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## **BAKALÁŘSKÁ PRÁCE**

Relationship between proficiency, exchange program, and grammatical knowledge about postpositional alternation in Korean locative construction by Czech-speaking learners of Korean.

Olomouc 2022 Martin Spáčil

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V Olomouci dne 3.5.2022



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## Anotace

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<b>Název práce:</b>	Souvislost mezi jazykovou zdatností, výměnným programem a gramatickou znalostí alternace postpozic při konstrukci lokativu v korejském jazyce u českých studentů korejštiny
<b>Vedoucí práce:</b>	Gyu-Ho Shin, PhD.
<b>Počet stran:</b>	68
<b>Počet znaků:</b>	69 963 (včetně mezer)
<b>Počet titulů použité literatury:</b>	49
<b>Klíčová slova:</b>	korejština, konstrukce lokativu, postpozice, alternace, jazyková zdatnost, výměnný program

Tato práce zkoumá gramatické znalosti českých studentů korejštiny u alternace postpozic v korejské lokativní konstrukci a zjišťuje, zda existuje vztah mezi jazykovou znalostí, výměnným programem a znalostmi alternace u postpozic v této konstrukci. Úkolem bylo posuzování přijatelnosti, které se zúčastnilo 24 českých mluvčích studentů a 10 korejských rodilých mluvčích. Výsledky ukázaly rozdíly v hodnocení přijatelnosti a úrovně jazykové znalosti mezi studenty, kteří absolvovali výměnný program, a těmi, kteří jej neabsolvovali. Výsledky také ukázaly, že studenti korejštiny hodnotili postpozice mezi konstrukcemi rozdílně. Tyto výsledky naznačují, že znalost a chápání lokativní konstrukce se střídajícími se postpozicemi v korejštině u českých studentů závisí na odbornosti, výměnném programu a typu postpozice.

## Abstract

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<b>Supervisor:</b>	Gyu-Ho Shin, PhD.
<b>Number of pages:</b>	68
<b>Number of characters:</b>	69 963 (spaces included)
<b>Number of resource titles:</b>	49
<b>Keywords:</b>	Korean, locative construction, postposition, alternation, proficiency, exchange program

This thesis investigates L1-Czech L2-Korean learners' grammatical knowledge about postposition alternation in Korean locative construction, asking if there is a relationship between proficiency, exchange program, and L2 knowledge about postpositional alternation in that construction. Twenty-four Czech-speaking learners and 10 Korean native speakers of Korean participated in an acceptability judgement task. Results showed differences in acceptability judgement ratings and level of proficiency between learners who underwent the exchange program and those who did not. The results also showed differences in L2 learners' ratings between certain conditions. These results suggest that L1-Czech L2-Korean learners' comprehension of a locative construction with alternating postpositions in Korean depends on proficiency, exchange program, and type of postposition.

Rád bych touto cestou vyjádřil poděkování Gyu-Ho Shinovi, PhD., za jeho cenné rady a trpělivost při vedení mé bakalářské práce. Rovněž bych chtěl poděkovat za vstřícnost a ochotu účastníkům dotazníkového šetření a za věnovaný čas.

I would like to take this opportunity to thank Gyu-Ho Shin, PhD, for his valuable advice and patience in supervising my bachelor's thesis. I would also like to thank the participants of the questionnaire for their kind contribution and willingness to spare their time.

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## Abbreviations

I use abbreviations in the example sentences throughout the thesis (Sohn, 1999; Lehmann, 2004).

**ACC** – accusative case marker

**COM** – comitative case marker

**DECL** – declarative mood

**GEN** – genitive case marker

**INST** – instrumental case marker

**LOC** – locative case marker

**NOM** – nominative case marker

**PST** – past tense marker

**SG** – singular

**Ø** – zero morpheme

## Transcription

To linguistically gloss example sentences in a consistent way throughout the thesis, I use the Yale romanization system (Martin, 1942, the only publicly available descriptions are from 1992), one of the commonly used transcription systems in Korean.

Hangul consonants	Yale romanization	Hangul vowels and diphthongs	Yale romanization
ㄱ	k	ㅏ	a
ㄲ	kk	ㅑ	ay
ㄴ	n	ㅓ	ya
ㄷ	t	ㅕ	yay
ㄸ	tt	ㅖ	e
ㄹ	l	ㅗ	ey
ㅁ	m	ㅛ	ye
ㅂ	p	ㅜ	yey
ㅃ	pp	ㅝ	o
ㅅ	s	ㅞ	wa
ㅆ	ss	ㅟ	way
ㅇ	ng	ㅠ	oy
ㅈ	c	ㅡ	yo
ㅉ	cc	ㅢ	wu
ㅊ	ch	ㅣ	we
ㅋ	kh	ㅤ	wey
ㆁ	th	ㅥ	wi
ㆁ	ph	ㅦ	ywu
ㅎ	h	ㅧ	u
		ㅨ	uy
		ㅩ	i

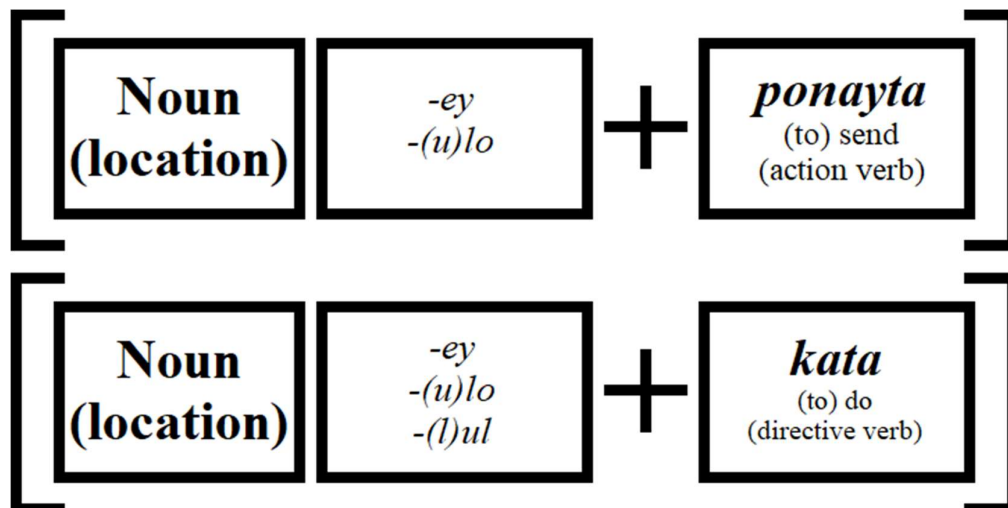
# Chapter 1. Introduction

## 1.1. Background

Construction is a conventionalised unit of language that delivers various aspects of linguistic information including formal properties, meaning/function, and a speaker's perspective in a unified manner (Ellis, 2002; Goldberg, 1995). A language can adopt different ways to carry out a given construction which is called alternation.

The concept of space, and with its related locative construction, has been a frequently discussed topic in linguistics by Talmy (1972, 1978, 1983), Levinson and Wilkins (2006), and Fortis (2010) for example but its roots came from the field of psychology in Rubin (1915). There are two main terms in the concept of space – location and figure/ground. Sometimes, in describing the same concept, figure and ground are referred to as object and space (e.g., Yeon, 2003). Figures are objects or substances, whereas ground is a certain container or surface. Not every verb in the sentence can be contextually correct in both structures; that is, some verbs can appear only in a ground frame and others can occur only with a figure frame. If both constructions are possible for a given verb, we call it locative alternation. (Park, 2016)

Many previous studies on case alternation, especially on the locative case and its processing in Korean as a second/foreign language have focused on L1-English or L1-Mandarin L2-Korean speakers (e.g., Park, 2016; Park & Kim, 2017; You & Oh, 2008), and L1-Korean L2-English (e.g., Lee, 2009). In this thesis, I focus on a locative particle–verb construction and its alternation. This construction is defined as a sentential frame where a verb expresses directional meaning and postpositions (*-ey*, *-(u)lo* and *-(l)ul*) are sometimes interchangeable. In some cases, verbs of other qualities such as existential verbs are combined with only *-ey* as a viable postposition. This means that the choice of a verb relates to what postposition can be used (Figure 1). In this study, I choose two particular verbs – intransitive *kata* ‘to go’ and ditransitive *ponayta* ‘to send’ – due to the difference in the number of postpositions that can be used in respective constructions with given types of verbs. Korean intransitive verbs in general accept postpositions *-ey*, *-(u)lo* and *-(l)ul* while ditransitive verbs accept only *-ey* and *-(u)lo*, making *-(l)ul* ungrammatical.



**Figure 1:** Locative particle–verb construction with two specific verbs and possible choices of postpositions adopted in this thesis.

## 1.2 Research questions and hypotheses

**Research question:** Is there a relationship between proficiency, exchange program, and postposition types in L1-Czech L2-Korean learners’ comprehension of a locative construction with alternating postpositions in Korean?

**Hypothesis:** There is a relationship between these three factors in the learners’ performance.

**Supporting hypothesis (1):** Higher proficiency should result in higher rates of acceptability in the grammatical constructional patterns for learners.

**Supporting hypothesis (2):** Learners who underwent an exchange program should demonstrate their knowledge about alternations similar to that of native speakers.

**Supporting hypothesis (3):** Learners should evaluate the *-(l)ul* pattern of the locative construction with a ditransitive verb, which is ungrammatical, to be lower than the other postposition-verb combinations of the construction.

## 1.3. Organization of the thesis

In Chapter 2, I outline the general characteristics of Korean and Korean particles which are categorized as case markers, postpositions, and delimiters. I describe postpositional alternation and locative construction in Korean. Because of that, it is also necessary to describe grammatical cases in Czech, as it is the native

language of learner participants. Usage of prepositions and declination is ‘equivalent’ to Korean particles in forming grammatical cases, which will be the topic of grammatical case construction. Similar to the case of Korean, I also explore alternation in Czech. Chapter 3 explicates the methodology of this thesis, including participants, methods, procedure, and analysis, and I verify each hypothesis to answer the research question. Chapter 4 provides a summary of the major findings of this thesis and discusses the implications of these findings.

## Chapter 2. Review of literature

### 2.1. General characteristics of Korean

Korean is an agglutinative language and grammatical information is added to the stem of the word, mostly by particles and affixation (Sohn, 1999). Those particles or suffixes are attached to nominals which are nouns, pronouns, numerals and noun phrases, or predicate which is verb or adjective. Adjectives usually describe nouns, but in Korean not only can they describe nouns in their descriptive form (that is a stem of a qualitative verb followed by a participial suffix) but can also fulfil a function of a predicate as a verb does, for example:

- (1) *haksayng-i*            *pappu-ass-ta*  
student-NOM            be.busy-PST-DECL  
'Student was busy.'

One of the most prominent features of Korean is that its sentences are arranged in SOV (also known as a predicate-final) order, i.e., Subject-Object-Verb. This basic word order can be scrambled with the correct assignment of nominal particles.

### 2.2. Particles in Korean

Korean particles *cosa* are suffixes that indicate a grammatical relationship between words and help in carrying information about the meaning and grammatical functions (Choo & Kwak, 2008; Yeon, 2003). In some cases, as in colloquial speech, particles can be omitted if the context is understandable to the receiver of the information (Choo & Kwak, 2008). Notably, as Yeon (2003) states, only case markers can be dropped while postpositions cannot as those indicate semantic roles. That means the grammatical case does not have to be explicitly shown and results in a so-called zero morpheme ( $\emptyset$ ) as shown in (2). Pucek (2005) noticed that this practice is often not specified in Korean grammar books. According to Chung and Lee (2017), case dropping tends to occur in connection with inanimate objects, especially in the accusative or locative case:

- (2) *cinku-ka hwacangsil-Ø ka-ass-ta*  
 friend-NOM bathroom-LOC go-PST-DECL  
 ‘[My] friend went to the bathroom.’

### 2.2.1. Case markers

Sohn (1999) defines case markers as particles that indicate nominative, accusative, and genitive syntactic functions. Yeon (2003) adds to this definition that case markers show grammatical relations of nominal phrases and have no lexical meaning.

*-i/ka* (*-i* after a consonant) denotes the subject of the sentence (3) and is often called a nominative case marker. The third form *-kkeyse* also exists as an honorific form. *-(l)ul* (*-ul* after a consonant) denotes an object in a sentence which is a receiver of the action caused by the subject in the sentence and is called an accusative case marker. (3) is an example of the two case markers in the canonical word order.

- (3) *chinku-ka sakwa-lul mek-ess-ta*  
 friend-NOM apple-ACC eat-PST-DECL  
 ‘[My] friend ate an apple.’

*-uy* denotes genitive case. This case marker can be also omitted if the context can be deduced. The most important feature is its connection with pronouns whom it can be ‘merged with’ into a different form. In the 1<sup>st</sup> person singular *na-uy* (1SG-GEN) becomes *nay* ‘my’ and in its honorific form *ce-uy* becomes *cey*. Similarly, the 2<sup>nd</sup> person singular *ne-uy* (2SG-GEN) becomes *ney* ‘your’ (4).

- (4) *nay kangaci-ka mek-ess-ta*  
 1SG-GEN puppy-NOM eat-PST-DECL  
 ‘My puppy ate.’

The genitive case marker with the 1<sup>st</sup> person plural (*wuli* and its honorific form *cehuy*) does not merge and this marker is frequently omitted.

### 2.2.2. Postpositions

According to Choi and Schmitt (2015), postpositions indicate semantic cases by being attached to independent words without using space in between them. *-ey* is one of the most polysemous postpositions in Korean. One of its main functions is denoting the dative case, which is the only case in Korean that distinguishes between animate and inanimate nominals. The dative case is used in the meaning of ‘to and from’ if we are talking about people, animals, or objects and the postposition *-ey* is used for the inanimate objects, e.g., plants, stones (5).

- (5) *kkoch-ey mwul-ul cwu-ess-ta*  
flower-DAT water-ACC give-PST-DECL  
‘[I] gave water to plant.’

For the animate category of nominals forms *-eykey* ‘to’ and *-eykeyse* ‘from’ are used (6). Honorific form *-kkey* is also present and while it has both directional senses, its meaning can be easily determined through context with the appropriate choice of the predicate, e.g., *patta* ‘to receive’, *ponayta* ‘to send’. In a casual speech *-hantey* and *-hanteyse* are also possible to use to indicate ‘to’ and ‘from’.

- (6) *chinku-eykey senmwul-ul cwu-ess-ta*  
friend-DAT gift-ACC give-PST-DECL  
‘[I] gave a gift to a friend.’

Another function *-ey* denotes is locative. This function relates to ‘to’ and ‘from’ while talking about places and locations. *-ey* is used for direction ‘to’ and comes before directional verbs, for example, *kata* ‘to go’ (7). Its counterpart *-eyse* means ‘from’ and again comes before directional verbs, for example, *ota* ‘come’. *-eyse* is also used with action verbs and gets the meaning of doing something somewhere.

- (7) *cikcangin-i cip-ey ka-ass-ta*  
worker-NOM home-LOC go-PST-DECL  
‘Worker went home.’



-*ey* is used in the basic locative frame with existential words like *issta* (also its honorific form *kyeysita*) and *epsta*. This forms a meaning of ‘to exist and not exist somewhere’ which is in many cases translated simply as ‘to be somewhere’ and ‘not to be somewhere’ (8).

- (8) *philthong-i kapang-ey iss-ess-ta*  
 pencil.case-NOM backpack-LOC be-PST-DECL  
 ‘Pencil case was in a backpack.’

-(*u*)*lo* (-*ulo* after the consonant) is also frequently used in Korean. Unlike some other postpositions, -(*u*)*lo* does not have any honorific form. One of its functions is denoting instrument (‘by, with, of, in’ or ‘in a way of’) which tells us what instrument is being used (9). In addition, it indicates a means of transportation (10).

- (9) *ceskalak-ulo mek-ess-ta*  
 chopsticks-INST eat-PST-DECL  
 ‘[He] ate with chopsticks.’

- (10) *besu-lo o-ass-ta*  
 bus-INST come-PST-DECL  
 ‘[She] came by bus.’

Another semantic function for these postpositions concerns direction, which is a similar form to locative case marker -*ey* but is very specific in the sense of ‘to, towards someone or something’. The emphasis is on the general direction and does not have to be the final location itself (11).

- (11) *haksayng-i kiswuksa-lo ka-ass-ta*  
 student-NOM dormitory-LOC go-PST-DECL  
 ‘The student went to (towards) dormitory.’

Sohn (1999) states that usage of -(*u*)*lo* can be very broad and versatile, and this particle occurs in many idiomatic expressions, for example in adverbials: *hol-lo* ‘alone’, *nal-lo* ‘by day’, *pothong-ulo* ‘usually’ etc.

### 2.2.3. Delimiters

Another type of Korean particles are delimiters. Those have a very little syntactic function, and their primary task is more pragmatic, giving additional meaning or status to clauses, sentences, nouns, or adverbs.

*-man* ‘only’, and *-to* ‘too, also, even’ are very frequently used ones. *-to* is also used to list things, by putting it at the end of listed nominals, such as *sakwa-to panana-to* ‘apple and banana too’. Other delimiters are: *-puthe* ‘since, from’ and *-kkaci* ‘to’ (both indicating a time frame, hence can be used together in one sentence), and many other.

Delimiters can replace case markers in an appropriate context. Instead of producing zero morphemes, keeping at least one of the case markers will make the context clearer. For example, if we keep *-i/ka*, then *-(l)ul* can be replaced with a delimiter and the context is easily understood (12) while keeping *-(l)ul* and replacing *-i/ka* results in a whole different meaning (13).

- (12) *haksayng-i chayk-to ilk-ess-ta*  
student-NOM book-even read-PST-DECL  
‘The student even read a book.’

- (13) *haksayng-to chayk-ul ilk-ess-ta*  
student-even book-ACC read-PST-DECL  
‘Even the student read a book.’

Another feature of delimiters is stacking up with postpositions to create longer chains of particles, with emphasis on the meaning of the postposition or case marker. The most common combinations can be seen with locative and dative case postpositions (14). If stacked up with any particle, the delimiter always comes last.

- (14) *cip-eyse-to kongpwu-hess-ta*  
home-LOC-as.well study-PST-DECL  
‘[I] studied at home as well.’

Exception in stacking up is with case markers *-i/ka* and *-(l)ul* as the delimiter replaces the case marker (15, 16), therefore only the delimiter can remain (Yang, 1972).

(15) *sacin-ul po-ass-ta*  
 picture-ACC see-PST-DECL  
 ‘[I] saw a picture.’

(16) *sacin-man po-ass-ta*  
 picture-only see-PST-DECL  
 ‘[I] saw only a picture.’

### 2.3. Postpositional alternation in Korean locative construction

#### 2.3.1. Locative construction

A locative construction hosts various postposition types which are attached to a noun expressing a location. In Korean, the figure-ground information influences the choice of a particular locative postposition within the locative construction (Joo, 2000, 2003). As in (17), which is a figure frame, the object *mwul* ‘water’ is denoted by accusative case marker *-(l)ul*, and the final location (*khep* ‘cup’) is denoted by locative postposition *-ey*.

(17) *Mina-ka khep-ey mwul-ul chaywu-ess-ta*  
 Mina-NOM cup-LOC water-ACC fill-PST-DECL  
 ‘Mina filled water into the cup.’

In the ground frame, however, as in (18), the final location (*khep* ‘cup’) is denoted by accusative case marker *-(l)ul*, and the object or substance (*mwul* ‘water’) is followed by locative/instrumental postposition *-(u)lo* as the object is an instrument of this action.

(18) *Mina-ka mwul-lo khep-ul chaywu-ess-ta*  
 Mina-NOM water-INST cup-ACC fill-PST-DECL  
 ‘Mina filled cup with water.’

Locative construction also greatly depends on the transitivity of verbs. Intransitive verbs require no direct object and can function on their own. That applies to motion (directional) or existential verbs (19). I call this construction

[**subject-NOM location-LOC verb**], which is an answer to a simple question of Fortis (2010) ‘Where is object?’.

- (19) *cip-ey ka-ass-ta*  
house-LOC go-PST-DECL  
‘[I] went home.’

Ditransitive verbs are such verbs that need a subject and two objects – direct and indirect. Some verbs require locational information about the action taken to the direct object to be overtly expressed. I call this construction [**subject-NOM object-ACC location-LOC verb**]. Location can switch place with direct object if correct particles are assigned (as stated in chapter 2.1.) As seen in (20), the information of what is being sent is missing and therefore incomplete without a direct object.

- (20) *cip-ey ponay-ess-ta*  
house-LOC send-PST-DECL  
‘[?] sent home’

### 2.3.2. Postpositional alternation

According to Bley-Vroman and Joo (2001), there are different ways to carry out a given construction, which is called alternation. Alternations in general result only in a slight semantical difference. This applies even to postpositions, resulting in postpositional alternation. Yeon (2003) defined alternation in locative as marking of object range where the accusative marker indicates motion in the entire space of a noun phrase, and the locative marker indicates motion at some part of it.

*-eyse* is used in locative construction with an action verb and gains the meaning of ‘doing something somewhere’ (21). While postposition *-ey* can be also used (22) and result in alternation, *-eyse* is more frequently used with action verbs and *-ey* is used with existential verbs (where alternation is not possible).

- (21) *hakkyo-eyse kongbwuha-ta*  
school-LOC study-DECL  
‘[I] study at school.’

- (22) *hakkyo-ey kongbwuha-ta*  
 school-LOC study-DECL  
 ‘[I] study at school.’

In the case of directional verbs, the case marker *-(l)ul* can replace the function of locative postposition *-ey* in a sense of stating movement to location (23, 24). This comes from the nuance of stating the reason, purpose, or goal of the movement. *-(l)ul* can also replace postposition *-eyse* in sense of moving from location (25, 26).

- (23) *hakkyo-ey tani-ta*  
 school-LOC go-DECL  
 ‘[I] attend (go to) school.’

- (24) *hakkyo-lul tani-ta*  
 school-ACC go-DECL  
 ‘[I] attend (go to) school.’

- (25) *Sewul-ul ka-ass-ta*  
 Sewul-LOC go-DECL  
 ‘[I] went to Seoul.’

- (26) *Sewul-ul o-ass-ta*  
 Sewul-LOC come-DECL  
 ‘[I] came from Seoul.’

#### 2.4. General characteristics of Czech

Unlike Korean, Czech is a synthetic language. Instead of using particles, the Czech language uses a system of morphemes that denote various grammatical functions. Three nominal genders are present, i.e., masculine, feminine, and neutral. Their properties are given by the inflexion of morphemes. Each gender not only has a plural form, but also hosts four noun types (each type behaves the same), and the masculine gender distinguishes between inanimate and animate objects which adds two additional noun types to the masculine gender. This leaves Czech with many possible inflected morphemes.

### 2.4.1. Case system in Czech

The construction of grammatical cases in Czech significantly differs from Korean. Czech cases are constructed in a combination of prepositions and inflected morphemes. There is a total of seven cases which creates a complex system of inflexions because of the three nominal genders. The nominative case is the only one that does not require any preposition and serves as a ‘basic’ form for nouns. For example, in the word *škola* ‘school’, *-a* is the inflectable morpheme denoting feminine gender and nominative case.

### 2.4.2. Prepositional alternation

There are no postpositions in Czech like there are in Korean, but instead, a system of prepositions with their own grammatical and syntactical function is used. Czech encyclopaedic dictionary defines preposition as “A flexible syntax-semantic grammatical category; an expression of grammatical, especially syntactic functions of nouns in their grammatical case forms, and thus a means of expressing the nature of the relationship between a noun and a verb or other nouns” (Karlík et al., 2002, p. 349). Czech prepositions with their semantics and syntax have been targeted only by some researchers and focus only on the basic functions. Existing studies refer to prepositions that can alternate as ‘competitive prepositions’, or broadly, they focus on the ‘competitiveness’ of prepositions (e.g., Čechová, 1981; Hrdlička, 1998; Kroupová, 1968).

*na* is a polysemous preposition with many functions and meanings, but for the reason of topic appropriation in this thesis, I focus on its association with accusative and a locative case. In the accusative case one of its properties is denoting movement to a place or surface ‘on, on top of’ or direction ‘to’, therefore serving a directional function. But in locative case denotes static position or location (‘on, at, in’), which is a basic locative function. Čechová (1981) states, that *na* is overlapping semantically with *v/ve*, which is another preposition associated with the locative case with the meaning ‘in’ or ‘at’, and some other prepositions. For example, *ve škol-e* and *na škol-e* both mean ‘in (at) the school’, where the inflected morpheme stays the same in both cases, and only the preposition alternates. In other cases, for example, *u kas-y* ‘by cash register’, *na kas-e* ‘at (on) cash register’, *za kas-ou* ‘behind cash register’, inflected morpheme changes with the preposition and the literal meanings are different in all three cases. Yet, if we account for some specific verbs, like *sedět* ‘to

sit', the context for all of them becomes almost identical, which in the case of previous examples is 'to work as a cashier with cash register' (Chudíková, 2013).

Alternation of these prepositions is in some cases not possible at all, for example: *na pošt-ě* 'at the post office' and *v pošt-ě* 'in the mail' (Chudíková, 2013). The semantics are altered as well, therefore this is not alternation.

## **2.5. Cross-linguistic influence on L1-Czech L2-Korean learners' comprehension of Korean locative particle-verb construction**

Cross-linguistic influence (CLI) is a term defining various ways that may shape L2 acquisition through L1 knowledge (e.g., Odlin, 1989; Ringbom, 1987; Schwartz & Sprouse, 1994, 1996; Selinker, 1992). To illustrate, Torrijos (2009) studied the importance of CLI on second language acquisition in L1-Spanish L2-English learners. The results show that L1 influence took place in the writing of the target language. Overgeneralizations of the English plural nouns were also found, and in fact, the errors found in the data helped to demonstrate the importance of native language semantic structure in the process of learning a second language. Park (2016) focused on the L2 acquisition of Korean locative construction by English L1 speakers. The main task of the experiment was the acceptability judgment of sentences with ground-frame, figure-frame alternating and non-alternating verbs. The major finding was that Korean figure-frame non-alternating verbs might have caused problems for participants' learnability.

In research conducted by Robenalt and Goldberg (2016), L2 learners avoided alternations altogether and evidence shows, that they were less aware of whether the given alternations are even grammatical. Thus, concluded that L2 learners do not take (any) alternative expressions into account the way native speakers do. This might be one of the factors that influence participants because the main topic is postpositional alternation in Korean.

Some of the assumptions on results of participants' performance are that alternation is not getting much attention as target grammar in the classroom and L2 learners may not be aware of ways to alternate. In this respect, the conclusion of Park (2016) and Torrijos (2009) are similar. Participants in their respective research generalized their judgments in L2 based on their distinct L1 constructions and CLI had a direct impact on the process of L2 acquisition. According to McManus (2021), some researchers have even questioned whether advanced L2 learners actively use

the L1 grammar in parsing the L2 to address cross-linguistic competition. Grüter and Hopp (2021) argue that not only there is evidence of beginner L2 learners basing the language acquisition process on their L1 grammar, but this practice might persist even in advanced L2 learners.

However, CLI is not a universal phenomenon that is occurring between all languages. Van Dijk et al. (2022) investigated CLI on sentence processing in two groups of bilingual children and found that CLI was only attested from German to Dutch which are two highly related languages in terms of lexical overlap, and no influence was found from English to Dutch. Park and Kim (2021) examined whether L1-Japanese L2-Korean would process two types of Korean causative constructions as native speakers would. One of the constructions led to competition between L1 and L2 and the second one presented no cross-language competition. Learners showed native-like performance during an acceptability judgment task, but a self-paced reading task proved to cause difficulties with the integration of morphological and syntactic information as the target construction had a corresponding L1 cross-linguistic competitor. As both studies focused on typologically similar languages or languages with certain common features, no significant CLI was found.

Even though CLI has received much attention, Odlin (1989) noted that research in the acquisition of non-European languages is still needed, as studies are predominantly focused on English. Therefore, there is a need to study typologically different languages from English and other European languages to find out more about CLI (Brown & Iwasaki, 2013). The L2-Korean for example has been investigated mainly in bilingual speakers, but the focus is still concentrated heavily on CLI of English, e.g., Kim et al. (1998), Kim (1999), Bley-Vroman and Joo (2001), Joo (2003) among others.



## Chapter 3. Experiment: Acceptability judgement

### 3.1. Methods

#### 3.1.1. Participants

Twenty-four students (mean age = 22.5, SD = 1.29) of Korean for business, which is an undergraduate program at Palacký University in Olomouc, took part in this experiment. Participants attended the same university and were taught by the same professors, but language proficiency may vary, depending on the length of study (mean of learning in years = 2.75, SD = 1.41) and their sources for self-studying or participation in an exchange program. Participants were compensated for their participation in Korean snacks.

Most of the students are females, where out of 24 participating students 2 were males and 1 did not want to specify. Due to this skewness, the factor ‘gender’ was excluded from the following analysis/discussion.

#### 3.1.2. Stimuli

A total of 66 test sentences were created. These sentences were classified into two categories. The first category consisted of 18 sentences in grammatical construction **subject-NOM location-LOC go** (27) where six sentences were constructed using locative postposition *-ey*, another six sentences using *-(u)lo* and the other six sentences using *-(l)ul*. All the sentences were grammatical.

- (27) *Cayhuy-ka konghang-ulo ka-ass-ta*  
*Cayhuy-NOM airport-LOC go-PST-DECL*  
‘Cayhuy went to an airport.’

The second category consisted of 18 sentences in construction **subject-NOM object-ACC location-LOC send** (28) where six sentences were constructed using locative postposition *-ey*, another six sentences using *-(u)lo* and both were grammatical. The other six sentences in this category used the postposition *-(l)ul*, which is ungrammatical (29) in this construction.

(28) *Yumi-ka phyenci-lul kyengchalse-ey ponay-ess-ta*  
 Yumi-NOM letter-ACC police.station-LOC send-PST-DECL  
 ‘Yumi send letter to a police station.’

(29) *Yumi-ka phyenci-lul kyengchalse-lul ponay-ess-ta*  
 Yumi-NOM letter-ACC police.station-ACC send-PST-DECL  
 ‘(Yumi send letter to a police station.)’

Alongside the test sentences I included 30 fillers that were not related to the test sentences in order to mask the purpose of the experiment, for example:

(30) *Swulki-ka halmeni-wa o-ass-ta*  
 Swulki-NOM grandmother-COM come-PST-DECL  
 ‘Swulki came with grandmother.’

(31) *Nalay-ka yelsoy-to chac-ass-ta*  
 Nalay-NOM key-also find-PST-DECL  
 ‘Nalay also found a key.’

(32) *Sengca-ka cip-Ø kwumayha-yess-ta*  
 Sengca-NOM house-(ACC) purchase-PST-DECL  
 ‘Sengca purchased a house.’

### 3.1.3. Procedure


Learner participants were asked to fill in the Korean C-test (Lee-Ellis, 2009) in Microsoft Word and send the filled-in file back first, and then they proceeded to an online acceptability judgement task through Google Forms. Data collection took place online because all the learner participants were in their respective hometowns due to the winter holiday break and the COVID-19 situation made the in-person data collection difficult. Participants were not informed about the content in advance for the reliability of the results and were also forbidden to get any help from others, the internet (translator), or learning materials. The two tasks took roughly 20 minutes altogether to finish.

The Korean C-test measured the proficiency of learner participants. This consists of five paragraphs, with varying difficulty in reading, and requires a test taker to fill in blanks in each paragraph considering the topic/contents of the paragraph (Figure 2). Every correctly filled in blank space equals one point of the score (Figure 3). In this thesis, I included two (out of five) paragraphs for the practicality of conducting the experiment. The blank space can be any morphological or semantical part. Therefore, participants can even receive proficiency points for the correct assignment of postposition, which can be understood from the context, but incorrect or no filled in blanks in the middle of the word (Figure 3).

안녕하세요. 제 이름은 김철수입니다. 저는 대학\_ \_ 다닙니다. 아침에 일어\_ \_ 학교 체육\_ \_ 갑니다. 체육\_ \_ \_ 운동을 합\_ \_ \_ 운동을 한 다\_ \_ 아침을 먹습니다. 아침은 기숙\_ \_ 식당에서 먹 습니다. 저는 대학\_ \_ \_ 한국어를 배\_ \_ \_ \_ 한국어 수\_ \_ 매일 오\_ \_ 10 시에 시작\_ \_ \_ . 한국어는 쓰\_ \_ 말하기가 어\_ \_ \_ \_ . 그렇지만 듣\_ \_ 읽기는 쉽\_ \_ \_ . 한국어 배\_ \_ \_ 것이 참 재미\_ \_ \_ \_ . 주말에는 친\_ \_ \_ \_ 같이 극\_ \_ \_ 영화를 봅니다. 영화를 \_ 후에 한국 식당에서 저\_ \_ 먹습니다. 한국 식\_ \_ 극장 바\_ \_ 옆에 있습니다. 불고\_ \_ 맛있습니다. 김치찌개는 맵습니다.

도시의 가장 큰 문제점이라면 뭐니뭐니해도 교통 문제가 제일 크다. 도로에서는 교\_ \_ 체증으로 인\_ \_ 에너지와 시\_ \_ 낭비된다. 특히 출\_ \_ 시간에는 한꺼\_ \_ 차량이 일제\_ \_ 몰려서 도\_ \_ 아주 북\_ \_ \_ . 게다가 뉴욕 같은 대도\_ \_ 주차난은 매\_ \_ 심각한 수준\_ \_ . 자동\_ \_ 점점 많아\_ \_ 반면 주\_ \_ 공간은 제\_ \_ \_ 있기 때\_ \_ 주차난이 생\_ \_ . 주차장이 부족하면 사람\_ \_ 주택 가 골\_ \_ 이나 도로에까지 주차를 하\_ \_ 경우가 많다. 이렇게 불\_ \_ 으로 주\_ \_ 차량은 또 다시 교통 혼\_ \_ 원인이 되\_ \_ 더 심\_ \_ 교통 체증을 일으킨다. 따라서 교통 문제를 해결하기 위해서는 자가용보다는 버스나 지하철을 많이 이용해야 할 것이다.

**Figure 2.** Two paragraphs of the C-test actually used for learner participants.

체육  갑니다

**Figure 3.** Example of grading. Green denotes correct writing of a syllable; red denotes incorrect/no writing of a syllable.

The acceptability judgement task contained three sections: participant ID, actual task, and background questions. ID was a way to pair results from the experiment outcomes, without mentioning any sensitive data, i.e., participant name. All the sentences were pseudo-randomized so that the participants did not encounter two sentences with the same postposition (condition) sequentially. The task adopted a 6-point Likert scale (0 very unacceptable, 5 very acceptable); the option ‘I don’t know’ was included and it was filtered out in the later analysis.

The background questions included gender, length of study, experience with the exchange program and listing of some study materials.

The experiment originally started with 25 participants, but after all of the data were collected, I started to assign points to all the participants based on their performance on the c-test to receive their proficiency scores. One of the participant's final scores stood out, as the final proficiency score was the highest among other participants, which was around 95% of the maximum score. After further investigation, the participant admitted to cheating. Due to this incident, one participant was disqualified, and only data from 24 participants were used in the following analysis.

### **3.1.4 Analysis: C-test**

Firstly, the participants' answers were assigned points, where the sum of the points equals the proficiency score and later was used as a factor within the group of L2 participants. The data collected were run through an independent t-test to compare mean scores of proficiencies in two groups of L2 learners: those who underwent the exchange program, and those who did not. The program used for statistical analysis was *R* (R Core Team, 2021).

### **3.1.5. Analysis: Acceptability Judgement**

#### 3.1.5.1. Data pre-processing

I inspected how many times participants chose the 'I don't know' option in the acceptability judgement task. This option was selected 14 times by L2-Korean learners, which is 0.62% of total responses, while native speakers did not choose this option at all. These data were eliminated from further analysis.

#### 3.1.5.2. ANOVA

An ANOVA model was run to analyse the main effect of the overall *Group* (L1 and L2 speakers of Korean), *Construction* (intransitive with the verb *kata* 'to go' and ditransitive with the verb *ponayta* 'to send') and *Postposition* (-*ey*, -(*u*)*lo*, -(*l*)*ul*), as well as their interaction effect on acceptability judgement. The formula of this model is as follows:

$$a) \text{ Acceptability} \sim \text{Group (L1 vs. L2)} * \text{Construction} * \text{Postposition}$$

To account for the exchange program effect, another ANOVA model was run where the factor of the L2 *Group* was split into two: L2 learners who underwent the exchange program and those who did not. The formula of this model is as follows:

$$b) \quad \textit{Acceptability} \sim \textit{Group (L2: exchange vs. no-exchange)} * \textit{Construction} * \textit{Postposition}$$

To fully reveal any interaction effect found in ANOVA, post-hoc analysis was followed by way of Tukey's HSD test. This copes well with the family-wise error rate, calculates a single critical value that must be exceeded for all comparisons to be significant, and is less prone to result in Type I error. (Hilton & Armstrong, 2006). The program used for statistical analysis was *R* (R Core Team, 2021).

#### 3.1.5.3. Linear regression

To find out whether proficiency had an effect on learner participants' rating performance, a linear regression model was used with *Proficiency* as a predictor variable and with *Acceptability* as an outcome variable. The program used for statistical analysis was *R* (R Core Team, 2021).

$$c) \quad \textit{Acceptability} \sim \textit{Proficiency}$$

### 3.2. Prediction

If there is a relationship between proficiency, exchange program, and postposition type for the alternation of two construction types, L2 learners with higher proficiency are more likely to show accurate acceptability ratings. This is because of their knowledge about postpositional alternation in the target construction.

In addition, L2 learners who underwent the exchange program would rate the acceptability of test sentences more similarly as native speakers would do than L2 learners with no such experience. This is because the exchange program would provide L2 learners with more native-like environments for L2 learning, which should aid them in learning the target language considerably.

In addition to those predictions, I believe that Learners should evaluate the *-(l)ul* pattern of the locative construction with a ditransitive verb, which is

ungrammatical, to be lower than the other postposition-verb combinations of the construction.

### 3.3. Results

#### 3.3.1. C-test: Proficiency

The C-test was composed of two paragraphs, each different in difficulty. The second one was more advanced, and it posed a problem for both groups, as both groups received fewer points in the second paragraph. The highest proficiency score learners could receive was 101. The group of L2-Korean learners was split into two groups that had one distinctive feature: the exchange program. Both groups had an equal number of participants, which is 12.

An independent sample t-test showed a significant difference in proficiency scores between L2 group with no exchange program (Mean = 59.47, SD = 14.68) and L2 group with exchange program (Mean = 64.51, SD = 12.26):  $t(848) = -5.430$ ,  $p = < .001$ . This indicates that L2 learners who underwent the exchange program had higher proficiency than L2 learners who did not.

#### 3.3.2. ANOVA: *Acceptability ~ Group (L1 vs. L2) \* Construction \* Postposition*

Table 1 presents the results of the participants' acceptability judgement in given constructions and postpositions with the number of responses (N), mean scores of their acceptability ratings (Mean) and standard deviation of responses (SD).

**Table 1.** Result: Acceptability judgment

Construction	Postposition	Mean (SD)	
		L1	L2
Intransitive	- <i>ey</i>	4.95 (0.22)	4.78 (0.73)
	-( <i>u</i> ) <i>lo</i>	4.82 (0.54)	3.67 (1.48)
	-( <i>l</i> ) <i>ul</i>	4.53 (0.75)	1.08 (1.37)
Ditransitive	- <i>ey</i>	4.71 (0.56)	3.46 (1.56)
	-( <i>u</i> ) <i>lo</i>	4.82 (0.54)	3.59 (1.54)
	-( <i>l</i> ) <i>ul</i>	1.60 (1.30)	0.71 (1.08)

For the L1 group, in the intransitive construction with the verb *kata* 'to go', the L1-Korean group judged all three conditions to be highly acceptable. In the

ditransitive construction with the verb *ponayta* ‘to send’, while the L1-Korean group evaluated postpositions *-ey* and *-(u)lo* to be highly acceptable, they dispreferred *-(l)ul* such that they rated this condition to be nearly unacceptable. For the L2 group, in the intransitive construction with the verb *kata* ‘to go’, the L2 group judged postposition *-ey* to be highly acceptable and *-(u)lo* to be acceptable, while *-(l)ul* to be nearly unacceptable. In the ditransitive construction with the verb *ponayta* ‘to send’, the L2 group evaluated postpositions *-ey* and *-(u)lo* to be acceptable but dispreferred *-(l)ul* even more than the L1 group such that they rated this condition to be even more unacceptable.

Table 2 presents the outcome of the global ANOVA model including the L1 and L2 groups. This model revealed the main effects of *Group*, *Construction*, and *Postposition*, two-way interactions between *Group* and *Construction*, *Group* and *Postposition*, and *Construction* and *Postposition*, and a three-way interaction between all the factors.

**Table 2.** ANOVA model (global, L1 and L2) (alpha level = .05)

	df	Sum sq	Mean sq	<i>F</i>	<i>p</i>
Group	1	458.10	458.10	327.81	< .001***
Construction	1	158.60	158.60	113.50	< .001***
Postposition	2	1860.00	930.00	665.44	< .001***
Group × Construction	1	13.70	13.70	9.82	.002**
Group × Postposition	2	93.10	46.60	33.31	< .001***
Construction × Postposition	2	68.80	34.40	24.62	< .001***
Group × Construction × Postposition	2	150.20	75.10	53.74	< .001***
Residuals	1198	1674.30	1.40		

To precisely address the interaction effects above, I conducted a post-hoc analysis through Tukey’s HSD test, with the alpha level as .025 to make results as conservative as possible. Table 3 summarizes the meaning pairs for comparison (see Appendix for the complete results). Together, these results indicate differences in acceptability between groups, constructions, and postpositions. The L1 group showed no difference in acceptability judgement of postpositions in the intransitive

construction. However, postposition *-(l)ul* in ditransitive construction received a lower rating than in intransitive construction and a lower rating relative to other postpositions in the ditransitive construction. For the L2 group itself, there was a difference between the judgements of all postpositions in intransitive construction. A significant difference was also present between the judgements of postposition *-ey* in the intransitive, which was higher than in ditransitive construction, *-(u)lo* received similar ratings in both constructions, and *-(l)ul* received lowest rating relative to other postpositions in the intransitive construction and the even lower rating in ditransitive construction. For the L2 group's judgement of postpositions in intransitive construction relative to the L1 group, *-ey* received a similar rating in both groups and was judged as highly acceptable while *-(u)lo* received a lower rating than in L1 group but was still acceptable. However, highly accepted *-(l)ul* in the intransitive construction by the L1 group was rated much lower in the L2 group to the point of being unacceptable. For the L2 group's judgement of postpositions in ditransitive construction relative to the L1 group, *-ey* and *-(u)lo* received significantly lower ratings, yet both were still acceptable. The postposition *-(l)ul* was judged by both groups as unacceptable and received an even lower rating by the L2 group.



**Table 3.** Summarized results from Tukey's HSD (L1 and L2) (alpha level = .025)

Compared pairs of levels							
First set of levels		Second set of levels		diff	<i>p</i> adj		
L1	intransitive	<i>-(u)lo</i>	L1 intransitive	<i>-ey</i>	-0.13	.5000	
		<i>-(l)ul</i>		<i>-ey</i>	-0.42	.3700	
		<i>-(l)ul</i>		<i>-(u)lo</i>	-0.28	.4890	
	intransitive	<i>-ey</i>	ditransitive	<i>-ey</i>	0.23	.4975	
		<i>-(u)lo</i>		<i>-(u)lo</i>	0.00	.5000	
		<i>-(l)ul</i>		<i>-(l)ul</i>	2.93	< .0005 ***	
	ditransitive	<i>-(u)lo</i>	ditransitive	<i>-ey</i>	0.10	.5000	
		<i>-(l)ul</i>		<i>-ey</i>	-3.12	< .0005 ***	
		<i>-(l)ul</i>		<i>-(u)lo</i>	-3.22	< .0005 ***	
L2	intransitive	<i>-(u)lo</i>	L2 intransitive	<i>-ey</i>	-1.11	< .0005 ***	
		<i>-(l)ul</i>		<i>-ey</i>	-3.70	< .0005 ***	
		<i>-(l)ul</i>		<i>-(u)lo</i>	-2.59	< .0005 ***	
	intransitive	<i>-ey</i>	ditransitive	<i>-ey</i>	1.32	< .0005 ***	
		<i>-(u)lo</i>		<i>-(u)lo</i>	0.08	.5000	
		<i>-(l)ul</i>		<i>-(l)ul</i>	0.36	.1435	
	ditransitive	<i>-(u)lo</i>	ditransitive	<i>-ey</i>	0.13	.4995	
		<i>-(l)ul</i>		<i>-ey</i>	-2.75	< .0005 ***	
		<i>-(l)ul</i>		<i>-(u)lo</i>	-2.87	< .0005 ***	
L2	intransitive	<i>-ey</i>	L1 intransitive	<i>-ey</i>	-0.17	.4995	
		<i>-(u)lo</i>		<i>-(u)lo</i>	-1.14	< .0005 ***	
		<i>-(l)ul</i>		<i>-(l)ul</i>	-3.45	< .0005 ***	
	ditransitive	<i>-ey</i>	ditransitive	<i>-ey</i>	-1.25	< .0005 ***	
		<i>-(u)lo</i>		<i>-(u)lo</i>	-1.23	< .0005 ***	
		<i>-(l)ul</i>		<i>-(l)ul</i>	-0.88	< .0005 ***	

### 3.3.3. ANOVA: *Acceptability ~ Group (L2: exchange vs. no-exchange) \**

#### *Construction \* Postposition*

Table 4 presents the outcome of the ANOVA model including L2 learners who underwent an exchange program, and those who did not. This model revealed the main effects of *Group*, *Construction*, and *Postposition*, and a two-way interaction between *Construction* and *Postposition*.

**Table 4.** ANOVA model (L2) (alpha level = .05)

	df	Sum sq	Mean sq	<i>F</i>	<i>p</i>
Group	1	25.00	25.00	14.43	< .001 ***
Construction	1	73.00	73.00	42.22	< .001 ***
Postposition	2	1705.60	852.80	493.07	< .001 ***
Group × Construction	1	4.10	4.10	2.39	.122
Group × Postposition	2	2.40	1.20	0.69	.501
Construction × Postposition	2	59.40	29.70	17.17	< .001 ***
Group × Construction × Postposition	2	4.40	2.20	1.28	.280
Residuals	838	1449.40	1.70		

The Tukey's HSD test for multiple comparisons (Table 5; see Appendix for the complete results) indicate that L2 no exchange group's ratings in intransitive construction significantly differed across the postpositions, however all were still accepted. The group also rated differently *-ey* in intransitive and ditransitive constructions. In a ditransitive construction, there was a difference between the judgement of *-(l)ul*, relative to other postpositions. The same patterns in judgement can be seen in L2 exchange group. The only significant difference between the groups was found in the judgement of *-(u)lo* in the ditransitive construction.

Regression models of *Proficiency vs. Acceptability* (Figures 4 and 5) further revealed a general tendency of increase in rating as proficiency increased. In intransitive construction, there was a significance in L2 no exchange group's judgement of postpositions *-(u)lo* and *-(l)ul* and L2 exchange group's judgement of *-(u)lo*. This increasing tendency was also found in the L2 exchange group's acceptability judgement of ditransitive construction with postposition *-(u)lo*. However, as proficiency increased, the L2 exchange group demonstrated a decrease

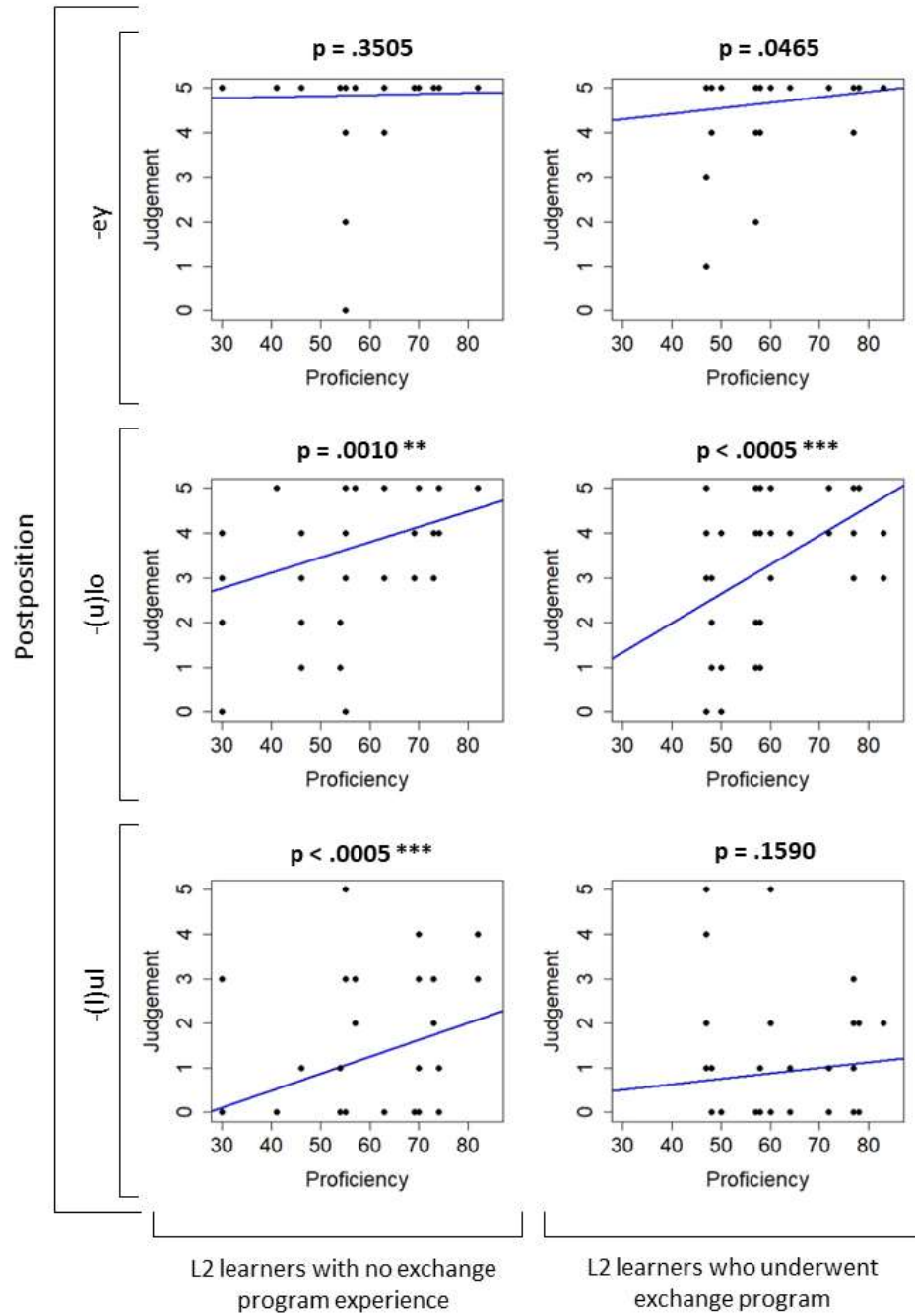
in acceptability rating of ungrammatical *-(l)ul* in ditransitive construction. Therefore, only the exchange program group approximated their judgement regarding *-(l)ul* to the native speakers’.

**Table 5.** Summarized results from Tukey’s HSD (L2) (alpha level = .025)

Compared pairs of levels							
First set of levels			Second set of levels			diff	<i>p</i> adj
L2-noex	intransitive	<i>-(u)lo</i>	L2-noex	intransitive	<i>-ey</i>	-1.07	< .0005 ***
		<i>-(l)ul</i>			<i>-ey</i>	-3.61	< .0005 ***
		<i>-(l)ul</i>			<i>-(u)lo</i>	-2.54	< .0005 ***
	intransitive	<i>-ey</i>	ditransitive	intransitive	<i>-ey</i>	1.14	< .0005 ***
		<i>-(u)lo</i>			<i>-(u)lo</i>	-0.19	.4995
		<i>-(l)ul</i>			<i>-(l)ul</i>	0.42	.3760
	ditransitive	<i>-(u)lo</i>	ditransitive	ditransitive	<i>-ey</i>	0.26	.4945
		<i>-(l)ul</i>			<i>-ey</i>	-2.89	< .0005 ***
		<i>-(l)ul</i>			<i>-(u)lo</i>	-3.16	< .0005 ***
L2-ex	intransitive	<i>-(u)lo</i>	L2-ex	intransitive	<i>-ey</i>	-1.15	< .0005 ***
		<i>-(l)ul</i>			<i>-ey</i>	-3.79	< .0005 ***
		<i>-(l)ul</i>			<i>-(u)lo</i>	-2.64	< .0005 ***
	intransitive	<i>-ey</i>	ditransitive	intransitive	<i>-ey</i>	1.51	< .0005 ***
		<i>-(u)lo</i>			<i>-(u)lo</i>	0.38	.4340
		<i>-(l)ul</i>			<i>-(l)ul</i>	0.31	.4835
	ditransitive	<i>-(u)lo</i>	ditransitive	ditransitive	<i>-ey</i>	-0.02	.5000
		<i>-(l)ul</i>			<i>-ey</i>	-2.59	< .0005 ***
		<i>-(l)ul</i>			<i>-(u)lo</i>	-2.57	< .0005 ***
L2-ex	intransitive	<i>-ey</i>	L2-noex	intransitive	<i>-ey</i>	-0.12	.5000
		<i>-(u)lo</i>			<i>-(u)lo</i>	-0.21	.4995
		<i>-(l)ul</i>			<i>-(l)ul</i>	-0.31	.4825
	ditransitive	<i>-ey</i>	ditransitive	ditransitive	<i>-ey</i>	-0.49	.2610
		<i>-(u)lo</i>			<i>-(u)lo</i>	-0.78	.0125 **
		<i>-(l)ul</i>			<i>-(l)ul</i>	-0.19	.4995

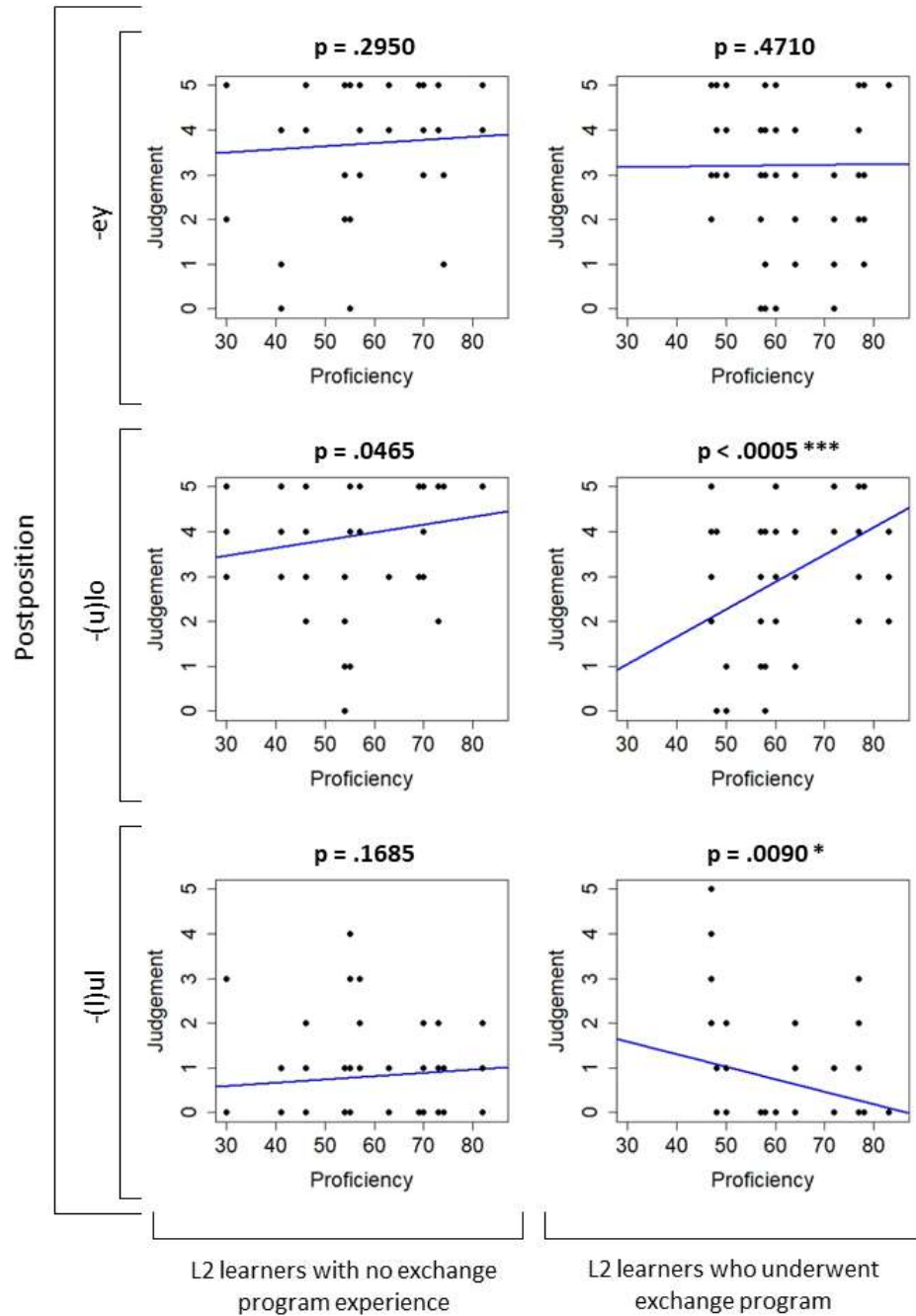
*Note.* L2-ex is a sub-group of the L2 group that underwent the exchange program; L2-noex is the other sub-group of the L2 group that did not.

**Linear regression model of judgement vs. proficiency  
in intransitive construction with the verb *kata* 'to go'**



**Figure 4.** Linear regression: *Proficiency* vs. *Acceptability* / intransitive construction with the verb *kata* 'to go' (alpha level = .025).

**Linear regression model of judgement vs. proficiency  
in intransitive construction with the verb *ponayta* 'to send'**



**Figure 5.** Linear regression: *Proficiency* vs. *Acceptability* / ditransitive construction with the verb *ponayta* 'to send' (alpha level = .025).

### 3.4. Discussion

I set a research question asking whether there is a relationship between proficiency, exchange program, and postposition types in L1-Czech L2-Korean learners' comprehension of a locative construction with alternating postpositions in Korean. Based on this research question, I posed three hypotheses. In this section, I assess each hypothesis on the basis of the findings of the experiment and discuss the implications of the study.

#### 3.4.1. Evaluation of research hypotheses

##### 3.4.1.1. Main hypothesis

The main hypothesis was that there is a relationship between proficiency, exchange program, and postposition types in L1-Czech L2-Korean learners' comprehension of a locative construction with alternating postpositions in Korean

In the account of the L2 group being divided into two, the results suggest that there certainly is a relationship between the proficiency, exchange program and knowledge about postpositional alternation in Korean locative construction as data from ANOVA analysis (3.3.3.) revealed the factor of *Group* had a main effect on learners' judgement. Linear regression analysis further revealed that with an increase in proficiency only L2 learners with exchange program experience showed a low acceptability rating of postposition *-(l)ul*, and high acceptability of *-(u)lo* in ditransitive construction.

##### 3.4.1.2. Supporting hypothesis (1)

The first supporting hypothesis was that a higher proficiency should result in higher rates of acceptability in the grammatical constructional patterns for learners and I predicted there is a chance that the L2 speakers with higher proficiency are more likely to show more accurate acceptability judgement, because of their knowledge of postpositional alternation in locative construction and this knowledge might be a result of higher proficiency.

However, the overall group of L2 learners showed rather different results from native speakers in acceptability judgement of postpositions *-ey*, *-(u)lo*, *-(l)ul*. The proficiency was indeed proven to be a factor influencing L2 learners' judgement. An independent sample T-test revealed that L2 learners who underwent the exchange program had higher proficiency than L2 learners who did not and the linear regression

models clearly show, that the higher the proficiency in L2 learners who underwent the exchange program, the higher the acceptability ratings of postpositions get (except for the only ungrammatical condition of postposition *-(l)ul* in ditransitive construction, which was and should have been low). But the acceptability judgement ratings in the overall L2 group were still somewhat lower than the ratings of native participants, especially in the grammatical conditions of ditransitive construction. The postposition *-ey* was universally accepted with high ratings by all participants in all conditions and is the only condition to be rated by L2 learners with a mean higher than four in intransitive construction. The overall data showed rather a distinction between each postposition, especially in the intransitive construction where *-ey* received the high rating, *-(u)lo* is somewhat in the middle, and *-(l)ul* received a low rating.

#### 3.4.1.3. Supporting hypothesis (2)

Similarly, another supporting hypothesis was that learners who underwent an exchange program should demonstrate their knowledge about alternations similar to that of native speakers. I predicted that it is probable for L2 learners who underwent the exchange program to rate the acceptability of test items in a similar manner as natives would do, therefore the mean scores of the judgements to be similar between those two groups, as the exchange program exposes learners to learning the language in the native environment

The L2 learners who underwent the exchange program did indeed demonstrate similar results to the native speakers. All the grammatical items were rated in a similarly high manner as native speakers did. The only ungrammatical condition was a postposition *-(l)ul* in ditransitive construction and received low ratings, which was again rated in a similar manner to the native participants.

#### 3.4.1.4. Supporting hypothesis (3)

Another supporting hypothesis was that learners should evaluate the *-(l)ul* pattern of the locative construction with a ditransitive verb, which is ungrammatical, to be lower than the other postposition-verb combinations of the construction.

This statement turned out to be true but only in the case of L2 learners with exchange program experience. The regression line suggests that with higher proficiency the judgement rating was decreasing. However, L2 learners with

exchange program experience evaluated the *-(l)ul* pattern of the locative construction with an intransitive verb, which is grammatical, to be almost unacceptable.

### 3.4.2. Implications of results

Considering the overall L2 group, the acceptability judgement of postpositions *-ey*, *-(u)lo*, *-(l)ul* in two types of locative constructions (intransitive and ditransitive) in L1-Czech L2-Korean learners showed different results than the sample of the natives, proving the results of research conducted by Robenalt and Goldberg (2016) where L2 learners avoided alternations altogether and were less aware of whether the given alternations are even grammatical and L2 learners kept track of what they heard and could tell the difference between known and new sentences. Robenalt and Goldberg (2016) further concluded that L2 learners do not take alternative expressions into account the way native speakers do, which seems to be the same case for L1-Czech L2-Korean learners. However, the L2 learners with exchange program experience showed that with increasing proficiency there is a tendency to judge grammatical conditions higher and ungrammatical conditions lower.

Park (2016), who assumed that since L2 locative alternation is not focused on as target grammar in the classroom found out that L2 learners may not have the knowledge of alternations overall, which certainly can contribute to L2 learners not taking alternations into account. Even though learner participants deemed particle *-(l)ul* in ditransitive construction correctly as ungrammatical, they did the same in intransitive construction, which is otherwise grammatical. This suggests that participants may not be sure about alternations in locative construction with this postposition and raises the question of whether they know about alternations explicitly or based their judgement on pure intuition.

Similarly, a very interesting finding is that intransitive construction with postposition *-ey* is the only condition to have a mean higher than four (out of five) in L2 learners, which suggests that the L2 participants may have generalized *-ey* as a prominently locative particle for intransitive verbs. This might be coming from L2 learners' misunderstanding of semantical meaning in postpositions. One of the only sources of Korean grammar books written in the Czech language is from Pucek (2005). In his book, for example, locative postpositions *-ey* and *-(u)lo* are categorized differently than Korean or English linguists would explain them, i.e., *-ey* as a 'dative postposition with locative function' and *-(u)lo* as an 'instrumental postposition with



the directive function'. This is mainly done to better suit the equivalents in Czech translations and better correspond with the explanation of the relation to Czech grammatical cases. Choi and Schmit (2015) noticed, that L1-Korean L2-English learners in their study may have struggled to adapt to the usage of prepositions in English, which can be analogically used for Czech learners' adaptation to Korean postpositions, in which this Czech-like explanation of Korean postposition would make sense to help learners. However, this might cause problems in the acquisition of alternation knowledge because these postpositions are not strictly bound to a certain grammatical case, but rather have different semantical meanings and in some cases might be just more frequently seen in a certain context, i.e., *-(u)lo* in the instrumental case. This is a good example of CLI where learners take their knowledge of grammatical cases in L1-Czech and project them onto L2 judgement.

This problem can be seen in the acceptability judgement of *-(l)ul* which is primarily seen as an accusative case marker but in a sentence with intransitive verbs fulfils the semantical function of a locative postposition. Despite this, the results show that L2 learners dispreferred *-(l)ul* in intransitive construction, even though it is grammatical. It is indeed ungrammatical in ditransitive construction which L2 learners did disprefer as well and L2 learners with exchange program experience show trend of decrease in rating of this condition as proficiency increases, however, this might be a mere result of a generalization, as they thought of *-(l)ul* to be purely accusative case marker and ungrammatical in the whole locative construction. Goldberg (2009) defines the basis of generalizations as newly acquired knowledge that is based on already acquired knowledge, which would further prove my conclusion.

In my opinion and from my experience, as a student at the same university as the participants, postpositional alternation in locative construction is implicitly showcased between postpositions *-ey* and *-(u)lo* as a possibility, however, the postposition *-(l)ul* is only mentioned and later left out completely, which proves assumptions of Park (2016).

Unexpectedly, the grammatical ditransitive constructions received much lower judgement scores in general, raising the question of how much are participants familiar with ditransitive constructions in Korean. Surprisingly though, *-(u)lo* was the most accepted postposition in ditransitive construction by both L1 and L2 speakers.

## Chapter 4. Conclusion

### 4.1. Summary of the study

The purpose of this thesis was to conduct research and find an answer to the question of whether there is a relationship between proficiency, exchange program, and grammatical knowledge about postpositional alternation in Korean locative construction by Czech-speaking learners of Korean. In Chapters 1 and 2, I introduced the background and core phenomena, explained the general characteristics of Korean and Korean particles, described postpositional alternation and locative construction in Korean, and described grammatical cases in Czech, as well as alternation of prepositions in Czech. In chapter 3, I introduced quantitative research dealing with postpositional alternation in Korean. The main point of this research is to find whether the students have knowledge of alternation in locative construction and whether is the exchange program a factor that influenced their knowledge.

I found out, that proficiency did play an influential role in grammatical knowledge about postpositional alternation in Korean locative construction by Czech-speaking learners of Korean. It was also proven that with an increase in proficiency the participants seem to judge alternations as more acceptable.

I also found that the exchange program had an effect on the knowledge of postpositional alternation and might have been even the reason why this group of L2 learners had higher proficiency on average. Even though participant learners rated all conditions somewhat lower than native participants, as proficiency increased in the L2 learners who underwent the exchange program, the acceptability ratings did as well (except for the ungrammatical condition where it should and did decrease). It is safe to say, that at least the participants with higher proficiency who underwent an exchange program did show somewhat similar results to natives.

I concluded that L1-Czech L2-Korean learners had knowledge about postpositional alternation in locative construction using *-ey* and *-(u)lo* in general and the knowledge concerning postposition *-(l)ul* depends on proficiency and exchange program.

### 4.2. Limitations and future study

The fact, that only one verb was used for each construction (intransitive and ditransitive) is very limiting. Therefore, the experiment does not account for other

factors such as frequency of the verbs and only represents a basic experiment within given constructions. Both constructions are also limited by the usage of verbs that indicate only movement in one direction, i.e., *kata* ‘to go’ and *ponayta* ‘to send’ are present, but *ota* ‘to come’ and *patta* ‘to receive’ were not used in this experiment.

The number of participants is also a limiting factor. The Korean language is not taught on a large scale in the Czech Republic. Therefore, it is difficult to collect data from a relatively large group with the L2 knowledge and the smaller the group gets, the less representative results we obtain. However, the results suggest that a larger group of participants with a more straightforward grouping of their proficiency, i.e., beginner, intermediate etc, would provide more specific results on participants’ knowledge of postpositional alternation in locative construction.

The exchange program itself poses a limitation and is a semi-inaccurate factor. Even though participants might get a chance to study abroad, their newly gained knowledge of the language depends on the curriculum of the university they study at, i.e., what classes they take, and how many hours a week they take, as well as the length of the exchange program which usually takes about 1 or 2 semesters and this time span itself, can cause a difference in obtained knowledge. Similarly, Ellis (2004) argues that students' performance varies and that they do not all perform in the same way, as various and unique situations have an impact on their performance.

This work presents only one of the basic studies on the topic of language knowledge and linguistic study in general in L1-Czech L2-Korean and only lays out the ‘foundation’ and inspiration for future studies. To conclude more definitive results, there is a need for more studies dealing with knowledge of grammatical constructions and CLI, as very few linguistic studies have been conducted between these two languages.

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## **List of appendices**

Appendix 1. Research sentences

Appendix 2. Results of Tukey's HSD test in L1 and L2 speakers

Appendix 3. Results of Tukey's HSD test in L2 speakers



## Appendix 1. Research sentences

### List of target sentences used for conducting research

#### Grammatical construction [subject-NOM location-LOC/ACC go]

##### Locative postposition -ey

영수가 학교에 갔다.

*Yengswu-ka hakkyo-ey ka-ass-ta*

Yengswu-NOM school-LOC go-PST-DECL

‘Yengswu went to a school.’

영미가 호텔에 갔다.

*Yengmi-ka hotheyl-ey ka-ass-ta*

Yengmi-NOM hotel-LOC go-PST-DECL

‘Yengmi went to a hotel.’

민수가 시장에 갔다.

*Minswu-ka sicang-ey ka-ass-ta*

Minswu-NOM market-LOC go-PST-DECL

‘Minswu went to a market.’

재희가 공항에 갔다.

*Cayhuy-ka konghang-ey ka-ass-ta*

Cayhuy-NOM airport-LOC go-PST-DECL

‘Cayhuy went to an airport.’

정우가 은행에 갔다.

*Cengwu-ka unhayng-ey ka-ass-ta*

Cengwu-NOM bank-LOC go-PST-DECL

‘Cengwu went to a bank.’

지애가 화장실에 갔다.

*Ciay-ka hwacangsil-ey ka-ass-ta*  
Ciay-NOM bathroom-LOC go-PST-DECL  
'Ciay went to a bathroom.'

**Locative postposition *-(u)lo***

영수가 학교로 갔다.

*Yengswu-ka hakkyo-ey ka-ass-ta*  
Yengswu-NOM school-LOC go-PST-DECL  
'Yengswu went to a school.'

영미가 호텔로 갔다.

*Yengmi-ka hotheyl-lo ka-ass-ta*  
Yengmi-NOM hotel-LOC go-PST-DECL  
'Yengmi went to a hotel.'

민수가 시장으로 갔다.

*Minswu-ka sicang-ulo ka-ass-ta*  
Minswu-NOM market-LOC go-PST-DECL  
'Minswu went to a market.'

재희가 공항으로 갔다.

*Cayhuy-ka konghang-ulo ka-ass-ta*  
Cayhuy-NOM airport-LOC go-PST-DECL  
'Cayhuy went to an airport.'

정우가 은행으로 갔다.

*Cengwu-ka unhayng-ulo ka-ass-ta*  
Cengwu-NOM bank-LOC go-PST-DECL  
'Cengwu went to a bank.'

지애가 화장실로 갔다.

*Ciay-ka hwacangsil-lo ka-ass-ta*  
Ciay-NOM bathroom-LOC go-PST-DECL  
'Ciay went to a bathroom.'

**Accusative case marker -(l)ul**

영수가 학교를 갔다.

*Yengswu-ka hakkyo-lul ka-ass-ta*  
Yengswu-NOM school-ACC go-PST-DECL  
'Yengswu went to a school.'

영미가 호텔을 갔다.

*Yengmi-ka hotheyl-ul ka-ass-ta*  
Yengmi-NOM hotel-ACC go-PST-DECL  
'Yengmi went to a hotel.'

민수가 시장을 갔다.

*Minswu-ka sicang-ul ka-ass-ta*  
Minswu-NOM market-ACC go-PST-DECL  
'Minswu went to a market.'

재희가 공항을 갔다.

*Cayhuy-ka konghang-ul ka-ass-ta*  
Cayhuy-NOM airport-ACC go-PST-DECL  
'Cayhuy went to an airport.'

정우가 은행을 갔다.

*Cengwu-ka unhayng-ul ka-ass-ta*  
Cengwu-NOM bank-ACC go-PST-DECL  
'Cengwu went to a bank.'

지애가 화장실을 갔다.

*Ciay-ka hwacangsil-ul ka-ass-ta*  
Ciay-NOM bathroom-ACC go-PST-DECL

‘Ciay went to a bathroom.’

### Grammatical Construction [subject-NOM object-ACC location-LOC send]

#### Locative postposition -ey

현우가 선물을 서울에 보냈다.

*Hyenwu-ka senmwul-ul Sewul-ey ponay-ess-ta*  
Hyenwu-NOM gift-ACC Sewul-LOC send-PST-DECL

‘Hyenwu sent gift to Seoul.’

미주가 용돈을 부산에 보냈다.

*Micu-ka yongton-ul Pwusan-ey ponay-ess-ta*  
Micu-NOM allowance-ACC Pwusan-LOC send-PST-DECL

‘Micu sent allowance to Busan.’

동희가 책을 집에 보냈다.

*Tonghuy-ka chayk-ul cip-ey ponay-ess-ta*  
Tonghuy-NOM book-ACC house-LOC send-PST-DECL

‘Tonghuy sent book to a house.’

유미가 편지를 경찰서에 보냈다.

*Yumi-ka phyenci-lul kyengchalse-ey ponay-ess-ta*  
Yumi-NOM letter-ACC police.station-LOC send-PST-DECL

‘Yumi sent letter to a police station.’

석주가 음식을 방송국에 보냈다.

*Sekcwu-ka umsik-ul pangsongkwuk-ey ponay-ess-ta*  
Sekcwu-NOM meal-ACC broadcast.station-LOC send-PST-DECL

‘Sekcwu sent meal to a broadcasting station.’

민지가 서류를 병원에 보냈다.

*Minci-ka selyu-lul pyengwen-ey ponay-ess-ta*  
Minci-NOM document-ACC hospital-LOC send-PST-DECL  
'Minci sent document to a hospital.'

### Locative postposition *-(u)lo*

현우가 선물을 서울로 보냈다.

*Hyenwu-ka senmwul-ul Sewul-lo ponay-ess-ta*  
Hyenwu-NOM gift-ACC Sewul-LOC send-PST-DECL  
'Hyenwu sent gift to Seoul.'

미주가 용돈을 부산으로 보냈다.

*Micu-ka yongton-ul Pwusan-ulo ponay-ess-ta*  
Micu-NOM allowance-ACC Pwusan-LOC send-PST-DECL  
'Micu sent allowance to Busan.'

동희가 책을 집으로 보냈다.

*Tonghuy-ka chayk-ul cip-ulo ponay-ess-ta*  
Tonghuy-NOM book-ACC house-LOC send-PST-DECL  
'Tonghuy sent book to a house.'

유미가 편지를 경찰서로 보냈다.

*Yumi-ka phyenci-lul kyengchalse-lo ponay-ess-ta*  
Yumi-NOM letter-ACC police.station-LOC send-PST-DECL  
'Yumi sent letter to a police station.'

석주가 음식을 방송국으로 보냈다.

*Sekcwu-ka umsik-ul pangsongkwuk-ulo ponay-ess-ta*  
Sekcwu-NOM meal-ACC broadcast.station-LOC send-PST-DECL  
'Sekcwu sent meal to a broadcasting station.'

민지가 서류를 병원으로 보냈다.

*Minci-ka selyu-lul pyengwen-ulo ponay-ess-ta*  
Minci-NOM document-ACC hospital-LOC send-PST-DECL

‘Minci sent document to a hospital.’

### Ungrammatical Construction [subject-NOM object-ACC location-ACC send]

#### Accusative case marker *-(l)ul*

현우가 선물을 서울을 보냈다.

*Hyenwu-ka senmwul-ul Sewul-ul ponay-ess-ta*  
Hyenwu-NOM gift-ACC Seoul-ACC send-PST-DECL

‘(Hyenwu sent gift to Sewul.)’

미주가 용돈을 부산을 보냈다.

*Micu-ka yongton-ul Pwusan-ul ponay-ess-ta*  
Micu-NOM allowance-ACC Busan-ACC send-PST-DECL

‘(Micu sent allowance to Pwusan.)’

동희가 책을 집을 보냈다.

*Tonghuy-ka chayk-ul cip-ul ponay-ess-ta*  
Tonghuy-NOM book-ACC house-ACC send-PST-DECL

‘(Tonghuy sent book to a house.)’

유미가 편지를 경찰서를 보냈다.

*Yumi-ka phyenci-lul kyengchalse-lul ponay-ess-ta*  
Yumi-NOM letter-ACC police.station-ACC send-PST-DECL

‘(Yumi sent letter to a police station.)’

석주가 음식을 방송국을 보냈다.

*Sekcwu-ka umsik-ul pangsongkwuk-ul ponay-ess-ta*  
Sekcwu-NOM meal-ACC broadcast.station-ACC send-PST-DECL

‘(Sekcwu sent meal to a broadcasting station.)’

민지가 서류를 병원을 보냈다.

*Minci-ka selyu-lul pyengwen-ul ponay-ess-ta*  
Minci-NOM document-ACC hospital-ACC send-PST-DECL  
'(Minci sent document to a hospital.)'

### List of filler sentences used for conducting research

#### Grammatical sentences

윤화가 도서관을 알았다.

*Yunhwa-ka tosekwan-ul al-ass-ta*  
Yunhwa-NOM library-ACC know-PST-DECL  
'Yunhwa knew a library.'

나래가 열쇠 찾았다.

*Nalay-ka yelsoy-Ø chac-ass-ta*  
Nalay-NOM key-ACC found-PST-DECL  
'Nalay found a key.'

지우가 가게를 찾았다.

*Ciwu-ka kakey-lul chac-ass-ta*  
Ciwu-NOM store-ACC found-PST-DECL  
'Ciwu found a store.'

은지가 영화를 보았다.

*Unci-ka yenghwa-lul po-ass-ta*  
Unci-NOM movie-ACC see-PST-DECL  
'Unci saw a movie.'

견우가 부엌을 보았다.

*Kyenwu-ka pwuekh-ul po-aass-ta*  
Kyenwu-NOM pwuekh-ACC see-PST-DECL  
'Kyenwu saw a kitchen.'

하니가 친구와 만났다.

*Hani-ka chinku-wa manna-ass-ta*  
Hani-NOM friend-COM meet-PST-DECL

‘Hani met with a friend.’

유리가 부장님으로 되었다.

*Yuli-ka pucangnim-ulo toy-ess-ta*  
Yuli-NOM department.head-INST become-PST-DECL

‘Yuli became head of department.’

진수가 사탕만 먹었다.

*Cinsu-ka sathang-man mek-ess-ta*  
Cinsu-NOM sweets-only eat-PST-DECL

‘Cinsu ate only sweets.’

영호가 친구의 운동화를 신었다.

*Yengho-ka chinkwu-uy wuntonghwa-lul sin-ess-ta*  
Yengho-NOM friend-GEN sneakers-ACC wear-PST-DECL

‘Yengho wore friend’s sneakers.’

술기가 할머니와 오았다.

*Swulki-ka halmeni-wa o-ass-ta*  
Swulki-NOM grandmother-COM come-PST-DECL

‘Swulki came with grandmother.’

성자가 집 구매하였다.

*Sengca-ka cip-Ø kwumayha-yess-ta*  
Sengca-NOM house-(ACC) purchase-PST-DECL

‘Sengca purchased a house.’



은수가 노래를 불렀다.

*Unswu-ka nolay-lul pwulu-ess-ta*  
Unswu-NOM song-ACC sing-PST-DECL

‘Unswu sang a song.’

보라가 우체국도 알았다.

*Pola-ka wucheykwuk-to al-ass-ta*  
Pola-NOM post.office-also know-PST-DECL

‘Pola knew also the post office.’

윤화가 도서관도 알았다.

*Yunhwa-ka tosekwan-to al-ass-ta*  
Yunhwa-NOM library-also know-PST-DECL

‘Yunhwa knew also the library.’

나래가 열쇠도 찾았다.

*Nalay-ka yelsoy-to chac-ass-ta*  
Nalay-NOM key-also find-PST-DECL

‘Nalay also found a key.’

은지가 영화도 보았다.

*Unci-ka yenghwa-to po-ass-ta*  
Unci-NOM movie-even see-PST-DECL

‘Unci even saw a movie.’

견우가 부엌도 보았다.

*Kyenwu-ka pwuekh-to po-ass-ta*  
Kyenwu-NOM kitchen-also see-PST-DECL

‘Kyenwu also saw a kitchen.’

하니가 친구도 만났다.

*Hani-ka chinkwu-to manna-ass-ta*  
Hani-NOM friend-also meet-PST-DECL  
'Hani also met a friend'

### Ungrammatical sentences

보라가 우체국과 알았다.

*Pola-ka wucheykwuk-kwa al-ass-ta*  
Pola-NOM post.office-COM know-PST-DECL  
'(Pola knew post office.)'

민기가 돈의 주었다.

*Minki-ka ton-uy cu-ess-ta*  
Minki-NOM ton-GEN give-PST-DECL  
'(Minki gave money.)'

범수가 밥이 샀다.

*Pemswu-ka pap-i sa-ass-ta*  
Pemswu-NOM rice-NOM buy-PST-DECL  
'(Pemswu bought rice)'

지우가 가게와 찾았다.

*Ciwu-ka kakey-wa chac-ass-ta*  
Ciwu-NOM store-COM find-PST-DECL  
'(Ciwu found store)'

유리가 부장님과 되었다.

*Yuli-ka pwucangnim-kwa toy-ess-ta*  
Yuli-NOM department.head-COM become-PST-DECL  
'(Yuli became department head.)'

민기가 돈이 주었다.

*Minki-ka ton-i cu-ess-ta*  
Minki-NOM money-NOM give-PST-DECL  
'(Minki gave money.)'

진수가 사탕이 먹었다.

*Cinsu-ka sathang-i mek-ess-ta*  
Cinsu-NOM sweets-NOM eat-PST-DECL  
'(Cinsu ate sweets.)'

술기가 할머니가 오았다.

*Swulki-ka halmeni-ka o-ass-ta*  
Swulki-NOM grandmother-NOM come-PST-DECL  
'(Swulki came with grandmother.)'

범수가 밥의 샀다

*Pemswu-ka pap-uy sa-Ass-ta*  
Pemswu-NOM rice-GEN buy-PST-DECL  
'(Pemswu bought rice.)'

성자가 집의 구매하였다.

*Sengca-ka cip-uy kwumayha-yess-ta*  
Sengca-NOM house-GEN purchase-PST-DECL  
'(Sengca bought house.)'

은수가 노래가 불렀다.

*Unswu-ka nolay-ka pwulu-ess-ta*  
Unswu-NOM song-NOM sing-PST-DECL  
'(Unswu sang a song.)'

성자가 집이랑 구매하였다.

*Sengca-ka      cip-ilang      kwumayha-yess-ta*

Sengca-NOM    cip-COM    purchase-PST-DECL

‘(Sengca bought house.)’

**Appendix 2. Results of Tukey's HSD test in L1 and L2 speakers  
(Alpha level = .025)**

	diff	<i>p</i> adj
L2-L1	-1.35	< .0005
intransitive-ditransitive	0.72	< .0005
lo-ey	-0.36	< .0005
ul-ey	-2.79	< .0005
ul-lo	-2.44	< .0005
L2:ditransitive-L1:ditransitive	-1.12	< .0005
L1:intransitive-L1:ditransitive	1.05	< .0005
L2:intransitive-L1:ditransitive	-0.53	< .0005
L1:intransitive-L2:ditransitive	2.17	< .0005
L2:intransitive-L2:ditransitive	0.59	< .0005
L2:intransitive-L1:intransitive	-1.58	< .0005
L2:ey-L1:ey	-0.70	< .0005
L1:lo-L1:ey	-0.02	.5000
L2:lo-L1:ey	-1.20	< .0005
L1:ul-L1:ey	-1.77	< .0005
L2:ul-L1:ey	-3.93	< .0005
L1:lo-L2:ey	0.69	< .0005
L2:lo-L2:ey	-0.50	< .0005
L1:ul-L2:ey	-1.06	< .0005
L2:ul-L2:ey	-3.23	< .0005
L2:lo-L1:lo	-1.19	< .0005
L1:ul-L1:lo	-1.75	< .0005
L2:ul-L1:lo	-3.91	< .0005
L1:ul-L2:lo	-0.56	< .0005
L2:ul-L2:lo	-2.73	< .0005
L2:ul-L1:ul	-2.16	< .0005
intransitive:ey-ditransitive:ey	1.00	< .0005
ditransitive:lo-ditransitive:ey	0.12	.4595

	diff	<i>p</i> adj
intransitive:lo-ditransitive:ey	0.18	.334
ditransitive:ul-ditransitive:ey	-2.86	< .0005
intransitive:ul-ditransitive:ey	-1.73	< .0005
ditransitive:lo-intransitive:ey	-0.88	< .0005
intransitive:lo-intransitive:ey	-0.82	< .0005
ditransitive:ul-intransitive:ey	-3.86	< .0005
intransitive:ul-intransitive:ey	-2.73	< .0005
intransitive:lo-ditransitive:lo	0.06	.4985
ditransitive:ul-ditransitive:lo	-2.98	< .0005
intransitive:ul-ditransitive:lo	-1.85	< .0005
ditransitive:ul-intransitive:lo	-3.04	< .0005
intransitive:ul-intransitive:lo	-1.91	< .0005
intransitive:ul-ditransitive:ul	1.13	< .0005
L2:ditransitive:ey-L1:ditransitive:ey	-1.25	< .0005
L1:intransitive:ey-L1:ditransitive:ey	0.23	< .0005
L2:intransitive:ey-L1:ditransitive:ey	0.07	.5000
L1:ditransitive:lo-L1:ditransitive:ey	0.10	.5000
L2:ditransitive:lo-L1:ditransitive:ey	-1.13	< .0005
L1:intransitive:lo-L1:ditransitive:ey	0.10	.5000
L2:intransitive:lo-L1:ditransitive:ey	-1.04	< .0005
L1:ditransitive:ul-L1:ditransitive:ey	-3.12	< .0005
L2:ditransitive:ul-L1:ditransitive:ey	-4.00	< .0005
L1:intransitive:ul-L1:ditransitive:ey	-0.18	.4995
L2:intransitive:ul-L1:ditransitive:ey	-3.63	< .0005
L1:intransitive:ey-L2:ditransitive:ey	1.49	< .0005
L2:intransitive:ey-L2:ditransitive:ey	1.32	< .0005
L1:ditransitive:lo-L2:ditransitive:ey	1.35	< .0005
L2:ditransitive:lo-L2:ditransitive:ey	0.13	.4995
L1:intransitive:lo-L2:ditransitive:ey	1.35	< .0005
L2:intransitive:lo-L2:ditransitive:ey	0.21	.4710
L1:ditransitive:ul-L2:ditransitive:ey	-1.86	< .0005
L2:ditransitive:ul-L2:ditransitive:ey	-2.75	< .0005

	diff	<i>p</i> adj
L1:intransitive:ul-L2:ditransitive:ey	1.07	< .0005
L2:intransitive:ul-L2:ditransitive:ey	-2.38	< .0005
L2:intransitive:ey-L1:intransitive:ey	-0.17	.4995
L1:ditransitive:lo-L1:intransitive:ey	-0.13	.5000
L2:ditransitive:lo-L1:intransitive:ey	-1.36	< .0005
L1:intransitive:lo-L1:intransitive:ey	-0.13	.5000
L2:intransitive:lo-L1:intransitive:ey	-1.28	< .0005
L1:ditransitive:ul-L1:intransitive:ey	-3.35	< .0005
L2:ditransitive:ul-L1:intransitive:ey	-4.23	< .0005
L1:intransitive:ul-L1:intransitive:ey	-0.42	.3700
L2:intransitive:ul-L1:intransitive:ey	-3.87	< .0005
L1:ditransitive:lo-L2:intransitive:ey	0.03	.5000
L2:ditransitive:lo-L2:intransitive:ey	-1.19	< .0005
L1:intransitive:lo-L2:intransitive:ey	0.03	.5000
L2:intransitive:lo-L2:intransitive:ey	-1.11	< .0005
L1:ditransitive:ul-L2:intransitive:ey	-3.18	< .0005
L2:ditransitive:ul-L2:intransitive:ey	-4.06	< .0005
L1:intransitive:ul-L2:intransitive:ey	-0.25	.4840
L2:intransitive:ul-L2:intransitive:ey	-3.70	< .0005
L2:ditransitive:lo-L1:ditransitive:lo	-1.23	< .0005
L1:intransitive:lo-L1:ditransitive:lo	0.00	.5000
L2:intransitive:lo-L1:ditransitive:lo	-1.14	< .0005
L1:ditransitive:ul-L1:ditransitive:lo	-3.22	< .0005
L2:ditransitive:ul-L1:ditransitive:lo	-4.10	< .0005
L1:intransitive:ul-L1:ditransitive:lo	-0.28	.4890
L2:intransitive:ul-L1:ditransitive:lo	-3.73	< .0005
L1:intransitive:lo-L2:ditransitive:lo	1.23	< .0005
L2:intransitive:lo-L2:ditransitive:lo	0.08	.5000
L1:ditransitive:ul-L2:ditransitive:lo	-1.99	< .0005
L2:ditransitive:ul-L2:ditransitive:lo	-2.87	< .0005
L1:intransitive:ul-L2:ditransitive:lo	0.94	< .0005
L2:intransitive:ul-L2:ditransitive:lo	-2.51	< .0005
L2:intransitive:lo-L1:intransitive:lo	-1.14	< .0005

	diff	<i>p</i> adj
L1:ditransitive:ul-L1:intransitive:lo	-3.22	< .0005
L2:ditransitive:ul-L1:intransitive:lo	-4.10	< .0005
L1:intransitive:ul-L1:intransitive:lo	-0.28	.4890
L2:intransitive:ul-L1:intransitive:lo	-3.73	< .0005
L1:ditransitive:ul-L2:intransitive:lo	-2.07	< .0005
L2:ditransitive:ul-L2:intransitive:lo	-2.95	< .0005
L1:intransitive:ul-L2:intransitive:lo	0.86	< .0005
L2:intransitive:ul-L2:intransitive:lo	-2.59	< .0005
L2:ditransitive:ul-L1:ditransitive:ul	-0.88	< .0005
L1:intransitive:ul-L1:ditransitive:ul	2.93	< .0005
L2:intransitive:ul-L1:ditransitive:ul	-0.52	.0825
L1:intransitive:ul-L2:ditransitive:ul	3.81	< .0005
L2:intransitive:ul-L2:ditransitive:ul	0.36	.1435
L2:intransitive:ul-L1:intransitive:ul	-3.45	< .0005



**Appendix 3. Results of Tukey's HSD test in L2 speakers**  
**(Alpha level = .025)**

	diff	<i>p</i> adj
L2 (exchange)-L2	-0.34	< .0005
intransitive-ditransitive	0.59	< .0005
lo-ey	-0.50	< .0005
ul-ey	-3.23	< .0005
ul-lo	-2.73	< .0005
L2 (exchange):ditransitive-L2:ditransitive	-0.49	.0005
L2:intransitive-L2:ditransitive	0.45	.0015
L2 (exchange):intransitive-L2:ditransitive	0.24	.1190
L2:intransitive-L2 (exchange):ditransitive	0.94	< .0005
L2 (exchange):intransitive-L2 (exchange):ditransitive	0.73	< .0005
L2 (exchange):intransitive-L2:intransitive	-0.21	.1760
L2 (exchange):ey-L2:ey	-0.29	.2040
L2:lo-L2:ey	-0.40	.0515
L2 (exchange):lo-L2:ey	-0.89	< .0005
L2:ul-L2:ey	-3.25	< .0005
L2 (exchange):ul-L2:ey	-3.50	< .0005
L2:lo-L2 (exchange):ey	-0.11	.4915
L2 (exchange):lo-L2 (exchange):ey	-0.60	.0010
L2:ul-L2 (exchange):ey	-2.96	< .0005
L2 (exchange):ul-L2 (exchange):ey	-3.20	< .0005
L2 (exchange):lo-L2:lo	-0.49	.0105
L2:ul-L2:lo	-2.85	< .0005
L2 (exchange):ul-L2:lo	-3.09	< .0005
L2:ul-L2 (exchange):lo	-2.36	< .0005
L2 (exchange):ul-L2 (exchange):lo	-2.60	< .0005
L2 (exchange):ul-L2:ul	-0.25	.3095
intransitive:ey-ditransitive:ey	1.32	< .0005
ditransitive:lo-ditransitive:ey	0.12	.4855
ditransitive:ul-ditransitive:ey	-2.74	< .0005

	diff	<i>p</i> adj
intransitive:ul-ditransitive:ey	-2.38	< .0005
ditransitive:lo-intransitive:ey	-1.20	< .0005
intransitive:lo-intransitive:ey	-1.11	< .0005
ditransitive:ul-intransitive:ey	-4.07	< .0005
intransitive:ul-intransitive:ey	-3.70	< .0005
intransitive:lo-ditransitive:lo	0.09	.4965
ditransitive:ul-ditransitive:lo	-2.87	< .0005
intransitive:ul-ditransitive:lo	-2.50	< .0005
ditransitive:ul-intransitive:lo	-2.96	< .0005
intransitive:ul-intransitive:lo	-2.59	< .0005
intransitive:ul-ditransitive:ul	0.36	.0925
L2 (exchange):ditransitive:ey-L2:ditransitive:ey	-0.49	.2610
L2:intransitive:ey-L2:ditransitive:ey	1.14	< .0005
L2 (exchange):intransitive:ey-L2:ditransitive:ey	1.01	< .0005
L2:ditransitive:lo-L2:ditransitive:ey	0.26	.4945
L2 (exchange):ditransitive:lo-L2:ditransitive:ey	-0.52	.2295
L2:intransitive:lo-L2:ditransitive:ey	0.07	.5000
L2 (exchange):intransitive:lo-L2:ditransitive:ey	-0.14	.5000
L2:ditransitive:ul-L2:ditransitive:ey	-2.89	< .0005
L2 (exchange):ditransitive:ul-L2:ditransitive:ey	-3.09	< .0005
L2:intransitive:ul-L2:ditransitive:ey	-2.47	< .0005
L2 (exchange):intransitive:ul-L2:ditransitive:ey	-2.78	< .0005
L2:intransitive:ey-L2 (exchange):ditransitive:ey	1.63	< .0005
L2 (exchange):intransitive:ey-L2 (exchange):ditransitive:ey	1.51	< .0005
L2:ditransitive:lo-L2 (exchange):ditransitive:ey	0.76	.0160
L2 (exchange):ditransitive:lo-L2 (exchange):ditransitive:ey	-0.02	.5000
L2:intransitive:lo-L2 (exchange):ditransitive:ey	0.56	.1545
L2 (exchange):intransitive:lo-L2 (exchange):ditransitive:ey	0.36	.4530
L2:ditransitive:ul-L2 (exchange):ditransitive:ey	-2.40	< .0005
L2 (exchange):ditransitive:ul-L2 (exchange):ditransitive:ey	-2.59	< .0005
L2:intransitive:ul-L2 (exchange):ditransitive:ey	-1.98	< .0005
L2 (exchange):intransitive:ul-L2 (exchange):ditransitive:ey	-2.28	< .0005

	diff	<i>p</i> adj
L2 (exchange):intransitive:ey-L2:intransitive:ey	-0.12	.5000
L2:ditransitive:lo-L2:intransitive:ey	-0.87	.0025
L2 (exchange):ditransitive:lo-L2:intransitive:ey	-1.65	< .0005
L2:intransitive:lo-L2:intransitive:ey	-1.07	< .0005
L2 (exchange):intransitive:lo-L2:intransitive:ey	-1.28	< .0005
L2:ditransitive:ul-L2:intransitive:ey	-4.03	< .0005
L2 (exchange):ditransitive:ul-L2:intransitive:ey	-4.22	< .0005
L2:intransitive:ul-L2:intransitive:ey	-3.61	< .0005
L2 (exchange):intransitive:ul-L2:intransitive:ey	-3.92	< .0005
L2:ditransitive:lo-L2 (exchange):intransitive:ey	-0.75	.0165
L2 (exchange):ditransitive:lo-L2 (exchange):intransitive:ey	-1.53	< .0005
L2:intransitive:lo-L2 (exchange):intransitive:ey	-0.94	.0005
L2 (exchange):intransitive:lo-L2 (exchange):intransitive:ey	-1.15	< .0005
L2:ditransitive:ul-L2 (exchange):intransitive:ey	-3.91	< .0005
L2 (exchange):ditransitive:ul-L2 (exchange):intransitive:ey	-4.10	< .0005
L2:intransitive:ul-L2 (exchange):intransitive:ey	-3.49	< .0005
L2 (exchange):intransitive:ul-L2 (exchange):intransitive:ey	-3.79	< .0005
L2 (exchange):ditransitive:lo-L2:ditransitive:lo	-0.78	.0125
L2:intransitive:lo-L2:ditransitive:lo	-0.19	.4995
L2 (exchange):intransitive:lo-L2:ditransitive:lo	-0.40	.4005
L2:ditransitive:ul-L2:ditransitive:lo	-3.16	< .0005
L2 (exchange):ditransitive:ul-L2:ditransitive:lo	-3.35	< .0005
L2:intransitive:ul-L2:ditransitive:lo	-2.74	< .0005
L2 (exchange):intransitive:ul-L2:ditransitive:lo	-3.04	< .0005
L2:intransitive:lo-L2 (exchange):ditransitive:lo	0.59	.1300
L2 (exchange):intransitive:lo-L2 (exchange):ditransitive:lo	0.38	.4340
L2:ditransitive:ul-L2 (exchange):ditransitive:lo	-2.38	< .0005
L2 (exchange):ditransitive:ul-L2 (exchange):ditransitive:lo	-2.57	< .0005
L2:intransitive:ul-L2 (exchange):ditransitive:lo	-1.96	< .0005
L2 (exchange):intransitive:ul-L2 (exchange):ditransitive:lo	-2.26	< .0005
L2 (exchange):intransitive:lo-L2:intransitive:lo	-0.21	.4995
L2:ditransitive:ul-L2:intransitive:lo	-2.96	< .0005

	diff	<i>p</i> adj
L2 (exchange):ditransitive:ul-L2:intransitive:lo	-3.15	< .0005
L2:intransitive:ul-L2:intransitive:lo	-2.54	< .0005
L2 (exchange):intransitive:ul-L2:intransitive:lo	-2.85	< .0005
L2:ditransitive:ul-L2 (exchange):intransitive:lo	-2.76	< .0005
L2 (exchange):ditransitive:ul-L2 (exchange):intransitive:lo	-2.95	< .0005
L2:intransitive:ul-L2 (exchange):intransitive:lo	-2.33	< .0005
L2 (exchange):intransitive:ul-L2 (exchange):intransitive:lo	-2.64	< .0005
L2 (exchange):ditransitive:ul-L2:ditransitive:ul	-0.19	.4995
L2:intransitive:ul-L2:ditransitive:ul	0.42	.3760
L2 (exchange):intransitive:ul-L2:ditransitive:ul	0.12	.5000
L2:intransitive:ul-L2 (exchange):ditransitive:ul	0.61	.0098
L2 (exchange):intransitive:ul-L2 (exchange):ditransitive:ul	0.31	.4835
L2 (exchange):intransitive:ul-L2:intransitive:ul	-0.31	.4825