

# Causality in Korean Children's Narratives\*

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**Park, Hyeson, 2009. Causality in Korean Children's Narratives.** *The Linguistic Association of Korea Journal*. 17(2). 21-42. Causality, one of the fundamental semantic concepts, is expressed by various linguistic means cross-linguistically. This paper examines how causal relations are encoded in L1 Korean children's narratives. Fifty seven Korean children and 30 adults participated in a story telling task, in which narrative data were elicited using a wordless picture book. An analysis of the data reveals the following patterns: 1) At the early stages, the children tended to express either the cause or the effect of a causal event, but not both of them. 2) The cause-effect relation of an event was first expressed by causal connectives, followed by morphological causatives, and then syntactic causatives; however, syntactic causatives were very rare even in adult narratives. 3) Direct and indirect causation were differentiated by Korean adults, but the distinction was weak in the case of the Korean children.

**Key Words:** causality, causal connectives, causative construction, Korean, L1 acquisition

## 1. Introduction

Causation is one of the fundamental semantic concepts, and its linguistic manifestation has drawn researchers' attention for many years (Comrie, 1976; Shibatani, 1976, 2002; Comrie & Polinsky, 1993; Levin & Rappaport, 1994; Goldberg, 1995; Wolff, 2003; Song & Wolff 2003). A causal relation between two events, a causing event and a caused event, is encoded by means of diverse

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\* I thank anonymous reviewers for their comments and suggestions. All errors and mistakes are mine.

linguistic forms in human language. Korean also has diverse ways of expressing causality: conjunctive adverbs, causal connective suffixes, morphological causatives, and syntactic causatives. While the majority of the previous studies on causation have focused on the form and function of causal expressions, a few studies have examined the acquisition of the causality markers by children acquiring their first language (L1). Among the acquisition studies, two major lines of research can be distinguished: the first looks at developmental patterns of causal connectives in child language, while the second examines the acquisition of causative constructions, i.e. lexical and syntactic causatives (Aksu, 1978; Hood & Bloom, 1979; Bowerman, 1982; McCabe & Peterson, 1985, 1989; Donaldson, 1986; Pinker, 1989). However, there have been few studies that attempt to combine the two lines of research; that is, few studies have looked at the developmental patterns of causality markers in general, including both the causal connectives and causative constructions. As an attempt to fill this gap in the existing research, this paper examines how causal relations are expressed by Korean children. Specifically, we look at the causal expressions in Korean children's narratives, focusing on the use of conjunctive adverbs, causal connective suffixes, morphological causatives, and syntactic causatives.

This paper is organized as follows. Section 2 introduces the causality markers in Korean, which is followed in section 3 by a review of previous studies on the acquisition of causal expressions. Section 4 reports the results of a narrative elicitation study, focusing on the analysis of the causal markers produced by Korean children and adults.

## 2. Causal expressions in Korean.

The first type of Korean causal marker is conjunctive adverbs, which are similar to causal conjunctions in English. The most common conjunctive adverbs are *kulayse* 'and' and *kulenikka* 'so', which connect two clauses.

- (1) a. John-un mikwuksalam-i-ta. Kulayse hankukmal-ul  
 John-TOP American-be-DC so Korean-ACC  
 mos-han-ta<sup>1</sup>).

cannot - do-DC<sup>2</sup>)

'John is an American. So he cannot speak Korean.'

- b. kimchi-nun maywe-yo. Kulenikka chokum-man meke-yo.  
 Kimchi-TOP hot-POL so little-only eat-POL  
 'Kimchi is hot. So eat it just a little at a time.'

Another type of causal expression connecting two sentences is causal connectives. Korean has diverse causal connective suffixes (or conjunctive endings) due to the agglutinative nature of the language. According to the frequency data compiled by The National Institute of the Korean Language (2003), the following are the most frequently used causal connectives: *-ase/-ese* (11613 out of 212230 words), *-(u)ni* (1968), *-(u)nikka* (1469), *-mulo* (402), *-nula(ko)* (224), *-kie* (176)<sup>3</sup>.

The morphological causative, also called the short-form causative, is formed by inserting the causative suffix *-i* (in 7 allomorphic variations *-i*, *-hi*, *-li*, *-ki*, *-wu*, *kwu-*, *-chwu*) or *-ttuli-*. Some examples are:

- |                   |                        |
|-------------------|------------------------|
| (2) cwuk-ta (die) | cwuk-i-ta (kill)       |
| wus-ta (laugh)    | wus-ki-ta (make laugh) |
| mek-ta (eat)      | mek-i-ta (feed)        |
| wul-ta (cry)      | wul-li-ta (make cry)   |

The morphological causative is semi-productive; there is no rule that helps predict the verbs that participate in the morphology and they should be learned case by case<sup>4</sup>).

1) The Korean data in this paper are transcribed using the Yale romanization system (Martin 1992).

2) Abbreviations:

ACC: accusative particle

DC: declarative sentence

NOM: nominative particle

PAST: past tense

POL: polite speech level particle

TOP: topic particle

3) Some of these connectives have more than one function. For example, *-(n)ni* can function as a 'circumstance' or 'causal' connective suffix. The NIKL data do not distinguish these different meanings.

4) Ihm et al. (2001) suggest that since it is not possible to formulate rules for the selection among the allomorphs, learners of Korean as an L2 should memorize the causative forms one by one.

The syntactic causative, or the long form causative, is formed by adding *-key hata* to intransitive (3a-b) or transitive verbs (3c-d), and is more productive than the morphological causative.

- (3) a. John-i        cip-ey        ka-ss-ta.  
       John-NOM home-to go-PAST-DC  
       "John went home"
- b. Mary-ka        John-ul        cip-ey        ka-key ha-ess-ta.  
       Mary-NOM John-ACC home-to go-CAUS-PAST-DC  
       "Mary had John go home."
- c. Mary-ka        sakwa-lul    sa-ss-ta.  
       Mary-NOM apple-ACC buy-PAST-DC  
       "Mary bought apples"
- d. John-i        Mary-ekey sakwa-lul    sa-key ha-ess-ta.  
       John -NOM Mary-to apple-ACC buy-CAUS - PAST-DC.  
       "John made Mary buy apples"

Some verbs allow both the short and long form causative, with subtle differences in meaning; the short form causative conveys more direct causation than the long form causative, as the following examples illustrate (Shibatani, 1976; Choi, 1999; Park, 2003).

- (4) a. emeni-ka        ai-eykey os-ul        ip-hi-ess-ta. (direct)  
       mother-NOM child-to clothes-ACC put on-CAUS-PAST-DC  
       'The mother put the clothes on the child.'
- b. emeni-ka        ai-eykey os-ul        ip-key ha-ess-ta. (indirect)  
       mother-NOM child-to clothes-ACC put on-CAUS-PAST-DC  
       'The mother made the child put on the clothes.'

### 3. Previous research<sup>5)</sup>

The studies looking at the encoding of causal relations in L1 acquisition have

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5) This section heavily relies on the author's previous work (Park, 2005).

mainly focused on the question of whether young children have a concept of causality, and if they do, whether they are aware of the directionality of causation (effect-cause vs. cause-effect) when they use causal connectives such as *because* and *so*. Hood and Bloom (1979) analyzed spontaneous production data of eight English-speaking children aged 2;6-3;6. They wanted to test Piaget's claim that children did not understand causality until the ages of 7-8. Their careful examination of the children's speech revealed that contrary to Piaget's claim, even children as young as two and a half were able to understand and express causal relations without much difficulty. Hood and Bloom suggested that the discrepancy between the results of their study and Piaget's derived from the difference in the topics the children talked about; in Piaget's study, the children were asked to retell stories involving physical objects undergoing observable sequential actions, while the children they studied mostly talked about events or states involving subjective emotions and personal judgments. They proposed that children might be able to express subjective psychological causality first, and then objective physical and logical causality. They observed that the children they studied rarely produced utterances where two sequential actions were connected by a causal connective, such as "A cup fell off a table because someone's elbow hit it." That is, the children in their study were at the 'subjective psychological stage' as far as the causal expressions were concerned. Their analysis finds support in McCabe and Peterson (1989), where a similar developmental pattern was observed among older children aged 3; 6-9;0.

In addition to the conceptual aspects of causation, Hood and Bloom also examined the linguistic forms the children used to encode causality. The children began to express causal relations by juxtaposing sentences without any explicit causal markers. The first explicit causal marker used by the children was *and*, followed by *because* and *so*. The order of appearance among the connectives and the causative constructions cannot be determined in Hood and Bloom's study since they did not examine the production of the lexical and syntactic causatives.

The studies in the second line of research are interested in the acquisition of lexical causative verbs<sup>6</sup>). Specifically, they focus on a linguistic phenomenon

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6) The question of whether Korean has lexical causative verbs is still controversial. The verbs that Yeon (1991) calls neutral verbs behave like lexical causative verbs.

called the inchoative/causative alternation, some examples of which are the following:

- (5) a. The door opened. (inchoative)  
 b. He opened the door. (causative)
- (6) a. The stick broke.  
 b. He broke the stick.

(5a) and (5b) basically express the same situation; the only difference between the two is that the causative construction includes an agent participant who causes the situation, while the inchoative construction describes the same situation as occurring spontaneously without a causer involved. In English, verbs which typically participate in the causative/inchoative alternation are restricted to those that encode externally caused change of state or location (Levin & Rappaport, 1994; Pinker, 1989). Unergative verbs, such as *laugh*, which do not encode change of state, cannot participate in the causative alternation:

- (7) a. He laughed  
 b. \*He laughed me.

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- (i) a. cha-ka      memchwu-ess-ta.  
       car-NOM stop-PAST-DC  
       'The car stopped.'
- b. John-i      cha-lul      mem-chwu-ess-ta.  
       John-NOM car-ACC stop-CAUS-PAST-DC.  
       'John stopped the car'

In (a), the verb *memchwu-ta* (to stop) is an intransitive verb, while in (b) the same verb is being used as a transitive causative verb. Some verbs have different forms for the intransitive and transitive-causative pair like the *die-kill* pair.

- (ii) kata (go)                      ponayta(send)  
       tulekata (move in)      nehta (put in)  
       naota (move out)      kkenayta (take out)

There are not many verbs that can be classified as lexical causative verbs, and they are not included in our analysis.

Bowerman (1982) observed that English speaking children over-generalized the causative alternation to non-alternating verbs and committed errors like the following:

- (8) a. Kendall fall that toy. (2;5)
- b. I'm singing him. (3;1)
- c. Don't giggle me. (3;0)
- d. He disappeared himself (4;2)
- e. You cried her (5;3)

Those studies that look into these overgeneralization errors attempt to shed light on the question of what causes this kind of errors in the first place and how children recover from them, obtaining a native-like competence of the causative alternation without being taught or being given explicit feedback on their errors. It is expected that explanations for the causative overgeneralization errors may provide some answers to 'the Logical Problem of Language Acquisition' (Baker, 1979; Pinker, 1989).

Pinker (1989) is a representative study seeking an explanation for the overgeneralization errors by children. He posited that two rules were involved in the causative alternation: the broad- and narrow-range lexical rule. According to the broad-range rule, verbs with the same thematic roles that are mapped to the same grammatical functions belong to the same lexical classes. For example, in the causative/ inchoative alternation, an intransitive verb whose meaning is "X goes to a location or state" changes to "Y acts on X, causing X to go to a location or state" when the agent role is added (p. 88). However, not all verbs having the same thematic roles participate in the causative alternation; verbs denoting change of existence (e.g. disappear, die, vanish) or inherently directed motion (e.g. fall, rise, go, come) do not allow the causative alternation, as shown in (9) and (10).

- (9) a. The cat disappeared.
- b. \*He disappeared the cat.
- (10) a. The rock fell.
- b. \* He fell the rock.

Pinker proposed that within the broad-range lexical class there are narrow subclasses of verbs, the classification of which is governed by language-specific lexical rules. The verbs that satisfy both the broad-range and narrow-range lexical rules exhibit the causative alternation. Children at the early stages of language acquisition apply the broad-range rule, resulting in the overgeneralization errors; the errors gradually decrease as they learn the narrow-range rules and apply them in verb classification.

Though it does not deal with causal expressions from an acquisitionist perspective, Song and Wolff's (2003) study needs to be mentioned in that it takes into account all the diverse linguistic forms encoding causal relations. Song and Wolff conducted experiments to see whether the distinction between direct and indirect causation had any effect on the forms the English speakers chose to express causation. Their definition of direct causation was based on Wolff (2003), in which he proposed the no-intervening-cause criterion, which stated that "direct causation is present between the causer and the final patient in a causal chain if there are no intervening causers at the same level of granularity as either the initial causer or final patient" (p. 4). Wolff (2003) hypothesized, based on his no-intervening-cause criterion, that English speakers would use lexical causatives to describe situations involving direct causation, while they would use syntactic causatives for indirect causation. His hypothesis proved to be correct in an experiment involving descriptions of animations; the native English-speaking participants preferred syntactic causatives for events with mediated chains, and lexical causatives for unmediated causation. Expanding Wolff (2003), which compared lexical causatives with syntactic causatives, Song and Wolff (2003) examined other means of expressing direct and indirect causation in English. Through the same elicitation tasks as in Wolff (2003), they found that the most common linguistic form for direct causation was the lexical causative, and the conjunction *and* and *because* for indirect causation.

Choi (1999) examined whether Korean children obeyed the directness constraint in their use of morphological and syntactic causatives. She analyzed spontaneous spoken data of four Korean children between the ages of 2;2-4;1. Each child was recorded every other week for 4 to 8 months. The children produced 47 morphological causatives, 43 of which were used to express direct causation. For example, one of the children told her mother *os-ul ip-hye-cwue*



'(you) put the clothes on me' when she asked her mother to help her put the clothes on. On the other hand, there were only two syntactic causative sentences produced by the oldest child to describe indirect causation:

- (11) emma-ka mos ka-key ha-ess-ci?  
 mother-NOM not go- CAUS -PAST-Q  
 "You (mom) didn't allow me to go/you stopped me from going?"

According to Choi, the Korean children's early acquisition of the morphological causatives could be explained based on Piaget's (1954) claim that the development of the concept of direct causation precedes that of indirect causation. The early acquisition of morphological causatives over syntactic causatives was observed in other previous studies. For example, Lee (1977) and Cho (1992) found that causatives were acquired before passives by Korean children, and between the morphological and syntactic causatives, the former preceded the latter in the acquisition order.

While the studies reviewed have examined specific aspects of the acquisition of causal expressions, there have been no studies of L1 acquisition that examined the developmental patterns of these expressions in general, including both causal conjunctions and causative constructions. We are left with many unresolved issues, such as the acquisition order of causal markers and the contexts in which one type of the causal marker is preferred over another.

## 4. The present study

### 4.1 Hypotheses

The present study examines the linguistic forms Korean children use to encode causal relations. The data were collected through an elicitation task using the 24-page wordless picture book *Frog, where are you?* (Mayer, 1969). Three scenes in the book involve caused motion events: 1) the dog brings about the fall of the beehive, 2) the emergence of the owl leads to the fall of the boy from the tree, and 3) the deer throws the boy and dog to the pond below. Berman

and Slobin (1994), using the same material and method as the current study, found that English speakers used diverse means to express causation, including linearly stacked clauses with conjunctions (e.g. "this owl comes out and the boy falls"), lexical causatives (e.g. "there is an owl in there who bumps him down to the ground"), and syntactic causatives (e.g. "the dog made the hive fall"). They noted that the three-year-old children in their study were able to talk about the causative activities with few errors; there was only a single instance of causative overgeneralization error ("owl in there- fall him down"). The older children and adult speakers preferred lexical causative verbs which conflated manner and motion when they described these three scenes (e.g. knock down, poke out, bam on(to)). Syntactic causatives, on the other hand, were very rare in both the adult and child data.

Berman and Slobin (1994) did not deal with the indirect and direct causation involved in the three scenes. The directness condition, however, will be included as a variable in our analysis. According to Wolff (2003), the relationship between causer and causee is direct so long as the causee does not act as an intermediate causer upon itself. For example, compare the following two situations: 1) a father sits his child up in a chair, and 2) a father tells his child to sit up. In the former situation, the causal chain between the causer and causee is direct since there is no intermediary between the two. In contrast, in the second situation, the causee acts as an intervening causer and the relation between the causer and causee is considered indirect. If we apply Wolff's no-intervening-cause criterion to the three scenes in the frog story, it appears that the second scene, where an owl surprises the boy and makes him fall from the tree, involves indirect causation since the boy acts as an intermediary in the causal chain. The first scene, in which the dog brings about the fall of the beehive, and the third scene, where the deer throws the boy into the river, involve direct causation without an intervening causer. We will take the directness condition into consideration in examining the developmental patterns of causal expressions in the Korean children's language.

Based on the results of Berman and Slobin (1994), Song and Wolff (2003), and Choi (1999), we hypothesize the following:

- 1) At the early stages, Korean children will express causal relations by juxtaposing two clauses without explicit causal connectives; then, as

the children's language develops, they will use explicit causal connectives more often.

- 2) Morphological and syntactic causatives will appear later than causal connectives, syntactic causatives being the last to appear.
- 3) Children will use morphological causatives more often for direct causation than for indirect causation.

## 4.2 Methods

**Participants:** 57 Korean children and 30 adults participated in the study. The children were grouped into four based on their age: Group 1: 17 children (2;6-3;11), Group 2: 12 children (4;0-4;11), Group 3: 12 children (5;0-5;11), Group 4: 16 children (9;0-10;11). The children in group 1 and 2 were recruited from a preschool in a southern Korean city. The older two groups were enrolled in a private English language school in the same area.

**Procedures:** The researcher obtained permission to collect data from the principals of the preschool and the English language school. Two classes at the preschool were chosen based on the researcher's and the schools' schedule. At the English language school those who volunteered to participate in the study were chosen after obtaining permission from their parents. The adults were university students attending a local university. The subjects were interviewed individually by the researcher. After spending some time talking with the children to help them feel comfortable, the researcher showed them the picture book and asked them to look at the pictures one by one. Once they finished looking at the pictures, the researcher asked them a few general questions regarding the pictures such as 'What is the name of the animal?' "Do you like the story?" etc. And then, the children were asked to tell what the story was about. Two tape-recorders were placed under the table and recorded the children's narration. The task took about 20 minutes for the children in group 1 and 2, and less than 10 minutes for group 3 and 4 and the adults. The children's narratives were then analyzed, focusing on the causality markers in the three target scenes. We first counted those utterances in which causality was expressed either explicitly or implicitly. Next, we examined the explicit causal markers and classified them as conjunctive adverbs, causal connective suffixes,

morphological causatives, or syntactic causatives.

### 4.3 Results and discussion

There being three scenes and 87 subjects, the number of expected utterances is 261; however, since the subjects omitted some scenes in their narrations, 227 utterances were obtained. Table 1 summarizes the number of expected and obtained utterances for each level and for each scene. Scene 1 elicited the lowest number of utterances, especially with the younger children. As far as the number of utterances is concerned, no developmental change was evidenced.

Table 1: Number of utterances for each scene and each level

|        | observed <sup>2</sup><br>/expected <sup>1</sup> | Scene1        | Scene2        | Scene 3       |
|--------|---|---------------|---------------|---------------|
| G1     | 39/51 (76.5%)                                   | 7/17 (41.2%)  | 17/17 (100%)  | 15/17 (88.2%) |
| G2     | 26/36 (72.2%)                                   | 4/12 (33.3%)  | 11/12 (91.7%) | 11/12 (91.7%) |
| G3     | 32/26 (88.9%)                                   | 8/12 (66.7%)  | 12/12 (100%)  | 12/12 (100%)  |
| G4     | 42/48 (87.5%)                                   | 13/16 (81.3%) | 13/16 (81.3%) | 16/16 (100%)  |
| Adults | 85/90 (94.4%)                                   | 27/30 (90%)   | 28/30 (93.3%) | 30/30 (100%)  |

<sup>1</sup> number of subjects x 3 (scenes)

<sup>2</sup> number of sentences where the subjects attempt to describe the target scenes

Next, the number of utterances with the cause and effect relationship explicitly expressed was counted. For scene 1, expressions with the dog as the causer and falling of the beehive as the result were counted. In scene 2, the owl is the causer and falling of the boy from the tree is the result. However, many subjects, especially the adults, described the scene with an intermediate result, that is, 'the boy's being surprised', which in turn is the cause of the following event, 'the boy's falling from the tree'. The causer of scene 3 is the deer and 'the falling of the boy and dog into the pond' is the result.

Table 2. The number of utterances with cause-effect expressed

|       | Scene 1          | Scene 2                        | Scene 3          |
|-------|------------------|--------------------------------|------------------|
| G 1   | 2/17<br>(11.8%)  | 2/17 (11.8%)<br>(0/2=0%)*      | 11/17<br>(64.7%) |
| G 2   | 0/12<br>(0%)     | 8/12 (66.7%)<br>(0/8=0%)       | 8/12<br>(66.7%)  |
| G 3   | 5/12<br>(41.7%)  | 4/12 (33.3%)<br>(2/4=50%)      | 11/12<br>(91.7%) |
| G 4   | 8/16<br>(50%)    | 7/16 (43.8%)<br>(4/7=57%)      | 12/16<br>(75%)   |
| Adult | 14/30<br>(46.7%) | 19/30 (63.3%)<br>(14/19=73.7%) | 26/30<br>(86.7%) |

\*The number of utterances with the intermediate result mentioned

As shown in Table 2, the cause-effect relation was expressed most explicitly in scene 3. No clear developmental pattern was observed, however; that is, the number of sentences with the cause-effect relation expressed did not increase in proportion to the subjects' age. For scene 2, the younger children in group 1 and 2 did not produce 'be surprised' as an intermediate result-cum-cause, while groups 3 and 4 and the adults produced the intermediate result, a manifestation of developmental change. Scene 1 and 3 involve direct causation, while scene 2 indirect causation. It is difficult to state, based on the data obtained, that the cause-effect relation was expressed more clearly for direct causation since scene 1 did not elicit more cause-effect expressions than scene 2.

The individual items used to express causality were examined and grouped into the following categories: no connectors, connective suffixes, conjunctive adverbs, morphological causatives, and syntactic causatives. The result is summarized in Table 3.

Table 3. Causal expressions produced by the subjects

|                | No connectors | Connective suffixes | Conjunctive adverbs | Morph causative | Syntactic causative |
|----------------|---------------|---------------------|---------------------|-----------------|---------------------|
| Group1 scene 1 | 0/17 ( 0%)    | 1/17 (5.9%)         | 0/17 (0%)           | 1 error/17      | 0/17 (0%)           |

|         |              |               |              |              |            |
|---------|--------------|---------------|--------------|--------------|------------|
| scene 2 | 2/17(11.8%)  | 9/17 (52.9%)  | 0/17 (0%)    | 0/17 (0%)    | 0/17 (0%)  |
| scene 3 | 1/17 (5.9 %) | 7/17(41.2%)   | 1/17 (5.9%)  | 0/17 (0%)    | 1 error/17 |
| total   | 3/51 (4.5%)  | 17/51(33.3%)  | 1/51(2%)     | 1 error/51   | 1 error/51 |
| Group 2 |              |               |              |              |            |
| scene 1 | 0/12 (0%)    | 0/12 (0%)     | 0/12 (0%)    | 0/12 (0%)    | 0/12 (0%)  |
| scene 2 | 1/12(8.3%)   | 6/12 (50%)    | 2/12(16.7%)  | 0/12 (0%)    | 0/12 (0%)  |
| scene 3 | 0/12 (0%)    | 2/12 (16.7%)  | 1/12(8.3%)   | 2/12 (16.7%) | 0/12 (0%)  |
| total   | 1/36 (2.8%)  | 8/36(22.2%)   | 3/36 (8.3%)  | 2/36 (5.6%)  | 0/36 (0%)  |
| Group 3 |              |               |              |              |            |
| scene 1 | 0/12 (0%)    | 3/12(25%)     | 0/12 (0%)    | 2/12(16.7%)  | 0/12(0%)   |
| scene 2 | 0/12 (0%)    | 7/12 (58.3%)  | 1/12 (8.3%)  | 0/12(0%)     | 0/12(0%)   |
| scene 3 | 4/12 (33.3%) | 2/12 (16.7%)  | 5/12 (41.7%) | 2/12(16.7%)  | 1/12(8.3%) |
| total   | 4/36 (11.1%) | 12/36 (33.3%) | 6/36 (16.7%) | 4/36(11.1%)  | 1/36(2.7%) |
| Group 4 |              |               |              |              |            |
| scene 1 | 0/16(0%)     | 8/16(50%)     | 0/16(0%)     | 2/16(12.5%)  | 0/16(0%)   |
| scene 2 | 1/16(6.2%)   | 10/16(62.5%)  | 1/16(6.2%)   | 1/16(6.2%)   | 1/16(6.2%) |
| scene 3 | 4/16(25%)    | 6/16(37.5%)   | 2/16(12.5%)  | 8/16(50%)    | 0/16(0%)   |
| total   | 5/48(10.4%)  | 24/48(50%)    | 3/48(12.5%)  | 11/48(22.9%) | 1/48(2%)   |
| Adult   |              |               |              |              |            |
| scene 1 | 0/30 (0%)    | 17/30(56.7%)  | 2/30(6.6%)   | 5/30(16.7%)  | 0/30 (0%)  |
| scene 2 | 0/30 (0%)    | 28/30(93.3%)  | 2/30(6.6%)   | 2/30(6.6%)   | M+S: 1/30  |
| scene 3 | 2/30(6.6%)   | 5/30(16.7%)   | 1/30(3.3%)   | 14/30(46.7%) | 0/30(0%)   |
| total   | 2/90(2.2%)   | 50/90(55.6%)  | 5/90(5.6%)   | 21/90(23.3%) | 1/90(1.1%) |

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Juxtaposing the cause and effect clauses without a connector was very rare across all the subjects. The causal markers used most frequently by all the subjects were the connective suffixes. The adults produced 50 connective suffixes out of 90 expected utterances (55.6%). The productions of the children were the following: group 4: 50%, group 1: 33.3%, group 3: 33.3%, and group 2: 22.2%.

Our first hypothesis, derived from previous research which examined the use of causal expressions by English speaking children, was that at the early stages, Korean children will express causal relations by juxtaposing two clauses without explicit causal connectives, and as the learners' language develops, they will use

explicit causal connectives more often. This hypothesis is not consistent with what we found in our data. The children used the causal connective suffixes more than the 'no connector' strategy from the very early stages. The use of causal connective suffixes was also the most frequently used strategy even for the adults. This must be due to a language specific feature of the Korean language, characterized as an agglutinative language that utilizes a variety of connective suffixes instead of conjunctions. Since the children are exposed to a rich inventory of connective suffixes, they start to use them from the early stages of language acquisition rather than juxtaposing two sentences without an explicit connector. The connective suffixes produced by the subjects are shown in Table 4.

Table 4: Causal connective suffixes produced by the subjects

|       | -(e)se | -e | -kaciko | -ta(ka) | -nikka | -uni | palamey | -ko | ttay<br>mwune |
|-------|--------|----|---------|---------|--------|------|---------|-----|---------------|
| G 1   | 6      |    | 5       | 6       |        |      |         |     |               |
| G 2   | 4      | 1  | 2       |         |        |      |         |     | 1             |
| G 3   | 7      | 2  | 1       |         | 1      | 1    |         |     |               |
| G 4   | 10     | 10 |         | 2       | 1      |      |         |     | 1             |
| Adult | 31     | 5  | 2       | 4       | 1      |      | 3       | 1   | 3             |
| Total | 58     | 18 | 10      | 12      | 3      | 1    | 3       | 1   | 5             |

The most common connective suffix was *-(e)se*, which was produced 58 times by the subjects, followed by *-e* (18) and *-kaciko* (10). The high frequency of *-ese* is consistent with the frequency data reported by the National Institute of the Korean Language (2003), in which *-ese* is the most frequently used connective suffix<sup>7)</sup>. The suffix *-kaciko* is a multi-function word that is getting more visible in spoken and informal register, one of whose several functions is a causal connector (Se 2005). The following are example utterances produced by the subjects, in which the above connectives were used to express causality:

7) As mentioned before, 11613 of *-ese* was found out of 212230 words in the NIKL data. The multiple functions of *-ese*, such as time and circumstances, are not distinguished in the NIKL data.

- (12) a. *namwu wi-ey ollaka-se nemeci-ess-eyo* (group 1)  
 tree above-at climb-because fall-PAST-POL  
 '(the boy) climbed up the tree, and fell down.'
- b. *pwuengi-ka nawa-kaciko tteleci-ess-eyo.* (group 2)  
 owl-NOM come out-because fall-PAST-POL  
 '(the boy) fell because an owl flew out (of a tree)'
- c. *sasum-i tempyetul-e wuli-nun yenmos-ey*  
 deer-NOM attack-because we-NOM pond-at  
*ppaci-ess-eyo*  
 fall-PAST-POL  
 'A deer attacked us, and so we fell to the pond.' (group 3)

Though *-(u)nikka* belongs to the high frequency suffix group in the NIKL data (1070/212230), it was produced only three times by the older children and the adults in this study. The suffixes *-ttaymwuney* and *-palamey* are causal makers derived from defective nouns. The former was being used by both the children and adults, but the latter by the adults only.

- (13) a. *ku olppaymi-ka iss-unikka nolla-se*  
 the owl-NOM be-because surprised-because  
*twilo epeci-ess-eyo.*  
 backward fall-PAST-POL  
 'Because of the owl,(the boy was) surprised and fell backward'  
 (group 4)
- b. *ay-ttaymwuney tteleci-ess-unikka,*  
 boy-because fall-PAST-because  
*ku peltul-i hwa-ka na-se..*  
 the bees-NOM anger-NOM get-because  
 'Since(the beehive)fell because of the boy, the bees got angry'
- c. *pwuengi-ka nao-nun palamey kkamccak nolla-se*  
 own-NOM come out-because very surprised-because  
 'As the owl flew out (of the tree), (the boy) was very surprised.'  
 (adults)



The main function of the connective suffix *-ta(ka)* is temporal (while), but it was used to express causality. The coordinating connective suffix *-ko* (and) also picked up causal meaning in the adult data.

- (14) a. *nawu-ey ollaka-ss-ta nemeci-ess-eyo.* (group 1)  
 tree-to climb-PAST-because fall -PAST-POL  
 '(the boy) climbed up the tree, and fell down.'
- b. *namwu huntul-daka, yeki pelcim-i tteleci-eyo.*  
 tree shake-while/because here beehive-NOM fall-POL  
 'Because (the dog) shook the tree, the beehive fell.' (group 4)
- c. *sasum-un kapcaki memcuw-ess-ko, sonyen-un*  
 deer-TOP suddenly stop-PAST-and/because boy-TOP  
*ku nangtteleci mit-ulo tteleci-ess-eyo.*  
 the cliff down-to fall-PAST-POL  
 'The deer suddenly stopped, and the boy fell down the cliff.'  
 (adults)

Our second hypothesis is that morphological and syntactic causatives will appear later than causal connectives, syntactic causatives being the last to appear. Let us consider whether our data support this hypothesis. The causality markers produced by the youngest group were causal connectives and a conjunctive adverb, *kuliko*(and). Morphological and syntactic causative constructions were attempted by this group, but were all incorrect.

- (15) a. *\*kangaci-ka ike ttelecye-kaciko mekko sipu-ntey*  
 dog-NOM this fall- and eat want-and  
 'The dog wanted to drop it and eat it.'
- b. *\*sasum-i ayki-lul tteleci-key ha-taka ayki tteleci-ess-eyo.*  
 deer-NOM boy-ACC fall-cause-while/so boy fall-PAST-POL  
 'The deer made the boy fall, and the boy fell.'

(15a) is an example where *ttelecye*(fall) is being used instead of the correct form '*tteletulye*'. In (15b) the child attempted the syntactic causative form '*ci keyha-*', but in an incorrect context.

Group 2 produced a conjunctive adverb, *kulaykaciko* (and), several connective suffixes, and two morphological causatives in the form of *ttelettulita* (make - fall), in which '-*ttuli*-' is a causative morpheme. Group 2 did not produce any syntactic causatives. Group 3 produced four morphological causatives and one correct syntactic causative construction, together with multiple causal connectives and conjunctive adverbs (*kulayse*, *kuliko*, *kulaykaciko*). Though the children in group 3 correctly produced the syntactic causative construction *-ci keyhata*, syntactic causatives were in general very rare among the subjects, including the adults; only one syntactic causative sentence was found in group 4 and the adult group, while 11 and 21 morphological causatives were found in group 4 and the adults, respectively.

It appears then that our data is consistent with the second hypothesis; the causal markers appear in the following order- causal connectives, morphological causatives, and syntactic causatives. Conjunctive adverbs are produced later than causal connectives but no later than the morphological causatives, though low in frequency.

According to Choi (1999), the reason for the later appearance of the syntactic causative compared to the morphological causative is that the former conveys an indirect causation while the latter a direct causation. This point is related to our third hypothesis: children will use morphological causatives more often for direct causation (scene 1 & 3) than for indirect causation (scene 2). We examined whether this hypothesis was supported or not by our data. Table 5 presents the causal expressions used most frequently for each scene.

Table 5. Most frequent causal expressions for each scene

|       | Scene 1          | Scene 2          | Scene3              |
|-------|------------------|------------------|---------------------|
| G 1   | suffixes (5.9%)  | suffixes (52.9%) | suffixes(41.2%)     |
| G 2   | 0                | suffixes (50%)   | morpho caus (16.7%) |
| G 3   | suffixes (25%)   | suffixes (58.3%) | conj adverb(41.7%)  |
| G 4   | suffixes (50%)   | suffixes (62.5%) | morph caus(50%)     |
| Adult | suffixes (56.7%) | suffixes (93.3%) | morph caus (46.7%)  |

Scene 1 involving direct causation is expected to be described by the

morphological causative. However, differently from our hypothesis, the connective suffixes are the most frequently used causal expression for scene 1. It appears that the directness of causation in scene 1 was perceived by the subjects not as strong as that of scene 3. For scene 3, the morphological causative was the structure most frequently chosen by group 2 & 4, and the adults, substantiating the predicted pattern.

The causal relation in scene 2 is indirect, which is hypothesized to be expressed via the syntactic causative construction. However, differently from the hypothesis, all the groups used the connective suffixes most frequently, followed by conjunctive adverbs, to encode the indirect causal relationship. It appears that connective suffixes or conjunctive adverbs, not syntactic causatives are the medium through which indirect causality is expressed in Korean. The Korean data suggest that directness of causality is not the only factor involved in the choice of causal markers; perceptual saliency of the relationship and linguistic structures available in a language are other factors that might be relevant.

## 5. Conclusion

Causality is one of the core semantic concepts human beings possess, and human language utilizes diverse linguistic means to encode this concept, including implicit marking, conjunctions, prepositions, causative verbs, and diverse syntactic constructions. There have been few studies that have examined the developmental patterns of the causal markers in general. This study, though preliminary, has attempted to fill the gap in the existing research by examining Korean children's use of causal markers in their developing grammar. The analysis of causal markers in the narrative data reveals a developmental pattern, though a weak one: causal relations were expressed by connective suffixes by the Korean children from the early stages, followed by conjunctive adverbs and morphological causatives. Even the youngest children seem to have learned the connective suffixes in conveying causality. Syntactic causatives were seldom used by either the adults or children. The distinction between the direct and indirect causation was made most clearly by the adults and the oldest children. Group 1 and 3 did not distinguish between these two types of causation, at least

using linguistic means.

Some limitations of this study should be pointed out for future research. First, the data was collected through a semi-controlled story telling task. The observed patterns of causal marking may be a derivative of the data collection method. The cross-sectional data may also have limitations in presenting us a better picture of developmental changes. Analyses of spontaneous utterances from a set of longitudinal data should precede any conclusions concerning the developmental patterns of causal markers.

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Received: 30 March, 2009

Revised: 21 June, 2009

Accepted: 23 June, 2009