Comprehension and production of first and second person pronouns in autistic children

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Abstract

Abnormal use of personal pronouns is a central feature of autism. There are many studies on the use of personal pronouns in English-speaking autistic children but no corresponding systematic study in Cantonese. This study compared the use of first and second person pronouns in Cantonese-speaking autistic and normal children. The results revealed that the autistic group showed significantly more errors in the comprehension of the "I/You" pronouns. Though the autistic group showed comparable results in the correct production of personal pronouns with the normal group, reversal errors were observed in the autistic group only showing a deviant error pattern from the normal group. Also, the number of subjects with errors and the total errors obtained in the autistic group were much higher than the normal group. The overall result showed that autistic children have greater difficulties in the learning of personal pronouns.

Introduction

Autism was first described in 1943 by a psychiatrist called Leo Kanner. Since then, there were many studies on some of the special features and behaviors shown by the autistic children. Pronominal reversal, which means that the child substitutes "you" for "I" or vice versa, was one of the central features of autism (Aarons & Gittens, 1992) and was supported by past studies. Jordan (1989) had done an experimental study on comparing the understanding and use of first and second person pronouns in autistic, mentally retarded and normal children. The results revealed that most of the subjects were able to comprehend the personal pronouns among the test situations but significant differences were found between the autistic children and the two control groups on the production of personal pronouns. Most of the autistic children tended to use proper names to refer to themselves or the experimenter and some of them showed pronoun reversals or used the incorrect case pronouns such as "I" instead of "me". In the experimental study of Lee, Hobson & Chiat (1994), comparison was done on autistic and nonautistic mentally retarded children. The results again revealed that the autistic children performed near perfect in the comprehension of personal pronouns but some of them made pronoun reversals in the production task. Also, in the longitudinal study of Tager-Flusberg (1994), the author analyzed the spontaneous speech from 6 autistic children and 6 children with Down syndrome on their use of personal pronouns. The results showed that the Down syndrome children made no reversal errors while the autistic children made a significant number of reversal errors.

Personal pronouns required children to master a range of pragmatic, semantic, syntactic and morphological distinctions (Lee, Hobson & Chiat, 1994) before the children could correctly use them in everyday communication. Despite of the complex process, the personal pronouns are commonly developed in children in an early age. Oshima-Takane

(1992) studied a normally developing English-speaking child on his acquisition of personal pronouns. The results showed that the child used the first and second person pronouns at about 20 months and mastered the correct usage by 34 months. Xu & Min (1992) studied about the acquisition of personal pronouns in Mandarin-speaking children. The study reported that the children learned the first person pronoun when aged from 19 to 20 months, the second person pronoun when aged from 23 to 26 months and the third person pronoun when aged from 36 to 39 months. Chan & Mak (1994) studied about the acquisition of personal pronouns in Cantonese-speaking children. The study reported that the comprehension of the second person pronoun was achieved from 26 to 28 months before the first person pronoun which was from 32 to 34 months. The first and second person pronouns were produced correctly at the same time at around 32 to 34 months while the first person pronoun was developed at an earlier age. The studies reviewed have showed that the learning of the first and second person pronouns was developed in English, Mandarin and Cantonese-speaking children within similar period of time and they all used the two personal pronouns correctly before the age of three.

Whenever we talked about pronoun reversal, it was linked to autistic children immediately by many people. Though pronoun reversal was claimed to be rare in children's acquisition of personal pronouns (Oshima-Takane, 1992), it did has been reported in some normal language development children and some of the studies are shown in Table 1. These children were all normally developing children showing pronoun reversals when aged between 19 and 28 months each lasted for 3 to 6 months differently.

Table 1: *Normal language development children reported with pronoun reversal errors*

Author(s)	Language	Type of Study	Pronoun reversal
Chiat (1982)	English	Case study	Around 24 months
Schiff-Myers (1983)	English	Case study	From 19 to 25 months
Oshima-Takane (1992)	English	Case study	From 23 to 28 months
Xu & Min (1992)	Mandarin	Group study	From 20 to 23 months

By comparing the singular forms of the first and second person pronouns in English (Greenbaum, 1991) and Cantonese (Mattews & Yip, 1994) as shown in Table 2, some distinctions could be observed.

Table 2: *The first and second person pronouns in English and Cantonese*

	Personal Pronouns				Possessive Pronouns			
	First Person		Second Person		First Person		Second Person	
	Subjective case	Objective case	Subjective case	Objective case	Dependent function	Independent function	Dependent function	Independent function
English	I	Me	You		My	Mine	Your	Yours
Cantonese	"ngo" (I)		"nei" (you)		"ngo ge"		"nei ge"	

According to Mattews & Yip (1994), the pronouns in Cantonese only have a single form for both the subject and object positions with the first person singular "ngo" (I) corresponds to both "I" and "me" in English. Also, there are no separate forms in Cantonese for the possessive pronouns corresponding to the English my/mine and your/yours. The linking particle "ge" in Cantonese is used after the pronouns "ngo/nei" in expressing the possessive relation without changing the original forms of the first and second person pronouns. It was observed that the pronoun system in Cantonese is syntactically simpler than in English. However, despite of the differences in the English and Cantonese pronoun systems, the acquisition of first and second person pronouns in normal English-speaking children were comparable with the Cantonese-speaking children which has been mentioned previously. Unfortunately, comparison on the use of personal pronouns between English- and Cantonese-speaking autistic children was not available as there is no corresponding study in Cantonese.

The phenomenon of pronoun reversal has been explained as a result of children's imitation of others utterances (Fay, 1971; Schiff-Myers, 1983). In the case study of Schiff-Myers (1983), the author reported that the child learned to use personal pronouns

spontaneously with proper reference when the frequency of echolalia from the child was decreased. Besides echolalia, the author claimed that the pronoun reversal errors observed from the child also involved a psycholinguistic problem which reflects semantic confusion and this explanation was supported by Oshima-Takane (1992). It means that the personal pronouns were used with fixed reference by the child like the proper names in referring to the child and a particular person. Consistent errors where the child used "you" to refer to himself and "I" to refer to a certain person would be resulted. Finally, pronoun reversal was also explained as an inability to shift speech roles of oneself and others (Charney, 1980a, 1980b; Loveland, 1984; Tager-Flusbery, 1994). It means that the child does not understand the speech roles and the shifting point of reference with which the first and second person pronouns are used. Therefore, the child could not figure out that the pronoun "you" refers to the listener when the child is addressing other people and it refers to the child when he is addressed by others. This also happened in the first person pronoun.

In Hong Kong, though many people were getting more familiar with the term "autism", they were concerned mainly about the autistic children's behavioral problems rather than their language problems. Pronoun reversal was universally accepted as one of the language problems shown by autistic children and there are many studies on this topic in English but not in Cantonese. This study aimed to provide an overview of the use of personal pronouns in Cantonese-speaking autistic children in order to assess whether their use is similar or different from that in normal language development children. An experimental study was chosen because it could test the small children's control of fine linguistic distinctions of the personal pronouns. As shown in Lee, Hobson & Chiat (1994), in order to establish the abnormal patterns of pronoun usage in atypical groups of children in specific experimental settings, comparisons should be made between the atypical group and a control

group in the same settings. Therefore, this study was conducted with groups of autistic and normally developing children who were matched very closely for their verbal ability.

In Chan & Mak (1994), the Cantonese-speaking children achieved with over 90% correct comprehension and production of the first and second person pronouns when aged from 32 to 34 months. Therefore, the autistic children chosen were compared with the normal children with chronological age between three to four and they are matched by their verbal ability. As it is a critical period of time on children's acquisition of personal pronouns, clearer contrast could be observed if there is difference in the performance between the two groups of subjects. Any finding on the autistic children's abnormal use of personal pronouns may give insight on the intervention program.

The following research questions were considered in the study:

1. Will the autistic children produce differentially more errors in the comprehension and/or production of the first and second person pronouns than the normally developing children?
2. Among the errors obtained in the comprehension and production tasks, will the error pattern obtained in the autistic children different from those in the normally developing children?

From previous research, it is hypothesized that:

1. The autistic children would have difficulties in comprehending and producing the first and second person pronouns correctly with proper reference.
2. The autistic children would show more pronoun reversal errors while the normally developing children would use proper names instead when they have difficulties in using the personal pronouns.

Method

Subjects

Two subject populations, a group of autistic children and a group of normal children, participated in the experiments. The group of normal children was further divided into a normal comprehension group and a normal production group. There were 13 children in each group and all of them were native Cantonese speakers.

The autistic children included 10 boys and 3 girls aged from 7;03 to 15;00 with mean age of 11;01. They all attended special schools for mentally handicapped children and had been diagnosed as autistic before their enrollment in the schools. The severity of autism was screened again by the tester according to the criteria described by Schopler, Reichler & Renner (1988) on the behaviors observed from the children during the language test and the experimental tasks and they were revealed with mild to moderate autism.

Both the normal comprehension group and the normal production group included 5 boys and 8 girls. The children from the normal comprehension group were aged from 3;00 to 4;00 with mean age of 3;06 and the children from the normal production group were aged from 3;01 to 4;00 with mean age of 3;06. There were 14 normal children in the test and 12 of them belonged to both the normal comprehension and normal production groups. The forming of the normal comprehension and normal production groups were for easier matching with the autistic group on comparing their performance in the comprehension and production tasks separately. The normal children all attended day nursery schools and reported with no speech and language problems.

The language ability of each subject was measured by using the Reynell Developmental Language Scales (revised, Hong Kong version; Reynell, 1987). This test was

chosen because it is the only available test on the expressive language in Cantonese. The autistic group was matched with the normal comprehension group based on the receptive age and was matched with the normal production group based on the expressive age as measured by the Reynell Developmental Language Scales. The receptive and expressive age of the normal children was within -0.5 and +1.3 standard deviation for their respective chronological ages. The receptive and expressive age in each matched pair differed within 4 months.

Table 3 presents group means for the receptive age and the expressive age. Dependent t-tests were conducted to check for differences between the groups on the receptive and expressive age. Neither the receptive age, $t(12) = 1.13$, $p>0.2$, nor the expressive age, $t(12) = 0.06$, $p>0.9$, revealed significant group differences, demonstrating that the autistic and normal subjects were well matched initially before the test.

Table 3: *Group range and means for receptive and expressive age measured by the Reynell Developmental Language Scales*

Group	Autistic Group	Normal Comprehension Group	Normal Production Group
Receptive age	3;02 – 4;06 (3;09)	3;00 – 4;10 (3;11)	
Expressive age	3;00 – 4;03 (3;07)		3;00-4;06 (3;07)

Procedures

All subjects were tested individually in a 45-minutes session. The Reynell Developmental Language Scales (revised, Hong Kong version; Reynell, 1987) was administered first. The subjects then participated in the comprehension and production tasks. The tasks only test the children's use of the first and second person pronouns when the children were acting as the speaker and addressee but not in the onlooker position. The comprehension part of the experiment was conducted prior to the production part in order to

help to elicit the correct first and second person pronouns in the production task. No correction was given when the children made errors. The tester took written notes of both verbal and non-verbal answers during the test (See Appendix A for the recording sheets). Each subject was recorded by cassette recorder to be analyzed for relevant spontaneous productions and for information to supplement the written notes. The test method was mainly adapted from Chan & Mak (1994).

Comprehension task

Twenty commands were asked with 10 on the comprehension of the first person pronoun and 10 on the second person pronoun. Each command was presented whenever the tester could get the child's attention. No gestural or visual cue was provided to the child during the test. The order of the commands was presented randomly by the tester with the sentence form of "Point to my / your (objects / body parts)". The objects are shoe and clothes and the body parts are eye, ear, mouth, nose, neck, hand, foot and hair (See Appendix B for the exact commands in Cantonese).

The child was asked to label the objects and body parts from a picture (See Appendix C) first to make sure they know the names. A brief five-trial pretest using proper names instead of personal pronouns was carried to ensure that the child could follow the commands and to let the child know that he may have to point to both the tester and himself. The child was required to give gestural responses to the commands. Each command was asked twice with one using the pronoun "ngo ge" (my) and one using the pronoun "nei ge" (your). The possessive pronouns are used because they would be more natural and easier to be included in the comprehension task (Charney, 1980a). The child's response was noted immediately and later scored as right or wrong according to whether the child pointed to the correct

referent mentioned in the stimulus or not. The tester repeated the questions once if there was no response from the child. Every correct response was scored with 1 mark with a maximum of 10 marks for each personal pronoun. No mark was given for incorrect or no response.

Production Task

Ten objects (apple, banana, pear, grapes, orange, spoon, doll, rubber, hamburger and French fries) were used and the child was asked to name the objects first to make sure they know the names before the test was started. Twenty questions were asked in order to elicit the target verbal output from the child with 10 for the first person pronoun and 10 for the second person pronoun. The 10 objects were divided between the tester and the child with each one having 5 objects first. The tester then randomly named one object in order to get the child's attention to look at the target object. After that, the child had to pick up the object named by the tester if the object was on his side or the tester had to pick up the object if it is on the tester's side. The question of "Who has (the object)?" (See Appendix B for the exact questions in Cantonese) was presented to the child while the child or the tester was holding that particular object in order to elicit the verbal output of "ngo" (I) or "nei" (you) from the child. After 10 questions, the tester exchanged the objects with the child and 10 more questions were asked.

After the procedures, the same question with each object would be asked twice with once that the child was holding the object and once that the tester was holding the object. The tester repeated the question once when there was no response from the child. Binary choice ("I" or "You") was given as a prompt when the child had no response after the tester repeated the question once. The tester did not point or use eye-gaze to indicate the appropriate individual in any part of the experiment. Correct response is a pronoun indicating the correct

person in the child's perspective. Every correct production of the personal pronoun was scored with 1 mark with a maximum of 10 marks for each personal pronoun. No mark was given for incorrect pronoun production, with the use of proper name and no response.

Results

General Performance

Results of the study were found to be in agreement with the hypothesis that the autistic children would have difficulties in comprehending and producing the first and second person pronouns. The score of correct responses out of a maximum of 10 was tabulated for each group. The mean number of correct responses and standard deviations for each group are represented in Table 4. Overall speaking, the average scores in the autistic group were all lower than in the normal groups.

Table 4: *Means and standard deviations (in parentheses) of correct scores made by the subjects to the first and second person pronouns in the Comprehension (COMP "I"; COMP "You") and Production Tasks (PROD "I"; PROD "You"). Maximum average score for each pronoun in each task is 10.*

Group	Autistic	Normal Comprehension	Normal Production
Tasks	Mean Correct Score (Standard Deviation)		
COMP "I"	6.69 (3.66)	9.15 (2.15)	
COMP "You"	7.85 (2.94)	10.00 (0.00)	
PROD "I"	7.38 (3.48)		9.23 (2.77)
PROD "You"	4.46 (4.89)		6.92 (4.11)

The comprehension of the first and second person pronouns in the normal comprehension group and the production of the first person pronoun in the normal production

group were achieved with a percentage of correct responses over 90%. However, none of the personal pronouns were achieved in the comprehension or production in the autistic group.

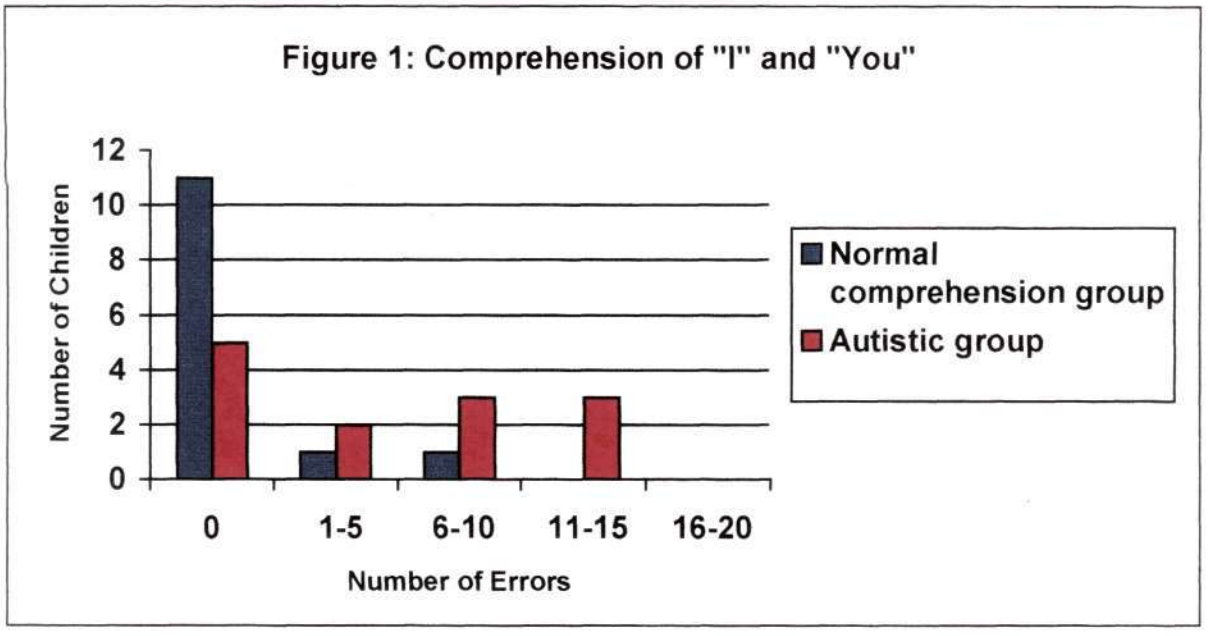
The number of correct responses in each category made by individuals within the respective matched pairs of the autistic and normal children were further tested for group differences by a nonparametric matched-pairs analysis (Wilcoxon Matched-pairs Signed Ranks Test). The results, in Table 5, confirmed that the normal comprehension group performed significantly better than the autistic group in the comprehension of the first and second person pronouns and the normal production group performed significantly better than the autistic group in the production of the first person pronoun. Though the average score of production of the second person pronoun in the normal production group was higher than in the autistic group, no significant difference was observed.

Table 5: *Summary table for the Wilcoxon Matched-pairs Signed Ranks Test in the comprehension and production of the first and second person pronouns*

	Tasks	Wilcoxon's T	N	p-level
Matched between the Autistic and Normal Comprehension Group	COMP "I"	3.50	9	< 0.05
	COMP "You"	0.00	6	< 0.05
Matched between the Autistic and Normal Production Group	PROD "I"	0.00	6	< 0.05
	PROD "You"	14.50	10	> 0.10

Comprehension Task

The results obtained in the comprehension task did not agree with the hypothesis that only the autistic children would show reversal errors as all the errors observed in the autistic and normal children were reversal errors. As shown in Figure 1, five of 13 autistic and 11 of 13 normal children achieved the maximum score of 10 correct responses for both the comprehension of the first and second person pronouns.



Among the remaining 8 subjects in the autistic group, 5 of them with errors in both the comprehension of first and second person pronouns, 2 of them with errors in the comprehension of first person pronoun and 1 of them with errors in the comprehension of second person pronoun. Among the remaining 2 subjects in the normal comprehension group, both of them with errors in the comprehension of first person pronoun. Table 6 and Table 7 summarized the percentage of each error type and the distributions of the errors in the comprehension task.

Table 6: *Number of subjects with errors and number of errors recorded in the comprehension of first and second person pronouns*

	Autistic Group	Normal Comprehension Group
No. of subjects with errors		
COMP "I"	7 (13)	2 (13)
COMP "You"	6 (13)	0 (13)
No. of reversal errors		
COMP "I"	100% (43/43)	100% (11/11)
COMP "You"	100% (28/28)	0% (0/0)

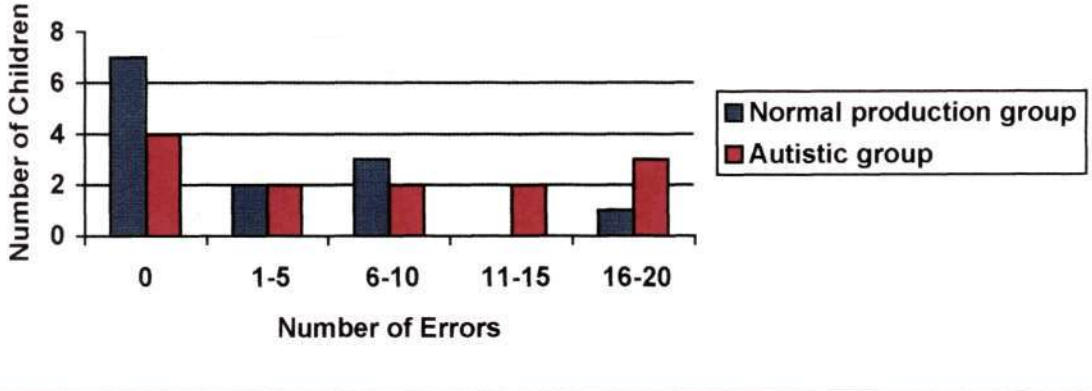
Table 7: *Comprehension: responses of those children who made errors*

	Target: comprehension of "I"		Target: comprehension of "You"	
	I	You	You	I
Autistic				
A2	3	7	2	8
A3	3	7	6	4
A4	3	7	7	3
A5	4	6	5	5
A12	6	4	9	1
A13	8	2	10	
A7		10	10	
A9	10		3	7
Normal				
C7	3	7	10	
C9	6	4	10	

Production Task

The results obtained in the production task agreed with the hypothesis that the autistic children would show reversal errors while the normal children would use proper names instead when they have difficulties in using the personal pronouns. As shown in Figure 2, four of 13 autistic and 7 of 13 normal children achieved the maximum score of 10 correct responses for both the production of the first and second person pronouns.

Figure 2: Production of "I" and "You"



Among the remaining 9 subjects in the autistic group, 7 of them with errors in both the production of first and second person pronouns and 2 of them with errors in the production of second person pronoun. Among the remaining 6 subjects in the normal group, one of them with errors in both the production of first and second person pronouns and 5 of them with errors in the production of second person pronoun. Table 8 and Table 9 summarized the percentage of each error type and the distributions of the errors in the production task. Among the errors observed in the production task, though proper names were used in both groups, reversal errors were observed in the autistic group only.

Table 8: *Number of subjects with errors and number of errors recorded in the production of first and second person pronouns*

	Autistic Group	Normal Production Group
No. of subjects with errors		
PROD "I"	7 (13)	1 (13)
PROD "You"	9 (13)	6 (13)
No. of errors on PROD "I"	34	10
Reversal	51.88% (19/34)	0% (0/0)
Proper Name	26.47% (9/34)	100% (10/10)
Others	17.65% (6/34)	0% (0/0)
No. of errors on PROD "You"	72	40
Reversal	51.39% (37/72)	0% (0/0)
Proper Name	41.67% (30/72)	100% (40/40)
Others	6.94% (5/72)	0% (0/0)

"Others" included repeating examiner's questions and incorrect use of proper names.

Table 9: *Production: responses of those children who made errors*

	Target: production of "I"					Target: production of "You"				
	I	Own name	Tester's name	You	Repeat test Qs	You	Tester's name	Own name	I	Repeat test Qs
Autistic										
A1	3			7					10	
A2	9			1		8			2	
A3	0	2	1	2	5		5	2		3
A7	7			3			7		3	
A8	3			7			8		2	
A9	9			1		9			1	
A10	5			5					10	
A5	10					1			9	
A11	10						10			
Normal										
P3		10					10			
P4	10						10			
P5	10					8	2			
P9	10					7	3			
P10	10					2	8			
P13	10					3	7			

Discussions

General Performance

From the performance in the normal groups, the results were comparable with those obtained in Chan & Mak (1994) in their study about the acquisition of personal pronouns in Cantonese-speaking children. From their results, the children reached the 90% criteria in the comprehension and production of the first and second person pronouns at the age of 32 to 34 months. In this study, the normal children were aged from 36 to 48 months and they managed to maintain the 90% criteria in the comprehension of first and second person pronouns and in the production of first person pronoun. However, the autistic children who were matched

with these normal children by their verbal ability at this age range (36 to 48 months) did not achieve the 90% criteria in either the comprehension or the production of the first and second person pronouns.

By looking at the comprehension and production tasks separately, it is observed that the comprehension of second person pronoun is better than first person pronoun while the production of first person pronoun is better than second person pronoun in both the autistic and normal groups. By arranging the performance of the four tasks with decreasing mean scores in the autistic group, it can observed that the autistic children performed the best in the comprehension of "You" followed by production of "I", comprehension of "I" and production of "You". Though the differences between the tasks are not significant, the trends observed had supported the person-in-speech-role-referring theory suggested by Charney (1980a) in explaining the acquisition of personal pronouns in children. The theory states that the pronouns referring the child in each speech role should be easier for the child to master first. It means that, when the child acts as a listener, the comprehension of the pronoun "you" should be easier as it refers to the child in this speech role. However, when the child acts as a speaker, the production of the pronoun "I" should be easier then as it refers to the child in this speech role.

Chiat (1981) had argued about Charney's (1980a) theory in explaining the acquisition of the personal pronouns. The author argued that the discrepancy between the comprehension and production of the second person pronoun should be explained by the general lag between comprehension and production observed in the acquisition and use of linguistic and non-linguistic knowledge. Also, the pronoun "I" produced in children in an early age were just unanalyzed linguistic units embedded in the children's utterances. In this study, as the production of the first and second person pronouns were elicited from the child

independently, the possibility that the first person pronoun was used by the child as an unanalyzed linguistic unit could be ruled out. Therefore, Charney's (1980a) explanation was applicable in this study. Besides, the results from Chan & Mak (1994) in studying the acquisition of first and second personal pronouns in Cantonese-speaking children also agreed with Charney's (1980a) person-in-speech-role-referring theory.

The results in the study showed that the autistic children followed the same route of the normal language development children in acquiring the first and second person pronouns but were developmentally delayed in the acquisition process. The autistic children were significantly delayed in acquiring the comprehension of the first and second person pronouns and the production of the first person pronoun when compared with the normal children in this study. By following the acquisition process suggested by Charney (1980a), the children in the normal production group would master the production of the second person pronoun before the autistic children. It is because the autistic children in the study had to master the comprehension of "I/you" and the production of "I" first before producing the second person pronoun correctly.

Comprehension Task

The autistic children did produce differentially more errors in the comprehension of the first and second person pronouns than the normal children. However, among the errors obtained in the two groups, only reversal errors were observed. It was mainly due to the design of the test. During the comprehension task, it was observed that the children would point to the object or body part randomly following the commands even though they did not understand the personal pronouns. As only the child and the tester were involved in the pointing task, only correct or reversal error would be recorded if the child did carry out the pointing action. Therefore, it would be inappropriate to suggest that the autistic children were

more vulnerable in making pronoun reversal errors than the normally developing children from their performance in the comprehension task.

The results obtained in this study were different from previous studies. In the study of Jordan (1989), the autistic children showed complete understanding of "you" and the majority of autistic children also showed full understanding of "me" in the comprehension task. Lee, Hobson & Chiat (1994) revealed that the autistic children did not have problems in the comprehension of the first and second person pronouns in their studies. However, the autistic children in this study did produce significantly more errors in both the comprehension of the first and second person pronouns. This may be due to the autistic children involved in the previous studies were with relatively higher verbal mental age than the autistic children involved in this study.

One of the autistic children (A9) made errors in the comprehension of the second person pronoun only which contradict the person-in-speech-role-referring theory (Charney, 1980a) as it claimed that the comprehension of the second person pronoun is easier than the first person pronoun. It may suggest that some of the autistic children are developmentally deviant rather than developmentally delayed in the acquisition of personal pronouns. However, a longitudinal study on autistic children's acquisition of personal pronouns would be more appropriate in answering this question.

Production Task

Though the production of the second person pronoun in the normal production group did not differ significantly from the autistic group, differences were found in the error pattern shown by the normal and autistic children. From the errors obtained, the normal production group used proper names instead of correct personal pronouns in indicating the person. This

was also observed in some of the autistic children. However, in the autistic group, besides the use of proper names, over half of the errors observed in the autistic children were pronoun reversals errors in both the production of the first and second person pronouns.

In adults, it may be inappropriate for a speaker to use the non-pronominal forms in reference to himself or his addressee in response to the questions asked in the production task. However, it is understandable that why some children prefer to use the proper names instead of the personal pronouns. In Jordan (1989), because of the problems in the correct assignment of pronouns, many adults used the proper names to refer to the child and in self-reference when talking to children. This strategy was used by many people in talking to autistic or young normally developing children which may suggest why some autistic and normal children showed a preference to use the non-pronominal forms in indicating himself or the addressee. Besides, according to Oshima-Takane (1988), children begin using proper names or kinship terms to refer to another person long before they begin using first person pronouns or their own names to refer to themselves. Then, the children used the first person pronoun to refer to themselves and continue to use the proper names or kinship terms to refer to the addresses until they begin using the second person pronoun. It agreed with the results obtained in this study that the use of proper names in replacing the second person pronoun were more common than in replacing the first person pronoun in both the autistic and normal group. It also showed that the normal children are better than the autistic children in using the proper names to resolve the problems when they have difficulties in assigning the personal pronouns correctly in indicating other people or themselves.

When looking at the responses of those children who made errors in the production task in Table 9, it was noted that the reversal errors observed in the autistic children were

produced alongside correct pronoun usage and were included errors of reference to both self and others. Therefore, the cause of pronoun reversal errors observed in this study was seemed more suitable be explained by a confusion between the speaker and listener role relations (Chiat, 1986; Tager-Flusberg, 1994) than a cause of children's imitation of others utterances (Fay, 1971; Schiff-Myers, 1983) or a semantic problem (Schiff-Myers, 1983; Oshima-Takane, 1992) because the personal pronouns were elicited from the child as an independent linguistic unit in this study and no consistent reversal errors were observed.

Though only reversal errors were observed in the autistic children but not in the normal children, it did not mean that the autistic children showed a deviant pattern in the acquisition of personal pronouns. It was because Chiat (1982) had suggested that the process of pronoun reversal is not different in kind from the normal processes of language development but only close to the limits of normal processing as pronoun reversal errors were also observed in some normally developing children. However, the autistic children are severely delayed in passing through the stage of confusion over personal pronoun production which is a normal stage in the development of personal deixis for some children (Jordan, 1989).

Finally, one of the autistic children (A3) used the proper names incorrectly by using her own name in indicating the tester and the tester's name in indicating herself. Also, she failed to response to the tester's questions sometimes by just repeating what the tester had said. It was suggested that the child did not understand the test questions and the errors produced were not resulted from the child's confusion between the speaker and listener role relations.

Clinical Implications

As mentioned in the previous paragraphs, the presence of pronoun reversal errors was due to the confusion about speaker and listener role relations. Oshima-Takane (1988) suggested that it was mainly due to the children's failure to observe the pronouns in speech addressed to another person. Oshima-Takane & Benaroya (1989) then suggested that the intervention could focus on enhancing the autistic children's attention to utterances directed to others. It is because in the speech not addressed to the children, they often have opportunities to observe that the second person pronouns refer to a person other than themselves and that the first and second person pronouns reciprocate each other. Thus, the relationship between the pronouns and the speech roles may be better understood when the children observe other people talking to each other. However, as the autistic children may be less attentive to the parental speech addressed to another adult since the utterances used in the speech are usually longer and more complex than those addressed to children. Oshima-Takane (1988) suggested that the child's attention could be increased by having the child as one of the participants in the conversation. Also, some nonverbal behavior such as pointing or gesture can be used to attract the child's attention following the speech addressed to another person. Finally, the clinician can invite the autistic children's older sibling as one of the other participants whose utterances are less complex than the adults so that the autistic children can be easier to follow others' speech.

Limitations

The experimental study could provide information about the autistic children's patterns of pronoun usage within the test situation only but no spontaneous data about the natural process of pronoun acquisition in the autistic children could be obtained. Also, the study did not investigate the effect of the severity of autism to the autistic children's use of

personal pronouns which is worth considering. Finally, the limited number of subjects involved in the study may not be representative enough to include all possible error patterns that would be observed in the Cantonese-speaking autistic children.

Future Research

A longitudinal study on the acquisition of personal pronouns in Cantonese-speaking autistic children is recommended as it can provide more valuable information in answering the question that whether the acquisition of personal pronouns in autistic children is a delayed or a deviant process from normal children. Also, a similar experimental study could be carried out again to investigate how the severity of autism is related to the autistic children's use of personal pronouns.

Conclusions

In the series of comprehension and production tests, the autistic children did produce differentially more errors in the comprehension of first and second person pronouns than the normal children. Also, only reversal errors were observed in the autistic children in the production task while both the autistic and normal children would use proper names when they have difficulties in using the personal pronouns. This study has confirmed the problems of Cantonese-speaking autistic children with person deixis when comparing their performance to normal language development children. Though not all autistic children are with problems in the acquisition of personal pronouns, they are with higher incidence in suffering from prolonged non-resolution of pronouns in their development of personal pronouns. Finally, it was concluded that the autistic children are developmentally delayed in the acquisition of personal pronouns than the normal children.

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SCORING SHEET

Subject Name : _____
Subject Number : _____
Date of Birth / Sex : _____
Date of Test : _____
School : _____
Reynell Developmental Language Scales
Receptive Age : _____
Expressive Age : _____

Comprehension of 'I'

		Incorrect		
Stimuli	Correct	Reverse	No Response	Remarks
鞋				
衫				
眼				
耳				
口				
鼻				
頸				
手				
腳				
頭髮				
Scores				

Comprehension of 'You'

		Incorrect		
Stimuli	Correct	Reverse	No Response	Remarks
鞋				
衫				
眼				
耳				
口				
鼻				
頸				
手				
腳				
頭髮				
Scores				

Production of 'I'

		Incorrect			
Objects	Correct	Reverse	Proper Name	No response	Remarks
橙					
蘋果					
香蕉					
雪梨					
提子					
薯條					
匙羹					
公仔					
擦膠					
漢堡包					
Scores					

Production of 'You'

		Incorrect			
Objects	Correct	Reverse	Proper Name	No response	Remarks
橙					
蘋果					
香蕉					
雪梨					
提子					
薯條					
匙羹					
公仔					
擦膠					
漢堡包					
Scores					

Comprehension Task

The 20 commands for the comprehension of the first and second person pronouns

	Comprehension of "I"	Comprehension of "You"
1	指下我隻鞋	指下你隻鞋
2	指下我件衫	指下你件衫
3	指下我隻眼	指下你隻眼
4	指下我隻耳	指下你隻耳
5	指下我個口	指下你個口
6	指下我個鼻	指下你個鼻
7	指下我條頸	指下你條頸
8	指下我隻手	指下你隻手
9	指下我隻腳	指下你隻腳
10	指下我的頭髮	指下你的頭髮

Production Task

The 20 questions for the production of the first and second person pronouns

	Production of "I" – asked when the child is holding the object	**Production of "You"** – asked when the tester is holding the object
1	邊個有橙？	邊個有橙？
2	邊個有蘋果？	邊個有蘋果？
3	邊個有香蕉？	邊個有香蕉？
4	邊個有雪梨？	邊個有雪梨？
5	邊個有提子？	邊個有提子？
6	邊個有薯條？	邊個有薯條？
7	邊個有匙羹？	邊個有匙羹？
8	邊個有公仔？	邊個有公仔？
9	邊個有擦膠？	邊個有擦膠？
10	邊個有漢堡飽？	邊個有漢堡飽？