic interpretations (*i.e.*, *miss the boat* meaning 'miss the opportunity') in KE and JE CS (66% and 63%, respectively). Since the same set of English verbs were included in both literal and non-literal interpretations, the OV~VO contrast between them can be only explained by the fact that object shift occurs in literal interpretations, while it fails to occur in non-literal interpretations. What prevents the object from raising to Spec, ASPP in non-literal interpretations?

Similar to (33), the null Asp head may inherit [*u*ϕ, *u*Case^{EPP}] from $v = ha^{KR}/su^{JP}$ via FI and trigger object shift in (34). Yet, the object may resist being extracted out of the VP due to the fact that the VP of a non-literal interpretation (or the VP idiom) is not as flexible as that of a VP with a literal interpretation, as confirmed in the results from the syntactic flexibility judgment task: as shown in Figure 4, the idioms (HV, Non-Lit and LV, Non-Lit) were judged by all three speaker groups as being syntactically less flexible than the non-idiomatic expressions (HV, LVC and LV, LVC).

34.



Suppose that the object cannot be extracted out of the VP due to the syntactic inflexibility of the VP. The EPP property on Asp still needs to be satisfied; otherwise, the derivation crashes in (34). FI is designed to value uninterpretable features on a phase head (C, *v*) in a more efficient and economical way, and it happens automatically as long as a derivation converges. To put it another way, while FI from *v* to Asp is otherwise spontaneous, it is blocked in (34), for it leads to a derivational crash. Instead, $v = ha^{KR}/su^{JP}$ may not transmit any of its features to Asp and *v* itself enters into a probe-goal relationship, so all of its features can be valued.

In summary, when an English HV takes an object in non-literal or idiomatic interpretations, FI from $v = ha^{KR}/su^{JP}$ to Asp may not occur. As a result, the English VO order is maintained in KE and JE CS.

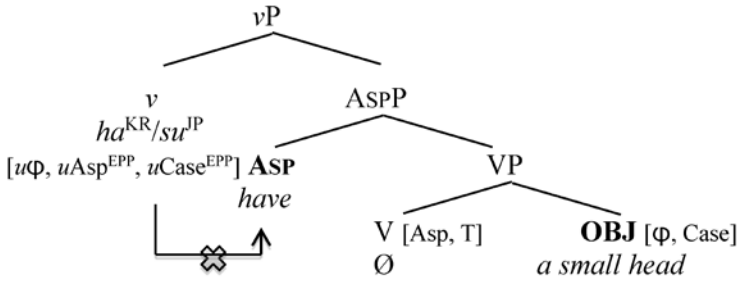
4.3. VO with an English Light Verb in Literal Interpretation

The results from the CS judgment task (Figure 3) shows that the occurrence of VO order with an English LV in literal interpretation (*i.e.*, *have a small head*) is 46% for KE CS (and 36% for JE CS). At first glance, this seems to suggest that OV and VO orders are more or less equally distributed in KE CS. However, as reported in Section 3.1.2, a main effect of verb type (heavy *vs.* light verbs) was found, revealing a higher preference of VO order with LVs than HVs in literal interpretations, which should be accounted for. In addition, an item-based analysis suggests that, with a subset of the LVs included in (19), such as *have*, *get*, and *keep*, the preference for VO order was exceptionally high in relation to literal interpretations, around 80% or above, exhibiting a stark contrast with HVs in literal interpretations, most of which were strongly preferred (more than 90%) in the OV order. Thus, LVs seem to behave very differently from HVs. On the other hand, some of the LVs in (19), such as *hold*, instead exhibited patterns that were similar to HVs, where OV was the preferred word order in KE and JE CS, suggesting that they are close to HVs, and not LVs, and are base-generated as V in such cases.

Based on the above patterns, I conclude that true LVs, such as *have*, *get*, and *keep* are distinguished from HVs, and VO order is derived with LVs in literal interpretations. In the following, I will discuss how VO order is derived with English LVs in KE and JE CS. In Section 4.7, item-based analyses of LVs in (19) are provided.

With the assumption that the English LV lexicalizes Asp in place, the fact that preverbal object placement does not happen when an English LV is code-switched can be explained. In (34), for example, *have*, qua, LV lexicalizes Asp, and it prevents Asp from inheriting probing features from $v = ha^{KR}/su^{JP}$. FI will take place successfully if and only if the functional head of the complement of the phase head is empty (*cf.* Richards 2007) [71]. If the functional head is already equipped with idiosyncratic lexical properties, such as being filled by a lexical item such as an English LV, for instance, FI does not occur. As a consequence, none of *v*'s features are discharged to Asp, lexicalized by an English LV.

35.

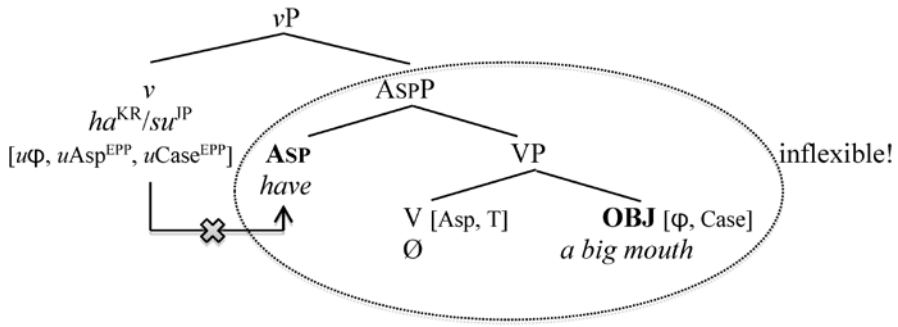


When English LVs lexicalize Asp, the V head remains empty in (35), whose status may be questioned. The existence of null lexical verbs has been argued in many languages (e.g., in Slovenian and in various Germanic languages, such as Dutch, German, West Flemish, Luxemburgish, Afrikaans, Swedish, Swiss German [72,73]. This supports the validity of the null V in (35). It is not clear whether empty verbs need formal licensing, as argued by van Riemsdijk [73], or whether they do not need formal licensing, as claimed by Marušič and Žaucer [72]; more research is needed to understand the nature of empty verbs. I will leave the topic for future research.

4.4. VO with an English Light Verb in Non-Literal Interpretation

When an English LV takes an object in a non-literal or idiomatic interpretation (e.g., *have a big mouth*), VO order was preferred both in KE and JE CS (69% and 72%, respectively), similar to non-literal phrases with an English HV. As shown in Figure 4, VP idioms with both HVs and LVs were judged less flexible than non-idiomatic phrases, thus the ASPP headed by the LV *have* in (35), for instance, is inflexible, making object extraction difficult. In (36), the Asp head filled by an English LV does not inherit probing features from $v = ha^{KR}/su^{JP}$.

36.



Both English idioms with a HV and a LV in KE and JE CS were preferred in VO order alike, yet the syntactic derivations for deriving VO order with a HV and an LV slightly differ from each other under the current proposal that English HVs merge under V and LVs merge as Asp. With a VP idiom including a HV, Asp can in principle inherit *v*'s features and value *v*'s features as soon as possible. However, FI is blocked because of the failure of object shift caused by the inflexibility of the VP idiom (Section 4.2). With the idiom with an LV, on the other hand, FI cannot happen from *v* to lexically filled Asp by an English LV. What is common between VP idioms with a HV and an LV is that VO order is derived in KE and JE CS, which is accounted for by no FI from $v = ha^{KR}/su^{JP}$ to Asp, resulting in the failure of object shift.

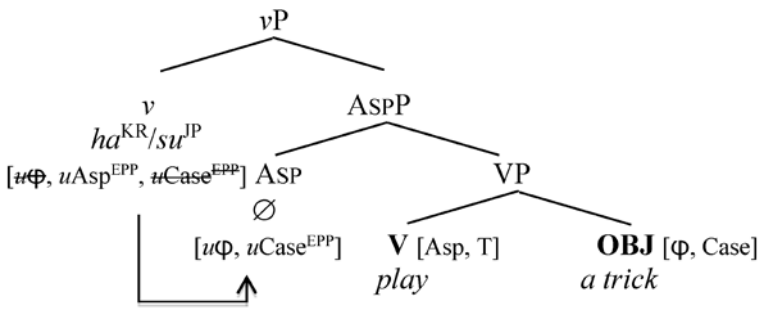
4.5. Either OV or VO with an English Light Verb in a Light Verb Construction

In an LVC in which an English HV takes an object (e.g., *play a trick*), the average percentage of VO order preference was 41% in KE CS (and 47% in JE CS). While OV order was slightly preferred with several items (*i.e.*, *deliver a talk, deliver a speech, reach an agreement, pass sentence, play a joke,* and *pay a compliment*), the majority of the items were not biased towards either order, ranging from 36% to 64%

VO preference, in KE CS. I now proceed to explain why both OV and VO orders are possible with a LVC with a HV.

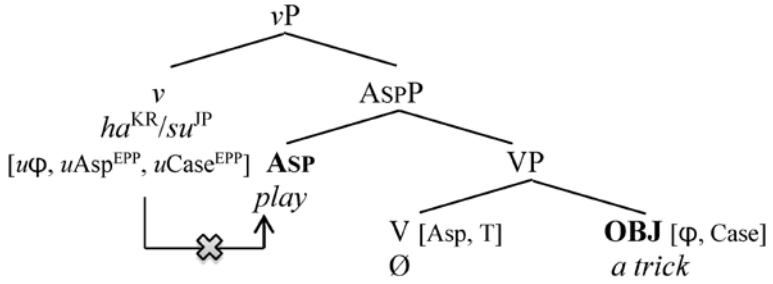
In an LVC with a HV, the verb may have a choice between merging as V, following its lexical root, and merging as Asp, based on its "light" use in an LVC. If the verb maintains its identity as a lexical verb and merges under V despite its light use in an LVC, OV order is derived; the null-headed Asp inherits [$u\phi$, uCase^{EPP}] from v = ha^{KR}/su^{JP} and triggers the object to move to its specifier position, resulting in OV order.

37.



Alternatively, the verb may merge as Asp, following its function similar to the LV in an LVC, despite the fact that it is originally a lexical verb. If the verb merges as Asp, FI from v = ha^{KR}/su^{JP} to the lexically filled Asp does not take place, and the underlying VO order maintains.

38.

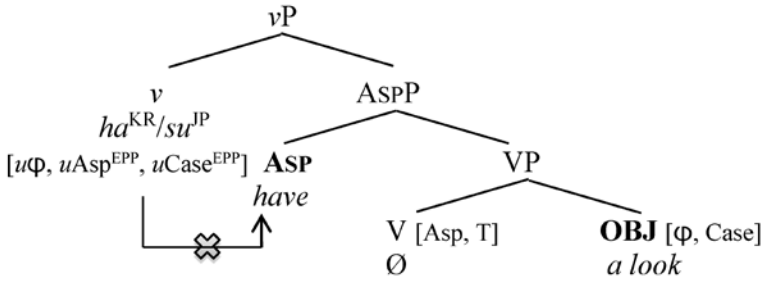


Thus, the proposal that the English HV in an LVC may merge either as V or as Asp accounts for the results from the KE and JE CS judgment task, showing that the preferred word order of most examples was not biased towards either OV or VO order and both orders are possible derivations in an LVC with a HV.

4.6. VO with an English Light Verb in a Light Verb Construction

In an LVC where an English LV takes an object (e.g., *have a look*), the average percentage of VO order preference was 69% in KE CS and 71% in JE CS. The proposal that an English LV is base-generated as Asp correctly accounts for the surface VO-*ha/su* order; FI from v = ha^{KR}/su^{JP} to the lexically filled Asp is blocked, and the object remains *in situ*, as illustrated in (39).

39.



4.7. Reanalyzing English Light Verbs

Overall, the study found LVs and HVs behave differently in CS. Except for idiomatic phrases, a code-switched phrase with an English HV was preferred in OV order, whereas with an English LV it was generally preferred in VO order in all phrase types, including in an LVC and in a literal interpretation. Under the proposal that English LVs and HVs merge under Asp and V, respectively, this is a welcome result. However, there were instances in which OV order was preferred with an LV. Assuming that LVs lexicalize the Asp head, this is unexpected. Especially, the strong OV order preference for some code-switched phrases with an LV suggests that the verb is instead used as a HV and base-generated as V in those cases. In what follows, detailed analyses of the verbs *keep* and *hold* are provided based on the results from the KE CS judgment task. For other LVs investigated in this study, readers are asked to refer to previous work by Shim ([9]).

4.7.1. Keep

Similar to *have* and *get*, a phrase with the verb *keep* was also mostly preferred in VO order in KE CS 5 out of 6 times, suggesting that *keep* is also an LV (see Table 1). However, there was one instance that had a noticeably different pattern.

Table 1. Item-based analysis for *KEEP* in KE CS.

Code-Switched Phrase	Phrase Type	Preferred Word Order	% VO	# of Occurrences
keep close watch	LVC	VO	93	13
keep track	LVC	VO	93	13
keep your cool	Non-Lit	VO	79	11
keep a respectful manner	Lit	VO	71	10
keep a civil tongue	Non-Lit	VO	71	10
keep your receipt	Lit	OV	0	0

Not only was the phrase *keep your receipt* preferred in the OV order, in contrast to the predominance of VO order in the case of the verb *keep*, but OV order was also unanimously favored by all KE and JE bilingual speakers. While both *keep your receipt* and *keep a respectful manner* are interpreted literally, it is only the former that was preferred in OV order. What makes the verb *keep* in *keep your receipt* very different from *keep a respectful manner* and other instances?

In (19), the verb *keep* was proposed to be an LV, representing *keep* = CAUS + BE. While this analysis can represent the meaning of the verb *keep* in most phrases, including *keep a respectful manner,* it does not seem to convey the meaning of the verb in *keep your receipt*, in which the verb is interpreted as 'to retain or to save', suggesting *keep* in *keep your receipt* is not as light as *keep* in other examples. And this contrast is reflected in OV and VO order preference in CS, respectively.

The difference in relation to *keep* in *keep your receipt* compared to other uses of the verb is not just limited to its semantics. The verb *keep* in *keep your receipt* arguably selects a secondary predicate, as in *keep your receipt with you*. I propose that the verb *keep* in *keep your receipt* takes a small clause headed by a null preposition as its complement, shown in (40).

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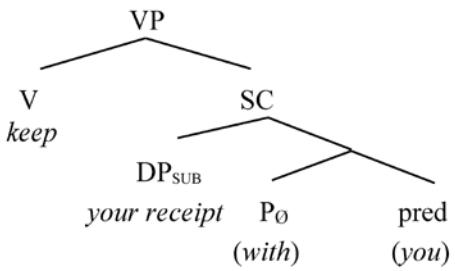

In (40) the verb *keep* merges under V rather than Asp, and takes a null-headed small-clause complement, in which *your receipt* is the subject of the null predicate. What is crucial is that *keep*

base-generates as V, not Asp, based on the fact that a small clause is selected only by V, but nothing else (*cf.* Kayne [74]). Thus, the verb *keep* here is not an LV but a HV taking a small-clause complement and OV order is derived in KE and JE CS.

4.7.2. Hold

In (19), the verb *hold* was included as an English LV, decomposed into CAUS + BE, which is also proposed as the structure for a synonymous verb, *keep*. However, the results from the CS judgment test revealed a big contrast between these two verbs. While *keep* behaved as an LV in most cases, exhibiting the verb phrase with the inclusion of *keep* was preferred in VO order in CS, except when it was used as a HV meaning 'to retain', OV order prevailed with *hold* in both KE and JE CS, shown in Table 2.

Table 2. Item-based analysis for *HOLD* in KE CS.

Code-Switched Phrase	Phrase Type	Preferred Word Order	% VO	# of Occurrences
hold water	Non-Lit	VO	71	10
hold water	Lit	neither OV or VO	43	6
hold the bowl	Lit	OV	29	4
hold the fort	Non-Lit	OV	29	4
hold a conversation	LVC	OV	29	4
hold a debate	LVC	OV	21	3

The contrast between *hold* and the rest of the verbs classified as LVs in the study highlights the word order contrast in an LVC; none of the LVCs with other LVs were favored in OV order, whereas the two *hold* LVCs (*hold a conversation*, *hold a debate*) were preferred in OV order, similar to the patterns observed in a number of LVCs with various HVs. This suggests that *hold* is not an LV but a HV.

While *hold* and *keep* are usually considered to be synonyms, Levin [75] makes a subtle distinction between *hold* verbs (e.g., *clasp*, *clutch*, *grasp*, *handle*, *hold*, *wield*) and *keep* verbs (e.g., *hoard*, *keep*, *leave*, *store*); while the former describes "prolonged contact with an entity", the latter relates to "maintaining something at some location" (pp. 145–146). Along these lines, while the decomposed structure, CAUS + BE, can represent the meaning of the light verb *keep*, maintaining something, it may not reflect the extra semantic information contributed by *hold*.

Although I have no further insights to offer as to how such subtle differences among diverse near-synonymous verbs are encoded in the argument structure, the heavy *vs.* light distinction of verbs is not only a matter of lexical semantics, but is reflected in the syntactic structure, as evidenced by word order variation in CS. This is certainly a very interesting finding presented by the present CS research, one that would not perhaps have emerged from the study of monolingual data alone.

5. Conclusions

The main purpose of this study was to investigate mixed verb constructions in CS in two typologically similar language pairs, Korean-English and Japanese-English. Especially, the role of light verbs, in comparison with heavy verbs, was explored as to its contribution to OV~VO variation in KE and JE CS. In addition, the role of syntactic flexibility of a code-switched phrase was also investigated, assuming that while the internal argument of a syntactically flexible VP is subject to CS, a less flexible phrase undergoes CS as a unit.

The pattern of the results found in the CS judgment task and the syntactic flexibility judgment task from 28 KE and 8 JE bilingual speakers confirms the two research hypotheses that (i) the selection of an English HV or an LV within a code-switched constituent leads to OV~VO variation, and (ii) syntactically flexible and less flexible phrases also result in OV~VO variation in CS.

To conclude, there are several implications of the findings of the present study for an understanding of bilingual LVCs and their linguistic creativity as well as human language forms in general. As argued in this study, LVs may not represent the same syntactic category across languages;

for instance, Korean- and Japanese-type LVs lexicalize the functional category *v*, whereas English-type LVs realize Asp. With access to a larger set of functional categories drawn from different languages, which may vary in their morphological forms, bilingual speakers are able to construct a wider range of LVCs, whose patterns may not be found in monolingual grammar. Otherwise, bilinguals are just like monolinguals in the sense that their grammars also reflect Universal Grammar, which is claimed to govern monolingual grammars in generative linguistics. Thus, CS provides us with richer data to test with stronger confidence the validity of various linguistic theories and proposals primarily intended to account for the grammatical patterns of monolingual grammar. By studying the diverse and creative patterns of CS, we are at a better disposal to understand how languages are parameterized similarly or differently in a given domain, the very topic that generative linguists have pursued for a long time.

Acknowledgments: I would like to thank the editors, Usha Lakshmanan, Osmer Balam and Tej K. Bhatia, and other anonymous reviewers for their comments and suggestions at various stages of revising the paper. This study was funded by three different grants, a Doctoral Dissertation Improvement Grant from the National Science Foundation (BCS-1023709), a Sponsored Dissertation Fellowship and a Doctoral Research Grant from the CUNY Graduate Center, which are also gratefully acknowledged.

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

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