한국 고기능 자폐아동의 담화화용과 문법 능력의 상호 관계에 관한 분석 연구[1]

An Analysis of the Development of Communicative Skills and Grammar in Three Korean Children with Autism

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Abstracts The present paper is concerned with assessing both communicational skills and grammatical knowledge in three Korean-speaking children with a range in age from 9;11 to 12;2 and in MLU from 1.68 to 2.22. It was found that all three autistic children's speech was largely repetitive and echolalic, unable to consistently interact communicatively on the ongoing joint focus of attention. It was also observed that the more repetitive the child speech was, the more impaired morpho-syntactically it was. Based on these findings, it was speculated that the deficit in joint focus of attention might relate to grammatical development.

INTRODUCTION

It is reported in the literature that children with autism are impaired in their communicative use of language. For example, Ball (1978) found that certain communicative skills including commenting, acknowledging the listener, and requesting information were completely absent while other speech acts such as responding to questions and requesting objects or actions and protesting (e.g., 'Don't do that') were present. Children with autism are also observed to fail to respond in a topic-related way to their interlocuters (Tager-Flusberg, 1999, p. 330). Rollins (1994), for example, found that children with autism rarely participated in talking about an object that was the focus of their mothers' attention.

Reports from the studies of linguistic development in autism, on the other hand, are conflicting. While the early clinical literature (e.g., Menyuk, 1978) indicates that autistic children were unable to form semantic concepts of words, a more recent study by Tager-Flusberg (1985) reports to have found no difference between autistic subjects and control groups in organizing and representing basic level and superordinate level concepts, claiming that autistic children develop word meaning "in a highly systematic way" (Tager-Flusberg, 1999, p. 332). Moreover, Tager-Flusberg et al. (1990) found that their six autistic subjects acquired morpho-syntactic grammatical structures in the same order as normally developing children although the rate of growth in autistic children was slower than in normally developing children. As pointed out in Rollins & Snow (1998, p. 656), on the other hand, it seems that there is individual variation observed in autistic children, some unable to acquire syntax, others apparently achieving a fairly high level of grammatical competence.

The present paper is concerned with assessing both communicational skills and grammatical knowledge in three Korean-speaking children with a range in age from 9;11 to 12;2. The motivation of this study lies in the observation that, as briefly mentioned above, while previous studies on children with autism mostly agree on very limited communicative ability, few have looked into and seem to

have a good understanding of grammatical development in autism. In light of the deficits discussed in the literature, it would be worthwhile to investigate Korean children with autism for two reasons.

First, Korean is a discourse-oriented language in which noun phrases (NPs) can drop if predictable and thus recoverable in a discourse. For example, given a discourse context where someone (e.g., 'Mary') has been talked about as a topic for conversation, as illustrated in (1), the speaker and its interlocuters are most likely to stop mentioning her explicitly until the ongoing topic is discontinued.This is true particularly because Korean pronouns can be used in written text, but not in spoken form, hence a null form (ellipted NP) being most likely to occur.[2]

(1) A: Ne   Mary(-ka)   eti-ey   iss-nun-ci a-ni?
        you Mary(-NOM) where-LOC be-CONN-whether
        know-QUE
        'Do you know where Mary is?'
    B: Nay(-ka) akka   po-ass-nuntey.
        I(-NOM) earlier   see-PAST-DEC
        'I saw earlier today.'
    A: (Ne) cengmal po-ass-e?
        (you) really   see-PAST-QUE
        'Did (you) really see ?'

Conceivably, an examination of Korean autistic children's speech would shed an insight into how they apply the pragmatic condition of topic recoverability in either dropping or retaining the grammatical category, a subject.

Second, Korean is an agglutinative language employing a rich system of modal suffixes on the verb, and these modals are important on both pragmatic and morpho-syntactic accounts. All Korean modals encode speech acts such as requesting, proposing, commanding, expressing the speaker's strong intention, and so on, and the speaker's communicational intent would not be conveyed adequately unless they were used distinctly. Furthermore, Korean

modals are, in part, also restricted morpho-syntactically in that they must agree in person with the subject NP that they co-occur with. Due to the subject-modal agreement, subjects are further motivated to drop, as illustrated in (2). For example, modal suffixes denoting intention ('-lay,' '-kke,' '-kkeya,' '-yaci') and propositive ('-ca,' '-ci,' '-kka') must co-occur with first person subjects. Some other modals expressing prohibition ('-ma'), request ('-yo,' 'e,' '-la') require second person subjects, retrospective modal ('te') co-occuring with second or third person subjects.

(2) a. (Nay-ka) ka-lkke-ya.
        (I-NOM) go-INTENT (1P)-DEC
        'I will (intend to) go.'
    b.(Mary-ka) ka-te-la.
        (Mary-NOM) go-RETRO(3P)-DEC
        'Mary was perceived to go earlier.'

Modal suffixes '-lkke' ('-intent') and '-te' ('-retrospective') in (2a) and (2b) each are required to occur with a first and third person NP (i.e., 'na' ('I') and 'Mary'). Due to their person feature denoted by the modal suffixes in (2), the referent of the subject can be recovered, and thus can drop optionally. It is hence thought that an exploration of Korean autistic children's use of speech act modals as well as subjects would potentially lead us to observe their pragmatic as well as grammatical capabilities. (For further study on the impact of modality on subject drop in child speech, see Cho (To appear).)[3]

RESEARCH QUESTIONS

This study has two goals. One purpose is to examine the Korean autistic children's pragmatic skills in expressing communicative intents. For this purpose, two questions are asked: (a) What types of communicational attempts do Korean autistic children use?; (b) What is the incidence of modals suffixed on verbs? A second purpose is to

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2) In transliterating Korean data, I employ the following abbreviations: ACC=accusative case marker, CONN=connective, DEC=declarative, INTENT=speaker's intention marker, LOC= locative case marker, NOM=nominative case marker, PAST=past tense marker, QUE=question marker, RETRO=retrospective, 1P/2P/3P=first person/second person/third person. Korean examples in this paper are transliterated on the basis of Yale Romanization System in Martin and Lee (1969, p. 575).

3) An anonymous reviewer argues that Korean "drop subject when it is predicted/able to be recovered from context, other than the modal sufix on the verb." The effect of morpho-syntactic aspect of verb suffixes on subject drop, however, has been noted in the literature of Korean grammar in recent years (e.g., Chang (1985)) although most of the traditional analyses failed to generate a unified outlook of a variety of facts associated with it.

investigate the Korean children's sensitivity to topic recoverability and subject-modal agreement. It is predicted that null subjects will occur frequently in the speech of the children whose sensitivity to discourse topic and morpho-syntactically restricted modals is developing. This prediction will be examined by asking: (a) What is the rate of recoverable topics and person-specific modals in null subject utterances in the Korean children? This study analyzes a limited portion of the data collected from three children with autism, as will be seen shortly, so the results to be discussed in response to the questions above will be largely descriptive in nature.

METHODS

Subjects and Data Collection

This study examines spontaneous production data collected from three Korean monolingual boys, T, S, and J while they were interacting in class with their classmates, their teacher, and one of the researchers. These three children were diagnosed as being normally developing in intelligence, yet were severely impaired in linguistic skills in comparison to intelligence-matched controls. While none of these children were high-functioning, S was more fluent and productive than T and J.

Data has been collected for eight months, weekly or bi-weekly. Each taping session lasted approximately 120 minutes. This paper, focuses only on the data collected during the first three month long period. A brief description of the children and the data to be analyzed is provided in <Table 1> below.

<Table 1> Subjects

Child	MLU	Age	Months observed	Number of observations
J	1.76	9;11-10;2	3	8
T	2.21	10;11-11;2	3	7
S	1.68	11;11-12;2	3	7

Transcription

The transcribing system adopted in this study is based on

MacWhinney (1995). The data was originally transcribed into Korean alphabet 'hangul'by one of the researchers who regularly participated in all the taping sessions. The hangul data was edited later in CHAT format, in which hangul remained the same as in the original transcripts.

Coding and Data Analysis

My coding inventory identifies and codes communicative functions at both the interchange level and the illocutionary utterance level along the lines suggested in Ninio and Snow (1996). The analysis of my data was conducted in two parts of the procedure, as follows.

In order to explore the first set of questions on the children's development of pragmatic skills, the communicative attempts by each child were coded on both the interpersonal and the speech act level. One level describes the type of interpersonal interchange in which the three subjects, their classmates and their teacher were interacting in class. As will be seen shortly below in <Table 4>, it was observed that the Korean autistic children expressed five to six types of interchanges as follows: DJF (Discuss joint focus of attention to physically objects, current on-going events and topic for conversation, DIT (Discuss a topic irrelevant to joint focus of attention), DPT (Discuss past events), CAL (Demand attentiveness from the hearer), DSS (Discuss the speaker's inner state and feelings), and MRK (Mark socialization (e.g., greetings, interactional exchanges)). The second level of coding was also conducted to capture the specific intent of the speaker. The speech act types used for this level include AY (Answer to yes-no question), RQ (Request), AW (Answer to wh-question), RQ (Request), ST (Make a statement), and AG (Agree), among many others. A whole list of the speech act categories is provided in <Table 5>.[4]

In an attempt to answer the second question on the children's sensitivity of topic recoverability and subject-modal agreement, my system coded for the null subjects ($nsvs. overt subject ($os)) for each child in contexts involving recoverable topics ($old vs. $new (non-recoverable)) and modals (overt vs. null modal suffix ($osf vs. $nsf)) and I used the COMBO program within the CHILDES (MacWhinney, 1995). It was thoughtthat this

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4) The analysis includes only the verbally conveyed utterances, hence non-verbal communicative attempts such as conventional gestures (e.g., pointing, head nodding/shaking) being excluded.

analysis would allow me to assess co-occurrence of particular codes to calculate the incidence of null subjects and topic recoverability on one hand, and null subjects and person-specificity of modals on the other.

Below is a transcript excerpt with the speech act (%SPA), subjecthood (%SUB), topicality (%TOP), and modality (%MOD), in which J(HN) and the researcher were engaged in a conversation in class.

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*JHN:   Eumlyo-swu .        ('water')
%TOP:   $old
%SUB:   $ns
%SPA:   $djf:rq
%MOD:   $nsf


*RES:   Ung.               ('Okay')


*JHN:   Mitum-ey ka-yo.    ('(I) am going to Mitum.')
%TOP:   $old
%SUB:   $ns
%SPA:   $dit:st
%MOD:   $osf:yo                        (J 11;1)
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RESULTS

This section reports on the main findings in three parts. First, I provide summary statistics for descriptive measures including the total number of utterances and the type-token ratio in each child.   Second, I describe the types of communicative interchanges and specific speech acts, which were found during the interactions among the three children, their classmates,and their teacher in class.   Third, I discuss main findings on the null subjects in contexts where they refer to a recoverable topic and are in agreement in person with the modal suffix co-occurring with them.

An overview

A FREQ analysis yielded the total number of utterances and the type-token ratio in each of the three Korean children, as shown in <Table 2>.

In <Table 2>, we can note that while the number of the utterances in J is largest of all, the type-token ratio in J is lower than that in two other children, T and S (.33 vs. .55 and .57).   In order to examine closely the grammatical nature of the lexical items in the three children, I analyzed

<Table 2> Total number of utterances and type-token ratio in J, T, S

Child	Age	Total number of utterances	Type-token ratio
J	9;11-10;2	708	427/1291 = .33
T	10;11-11;2	198	203/367 = .55
S	11;11-12;2	194	213/374 = .57

the first 100 utterances in each of the three children in terms of morpho-syntactic categories such as noun, verb, demonstrative, and so on. This analysis reveals that the most frequent type of utterances was a noun phrase and a verb phrase, as presented in <Table 3> below.

<Table 3> shows that across the three children the rate of noun phrases was higher than that of verb phrases (30%-50% vs. 13%-14%), and that the number of the noun phrases was larger in the speech of J than that in T and S (50% vs. 30%-42%) while the frequency of the verb phrases was similar (13%-14%).

<Table 3> Proportion of noun phrases and verb phrases In J (9;11-10;2), T (9;11-10;2), and S (10;11-11;2)

Child	Noun phrase	Verb phrase	Other	Total number of tokens
J	50 (.50)	14 (.14)	46 (.46)	100 (1)
T	42 (.42)	14 (.14)	44 (.44)	100 (1)
S	30 (.30)	13 (.13)	57 (.57)	100 (1)

(Note: "Other" category includes rare occurrencesof demonstratives and adverbs and other types such as irrelevant and non-identifiable utterances, and repetitions of the speaker's own and the interlocuter's utterances.)

Development of Communicative Skills

This section examines how the Korean children expressed communicative intents in interpersonal interchanges and the specific illocutionary speech acts.

Uses of communicative interchanges

The analyses of the interpersonal interchanges obtained the following results outlined in <Table 4> below.

<Table 4> shows that, while DJF was most frequent of all types in all three children (33% to 49%), DIT was more common in J (23%) than in T and S (9%-14%).   The

<Table 4> Proportion of communicative attempts in interchanges expressed verbally in J (9;11-10;2), T (10;11-11;2), and S (11;11-12;2)

Interchange	J	T	S
DJF: Discuss joint focus of attention to physically objects, current on-going events and topic for conversation	.33	.39	.44
DIT: Discuss a topic irrelevant to joint focus of attention	.23	.14	.09
DPT: Discuss past events	0	.02	0
CAL: Demand attentiveness from the hearer	.004	0	0
DSS: Discuss the speaker's inner state and feelings	.001	.02	.02
MRK: Mark socialization (greetings, interactional exchanges)	.003	.01	.02
NRS: Give no response	.01	.16	.01
NID: Give non-identifiable response	.09	.04	.05
RPI: Repeat the interlocuter's utterance	.11	.11	.30
RPS: Repeat the speaker's own utterance	.21	.04	.08
Total	1	1	1

number of repetitions, RPI and RPS together, was higher in J (32%) and S (38%) than in T (15%).

Uses of speech act types

Observe now in <Table 5> below the rate of speech act types expressed at a single utterance level in each of the three children.

As seen in <Table 5>, overall the three children produced ST and RPI most frequently (18% - 27% and 11%-30%). A close examination of the utterances in each child, on the other hand, reveals that CL and RPS were frequent in the speech of J (17% and 21%), but rare in T and S (2%-8%).

Development of Subject-Modal Agreement

In this section I am concerned with observing the way in which the three Korean used null vs. overt subjects and modals suffixes.   As seen earlier, one of the main research questions in this paper was to determine whether or not subjects tend to drop in the contexts where the co-occurring modals are person-sensitive.   Apparently, as it turned out, this question could not be explored substantially because the number of the person-specific modal suffixes was extremely

<Table 5> Proportion of speech act types used by J (9;11-10;2), T (10;11-11;2), and S (11;11-12;2)

Speech act types		J	T	S
ST	Make a statement	.27	.18	.18
CL	Repeat the speaker's own utterance in response to the interlocuter's request to make it clear	.17	.03	.02
RPI	Repeat the interlocuter's utterance	.11	.11	.30
RPS	Repeat the speaker's own utterance	.21	.04	.08
NID	Non-identifiable utterance	.09	.04	.04
NRS	No response is provided	.01	.16	.01
AY	Answer yes-no question	.01	.08	.02
RQ	Request	.05	.04	.06
AW	Answer wh-question	.03	.19	.12
IRR	Irrelevant to joint focus of attention	.01	.07	.01
AG	Agree	0	.01	.01
DG	Disagree	0	.01	0
DS	Disapprove, scold, protest disruptive behavior	.001	0	0
EL	Elaborate on the speaker's own utterance	.01	0	.01
CO	Co-operate with the interlocuter's request, or comply by responding	.002	0	.02
IN	Express the speaker's intention	.004	.02	.01
QC	Make a question for clarification	0	0	2
RS	Response to directions	.003	.01	.06
YQ	Make a yes-no question	0	0	.12
WQ	Make a wh-question	0	.01	.01
OH	Offer help by supplying information	.001	0	.02
CR	Correct the interlocuter's utterance	.003	0	0
AT	Call someone to get attention	.003	0	0
GR	Greeting	.003	.01	.01
PL	Make a proposal	0	.01	0
Total		1	1	1

small.   In this section, I will thus limit my discussion to presenting the rate of null vs. overt subjects and modals.

Uses of subjects

The frequency of null and overt subjects and other types of utterances is presented in <Table 6>.

In <Table 6> we can note that the null subjects are more common than overt subjects across the children. The contrast becomes prominent if we consider the rate of subject use without including the "other" types of utterances. That is, aside from the "other" types of utterances, the frequency of null subjects in the speech of J, T, and S is .90 (111/123), .88 (70/80), and .91 (51/56), respectively.

<Table 6> Proportion of null vs. overt subjects in J (9;11-10;2), T (10;11-11;2), and S (11;11-12;2)

Child	Null subjects		Overt subjects		Other		Total	
J	111	(.16)	12	(.2)	585	(.82)	708	(1)
T	70	(.35)	10	(.5)	118	(.60)	198	(1)
S	51	(.26)	5	(.3)	138	(.71)	194	(1)

(Note: The "other" category includes the incidence of irrelevant and non-identifiable utterances, repetitions of the interlocuter's and speaker's own utterances, and no responses.)

Uses of modal suffix

<Table 7> below presents the frequency of modal suffixes in three children.

We can note in Table 7 that, while all three children frequently failed to use the suffixes on the verb with a range from 34% to 38%, they produced person-neutral modals more frequently than person-specific modals (9%-21% vs. 0%-1%). If we exclude "no suffix" and "other" types of utterances, we find that the proportion of person-neutral modals produced by J, T, and S 86% (63/73), 98% (42/43), and 100% (17/17). It was also found that the communicative intents expressed in

these person-neutral modal suffixes include declarative, request, question, honorification, and suggestion, the most common type being declarative and request across all three children.

I examined the ten instances of the person-specific modals used by J, and found that they were nine occurrences of first-person modal suffixes encoding the speaker's intention ('-kkey') and one instance of the third-person specific reportative suffix ('-tay'). The analysis also yielded that out of these nine person-specific modals, eight modals were produced in the subjectless structures. It was thought, however, that the total number of the person-sensitive modals is too small (1% out of the total) to be looked into seriously in exploring the children's sensitivity to the subject-modal agreement.

Development of Topic Recoverability

In this section we examine the overall frequency of both recoverable (old) and non-recoverable (new) topics in null and overt subject utterances in J, T, and S. I would be particularly interested in finding out whether or not children drop subjects in expressing old referents.

Null subjects

<Table 8> presents the rate of old and new referents in null subject utterances in the three children.

As seen in Table 8, the occurrences of old referents are predominant in the incidence of null subjects in all three children with a range from 94% to 97%.

Overt subjects

<Table 9> below shows the rate of old and new referents in overt subjects in the three children.

<Table 7> Proportion of person-neutral and person-specific modals in the utterances with verbs in J (9;11-10;2), T (10;11-11;2), and S (11;11-12;2)

Child	Modality								Total	
	Person-neutral		Person-specific		No suffix		Other			
J	63	(.09)	10	(.01)	270	(.38)	365	(.52)	708	(1)
T	42	(.21)	1	(.01)	68	(.34)	87	(.44)	198	(1)
S	17	(.09)	0	(0)	67	(.35)	110	(.56)	194	(1)

(Note: The "other" category includes the incidence of irrelevant and non-identifiable utterances, repetitions of the interlocuter's and speaker's own utterances, and no responses.)

<Table 8> Proportion of old and new referents in null subjects in J (9;11-10;2), T (10;11-11;2), and S (11;11-12;2)

Child	Old		New		Other		Total	
J (9;11-10;2)	108	(.94)	0	(0)	7	(.06)	115	(1)
T (10;11-11;2)	69	(.97)	0	(0)	2	(.03)	71	(1)
S (11;11-12;2)	51	(.96)	0	(0)	2	(.04)	53	(1)

(Note: The "other" category includes the incidence of irrelevant and non-identifiable utterances, repetitions of the interlocuter's and speaker's own utterances, and no responses.)

<Table 9> Proportion of old and new referents in overt subjects in J (9;11-10;2), T (10;11-11;2), and S (11;11-12;2)

Child	Old		New		Other		Total	
J (9;11-10;2)	2	(.14)	10	(.71)	2	(.14)	14	(1)
T (10;11-11;2)	7	(.70)	3	(.30)	0	(0)	10	(1)
S (11;11-12;2)	4	(.80)	1	(.20)	0	(0)	5	(1)

(Note: The "other" category includes the incidence of irrelevant and non-identifiable utterances, repetitions of the interlocuter's and speaker's own utterances, and no responses.)

We can note in <Table 9> that J, in particular, used overt subjects to refer to new information most frequently (71%), unlike T or S. The number of the occurrences of overt subjects is, however, small (2% (12/708)), and it seems difficult to determine whether or not J was using overt subjects appropriately to refer to new referents.

DISCUSSION

In this section I discuss the communicative and grammatical capabilities of J, T, and S with a focus on the main findings observed in previous sections. I will be concerned particularly with characterizing the nature of the deficits in these children by considering the acquisition process examined in one normally developing child JK in Cho (1999; 2000) and in other autistic children studied in other previous studies (e.g., Tager-Flusberg et al., 1990; Tager-Flusberg, 1999).

Communicative Skills

We have seen in this paper that all three Korean children with autism were engaged in discussing joint focus of attention (DJF) at the rate of 33% - 44% of the time. This frequency of DJF in these children is lower than that in a normally developing child JK who expressed DJF verbally at 58% of the time at 2;11 (Cho, 1999). On the other hand, the finding that DJF was expressed most frequently of all interchange types across all three children with autism is a little surprising to note in light of the fact that, as reported commonly in previous studies, autistic children generally lack in interacting on mutual focus of attention (Tager-Flusberg, 1999).

A close examination of other interchange types found in the three children <Table 4>, however, reveals that all three children often failed to discuss in a topic-related way by abruptly bringing up a subject that was totally irrelevant to the ongoing topic or activities (DIT) at the rates with a range from 9% to 23%. J was observed to express DIT most frequently of all (23% vs. 9%-14%), and it is interesting to note that he used DJF less frequently than T and S (33% vs. 39%-44%). This probably suggests that J's pragmatic skill is more deficient than T's or S's.

Moreover, as seen in Table 5, the three children's ability to express specific communicative intents at a single utterance level was limited within just a few speech act types such as making a statement (ST) (e.g., 'ka-ss-ta'('(he's) gone'), answering wh-questions (AW) and yes-no questions (AY), and making a request for an object (RQ). This is in contrast with the variety of the speech act types used in JK who was able to evaluate an ongoing activity (19%), disagree (11%), express his intention (10%), and make a claim (4%), in addition to using ST, AW, AY, and RQ, at 2;5 (Cho, 1999). The discrepancy in the use of illocutional speech acts between the autistic children and JK supports the report in previous studies (e.g., Ball, 1978; Wetherby and Prutting, 1984), namely, that children with autism are impaired selectively in their use of speech acts particularly for commenting, showing off, and acknowledging the listener, among others.

Concerning the imitative and echolalic repetitions commonly observed in children with autism (Tager-Flusberg, 1999, p. 334), it was found in this study that J, T, and S

differed in their behavior in terms of the type and rate of the repetitions. J, for example, repeated his own utterances (RPS) more frequently than T and S (21% vs. 4%-8%), while S repeated his interlocuter's (RPI) more often than J and T (30% vs. 11%). T, on the other hand, repeated both types of repetitions least frequently of all (15% vs. 32%-38%).

It is to be noted that J also repeated his own utterances in response to a clarification question by his interlocuter (e.g., "Mwe?" 'What?') more frequently than two other children (17% vs. 2%-3%). It was, on the other hand, not clear to me whether he was actually attempting to help his interlocuter to understand better because he would simply repeat his previous utterance without varying his tone and intonation very much. If these instances in J's speech were to be taken as the RPS's, then the difference between the rate of the repetitions in the speech of J and that in T and S would become even larger (38% vs. 7%-10%).[5] If this is reasonable to assume, the high frequency of RPI's in J's speech probably demonstrates that J was interacting with than T and S. This is supported independently by the evidence seen above, namely that, while he discussed joint focus of attention less often than T and S, J brought up a topic irrelevant to the joint focus of attention more frequently than the two other children.

Null Subject Use and Topic Recoverability

As noted earlier, the proportions of null vs. overt subjects and old vs. new referents in the three Korean childrendo not seem to help us to determine whether their use of subjects relates to their sensitivity to topic recoverability. We saw in Table 8 that the majority of the null subjects produced by the three children correctly conveyed old referents with the proportions of 94% - 96%, no new information being referred to by a null subject. One may argue that this evidence points to a possibility that these children have learned to drop a subject properly to express an old referent.

An examination of the overallrate of null and overt subjects and that of overt subjects conveying new

information, however, leads us to speculate that the subject use in these Korean children may not reflect their sensitivity to topic recoverability. Two pieces of our evidence observed earlier are important to consider here: namely, first, that the null subjects were predominant in the speech of all three children (88%-91%), and second, that both the number of the total number of overt subjects and the number of overt subjects referring to new information were each extremely small across the three children (10/14, 3/10, and 1/5). The frequency of overt subjects in these autistic children is far lower than that in JK who produced overt subjects to convey old and new referents with the rate of 26% (21/80) and 73% (58/80), respectively, at 3;0. Given the lack of evidence on overt subjects and new information, it seems difficult to determine whether the Korean children's use of null vs. overt subjects reflects their knowledge of topic recoverability in conveying old vs. new referents. It may well be that these children were simply dropping subjects without being sensitive to topic recoverability, as is commonly observed during the earliest phase of the normally developing acquisition process before 1;6 in many children universally.

Null Subject Use and Subject-Modal Agreement

One of the purposes of this paper was to investigate whether or not the Korean autistic children would drop a subject if its referent is predictable due to the person-specificity of the modal suffixed on its co-occurring verb. Unfortunately, as it turned out, this question could not be explored in depth because, as seen earlier, the number of person-specific modals was very small (1% in J and T and no instance in S). This frequency of person-specific modals in these children is in sharp contrast with that in JK who produced a variety of person-specific modal suffixes with the proportion of 29% of the time (67/230) at 2;8 (Cho, 2000).

CONCLUSIONS

The findings reported in this study can be summarized as follows. First, it was found that all three autistic children's speech was largely repetitive and echolalic, unable to consistently interact communicatively on the ongoing joint focus of attention by introducing frequently irrelevant issues and topics, although they were observed to be able to

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5) The figures 38% in J and 6%-11% in T and S together are based on the addition of 21% (RPS) and 17% (CL) in J's speech on one hand, and the addition of 4% (RPS) and 3% (CL) in T's speech (thus, 8%) together with the addition of 8% (RPS) and 2% (CL) in S's speech (hence, 10%) on the other.

discuss joint focus of attention at least one third of the time. Second, this study could not determine whether or not the Korean children with autism were sensitive to topic recoverability and subject-modal agreement due to the extremely rare occurrences of overt subjects and person-specific modal suffixes. It was speculated that subject drop in these autistic children may not have any bearing on their pragmatic and grammatical knowledge yet, as is universally observed in typical children's earliest speech before 1;6.

In closing, I would like to note that J seemed to be more delayed than T and S in the development of communicative and linguistic capacities. As seen earlier, J was more repetitive than T and and S, failing to continue to talk in a topic-related way more frequently than T and S. J's speech also seemed to be more impaired morpho-syntactically than T's and S's in light of the fact that the MLU and the type-token ratio (TTR) in his speech were lower than T's and S's (MLU=1.76 (J) vs. 2.21 (T), TTR=.33 (J) vs. .55 (T) and .57 (S)). These findings may suggest that the deficit in joint focus of attention may relate to grammatical development although the nature of the relationship between the two, if any, remains to be explored in future research.

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