

## A Linguistic Analysis of Children's Speech Errors in Korean Speech Production<sup>\*</sup>

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### ◆ ABSTRACT

Taeho Kim, & Han-gyu Lee, 2020. *Journal of Cross-cultural Studies* xx-xx. **A Linguistic Analysis of Children's Speech Errors in Korean Speech Production.** The primary purpose of this study was to investigate how Korean children produce speech errors (or slips of the tongue) during speech production and show that their errors are not arbitrary but systematic, which reflects their language knowledge and abilities. To achieve this goal, we collected 122 speech errors from the spontaneous, casual conversations of two groups of children, pre-schoolers and primary schoolers, and classified them according to three dimensions: linguistic components, directionality, and forms of errors. The rates of errors were compared carefully, not only between the two child groups, but also between children and adults. Such comparisons provide a linguistic clue for language production and language development processes. This study will be linguistically significant in that there have been no studies of children's speech errors in Korean, although there have been many in other languages.

Key Words : language development, children's speech errors, language acquisition, Korean speech production

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## I . Introduction

Children's development of language production has been intensively investigated for both theoretical and empirical issues in language acquisition for the past decades. The predominant methodology used for such issues has been longitudinal observation of children's spontaneous speech, but cross-sectional experiments, asking children of various ages to manipulate linguistic units and constructions, have been also used to examine their linguistic competence and performance.<sup>1)</sup>

Slips of the tongue made by normal adults have been studied quite intensively, particularly focusing on English data, because they have been very useful data for speech production planning models. Yet, there have been only few studies done to investigate how Korean normal adult speakers produce speech errors in their spontaneous speech (Kim 2010, 2013, Kim & Lee 2010). To our knowledge, no studies have attempted to investigate children's speech errors with relation to language development process; there has been no studies examining how Korean young children produce slips of the tongue in their speech production, despite their linguistic importance of serving as a source, which reveals their current linguistic knowledge and abilities.

A slip of the tongue (SOT)<sup>2)</sup> may be defined as a one-time error in speech production planning; the speaker intends to utter a particular sound, word, phrase, or clause, but, during the planning process, something goes wrong, so that actual production will get different in

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1) Jaeger, J. *Kids' Slips: What young children's slips of the tongue reveal about language development*. Mahwa, NJ: Lawrence Erlbaum Associates. 2005, p.1.

2) The terms '(speech) error' and 'slip of the tongue (SOT)' will be used with no difference.

some ways from the original speech plan. An SOT is not considered as a simple mis-articulation, lack of grammatical knowledge or memory, or a false start in the light that speakers admit it as an error, and often correct it immediately. It is of importance to note that “a slip of the tongue cannot be made on a structure unless that particular structure has already been learned or acquired.”<sup>3)</sup> It should be noted that some utterances are considered ungrammatical by adults' standards. But, if regularly produced, they are not considered as ungrammatical by children's standards; so not errors from their perspective.

Take the examples (1)-(3) to demonstrate how SOTs differ from mere grammatical errors. Examples (1) and (2) are speech errors made by Korean young children,<sup>4)</sup> while (3) is an example perceived an error by adults' grammatical standards, but not by the child's knowledge.<sup>5)</sup>

- (1) A: swuhak hakwon-to an ka?  
 math academy-also not go  
 “Don't you go to the math academy either?”  
 C: pwunswu-lul mos hayse **ka**-ci mal-layyo. **o**-ci mal-layyo,  
 sensayngnim-i  
 fraction-ACC can't do go not-said come not-said teacher-NOM  
 “The teacher told me not to 'go' because of my poor fraction.  
 Don't come, said he.”
- (2) C: swukohaseyyo. I yak-**i** cal mek-eya toyeyo.  
 good job this pill-NOM well eat-must  
 “Good job! You should take this pill well.”

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3) Jaeger, J. *Kids' Slips: What young children's slips of the tongue reveal about language development*. Mahwa, NJ: Lawrence Erlbaum Associates. 2005, p.2.

4) The Yale system is used to romanize Korean in the examples.

5) In the examples throughout the paper, a child speaker is labeled as C, and an adult speaker as A. And pseudonyms were used for real names.

- (3) A: pheyngkwin-i-lul kaci-ko woa-se  
 Penguin-ACC bring-and come-and  
 “(They) brought a Penguin, and”

In example (1), the child C normally can differentiate *ka-* ‘to go’ and *o-* ‘to come,’ but, in this instance, she initially chose the wrong verb, *ka-* ‘to go,’ under the influence of *ka-* ‘to go’ used in A’s utterance, and then she corrected her mistake later with her intended verb, *o-* ‘to come.’ In (2), C mistakenly selected the subject marker *-i*, instead of the object marker *-lul*, to encode the object *yak* ‘medication’. This instance is considered as an error because the child has already established the language knowledge and ability of using the case markers properly in other discourse contexts, so this case is treated as a slip by the child’s standards. On the other hand, the error the speaker made in (3) is considered ungrammatical by adults’ standards, but it is not an error by the child’s standards because the child regularly produces such a construction; that is, the child regularly adds *-i* when the preceding noun ends with the closed syllable, so this is not a slip, but simply the result of the child’s lack of such grammatical knowledge at the time. In short, an utterance produced by a child is considered as an SOT if and only if it contains an error from the child’s perspective, in terms of phonology, lexicon, morphology or syntax.

There is a difference between speech errors by children at the time of language acquisition and those by adults who have completed it (Jaeger 2005). It is known that adults produce more lexical errors and syntactic errors, while children tend to make more errors concerning functional words than content words. In this study, we will examine how the speech errors of Korean children differ from those of Korean adults, and what cause the difference. Through the analyses of their

errors, it will be possible to see how and when children learn what grammatical rules; the SOT data can be an important linguistic resource through which we can understand children's language development process.

The primary purposes of this study are to investigate how Korean children produce speech errors in their speech production, and to show that they are not arbitrary but systematic, which reflects their language knowledge and abilities. This study compares the characteristics of children's speech errors with those of adults', and discusses the similarities and differences between them. It further discusses children's speech errors in Korean in comparison with those of Germanic languages such as English. Finally, based on the analyses of SOT data, this study claims that SOTs are an important resource to investigate and understand children's language development process.

The structure of this paper is as follows: Section 2 takes a brief look at previous studies on speech errors. Section 3 discusses the methodology for the study. Section 4 discusses the results of the data analyses. Section 5 summarizes the findings of this study and makes suggestions for future studies.

## II. Previous Studies

As already mentioned, SOTs have been intensively studied and used for various reasons. In the beginning, they were taken as a window to the subconscious (Freud 1973, 1901), but recently they have been used as a linguistic evidence regarding language representation and speech production planning, as well as for the discussion of many issues on

linguistic structures in various languages (Bock & Levelt 1993, Fromkin 1988, Garrett 1993, Menn 2010, Stemberger 1993). For example, Laubstein (1987) conducted a study of comparing consonant and vowel errors, and explored the role of syllable structures in speech production.

The actual collection of SOT data and their analyses were very popular in the 1970s and 1980s, but they are not nowadays. Most of the previous SOT studies were based on normal adult English speakers (Dell 1986, Dell & Reich 1981, Garrett 1980, Jaeger 1992, 2005, 2007, Poulisse 1999, Schultz 2004, among others), and some studies were done with non-English SOT data collected from normal adults of Dutch and German (Levelt 1989). Unfortunately, those studies on adult SOTs, mostly from Germanic languages, made a hasty conclusion that there's not much left to do with SOT data. Yet, there have been not many studies done with non-Germanic languages such as Korean or Japanese (Awuku 2002, Kang 2003, Kim 2007, Kim 2010, Kim 2013, Kim & Lee 2010, Kawachi 2002, Ko & Lee 2002, Min 1996). For example, Kim (2010) and Kim & Lee (2010) proposed that SOT data can function as important linguistic evidence for the study of the Korean language. Kim (2013) examined the differences in SOT errors with regards to the subjects' age and gender, and reported that SOT errors vary depending on the factors. Kawachi (2002) studied errors in spontaneous and preplanned speech in Japanese, and argued that speech errors can be reduced by practice. By looking at SOT data from non-Germanic languages, many long-standing issues in their phonology, morphology, or syntax could be addressed from a new perspective to show the reality of linguistic universals and parameters. Furthermore, most of the previous SOT researches have been based on normal adult monolingual speakers, but few have been done with children or the elderly, and even fewer

with abnormal speakers with language disorders (Berg 1987, Stemberger 1984, Rapp & Goldrick 2000, Mahoney 1997, among others).

Despite some methodological issues regarding children's SOTs, it is certain that SOT data from normal children can provide insights into their knowledge of language structures, in the light that a child can produce an SOT on a structure only after the linguistic knowledge of the structure has been acquired (Jaeger 2005). That is, if certain types of errors frequently occur more or less at the same stage in the language development of all children irrespective of their L1 background, it may be assumed that this is the time that a particular structure is normally acquired (Jaeger 2005). Even with the potential linguistic value of SOT studies on child language development, no attempt has been made based on SOT data produced by Korean children to examine how and why they make SOTs in their speech production. Therefore, it is worthy of looking at children's SOTs produced in their Korean speech production to discuss what linguistic implications we can draw from the data.

### **III. Methodology**

#### **3.1 Subjects and Data Collection**

This section provides a description of how SOT data for this study were collected from the speeches of Korean children, and discusses the methodology utilized to analyze the data.

The SOT data for this study were collected from a total of 14 children (6 pre-schoolers and 8 primary schoolers) who were engaged in a total of 10 two-party informal conversations, and each conversation was

audio-recorded.<sup>6)</sup> Each conversation goes approximately 30 minutes long, and the total length of all the conversations amounts to around 5 hours. Jaeger<sup>7)</sup> states that certain types of errors are easier to perceive than others. In order to eliminate the potential perceptual biases and to increase the accuracy of error detection, we transcribed the recorded conversations and examined the transcriptions repeatedly. The overall procedures for the SOT data collection are based on Jaeger (2005), Kim (2010, 2013) and Kim & Lee (2010), and summarized as follows.

All of the recordings took place at the participants' homes from October 2019 through April 2020. The participants were all young native speakers of Korean, who were born and raised in Korea. The age of the subjects ranged from 5 to 12. The paired participants were family members, caretakers or close friends. During the recording, the voice recorder was unattended, and the subjects were left by themselves, in order to create a comfortable environment for casual conversation. They were left unaware of the recordings, which were done under the consent of their caretakers. In each recording session, the participants were asked to converse comfortably about any topic they liked to talk about. All the recorded conversations were transcribed for further analysis.

### 3.2 Identification of SOTs

As previously mentioned, it is not always easy to detect SOTs produced

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6) Six children were engaged in a conversation with their caretakers, and eight children conversed with their close friends. One child participated in two conversations with a different conversational partner.

7) Jaeger, J. *Kids' Slips: What young children's slips of the tongue reveal about language development*. Mahwa, NJ: Lawrence Erlbaum Associates, 2005, pp. 16-17.

by children because they often produce utterances which sound strange or even ungrammatical from an adult's point of view, but which sound normal to children's standards. Therefore, the SOTs which reflect a child's current stage of language development should not be analyzed as the right instances. When we encountered with the cases where an error, not corrected by the child, can be analyzed as an SOT or as a simple grammatical mistake, we looked at other similar constructions and the discourse contexts to identify whether it should be treated as an error or not. When other similar constructions were not available or the discourse contexts did not offer enough cues, we asked the child or his/her caretakers in person for their comments or opinions before we made a judgment.

A total of 122 SOTs were collected from 14 Korean children during their speech production. All of them were sorted into two groups, according to the status of the participants, i.e. 6 pre-schoolers and 8 primary schoolers. Also, for the comparison of their speech errors with those of Korean adults, we employed the results of some previous studies on adults' speech errors (e.g. Kim 2010, 2013).

### 3.3 Data Classification System

The SOT data collected for this study were classified basically by the traditional systems used to classify adult errors in Korean (e.g. Kim 2010, 2013). We made use of the following three dimensions for the linguistic analysis of the collected SOTs: linguistic components involved in the SOTs, the directionality of the errors, and the forms of the error. The three dimensions used for the data classification are described below.

The first dimension is linguistic components. Speech errors can occur at any linguistic level of speech production planning, and they can be classified into the five different categories based on what linguistic unit was the source of errors: lexical, phonological, syntactic, propositional, and pragmatic errors (Kim 2010, 2013, Kim & Lee 2010). Phonological errors occur when unplanned phonetic forms are produced, and they also can involve non-meaningful phonological units or prosody. Lexical errors occur when wrong lexical items are selected instead of the planned ones, and they can include paradigmatic lexical substitutions and blends. Syntactic errors concern the syntagmatic organization of phrasal strings, and they usually involve the misplacement of words or morphemes in the syntagmatic string. Syntactic errors often involve lexical units, but they are not just in wrong lexical choices, but they are put in the erroneous positions in the syntagmatic strings.<sup>8)</sup> It is often said that syntactic errors are the most difficult errors to collect from a child's talk, because the child does not correct his or her utterance.<sup>9)</sup> Propositional errors take place when a speaker produces an utterance whose meaning is aberrant or self-contradictory to what is intended to convey. Finally, pragmatic errors are those that are semantically and syntactically perfect, but used inappropriately in the context where the utterance is produced (Kim 2010, Jaeger 2005).

The locational relationship (that is, directionality) between an error and the source of it is another dimension for the classification of SOTs. More specifically, depending on whether the source of the error can be found from the discourse context, it can be classified broadly into

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8) Jaeger, J. *Kids' Slips: What young children's slips of the tongue reveal about language development*. Mahwa, NJ: Lawrence Erlbaum Associates. 2005, p. 24.

9) *Ibid.* p. 18.

'contextual' and 'non-contextual' with regards to directionality (Jaeger 2005). The 'contextual' errors are those which have their sources in the discourse context, while the 'non-contextual' errors have no apparent linguistic sources so that we cannot tell what caused the errors contextually (Jaeger 2005, Kim 2010, 2013, Kim & Lee 2010). For the contextual errors, they are classified as 'perseveration,' 'anticipation,' and 'exchange,' depending on the directionality of whether their sources come before or after them, that is, whether the sources shed an influence forward or backward. If the sources are produced before the target units, and if they exert some linguistic influence on the speaker to utter wrong units instead of the target ones, this kind of errors is called 'perseveration.' On the other hand, when the errors replace the target units under the influence of their sources which have not been uttered yet, they belong to the category of 'anticipation.' If the two units exchange their positions, they are classified as 'exchange.' The directionality-based errors can be good examples to show that speakers seem to plan what to say before they begin to utter, because it is impossible to explain why perseveration, anticipation or exchange errors can be generated unless we assume that speakers say with a plan of what to say.

The last dimension to classify SOTs is the forms of the errors such as deleting or adding a linguistic element, substituting one with a wrong one, and assimilating or dissimilating two elements. They are classified as substitution, addition, omission, assimilation/dissimilation, as well as multiple forms. More specifically, in the error of substitution, one linguistic unit is substituted for another, and in the error of addition, a new linguistic element is inserted into an incorrect position. The error of omission involves omitting some linguistic element from the planned target. In assimilation, the error is produced in a way similar to the

source. Dissimilation refers to the case where the error is produced to distinguish the target from the source. Lastly, the multiple forms of errors involve two or more error forms to produce an error.

## IV. Results and Analysis

This section provides a quantitative and qualitative account of the SOT data collected from the conversations of 14 Korean children. Each subsection deals with the classifications by the three dimensions discussed in section 3.2; first, typical cases of speech errors are exemplified and analyzed, and then the frequencies of the classified errors are offered for two groups, pre-schoolers and primary schoolers; the two groups show distinct characteristics of their speech errors statistically. These quantitative analyses will be interpreted, discussing what they imply with regards to child language development.

### 4.1 SOTs and Linguistic Components

This section will discuss the relationship of speech errors with various stages of speech production planning. The parameter of linguistic components concerns an error that occurs at one of the four levels mentioned: lexical, phonological, syntactic, as well as propositional errors.<sup>10)</sup> Following are some examples of SOTs falling into each of the four levels. In this study, all SOTs are both underlined and boldfaced, and their corrected expressions, if they appear in the utterances, are underlined.

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10) No instance of pragmatic errors was found in the study.

- (4) C: nacwungey Youtube-to po-ko kangaci kulim-to po-l keeyyo.  
later -too see-and puppy picture-too see-will  
“Later, I will watch YouTube and look at puppy pictures.”  
A: Youtube-lo kangaci kulim po-l keeyyo?  
-with puppy picture see-will  
“Are you going to look at puppy pictures?”  
C: Ani, kangaci sukheychipwuk-ey kuli-l kelakoyo.  
No puppy sketchbook-in draw-will said  
“No, I mean I will draw a puppy in a sketch book.”
- (5) C: wuwa kamca masiss-keyss-ta. kamca kkepcil kka-cwu-seyyo.  
wow potato delicious-look potato peel off -please  
“Wow, the potato looks yummy. Please, pill off the potato.”  
A: kamca aniko, kokwuma-inteyyo.  
potato not.be yam-be  
“Not a potato, but a yam.”  
C: ai kokwuma-yo.  
Ah, yam  
“Yes, yam.”

The errors in (4) and (5) exemplify lexical errors, in which lexical items are not correctly chosen from the lexicon for the planned utterances. In C's first utterance in (4), the predicate *po*- 'to see' was incorrectly substituted for *kuli*- 'to paint' under the influence of the verb *po*- 'to see' uttered in the immediately preceding clause. Later, the speaker noticed that she made a slip, and corrected herself by changing the wrong lexical item with the correct one, *kuli*- 'to paint' after listening to A. In (5), B made a slip by choosing the noun *kamca* 'potato' instead of the target *kokwuma* 'yam', and she realized that she made an error due to the correction of A. Then, she corrected herself. As seen above, lexical errors are generated when unplanned lexical items are selected

from the speaker's lexicon.

Syntactic errors indicate the ones which are produced because of choosing wrong grammatical morphemes or structural orders, as exemplified in (6) and (7), and phonological errors are the ones which occur when the target sounds are substituted with wrong ones, as seen in (8).

- (6) A: hyeysang-i onul mwue-ka ceyil caymiss-ess-e?  
 Hyesang today what-NOM most fun-was-Q  
 “Hyesang, what was the most fun to you today?”  
 C: *mek-nun ke nol-ko, nol-ko mek-nun ke.*  
 eating thing play-and, play-and eating thing  
 “\*Eating, playing and. Playing and eating.”
- (7) C: swukohaseyyo. I yak-i cal mek-eya toyeyo. (=2)  
 good job this pill-NOM well eat-must  
 “Good job! You should take this pill well.”
- (8) C: kulemyen, kulem, yemsup-ul manhi ha-myen toay.  
 then then practice-acc a lot do-if good  
 “Then, you only have to practice hard.”

The syntactic error in (6) was made due to a wrong assignment of *mek-nunke* ‘eating’ and *nol-ko* ‘and play’ to a syntagmatic slot of the utterance. That is, the two lexical verbs combined with different functional morphemes are placed in reverse order to produce the ungrammatical syntactic structure *\*meknun ke nolko* ‘\*eating playing and.’ After noticing a slip, she immediately corrected the wrong order by producing the target syntactic structure *nolko meknun ke* ‘playing and eating.’ In (7), the subject marker *-i* was wrongly assigned to the object case marker slot, which is considered to be ungrammatical. In this example, the speaker did not notice that she made a slip, and her conversational

partner did not mention or correct the error either. Yet, the speaker regularly distinguishes the subject marker *-i* from the object marker *-(l)ul* in other situations. Example (8) shows a phonological error that the bilabial nasal /m/ in *yemsup* ‘practice’ was mis-articulated for /n/ probably due to the influence of the preceding word *kulem* ‘then,’ which ends in the nasal stop /m/.<sup>11)</sup>

Propositional errors are those which occur when a speaker produces an utterance self-contradictory to what he or she intends to convey, and they are exemplified in (9) below.

- (9) C: appa chenwon-i      manwon-pota cak-ney.  
       dad 1000 won-NOM 10000won-than smaller  
       “Dad, 1,000 won is smaller than 10,000 won.”  
 A: kulehci. ‘Right!’  
 C: kulem omanwon-i      manwon-pota cak-a?  
       then 50000won-NOM 10000won-than smaller  
       Ani manwon-i      omanwon-pota cak-keyssney.  
       no 10000won-NOM 50000won-than smaller  
       “Then, 50,000 won is smaller than 10,000 won, right?”  
       No, 10,000 won is smaller than 50,000 won.”

The example in (9) illustrates a propositional error in which the speaker

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11) This error can be analyzed in another way: the bilabial nasal /m/ in *yemsup* is produced due to the influence of the bilabial stop /p/, the coda of the following syllable /sup/ (anticipatory assimilation). And one reviewer claimed that the error be analyzed this way because it can be made even when *kulem* ‘then’ does not occur. It sounds plausible. However, a speech error occurs not in only one linguistic environment, but different environments can cause the same speech error to occur. In addition, Table 2 shows that anticipatory errors are much more difficult for children to make than perseveratory ones. That is why we did not analyze (8) as a case of anticipation.

formulated an utterance encoding a proposition which is different from what he intended to say. That is, C intended to state that 10,000 won is smaller than 50,000 won, but the actual statement that he uttered was the other way around, making no sense at all, thus being considered an instance of propositional errors.

Now we will look at the frequency of the SOTs with respect to the different linguistic components. Table 1 demonstrates interesting patterns of the errors of the two groups, pre-schoolers and primary schoolers.

Table 1: SOTs and linguistic components

	Lexical	Syntactic	Phonological	Propositional	Total
Preschool	16(30%)	<b>14(26%)</b>	<b>22(41%)</b>	2(4%)	54(101%)
Primary	<b>26(38%)</b>	<b>24(35%)</b>	17(25%)	1(1%)	68(99%)
Total	<b>42(34%)</b>	<b>38(31%)</b>	<b>39(32%)</b>	3(2%)	122(100%)

First, children show almost the same rates of lexical, syntactic, and phonological errors (34%, 31%, and 32%). This result is quite attractive in the light that, according to Kim (2010), Korean adults show a different tendency; adults produce lexical errors (77%) far more frequently than the other types of errors. A similar tendency is also observed in Kim (2013) with the highest rate (61%) of lexical errors. This difference implies that children are on the way of acquiring the Korean grammar, so that they can make similar rates of errors. However, it's not easy to tell why adults make lexical errors overwhelmingly more than those of the other components, which is beyond the scope of this study, but should be investigated in the future.

Yet, the two groups of children demonstrate distinctive characteristics

at different linguistic levels. For pre-schoolers, phonological errors occur most frequently (41%), but, for primary schoolers, both lexical and syntactic errors are produced more frequently (38% & 35%). The same tendency is reported in young children's errors in English that phonological errors are the most common type of the four types. These distinctive characteristics of the two child groups can be evidence for supporting the claim of Jaeger (2005) that, when a child learn a certain linguistic structure, they often produce SOTs related to that structure: it can be said that pre-schoolers are more focused on acquiring phonological knowledge, while primary schoolers on acquiring syntactic knowledge and expanding their vocabulary to express their thoughts appropriately. It is also proven that the difference between the two groups reflects the general pattern of acquisition order that phonological rules are acquired before lexical or syntactic ones (Jaeger 2005).

Third, children show the extremely low rate of propositional errors (2%), which is far lower than that of adults (10%) observed by Kim (2013). Jaeger also finds that propositional errors are very rarely found in children's errors in English.<sup>12)</sup> We cannot find any explanation of why children make less propositional errors, but it will be left for our future study.

## 4.2 SOTs and Directionality

This section concerns the locational relationships between errors and their sources, the explanation of their typical examples, as well as their quantitative and qualitative interpretations. As discussed in 3.3, SOTs

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12) Jaeger, J. *Kids' Slips: What young children's slips of the tongue reveal about language development*. Mahwa, NJ: Lawrence Erlbaum Associates. 2005. p. 57.

can be divided largely into contextual and non-contextual errors. In contextual errors, the source of an error involves a linguistic item which shed an influence over the target unit following or preceding it so as to cause the error. In non-contextual errors, the source of an error does not exist in the nearby discourse context. As previously stated, all SOTs are categorized into the four sub-groups: perseveration, anticipation, exchange, and non-contextual.

Following are the typical examples of the four groups of speech errors;

(10) C: sensayngnim-i aktang-ieyyo. na-nun **chakhan** salam hal-lay.  
 teacher-NOM villain-be I good guy do-will

A: ung, nay-ka aktang ha-lkey.

Okay I-NOM villain do-will

C: hwoanay-nun chek hayyacyo. hwoanay-ko **chakhan**-key aktang-ieyyo.  
 get.angry pretend get.angry-and good-thing villain-is

A: (laugh) hwanay-nun key chakhan-ke-ya?

get angry-thing good-be-Q

C: ani, hwoanay-ko **nappun** key aktang

No get angry-and bad thing villain

“C: Teacher, you are a villain, and I am a good guy.

A: Okay, I’ll be a villain. C: You should pretend to be angry. It’s a villain who gets angry and good. A: Is it good to get angry? C: No, it’s a villain who gets angry and be bad.”

(11) C1: kuliko tto yuchiwonsayng etisse?

and also kindergarteners where.be

“And where are other kindergarteners?”

C2: **phithi**-to, phikwuphikwu-to, **khithi**, khithi-nun elinicip-i-ess-ci?

Phithi-also Phikwuphikwu-also Kitty Kitty-top daycare center-be

“Phithi too. Phikwuphikwu too, Oh, Kitty attends a day-care center.”

- (12) C: onul yuchiwon-eyse **pwutwu** mekess-nuntey, Ciyeni-ka hullye-sseyo.  
today kindergarten-in tofu ate --but Ciyen-nom spilt  
“Today, we had tofu, and Ciyen spilled it.”
- (13) C: etten han **namca**-ka iss-ess-e. a, **namca**-lanta.  
certain one guy-NOM was uh guy-said  
“There was a guy, uh, did I say ‘a guy’?”

Example (10) includes a case of perseveration. The speaker C intended to produce *nappun* ‘bad,’ but she made a slip by choosing the wrong lexical item *chakhan* ‘nice’ under the influence of the item *chakhan* ‘nice’ which uttered in her previous turn; that is, the influence of the source item was perseverated to cause the error. On the other hand, example (11) demonstrates a case of anticipation. In the context of (11), C1 and C2 are playing house, and *Khiti* and *Phiguphigu* are the names of the toys who attend day-care centers. C2’s *Phithi* is a wrong choice for *Khiti* because of the influence of *Phigwuphigwu* which will be uttered later; that is, /p<sup>h</sup>/ is substituted for /k<sup>h</sup>/ with C2’s anticipation of *Phigwuphigwu* at the time when she had to utter ‘*khiti*.’ Example (12) shows a case of exchange. The speaker planned to pronounce the two-syllabled word *twupwu* ‘tofu,’ but she made an error that the onsets of the two syllables are exchanged so as to produce *pwu-twu*. On the other hand, the error in (13) is a non-contextual error, because *namja* ‘man’ is not the speaker’s intended expression, but the source of the error cannot be found in the discourse context.

Now we will look at the frequency of the SOTs with regards to their directionality. Table 2 demonstrates patterns of the errors of the two groups, pre-schoolers and primary schoolers.

Table 2: SOTs and their directionality

	perseveration	anticipation	exchange	non-context	Total
Preschool	<b>25(46%)</b>	4(7%)	2(4%)	<b>23(43%)</b>	54(100%)
Primary	<b>15(22%)</b>	7(10%)	3(4%)	<b>43(63%)</b>	68(99%)
Total	40(33%)	11(9%)	5(4%)	66(54%)	122(100%)

First, children make perseveration (33%) and non-contextual (54%) errors occur more frequently than the others, as seen in Table 2. This result is quite interesting in that, according to Kim (2013), Korean adults produce exchange errors (41%) most frequently (compare with 4% for children in Table 2). We cannot tell why adults make exchange errors significantly more than children do, which is beyond the scope of the study, but it can be investigated in the future study. It is notable that adults English speakers make more anticipation errors (57%) than perseveration (21%) or exchange (22%) in their production. Children produce perseveration errors (41%) slightly more frequently than anticipation (39%) or exchange (25%) errors.<sup>13)</sup>

Second, the two groups of children demonstrate distinctive characteristics with the directionality of errors: pre-schoolers (46%) produce perseveration errors significantly more than primary schoolers (22%) do. Considering how perseveration occurs, pre-schoolers are likely to be left longer under the influence of previous utterances than primary schoolers. On the other hand, children show an extremely low rate of anticipation errors (9%), and, according to Kim (2013), adults also produce the errors at the similar rate (13%), compared with 30% of perseveration. The high rate of perseveration and the low rate of anticipation for both

13) Jaeger, J. *Kids' Slips: What young children's slips of the tongue reveal about language development*. Mahwa, NJ: Lawrence Erlbaum Associates. 2005. p. 72.

children and adults can imply that what has been already uttered is more likely to exert its influence on what will be uttered than the other way round.

Third, for non-contextual errors, primary schoolers produce them more frequently (63%) than pre-schoolers (43%): these rates are far higher than those of Korean adults (16%) observed by Kim (2013). Based on these distinctive characteristics of the two child groups, it can be said that non-contextual factors are more likely to cause errors to children than to adults.

### 4.3 SOTs and their Forms

Here, we will deal with various forms of speech errors, and the analysis of the statistical results of those forms. As stated in 3.3, the forms of errors indicate the patterns the errors show characteristically. The five basic forms of errors are substitution, addition, omission, assimilation/dissimilation, and multiple form.

Out of the six forms of the SOTs, let us look at the examples of substitution in (14), addition in (15), and omission in (16).

- (14) C: wuli cip-eyse-nun ssayngswu an mek-e  
 we home-in mineral water not eat-DEC  
 “We don't drink mineral water.”
- (15) C: samsip nyen ceneynun oksssakhan mau*i*-iess-ko ...  
 30-year ago creepy town-was-and  
 “It was a creepy town 30 years ago, and....”
- (16) C: cal callacici-nun molukeyss-ciman cal callac*i*-n molukeyss-ciman  
 well may.be.cut not.know-though well may.be.cut not.know-though  
 “Well, I don't know if it may be cut nicely, but, I don't know  
 if it may be cut nicely.”

Example (14) demonstrates a case of substitution, where the phoneme /ss/ in the underlined error *ssayngswu* substituted for the phoneme /s/ as the onset of the first syllable in the target *sayngswu* ‘mineral water.’ A case of addition is found in (15), where the consonant /k/ was inserted into the coda position of the first syllable of the target *o-ssak-han* ‘creepy,’ which resulted in the error *ok-ssak-han*. On the other hand, (16) shows a case of omission, where A planned to produce the correct form *callacil-ci* ‘may be cut,’ but he actually pronounced it by omitting the coda /l/ from the third syllable *-cil-*, which resulted in *-ci-*. The speaker noticed the error and attempted to correct it, but he made another identical omission error in the utterance that follows.

The following examples exemplify cases of assimilation in (17), dissimilation in (18), and multiple errors in (19).

(17) C: ney, swukwuhaseyyo.

yes take.care

“Yes. have a good one.”

(18) C: ttingpong, ttingtong, komapsupni, komapsupni.

Ding-dong Ding-dong thank thank

“Ding dong, ding dong, thank you.”

(19) C: (looking at the doll, Masimaro) Masimwu.

“(it’s) Masimwu.”

A: Masimalo? “You mean Masimalo?”

C: imo, machimwu cal wasse. machim cal wasse. imo.

Aunt right.on.time well came right.on.time well came aunt

“Aunt, you came right on time.”

Example (17) shows a case of assimilation where the planned form was *swuko* ‘toil’, but the vowel /o/ is completely assimilated to its

preceding vowel /u/ to result in the error *swukwu*. On the other hand, a dissimilation is found in (18), where the target was *tting-tong* ‘ding-dong,’ but the onsets of each syllable, /tʰ/ and /t/, are articulated in the same manner (stops) and at the same place (alveolars), so that the second alveolar stop /t/ was dissimilated with the place of articulation to result in producing *tting-pong* with the bilabial stop /p/. And the error *ma-chi-mwu* in (19) illustrates a multiple error which addition and omission cooperate to produce instead of the intended form *ma-chim* ‘timely’; the coda /m/ of the second syllable ‘chim’ is omitted, but the new syllable ‘mwu’ is added under the influence of *masimwu* uttered by A in his previous turn.

Now we will look at the frequency of the SOTs with regards to their forms. Table 3 shows the patterns of errors of the two groups.

Table 3: SOTs and their forms

	substitution	addition	omission	assim/dissim	multiple	Total
Preschool	<b>34(63%)</b>	9(17%)	2(4%)	<b>8(5/3)(15%)</b>	1(2%)	54(99%)
Primary	<b>52(76%)</b>	9(13%)	4(6%)	2(1/1)(3%)	1(1%)	68(99%)
Total	86(70%)	18(15%)	6(5%)	10(6/4)(8%)	2(2%)	122(100%)

First, according to Table 3, the two groups of children show such a similar tendency that they produce substitution errors far more than the other types. This tendency is also observed in adults’ errors in Korean, according to (Kim 2013); they produce substitution errors (58%). The high tendency of substitution can also be found in other languages: in English, above 50% for children and 57% for adults (Jaeger 2005); in Dutch, 71% for adults (Jaeger 2005); in Japanese, 71% for adults (Kawachi 2002).

We cannot explain here why substitution occurs most frequently (above 50%), regardless of age groups or languages. But it can be inferred that linguistic elements which share some linguistic features are grouped and stored into the same set and that the uttered linguistic element is more likely to be erroneously selected from the set to which the intended one belongs, too.

Second, overall, the two groups of children demonstrate similar patterns of errors. Yet, it is notable that the two groups show one distinctive characteristic; pre-schoolers (15%) produce assimilation/dissimilation errors more than primary schoolers (3%) do. This difference looks like implying that pre-schoolers are more focused on acquiring phonological knowledge, reflecting the general pattern of acquisition order as was previously noted in 4.1 (Jaeger 2005).

## V. Concluding Remarks

This study investigated a total of 122 SOTs of 14 Korean children (6 pre-schoolers and 8 primary schoolers) to discuss how children produce SOTs, as well as how their errors differ from those of adults. It has been found that the two groups of children show some distinctive characteristics, which are different from those of Korean adults.

First, Korean children produced nearly all the same types of errors in Korean as adults, which is also observed similarly in English SOTs.

Second, children show almost the same rates of lexical, syntactic and phonological errors, while adults produce lexical errors far more frequently than the other types of errors. This difference implies that children are on the way of acquiring Korean grammar, so that they can

make similar rates of errors.

Third, the two groups of children demonstrate distinctive characteristics at different linguistic levels. For pre-schoolers, phonological errors occur most frequently, but, for primary schoolers, both lexical and syntactic errors are produced more frequently. The same tendency is reported in young children's errors in English. The difference between the two groups reflects the general pattern of acquisition order that phonological rules are acquired before lexical or syntactic ones.

Fourth, children show the extremely low rate of propositional errors, compared to that of adults. Propositional errors are very rarely found in children's errors in English as well.

Fifth, Korean children make perseveration and non-contextual errors more frequently, whereas Korean adults produce exchange errors most frequently. It is notable that adults English speakers make more anticipation errors than perseveration or exchange in their production, while children produce perseveration errors slightly more frequently than anticipation or exchange errors. In this respect, there is a cross-linguistic difference between Korean and English.

Sixth, Korean children and adults show a tendency that they produce substitution errors far more than the other forms of errors, which is also found in other languages such as English, Dutch, and Japanese. It can be inferred that linguistic elements which share some linguistic features are grouped and stored into the same set and that the uttered linguistic element is more likely to be erroneously selected from the set to which the intended one belongs, too.

There are some attractive issues found, which are beyond the scope of this study; why adults produce lexical errors overwhelmingly more than those of the other components, not only in Korean, but in other

languages, and why children rarely make propositional errors against our expectation. They should be explained theoretically as well as through proper experiments. In addition, a lot more speech error data collected from different age groups of more children will contribute to understanding their language development stages. These studies will be left for our future study.

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❖ 국문초록

## 한국어 아동 발화오류에 대한 언어학적 분석

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본 연구의 목적은 한국어 아동 발화오류가 무작위적으로 나타나지 않고, 아동의 언어지식과 능력을 반영하면서 체계적으로 발생한다는 것을 보여주는 것이다. 이를 위해 미취학 및 취학 연령의 한국인 아동 14명을 대상으로 총 122개의 발화오류 자료를 수집하여 분석하였다. 연구의 목적을 위해 우선 취학 아동과 미취학 아동을 구분하여 오류의 발생 비율을 비교하였고, 아동 전체의 발화오류를 성인의 경우와도 비교 분석하여 아동의 오류가 성인의 오류와 어떠한 차이를 보이는지 확인하였다. 한국어 아동 발화오류에 대한 연구는 한국인 아동의 언어 발달 및 언어 사용 과정에 대한 중요한 근거자료로 사용될 수 있음에도 불구하고 지금까지 없었다는 점에서 본 연구가 갖는 언어학적 중요성은 충분하다고 할 수 있다.

주제어 : 언어발달, 아동 발화오류, 언어습득, 한국어 발화 생성

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