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NOMINATIVE CASE-MARKER OMISSION AND A-CHAIN DEFICIT IN CHILD LANGUAGE ACQUISITION OF KOREAN

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The present study investigates the account of the A-Chain Deficit Hypothesis (ACDH) on the omission of the NOM(inative) case marker in child Korean, which argues that children omit NOM frequently in unaccusative constructions due to the unavailability of A-movement.¹ Overall, the results of this study confirm previous results on the rate of NOM omission used to support the ACDH (Borer and Wexler 1987, Miyamoto et al. 1999, Lee and Wexler 2001, Machida et al. 2004). Previous studies used a binary distinction between verb categories, i.e., unaccusatives vs. the others (unergatives/transitives). Once the various subclasses of unaccusatives are considered individually (adjectival, copular, existential, psych, and lexical unaccusative verbs), the unaccusativity effect is found not to hold across all unaccusative verb types. The results of detailed analyses appear not to support the ACDH in that not all verb subcategories follow the pattern among verb types suggested by the simple binary categorization.

1. INTRODUCTION. Word order and case-marking are the primary mechanisms for coding structural relations in languages. Children learning their first language can make use of these parametric mechanisms at early stages in the same way that adults do (Borer and Wexler 1987, S. Kim et al. 1995, O’Grady 1997, Cho et al. 2002). As for the parametric features, Korean has a Subject-Verb-Object (SOV) word order, and the noun phrases (NPs) are marked by Case. Korean case markers are dropped relatively freely in the informal or casual speech of adults. Numerous acquisition studies of Korean (e.g., Y. Kim 1992, S. Kim et al. 1995, Y. Kim 2000, Cho et al. 2002, among others) report that children learning Korean drop case markers much more frequently than adults do and that case markers are more often omitted from direct objects than from subjects. A similar phenomenon has been noted in the acquisition of Japanese (e.g., Hakuta 1982, Matsuoka 1998, Miyamoto et al. 1999, Suzuki 1999, Machida et al. 2004), which is similar in these parametric features to Korean.

In more detailed analyses, it is reported that when children learning Korean and Japanese omit the nominative case markers (NOM), they may exhibit a so-called “unaccusativity effect” (e.g., Miyamoto et al. 1999, Lee and Wexler 2001, Machida et al. 2004). That is to say, children at early stages use nominative case particles significantly less with subjects of unaccusatives than with subjects of other types of verbs, such as unergatives and transitives. The surface subjects of unaccusatives are generated in the object position of the underlying structure and move to subject position. Following the A(rgument)-Chain Deficit Hypothesis (ACDH) put forward by Borer and Wexler (1987), the frequent omission of NOM in unaccusative constructions occurs because children’s early grammar lacks this A(rgument)-movement. In contrast, because unergative and transitive verbs do not involve A-movement, there is no problem in case-marking the subjects of child speech. While there are numerous Japanese studies supporting the ACDH phenomenon (e.g., Miyamoto et al. 1999, Machida et al. 2004) or disputing (e.g., Sano et al. 2001), only a few acquisition studies have examined the unaccusativity effect in Korean (e.g., Lee and Wexler 2001).

2. PREVIOUS STUDIES.

2.1 KOREAN CASE MARKERS. A canonical transitive sentence of Korean manifests a Subject-Object-Verb (SOV) pattern, but word order is relatively flexible, due to the case-marking system. The inventory of case markers is somewhat complicated, because allomorphic alternations exist for some case

¹ Abbreviations used for this study are as follows: NOM = the nominative case marker, ACC = the accusative case marker, TOP = the topic marker, # = the null case marker, Ø = the null argument. The Yale Romanization system is used to transliterate Korean.

markers: *ka/i* for NOM, *lul/ul/l* for ACC, and *nun/un/n* for TOP. In addition, given that Korean case markers and argument NPs may be dropped relatively freely when they are recoverable in the given contexts, arguments may be realized in three different forms: (a) as case-marked overt NPs, (b) as zero-marked overt NPs, and (c) as phonetically null NPs (Clancy 1995).

At early stages of language development, children learning Korean tend to comprehend the utterances in canonical word order better than in scrambled word order (S. Kim et al. 1995, Cho et al. 2002). Meanwhile, Korean children should learn that Korean makes use of case particles to indicate functions of the preceding NPs. At a certain developmental stage, they will begin to recognize that case markers are occasionally used or omitted from NPs, and will learn how to express a greater variety of meanings or functions of NPs even in syntactically complex structures due to scrambling or making phrasal fragments. Given that case-marking is a part of the canonical schema, case markers should not only be recognizable but also helpful for language processing (Slobin and Bever 1982), in which adult Koreans may rely on some semantic and/or pragmatic features such as animacy and plausibility. In this light, although bare NPs should lack the clues to comprehension provided by case particles, it is frequently observed that Korean NPs are produced with no case markers in adult speech as well as in child speech.

Considering that almost any referring NPs can be topicalized in Korean, most case markers may be replaced with TOP, unless other factors (for example, the presence of new information) intervene. In Korean, NPs with TOP may indicate topicality or contrast just as English topicalization does. Compared with English topicalization involving overt movement, topicalization in Korean does not always require the modification of word order. Rather, a case marker (TOP) alone is enough to mark a topicalized element. However, TOP can drop more easily than NOM or ACC, which complicates studies of case-marker omission. Therefore, in order to study the omission of NOM (or ACC as well), it is necessary to exclude the possibility of TOP drop from all bare NPs.

2.2 ACQUISITION OF CASE-MARKING. Children learning their first language appear to master appropriate use of case markers and word order together by around age 3;6 (Slobin and Bever 1982, S. Kim et al. 1995, Y. Kim 1997, Cho et al. 2002).

Previous studies agree that when the arguments are overt, ACC not only drops more frequently, but is acquired much later than NOM and TOP, although there are some contradictory findings with regard to the order of development of NOM and TOP (Cho 1981, Chung 1994, Clancy 1995, Y. Kim 1997, Matsuoka 1998, Miyamoto et al. 1999, Suzuki 1999, Y. Kim 2000). For example, Chung (1994) suggests a developmental sequence for the case markers, which can be modified as follows by adding two phases of Stage 0:

- (1) The development of case-marking
 - Stage 0a: No case marker at all (i.e., Bare NP stage)
 - Stage 0b: No structural case marker but some other particles (e.g., TOP)
 - Stage I: NOM only but no ACC
 - Stage II: Overextension of NOM to all NPs
 - Stage III: NOM to the first NP and ACC to the second NP (i.e., positional ACC stage)
 - Stage IV: Adult-like use with occasional errors

Children start to produce Korean nominals without using any case marker at the time prior to Stage I, although they may use some TOPs. While children learning Korean begin using case markers by marking NOM only (Stage I), NOM may be used for NPs to which it should not be assigned (Stage II). Thus children may develop an intermediate case-marking rule such as overextension of NOM or positional ACC (Stage III) until they master the adult-like case marking of NOM and ACC (Stage IV). One thing to note is that Korean children overgeneralize the use of NOM for ACC, which differs from the acquisition of English in that children learning English tend to use ACC forms for NOM positions until age 2;0 (O'Grady 1997, Schütze 1997, Schütze 2001).²

² Schütze (1997) argues that the overgeneralization is due to the default case, which is ACC in English while it is NOM in Dutch and German.

2.3 THE A-CHAIN DEFICIT HYPOTHESIS. The A-chain is crucial to account for the association of the surface thematic subject with an underlying object position with respect to various cross-linguistic constructions—for instance, passives in English and Hebrew (Borer and Wexler 1987), negation in Russian (Babyonyshev et al. 2001), or case-marking in Japanese (Miyamoto et al. 1999, Machida et al. 2004) and Korean (Lee and Wexler 2001). Borer and Wexler propose that A-chains mature over time, based on the observation that children do not exhibit competence in verbal passives while they do in adjectival passives. For example, the ACDH assumes that the verbal passive construction involves the formation of an A-chain, as illustrated in (2):

- (2) a. # [was opened the door_i] (underlying structure)
 b. The door_i [was opened t_i] (surface structure)

Given this derivation, the surface subject NP of verbal passives (2b) is moved from the object position (2a). Due to the A-chain, while the nominative case is licensed to the subject position in (2b), the θ -role assigned to the object position (2a) is available for the subject to access. By contrast, if the ACDH is correct, a child who lacks the ability to form A-chains is not able to construct or comprehend the constructions requiring A-chains (e.g., verbal passives or unaccusatives), since s/he is not able to link a θ -role of the object position with the moved subject NP non-locally via an A-chain.

The same machinery accounts for the omission of NOM on subjects in Korean and Japanese (e.g., Miyamoto et al. 1999, Lee and Wexler 2001, Machida et al. 2004). Compared with grammatical characteristics and frequency of the adult input, it is unusual for children to behave differently from adults with regard to the omission rate of NOM for the subjects of unaccusative constructions in their early grammar (Miyamoto et al. 1999, Lee and Wexler 2001, Machida et al. 2004). The possible effect of the unaccusative verbs on the case marking of subjects in child language raises a question as to why children omit the case markers of the subjects in unaccusative constructions more often than in unergative/transitive constructions.

Transitive verbs and two types of intransitive verbs can be distinguished from each other in terms of their subcategorization in the underlying structures:

- (3) a. # [arrived the mail] (unaccusatives)
 b. The baby [cried] (unergatives)
 c. The cat [ate the fish] (transitives)

While the subject NP of unergatives (3b) is base-generated at the subject position, as in the transitive (3c), the subject of the unaccusative (3a) is generated in the object position, just like the object of transitive verbs and the subject of verbal passives. As for unergatives/transitives, children do not have a crucial problem with satisfying the Extended Projection Principle (EPP) and case-marking the subject, because it is base-generated at the subject position preceding the verb, and an A-chain is not necessary. In fact, if children fail to raise subjects of unaccusative verbs, they will violate the EPP by leaving the subject position empty. However, Korean is not an easy language in which to study this topic, since unlike English SVO word order, Korean SOV word order is unchanged even if children fail to raise the theme NPs from the VP complement position as with unaccusatives and verbal passives. Consider the underlying structures of various verb types in Korean:

- (4) a. unaccusatives: # [NP V]
 b. unergatives: NP [V]
 c. verbal passives: # [NP V]
 d. transitives: NP [NP V]

In Korean, although children may violate the EPP without raising the subject NP from the object position in unaccusatives (4a) and verbal passives (4c), no “ungrammatical” word order is generated, since the subject always precedes the verb. In this respect, if the subject of unaccusatives in Korean fails to be raised to Spec-TP position by A-movement, it is not possible to check off its nominative case, although it precedes the verb in the surface structure. If children have difficulty with A-chain formation, not only will they have difficulty with verbal passives, but they also will show compara-

tively higher omission of NOM with unaccusatives than with unergatives and transitives (Miyamoto et al. 1999, Lee and Wexler 2001). According to the ACDH, therefore, it is predicted that there will be a noticeable delay in marking the nominative case to the subjects of unaccusative verbs, which will result in NOM omission of the subjects in these unaccusative constructions. Nonetheless, although it is not frequent, children at early stages occasionally mark NOM on the subjects even in unaccusative constructions. According to the ACDH, this may occur when they choose to obey the EPP but violate the Uniformity of Theta Assignment Hypothesis (UTAH) by generating the theme subjects at the VP external position as if they have the actor subjects of unergatives (Miyamoto et al. 1999, Babyonyshev et al. 2001, Lee and Wexler 2001). This will be discussed in more detail later.

While there are few studies of the effect of A-chains, in particular, on NOM omission of Korean, Lee and Wexler (2001) argue that young Korean children drop NOM more frequently in the unaccusative constructions than in the other constructions, as has been observed in children learning Japanese (Miyamoto et al. 1999, Machida et al. 2004). Nonetheless, there are some issues that we have to consider to strengthen the analysis. First, it is not clear whether Lee and Wexler eliminate the possible confusion of TOP omission with NOM omission. As noted in the previous section, the ACDH studies should avoid counting the subjects marked by TOP, because many subjects can be marked by TOP or NOM depending on the speakers' intention (Miyamoto et al. 1999).

In addition, the simplification of verbal categories should be reconsidered. Lee and Wexler simply combined the frequencies of transitives with unergative intransitives in that the subjects of these two constructions contain the thematic roles of actor or agent, while unaccusatives contain a theme or experiencer subject. As noted by Nakamura (2001), only a small number of occurrences of unergative verbs in child speech might be a reason for the combination of these two different types of verbs. However, the calculation of the data in this way may be misleading, since transitive constructions require at least two argument NPs, while intransitive constructions need only one. The difference in the number of obligatory argument NPs in these constructions may affect the preference of case marker omission of the subjects. When there are multiple argument NPs, as in a transitive sentence, children may want to differentiate the subjects from the other arguments by marking them with NOM. Thus, an alternative method is proposed in this study to the simple comparison of verbs categorized as unaccusatives vs. others (unergatives and transitives).

In sum, this study investigates Korean child language acquisition data from two perspectives: first, whether there exists an effect of unaccusativity due to A-chain deficit on case marker omission; second, whether children use NOM in a different way from adults.

3. PRESENT STUDY. Case-marking and omission of case particles were examined, with a special focus on NOM, in the transcripts of three children, JK (1;8 – 2;8), HJ (2;3 – 2;8), and SY (2;10 – 3;5). I collected data from HJ, while other researchers collected JK's and SY's data.

TABLE 1. Participants of the study.

	age	case-marking stage	case markers used ³
JK	1;8 – 2;8	Stage 0a	n/a
HJ	2;3 – 2;8	Stage 0b	<i>nun</i>
SY	2;10 – 3;5	Stage I	<i>nun, ka</i>

All three children were raised by Korean-speaking caregivers. During the time of recordings, JK was living with his parents and grandmother in Korea. HJ was born in Korea, but she was living in Hawai'i with her parents, and SY was living with her parents in Calgary. All three children were recorded from different stages, which were not directly correlated with their age. Although neither JK nor HJ used NOM in their first transcripts, the initial stages of their speech were slightly different in that JK did not use any case particles at all (Stage 0a), while HJ used TOP (Stage 0b). At the onset of the recording, SY was already using most case particles including NOM, ACC, and TOP, in a quite

³ Only three types of case particles, i.e., TOP, NOM, ACC, were considered in this study.

productive way, and she was comparatively older than the other speakers – older even than the other children at the time of their last recordings.

3.1 DATA ANALYSIS. In order to count the types of verbs and nominals, all transcripts had to be coded. The following guidelines were used for tallying case marker omission in the transcripts, which is similar to some previous studies (Cho 1981, Miyamoto et al. 1999, Y. Kim 2000):

- a. Phrases containing only one word or NP utterances lacking a verbal predicate were excluded in order to avoid a potential risk of confusing the verb types involved, which is one of the main interests in this study. For example, although we can assume a topic-comment or a subject-predicate relation between the two NPs in *ike yak* ‘This (is) medicine’ (JK 1;10), *chiyak-i-(*)ka twu kay* ‘Toothpastes (are) two.’ (JK 2;0), these incomplete utterances were not counted.
- b. Imitations and repetitions were excluded. There are many repeated utterances in the data because children and caretakers sometimes like to play word games by repeating the same pattern of questions and answers. These utterances were identical in whole or part with the immediately preceding utterance of the speakers’ turn. Although there might be a partial substitution, I excluded these utterances from the third repetition of the same pattern unless a change was made in the affixes appearing on subjects, objects, or predicate verbs.
- c. Idiomatic expressions or unanalyzed formulaic expressions were excluded. This category includes idiomatic expressions such as *mal cal/an tut* ‘obey/disobey’, postpositions originating from a verb such as *kaci-/kac-ko* ‘with’, and the adversity passive constructions such as *cwusa/may mac* ‘get injection/spanked’. Although Korean speakers occasionally use NOM on the second argument of the negative copula *ani* ‘be not’ and the inchoative verb *toy* ‘become’, they too were excluded.
- d. Routine expressions were excluded. For example, child and adult frequently produce *ike-/ceke-nun mwe-/nwukwu-ya?* ‘What/Who is this/that?’, *ike po-a* ‘Look at this’, or *ike cwu-e* ‘Give (me) this’.
- e. Defective nouns such as *ke(s)*, *swu*, and *cwul* were excluded because they do not contain the concrete semantic/pragmatic features to be analyzed in the following section.
- f. Imperative and propositive sentences were included if they contained a subject or an object. In these sentences, those NPs referring to the interlocutor were excluded if they were clearly used as a vocative, which may involve a rising/falling intonation or a longer following pause.
- g. Verbs were classified into three basic subgroups: unaccusative, unergative, and transitive. As described earlier, verbal expressions containing the light verb *ha* were classified by the argument structure of the complex verb as a whole. Following Lee and Wexler 2001, unaccusatives are distinguished from unergatives by using the *e iss* (the perfective aspectual) test: unergative verbs and transitive verbs cannot be combined with the *e iss* form. Additionally, in order to compare the results with Lee and Wexler’s (2001) study, I followed the same categorization of unaccusatives. The set of unaccusatives involves adjectival verbs (e.g., *aphu* ‘sick’, *kil* ‘long’), copulas (e.g., *i* ‘be’), existential verbs (e.g., *iss* ‘exist’, *eps* ‘non-exist’), psych(ological) verbs (e.g., *coh* ‘like’, *mwusep* ‘fear’), as well as lexical unaccusative verbs (e.g., *anc* ‘sit’, *o* ‘come’). In contrast, unergative intransitives and transitives exhibit comparatively less variation in that they only have lexically unergative (e.g., *ca* ‘sleep’, *ki* ‘crawl’) or transitive verbs (e.g., *mek* ‘eat’, *ttayli* ‘hit’) and some complex verbs incorporated with a light verb, *ha* (see (h)). Note that the existential verbs with a possessive reading, which take a complement NP, were excluded from the subgrouping for the analysis of unaccusativity effect.
- h. Complex verbs containing an NP incorporated with the light verb *ha* ‘do’ were coded as a whole rather than considering the NP as an object and *ha-* as a transitive verb, although the NPs followed by a light verb may be marked by ACC in some contexts. Thus *kecismal+ha* ‘lie’ was coded as an unergative verb, while *kongpwu+ha* ‘study’ was classified as a transitive

- verb, because the latter can take an object but the former cannot.
- i. To avoid unidentified expressions, utterances containing pro-forms of verbs such as *ku-leh/kuleha* or *ha* ‘do so’ were excluded as in *nwu-ka kulayss-e* ‘Who did so?’ and *nay-ka ha-l-lay* ‘I will do it’. When the verb *ha* is used to denote ‘say’, it was also excluded when it came after quotations.
 - j. NPs were also categorized by their types such as lexical NPs, pronouns, demonstratives, proper nouns, and *wh*-words. Note that proper nouns may include kinship terms such as *emma* ‘mom’, *appa* ‘dad’, *enni* ‘sister’ and the names of people, as in Miyamoto et al. 1999.
 - k. In order to investigate the omission of NOM more clearly, it is essential that all possible cases of topicalization are eliminated, as specified by Miyamoto et al. (1999). I coded nominals as topics when they had already been introduced in the same discourse context, and analyzed them for the use or omission of TOP instead of NOM. Thus the caseless forms of *wh*-words and indefinite NPs were coded as instance of NOM omission, because these nominals cannot be topicalized.

3.2 RESULTS. As summarized in Table 2, overall, the rate of case marker omission is the same as in the previous studies (e.g., Cho 1981, Chung 1994, Miyamoto et al. 1998, Y. Kim 1997, among others). For example, all three children drop object markers (ACC) more often than subject markers (NOM and TOP). The omission rate of NOM is generally lower than that of TOP, and this is also observed in adult speech. JK and SY showed an omission rate similar to that of adults, i.e., ACC > TOP > NOM, from the highest. HJ appears to behave slightly differently from the others in that she dropped NOM a little more frequently than TOP, although the difference is not significant.

TABLE 2. The overall omission rate of case markers.

case markers		JK (1;8 – 2;8)	HJ (2;3 – 2;8)	SY (2;10 – 3;5)
child	NOM	45.9% (304/663)	76.4% (107/140)	32.5% (64/197)
	TOP	73.2% (260/355)	73.8% (107/145)	62.1% (220/354)
	ACC	99.0% (382/386)	98.5% (135/137)	99.3% (279/281)
adult	NOM	34.1% (92/270)	31.5% (116/368)	29.8% (258/867)
	TOP	77.0% (217/282)	57.2% (151/264)	58.5% (428/732)
	ACC	92.3% (181/196)	85.9% (342/398)	93.9% (925/985)

The high omission rate of ACC does not have to imply later emergence of ACC than the other particles, but it was observed that these children began using ACC at a later age than the other particles. JK used ACC for the first time at age 2;2, HJ at 2;7, and SY at 3;4, when they were using NOM and TOP in the preceding transcripts.

Note further that SY, who was older than the other two children, showed a very similar omission rate to that of adults, although there is no critical difference in the omission of TOP and ACC, because adults drop these particles frequently in their casual speech as well. As for the NOM omission rate, however, while JK and HJ deleted NOM at a higher rate than adults, SY dropped as low (32.5%), just as adults did (29.8% – 34.1%). The results therefore partially support the argument that children tend to master their canonical schema by around age 3;6 (Slobin and Bever 1982, Cho et al. 2002). If children at an early stage fail to create A-chains, as the ACDH contends, the NPs adjacent to the verb with a theme role will show a tendency to occur without case markers.

Further analyses by types of verbal predicates will help to find out the variables causing NOM omission. First of all, for a more detailed analysis of verbs with respect to an unaccusativity effect, they can be grouped into two main categories: unaccusative verbs vs. other (unergative/transitive) verbs, as in Table 3. Unergatives and transitives were combined into a category “other verbs,” as in Miyamoto et al. 1999 and Lee and Wexler 2001, because all three children produced too few unerga-

tives to compare with unaccusatives or transitives.⁴

TABLE 3. The NOM omission rate by verb types – unaccusativity effect.

verb types		JK (1;8 – 2;8)	HJ (2;3 – 2;8)	SY (2;10 – 3;5)
child	unaccusative verbs	61.6% (249/404)	84.6% (66/78)	59.8% (49/82)
	Other verbs	21.2% (55/259)	66.1% (41/62)	13.0% (15/115)
	Total	45.9% (304/663)	76.4% (107/140)	32.5% (64/197)
adult	unaccusative verbs	50.0% (77/154)	39.3% (77/196)	45.6% (176/386)
	Other verbs	12.9% (15/116)	22.7% (39/172)	17.0% (82/481)
	Total	34.1% (92/270)	31.5% (116/368)	29.8% (258/867)

Table 3 illustrates that on the average, all three children dropped NOM more frequently in unaccusative constructions than in the other constructions. Compared to the overall NOM omission rate in Table 2, children dropped NOM at a very high rate in unaccusative constructions. However, the average rate of NOM omission cannot directly indicate the effect of the ACDH on case-marking, because all adults also dropped NOM more frequently in unaccusative constructions.

The ACDH predicts that there exists a certain period of time during which the omission rate remains high for unaccusatives, while it significantly drops for the other verbs, although the NOM omission rate of children in all constructions will eventually decrease. If we examine how JK and HJ dropped NOM in terms of the two types of verbs over time as in Tables 4–5, it will help us understand the more detailed properties of NOM omission.^{5,6}

TABLE 4. The NOM omission rate over time in JK's speech.

<JK>	child				1 st use	adult			
	unaccusative		others			unaccusative		others	
1;8	100.0%	(15/15)	n/a	(0/0)		80.0%	(4/5)	0.0%	(0/2)
1;9	100.0%	(7/7)	100.0%	(2/2)		73.7%	(14/19)	40.0%	(2/5)
1;10	100.0%	(14/14)	100.0%	(3/3)		27.8%	(5/18)	7.1%	(1/14)
1;11	100.0%	(15/15)	58.8%	(10/17)	NOM	80.0%	(12/15)	4.5%	(1/22)
2;0	83.1%	(59/71)	51.9%	(14/27)		83.3%	(15/18)	5.9%	(1/17)
2;1	79.7%	(55/69)	31.4%	(11/35)		42.1%	(8/19)	25.0%	(3/12)
2;2	50.0%	(21/42)	4.4%	(2/45)	ACC	46.2%	(6/13)	9.1%	(1/11)
2;3	43.8%	(14/32)	8.7%	(2/23)		16.7%	(2/12)	0.0%	(0/6)
2;5	52.2%	(24/46)	11.6%	(5/43)		16.7%	(1/6)	14.3%	(1/7)
2;6	39.0%	(16/41)	12.9%	(4/31)		38.5%	(5/13)	0.0%	(0/7)
2;7	19.4%	(7/36)	9.1%	(2/22)		35.7%	(5/14)	0.0%	(0/9)
2;8	12.5%	(2/16)	0.0%	(0/11)		0.0%	(0/2)	0.0%	(0/4)
total	61.6%	(249/404)	21.2%	(55/259)		50.0%	(77/154)	12.9%	(15/116)

Looking first at the analysis of JK's data (Table 4), we observe that the decreasing rate of NOM omission is noticeably different in unaccusative constructions and in unergative/transitive constructions. As soon as JK started using NOM in unergative/transitive constructions, he employed it in un-

⁴ Including lexical unergatives and complex verbs, the frequency rate of unergatives was at about 5% of all predicate verbs, e.g., JK 4.87% (33/678), HJ 5.33% (8/150), SY 5.53% (12/217).

⁵ As for the developmental stages of case-marking subjects and objects, SY did not show her Stage 0 but Stage I. In the first recording, she was already using NOM for subjects, but did not use ACC for objects.

⁶ The shading in the Tables 4–5 indicates that there was a noticeable gap of NOM omission of unaccusative verbs from the others before the rate of their NOM omission reached an adult-like level.

accusative constructions at a relatively low rate (58.8%), and he used NOM more frequently. The uses of NOM increased rapidly until he made adult-like omissions. In contrast to the rapid decrease of the omission rate in the unergative/transitive constructions, it took much longer for JK to use NOM in the unaccusative constructions at an adult-like rate (from age 2;6). It seems that these six months were critical for JK to consider unaccusative constructions and the others in a different way.

Table 5 illustrates that HJ showed a pattern of NOM omission similar to JK's data, although it is not as apparent as in Table 4.

TABLE 5. The NOM omission rate over time in HJ's speech.

<HJ>	child				1 st use	adult			
	unaccusative		others			unaccusative		others	
2;3	100.0%	(23/23)	100.0%	(12/12)		45.6%	(26/57)	21.2%	(7/33)
2;4	100.0%	(9/9)	81.8%	(9/11)	NOM	37.5%	(9/24)	29.4%	(10/34)
2;5	91.7%	(22/24)	100.0%	(6/6)		50.0%	(14/28)	38.5%	(5/13)
2;7	42.9%	(6/14)	60.0%	(6/10)	ACC	30.4%	(14/46)	21.4%	(9/42)
2;8	75.0%	(6/8)	34.8%	(8/23)		34.1%	(14/41)	16.0%	(8/50)
total	84.6%	(66/78)	66.1%	(41/62)		39.3%	(77/196)	22.7%	(39/172)

In unaccusative constructions, HJ omitted NOM at a high rate (over 90%) for two months (from age 2;4 to 2;5) after the first use of NOM in unergative/transitive constructions and gradually began to use NOM more frequently, which is distinct from the other constructions in that the NOM omission rate decreased a little more rapidly. But in the recordings, HJ did not reach an adult-like omission rate of NOM.

Overall the results agree with the three phases of NOM omission by the types of verbs which were proposed by Lee and Wexler (2001). First, even after the first use of NOM, children did not use it so frequently for several months. Second, as time went by, unaccusatives and unergatives/transitives started differing in that the omission rate in unergatives/transitives rapidly dropped, while it slightly decreased in unaccusatives. This discrepancy by verb types was clearly observed mostly at stages I – II of case-marking developmental stages in (1), when children use NOM dominantly. Third, they eventually approached close to the rate at which adults omit NOM. Lee and Wexler (2001) provide speech data for adults, in which NOM is omitted between 12.6% and 20.4% of the time with unaccusatives, and 8.5% and 11.9% of the time with unergatives/transitives. This is much lower than the average omission rate of two of the children in this study, but JK seemed to have reached this rate in his last recordings.

Furthermore, it is interesting that the NOM omission rate for adults in Tables 4–5 decreased over time as well. In the unaccusative constructions, although adult speakers must be able to form A-chains in their grammar, they optionally drop or use NOM as well. As for the higher omission rate by adults in some recordings of JK (at age 1;8 through 2;0), it is possible that the adult has imitated child speech as a caregiver, as proposed by Lee and Wexler (2001). But adults in conversation with JK and HJ respectively dropped NOM much more often in unaccusative constructions than in the other constructions throughout all recordings. According to the ACDH, as the NOM omission rates in both constructions decrease, it is assumed that not only adults but also children will omit case markers at the same level in these two constructions for some time into the future. The results of this study imply that the difference of the NOM omission rate between these two constructions may not be found even in adult speech.

So far, we have used a binary distinction between verb categories, i.e., unaccusatives vs. the others (unergatives/transitives), as in Tables 3–5. However, in order to verify the validity of the ACDH or the effect of A-chain deficit in unaccusatives in particular, the two types of intransitive verbs should be directly compared. Therefore, it is necessary to analyze the data by a three-way distinction, separating unergatives and transitives. Table 6 shows a slightly different pattern from Table 3.

TABLE 6. The NOM omission rate by verb categories (revision of Table 3).

verb types		JK (1;8 – 2;8)	HJ (2;3 – 2;8)	SY (2;10 – 3;5)
child	unaccusative verb	61.6% (249/404)	84.6% (66/78)	59.8% (49/82)
	unergative verb	30.3% (10/33)	50.0% (4/8)	16.7% (2/12)
	transitive verb	19.9% (45/226)	68.5% (37/54)	12.6% (13/103)
	Total	45.9% (304/663)	76.4% (107/140)	32.5% (64/197)
adult	unaccusative verb	50.0% (77/154)	39.3% (77/196)	45.6% (176/386)
	unergative verb	24.2% (8/33)	33.3% (9/27)	27.9% (12/43)
	transitive verb	8.4% (7/83)	20.7% (30/145)	16.0% (70/438)
	Total	34.1% (92/270)	31.5% (116/368)	29.8% (258/867)

As in Table 3, it is still apparent that NOM was dropped more often in unaccusative constructions than in the all other constructions. On the other hand, Table 6 depicts an additional tendency for children as well as adults to omit NOM somewhat more often for unergatives than for transitives.⁷

One thing to note here is that both children and adults produce far more transitives than unergatives. This suggests that the high NOM omission rate with unaccusatives and the low rate in transitive/unergative constructions (in Table 3) may be biased by some verb types of each category which are produced comparatively more frequently than the others. This calls into question the binary comparison used in Miyamoto et al. 1999 and Lee and Wexler 2001, for it may oversimplify the verb categories by focusing only on the thematic role of subjects.

While the simplified binary classification of verbs was crucial to justify the effect of the ACDH, Table 7 shows the rates of NOM omission broken down by all the subcategories of each verb type. In particular, unaccusatives are broken down into adjectival verbs, copular verbs, existential verbs, psych verbs, and lexical unaccusatives, as in Lee and Wexler 2001.

TABLE 7. The NOM omission rate by verb subcategories.

verb types		JK (1;8 – 2;8)	HJ (2;3 – 2;8)	SY (2;10 – 3;5)
Child	adjectival verb	53.7% (22/41)	83.3% (5/6)	60.0% (3/5)
	copular verb	29.7% (11/37)	40.0% (2/5)	38.5% (5/13)
	existential verb	86.1% (180/209)	95.0% (38/40)	84.6% (22/26)
	psych verb	15.8% (3/19)	100.0% (2/2)	71.4% (5/7)
	lexical unaccusative verb	33.7% (33/98)	76.0% (19/25)	45.2% (14/31)
	unergative verb	30.3% (10/33)	50.0% (4/8)	16.7% (2/12)
	transitive verb	19.9% (45/226)	68.5% (37/54)	12.6% (13/103)
	Total	45.9% (304/663)	76.4% (107/140)	32.5% (64/197)
Adult	adjectival verb	41.9% (13/31)	46.2% (12/26)	52.5% (32/61)
	copular verb	7.7% (2/26)	16.0% (4/25)	22.8% (23/101)
	existential verb	68.0% (34/50)	51.7% (30/58)	62.5% (60/96)
	psych verb	28.6% (2/7)	60.0% (9/15)	70.6% (12/17)
	lexical unaccusative verb	65.0% (26/40)	30.6% (22/72)	44.1% (49/111)
	unergative verb	24.2% (8/33)	33.3% (9/27)	27.9% (12/43)
	transitive verb	8.4% (7/83)	20.7% (30/145)	16.0% (70/438)
	Total	34.1% (92/270)	31.5% (116/368)	29.8% (258/867)

⁷ HJ omitted NOM at an exceptionally low rate with unergatives than with transitives. However, note that there were only 8 tokens of unergative verbs in the recordings. As mentioned in the previous section, there may be an error in generalizing the results of some verb categories due to small numbers of occurrences. For this reason, verbs occurring fewer than 15 times were not used to interpret the results in this study from here on.

It is interesting that the results in Table 7 do not exactly reflect the NOM omission rate by major verb types in Table 6. If the ACDH is correct, children at early stages should tend to drop NOM frequently in most unaccusative constructions. Given this prediction, except with two verb subcategories, i.e., adjectival verbs (53.7%) and existential verbs (86.1%), it is puzzling that JK omitted NOM less frequently with copulas (29.7%) and psych verbs (15.8%), a subgroup of unaccusatives, than with unergatives (30.3%).⁸ Moreover, the NOM omission rate with lexical unaccusatives (33.7%) was not much distinct from that with unergatives. Given that existential verbs were about a half of all unaccusative verbs in JK's speech, this may significantly influence the average rate of NOM omission, as it was reasoned to distinguish unergatives from transitives. Thus the results in Tables 6–7 suggest that the high NOM omission rate of unaccusative constructions may be due to a particular predicate type such as existential verbs, even if there turns out to be an "unaccusativity effect" in the speech of young children learning Korean when the results are averaged out. For example, the pattern of unaccusatives becomes clear in the re-analysis of Table 6, in which existential verbs are not included in the set of unaccusatives.

TABLE 8. The NOM omission rate by verb categories (revision of Table 6).

verb types		JK (1;8 – 2;8)	HJ (2;3 – 2;8)	SY (2;10 – 3;5)
child	unaccusative verb	35.4% (69/195)	73.7% (28/38)	48.2% (27/56)
	unergative verb	30.3% (10/33)	50.0% (4/8)	16.7% (2/12)
	transitive verb	19.9% (45/226)	68.5% (37/54)	12.6% (13/103)
	Total	27.3% (124/454)	69.0% (69/100)	24.6% (42/171)
adult	unaccusative verb	41.3% (43/104)	34.1% (47/138)	40.0% (116/290)
	unergative verb	24.2% (8/33)	33.3% (9/27)	27.9% (12/43)
	transitive verb	8.4% (7/83)	20.7% (30/145)	16.0% (70/438)
	Total	26.4% (58/220)	27.7% (86/310)	25.7% (198/771)

Compared to the NOM omission rate with unaccusatives in Table 6 (61.6% for JK and 84.6% for HJ), Table 8 shows that it decreased by from 26.2% (JK) to 10.9% (HJ). Moreover, JK showed that although the comparative rate of NOM omission remained the same, i.e., unaccusatives > unergatives > transitives, the difference in the NOM omission rate between the two types of intransitive verbs decreased, which may minimize the unaccusativity effect as expected from the ACDH.

4. DISCUSSION. Since the ACDH is a type of Maturation Hypothesis, the patterns of NOM omission in the speech of children were compared to those in adult speech as a base line. In reference to the children's omission of NOM only, the overall results were in agreement with previous findings, and there seems to be support for the effect of the A-chain deficit on the omission of NOM in that children tend to omit case markers more frequently with unaccusative verbs than unergatives/transitives. Children start case-marking subjects with NOM after they go through Stage 0, in which they employ no syntactic case markers at all. Children omitted NOM less frequently than TOP or ACC (Table 2), and least frequently in transitive constructions, but most frequently in unaccusative constructions (Table 6). According to the developmental data, large gaps were observed in the decreasing pattern of NOM omission rates between unaccusative verbs and unergative/transitive verbs, especially for certain periods of time (Tables 4–5).

Because the ACDH suggests that children at early stages lack the ability to form A-chains, it attempts to account for the fact that Korean children at stage I or II, which immediately follows the first emergence of NOM, drop NOM more often with unaccusatives than with unergatives/transitives. If the ACDH is correct, children who cannot form A-chains should not in principle produce or compre-

⁸ We cannot use the data of SY and HJ, since SY showed an adult-like low rate of NOM omission and HJ produced too small a number of verbs.

hend the utterances such as unaccusatives and passives, which require A-chains. Thus the subjects of these constructions are not raised from the object position, but they should be produced without NOM.

However, as the use or omission of NOM is, of course, not an all-or-nothing situation but a proportional phenomenon even in adult speech, children sometimes may not drop NOM in unaccusative constructions. In order to account for the fact that children occasionally raise subjects in unaccusatives, the ACDH introduces an optional rule which assumes that, if children with no A-chains raise the subjects of unaccusative verbs, they can do so because they incorrectly analyze them as of unergatives. In other words, for the children at early stages, unaccusatives are actually s(yntactic)-homophones whose analysis as unergatives does not require A-chains. Therefore, when these children use NOM on the subjects of unaccusatives, it involves no A-movement of the subjects from the object position. Rather, they base-generate the subjects at the VP-external position to satisfy the EPP by filling the sentential subject position, as they do for unergatives (Babyonyshev et al. 2001, Machida et al. 2004).

Contrary to the prediction of the ACDH, however, detailed analyses taking verb subcategories into account (Table 7) revealed that not all verb subcategories follow the pattern among verb types suggested by the simple (e.g., two-way or even three-way) categorization, and that there are important similarities between the speech of adults and children. First, among the subgroups of unaccusative verbs, NOM was omitted by children most frequently with existential verbs and least frequently with copulas. Note that the NOM omission rate was even lower with copulas than with unergative verbs. Thus it is hard to say that the sharpest break in the NOM omission rate does not fall between unaccusatives and unergatives, which is the main argument for the ACDH. Instead, with regard to the NOM omission rate, unergatives differ from existential verbs. As for the interpretation as “misanalysis” that supposedly licenses some optional uses of case markers even at the period of no A-chains, the misanalysis, if any, would have to occur less frequently with some individual verb subcategories (e.g., existential verbs) instead of the major verb types (e.g., unaccusatives). Alternatively, the principles for forming A-chains would have to mature over time at a different time for verb types.

Furthermore, the unaccusativity effect appears to rely largely on particular types of verb subcategories, which usually occur most frequently in child speech. The low omission rate of the combined unergative/transitive category is skewed by transitive verbs which occur more frequently than unergatives. Likewise, since existential verbs make up a large proportion of all types of unaccusative verbs, the highest NOM omission rate for existential verbs strongly influences the overall NOM omission rate for unaccusative verbs. In addition, the NOM omission rate for copular verbs is extremely low – even lower than the rate for unergatives. It is important that not all types of unaccusatives are correlated with frequent NOM omission, which is a characteristic feature of unaccusatives, as expected from the ACDH. Thus the standard account of the effect of A-chain deficit (or unaccusativity) actually does not fit as well as it initially seemed to.

Finally, it is hard to conclude that children at an early stage show the discrepancy in NOM omission rate between unaccusatives and unergatives/transitives because of the absence of A-chains. Overall, the pattern of children’s NOM omission seems not so different from that of adults. First, all child and adult speakers demonstrate that transitive constructions, which are produced far more than unergative constructions, seem to correlate with the least frequent omission of NOM. Second, it is observed that existential verb constructions were produced most frequently among subgroups of unaccusatives, and that both children and adults dropped NOM in this construction at the highest rate over all verb subcategories, including unergatives and transitives. These overall results support Miyamoto et al.’s (1999) claim that children tend to drop NOM in environments when case omission is permitted in adult speech as well. From the opposite perspective, children may not behave differently from adults, although the ACDH should expect a child-specific behavior in the NOM omission rate. That is to say, even adults in this study produced utterances with more frequent NOM omission in unaccusative constructions (than in unergatives/transitives) and with the effect of individual verb subcategories.

5. CLOSING REMARKS. The principal finding of this study is that, despite the high rate of NOM omission in unaccusative constructions overall, the validity of the ACDH is undermined by: (a) the unexpectedly low rate of NOM omission in copular constructions, and (b) the unexpectedly high rate of NOM omission in unergative constructions. The limitation of this study is that it is not easy to generalize the findings on the development of case markers with reference to the data from three Korean children. Compared to previous studies on the effect of word order and case marking in Korean, case marker omission has not yet been extensively studied. We need more studies to support or refute the Maturation Hypothesis and the ACDH.

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