RESLA
Revista Española de Lingüística Aplicada

https://matrix.aesla.org.es/RESLA
ISSN 0213-2028 | e-ISSN 2254-6774

Typological similarity is not always helpful: Second language processing of the Korean dative construction

Gyu-Ho Shin [1]* & Jeong Eun Shin [2]

[1]University of Illinois Chicago, United States
[2]University of Tsukuba, Japan

Abstract: We investigate how cross-linguistic influence affects L2 sentence processing at the interface of task effects and typological similarity between L1 (English; Czech; Japanese) and L2 (Korean), focusing on the two alternating patterns of dative construction (Dative–Accusative; Accusative–Accusative). Results from an Acceptability Judgement Task showed that, while L2-Korean learners were stringent with Dative−Accusative and were lenient with Accusative−Accusative when compared to native Korean speakers, L1-Japanese L2-Korean learners were notably generous with Accusative–Accusative compared to the other learner groups. Results from a Self-paced Reading Task showed that L2-Korean learners' reading-time patterns were largely the same across the groups, but with substantial reading-time difference across the two patterns only by L1-English L2-Korean learners. These findings suggest by-task and by-group variabilities involving cross-linguistic influence, surrounded with various factors such as linguistic properties of an L2 item, morphosyntactic characteristics of learners' L1, and task-specific requirements. This highlights the noisy – vaguer and less specific – representations of L2 knowledge.

Keywords: *cross-linguistic influence, language typology, dative construction, sentence processing, korean.*

La similitud tipológica no siempre es útil: Procesamiento de la construcción dativa coreana en segunda lengua

Resumen: Este estudio investiga cómo la influencia translingüística afecta el procesamiento de oraciones en L2 cuando se consideran los efectos de la tarea y la similitud tipológica entre L1 (inglés; checo; japonés) y L2 (coreano), centrándonos en los dos patrones alternativos de la construcción dativa (Dativo-Acusativo; Acusativo-Acusativo). Los resultados de una Tarea de Juicio de Aceptabilidad mostraron que, mientras que los aprendices de coreano L2 eran estrictos con la construcción Dativo−Acusativo y flexibles con Acusativo−Acusativo en comparación con los hablantes nativos de coreano, los aprendices de japonés L1 coreano L2 eran notablemente más flexibles con Acusativo-Acusativo en comparación con los otros grupos de aprendices. Los resultados de una Tarea de Lectura a Ritmo Propio revelan que los patrones de tiempos de lectura de los aprendices de coreano L2 eran, en su mayoría, iguales entre los grupos, pero mostraban una diferencia sustancial en los tiempos de lectura entre los dos patrones únicamente en los aprendices de inglés L1 coreano L2. Estos hallazgos sugieren variabilidades de tarea y de grupo que involucran influencia cross-lingüística, rodeada de varios factores como las propiedades lingüísticas de un elemento en L2, las características morfosintácticas de la L1 de los aprendices y los requisitos específicos de la tarea. Esto resalta las representaciones ruidosas – más vagas y menos específicas – del conocimiento en L2.

Palabras clave: *influencia cross-lingüística, tipología lingüística, construcción dativa, procesamiento de oraciones, coreano.*

How to cite: Shin, G-H. & Shin, J. E. (2026). Typological similarity is not always helpful: Second language processing of the Korean dative construction. *Revista Española de Lingüística Aplicada, 39*(2), 95-129. https://doi.org/10.58859/resla.1546

*Corresponding author: ghshin@uic.edu

AESLA
Asociación Española de Lingüística Aplicada

Available under the
CC BY 4.0 license. ©

1. Introduction

One notable characteristic of second language (L2) knowledge lies in its noisier representations compared to those involving first language (L1) knowledge (Futrell & Gibson, 2017; Tachihara & Goldberg, 2020). Noisiness of L2 knowledge refers to the situation in which linguistic formulations that L2 speakers have are vaguer and less specific than those L1 speakers have, given that memory for L2 knowledge is not as strong as that for L1 knowledge. This characteristic is attributed to L1–L2 competition in the mind (Hartsuiker et al., 2004; Jiang et al., 2017; MacWhinney, 2008) and an increased cognitive load while engaging in L2 behaviour at hand (Cunnings, 2017; Hopp, 2014; Jacob & Felser, 2016; McDonald, 2006; Pozzan & Trueswell, 2016), also interfacing with task effects (Lee et al., 2023; Tan & Foltz, 2020) and learner characteristics (Dąbrowska & Street, 2006). This particular nature of L2 knowledge often leads to a learners' reduced capacity to utilise target knowledge in the course of L2 behaviour[1] (Clahsen & Felser, 2006; Hopp, 2018; Robenalt & Goldberg, 2016; Tachihara & Goldberg, 2020). It also results in their learning trajectories being distinctive from how L1 knowledge is acquired (Frenck-Mestre et al., 2019; Jiang et al., 2011; Park & Kim, 2021; Slabakova, 2014). Together, the noisy nature of L2 knowledge highlights the complex and multifaceted aspects of L2 acquisition (cf. Associative–Cognitive CREED; Ellis, 2006a).

Amongst various factors constructing L2 knowledge, cross-linguistic influence (CLI) is a long-standing topic of L2 literature. CLI has generated active debates on three major and inter-related areas: (i) the status of two (or more) language systems in a learner's cognitive space (Bernolet et al., 2013; Hartsuiker & Bernolet, 2017; Håkansson et al., 2002; Hwang et al., 2018; Kaan et al., 2015; Putnam et al., 2018; Shin & Christianson, 2009; Ullman, 2001); (ii) the direction and magnitude of influence that one language exerts on the other(s) (i.e., L1-to-L2 or L2-to-L1) (Grüter & Hopp, 2021; Hopp & Grüter, 2021; Hopp et al., 2020; MacWhinney, 2008; cf. L1 attrition: Schmid & Köpke, 2017; L2 attrition: Mickan et al., 2019); and (iii) the degree of similarity or difference between two (or more) languages affecting the learning outcomes (Andersson et al., 2019; Cadierno & Robinson, 2009; Frenck-Mestre et al., 2019; Jiang et al., 2011; Mickan & Lemhöfer, 2020; Park & Kim, 2021, 2022). Various proposals have been made to address CLI, with a focus on the extent of the structural overlap between two languages (the shared-syntax account; Hartsuiker & Bernolet, 2017; Hartsuiker et al., 2004), the possibility of realignment of functions routinised in L1 onto forms in L2 (the morphological congruency hypothesis; Jiang et al., 2011; Jiang et al., 2017), the change in strength of form–function mapping in competition across languages (the Competition Model; MacWhinney, 2008, 2013), the asymmetric degree of salience involving L1 and L2 information (the overshadowing and blocking account; Ellis, 2006b; Luk & Shirai, 2009), to name a few.

[1] Throughout this article, we use 'L2 behaviour' as a cover term indicating language activities using an L2 including comprehension and processing.

Despite the fruitful discussions regarding CLI, we identify two major caveats in the current research practice. One is the sampling bias towards a limited range of major (Indo-European) languages (and particularly towards L2 English) prevalent in the literature (cf. Nielsen et al., 2017). This poses a threat to diversity, equity, and inclusion in research, in addition to weakening the generalisability of the implications of previous studies to other (and lesser-studied) languages, considering multilingual communities in which human beings are currently living. The other caveat concerns the distinction between macro-level and micro-level linguistic properties involving CLI. Studies often conflate typological features, which comprise general properties of an overall language system such as word order and case-marking, and item-specific characteristics such as structural components and alternating nature of a construction. Concepts such as typological proximity (Rothman, 2011), cumulative enhancement (Flynn et al., 2004), and applied language typology (Filipović, 2008) encapsulate this practice, reflecting the intuition that the more closely related two languages are holistically, the easier it is to implement the two languages in one mind. Notably, a line of research has shown that this may not be always the case (Cuza et al., 2018; Westergaard, 2021), but more research (also considering lesser-studied language pairs) is needed to precisely evaluate the individual and interactive roles of macro- and micro-level properties involving typological considerations for L2 acquisition.

Against this background, the present study investigates how CLI is manifested during L2 sentence processing in consideration of learners' L1 and task effects. We employ Korean as an L2 and three languages manifesting notable typological characteristics when compared to Korean (English; Czech; Japanese) as L1s, with a focus on the dative construction. Korean has become a popular L2 acquisition target but still remains understudied in the L2-acquisition literature. Pertaining to morphosyntactic properties, the four languages that we consider in this study manifest notable similarities and differences with respect to macro-level typological features and micro-level characteristics about the target construction. The dative construction has drawn L2-acquisition researchers' attention to its productivity and challenge in L2 acquisition due to the intricacies regarding its morphosyntactic characteristics and diverse factors determining its usage (Ambridge et al., 2014; Bresnan & Ford, 2010; Goldberg, 1995; Pinker, 1989; Xiang & Chang, 2022). We also address CLI at the interface of task effects by employing two different tasks: acceptability judgement (offline task) and self-paced reading (online task). Some studies have touched upon how L2 processing is affected by the different requirements by task type (translation vs. eye-tracking in L2 English: Lim & Christianson, 2015; types of comprehension question in a self-paced reading task in L2 English: Tan & Foltz, 2020), but research on this topic for lesser-studied languages is scarce. The current study seeks to answer the following research question: To what extent does L2-Korean learners' processing of the Korean dative construction is affected by L1–L2 differences and task types?

2. Background: Dative construction in four languages

2.1 Target L2: Korean

Korean is an agglutinative and Subject–Object–Verb language, has overt case-marking through particles, and allows scrambling of pre-verbal arguments if the original intention is maintained without ambiguity (Sohn, 1999), as in (1).

(1) A Korean sentence: 'Chelswu hugged Yenghuy.'

a. SOV

Chelswu-ka	Yenghuy-lul	an-ass-ta.
Chelswu-NOM	Yenghuy-ACC	hug-PST-SE[2]

b. OSV

Yenghuy-lul	Chelswu-ka	an-ass-ta.
Yenghuy-ACC	Chelswu-NOM	hug-PST-SE

The dative construction in Korean has two variant patterns while maintaining the canonicity of word order (i.e., recipient-before-theme): a Dative–Accusative pattern (2a) which involves a dative-marked recipient (*Jiho-eykey*)[3] followed by an accusative-marked theme (*chak-ul*), and an Accusative–Accusative pattern (2b) where both recipient (*Jiho*) and theme (*chak*) are marked by an accusative case marker (with two allomorphic variants serving the same function: *-lul* after a vowel; *-ul* after a consonant) (Lee, 2014; Shin, 2016; Yoon, 2015).

(2) The two patterns of Korean dative construction

a. Dative–Accusative

Mina-ka	Jiho-eykey	chak-ul	cwu-ess-ta.
Mina-NOM	Jiho-DAT	book-ACC	give-PST-SE

'Mina gave a book to Jiho.'

b. Accusative–Accusative

Mina-ka	Jiho-lul	chak-ul	cwu-ess-ta.
Mina-NOM	Jiho-ACC	book-ACC	give-PST-SE

'Mina gave Jiho a book.'

While the two dative patterns in Korean share the basic communicative intent that expresses the propositional meaning of *transferability* (Haspelmath, 2015), the Accusative–Accusative pattern is relatively rare in use as found in a corpus (Kim & Shin, 2022) and it is dispreferred relative to its Dative–Accusative counterpart (Cho & Jeon, 2015;

[2] Abbreviations: ACC = accusative case maker; DAT = dative marker; FEM = feminine; MASC = masculine; NOM = nominative case marker; PST = past tense marker; SE = sentence ender.

[3] There are the other possible case markers for this purpose: *-hanthey* in informal contexts, *-tele* and *-poko* in colloquial settings, *-ey* with an inanimate recipient, and *-kkey* to indicate a deferential intention (Sohn, 1999).

Kim & Shin, 2022). However, Korean speakers do employ this pattern for communication (Park & Yi, 2021), which confirms its status as a grammatical pattern for the dative construction in Korean. Focusing on their paraphrase relationship, some studies have utilised this pair to assess Korean speakers' acceptability judgements of dative alternation in Korean (Cho & Jeon, 2015; Kim & Shin, 2022; Lee, 2014) or to investigate cross-linguistic priming in dative alternation between Korean and English (Kim et al., 2020; Shin & Christianson, 2009). These studies provide support for the idea that, although not completely identical in every aspect (cf. Shin, 2016), the two dative patterns in Korean comprise a reasonable pair of alternating relations.

Considering the typical and canonical status of the Dative–Accusative pattern for the dative construction in Korean (Choi, 2009), of great interest is whether and how L2-Korean learners use (i) the Accusative–Accusative pattern itself and (ii) the particular form–function association involving the accusative case marker for that pattern. The accusative case marker typically indicates a theme role in a transitive construction as in (1) (Choo & Kwak, 2008; Sohn, 1999). However, the same marker can also be used to indicate a recipient role in a dative construction as in (2b) (although in a somewhat restricted way; Shin, 2016). An accusative-marked recipient is less favoured in actual language use (Choo & Kwak, 2008; Kim & Shin, 2022; Shin & Mun, 2023), and L2-Korean textbooks for university students often present this marker exclusively with the theme role (Shin & Jung, 2022). Because of this, the cue validity of the Accusative–Accusative pattern (and the accusative-marked recipient) becomes considerably lower than that of the Dative–Accusative pattern (and the accusative-marked theme) in the Korean dative construction (cf. Bates & MacWhinney, 1989). These aspects could pose a challenge to L2-Korean learners' understanding and use of the Accusative–Accusative pattern, and the accusative-marked recipient, for the dative construction in Korean.

2.2 L2-Korean learners' L1: English, Czech, and Japanese

English is an analytic, Subject–Verb–Object language with little inflection. This language has rigid word order and a less active agreement system. The words' position in a sentence provides crucial information about their grammatical status. For example, in the sentence 'Max hugged Tim', given that the transitive verb 'to hug' requires two participant roles (i.e., *hug-ger*, *hug-gee*), it is highly likely that before the verb there will be an actor and after the verb an undergoer of this action. For the dative construction, English has two variants – a prepositional dative as in (3a) and a double object dative (or ditransitive) as in (3b), and this pair is employed as a functional equivalent to the two dative patterns in Korean (Shin & Christianson, 2009; Kim et al., 2020).

(3) English dative constructions

a. Prepositional dative Mary gave a book to Nancy.

b. Double object dative Mary gave Nancy a book.

In the English double object dative pattern, there exists a functional equivalent of an accusative-marked recipient found in the Korean Accusative–Accusative pattern (e.g., *I gave them presents*); however, this inflection is identified only for some pronouns (e.g., *me, him, her, them*), which indicates that the use of an accusative-marked recipient in the English dative construction is not prominent.

Czech is a synthetic, Subject–Verb–Object language and is highly inflectional. In contrast to English, Czech is characterised as having an active agreement system through word inflection indicative of grammatical case, gender, and number. This allows flexible word order while keeping propositional meaning intact while inviting particular discourse effects (Naughton, 2005). As shown in (4), the verb *obejmout* 'to hug' agrees with the subject *ona* 'she', yielding the change of the verb form (*objala* 'hug.FEM'), and this allows for six word-order variations.

(4) Czech sentence: 'She hugged Tim.'

a. SVO

Ona	objala	Tima.
She	hug.PST.FEM	Tim

b. SOV

Ona	Tima	objala.
She	Tim	hug.PST.FEM

c. VSO

Objala	ona	Tima.
hug.PST.FEM	she	Tim

d. VOS

Objala	Tima	ona.
hug.PST.FEM	Tim	she

e. OSV

Tima	ona	objala.
im	she	hug.PST.FEM

f. OVS

Tima	objala	ona.
Tim	hug.PST.FEM	she

The dative construction in Czech has only one case-inflection pattern: Dative–Accusative as in (5). Although this pattern allows scrambling (Accusative–Dative), Czech, unlike Korean, does not allow any dative pattern with two accusative cases.

(5) Czech dative construction

Martin	dal	ji	knihu.
Martin.MASC.NOM	give.MASC.PST	she.FEM.DAT	book.FEM.ACC

'Martin gave her a book.'

Japanese is an agglutinative, Subject–Object–Verb language with active suffixation and particle use. This allows relatively flexible word order, maintaining the verb-final order, while keeping propositional meaning intact while inviting particular discourse effects (Association for the Study of Japanese Descriptive Grammar, 2009) as in (6).

(6) Japanese sentence: 'Taroo hugged Yuko.'

a. SOV

Taroo-ga	Yuko-o	dakisime-ta.
Taroo-NOM	Yuko-ACC	hug-PST

b. OSV

Yuko-o	Taroo-ga	dakisime-ta.
Yuko-ACC	Taroo-NOM	hug-PST

The dative construction in Japanese has only one case-marking pattern: Dative–Accusative as in (7). Although this pattern allows scrambling (Accusative–Dative), Japanese, like Czech and unlike Korean, does not allow a dative pattern with two accusative cases.

(7) Japanese dative construction

Taroo-ga	Yoko-ni	hon-o	age-ta.
Taroo-NOM	Yoko-DAT	book-ACC	give-PST

'Taroo gave a book to Yoko.'

However, Japanese allows double accusative-case when (i) it is *not* a dative construction and (ii) the first nominal marked as accusative is *not* an obligatory argument, as in (8). While this does not relate to dative semantics, the use of double accusative cases is observed and allowed in other types of clausal constructions (Masuoka, 1987; Nakamura, 2003; Sugimoto, 1986).

(8) Non-dative, double accusative-case use in Japanese

Ame-no	naka-o	gurando-o	san-syu	hasit-ta.
Rain-GEN	inside-ACC	ground-ACC	three-lap	run-PST

'(He) ran three laps around the ground in the rain.'

2.3 Expected outcome: L2 processing of Korean dative construction intertwined with L1–L2 difference and task type

Based on the above, we can state that there are notable morphosyntactic similarities and differences shared by the three languages when compared to Korean (Table 1). Given this background, we can make several predictions on L2-Korean learners' processing behaviour by task type.

Table 1. Macro-level typological features and micro-level constructional properties: English, Czech, and Japanese.

	Macro-level typological features		**Micro-level structural properties (dative construction)**	
	What is the canonical word order?	How is case information expressed?	How many alternating patterns exist?	Does the language allow an accusative-marked recipient in this construction?
Korean	SOV; somewhat flexible	Particle use (no major change in word form)	Two - Dative–Accusative - Accusative–Accusative	Yes
English	SVO; rigid	Inflection but minimal	Two - prepositional dative (corresponding to Dative–Accusative in Korean) - double object dative (corresponding to Accusative–Accusative in Korean)	Yes (but limited to some cases of pronominal use)
Czech	SVO; flexible	Inflection (change in word form)	One (corresponding to Dative–Accusative in Korean)	No
Japanese	SOV; somewhat flexible	Particle use (no major change in word form)	One (corresponding to Dative–Accusative in Korean)	No

2.3.1 Acceptability Judgement Task

In an Acceptability Judgement Task (AJT), an interlocutor engages in both partial and holistic considerations of a sentence to arrive at a complete interpretation of it and then to decide its acceptability. During this process, learners may reserve enough space for taking the entire structural frame into account.

If macro-level typological features exert strong influence on L2-Korean learners' acceptability-rating behaviour, we would expect L1-Japanese L2-Korean learners' overall success in this task, indicated by their preference for the Dative–Accusative pattern over the corresponding Accusative–Accusative pattern. This is supported by the global proximity between Korean and Japanese, such as word order and case-marking properties,

alleviating challenges in L2 learning and thus leading to performance close to how native Korean speakers deal with the two patterns. Specifically, the L1 Japanese learners should demonstrate a good command of case-marking facts involving this construction so that they easily link two thematic roles (theme; recipient) to the Korean accusative case marker (cf. Jiang et al., 2017). L1-Czech L2-Korean learners would also demonstrate an enhanced ability to handle the same case-marking facts due to the active use of case information in their L1, possibly benefitting their acceptability rating of the two patterns, but not to the extent that L1-Japanese L2-Korean learners are expected to demonstrate. Meanwhile, L1-English L2-Korean learners may have difficulty judging the target construction due to the typological differences between English and Korean.

If construction-specific, micro-level knowledge greatly affects L2-Korean learners' acceptability-rating behaviour, we would find L1-English L2-Korean learners' comparable degrees of acceptability rates across the two patterns due to the functional equivalency shared by the two dative patterns for each language. These learners' performance may further benefit from the use of the accusative-marked recipient pronominals in English double object dative construction. In contrast, L1-Czech L2-Korean learners and L1-Japanese L2-Korean learners would have difficulty with the Accusative–Accusative pattern, which is not available in their L1s, leading to less acceptability rates for this pattern relative to its counterpart.

2.3.2 Self-paced Reading Task

A self-paced Reading Task (SPRT) requires a participant to engage in a moment-by-moment, sequential, and cumulative interpretation of the incoming items in real time and with more time constraints. During this process, learners may attend more to item-specific requirements within one region at hand than to a broad structure-building process utilising cross-region and upcoming information. This is informed by L2 learners' global difficulty in real-time processing (Clahsen & Felser, 2006; Hopp, 2014; McDonald, 2006; Pozzan & Trueswell, 2016), and specifically, their reduced space for generating expectations of the following representations based on the current information even though they can exhibit the target knowledge in offline tasks (Grüter et al., 2017; Pozzan & Trueswell, 2016).

If holistic typological features exert strong influence on the L2-Korean learners' sentence-processing behaviour, we would expect L1-Japanese L2-Korean learners' shorter reading times for both patterns than L1-Czech L2-Korean learners and L1-English L2-Korean learners due to the global similarity between Korean and Japanese as explained above. Relatedly, this macro-level proximity between languages also predicts that L1-English L2-Korean learners would demonstrate longer reading times for both patterns than L1-Czech L2-Korean learners. If construction-specific, micro-level knowledge greatly affects their sentence-processing behaviour, we expect that L1-English L2-Korean learners would read the Accusative–Accusative pattern faster than L1-Japanese L2-Korean learners and L1-Czech L2-Korean learners. This is because English has the double object dative

pattern (sometimes with an accusative-marked pronominal recipient) while the other two languages do not allow two accusative-marked nominals in the dative construction. This may benefit L1-English L2-Korean learners when processing the Accusative–Accusative pattern in Korean.

Meanwhile, if L2 learners' exclusive focus on here-and-now information in sentence processing supersedes CLI under the word-by-word sentence-reading environment, we predict that L2-Korean learners would mis-parse the accusative-marked recipient in the Accusative–Accusative pattern, interpreting it as a theme, and would not always revise their initial interpretation when encountering the actual theme argument marked with an accusative case marker later in that pattern. It is known that L2 users are prone to interference from garden-path parses (Futrell & Gibson, 2017) and they sometimes miss a revision process (Clahsen & Felser, 2006; Omaki & Schulz, 2011) because of an increased cognitive load when conducting L2 behaviour (Cunnings, 2017; Pozzan & Trueswell, 2016) unless these significantly distort communicative intents (cf. Christianson, 2016; Ferreira, 2003). This will be observed via (i) less reading times spent in the accusative-marked recipient for the Accusative–Accusative pattern relative to those in the dative-marked recipient for the Dative–Accusative pattern and (ii) no substantial reading-time increase in the accusative-marked theme relative to the accusative-marked recipient for the Accusative–Accusative pattern.

3. Methods

3.1 Participants

We recruited L1-English (ENG), L1-Czech (CZH), and L1-Japanese (JPN) learners of Korean, all of whom were non-heritage speakers of Korean and currently residing in their respective home countries (i.e., ENG living in the United States; CZH living in Czechia; JPN living in Japan). Each participant had spent fewer than six months abroad in South Korea at the time of testing. Proficiency in Korean was measured through the Korean C-test (Lee-Ellis 2009), for which the assessment involved participants' comprehension of Korean sentences of varying length and complexity. This test comprises five passages with syllable-unit blanks; we chose the first four passages for testing efficiency, as suggested by the original study. The two tasks in this study require a certain level of (reading) proficiency, but this test does not provide standard score-proficiency indications like CEFR. Therefore, we set a threshold value of 63 out of 188, or scoring 33%, to select appropriate participants for our study. This was informed by previous studies utilising the scores to estimate language proficiency required by the task (Hwang & Lardiere, 2013), also individually supported by the test's reliability/validity (Eckes & Grotjahn, 2006) and high correlation with scores on other language-proficiency tests (McKay, 2019). In the end, we obtained 24 ENG (M_{age} = 23.3, SD = 4.2; $M_{learning_Korean}$ = 4.4 years, SD = 2.0), 28 CZH (M_{age} = 24.1, SD = 2.8; $M_{learning_Korean}$: mean = 3.9 years, SD = 1.8), and 32 JPN (M_{age} = 19.8, SD = 1.0; $M_{learning_Korean}$: mean = 2.9 years, SD = 1.5) from the initial recruitment (33 USA; 35 CZH; 40 JPN). There was no statistical by-group difference in the scores (one-

way ANOVA: $F(81) = 0.984$, $p = .378$), indicating that proficiency in the three L2-Korean groups was not substantially different. We also recruited 40 native speakers of Korean (NSK; $M_{age} = 23.6$, $SD = 4.1$) for the control group.

3.2 Stimuli

We created a total of 32 test sentences (see Appendix A for the entire sentence list) for SPRT, half of which was Dative–Accusative and the other half of which was Accusative–Accusative, as in (9). Each sentence was followed by an invariant carrier phrase (*Yenghui*-NOM *say*-PST-SE). For subjects and objects in the sentences, we used simple and common nouns (e.g., human name, everyday object) often used in daily life. All the verbs (with sufficient usage frequency in use) were in their past tense forms, and there was no overlap in verb use across the sentences. The dative marker used in all the sentences was uniformly *-eykey*. We note that, while the two patterns can be scrambled, the canonical word order (recipient-before-theme) constitutes the majority of this construction type (Choi, 2009). Scrambling also invites discourse effects on interpretation (Shin, 2016; Sohn, 1999), which is beyond the scope of this study. Hence, this study proceeded with the canonical word order.

(9) Example: SPRT

Yengci-ka	Mincay-eykey/lul[4]	hayntuphon-ul	senmwulhay-ss-ta-ko
Yengci-NOM	Mincay-DAT/ACC	cell.phone-ACC	present-PST-SE-COMP
Yenghuy-ka	malhay-ss-ta.		
Yenghuy-NOM	say-PST-SE		

'Yenghuy said that Yengci gave Mincay a cell phone (as a gift).'

Each sentence was presented in six regions (Rs) as in Table 2. We focused on R2–R4 as the critical regions and R5 to accommodate any spill-over effects arising from a task-specific button-press strategy (Koornneef & Van Berkum, 2006).

Table 2. Scheme of stimuli: SPRT.

Condition	R1	R2	R3	R4	R5	R6
Dative–Accusative	N1-NOM	N2-DAT	N3-ACC	V	*Yenghuy*-NOM	*said*
Accusative–Accusative		N2-ACC				

[4] While the accusative marker has two allomorphic variations (*-lul*; *-ul*), these variations come from phonological considerations (*-lul* after a vowel e.g., *uyca-lul* 'chair-ACC'; *-ul* after a consonant e.g., *chayksang-ul* 'desk-ACC') and they do not differ in function. The reason why all the recipient nominals in the test stimuli had *-lul* uniformly was that, except for some specific genres/registers of language use (e.g., novel), it is natural that any human name ending with a consonant is followed by *-i*, whose form is coincidently the same as the nominative case marker *-i*, between the name and a particle. We controlled for as many confounding factors, including this additional *-i*, as possible that might be able to affect the learners' comprehension and processing behaviour in an unexpected way.

Participants also completed AJT with the sentences generated from the critical structure portion (R1 to R4) from the test stimuli and the fillers used in SPRT.

To mask the experiment's intention, the test sentences for both tasks were interspersed with 96 fillers in varying structures and complexity. All the test sentences and fillers were split into two sub-lists and were randomly assigned to participants; we also randomised the sentences' presentation order in each sub-list.

Prior to the experiment, ten native speakers of Korean who did not join the experiment inspected the test stimuli for their grammaticality using a binary scale (i.e., grammatical [1] or ungrammatical [0]). The result confirmed the grammaticality of the stimuli for the Dative–Accusative ($M = 1$, $SD = 0$) and Accusative–Accusative ($M = 0.80$, $SD = 0.40$) conditions. Based on the inspectors' comments, the relatively lower score of the Accusative–Accusative stimuli compared to that of the Dative–Accusative ones was not from the sentences' grammaticality but from the inspectors' dispreference for the Accusative–Accusative pattern in use.

3.3 Procedure

Participants joined a *Zoom* meeting room and completed the two tasks, along with the proficiency test, individually on web-based platforms: *PCIbex* (Zehr & Schwarz, 2018)[5] for SPRT followed by *Qualtrics* for AJT. All sentences were displayed individually (i.e., one by one) on a computer screen. For the stability of the testing environment, mobile devices were prohibited. Participants completed the tasks wherever they wanted (e.g., house, school), as long as they could maintain a good internet connection and keep focusing on the tasks without any disturbance. For this purpose, we asked all the participants invited to the Zoom meeting room to (i) check the internet connection and clear up the surroundings before starting the tasks and (ii) stay in the meeting room until completing all the tasks so that we could observe their participation in real time.

SPRT was run visually in a non-cumulative moving-window paradigm (Just et al., 1982). Participants read sentences as naturally and quickly as possible, pressing a space bar to work through three practice items before proceeding to the main task. Following the final region in each sentence, a comprehension check-up question appeared prompting participants to answer by clicking on one of the two choices presented below the question. The question was designed simply to maintain the participants' attention to the task, asking about simple facts regarding the sentence being read (e.g., what the sentence was about, what action was done). If participants clicked on the wrong answer, 'wrong choice' feedback appeared on the screen in red. This task took around 25 minutes for each participant.

[5] Regarding data quality of online measurement, recent studies have shown that data collection via web-based platforms is as reliable as traditional, lab-based data collection (e.g., Enochson & Culbertson, 2015; Hilbig, 2016; Kim et al., 2019; Slim & Hartsuiker, 2022). We also believe that the experimental procedure that we took in this study – inviting individual participants to a Zoom meeting room and supervising their progress in real time – further ensured data quality.

In AJT, participants rated the acceptability of each sentence with a 6-point Likert scale from zero (unacceptable) to five (acceptable), responding immediately upon encountering the sentences but without sacrificing accuracy and faithfulness/confidence of how they responded to each item. Once the participants clicked on the scale and moved to the next sentence, they were not allowed to revise their previous judgements. This task took around 20 minutes for each participant.

3.4 Analysis

Data from SPRT were first trimmed by excluding reading-time datapoints of all the regions in a sentence if a participant failed to pass the comprehension question of that sentence (data loss: 3.43%) and by excluding outliers (i.e., extremely long or short reading times) per region through a three-standard-deviation cut-off point (collapsing over item and participant; data loss: 1.22%). We then log-transformed the trimmed data for data normalisation and residualised the data to adjust for variability in word length and individuals' reading speed (cf. Baayen & Milin, 2010). Finally, the pre-processed data were submitted to a linear mixed-effect modelling for each critical and spill-over region with *Group* (global model: −.5 for NSK, −.25 for ENG, .25 for CZK, .5 for JPN; by-group model: −.5 for one group, .5 for the other group) and *Condition* (−.5 for Dative−Accusative, .5 for Accusative−Accusative) as fixed effects (centred around the mean and deviation-coded) and with *Participant* and *Word* as random effects using the *lme4* software package (Bates et al., 2015) in R (R Core Team, 2023). The models included the maximal random-effects structure allowed by the model with random intercepts and random slopes for all effects (Barr et al., 2013).

Data from AJT were also trimmed first before the analysis by excluding individual judgement values whose response times were below 1,000 ms or above 10,000 ms (data loss: 5.74%). We then *Z*-transformed the data to satisfy the assumption of normal distribution and proceeded to the same kind of linear mixed-effect modelling, with *Group* and *Condition* as fixed effects (centred around the mean and deviation-coded) and with *Participant* and *Sentence* as random effects (Bates et al., 2015) in R (R Core Team, 2023), including the same maximal random-effects structure as the SPRT data analysis (Barr et al., 2013).

4. Results

We first report the results from AJT since this task shows participants' application of knowledge in an offline manner, which is a prerequisite for appropriately interpreting the results from online measurement such as SPRT.

4.1 AJT

Figure 1 illustrates each group's acceptability-rating outcomes. NSK preferred the Dative−Accusative condition over the Accusative−Accusative condition, which is consistent with previous findings (Cho & Jeon, 2015; Kim & Shin, 2022). The L2-Korean

groups' acceptability for the Accusative–Accusative condition was more generous than NSK's in general, with ENG as the lowest and JPN as the highest. Notably, whereas ENG and CZH rated the Accusative–Accusative condition to be low (with the mean scores below 2.5), JPN demonstrated a similar degree of acceptability for both conditions (with the mean score of the Accusative–Accusative condition above 2.5).

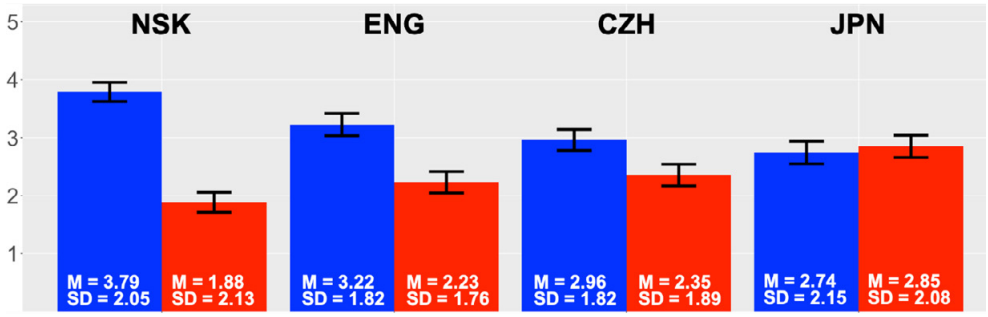


Figure 1. Results (AJT). X-axis: Group & Condition (Blue = Dative–Accusative; Red = Accusative–Accusative); Y-axis: acceptability (6-point Likert scale from 0 to 5). M = mean score; SD = standard deviation. Error bars indicate 95% CI.

Tables 3 to 5 present the model outcomes. In the global model (Table 3), we found an interaction effect between *Condition* and *Group*. Post-hoc analyses revealed three major aspects of the L2-Korean groups' performance. First, in the by-condition models (Table 4), all the learner groups evaluated the Dative–Accusative condition to be significantly lower and the Accusative–Accusative condition to be significantly higher than NSK. Second, in the same models, while no statistical difference was found across the L2 groups in the Dative–Accusative condition, there was statistical difference between ENG and JPN for the Accusative–Accusative condition, with the mean rating score by JPN being higher than that by ENG. Third, in the by-group models (Table 5), we found statistical difference between the two conditions only for NSK and ENG, with the Dative–Accusative condition being higher than the Accusative–Accusative condition.

Table 3. Model outcome (AJT): Global (α = .05).

	β	*SE*	*t*	*p*
(Intercept)	0.004	0.122	0.031	.975
Condition	−0.498	0.243	−2.047	.051
Group	0.011	0.020	0.568	.570
Condition * Group	0.273	0.039	6.927	< .001***

Table 4. Model outcome (AJT): By-condition (α = .025).

Condition	Group	*β*	*SE*	*t*	*p*
Dative–Accusative	NSK–ENG	−0.216	0.077	−2.804	.005*
	NSK–CZH	−0.290	0.074	−3.893	< .0005***
	NSK–JPN	−0.467	0.081	−5.748	< .0005***
	ENG–CZH	−0.039	0.095	−0.410	.682
	ENG–JPN	−0.138	0.117	−1.180	.240
	CZH–JPN	−0.156	0.108	−1.448	.149
Accusative–Accusative	NSK–ENG	0.229	0.076	3.013	.003**
	NSK–CZH	0.257	0.074	3.461	.0006**
	NSK–JPN	0.478	0.082	5.792	< .0005***
	ENG–CZH	0.043	0.099	0.430	.667
	ENG–JPN	0.283	0.112	2.528	.012*
	CZH–JPN	0.221	0.113	1.953	.052

Table 5. Model outcome (AJT): By-group (α = .025).

Group	*β*	*SE*	*t*	*p*
NSK	−0.957	0.326	−2.938	.006*
ENG	−0.478	0.191	−2.506	.018*
CZH	−0.364	0.198	−1.839	.075
JPN	0.062	0.271	0.227	.822

These findings indicate that, given the L2-Korean learner groups' overall stringency with the Dative–Accusative condition and leniency with the Accusative–Accusative condition when compared to NSK's, each group manifested distinctive acceptability-rating patterns: ENG close to NSK, JPN different from NSK, and CZH somewhere between ENG and JPN.

4.2 SPRT

Table 6 presents raw reading times by region, and Figure 2 illustrates each group's reading-time patterns (with residualised reading times). We note three major trends. First, all L2-Korean groups spent considerably more time reading each region than NSK, which aligns with previous studies reporting L2 learners' global challenge in real-time processing (Clahsen & Felser, 2006; Hopp, 2014; McDonald, 2006; Pozzan & Trueswell, 2016). Second, while the learner groups did not demonstrate a notable gap between the two conditions at R3 to R5, they numerically spent more time at R2 (the first critical region; N2-DAT/ACC) for the Dative–Accusative condition than for the Accusative–Accusative condition. Third, every learner group showed a substantial drop in reading times at R5 compared to those at R4.

Table 6. Descriptive statistics: SPRT, by-region reading time (raw; trimmed).

Group & Condition		Mean (SD)					
		R1	R2 (N2-DAT/ACC)	R3 (N3-ACC)	R4 (V)	R5	R6
NSK	Dative–Accusative	348 (264)	386 (258)	404 (249)	423 (313)	384 (238)	353 (165)
	Accusative–Accusative	350 (206)	363 (204)	411 (278)	417 (273)	412 (311)	365 (138)
ENG	Dative–Accusative	992 (458)	1197 (472)	1022 (456)	1101 (465)	649 (338)	455 (259)
	Accusative–Accusative	908 (393)	980 (461)	946 (427)	1138 (498)	590 (283)	443 (196)
CZH	Dative–Accusative	961 (452)	1089 (424)	968 (440)	1035 (442)	619 (310)	461 (257)
	Accusative–Accusative	835 (402)	985 (435)	925 (413)	1015 (492)	652 (328)	459 (205)
JPN	Dative–Accusative	905 (446)	1147 (465)	931 (361)	1017 (466)	543 (291)	421 (183)
	Accusative–Accusative	932 (417)	1021 (475)	993 (406)	1064 (480)	553 (275)	416 (202)

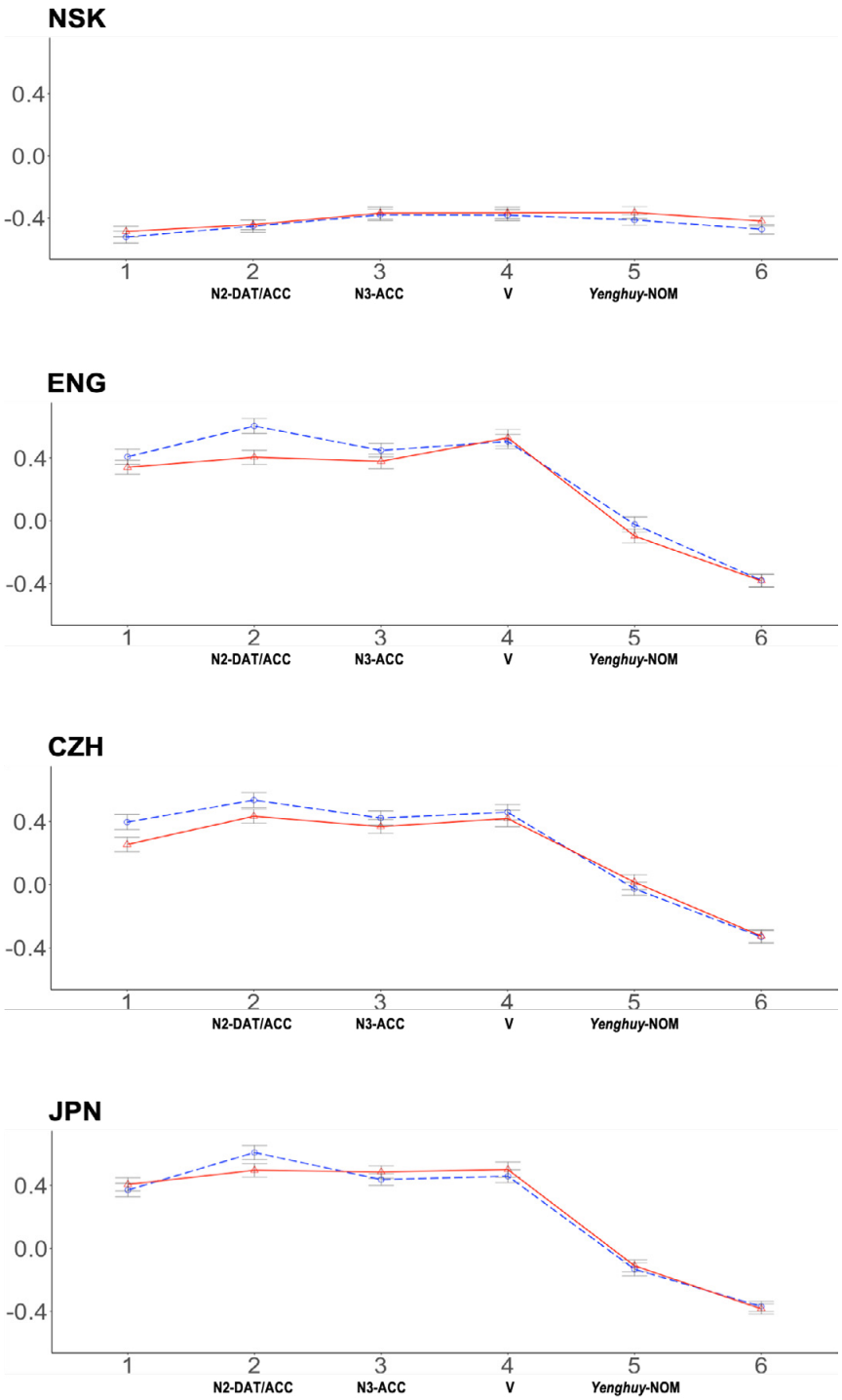


Figure 2. Results (SPRT). X-axis: region; Y-axis: reading time (residualised). Blue, dotted = Dative−Accusative; Red, solid = Accusative−Accusative. Error bars indicate 95% CI.

The global model (Table 7) revealed a main effect of *Group* at all regions of interest, which is consistent with the visual observation in Figure 2, and a main effect of *Condition* at R2. Considering the substantial reading-time difference between NSK and the L2-Korean groups, we conducted additional by-condition and by-group analyses including only the learner groups (see Appendix B for the model outcomes). However, these analyses revealed no significant difference except at R2 for ENG ($p = .006$) given the adjusted alpha-level ($\alpha = .025$).

Table 7. Model outcome (SPRT): Global ($\alpha = .05$).

			β	*SE*	*t*	*p*
Critical region	R2 (N2-DAT/ACC)	(Intercept)	0.182	0.017	10.805	< .001***
		Condition	−0.071	0.034	−2.122	.034*
		Group	0.328	0.014	23.282	< .001***
		Condition * Group	−0.040	0.028	−1.415	.157
	R3 (N3-ACC)	(Intercept)	0.156	0.026	6.042	< .001***
		Condition	−0.004	0.031	−0.130	.896
		Group	0.272	0.013	20.705	< .001***
		Condition * Group	0.010	0.026	0.401	.688
	R4 (V)	(Intercept)	0.180	0.021	8.552	< .001***
		Condition	0.013	0.034	0.382	.703
		Group	0.280	0.014	19.472	< .001***
		Condition * Group	0.004	0.029	0.149	.881
Spill-over region	R5	(Intercept)	−0.171	0.015	−11.485	< .001***
		Condition	0.019	0.030	0.629	.530
		Group	0.095	0.012	7.564	< .001***
		Condition * Group	−0.001	0.025	−0.058	.954

These findings indicate that, whereas the L2-Korean groups' reading-time patterns differed from NSK's and were largely the same across the groups, only ENG notably differentiated the two conditions at R2.

5. Discussions and Conclusion

5.1 AJT

Our findings from AJT suggest CLI interfacing with usage frequency. Across languages, the dative/ditransitive construction is often deemed a complex argument-structure construction (Goldberg, 1995; Haspelmath, 2015) and its acquisition is relatively delayed when compared to simple clausal construction types such as intransitives and transitives (Gries & Wulff, 2009; Kim et al., 2023) in conjunction with multiple factors involving its use (Xiang & Chang, 2022). The use of this construction is also not prominent in L2

textbooks, one primary source of L2-classroom input (Alsaif & Milton, 2012; Römer, 2004; Shin & Jung, 2022). These aspects appear to have led all the learner groups in this study to evaluate the Dative–Accusative condition to be significantly lower than NSK (with no statistical difference amongst these groups for this condition).

Specifically, the L2-Korean groups' substantial leniency towards the Accusative–Accusative condition than NSK lend empirical support to the reduced role of statistical pre-emption for L2 comprehension. Statistical pre-emption refers to a situation in which learners avoid using one formulation if an alternative formulation has been systematically attested in their language-usage experience. This competition-driven learning mechanism well-explains native speakers' linguistic knowledge in general (e.g., Boyd & Goldberg, 2011; Goldberg, 2019; Perek & Goldberg, 2017). A line of research on speakers' judgement of constructional alternations has also shown that the degree of acceptability of one constructional pattern is affected by the existence of competing alternatives (Kim & Shin, 2022; Robenalt & Goldberg, 2015; Stefanowitsch, 2011). L2 speakers (unless highly proficient in L2), however, may not always take competing alternatives into account during their acceptability-judgement activities, taking less advantage of statistical pre-emption (Robenalt & Goldberg, 2016; Tachihara & Goldberg, 2020). Our findings conform to this argument: the learner groups' reduced capacity to consider an alternative (and dominant) formulation – the Dative–Accusative pattern – seem to have allowed them to be substantially generous in evaluating the acceptability of the Accusative–Accusative pattern, which otherwise would have been rejected as NSK did.

Regarding the individual L2-Korean groups, we found that JPN rated the Accusative–Accusative condition more acceptable than ENG and CZH (with the statistical significance found only between JPN and ENG). This finding suggests that JPN may have relied upon their L1 knowledge, which allows the repetition of accusative cases (see (8) for example), during this task. In other words, the fact that Japanese permits repetition of the accusative case marker, albeit not falling into the dative construction, would have led JPN to be more generous with the Accusative–Accusative condition. This further bears two additional interpretations. First, based on the overall proximity between their L1 (Japanese) and L2 (Korean), JPN could have secured more space to consider the parts of their L1 knowledge which is not fully compatible with the target L2 knowledge and yet close enough to that L2 knowledge. If this is valid, it implies that the global proximity between the two languages led them to rather deviate from how native speakers of the target language cope with this low usage-frequency pattern of the dative construction. Second and relatedly, JPN may not have always treated the accusative-marked recipient in the Accusative–Accusative condition as intended (i.e., recipient), which we revisit in the next section.

Meanwhile, it seems that the pattern-wise functional equivalency between Korean and English dative constructions and the pairing between a pronominal recipient and an accusative case found in an English double-object dative pattern did not strongly influence L1-English L2-Korean learners' acceptability-rating of the Accusative–Accusative condition; their evaluation was rather similar to NSK's with a significant by-condition gap.

One promising reason for this outcome lies in the competition between cues involving the accusative case marker in Korean. Although this marker allows for indicating two different thematic roles in composing (di)transitive construction (Choo & Kwak, 2008; Sohn, 1999), the use of the accusative-marked theme is far more frequent and typical in use than that of the accusative-marked recipient (Choo & Kwak, 2008; Kim & Shin, 2022; Shin & Mun, 2023). Furthermore, L2 classroom input pertaining to the accusative case marker appears to be skewed towards the particular form–function association, namely, theme–accusative (Shin & Jung, 2022). Based on the learners' usage/learning history and weak representations of the accusative-marked recipient in English, the L1-English L2-Korean learners in this study could have resorted to the stronger cue involving the accusative case marker (i.e., theme–accusative), thereby suppressing the other option which can be found in their L1. This also implies that ENG, like the case of JPN, may not have interpreted the accusative-marked recipient nominal in the Accusative–Accusative condition as intended (i.e., recipient) all the time. We will return to this issue in the next section.

CZH's acceptability-rating performance was somewhere in between ENG and JPN, showing only a numerical (and not statistically significant given the alpha level) gap in the condition-wise comparison (Dative–Accusative vs. Accusative–Accusative) and the group-wise comparisons (CZH vs. ENG; CZH vs. JPN). We find one plausible locus of this result from the typological properties of Czech in relation to the other two languages of comparison in this study. Czech is an SVO language, which is the same as English, but scrambling is allowed because of its active case system, which is the same as Japanese. Unlike Japanese, however, Czech case is indicated through word inflection, not through particles. In addition, the dative construction in Czech comprises exclusively one pattern (Dative–Accusative), which is different from English but is similar to Japanese. This way, Czech is typologically located between English and Japanese. Therefore, given the same kind of usage-frequency effects that the other L2-Korean groups experienced (thus resulting in the comparable rates of acceptability for the Dative–Accusative condition across all learner groups), the aforementioned properties of Czech in comparison to the two other languages may have led the CZH's acceptability ratings of the Accusative–Accusative condition to remain around the ENG or the JPN (with the same kind of possibility that they mistreated the accusative-marked recipient in this condition).

5.2 SPRT

The L1-Korean group in our experiment did not manifest notable reading-time difference across the two conditions. Specifically, there was no particular processing burden at R3 (the second critical region; N3-ACC) for the Accusative–Accusative condition. This is indicative of L1 speakers' efficient and fast processing of their L1 (in comparison to how L2 learners go about online processing), resulting in a floor effect. This also implies that native Korean speakers have good knowledge that the accusative case marker can indicate a recipient role (albeit not preferred in actual language use) and retain this possibility for later processing of the incoming/upcoming input.

CC BY

Turing to the learner groups, we note three major findings. First, they spent substantially longer time reading the critical (R2 to R4) and spill-over (R5) regions compared to NSK. Second, for the Accusative−Accusative condition, they did not manifest notable increase in reading times at R3 in comparison to those at R2 (the first critical region; N2-DAT/ACC). Third, they showed by-condition difference in reading times at R2 but only ENG spent significantly longer time reading R2 for the Dative−Accusative condition than for the Accusative−Accusative condition.

Our findings from the learner groups in SPRT reveal another aspect of CLI interfacing with usage frequency and processing factors. The first finding aligns with previous studies showing L2 learners' global challenge in real-time processing (Clahsen & Felser, 2006; Hopp, 2014; McDonald, 2006; Pozzan & Trueswell, 2016). Given this challenge, the second finding points to the possibility that the learners engaged more in the item-specific requirements at hand than in a broad structure-building process utilising cross-region and/or upcoming information. Specifically, for the Accusative−Accusative condition, the learners in this study would have treated the accusative-marked recipient at R2 simply as the accusative-marked theme. This interpretation seems reasonable by two promising forces. One is the morphological composition of a subject in each test stimulus: a nominative-marked agent (indicated by a human name). The other force is the accusative case marker itself, which typically indicates the theme argument within a (di-)transitive event. Considering the nature of SPRT (i.e., a moment-by-moment, sequential, and cumulative interpretation of the incoming items in real time and with more time constraints), these two forces would have encouraged the learners to be garden-pathed, relying on frequency/usage-based heuristics comprising a canonical active transitive (i.e., nominative-marked agent + accusative-marked theme) rather than searching for the possibility that the accusative-marked argument expresses a recipient role to deliver the dative semantics and holding that possibility until some later points. The learners' endeavour to cope with the here-and-now information in online processing would also address their performance at R3: they may have taken less into account what was interpreted at R2 to revise the previous interpretation as necessary based on the interpretation of the current input at R3. This lends support to the notion of L2 learners' reduced capacity to generate expectations of the following representations given the current input (Grüter et al., 2017; Pozzan & Trueswell, 2016) and to integrate information from multiple routes (Sorace, 2011) given the less precise and vaguer linguistic representations of L2 knowledge (Futrell & Gibson, 2017; Tachihara & Goldberg, 2020).

The third finding that the reading-time gap between the two conditions at R2 (the first critical region; N2-DAT/ACC) was significant only for ENG and not for CZH or JPN suggests asymmetric impacts of CLI on L2 sentence processing. The dative marker (which introduces the dative construction) is employed with less frequency compared to the accusative case marker (which introduces the transitive construction) in L2 textbooks (Shin & Jung, 2022) and does not exist in English. These characteristics would have incurred surprisal to a notable degree and invited more interpretive commitment for ENG, leading them to spend more time reading R2 when encountering this marker than when encountering

the accusative case marker. In contrast, although the way that it is realised in Czech and Japanese differs (i.e., word inflection in Czech; particle use in Japanese), overt realisation of the dative case in these languages is not marked in comparison to English. This holistic typological feature would have afforded CZH and JPN more agility to handle the dative marker (and probably to use the dative-marked recipient) at R2 in real-time processing, resulting in no considerable reading-time difference across the two conditions.

If this interpretation holds, one discrepancy emerges in the learners' performance on the two tasks: while all learner groups presumably mis-interpreted the accusative-marked recipient in the Accusative–Accusative condition for SPRT, only JPN demonstrated a fairly high level of acceptance in this condition for AJT (with the mean rate of 2.85 out of 5; see Figure 1). We attribute this to CLI being intertwined with task effects. The learners' L1s are distinctive with respect to the permission of two accusative-marked entities and the procedures and requirements in each task differ notably (see Sections 2.2 and 2.3). Based on these characteristics, AJT seems to have allowed more space wherein the learners evaluate the constructional composition of the stimuli in the Accusative–Accusative condition than SPRT. In this setting, JPN would have taken into account their L1 knowledge about multiple (accusative) case markers, albeit not related to the dative construction, more actively in AJT than in SPRT, resulting in their increased generosity with the acceptability of (the formal characteristics of) the Accusative–Accusative condition.

Meanwhile, the reason why all the learner groups demonstrated the considerable reading-time drop from R4 (the last critical region; V) to R5 (the spill-over region) for both conditions is somewhat unclear at this point. One may claim that the invariant carrier phrase used at R5–R6 somehow relaxed their processing burden. However, the test stimuli were interspersed with filler items (with different R5–R6 compositions) and the presentation order of the sentences were randomised. We thus believe there is little possibility that the learners benefitted from the invariant carrier phrase. Instead, we speculate that the learners may have focused exclusively on the current information at R5, rather than inspecting their previous (and cumulative) interpretation until R4 and/or pursuing the complete, full clausal integration at R5. This possibility is supported by the same reason that we addressed in the second finding above. In other words, the seemingly shortened reading times found at R5 relative to those at R4 may not indicate that the learners' processing burden was relaxed at R5. We believe this is an avenue for further investigation.

5.3 Typological similarity and L2 sentence processing

This study's findings proffer an intriguing picture of how CLI is manifested in L2 learners' mind at the level of morpho-syntax. Specifically, these findings suggest that, for clausal constructions (and perhaps beyond), the L2 processor operates in conjunction with multiple factors surrounding L2 behaviour currently being executed. In this study, we have identified three major factors that may address how the L2 processor goes about sentence processing: (i) properties of the target L2 item (i.e., the alternation relation of the

two grammatical patterns of dative construction which are distinctive in light of usage frequency and particular form–function mapping of case-marking), (ii) morpho-syntactic characteristics of learners' L1 (i.e., macro- and micro-level proximity involving L1–L2 pairs), and (iii) task-specific requirements (i.e., both holistic and partial evaluation with less time constraints for the acceptability judgement task; moment-by-moment resolution with more time constraints for the self-paced reading task). The three L2 groups' performance demonstrated by-task and by-group variabilities with respect to the role of CLI in L2 sentence processing.

Our results are largely consistent with the claim that macro-level typological proximity does not always ensure the success of L2 learning across the board. Recent studies advocating this claim (Cuza et al., 2018; Westergaard, 2021) often emphasise that a more influential factor in this respect may lie in particular (structural) features that the languages in contact share. What we have shown in this study not only supports this argument, but also advances our understanding of this issue by revealing the way in which CLI is modulated by various (non-)linguistic factors in L2 mind. We have evidenced this point by employing various L1–L2 pairs and different task types applied to the same L2 groups. The implications of our study call for a more fine-grained understanding of the previous proposals on the role of CLI for L2 acquisition (Ellis, 2006b; Frenck-Mestre et al., 2019; Hartsuiker & Bernolet, 2017; Jiang et al., 2017; MacWhinney, 2013), prompting continuous research on typological proximity effects on L2 processing and acquisition thereof. Our findings lend further empirical support to the idea that L2 knowledge is noisy, comprising vaguer and less specific representations in memory (Futrell & Gibson, 2017; Tachihara & Goldberg, 2020), which in turn shows the complex nature of L2 knowledge (Ellis, 2006a). More broadly, we believe the findings of the present study appeal to general L2 acquisition architectures, specifically concerning the pivotal role of usage frequency in learning outcomes (as argued by usage-based accounts; Ellis, 2002; Robenalt & Goldberg, 2016) and the impact of competition between linguistic cues on the degree to which the target L2 knowledge is manifested in the L2 mind (as argued by the Competition Model; MacWhinney, 2013; Park & Kim, 2021).

As a final remark, we acknowledge some remaining areas that the current study could not address clearly, which await further investigation. First, to get a fuller picture of the L2-acquisition architecture, the findings of this study should be cross-validated by way of more ecologically valid measurements (e.g., eye-tracking, EEG) together with assessing learners' cognitive skills relevant to L2 behaviour (e.g., working memory, inhibitory control). Second, more precise evaluation of L2 input, in consideration of learning materials that the learners typically learn in formal language-learning scenes, may be required so as to better quantify L2 learners' language-usage experience. Our study does not speak to this matter directly as we relied upon previous reports regarding the distributional properties of Korean dative construction for L2 learners. Lastly, how L2 learners engage in verb–construction integration when processing the two patterns of dative construction in Korean is something that the present study cannot answer. Although we ensured that the verbs were reasonably frequent in L1 use, we did not manipulate verb frequency carefully

when creating the test stimuli. Considering that a line of research has reported the major role of verb frequency in sentence comprehension and processing (Ambridge et al., 2014; Gries & Stefanowitsch, 2004; Kim & Shin, 2022; Robenalt & Goldberg, 2016; Stefanowitsch & Gries, 2003), we may expect the learners in this study to react to dative sentences with low-frequency verbs differently from what this study has found. This is what we plan to pursue next.

CRediT Author contribution / *Contribución de los autores*
Conceptualization / *Conceptualización:* Gyu-Ho Shin.
Formal Analysis / *Análisis formal:* Gyu-Ho Shin.
Methodology / *Metodología:* Gyu-Ho Shin.
Writing / *Redacción:* Gyu-Ho Shin, Jeong Eun Shin.
Research dataset / *Datos de investigación:* Gyu-Ho Shin.

Funding, data availability, and copyright / *Financiación, disponibilidad de datos y derechos de autoría*
Funding / *Financiación:* This work was supported from OP JAC Project "MSCA Fellowships at Palacký University I." CZ.02.01.01/00/22_010/0002593, run at Palacký University in Olomouc, Czech Republic awarded to the first author.



Image use consent / *Consentimiento para el uso de imágenes:* Not applicable.
Conflict of interest / *Conflicto de intereses:* The authors declare none.
Data availability statement / *Declaración de disponibilidad de datos:* The data and code used in this study are available in OSF at: https://doi.org/10.17605/OSF.IO/U2N4K.
License / *Licencia:* This article is published under the CC BY 4.0 License / *Este artículo se publica bajo la Licencia CC BY 4.0*.

Editorial history / *Fechas del proceso editorial*
Received / *Recibido:* 30/06/2023
Accepted / *Aceptado:* 30/04/2024
Published / Publicado: 15/11/2026

References

Alsaif, A., & Milton, J. (2012). Vocabulary input from school textbooks as a potential contributor to the small uptake gained by English as a foreign language learners in Saudi Arabia. *Language Learning Journal, 40(1)*, 21–33. https://doi.org/10.1080/09571736.2012.658221

Ambridge, B., Pine, J. M., Rowland, C. F., Freudenthal, D., & Chang, F. (2014). Avoiding dative overgeneralization errors: Semantics, statistics or both? *Language, Cognition and Neuroscience, 2(2)*, 218–243. https://doi.org/10.1080/01690965.2012.738300

Andersson, A., Sayehli, S., & Gullberg, M. (2019). Language background affects online word order processing in a second language but not offline. *Bilingualism: Language and Cognition, 22(4)*, 802–825. https://doi.org/10.1017/S1366728918000573

Association for the Study of Japanese Descriptive Grammar. (2009). *gendai nihongo bunpo 7 (Modern Japanese Grammar 7)*. Kurosio Publishers.

Baayen, R. H., & Milin, P. (2010). Analyzing reaction times. *International Journal of Psychological Research, 3(2)*, 12–28. https://doi.org/10.21500/20112084.807

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(3)*, 255–278. https://doi.org/10.1016/j.jml.2012.11.001

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software, 67(1)*, 1–48. https://doi.org/10.18637/jss.v067.i01

Bates, E., & MacWhinney, B. (1989). Functionalism and the competition model. In B. MacWhinney & E. Bates (Eds.), *The cross-linguistic study of sentence processing* (pp. 3–73). Cambridge University Press.

Bernolet, S., Hartsuiker, R. J., & Pickering, M. J. (2013). From language-specific to shared syntactic representations: The influence of second language proficiency on syntactic sharing in bilinguals. *Cognition, 127*, 287–306. https://doi.org/10.1016/j.cognition.2013.02.005

Boyd, J. K., & Goldberg, A. E. (2011). Learning what not to say: The role of statistical preemption and categorization in A-adjective production. *Language, 87*, 55–83. https://doi.org/10.1353/lan.2011.0012

Bresnan, J., & Ford, M. (2010). Predicting syntax: Processing dative constructions in American and Australian varieties of English. *Language, 86(1)*, 168–213. https://doi.org/10.1353/lan.0.0189

Cadierno, T., & Robinson, P. (2009). Language typology, task complexity and the development of L2 lexicalization patterns for describing motion events. *Annual Review of Cognitive Linguistics, 7(1)*, 245–276. https://doi.org/10.1075/arcl.7.10cad

Cho, Y. J., & Jeon, M. G. (2015). hankwuke swuyongseng phantanuy silhempangpeplon pikyo yenkwu [A comparative study of acceptability judgment collection methods in Korean]. *The Journal of Linguistics Science, 72*, 397–416.

Choi, H-W. (2009). Ordering a left-branching language: Heaviness vs. givenness. *Language and Information, 13(1)*, 39–56. https://doi.org/10.29403/LI.13.1.3

Choo, M. & Kwak, H-Y. (2008). *Using Korean: a guide to contemporary usage*. Cambridge University Press. https://doi.org/10.1017/CBO9781139168496

Christianson, K. (2016). When language comprehension goes wrong for the right reasons: Good-enough, underspecified, or shallow language processing. *Quarterly Journal of Experimental Psychology, 69(5)*, 817–828. https://doi.org/10.1080/17470218.2015.1134603

Clahsen, H., & Felser, C. (2006). Continuity and shallow structures in language processing. *Applied Psycholinguistics, 27(1)*, 107–126. https://doi.org/10.1017/S0142716406060206

Cunnings, I. (2017). Parsing and working memory in bilingual sentence processing. *Bilingualism: Language and Cognition, 20(4)*, 659–678. https://doi.org/10.1017/S1366728916000675

Cuza, A., Jiao, J., & López-Otero, J. C. (2018). Does typological proximity really matter? Evidence from Mandarin and Brazilian Portuguese-speaking learners of Spanish. *Languages, 3*(2), 13. https://doi.org/10.3390/languages3020013

Dąbrowska, E., & Street, J. (2006). Individual differences in language attainment: Comprehension of passive sentences by native and non-native English speakers. *Language Sciences, 28(6)*, 604–615. https://doi.org/10.1016/j.langsci.2005.11.014

Eckes, T., & Grotjahn, R. (2006). A closer look at the construct validity of C-tests. *Language Testing, 23(3)*, 290–325. https://doi.org/10.1191/0265532206lt330oa

Ellis, N. C. (2002). Frequency effects in language processing: A review with implications for theories of implicit and explicit language acquisition. *Studies in Second Language Acquisition, 24(2)*, 143–188. https://doi.org/10.1017/S0272263102002024

Ellis, N. C. (2006a). Cognitive perspectives on SLA: The associative-cognitive CREED. *AILA Review, 19(1)*, 100–121. https://doi.org/10.1075/aila.19.08ell

Ellis, N. C. (2006b). Selective attention and transfer phenomena in L2 acquisition: Contingency, cue competition, salience, interference, overshadowing, blocking, and perceptual learning. *Applied Linguistics, 27*, 164–194. https://doi.org/10.1093/applin/aml015

Enochson, K., & Culbertson, J. (2015). Collecting psycholinguistic response time data using Amazon Mechanical Turk. *PloS one, 10*(3), e0116946. https://doi.org/10.1371/journal.pone.0116946

Ferreira, F. (2003). The misinterpretation of noncanonical sentences. *Cognitive Psychology, 47*, 164–203. https://doi.org/10.1016/S0010-0285(03)00005-7

Filipović, L. (2008). Typology in action: Applying insights from typological contrasts. *International Journal of Applied Linguistics, 18(1)*, 42–61. https://doi.org/10.1111/j.1473-4192.2008.00189.x

Flynn, S., Foley, C., & Vinnitskaya, I. (2004). The cumulative-enhancement model for language acquisition: Comparing adults' and children's patterns of development in first, second and third language acquisition of relative clauses. *International Journal of Multilingualism, 1(1)*, 3–16. https://doi.org/10.1080/14790710408668175

Frenck-Mestre, C., Kim, S. K., Choo, H., Ghio, A., Herschensohn, J., & Koh, S. (2019). Look and listen! The online processing of Korean case by native and non-native speakers. *Language, Cognition and Neuroscience, 34(3)*, 385–404. https://doi.org/10.1080/23273798.2018.1549332

Futrell, R., & Gibson, E. (2017). L2 processing as noisy channel language comprehension. *Bilingualism: Language and Cognition, 20(4)*, 683–684. https://doi.org/10.1017/S1366728916001061

Goldberg, A. E. (1995). *Constructions: A construction grammar approach to argument structure*. University of Chicago Press.

Goldberg, A. E. (2019). *Explain me this: Creativity, competition, and the partial productivity of constructions*. Princeton University Press. https://doi.org/10.2307/j.ctvc772nn

Gries, S. T., & Stefanowitsch, A. (2004). Extending collostructional analysis: A corpus-based perspective on 'alternations'. *International Journal of Corpus Linguistics, 9(1)*, 97–129. https://doi.org/10.1075/ijcl.9.1.06gri

Gries, S. T., & Wulff, S. (2009). Psycholinguistic and corpus-linguistic evidence for L2 constructions. *Annual Review of Cognitive Linguistics, 7(1)*, 163–186. https://doi.org/10.1075/arcl.7.07gri

Grüter, T., & Hopp, H. (2021). How permeable are native and non-native syntactic processing to crosslinguistic influence? *Journal of Memory and Language, 121*, 104281. https://doi.org/10.1016/j.jml.2021.104281

Grüter, T., Rohde, H., & Schafer, A. J. (2017). Coreference and discourse coherence in L2: The roles of grammatical aspect and referential form. *Linguistic Approaches to Bilingualism, 7(2)*, 199–229. https://doi.org/10.1017/S1366728918000561

Hartsuiker, R. J., & Bernolet, S. (2017). The development of shared syntax in second language learning. *Bilingualism: Language and Cognition, 20(2)*, 219–234. https://doi.org/10.1017/S1366728915000164

Hartsuiker, R. J., Pickering, M. J., & Veltkamp, E. (2004). Is syntax separate or shared between languages? Cross- linguistic syntactic priming in Spanish-English bilinguals. *Psychological Science, 15*, 409–414. https://doi.org/10.1111/j.0956-7976.2004.00693.x

Haspelmath, M. (2015). Ditransitive constructions. *The Annual Review of Linguistics, 1(1)*, 19–41. https://doi.org/10.1146/annurev-linguist-030514-125204

Håkansson, G., Pienemann, M., & Sayehli, S. (2002). Transfer and typological proximity in the context of second language processing. *Second Language Research, 18(3)*, 250–273. https://doi.org/10.1191/0267658302sr206oa

Hilbig, B. E. (2016). Reaction time effects in lab-versus Web-based research: Experimental evidence. *Behavior Research Methods, 48*, 1718–1724. https://doi.org/10.3758/s13428-015-0678-9

Hopp, H. (2014). Working memory effects in the L2 processing of ambiguous relative clauses. *Language Acquisition, 21(3)*, 250–278. https://doi.org/10.1080/10489223.2014.892943

Hopp, H. (2018). The bilingual mental lexicon in L2 sentence processing. *Second Language, 17*, 5–27. https://doi.org/10.11431/secondlanguage.17.0_5

Hopp, H., Bail, J., & Jackson, C. N. (2020). Frequency at the syntax-discourse interface: A bidirectional study on fronting options in L1/L2 German and L1/L2 English. *Second Language Research, 36(1)*, 65–96. https://doi.org/10.1177/0267658318802985

Hopp, H., & Grüter, T. (2021). The time-course of competition from the L1 grammar in L2 sentence processing: Evidence from cross-linguistic structural priming. *Second Language Research*, 02676583211009586. https://doi.org/10.1177/02676583211009586

Hwang, H., Shin, J. A., & Hartsuiker, R. J. (2018). Late bilinguals share syntax unsparingly between L1 and L2: Evidence from crosslinguistically similar and different constructions. *Language Learning, 68(1)*, 177–205. https://doi.org/10.1111/lang.12272

Hwang, S. H., & Lardiere, D. (2013). Plural-marking in L2 Korean: A feature-based approach. *Second Language Research, 29(1)*, 57–86. https://doi.org/10.1177/0267658312461496

Jacob, G., & Felser, C. (2016). Reanalysis and semantic persistence in native and non-native garden-path recovery. *Quarterly Journal of Experimental Psychology, 69(5)*, 907–925. https://doi.org/10.1080/17470218.2014.984231

Jiang, N., Hu, G., Chrabaszcz, A., & Ye, L. (2017). The activation of grammaticalized meaning in L2 processing: Toward an explanation of the morphological congruency effect. *International Journal of Bilingualism, 21(1)*, 81–98. https://doi.org/10.1177/1367006915603823

Jiang, N., Novokshanova, E., Masuda, K., & Wang, X. (2011). Morphological congruency and the acquisition of L2 morphemes. *Language Learning, 61(3)*, 940–967. https://doi.org/10.1111/j.1467-9922.2010.00627.x

Just, M. A., Carpenter, P. A., & Woolley, J. D. (1982). Paradigms and processes and in reading comprehension. *Journal of Experimental Psychology: General, 3(2)*, 228–238. https://doi.org/10.1037/0096-3445.111.2.228

Kaan, E., Ballantyne, J. C., & Wijnen, F. (2015). Effects of reading speed on second-language sentence processing. *Applied Psycholinguistics, 36(4)*, 799–830. https://doi.org/10.1017/S0142716413000519

Kim, H., & Shin, G-H. (2022). Effects of verb and construction frequency in sentence comprehension: A case of dative construction in Korean. *Functions of Language, 29(3)*, 274–299. https://doi.org/10.1075/fol.22028.kim

Kim, H., Shin, G-H., & Hwang, H. (2020). Integration of verbal and constructional information in the second language processing of English dative constructions. *Studies in Second Language Acquisition, 42(4)*, 825–847. https://doi.org/10.1017/S0272263119000743

Kim, H., Shin, G-H., & Sung, M. (2023). Constructional complexity as a predictor of Korean EFL learners' writing proficiency. *Revista Española de Lingüística Aplicada/Spanish Journal of Applied Linguistics, 36(2)*, 436–466. https://doi.org/10.1075/resla.20066.kim

Kim, J., Gabriel, U., & Gygax, P. (2019). Testing the effectiveness of the Internet-based instrument PsyToolkit: A comparison between web-based (PsyToolkit) and lab-based (E-Prime 3.0) measurements of response choice and response time in a complex psycholinguistic task. *PloS one, 14*(9), e0221802. https://doi.org/10.1371/journal.pone.0221802

Koornneef, A. W., & Van Berkum, J. J. (2006). On the use of verb-based implicit causality in sentence comprehension: Evidence from self-paced reading and eye tracking. *Journal of Memory and Language, 54(4)*, 445–465. https://doi.org/10.1016/j.jml.2005.12.003

Lee, Y-h. (2014). Semantic relations and multiple case constructions: an experimental approach. *Linguistic Research, 31(2)*, 213–247. https://doi.org/10.17250/khisli.31.2.201408.001

Lee-Ellis, S. (2009). The development and validation of a Korean C-test using Rasch analysis. *Language Testing, 26(2)*, 245–274. https://doi.org/10.1177/0265532208101007

Lee, C., Shin, G-H., & Jung, B. K. (2023). How 'good-enough' is second language comprehension? Morphological causative and suffixal passive constructions in Korean. *Applied Linguistics Review*. https://doi.org/10.1515/applirev-2022-0152

Lim, J. H., & Christianson, K. (2015). Second language sensitivity to agreement errors: Evidence from eye movements during comprehension and translation. *Applied Psycholinguistics, 36(6)*, 1283–1315. https://doi.org/10.1017/S0142716414000290

Luk, Z.P., & Shirai, Y. (2009). Is the acquisition order of grammatical morphemes impervious to L1 knowledge? Evidence from the acquisition of plural -s, articles and possessive 's. *Language Learning, 59*, 721–754. https://doi.org/10.1111/j.1467-9922.2009.00524.x

MacWhinney, B. (2008). A unified model. In P. Robinson & N. C. Ellis (Eds.), *Handbook of Cognitive Linguistics and Second Language Acquisition* (pp. 341–371). Routledge.

MacWhinney, B. (2013). The logic of the unified model. In S.M. Gass & A. Mackey (Eds.), *The Routledge Handbook of Second Language Acquisition* (pp. 211–227). Routledge.

Masuoka T. (1987). Redundant Case. In H. Termura (Ed.), *A Case Study of Japanese Grammar* (pp. 18–23). Ofusha.

Mickan, A., McQueen, J. M., & Lemhöfer, K. (2019). Bridging the gap between second language acquisition research and memory science: The case of foreign language attrition. *Frontiers in Human Neuroscience, 13*, 397. https://doi.org/10.3389/fnhum.2019.00397

Mickan, A., & Lemhöfer, K. (2020). Tracking syntactic conflict between languages over the course of L2 acquisition: A cross-sectional event-related potential study. *Journal of Cognitive Neuroscience, 32(5)*, 822–846. https://doi.org/10.1162/jocn_a_01528

Nakamura, T. (2003). A study of double-wo case in Modern Japanese. *Okadaironko, 31*, 152–143.

Naughton, J. (2005). *Czech: An essential grammar*. Routledge. https://doi.org/10.4324/9780203567036

Nielsen, M., Haun, D., Kärtner, J., & Legare, C. H. (2017). The persistent sampling bias in developmental psychology: A call to action. *Journal of Experimental Child Psychology, 162*, 31–38. https://doi.org/10.1016/j.jecp.2017.04.017

McDonald, J. L. (2006). Beyond the critical period: Processing-based explanations for poor grammaticality judgment performance by late second language learners. *Journal of Memory and Language, 55(3)*, 381–401. https://doi.org/10.1016/j.jml.2006.06.006

McKay, T. (2019). *More on the validity and reliability of C-test scores: A meta-analysis of C-test studies* [Unpublished Ph.D. dissertation, Georgetown University].

Omaki, A., & Schulz, B. (2011). Filler-gap dependencies and island constraints in second-language sentence processing. *Studies in Second Language Acquisition, 33(4)*, 563–588. https://doi.org/10.1017/S0272263111000313

Park, S. H., & Kim, H. (2021). Cross-linguistic influence in the second language processing of Korean morphological and syntactic causative constructions. *Linguistic Approaches to Bilingualism, 12(5)*, 687–713. https://doi.org/10.1075/lab.20026.par

Park, S. H., & Kim, H. (2022). Bilingual processing of case-marking and locative verbs in Korean: Use of L2-unique information. *International Journal of Bilingualism*, 13670069221110385. https://doi.org/10.1177/13670069221110385

Park, S-H., & Yi, E. (2021). Perception-production asymmetry for Korean double accusative ditransitives. *Linguistic Research, 38(1)*, 27–52. https://doi.org/10.17250/khisli.38.1.202103.002

Perek, F., & Goldberg, A. E. (2017). Linguistic generalization on the basis of function and constraints on the basis of statistical preemption. *Cognition, 168*, 276–293. https://doi.org/10.1016/j.cognition.2017.06.019

Pinker, S. (1989). *Learnability and cognition: The acquisition of argument structure*. MIT Press.

Pozzan, L., & Trueswell, J. C. (2016). Second language processing and revision of garden-path sentences: a visual word study. *Bilingualism: Language and Cognition, 19(3)*, 636–643. https://doi.org/10.1017/S1366728915000838

Putnam, M. T., Carlson, M., & Reitter, D. (2018). Integrated, not isolated: Defining typological proximity in an integrated multilingual architecture. *Frontiers in Psychology, 8*, 2212. https://doi.org/10.3389/fpsyg.2017.02212

R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing.

Robenalt, C., & Goldberg, A. E. (2015). Judgment evidence for statistical preemption: It is relatively better to vanish than to disappear a rabbit, but a lifeguard can equally well backstroke or swim children to shore. *Cognitive Linguistics, 26(3)*, 467–503. https://doi.org/10.1515/cog-2015-0004

Robenalt, C., & Goldberg, A. E. (2016). Nonnative speakers do not take competing alternative expressions into account the way native speakers do. *Language Learning, 66(1)*, 60–93. https://doi.org/10.1111/lang.12149

Rothman, J. (2011). L3 syntactic transfer selectivity and typological determinacy: The typological primacy model. *Second Language Research, 27*, 107–127. https://doi.org/10.1177/0267658310386439

Römer, U. (2004). Comparing real and ideal language learner input: The use of an EFL textbook corpus in corpus linguistics and language teaching. In G. Aston, S. Bernardini, & D. Steward (Eds.), *Corpora and language learners* (pp. 151–168). John Benjamins. https://doi.org/10.1075/scl.17.12rom

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. https://doi.org/10.1075/lab.17058.sch

Shin, G-H., & Jung, B. K. (2022). Input-output relation in L2 acquisition: Textbook and learner writing for adult English-speaking beginners of Korean. *Australian Review of Applied Linguistics, 45(3)*, 347–370. https://doi.org/10.1075/aral.20049.shi

Shin, G-H., & Mun, S. (2023). Korean-speaking children's constructional knowledge about a transitive event: Corpus analysis and Bayesian modelling. *Journal of Child Language, 50(2)*, 311–337. https://doi.org/10.1017/S030500092100088X

Shin, J-A., & Christianson, K. (2009). Syntactic processing in Korean-English bilingual production: Evidence from cross-linguistic structural priming. *Cognition, 112(1)*, 175–180. https://doi.org/10.1016/j.cognition.2009.03.011

Shin, S-i. (2016). A study on the functions of eul/reul through examining double accusative constructions: focusing on transitivity. *URIMALGEUL: The Korean Language and Literature, 68*, 1–35. https://doi.org/10.18628/urimal.68..201603.1

Slabakova, R. (2014). The bottleneck of second language acquisition. *Foreign Language Teaching and Research, 46(4)*, 543–559.

Slim, M. S., & Hartsuiker, R. J. (2022). Moving visual world experiments online? A webcam-based replication of Dijkgraaf, Hartsuiker, and Duyck (2017) using PCIbex and WebGazer. Js. *Behavior Research Methods*, 1–19. https://doi.org/10.3758/s13428-022-01989-z

Sohn, H. M. (1999). *The Korean language*. Cambridge University Press.

Sorace, A. (2011). Pinning down the concept of 'interface' in bilingualism. *Linguistic Approaches to Bilingualism, 1*, 1–33. https://doi.org/10.1075/lab.1.1.01sor

Stefanowitsch, A. (2011). Constructional preemption by contextual mismatch: A corpus-linguistic investigation. *Cognitive Linguistics, 22*(1), 107–129. https://doi.org/10.1515/cogl.2011.005

Stefanowitsch, A., & Gries, S. T. (2003). Collostructions: Investigating the interaction of words and constructions. *International Journal of Corpus Linguistics, 8(2)*, 209–243. https://doi.org/10.1075/ijcl.8.2.03ste

Sugimoto, T. (1986). Case particle. In K. Okutsu, Y. Numuta & T. Sugimoto (Eds.), *A study of Japanese Postpositionals* (pp. 227–380). Bonjinsha.

Tachihara, K., & Goldberg, A. E. (2020). Reduced competition effects and noisier representations in a second language. *Language Learning, 70(1)*, 219–265. https://doi.org/10.1111/lang.12375

Tan, M., & Foltz, A. (2020). Task sensitivity in L2 English speakers' syntactic processing: Evidence for good-enough processing in self-paced reading. *Frontiers in Psychology, 11*, 575847. https://doi.org/10.3389/fpsyg.2020.575847

Ullman, M. T. (2001). The neural basis of lexicon and grammar in first and second language: The declarative/procedural model. *Bilingualism: Language and Cognition, 4*, 105–122. https://doi.org/10.1017/S1366728901000220

Westergaard, M. (2021). Microvariation in multilingual situations: The importance of property-by-property acquisition. *Second Language Research, 37(3)*, 379–407. https://doi.org/10.1177/0267658319884116

Xiang, K., & Chang, H. (2022). Multiple constraints on second language processing of English dative alternation. *Language Learning and Development*. https://doi.org/10.1080/15475441.2022.2149399

Yoon, J. H-S. (2015). Double nominative and double accusative constructions. In L. Brown & J. Yeon (Eds.), *The Handbook of Korean Linguistics* (pp. 79–97). John Wiley & Sons. https://doi.org/10.1002/9781118371008.ch5

Zehr, J., & Schwarz, F. (2018). *PennController for Internet Based Experiments (IBEX)*. https://doi.org/10.17605/OSF.IO/MD832

Appendix A

List of test sentences

Cwuhuy-ka Yumi-eykey/lul kapang-ul cwu-ess-ta.
Cwuhuy-NOM Yumi-DAT/ACC bag-ACC give-PST-SE
'Cwuhuy gave a bag to Yumi.'

Minci-ka Hyeymi-eykey/lul khatu-lul ponay-ss-ta.
Minci-NOM Hyeymi-DAT/ACC card-ACC send-PST-SE
'Minci sent a card to Hyeymi.'

Yengmi-ka Sea-eykey/lul phyenci-lul pwuchye-ss-ta.
Yengmi-NOM Sea-DAT/ACC letter-ACC mail-PST-SE
'Yengmi mailed a letter to Sea.'

Sihwu-ka Huycay-eykey/lul hankwuke-lul kaluchye-ss-ta.
Sihwu-NOM Huycay-DAT/ACC Korean-ACC teach-PST-SE
'Sihwu taught Korean to Huycay.'

Yengci-ka Mincay-eykey/lul hayntuphon-ul senmwulhay-ss-ta.
Yengci-NOM Mincay-DAT/ACC cellphone-ACC give-PST-SE
'Yengci gave a cell phone (as a gift) to Mincay.'

Wenho-ka Sungki-eykey/lul umsik-ul kenney-ss-ta.
Wenho-NOM Sungki-DAT/ACC food-ACC hand-PST-SE
'Wenho handed the food to Sungki.'

Seyhuy-ka Cinwu-eykey/lul noymwul-ul pachye-ss-ta.
Seyhuy-NOM Cinwu-DAT/ACC bribe-ACC offer-PST-SE
'Seyhuy offered a bride to Cinwu.'

Swuci-ka Unci-eykey/lul kakey-lul mathkye-ss-ta.
Swuci-NOM Unci-DAT/ACC shop-ACC leave-PST-SE
'Swuci left the shop to Unci.'

Changhuy-ka Minkwu-eykey/lul ccokci-lul centalhay-ss-ta.
Changhuy-NOM Minkwu-DAT/ACC note-ACC deliver-PST-SE
'Changhuy delivered a note to Minkwu.'

Taywu-ka Manswu-eykey/lul hotheyl-ul chwuchenhay-ss-ta.
Taywu-NOM Manswu-DAT/ACC hotel-ACC recommend-PST-SE
'Taywu recommended a hotel to Manswu.'

Seyho-ka	Cwunha-eykey/lul	sosik-ul	cenhay-ss-ta.
Seyho-NOM	Cwunha-DAT/ACC	news-ACC	deliver-PST-SE

'Seyho delivered news to Cwunha.'

Congswu-ka	Tongho-eykey/lul	sincang-ul	kicunghay-ss-ta.
Congswu-NOM	Tongho-DAT/ACC	kidney-ACC	donate-PST-SE

'Congswu donated kidney to Tongho.'

Ciay-ka	Hyencwu-eykey/lul	catongcha-lul	phala-ss-ta.
Ciay-NOM	Hyencwu-DAT/ACC	car-ACC	sell-PST-SE

'Ciay sold the car to Hyencwu.'

Cinswu-ka	Hyenwu-eykey/lul	chincel-ul	peyphwule-ss-ta.
Cinswu-NOM	Hyenwu-DAT/ACC	kindness-ACC	show-PST-SE

'Cinswu showed kindness to Hyenwu.'

Chelwu-ka	Minhuy-eykey/lul	pic-ul	kaphay-ss-ta.
Chelwu-NOM	Minhuy-DAT/ACC	debt-ACC	repay-PST-SE

'Chelwu repaid debt to Minhuy.'

Chelho-ka	Yenwu-eykey/lul	selkeci-lul	pwuthakhay-ss-ta.
Chelho-NOM	Yenwu-DAT/ACC	dishwashing-ACC	ask-PST-SE

'Chelho asked dishwashing of Yenwu.'

Appendix B

Model outcome: SPRT

By-condition (α = .025)

			β	*SE*	*t*	*p*
ENG–CZH	Dative–Accusative	R2	−0.068	0.067	−1.012	.313
		R3	−0.032	0.057	−0.554	.580
		R4	−0.041	0.062	−0.668	.505
		R5	−0.002	0.063	−0.037	.971
	Accusative–Accusative	R2	0.037	0.061	0.605	.546
		R3	−0.008	0.062	−0.134	.894
		R4	−0.108	0.074	−1.468	.144
		R5	0.113	0.064	1.764	.079
ENG–JPN	Dative–Accusative	R2	−0.028	0.066	−0.428	.669
		R3	−0.027	0.053	−0.506	.613
		R4	−0.040	0.060	−0.669	.504
		R5	−0.133	0.062	−2.121	.035
	Accusative–Accusative	R2	0.093	0.062	1.510	.133
		R3	0.101	0.058	1.753	.081
		R4	−0.029	0.068	−0.433	.666
		R5	−0.034	0.057	−0.596	.552
CZH–JPN	Dative–Accusative	R2	0.058	0.064	0.907	.365
		R3	−0.011	0.053	−0.213	.831
		R4	-2.674e-04	5.975e-02	−0.004	.996
		R5	−0.107	0.058	−1.835	.068
	Accusative–Accusative	R2	0.069	0.058	1.185	.237
		R3	0.109	0.056	1.944	.053
		R4	0.082	0.068	1.199	.232
		R5	−0.102	0.057	−1.793	.074

Note. For R5, we conducted an F1-analysis as there was only one level for *Word* with an invariant carrier phrase *Yenghuy-NOM* (see Table 2).

By-group (α = .025)

			β	*SE*	*t*	*p*
Dative–Accusative ~ Accusative–Accusative	ENG	R2	−0.209	0.070	−2.968	.006*
		R3	−0.077	0.055	−1.399	.164
		R4	0.029	0.066	0.443	.658
		R5	−0.076	0.058	−1.300	.195
	CZH	R2	−0.112	0.070	−1.587	.124
		R3	−0.048	0.052	−0.922	.358
		R4	−0.031	0.064	−0.489	.626
		R5	0.042	0.058	0.716	.475
	JPN	R2	−0.107	0.052	−2.027	.044
		R3	0.050	0.045	1.109	.269
		R4	0.038	0.056	0.687	.493
		R5	0.023	0.052	0.442	.659

Note. For R5, we conducted an F1-analysis as there was only one level for *Word* with an invariant carrier phrase *Yenghuy-NOM* (see Table 2).