Crosslinguistic Influence on the Korean Reflexive *Caki*: Potential Effects of L2 English on L1 Interpretation

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ABSTRACT

This study explores bidirectional crosslinguistic influence in the interpretation of reflexive pronouns, with a focus on whether L2 English experience induces a regressive L2-to-L1 influence among Korean and Azerbaijani learners. Whereas the English reflexives *himself/herself*, the Korean *caki-casin*, and the Azerbaijani *öz* follow strict syntactic constraints that allow only clause-mate antecedents, the Korean reflexive *caki* involves additional semantic and discourse factors, making it potentially more susceptible to crosslinguistic influence. Eighty-four L2 English learners (44 L1-Korean, 40 L1-Azerbaijani) completed a picture-based truth-value judgment task in English and in their respective L1s. The task manipulated context (long-distance vs. local) and pronominal type (simple vs. reflexive pronoun). Results showed that all learner groups performed in a target-like manner in English. In their L1, the Azerbaijani participants and Korean participants tested on *caki-casin* demonstrated consistent local binding, whereas the Koreans tested on *caki* exhibited considerable variability. Notably, Korean participants with higher proficiency in English showed stricter and more monolithic categorical interpretation patterns—favoring long-distance bindings while disallowing local bindings—than did lower-proficiency participants, suggesting that exposure to L2 English may modulate L1 interpretive preferences. Based on these results, we suggest that *caki* may be particularly susceptible to crosslinguistic influence.

Keywords: reflexive pronoun interpretations, Korean, Azerbaijani, crosslinguistic influence, interface vulnerability

1. Introduction

In language acquisition research, the interpretation of reflexive pronouns has been a central topic across multiple disciplines, serving as a testing ground for

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investigating innate linguistic knowledge (Chien & Wexler, 1990), examining parser development as a "promising syntactic phenomenon" (Omaki & Lidz, 2015, p. 182), and exploring crosslinguistic influence as an "ideal case to test L1 [first language] transfer" (Kim & Joo, 2021, p. 1531). The present study examines reflexive pronoun interpretation within the framework of crosslinguistic influence,[1] extending this framework to investigate how nonnative language experience affects L1 reflexive interpretation.

An important insight supported by bilingualism research (e.g., Cook, 2003; Jarvis & Pavlenko, 2008) is that crosslinguistic influence is not unidirectional. All of a multilingual speaker's languages coexist within a dynamically interactive system, particularly when each language is maintained at a relatively high level of proficiency (Herdina & Jessner, 2002). Consequently, just as L2 interlanguage is assumed to originate from the L1 (Schwartz & Sprouse, 1996), it may also feed back into previously acquired languages—an issue that is the focus of this study.

While crosslinguistic influence is theoretically important in second language acquisition and bilingualism, many previous studies examining this phenomenon suffer from methodological limitations, particularly the failure to include multiple L1 groups (Jarvis, 2000).[2] In the Korean context, for example, previous studies have largely argued for L1 transfer based on a single L1 group (e.g., Hahn, 2000; Kim & Schwartz, 2022), while an increasing number of recent studies have examined how learners from distinct L1 backgrounds differ in their interlanguage performance when learning the same L2 (e.g., Nam, 2020; Kim & Joo, 2021; Sung, Kim, & Nam, 2024).

To address this gap, the present study investigates how native speakers of Azerbaijani and Korean interpret English reflexive pronouns and their L1 reflexives. Comparing these two groups provides an ideal testing ground for crosslinguistic influence, as Azerbaijani and Korean differ markedly in their reflexive systems

1) The terms transfer and crosslinguistic influence are often used interchangeably in second language acquisition research. Transfer refers to "reduplication from previously acquired linguistic representations" (Rothman, González Alonso, & Puig-Mayenco, 2019, p. 24), whereas crosslinguistic influence encompasses cross-language interference that occurs during processing. The present study, which examines whether prior L2 experience affects L1 reflexive interpretation, aligns more closely with the notion of crosslinguistic influence than with transfer. Accordingly, while the term transfer will be used when referring to previous studies, crosslinguistic influence will be adopted when describing the current study.

2) Jarvis (2000) notes that empirical studies testing L1 transfer should demonstrate (a) intra-L1-group similarities in learners' interlanguage performance, (b) intra-L1-group similarities between learners' L1 and interlanguage performance, and (c) inter-L1-group heterogeneity in learners' interlanguage performance.

despite sharing several typological properties—such as SOV (Subject-Object-Verb) word order, the use of inflectional morphology to mark grammatical relations, and similar relative clause formation patterns.

As illustrated in (1a), English reflexives must take a local antecedent within the same clause (*himself=Peter*); it cannot be co-referential with an antecedent outside the clause, as shown in (1b) (*himself* ≠ *John*).

(1) a. Local antecedent:
John$_1$ thinks [Peter$_2$ trusts himself$_2$].

b. Long-distance (LD) antecedent:
*John$_1$ thinks [Peter$_2$ trusts himself$_1$].

Likewise, in Azerbaijani, the reflexive pronoun *öz* 'self' must be bound by a local antecedent, as shown in (2a), while a long-distance (LD) antecedent, as in (2b), is ungrammatical (Huseynzade, 2007).

(2) a. Local antecedent:

Con$_1$ [Piterin$_2$	özünə$_2$	güvəndiyini]	düşünür.
John Peter	self-ACC[3)]	trust	think

'John thinks that Peter trusts himself.'

b. LD antecedent:

*Con$_1$ [Piterin$_2$	özünə$_1$	güvəndiyini]	düşünür.
John Peter	self-ACC	trust	think

'John$_1$ thinks that Peter$_2$ trusts self$_1$.'

On the other hand, Korean possesses both local and LD reflexive pronouns (Lee, 2005). As shown in (3a-b), *caki-casin* functions like the English reflexives *himself/herself* or the Azerbaijani *öz* 'self', allowing only a local antecedent. In contrast, as illustrated in (4a-b), *caki* can take either a local or a LD antecedent, though it tends to favor the latter (Joo, 2015).

(3) a. Local antecedent:

3) Abbreviations used for the glosses in this study: ACC=Accusative marker; COMP=complementizer; DECL=Declarative marker; NOM=Nominative marker; PRES=present tense marker; TOP=Topic marker.

John$_1$-un [Peter$_2$-ka caki-casin$_2$-ul mitnunta-ko] saykakhan-ta.
John-TOP Peter-NOM self-ACC trust-COMP think-DECL
'John thinks that Peter trusts himself.'

b. LD antecedent:
*John$_1$-un [Peter$_2$-ka caki-casin$_1$-ul mitnunta-ko] saykakhan-ta.
John-TOP Peter-NOM self-ACC trust-COMP think-DECL
'John$_1$ thinks that Peter$_2$ trusts self$_1$.'

(4) a. local antecedent:
John$_1$-un [Peter$_2$-ka caki$_2$-lul mitnunta-ko] saykakhan-ta.
John-TOP Peter-NOM self-ACC trust-COMP think-DECL
'John thinks that Peter trusts himself.'

b. LD antecedent:
John$_1$-un [Peter$_2$-ka caki$_1$-lul mitnunta-ko] saykakhan-ta.
John-TOP Peter-NOM self-ACC trust-COMP think-DECL
'John$_1$ thinks that Peter$_2$ trusts self$_1$.'

Building on crosslinguistic patterns—namely, the syntactic constraint that allows only local antecedents in Korean *caki-casin*, English *himself/herself*, and Azerbaijani *öz*, but permits optionality in Korean *caki*, which allows both local and LD antecedents—this study explores whether L2 English experience influences the interpretation of L1 reflexive pronouns, focusing on Korean *caki*. Such differences in performance would provide novel evidence for the conditions—specifically, the interface condition (Hulk & Müller, 2000; Sorace & Filiaci, 2006; see Section 2.3)—under which crosslinguistic influence occurs, which will be discussed in the next section.

2. Literature Review

2.1. Previous studies on L1-to-L2 influence in the reflexive interpretation

Research on languages that permit both local and long-distance (LD) interpretations of reflexive pronouns has sought to determine whether L1 transfer plays a role in the acquisition of L2 reflexives. Thomas (1989) argues against L1 transfer, suggesting

that learner errors in L2 reflexive interpretation cannot be explained by L1 influence. Likewise, Yoshikawa (1993) maintain that L1 effects are minimal, based on findings that L2 learners showed no significant crosslinguistic variation in reflexive interpretation, indicating limited transfer effects. Meanwhile, Finer and Broselow (1986) propose that learners may arrive at a grammar of reflexives that represents neither their L1 nor the L2.

Despite such claims against L1 transfer, the majority of empirical studies interpret their findings in terms of L1 transfer. Research by Kim (1994) and Thomas (1995) indicates that L2 learners initially transfer their L1 knowledge on reflexive pronouns but gradually approach native-like comprehension and acceptability in the L2 over time. For example, in studies on the L2 acquisition of Chinese, Japanese, and Korean reflexives, learners whose L1 allows only local binding (e.g., English) tend to prefer local interpretations of Chinese LD reflexive *ziji* (Li & Zhou, 2010), Japanese LD reflexive *zibun* (Omaki et al., 2015), and Korean LD reflexive *caki* (Lee, 2012). This preference for a local antecedent, however, has also been interpreted as a form of processing amelioration rather than as evidence of L1 transfer. Evidence from L1 acquisition supports this interpretation: Chinese children often fail to interpret LD reflexive *ziji* even at age eight (Chien & Lust, 2006).

Clearer evidence in favor of L1 transfer comes from a study that followed Jarvis's (2000) method to test L1 transfer, which involves comparing multiple L1 groups. For example, Kim and Joo (2021) compared how L1-Chinese and L1-Russian children learning L2 Korean differ in their interpretation of the Korean reflexives *caki* and *caki-casin*. Note that Chinese is similar to Korean in having both local and LD reflexives, whereas Russian has only local reflexives. The results show that L1-Chinese children exhibited target-like interpretations consistent with their L1 reflexives, while only high-proficiency L1-Russian children exhibited partial convergence, providing evidence of L1 transfer effects.

Methodologically, earlier studies on the L2 acquisition of reflexives typically asked participants to identify antecedents in isolated sentences. For instance, early work often used tasks such as multiple-choice tests (Thomas, 1989; Yuan, 1998) or forced-choice comprehension tasks, where learners chose the intended antecedent of a reflexive (Cook, 1990). More recent research, however, emphasizes interpretation within discourse contexts (Chen, 2024), using the Truth Value Judgment Task (TVJT), which situates sentences in a context and requires participants to evaluate whether a given interpretation holds true. Chen (2024) categorizes TVJTs into three types: picture-based (e.g., Chen & Ionin, 2023; Lee, 2005), story-based (Slabakova

et al., 2017; Wu et al., 2020), and hybrid tasks combining both (Kim & Joo, 2021). In the hybrid version, participants read or listen to illustrated stories and judge whether the story matches the target sentence. Domínguez et al. (2012) note that story-based TVJTs can be overly demanding for lower-level learners, leading them to substitute them with a picture verification task in their study. Considering our objective—to compare proficiency-matched L1-Azerbaijani and L1-Korean learners across different proficiency levels—we employed a picture-based TVJT modeled after Chen and Ionin (2023).

2.2. Previous studies on L2-to-L1 influence in the reflexive interpretation

Crosslinguistic influence is bidirectional, encompassing influence from L2 to L1 as well. A seminal study examining how a later-acquired language affects L1 reflexive interpretation is Kim, Montrul, and Yoon (2009). Kim et al. conducted a TVJT to examine how Korean heritage speakers in the United States (n=51) interpret reflexives in bi-clausal Korean sentences. Their L1, or heritage language, was Korean, whereas their dominant and more proficient language was English. The heritage speakers were further divided by age of English onset into early bilinguals (n=22) and late bilinguals (n=29). The results showed that all groups preferred a local antecedent for *caki-casin*. However, for *caki*, the late bilinguals demonstrated a strong preference for long-distance (LD) binding—accepting it in over 90% of cases—while largely rejecting local binding (24% and 13%, respectively). In contrast, early bilinguals accepted local binding 80% of the time and LD binding 45% of the time. Kim et al. concluded that the early bilinguals' greater acceptance of local binding for *caki* reflects transfer from their dominant language, English, which allows only local binding of reflexives.

Research on third language (L3) acquisition and language attrition also highlights the dynamic and bidirectional nature of crosslinguistic influence. While most L3 acquisition studies have focused on forward transfer—that is, the influence of the L1 on the L2 interlanguage or of the L2/L1 on the L3 interlanguage (see Schwartz & Sprouse, 2021, for a theoretical review; Puig-Mayenco, González Alonso, & Rothman, 2020, for an empirical review)—more recent research has begun to examine regressive transfer, in which later-acquired languages influence earlier ones. Reflexive interpretation has received particular attention as a testing ground for such regressive transfer (Ahn & Mao, 2019; Kim, Ahn, & Lim, 2025). For example, Ahn and Mao (2019) investigated the effects of L3 regressive transfer on L2 English

reflexive interpretation. English reflexives permit only local antecedents, whereas Chinese and Korean LD reflexives allow both local and LD interpretations. Ahn and Mao examined how knowledge of L3 Korean influences L2 English reflexive interpretation. Results from a TVJT showed that learners with L3 Korean (i.e., Chinese-English-Korean L3 learners) performed differently from those without it (i.e., Chinese-English L2 learners), indicating regressive transfer from L3 Korean.

Research on language attrition investigates L2-to-L1 influence as one of the primary sources of L1 attrition (Schmid & Köpke, 2017). Notably, this line of research has emphasized that certain linguistic phenomena are particularly susceptible to crosslinguistic influence. The following section discusses why the Korean reflexive *caki* may be more vulnerable to such influence than Korean reflexive *caki-casin* or Azerbaijani *öz*.

2.3. The Korean reflexive *caki* as a form susceptible to crosslinguistic influence

The Interface Hypothesis (Sorace, 2011; Sorace & Filiaci, 2006), one of the important theoretical proposals within generative approaches to second language acquisition (Rothman & Slabakova, 2018), proposes that grammatical phenomena located at multiple interfaces (e.g., syntax-discourse) are acquired more slowly and are more vulnerable to attrition. For instance, Sorace and Filiaci (2006) examined how near-native L2 learners interpret intrasentential anaphora in Italian. Participants judged pictures corresponding to sentences containing either overt or null subject pronouns in bi-clausal structures. The L2 group showed native-like interpretations for null pronouns but diverged from native speakers in their interpretation of overt pronouns, which require syntax-discourse interface processing. These findings suggest that near-native speakers have acquired the syntactic constraints on pronouns but still exhibit residual variability at the interface between syntax and discourse. Based on such evidence, Sorace argues for the validity of the Interface Hypothesis in both second language acquisition and language attrition.

Hulk and Müller (2000) made a similar proposal, exploring the conditions under which crosslinguistic influence occurs in simultaneous bilingual children. They argue that such influence arises only when an interface between grammatical modules (e.g., the syntax-pragmatics interface) is involved. Based on data from bilingual Dutch-French and German-Italian children, compared with monolinguals, they argued that crosslinguistic influence stems from internal linguistic factors rather than external ones such as language dominance (however, later studies emphasized the

important role of language dominance in crosslinguistic influence, as discussed in Kim, Montrul, and Yoon (2009); see also Bosch and Unsworth (2021), who directly test the role of dominance in crosslinguistic influence).

The claims of both Sorace and Filiaci (2006) and Hulk and Müller (2000) lead to an an interesting prediction: the Korean reflexive *caki* is susceptible to crosslinguistic influence. While the English reflexives, the Korean reflexive *caki-casin*, and the Azerbaijani reflexive *öz* follow syntactic constraints (i.e., the reflexive refers to a clause-mate antecedent) relatively strictly, the Korean reflexive *caki* does not. Instead, *caki* shows interpretive variability because its reference is mediated by multiple sources—syntactic binding, verb-class semantics (Joo, 2015), and discourse cues (Joo & Deen, 2019). See (5) for an example.

(5) a. DAV (distant antecedent-biased verbs) sentence example
Minwoo-ka$_1$ [Soi-ka$_2$ caki-lul$_{1/?2}$ kyengkyeyha-n-ta-ko] malhay-ss-eyo.
Minwoo-NOM Soi-NOM self-ACC cautious-PRE-DEC-COMP say-PST-DEC
'Minwoo$_1$ said that Soi$_2$ is cautious about self$_{1/?2}$.'

b. LAV (local antecedent-biased verbs) sentence example
Minwoo-ka$_1$ [Soi-ka$_2$ caki-lul$_{?1/2}$ hensinha-n-ta-ko] malhay-ss-eyo.
Minwoo-NOM Soi-NOM self-acc dedicate-PRE-DEC-COMP say-PST-DEC
'Minwoo$_1$ said that Soi$_2$ dedicates self$_{?1/2}$.'

(Joo, 2015, p. 403)

As shown in (5a-b), the meaning of the verb influences the interpretation of *caki*. Joo (2015) categorized verbs into distant antecedent-biased verbs (DAVs) and local antecedent-biased verbs (LAVs) and experimentally demonstrated that DAVs lead *caki* to LD interpretations, whereas LAVs lead *caki* to local interpretations. For example, the matrix verb *kyengkyeyha* 'be cautious' in (5a) favors a LD antecedent, whereas *hensinha* 'dedicate' in (5b) favors a local antecedent. Now see (6) for the role of discourse context in *caki* interpretation.

(6) Yemso-ka$_1$ kkalkkaltaymye wus-ess-eyo. Hmm…
goat-NOM$_1$ joyfully laugh-PST-SES hmm…
'Goat$_1$ laughed joyfully.' Hmm…

Pheyngkwin-i$_2$ caki$_{1/2}$/caki-casin$_{*1/2}$-ul wuskiey

penguin-NOM self-ACC comically

kulyesski ttaymwun-i-lay-yo.
drew because-be-REP-SES
'(It was) because Penguin$_2$ drew self$_{1/2}$ comically.'
(Joo & Deen, 2019, p. 644)

As shown in (6), *caki* can refer either to *pheyngkwin* 'penguin' within the sentence or even to *yenso* 'goat' in the preceding discourse. Thus, the broader discourse context can serve as a cue for identifying the appropriate antecedent. In contrast, *caki-casin* can refer only to *pheyngkwin* 'penguin' within the sentence, with the discourse context playing no role in determining its antecedent.

All in all, if L2 English experience affects L1 reflexive interpretation, the following predictions can be made. First, based on the claim that crosslinguistic influence tends to occur in linguistic phenomena involving interfaces (Hulk & Müller, 2000; Sorace & Filiaci, 2006), L1-Korean learners of English may exhibit a non-target-like interpretation of the reflexive *caki*, which is assumed to be particularly susceptible to crosslinguistic influence when speakers are actively using L2 English. This susceptibility may stem from the fact that *caki* requires a flexible interpretive process in which multiple grammatical modules—syntax, semantics, and discourse—jointly determine its interpretation. Second, drawing on previous studies suggesting that language dominance—or high language proficiency—plays a key role in crosslinguistic influence (Bosch & Unsworth, 2021; Kim, Montrul, & Yoon, 2009), if L2 English influences the L1 reflexive interpretation, a proficiency effect may emerge in the interpretation of the L1-Korean reflexive *caki*, such that higher English proficiency would lead to stronger and more non-target-like effects. To the best of our knowledge, these predictions have not yet been empirically explored within the domains of second language acquisition, bilingualism, or L1 attrition, thereby revealing a clear gap in the existing literature. We thus address the following research question: Does immediate L2 English activation (i.e., priming from prior L2 sentences) lead to non-target-like interpretations of the L1-Korean reflexive *caki*? Furthermore, is the extent of this priming effect modulated by L2 English proficiency?

3. Method

3.1. Participants

Forty-four L1-Korean L2 learners of English and 40 L1-Azerbaijani L2 learners of English took part in this study. As a control group, 12 native English controls participated. The 84 L2 participants were divided into two proficiency groups based on their cloze test scores (max=50; cut-off score dividing the two proficiency groups=21.8), which will be explained in Section 3.2. The average scores suggest that the higher-proficiency groups correspond, on average, to CEFR levels B2-C1, whereas the lower-proficiency groups correspond, on average, to CEFR level B1 (Lee, 2025). All participants reported that their L1 was either Korean or Azerbaijani. The majority of participants (37 out of 40 Azerbaijani speakers; 25 out of 44 Korean speakers) reported knowing three or four languages, including their L1 and English. It is noteworthy that the non-native languages (excluding English) with the highest frequencies are Japanese (19 participants) and Chinese (7 participants) for the L1-Korean learners, and Turkish (23 participants) and Russian (13 participants) for the L1-Azerbaijani learners. Given that Chinese and Japanese possess reflexives that allow both long-distance (LD) and local interpretations, whereas Turkish and Russian restrict reflexive interpretation to local domains, there may be potential L3 influence on learners' L2/L1 interpretive patterns. We leave this possibility for future research. Background information for both groups of participants is summarized in Table 1.

3.2. Materials

The L1-Azerbaijani and L1-Korean speakers completed two TVJTs: one in English and the other in their respective L1s. Each item in the TVJT presented a picture-sentence pair, and participants were instructed to decide whether the two conveyed the same meaning (TRUE) or not (FALSE). Each item appeared only once, and learners were not allowed to revisit previous responses. Before beginning the task, participants completed a practice trial to familiarize themselves with the procedure.

Table 1. Participant background information

	L1-Korean learners (*n*=44)		L1-Azerbaijani learners (*n*=40)	
	Higher (*n*=22)	Lower (*n*=22)	Higher (*n*=16)	Lower (*n*=24)
Age (year)	28.6 (*SD*=4.2)	31.7 (*SD*=4.3)	26.5 (*SD*=5.1)	25.6 (*SD*=4.1)
Gender	11 Females 11 Males	14 Females 8 Males	10 Females 6 Males	10 Females 14 Males
English proficiency score (out of 50)	35.5 (*SD*=6.8)	9.8 (*SD*=5.5)	33.1 (*SD*=9.1)	9.3 (*SD*=7.0)
Nonnative languages other than English they know	Japanese (10) Chinese (6) German (1) Russian (1)	Japanese (9) French (4) Chinese (1) German (1) Spanish (1) Italian (1)	Turkish (9) Russian (6) Korean (3) French (2) Talish (1) German (1)	Turkish (14) Russian (7) German (4) Korean (3) French (1) Italian (1) Arabic (1) Talish (1)

In the English TVJT, participants were tested on their interpretation of reflexive pronouns (*himself/herself*) in contrast to simple object pronouns (*him/her*). The use of simple pronouns served as a baseline for comparing the interpretation of reflexives. Note that English simple pronouns contrast with reflexives in their choice of antecedents in bi-clausal sentences: the former takes a long-distance (LD) antecedent, whereas the latter takes a local antecedent. For example, in *John thinks that Peter trusts himself*, the reflexive *himself* refers only to the local antecedent *Peter*, whereas in *John thinks that Peter trusts him*, the simple pronoun *him* refers only to the LD antecedent *John*.

Figure 1 illustrates a sample item from the English TVJT used in this study. This task served as an experimental item for both L1-Azerbaijani and L1-Korean learners of English, assessing their interpretation of reflexive and simple pronouns in either a local or a LD binding context.

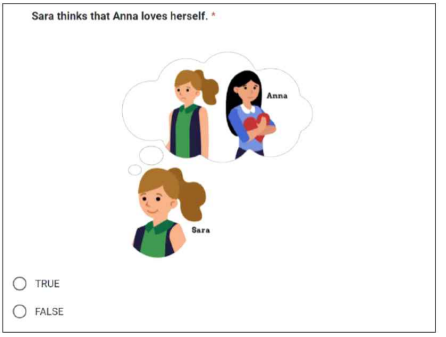

Figure 1. An example of English TVJT, showing a reflexive pronoun in a local context condition (Target=True).

The target items were constructed by crossing two independent variables—pronominal type (simple pronoun vs. reflexive pronoun) and context (LD context vs. local context)—resulting in four experimental conditions: Simple pronoun in a LD context condition (e.g., *Sarah thinks that Anna loves her*; the picture depicting Anna loves Sarah; the target answer is TRUE), Simple pronoun in a local context condition (e.g., *Sarah thinks that Anna loves her*; the picture depicting Anna loves Anna herself; the target answer is FALSE), Reflexive pronoun in a LD context condition (e.g., *Sarah thinks that Anna loves herself*; the picture depicting Anna loves Sarah; the target answer is FALSE), Reflexive pronoun in a local context condition (e.g., *Sarah thinks that Anna loves herself*; the picture depicting Anna loves Anna herself; the target answer is TRUE). To enhance the validity and reliability of the experimental findings, a Latin Square design was employed, yielding four counterbalanced experimental lists. Each list contained 32 sentences, including 16 experimental items (i.e., 4 items in each condition) and 16 filler items, arranged in a randomized sequence. The filler items did not contain reflexive pronouns; however, to prevent them from appearing noticeably different, several distractor items mirrored the bi-clausal structure of the target sentences (e.g., *Tom thinks that it was John who brought the cake*.)

After the English TVJT, the L1-Azerbaijani and L1-Korean participants completed a TVJT in their respective L1s to examine how they interpret simple and reflexive pronouns in their native languages. For both the Azerbaijani and Korean TVJTs, test items were constructed analogously to the English TVJT by crossing two factors: pronominal (simple pronoun vs. reflexive pronoun) and context (LD vs. local). See

Figure 2 for the examples of L1 TVJT.

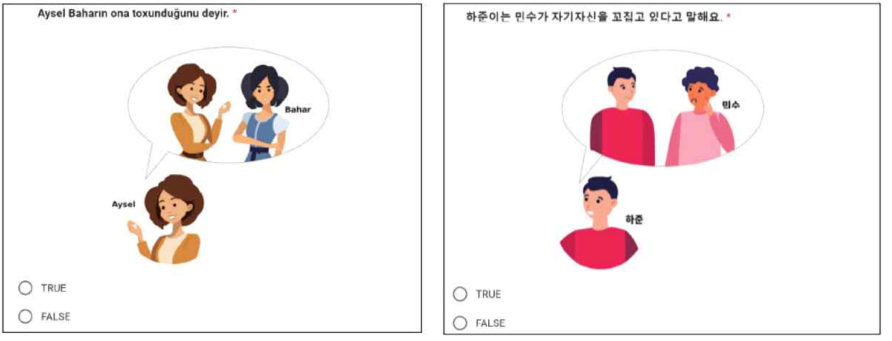

Figure 2. Examples of L1 TVJT (left: Azerbaijani, right: Korean).

It is important to note that two separate Korean TVJTs were created: one using *caki-casin* as the reflexive type and the other using *caki*. The 44 Korean participants were randomly divided into two groups, each completing one of the tasks. We employed this between-subjects design to more accurately examine whether prior English experience in the English TVJT affects the interpretation of *caki* but not *caki-casin*. A within-subjects design was avoided, as we were concerned that exposure to both *caki* and *caki-casin* within the same session might lead to cross-item influence between the two reflexive types. Appendix A includes all the experimental items for the TVJT and (7a-c) summarize the design and order of the English TVJT and L1 TVJTs.

(7) a. TVJTs conducted by L1-Azerbaijani (*n*=40)
L2 English TVJT [Pronominal (simple pronoun *him/her* vs. reflexive *himself/herself*) × Context (LD vs. local)]
→ L1 Azerbaijani TVJT [Pronominal (simple pronoun *on* vs. reflexive *öz*) × Context (LD vs. local)]

b. TVJTs conducted by half of L1-Korean (*n*=22)
L2 English TVJT [Pronominal (simple pronoun *him/her* vs. reflexive *himself/herself*) × Context (LD vs. local)]
→ L1 Korean TVJT (***caki-casin*** version) [Pronominal (simple pronoun

ku/kunye vs. reflexive ***caki-casin***) × Context (LD vs. local)]

c. TVJTs conducted by the other half of L1-Korean (*n*=22)
L2 English TVJT [Pronominal (simple pronoun *him/her* vs. reflexive *himself/herself*) × Context (LD vs. local)]
→ L1 Korean TVJT (***caki*** version) [Pronominal (simple pronoun *ku/kunye* vs. reflexive ***caki***) × Context (LD vs. local)]

Note that the interpretation of *caki-casin* and Azerbaijani *öz* aligns with that of English reflexives, allowing only a local antecedent. Given this similarity, it is difficult to determine whether the target-like interpretation of reflexives in the English TVJT would affect subsequent interpretations of *caki-casin* or *öz*. In contrast, *caki* differs from English reflexives in that it allows both local and LD antecedents, though it shows a preference for the latter. It resembles English simple pronouns in its LD preference, but it differs in that it also allows a local antecedent, whereas English simple pronouns do not. That is, the interpretation of *caki* differs from that of both English reflexives and simple pronouns. Therefore, if L2 English experience influences L1 Korean, such an effect would most likely be observed in the TVJT involving *caki*, which, as discussed in Section 2.3, may be also particularly susceptible to crosslinguistic influence.

To assess the English proficiency levels of all participants—both L1-Azerbaijani and L1-Korean learners of English, as well as native English speakers—the study employed a Cloze Test adapted from Brown (1980). Their results were subsequently used to classify the L2 learners into higher- and lower-proficiency groups. The cloze test consisted of a single passage from which 50 words were systematically deleted. Participants were instructed to read the passage for overall meaning and then fill in each blank with one appropriate word, guided by the contextual cues of the text. Finally, a language background questionnaire was administered to gather detailed information about the participants, covering participants' general background, educational history, and patterns of English use.

3.3. Procedure

The English and L1 versions of the TVJT and the language background questionnaire were all created and administered through Google Forms, while the

proficiency test (Cloze test) was hosted on a separate online platform. Each participant received individual task links along with detailed instructions outlining the procedure. The experimental group completed the tasks in the following order: (1) English TVJT, (2) L1 TVJT, (3) translation task (in which participants translated English sentences into their L1s; the results are not presented here because of space constraints and limited relevance) (4) proficiency test, and (5) language background questionnaire. Note that the English TVJT was administered before the L1 task in order to explore the effect of recent L2 activation on L1 interpretation. This ordering is consistent with psycholinguistic accounts of structural priming in bilinguals (e.g., Hopp & Grüter, 2023). On average, the entire procedure took about one hour for the L2 English participants. Participation was entirely voluntary, and all participants provided written informed consent prior to taking part. Upon completing all tasks, they received a monetary compensation for their participation.

3.4. Data analysis

First, the results from the TVJT were analyzed following the procedure used in previous studies (e.g., Chen & Ionin, 2023; Kim & Joo, 2021). For each condition, the number of TRUE responses was summed, where a TRUE response indicated that the participant accepted the use of a reflexive or simple pronoun in a particular context (LD vs. local). Each TRUE response was assigned a score of 1, and each FALSE response a score of 0. These raw scores were then averaged for each participant group and converted to percentages.

For the data analysis, we used the lme4 package (Bates et al., 2015) in R (R Core Team, 2025). A binomial generalized linear mixed-effects model was fitted to the judgment data to examine the effects of L1 group (Azerbaijani vs. Korean), context (LD vs. local), pronominal type (simple pronoun vs. reflexive pronoun), and proficiency (higher vs. lower), as well as their interactions. All fixed factors were contrast-coded and centered around the mean. Random intercepts were included for both participants and items. We initially constructed the maximal random-effects structure permitted by the design (Barr, Levy, Scheepers, & Tily, 2013) and then in case the model failed to converge, we simplified it by removing random slopes associated with participant and/or item.

4. Results

4.1. English TVJT

As illustrated in Figures 3 and 4, the native English controls as well as the two L1-groups showed target-like patterns in their interpretations of English simple pronouns and reflexives, judging long-distance (LD) interpretations of simple pronouns (*him/her*) and local interpretations of reflexives (*himself/herself*) as acceptable. For example, native English speakers accepted LD binding for simple pronouns 89.6% of the time (*SD*=0.31), but local binding for simple pronouns only 14.6% of the time (*SD*=0.36). They accepted LD binding for reflexives only 4.2% of the time (*SD*=0.20), but local binding 79.2% of the time (*SD*=0.41). This pattern also appeared in both L1-Korean and L1-Azerbaijani groups. See Figure 3 for the simple pronoun results and Figure 4 for the reflexive pronoun results. The left five bars show LD contexts, while the right five bars show local contexts.

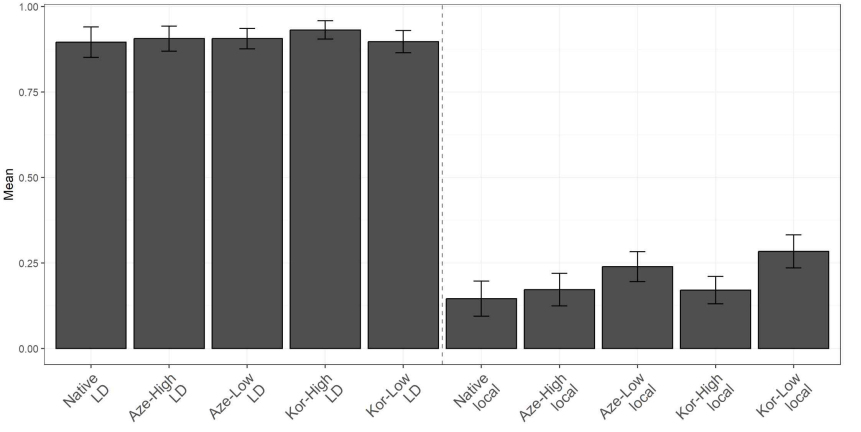

Figure 3. Mean 'True' responses for English simple pronouns on the English TVJT. *Note.* Error bars indicate standard errors. Kor=Korean; Aze=Azerbaijani; High=Higher English proficiency; Low=Lower English proficiency; LD=LD context; local=local context.

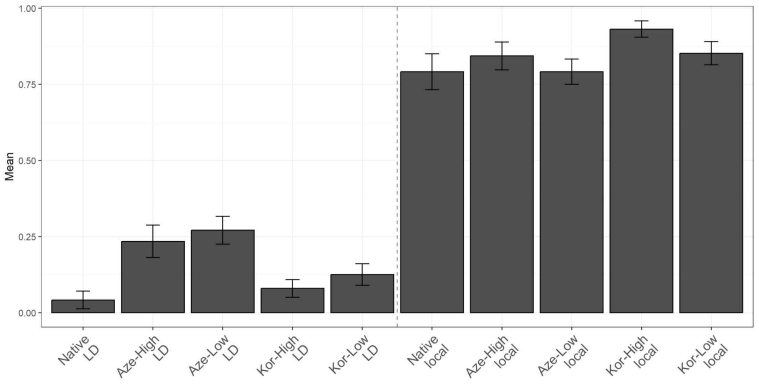

Figure 4. Mean 'True' responses for English reflexives on the English TVJT. *Note.* Error bars indicate standard errors. Native=English native speakers; Aze= Azerbaijani; Kor=Korean; High=Higher English proficiency; Low=Lower English proficiency; LD=LD context; local=local context.

Table 2. Summary of regression model for the English TVJT by L1-Azerbaijani and L1-Korean learners

	Estimate	Std. error	z value	*p*
(Intercept)	0.362	0.155	2.331	0.020
L1	−0.059	0.217	−0.271	0.787
context	−0.100	0.190	−0.528	0.597
pronominal	**−0.523**	**0.198**	**−2.639**	**0.008**
proficiency	0.031	0.221	0.139	0.889
L1 × context	**0.965**	**0.339**	**2.844**	**0.004**
L1 × pronominal	−0.392	0.339	−1.157	0.247
context × pronominal	**8.001**	**0.468**	**17.106**	**0.000**
L1 × proficiency	−0.118	0.440	−0.268	0.789
context × proficiency	−0.064	0.348	−0.185	0.854
pronominal × proficiency	−0.392	0.348	−1.127	0.260
L1 × context × pronominal	**1.945**	**0.693**	**2.806**	**0.005**
L1group × context × proficiency	−0.052	0.690	−0.075	0.940
L1 × pronominal × proficiency	−0.009	0.689	−0.013	0.989
context × pronominal × proficiency	**−1.751**	**0.707**	**−2.475**	**0.013**
L1 × context × pronominal × proficiency	−1.798	1.406	−1.279	0.201

A binomial generalized linear mixed-effects model was fitted to the judgment data to examine the effects of L1 (Azerbaijani vs. Korean), context (LD vs. local), pronominal (simple pronoun vs. reflexive pronoun), and proficiency (higher vs. lower), as well as their interactions (See Table 2). There was a robust context × pronominal interaction (β=8.001, SE=0.468, z=17.11, p<.001), indicating that the response difference between LD and local contexts was modulated by whether the pronominal was a simple pronoun or a reflexive. The context × pronominal × proficiency interaction was significant (β=−1.751, SE=0.707, z=−2.48, p=.013), indicating that proficiency modulated how L2 learners responded to pronominal contrasts across contexts, with the higher-proficiency group exhibiting more target-like performance than the lower-proficiency group. The L1 × context × pronominal type interaction was also significant (β=1.945, SE=0.693, z=2.81, p=.005), showing that the pattern of the context-pronominal interaction differed across L1 groups. L1-Korean learners rejected LD binding for reflexives more often than L1-Azerbaijani learners. Given that both L1-Korean and L1-Azerbaijani have local reflexives (i.e., *caki-casin* and *öz*), it is difficult to attribute these results to L1 influence. Rather, we can conclude that both L1-Korean and L1-Azerbaijani learners demonstrated target-like performance, although the proportion of target-like responses was slightly higher in the L1-Korean group than in the L1-Azerbaijani group, for reasons that are difficult to identify within this study. What is clearer is the effect of proficiency, with higher proficiency leading to more target-like performance—a pattern consistent with previous findings on proficiency effects in L2 performance (e.g., Kim & Joo, 2021). We now turn to the question of whether this target-like performance in the English TVJT influenced participants' subsequent responses in the L1 TVJTs.

4.2. L1 TVJT

Recall that the Korean participants were divided into two groups: one that read sentences containing the reflexive *caki-casin* and another that read *caki*. We first compare L1-Azerbaijani learners with L1-Korean speakers who read *caki-casin* in their L1 TVJT, where the interpretation patterns (*öz* vs. *caki-casin*) are similar to each other, allowing only local interpretation. Figure 5 shows the results for simple pronouns, whereas Figure 6 presents the results for reflexives. As shown in Figures 5 and 6, the Azerbaijani and Korean groups exhibited similar interpretation patterns: they accepted LD interpretations and rejected local interpretations for simple

pronouns, while accepting local interpretations and rejecting LD interpretations for reflexive pronouns.

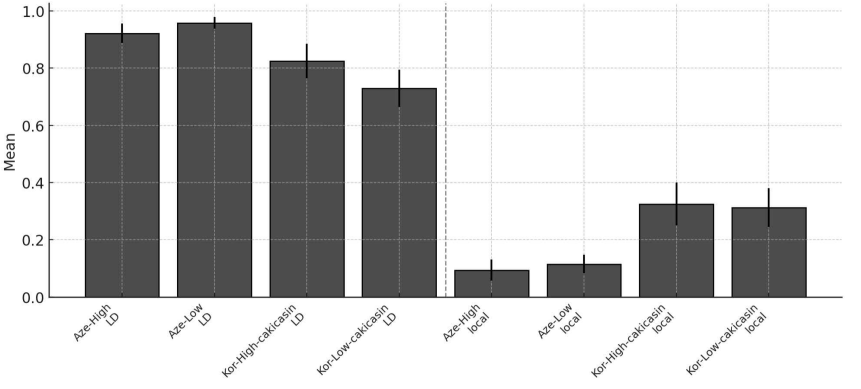

Figure 5. Mean 'True' responses for L1 simple pronouns on the L1 TVJT (L1 Korean: *caki-casin* version).

Note. Error bars indicate standard errors. Aze=Azerbaijani; Kor=Korean; High= Higher English proficiency; Low=Lower English proficiency; LD=LD context; local=local context; cakicasin=Korean TVJT version including *cakicasin*.

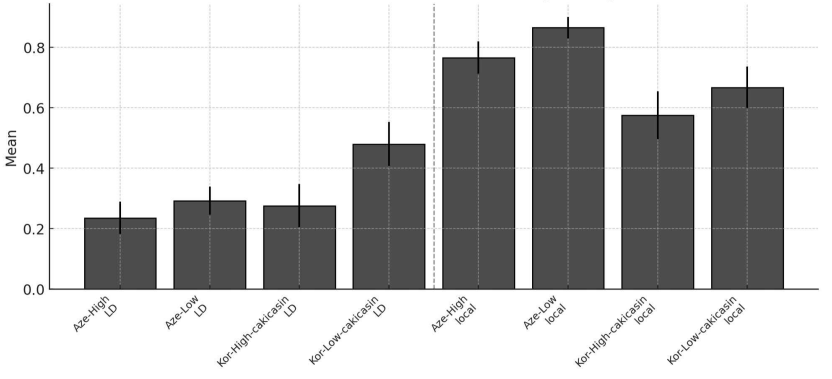

Figure 6. Mean 'True' responses for L1 reflexives on the L1 TVJT (L1 Korean: *caki-casin* version).

Note. Error bars indicate standard errors. Aze=Azerbaijani; Kor=Korean; High= Higher English proficiency; Low=Lower English proficiency; LD=LD context; local=local context; cakicasin=Korean TVJT version including *cakicasin*.

Table 3. Summary of regression model for the L1 TVJT by L1-Azerbaijani and L1-Korean learners (L1 Korean TVJT version including the reflexive *caki*-casin)

	Estimate	Std. error	z value	*p*
(Intercept)	0.324	0.162	1.995	0.046
L1	−0.265	0.320	−0.828	0.408
context	**−0.881**	**0.210**	**−4.190**	**0.000**
pronominal	−0.273	0.212	−1.290	0.197
proficiency	0.380	0.225	1.684	0.092
L1 × context	**0.986**	**0.423**	**2.331**	**0.020**
L1 × pronominal	−0.129	0.422	−0.305	0.760
context × pronominal	**6.297**	**0.527**	**11.957**	**0.000**
L1 × proficiency	−0.363	0.449	−0.809	0.418
context × proficiency	0.065	0.380	0.171	0.864
pronominal × proficiency	0.432	0.377	1.147	0.252
L1 × context × pronominal	**−5.371**	**0.932**	**−5.764**	**0.000**
L1 × context × proficiency	0.134	0.760	0.177	0.860
L1 × pronominal × proficiency	0.813	0.755	1.077	0.282
context × pronominal × proficiency	0.211	0.759	0.278	0.781
L1 × context × pronominal × proficiency	−1.448	1.515	−0.956	0.339

A binomial generalized linear mixed-effects model was fitted to the truth-value judgment data to examine how L1 background (Azerbaijani vs. Korean), context (LD vs. local), pronominal (simple pronoun vs. reflexive pronoun), and proficiency interact in learners' pronoun interpretation (see Table 3). There was a strong context × pronominal interaction (β=6.297, *SE*=0.527, *z*=11.96, *p*<.001), indicating that the difference in interpretation between simple pronouns and reflexives depended on whether the context was LD or local. An L1 × context × pronominal interaction also emerged (β=−5.371, *SE*=0.932, *z*=−5.76, *p*<.001). This three-way interaction indicates that the magnitude and direction of the context × pronominal type interaction differed across the two L1 groups: while Azerbaijani speakers showed a clear contrast between simple pronouns and reflexives across contexts, the Korean group exhibited a more attenuated sensitivity. Since the interpretation patterns of English reflexives, Azerbaijani

reflexive, and the Korean reflexive *caki-casin* are similar to each other, it is hard to discuss L2-to-L1 influence with the results in Table 3.

Next, we turn to a comparison between the L1-Azerbaijani group and the L1-Korean group reading the reflexive *caki*. Recall that the interpretation of *caki* differs from that of both English simple pronouns and reflexives in that it allows both LD and local binding, with a preference for LD binding. Figure 7 shows the results for simple pronouns, whereas Figure 8 presents the results for reflexive *caki*.

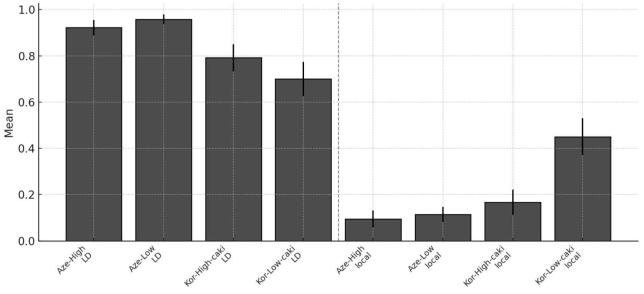

Figure 7. Mean 'True' responses for L1 simple pronouns on the L1 TVJT (L1 Korean: *caki* version).

Note. Error bars indicate standard errors. Aze=Azerbaijani; Kor=Korean; High= Higher English proficiency; Low=Lower English proficiency; LD=LD context; local=local context; caki=Korean TVJT version including *caki.*

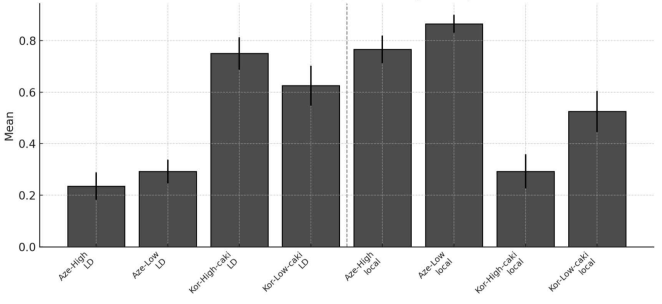

Figure 8. Mean 'True' responses for L1 reflexives on the L1 TVJT (L1 Korean: *caki* version).

Note. Error bars indicate standard errors. Aze=Azerbaijani; Kor=Korean; High=Higher English proficiency; Low=Lower English proficiency; LD=LD context; local=local context; caki=Korean TVJT version including *caki*.

Table 4. Summary of regression model for the L1 TVJT by L1-Azerbaijani and L1-Korean learners (L1 Korean TVJT version including the reflexive *caki*)

	Estimate	Std. error	z value	*p*
(Intercept)	0.339	0.155	2.185	0.029
L1	−0.195	0.305	−0.641	0.521
context	**−1.549**	**0.212**	**−7.302**	**0.000**
pronominal	−0.069	0.216	−0.321	0.748
proficiency	**0.449**	**0.228**	**1.974**	**0.048**
L1 × context	−0.330	0.413	−0.798	0.425
L1 × pronominal	0.242	0.429	0.564	0.573
context × pronominal	**4.666**	**0.484**	**9.642**	**0.000**
L1 × proficiency	−0.208	0.453	−0.458	0.647
context × proficiency	**0.982**	**0.377**	**2.603**	**0.009**
pronominal × proficiency	−0.090	0.375	−0.240	0.811
L1 × context × pronominal	**−8.181**	**0.954**	**−8.573**	**0.000**
L1 × context × proficiency	**1.899**	**0.757**	**2.510**	**0.012**
L1 × pronominal × proficiency	−0.189	0.751	−0.252	0.801
context × pronominal × proficiency	0.308	0.753	0.409	0.683
L1 × context × pronominal × proficiency	−1.248	1.508	−0.828	0.408

A binomial generalized linear mixed-effects model was fitted to the truth-value judgment data to examine whether L1 background (Azerbaijani vs. Korean), context (LD vs. local), pronominal (simple pronoun vs. reflexive), and proficiency interact in learners' pronoun interpretation, as seen in Table 4. An L1 × context × pronominal interaction was found (β=−8.181, *SE*=0.954, *z*=−8.57, *p*<.001), showing that Azerbaijani and Korean learners patterned similarly in their interpretation of simple pronouns but differed clearly in their treatment of reflexives: the Azerbaijani reflexive allows only local interpretation; in contrast, the Korean reflexive *caki* prefers LD interpretations. Notably, a proficiency effect emerged, showing the main effect of proficiency (β=0.449, *SE*=0.228, *z*=1.97, *p*=.048) and the context × proficiency interaction (β=0.982, *SE*=0.377, z=2.60, *p*=.009). Given this proficiency effect, a post hoc analysis revealed significant differences between lower- and higher-proficiency learners only within the L1-Korean group—specifically, for simple

pronouns in the local context condition (p=.01) and for reflexives in the local context condition (p=.03). Crucially, for reflexives in the local context condition, the higher-proficiency learners accepted local antecedent interpretations only 29.2% of the time, whereas lower-proficiency learners moderately accepted them 52.5% of the time.

5. General Discussion and Conclusion

This study examined crosslinguistic influence in the interpretation of reflexive pronouns by L1-Azerbaijani and L1-Korean learners of English, and its potential regressive effect on the learners' native languages. Using picture-based TVJTs in English and in the learners' respective L1s, we compared interpretation patterns across groups, reflexive types, and proficiency levels.

The findings revealed three main results. First, both L1-Azerbaijani and L1-Korean learners showed target-like comprehension of English reflexive pronouns. Second, when tested in their L1s, Azerbaijani learners' interpretation of the reflexive *öz* and Korean learners' interpretation of *caki-casin* closely matched the English pattern. Third, the Korean reflexive *caki* exhibited the greatest variability along with a proficiency effect: higher-proficiency learners—those with stronger L2 English—displayed a strong preference for long-distance (LD) binding for *caki*, even consistently rejecting local antecedents, while *caki* permits both LD and local interpretations. This pattern superficially resembles the LD-only pattern of English simple pronouns, but we emphasize that *caki* remains a reflexive, and the effect reflects temporary suppression of its local reading rather than syntactic realignment.

The results can be interpreted as a priming effect of L2 English pronoun interpretation on subsequent L1 Korean pronoun interpretation. Recent work in bilingual sentence processing suggests that the linguistic structure most recently activated can bias subsequent processing, even across languages. Hopp and Grüter (2021), for example, demonstrated that cross-linguistic structural priming—exposure to an L1 syntactic configuration immediately prior to an L2 sentence—modulates learners' parsing preferences and accelerates convergence on a particular interpretation. Although their study examined L1-to-L2 priming during real-time sentence processing, the underlying mechanism is directly relevant to the present findings. In our design, participants completed the English TVJT immediately before the Korean TVJT, thereby activating a set of strict, categorical interpretation

patterns: English reflexives allow only local interpretations (*himself/herself*), whereas English simple pronouns allow only LD interpretations (*him/her*). This prior activation appears to have biased the interpretation of *caki* toward a more monolithic, English-like pattern, particularly among higher-proficiency learners whose L2 representations are more robustly established. This pattern is consistent with the broader view that recently activated syntactic representations—regardless of language—temporarily increase in accessibility and may be recruited in subsequent cross-linguistic interpretation.

The findings have several theoretical implications. First, they underscore the bidirectional nature of crosslinguistic influence, extending beyond forward influence (L1→L2) to include regressive influence (L2→L1). Second, the proficiency effect—significant both in L2 English and L1 Korean data—underscores the role of proficiency in bidirectional crosslinguistic influence. For L1-Korean learners, higher proficiency in English coincided with a more target-like performance in English and a corresponding drift in Korean reflexive *caki* toward strict LD interpretation.

There are several limitations in this study. First, the current study did not disentangle whether the atypical interpretation of *caki* reflects a change at the representational level or a temporary performance fluctuation, nor whether the priming induced by the English TVJT experience activates participants' underlying representations or merely affects their behavior transiently. A separate task carefully testing their knowledge of reflexives is called for to address this issue. Second, the target-like performance in the English TVJT calls for the inclusion of participants whose English interlanguage is less developed. Expanding the participant pool to include a wider range of proficiency levels would allow for a more fine-grained modeling of crosslinguistic patterns. Third, as an anonymous reviewer noted, a more informative approach would have compared two order groups—those completing the Korean version first versus those completing the English version first—to examine the effect of prior English experience. Future research should incorporate such an order manipulation. Additionally, because the tasks were administered without supervision, quality-control procedures (e.g., attention checks, timing filters) could not be fully implemented. Future studies should include explicit monitoring measures to ensure data reliability. Finally, as the reviewer correctly points out, the Interface account (Hulk & Müller, 2000; Sorace & Filiaci, 2006) alone does not account for the results. Another possible explanation is the optimality of form-meaning mappings (O'Grady, Lee, & Lee, 2011). O'Grady et al. argue that when there is a one-to-one mapping between form and meaning (i.e., an optimal

mapping), the form-meaning association is easier to learn. In the case of *caki-casin*, the mapping is more transparent (i.e., more optimal), as the referent in a biclausal sentence refers only to the subject in the same clause. In contrast, the mapping for *caki* is less transparent because multiple factors—such as syntactic binding, verb-class semantics, and discourse cues—affect the choice of referent, potentially increasing susceptibility to crosslinguistic influence. To determine which proposal best accounts for the present findings, further research is needed.

References

Ahn, H. D., & Mao, C. (2019). Reverse transfer of L3 on the interpretation of L2 reflexives. *Journal of Asia TEFL, 16*(4), 1323-1331.

Barr, D. J., Levy, R., Scheepers, C. & Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing: Keep it maximal. *Journal of Memory and Language, 68,* 255-278.

Bates, D., Maechler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, *67*, 1-48.

Bosch, J. E., & Unsworth, S. (2021). Cross-linguistic influence in word order: Effects of age, dominance and surface overlap. *Linguistic Approaches to Bilingualism, 11*(6), 783-816.

Brown, J. D. (1980). Relative merits of four methods for scoring cloze tests. *The Modern Language Journal, 64,* 311-317.

Chen, C. (2024). Binding and co-reference: Reflexives. In T. Ionin, S. Montrul, & R. Slabakova (Eds.), *The routledge handbook of second language acquisition, morphosyntax, and semantics* (1st ed., pp. 473-486). Routledge.

Chen, C. Y., & Ionin, T. (2023). Interpretation of Mandarin pronouns and reflexives by L1-Korean and L1-English learners of Mandarin. *Second Language Research, 39*(4), 941-968.

Chien, Y. C., & Lust, B. (2006). Mandarin children's knowledge of the binding principles. In P. Li, L. H. Tan, E. Bates, & O. J. L. Tzeng (Eds.), *The handbook of East Asian psycholinguistics: Volume I, Chinese* (Vol. 1, pp. 23-38). Cambridge University Press.

Chien,Y.-C., & Wexler, K. (1990). Children's knowledge of locality conditions in binding as evidence for the modularity of syntax and pragmatics. *Language Acquisition, 1,* 225-295.

Cook, V. (1990). Timed comprehension of binding in advanced L2 learners of English. *Language Learning, 40*(4), 557-599.

Cook, V. J., Ed. (2003). *Effects of the second language on the first.* Multilingual Matters.

Cook, V., & Newson, M. (2007). *Chomsky's universal grammar: An introduction* (3rd ed.). Blackwell.

Demirci, M. (2001). Acquisition of binding of English reflexives by Turkish L2 learners: A neo-Gricean pragmatic account. *Journal of Pragmatics, 33*(5), 753-775.

Domínguez, L., Hicks, G., & Song, H. J. (2012). Untangling locality and orientation constraints in the L2 acquisition of anaphoric binding: A feature-based approach. *Language Acquisition, 19*(4), 266-300.

Finer, D., & Broselow, E. (1986). Second language acquisition of reflexive binding. In B. Berman et al. (Eds.), *Proceedings of the 16th Annual Conference of the Northeastern Linguistics Society* (pp. 154-168). Amherst, MA: GLSA.

Hahn, H.-r. (2000). *UG availability to Korean EFL learners: A longitudinal study of different age groups* (Unpublished doctoral dissertation). Seoul: Seoul National University.

Herdina, P., & Jessner, U. (2002). *A dynamic model of multilingualism: Perspectives of change in psycholinguistics.* Multilingual Matters.

Hirakawa, M. (1990). A study of the L2 acquisition of English reflexives. *Second Language Research, 6*(1), 60-85.

Hopp, H., & Grüter, T. (2023). The time-course of competition from the L1 grammar in L2 sentence processing: Evidence from cross-linguistic structural priming. *Second Language Research, 39*(1), 133-159.

Hulk, A., & Müller, N. (2000). Bilingual first language acquisition at the interface between syntax and pragmatics. *Bilingualism: Language and Cognition, 3*(3), 227-244.

Huseynzade, M. (2007). *Müasir Azərbaycan dili. III hissə. Morfologiya [Modern Azerbaijani language. Part 3. Morphology]*. Baku: Şərq-Qərb.

Jarvis, S. (2000). Methodological rigor in the study of transfer: Identifying L1 influence in the interlanguage lexicon. *Language Learning, 50*(2), 245-309.

Jarvis, S., & Pavlenko, A. (2008). *Crosslinguistic influence in language and cognition*. Routledge.

Joo, K.-J. (2015). Who is *caki*?: Experimental studies regarding the person feature of the Korean reflexive *caki*. *Language & Information Society, 26,* 385-410.

Joo, K.-J., & Deen, U. K. (2019). Intrasentential binding and extrasentential binding in child and adult Korean. *First Language, 39*(6), 633-651.

Kim, E. H. (2019). *Interpretation and processing of overt pronouns in Korean, English,*

and L2 acquisition. (Unpublished doctoral dissertation). University of Illinois at Urbana-Champaign.

Kim, E. H. (2023). L1-transfer effects and the role of computational complexity in L2 pronoun interpretation. *Second Language Research, 39*, 1-27.

Kim, H. R. (1994). L2 acquisition of English reflexives by native speakers of Korean. *Kansas Working Papers in Linguistics, 19*(1), 235-261.

Kim, J.-H., Montrul, S., & Yoon, J. (2009). Binding interpretations of anaphors by Korean heritage speakers. *Language Acquisition, 16*(1), 3-35.

Kim, K., & Joo, K.-J. (2021). L1 transfer in the interpretation of L2 reflexive pronouns by child learners of Korean. *International Journal of Bilingualism, 25*(6), 1529-1544.

Kim, K., & Schwartz, B. D. (2022). Learnability in the acquisition of the English *tough* construction by L1-Korean adult and child L2 learners. *Second Language Research, 38*(2), 259-287.

Kim, S., Ahn, H., & Lim, J. H. (2025). Investigating L3-to-L2 transfer in reflexive pronoun interpretation: A study of Korean-English-Chinese unbalanced trilinguals. *Language Research, 61*(2), 193-212.

Lee, D. (2025). *Exploring the alignment of the BCT80 and LexTALE with the CEFR*. Paper presented at the ALAK International Conference, Seoul, South Korea.

Lee, S. Y. (2005). *Development in the L2 acquisition of English reflexives by Korean adults and children* (Unpublished doctoral dissertation). University of Hawai'i at Mānoa, Honolulu.

Lee, S. Y. (2012). The acquisition of the Korean reflexive caki by heritage speakers and L2 learners. *Korean Journal of Linguistics, 37*(2), 383-400.

Li, X., & Zhou, X. (2010). Who is ziji? ERP responses to the Mandarin reflexive pronoun during sentence comprehension. *Brain Research, 1331,* 96-104.

Li, X., Sepanski, S., & Zhou, X. (2006). Language history questionnaire: A web-based interface for bilingual research. *Behavior Research Methods, 38*(2), 202-210.

Nam, B. (2020). *Be-insertion in interlanguage: A topic marker, a tense/agreement morpheme, or both?* (Unpublished doctoral dissertation). Bloomington: Indiana University.

O'Grady, W. (2013). Processing and language acquisition: Reflexive pronouns in English and Korean. *Language and Information Society, 19*, 33-59.

O'Grady, W., Lee, O.-S., & Lee, J.-H. (2011). Practical and theoretical issues in the study of heritage language acquisition. *Heritage Language Journal, 83*(3), 23-40.

Omaki, A., & Lidz, J. (2015). Linking parser development to acquisition of syntactic

knowledge. *Language Acquisition, 22*(2), 158-192.

Puig-Mayenco, E, González Alonso, J. & Rothman, J. (2020). A systematic review of transfer studies in third language acquisition. *Second Language Research, 36,* 31-64.

R Core Team. (2025). R: A language and environment for statistical computing. [Computer software]. Retrieved from http://www.R-project.org/

Rothman, J., & Slabakova, R. (2018). The generative approach to SLA and its place in modern second language studies. *Studies in Second Language Acquisition, 40*(2), 417-442.

Rothman, J., González Alonso, J., & Puig-Mayenco, E. (2019). *Third language acquisition and linguistic transfer.* Cambridge: Cambridge University Press.

Schmid, M. S., & Köpke, B. (2017). The relevance of first language attrition to theories of bilingual development. *Linguistic Approaches to Bilingualism, 7*(6), 637-667.

Schwartz, B. D., & Sprouse, R. (1996). L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research, 12*(1), 40-72.

Schwartz, B. D., & Sprouse, R. A. (2021). The Full Transfer/Full Access model and L3 cognitive states. *Linguistic Approaches to Bilingualism, 11*(1), 1-29.

Slabakova, R., White, L., & Brambatti Guzzo, N. (2017). Pronoun interpretation in the second language: Effects of computational complexity. *Frontiers in Psychology, 8,* 1-12.

Sorace, A. (2011). Pinning down the concept of 'interface' in bilingualism. *Linguistic Approaches to Bilingualism, 1*(1), 1-33.

Sorace, A., & Filiaci, F. (2006). Anaphora resolution in near-native speakers of Italian. *Second Language Research, 22*, 339-368.

Sperlich, D. (2013). *The acquisition of long-distance reflexives in Chinese as an interlanguage: An experimental study* (Unpublished doctoral dissertation). University of Auckland.

Sung, M.-C., Kim, K., & Nam, B. (2024). Influence of topic-prominent L1s on the use of L2 English copula be: A corpus-based study. *International Review of Applied Linguistics in Language Teaching (IRAL).* Online First.

Thomas, M. (1989). The interpretation of English reflexive pronouns by non-native speakers. *Studies in Second Language Acquisition, 11*(3), 281-303.

Thomas, M. (1993). *Knowledge of reflexives in a second language.* Amsterdam: John Benjamins.

Thomas, M. (1995). Acquisition of the Japanese reflexive zibun and movement of anaphors in Logical Form. *Second Language Research, 11*(3), 206-234.

Umeda, M., Takeda, K., Hirakawa, M., Fukuda, M., Hirakawa, Y., Matthews, J.,

& Snape, N. (2017). Acquiring antecedents for reflexives when both L1 and L2 permit long-distance binding. *Journal of the European Second Language Association, 1*(1), 38-48.

Wu, M., Zhang, L. J., Wu, D., & Wang, T. (2020). Effects of the interface categories on the acquisition patterns of English reflexives among learners of English as a foreign language. *International Journal of Bilingualism, 24*(4), 651-671.

Yoshikawa, T. (1993). *The acquisition of English reflexives by L2 learners* (Unpublished doctoral dissertation). Indiana University Bloomington.

Yuan, B. (1998). Interpretation of binding and orientation of the Chinese reflexive ziji by English and Japanese speakers. *Second Language Research, 14*(4), 324-340.

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Appendix A. Experimental items for the TVJTs

I. Experimental items for the English TVJT

1. Sam says that Peter is lifting him/himself.
2. Sara says that Anna is drawing her/herself.
3. Minnie thinks that Joanna is laughing at her/herself.
4. George thinks that Adam hates him/himself.
5. Jack says that Tyler is hitting him/himself.
6. Diana says that Sunny is touching her/herself.
7. Sara thinks that Anna is watching her/herself.
8. Helen says that Mary is hugging her/herself.
9. Tom says that John is pushing him/himself.
10. Diana says that Sunny is disguising her/herself.
11. Sara thinks that Anna loves her/herself.
12. Tom says that John is pinching him/himself.
13. Sam says that Peter is hiding him/himself.
14. Helen says that Mary is dressing up herself / dressing her up.
15. George thinks that Adam is chasing him/himself.
16. Jack thinks that Tyler is pointing at him/himself.

II. Experimental items for the Azerbaijani TVJT

1. Murad Orxanın onu/özünü qaldırdığını deyir.
2. Sara Nərminin onu/özünü çəkdiyini deyir.
3. Minə Nigarın ona/özünə güldüyünü düşünür.
4. Babək Yunusun ona/özünə nifrət etdiyini düşünür.
5. Cəfər Elşadın ona/ özünə vurduğunu dedi.
6. Aysel Baharın ona/özünə toxunduğunu deyir.
7. Sara Nərminin ona/özünə baxdığını düşünür.
8. Nəzrin Məryəmin onu/özünü qucaqladığını deyir.
9. Tamerlan Cavidin onu/özünü itələdiyini dedi.
10. Aysel Baharın onu/özünü maskaladığını deyir.
11. Sara Nərminin onu/özünü sevdiyini düşünür.
12. Tamerlan Cavidin onu/özünü çimdiklədiyini deyir.
13. Murad Orxanın onu/özünü gizlətdiyini deyir.
14. Nəzrin Məryəmin onu/özünü bəzədiyini dedi.

15. Babək Yunusun onu/özünü təqib etdiyini düşünür.
16. Cəfər Elşadın onu/özünü işarə etdiyini düşünür.

III. Experimental items for the Korean TVTJs

1. 용진이는 한솔이가 그를 / 자기(자기자신)을 들어주고 있다고 말해요.
2. 영희는 미화가 그녀를 / 자기(자기자신)을 그리고 있다고 말해요.
3. 현아는 수영이가 그녀를 / 자기(자기자신)을 비웃고 있다고 생각해요.
4. 윤찬이는 지훈이가 그를 / 자기(자기자신)을 싫어한다고 생각해요.
5. 성민이는 현석이가 그를 / 자기(자기자신)을 때렸다고 말했어요.
6. 민경이는 현정이가 그녀를 / 자기(자기자신)을 만지고 있다고 말해요.
7. 영희는 미화가 그녀를 / 자기(자기자신)을 지켜보고 있다고 생각해요.
8. 수지는 유나가 그녀를 / 자기(자기자신)을 안고 있다고 말해요.
9. 하준이는 민수가 그를 / 자기(자기자신)을 밀어주고 있다고 말해요.
10. 민경이는 현정이가 그녀를 / 자기(자기자신)을 변장하고 있다고 말해요.
11. 영희는 미화가 그녀를 / 자기(자기자신)신을 사랑한다고 생각해요.
12. 하준이는 민수가 그를 / 자기(자기자신)신을 꼬집고 있다고 말해요.
13. 용진이는 한솔이가 그를 / 자기(자기자신)을 숨기고 있다고 말해요.
14. 수지는 유나가 그녀를 / 자기(자기자신)을 꾸몄다고 말했어요.
15. 윤찬이는 지훈이가 그를 / 자기(자기자신)을 쫓아가고 있다고 생각해요.
16. 성민이는 현석이가 그를 / 자기(자기자신)을 가리키고 있다고 생각해요.