

L1 Acquisition of Binding Principles A and B in Korean

Saeromi Kim¹ and Seok-Hoon You²

¹Linguistics Department, Korea University, ²Faculty of Linguistics Department, Korea University

skim378@gmail.com, syou@korea.ac.kr

Abstract

This study investigates L1 acquisition of Binding Principles A and B by Korean-speaking children, focusing on the children's developmental stages of binding conditions for anaphors and pronouns. Two research questions were investigated, i) How Korean children acquire the locality condition of Binding Principles A and B and ii) which theoretical account on acquisition of Binding Principles, the parameterized subset principle or the subsequent form-function correlation theory, is supported by Korean children's data on acquisition of four different reflexives. 19 native Korean children between the age 5 to 7 were tested in three various experiments. The results of this study suggest that children perform more accurately with the pronouns than reflexives at an earlier age supporting previous L1 studies on Korean. However, children as young as 6 year olds seem to differentiate the locality condition of binding monomorphemic reflexives (*caki* and *casin*) and phrasal reflexives (*caki-casin* and *pronoun+casin*). Though further experimental is required to claim the validity of form-function correlation theory in Binding Principles, the results of this study raise questions to previous L1 acquisition studies on Korean supporting the Subset Principle.

Keywords

Binding Principles A and B, L1 acquisition, Korean reflexives and pronouns

Introduction

The acquisition of binding has received considerable attention from the first and second language acquisition studies within the generative grammar framework. Various L1 studies across languages, namely English, Chinese, and Danish among many, have found that children acquire the locality conditions for reflexives (Principle A) relatively early and the mastery of binding conditions for pronouns (Principle B) is achieved at later ages. (Chien & Wexler 1987b/1990, Solan 1987, Jakubovics & Olsen 1988, etc.) In this study, whether young Korean children successfully exhibit

adult-like performance on binding reflexives and pronouns with the appropriate antecedent as well as the developmental stages of the acquisition of Binding Principles in Korean will be examined.

Another aspect of binding that has been studied extensively concerns the local vs. long-distance binding preference of different reflexives across or within a language. Languages differ in the size of the binding domain. Unlike English which allows only local anaphors, Korean, Chinese, Japanese and Danish are known to have both local and long-distance anaphors. Along with the parametric variation of the binding domain for anaphors across languages, there are some languages that have a rich inventory of anaphors varying in the size of binding domain. Korean is a well-known example of such languages. It has four different reflexives; *caki*, *casin*, *caki-casin*, *pronoun+casin*, involving both monomorphemic (*caki* and *casin*) and phrasal reflexives (*caki-casin* and *pronoun+casin*). Though all Korean reflexives can choose both local and long-distance antecedents, each reflexive is distinct from one another in terms of how much it prefers a long-distance antecedent. *Caki* is predominantly a long-distance anaphor (LDA) whereas *caki-casin* and *pronoun+casin* are local anaphors. Lastly, *casin* interchangeably chooses both local and long-distance antecedents showing no preference for one over another. The adult Korean native speakers seem to differentiate the degree to which each reflexive can bind with a long-distance antecedent when both local and long-distance binding are possible. (Kim, Montrul & Yoon 2009) The previous studies on L1 acquisition of binding in Korean have mainly focused on the reflexive *caki*. (Lee & Wexler 1987, Cho 1989) However, it is still unknown how Korean children understand and develop the locality conditions for binding 4 different anaphors. This study attempts to discover whether Korean-speaking children display adult-like preference on the choice of local vs. long-distance antecedents for different reflexives (*caki*, *casin*, *caki-casin* and *pronoun+casin*). In the light of discovering Korean children's knowledge of the locality condition for different reflexives, test the validity of currently two competing theoretical

accounts on the acquisition of Binding Principles, namely ‘Governing Category Parameter (GCP)’ (Wexler & Manzini, 1987) and the subsequent theories such as ‘LF movement theory’ (Cole et al., 1990) or ‘Relativized SUBJECT theory’ (Progovac, 1992).

In sum, two main questions which this study strives to answer are as follows. First, what are the developmental stages of L1 acquisition of Binding Principles A and B in Korean? In other words, will Korean children also show delayed mastery of Principle B as compared to Principle A like English-speaking children? Another question concerns the children’s preference on the local vs. long-distance binding for 4 different reflexives in Korean. More specifically, the second part of the research questions asks if children show adult-like binding preference for each reflexive to find out which theoretical account on binding long-distance anaphors will be supported by Korean children’s data.

1 Basic Facts about Binding Principles

1.1 Binding Principles A and B

According to Chomsky, anaphors¹ and pronouns are subject to Binding Principles A and B.

(1) Binding Theory (Chomsky, 1981)

Principle A: An anaphor must be bound in its governing category.

Principle B: A pronoun must be free in its governing category.

By the meaning of ‘bound’ stated here, anaphors and pronouns must be c-commanded by and co-indexed with an antecedent in its governing category. On the contrary, the word ‘free’ referred in Principle B means un-bound to an antecedent in its governing category. In order to fully understand how Binding Principles operate, the definition of the governing category must be clarified. Though Binding Principles are UG constrained, the governing category varies from language to language. Wexler & Manzini (1987) proposed the settings in 2(a-e) for the governing category parameter:

(2) Governing Category Parameter (GCP): *a* is a governing category for *b* iff *a* is the minimal category which contains *a* and has

- a. subject; or
- b. an INFL
- c. a Tense
- d. a referential Tense; or

¹ Anaphor includes reflexives and reciprocals, but in this paper the term anaphor is used to refer to only reflexives.

e. a *root* Tense

Based on the cross-linguistic differences in the interpretation of reflexives in relation to binding, it is generally accepted that there is a parametric variation in the governing category associated with Binding Principle A. For example, English reflexives are most restrictive in its governing category, allowing GCP 2(a) setting. English reflexives must be co-indexed with an antecedent within the immediate clause, so called the local domain. However, Korean reflexives have a different governing category parameter setting, GCP 2(e). Within this binding domain of the matrix sentence, a Korean reflexive must be bound by an antecedent.

Binding Principle B, however, is not subject to the parametric variation in its governing category. Both English and Korean pronouns are associated with GCP (2a) setting that the local domain of the immediate clause containing a pronoun, an antecedent, and a subject is the binding domain for Principle B. In other words, pronouns may never be bound within the same immediate clause since Principle B states that they must be free in its governing category.

1.2 Korean reflexives

Korean is known to have a rich reflexive system consisting four types of reflexives; *caki*, *casin*, *caki-casin* and *pronoun+casin*. Unlike English which only allow local bindings for reflexives, Korean reflexives permit both local and long-distance bindings. Though Korean reflexives can bind with both local and long-distance antecedents, the preference for the antecedent choice varies among reflexives. The reflexive *caki* is a predominantly long-distance anaphor, whereas morphologically complex forms of reflexives such as *caki-casin* and *pronoun+casin* strongly prefer a local antecedent. Lastly, *casin* interchangeably chooses either the local or long-distance antecedent showing no preference for one over another. (Kim, Montrul & Yoon 2009, Kang 1998, etc.)

2 Two competing theoretical accounts on Binding Principles

2.1 The Subset Principle

The Subset Principle (Berwick 1982) states that the learning function maps the input data to that value of a parameter which generates the smallest language compatible with the input data. If we are in accordance with the Subset Principle, children will first allow a reflexive to be co-indexed in a local domain accepting (2a) setting of the GCP, and later accept a non-local interpretation by resetting the binding parameter through positive evidence if

necessary. Hence, Korean children first pass through a stage in which the local interpretation of reflexives is permitted and gradually broaden up the governing category for reflexives to GCP (2e) setting, allowing a nonlocal interpretation.

In addressing the parameter setting problem, Manzini & Wexler (1987) proposed 'Lexical Parameterization Hypothesis' which states that children only need to learn the lexical properties of anaphors and pronouns since Binding Principles are UG governed. Following the 'Lexical Parameterization Hypothesis', the governing category for Principle A is parameterized separately for each anaphor in a given language. Thus, the variation in the degrees which each reflexive allows long-distance binding in Korean can be explained in terms of different parametric variation of the governing category. Korean is the language that demonstrates the parameterization of each reflexive's preference for either local or long-distance binding, hence every reflexive in Korean sets its own governing category parameter.

2.2 Other subsequent counterproposals to Subset Principle and GCP

In addition to the parametric variation approach, there are more recent views to explain this phenomenon, namely LF movement theory (Cole et al. 1990) and relativized SUBJECT theory (Progovac 1992). Although there are different versions of counterproposals to Wexler and Manzini's parameterized Binding Principles, they all share the central claim. These various theories do not posit the parametric variation in the governing category for anaphors rather they concern the form-function correlation in anaphor bindings and movement of reflexives in LF. According to these theories, anaphors are not subject to parameterization of the governing category; instead simple anaphors are typically long-distance anaphors while phrasal anaphors are local anaphors due to head-movement restriction.

In a nutshell, as there are two different theories explaining how children acquire Binding Principles, it is worth noting to test which theory makes valid predictions through investigating L1 acquisition of Binding Principles of various languages. That is precisely what the current study attempts to do – to explore L1 acquisition of Binding Principles A and B by native Korean children.

3 Experimental study

3.1 Research questions and predictions

Based on previous studies on Korean reflexives and anaphors in relation to L1 acquisition studies, we can formulate two predictions on the research questions. Concerning the first question asking

Korean children's developmental stages of Binding Principles, we can expect to find Korean children acquiring Principle A prior to Principle B in accordance with Lee and Wexler's (1987) study on Korean children. The second question regards which theoretical accounts on the acquisition of Binding Principles, namely the Subset Principle and the Form-Function Correlation, will be supported by Korean children's data. If the Subset Principle and Governing Category Parameter are valid, then we would expect to see Korean children initially prefer a local antecedent regardless of the type of reflexives, and expand the governing category to a non-local antecedent if necessary. On the other hand, if form-function correlation theory is valid, then children will show long-distance binding for all types of reflexives regardless of their morphological form at the early stages and then narrow down to the local binding as they realize morphologically complex reflexives such as *caki-casin* and *pronoun+casin*.

3.2 Experimental methodology

3.2.1 Subjects

19 native Korean children between ages 5 to 8 participated in this study. The subjects were divided into three developmental age groups of one year interval with each group including at least 6 participants. A control group of 15 adult Korean speakers was also tested to compare the results with the experimental groups.

3.2.2 Test Procedures

Two act-out tasks and a truth-value judgment task are used in the experiment. Experiment 1 was the party game where the subject was invited to a party with Pororo and Patty, popular animation characters in Korea. The procedure of the first experiment was the child was expected to take a small toy from the center plate and put it into either his own bowl or one of the puppet's bowls according to the sentence presented to the child. Experiment 2 was another type of act-out task, the Simon-says game. For this experiment, the child was asked to perform an action whenever puppets read a test sentence. The child was expected to touch or tickle himself, Pororo (male puppet), or Patty (female puppet). The last experiment was yes/no judgment task using cartoon pictures. A series of pictures with a test sentence was presented to a child. After allowing some time for the subject to inspect the picture, the child was asked whether the picture matches (yes) or mismatches (no) with the test sentence.

The same test constructions from Chien and Wexler's (1990) study were used in all three experiments. First two experiments were designed to test children's knowledge of the binding

anaphors (Principle A) along with pronouns (Principle B) and Experiment 3 was to test whether children have the knowledge of Principle B. Experiment 1 and 2 have the same test sentence constructions: gender control and non-gender control bi-clausal sentences containing two potential antecedents, local and long-distance for the reflexive. The matrix verb ‘*jud-a*’ (to give) was used in the first experiment and two verbs ‘*manji-da*’ (to touch) and ‘*ganjiruphid-a*’ (to tickle) were used in the second experiment. In Experiment 3, four different types of experimental questions and three types of control questions were included. All sentences were simple sentences that are similar in the syntactic structure.

4 Results

4.1 Children’s knowledge of Principle A in Korean

Experiment 1 and 2 test children’s knowledge of the locality condition of four different reflexives in Korean. As seen in Figure 1, all subjects even the control group predominantly preferred the long-distance antecedent. In experiment 2, the results came out to be somewhat conflicting that all subjects’ preferred local binding of the reflexive *caki*. As for the development pattern of binding the reflexive *caki*, 6 year olds preferred long-distance binding more than 7 year olds. However, the difference between two age groups is not significant and more subjects of older children should be further tested to see the developmental pattern of binding *caki*.

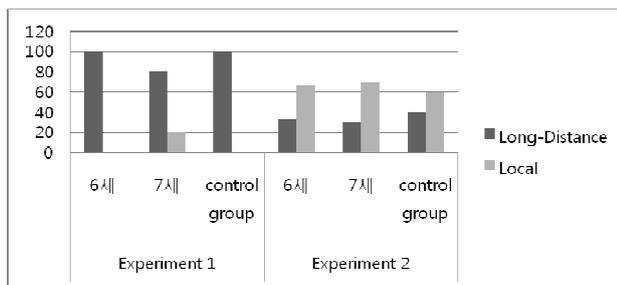


Figure 1: Acceptance percentage of local and LD binding with *caki*

As for *casin* in experiment 1, the control group of adult Korean speakers interchangeably chose between local and LD binding showing no preference for one over another. Both 6 and 7 year olds show very adult-like performance on the preference of the local and LD binding. Experiment 2 again is strongly biased toward the local binding as we saw in the result with *caki*. The control group sharply preferred the local antecedent in the experiment 2, and same pattern was found in 6 and 7 year olds. As Chien & Wexler stated in their

previous study, Simon-says game (Experiment 2) seems to reflect some response bias toward local binding.

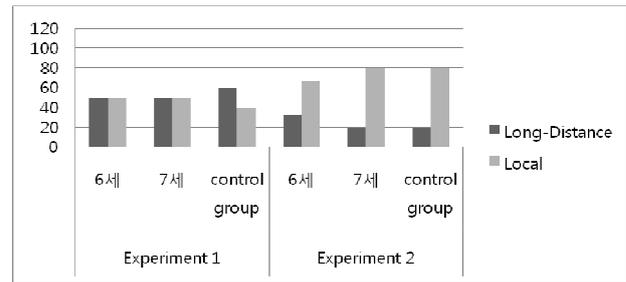


Figure 2: Acceptance percentage of local and LD binding with *casin*

The polymorphemic reflexives *caki-casin* and *pronoun+casin* largely preferred the local antecedent as can be seen in Figure 3 and 4. For *caki-casin*, local binding is predominantly preferred by adult Korean speakers and children as young as 6 year olds seem to show adult-like preference for *caki-casin*. The similar pattern is found for *pronoun+casin*, all subjects including the youngest age strongly chose the local antecedent over long-distance antecedent for *pronoun+casin* and the percentage of preference for local binding slightly increased from 6 to 7 year olds.

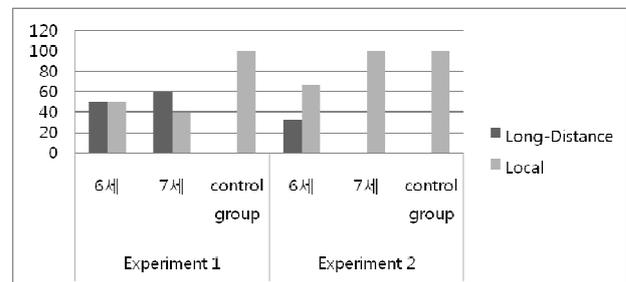


Figure 3: Acceptance percentage of local and LD binding with *caki-casin*

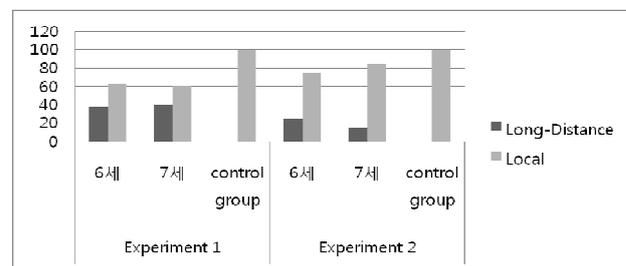


Figure 4: Acceptance percentage of local and LD binding with *pronoun+casin*

Overall results of this study reveal that all groups of subjects predominantly preferred long-distance binding with *caki* whereas *casin* shows no preference for one type of binding over another. The polymorphemic reflexives *caki-casin* and *pronoun+casin* are mostly local anaphors. In sum, children as young as 6 seem to distinguish between

simple and complex anaphors; moreover, they displayed adult-like performance on the choice of antecedent for different reflexives.

4.2 Children's knowledge of Principle B in Korean

Figure 5 and 6 summarizes the results of Experiment 3, that is, children's correct responses to the name-pronoun and quantifier-pronoun questions.

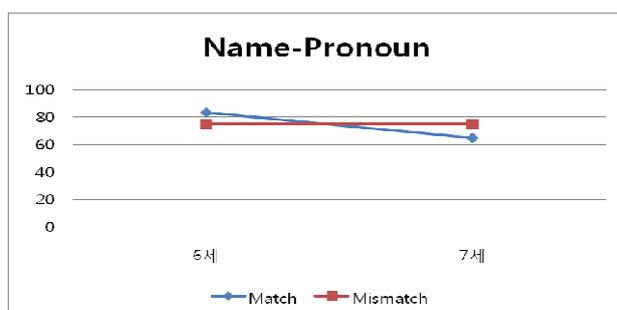


Figure 5: Percentage of correct responses to Name-Pronoun questions

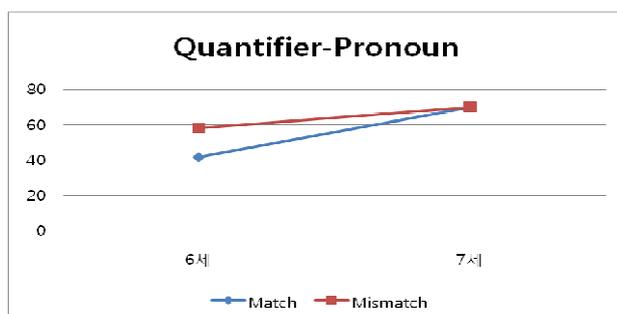


Figure 6: Percentage of correct responses to Quantifier-Pronoun questions

According to the results of this study, 6 year old children performed quite accurately with the choice of antecedent for pronouns. With regards to the quantifier pronouns, children performed relatively well and seem to perform even more accurate as they get older. Yet, it still requires additional experimental studies with younger children to see if 6 year olds truly exhibit the knowledge of the locality condition for pronouns.

5 Discussion

The aim of this study was to assess Korean children's knowledge of the locality condition of different anaphors and pronouns. The research questions I investigated concerned the following: (i) the developmental stages of Principle A and B by Korean children; more specifically how Korean children acquire different locality condition for various anaphors in the language system and whether they seem to master Principle A prior to Principle B; and ii) which of two competing

theoretical accounts on the acquisition of Binding Principles - Wexler & Manzini's parameterized subset principle or other subsequent theories related to LF movement (Form-Function Correlation) - will be supported by Korean children's data. With regards to the first research question on children's developmental patterns on the acquisition of Principle A and B, children's knowledge of the locality condition of reflexives does not seem to change significantly between the age 6 and 7 in this study. However, children as young as 6 years old seem to distinguish different binding preference between simple (*caki* and *casin*) and complex anaphors. (*caki-casin* and *pronoun+casin*) The question on children's knowledge of Principle B, 7 year olds seem to have a better understanding of the binding condition for pronouns than 6 year olds. For the second research question on testing the validity of two competing theories on acquisition of binding principles, overall results of this study raise some serious questions to Wexler and Manzini's parameterized binding and Subset Principle. According to the results of this study, children did not first acquire the local binding and then expand to the long-distance binding. Instead, children seem to differentiate the locality condition for each anaphor from quite early on showing adult-like preferences with the choice of the antecedent. As the linguistic knowledge of binding reflexives at the age of 7 still seems to be unstable, significantly diverging from the control group, the mastery of Binding Principles is not yet achieved at this age.

Overall this study was a meaningful investigation into children's acquisition of Binding Principles A and B. Along with *caki*, previously unexplored Korean reflexives in L1 acquisition; *casin*, *caki-casin*, and *pronoun+casin*, were taken into account. However, in order to test the validity of two currently debated theoretical accounts on binding, further experiments including more subjects of wider age groups is required.

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