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ABSTRACT

This investigation compared self-talk use in five preschool autistic children (ages 57 to 86 months) and in matched chronological age and mental age peer groups. Videotape recordings of the children during free play with and without an adult were coded for the following self-talk categories: (1) private, mastery speech; (2) stereotypic repetitions; (3) word play; (4) self-regulative speech; (5) utterances; and (6) mouthing of words. All three groups exhibited fewer instances of self-talk in the presence of adults than without an adult. The autistic children demonstrated a similar pattern of self-talk with adults as did their control peers. Autistic children showed less consistency in behaviors between the adult present and adult absent situation than did controls; this was not felt to reflect their lack of response to adults in their environment, but rather to the high production of utterances and private mastery talk when they were not with an adult. (Contains six figures/tables.) (JDD)

SELF TALK IN NORMAL AND AUTISTIC CHILDREN

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RUNNING HEAD: Self Talk

Abstract

This investigation compared self-talk use in preschool autistic children and in matched CA and MA peer groups. Videotapes taken of the children in the same day care centre were coded for self talk: a) private, mastery speech , b) stereotypic repetitions, c) word play and d) self-regulative speech e) utterances and f) mouthing of words. All three groups elicited fewer instances of self talk in the presence of adults than without an adult. The autistic children demonstrated a similar pattern of self talk with adults as their control peers. The findings were discussed in terms of intervention during adult absent play.

The purpose of this investigation was to explore the nature and use of different types of self talk in normal and autistic children. A stereotypic representation of autism would include echolalia as one form of self talk. In normal development self-talk is viewed from three primary perspectives. First, self-talk serves as private speech which is non-communicative, but which aids the child in working through problems (Vygotsky, 1962). Second, word-play may provide a pleasure in of itself, as the child acquires new abilities. Third, self-regulative speech permits a child to restate to self instructions from others. Rogers & Pennington (1991) indicate that the autistic child's understanding of words is limited to association with environmental events and happen-stance. Although language usage has been found wanting in the autistic child, autistic children appear to demonstrate some knowledge of the self and other (Roger & Pennington, 1991). A basic question to understanding autistic development is whether it is a delay more characteristic of younger, normal children. Thus, this investigation compared self-talk use in autistic children as compared to its usage in matched verbal MA and CA peers. Since environmental conditions may impact on language production the children were observed in free play with adult and free play without adult.

Method

Five children formally classified with Infantile Autism (Pervasive Developmental Disorders) attended a provincially funded day care center and were integrated fully into a regular program. Each of these children were matched with two children in the day care center on the basis of CA or MA. In addition, gender, birth order and SES were used in matching. The mean age of the autistic children was 69.6 mths., SD = 11.6 mths. (range 57-86 mths.) the mean age of the CA match group was 63.2 mths., SD = 8.2 mths. (range 57-88 mths.), and the average age of the MA match was 41.8 mths., SD = 8.8 mths. (range 32-54 mths). The children in the autistic group had a mean MA of 34.6 mths., SD = 31.9 mths (range 0-64) on the PPVT-R (Dunn & Dunn, 1981). Their matched CA controls had a mean MA of 76.2 mths. , SD = 8.6 (range 57-88). The MA group had a mean age of 45.4, SD = 15.7, (27-60 mths).

The children attended the same day care centre which had 48 children and 16 staff. Although children were placed by CA into groups for eating and structured activities, all the children were exposed to a similar program, physical environment, equipment and peer group. The five children who were classified as autistic each had a primary caregiver who monitored the activity of the child throughout the day. All of the children had been attending the day care for a minimum of six months.

Each child was videotaped in free play for 10 minutes a) without an adult and b) with an adult. The children were videotaped randomly with the conditions being counterbalanced. The videotapes were coded according to a revised version of Kerr (1976). Inter-rater agreement between two skilled coders was 92%. A third coder reviewed the tapes when there were instances of disagreement and further review of the tapes occurred.

Results

The instances of self talk were coded as a) private, mastery speech , b) stereotypic repetitions, c) word play, d) self-regulative speech e) utterances, and f) mouthing or movement of lips . The total number of each self talk category was analyzed. An additonal category of mouthing objects was added to the analyses as shown in Figures 1 and 2. The descriptive statistics for the adult present and adult absent groups are provided in Tables 1 and 2.

Insert Tables 1, 2. amd 3 about here

Partial correlations for all the self talk categories are given in Table 3. Analysis for each group produced significant correlations. In the CA group, utterances with an adult were related to mouthing words in the adult absent condition ($r = -.91$, $p < .03$), stereotypic vocalizations without an adult present ($r = .85$, $p < .05$), and self-regulatory speech without an adult ($r = .85$, $p < .05$). Use of private mastery with an adult was related to production of utterances without an adult ($r = .91$, $p < .03$). Word play with adult and word play without an adult ($r = .88$, $p < .05$), word play and stereotypic productions without an adult ($r = .95$, $p < .008$), and

word play without an adult and self regulatory responses without an adult ($r = .95$, $p < .008$) were correlated. For the MA group in the adult present situations, utterances were associated with mouthing words ($r = .99$, $p < .0003$). For the autistic group with adult present, utterances and stereotypic responses($r = .88$, $p < .05$), stereotypic responses and mouthing objects ($r = .99$, $p < .0003$), self regulatory and private mastery speech ($r = .99$, $p < .0003$) were related.Utterances without an adult were associated with stereotypic responses with an adult ($r = .88$, $p < .05$) and mouthing words with an adult ($r = .98$, $p < .001$).

Insert Figures 1, 2, and 3

The autistic children produced more utterances than the other two groups, $F(2, 12) = 4.2$. $p = .04$. This difference was primarily due to the difference between the autistic children and the CA controls (Bronferroni/Dunn critical difference = 2.7, p = .07). There were no overall differences in amount of self talk amongst the groups.

There were no differences in the number of behaviors displayed in each self talk category in the presence of adults. Without an adult present there was a slight tendency towards a difference in the display of behaviors (Krusal-Wallis test, $df = 2$, $H = 4.9$, $p < .08$). As seen in Figure 3, private mastery tended to occur more frequently without an adult present. Both normal and autistic children evidenced less self talk when with an adult than when engaged in free play without an adult, and specifically use less private and less self-regulative speech.

Conclusion

There were no differences in children's self talk when they were with an adult. In the presence of an adult, the child more often may permit the adult to guide activity and engage in interactive problem-solving and socializing. The finding that autistic children showed less consistency in behaviors between the adult present and adult absent situation than their MA and CA controls may not reflect their lack of response to the adults in their environment, but rather their high production of utterances and private mastery talk when they are not with an adult.

The autistic children produced no self mastery talk when with the adult, but engaged in such talk when they were not with an adult. Due to the high frequencies of utterances and private mastery talk, the autistic children had the highest overall self talk production of the three groups when an adult was absent. The role and function of these behaviors is not clear. It is suggested from the findings that utterances produced when an individual is without an adult may replace stereotypic response, mouthing of objects and words when the autistic child is with an adult. These latter behaviors may be less intrusive on the adult and, therefore, receive fewer interventions.

Further analyses are being conducted on the nature of child's activity when producing such behaviors. The utterances may be associated with unfocused motor activity. Whereas, the private mastery speech may aid the child in problem solving activities. In addition, the statements must be restricted due to the sample size.

This study suggests that autistic children do demonstrate a similar pattern of self talk with adults as peers in a fashion similar to their MA and CA control. However, it also demonstrates that this similar pattern does not extend to situations where the adult is not present. At an applied level, technological mechanisms should be promoted for the use of private and self regulative speech by autistic children while alone or with peers.

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FIGURE 1. SELF TALK ACTIVITIES IN PLAY WITH ADULT

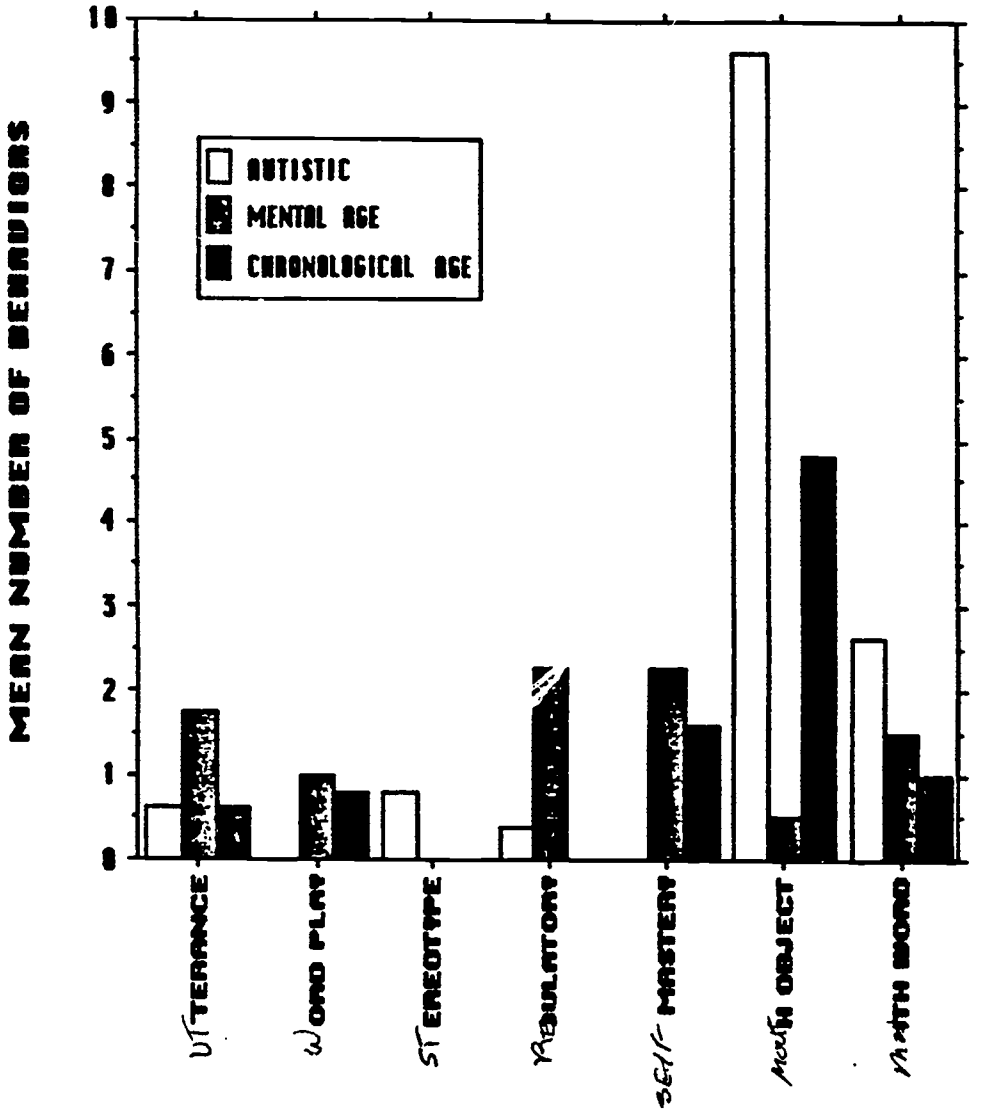

FIGURE 2. SELF TALK ACTIVITIES IN PLAY WITHOUT ADULT

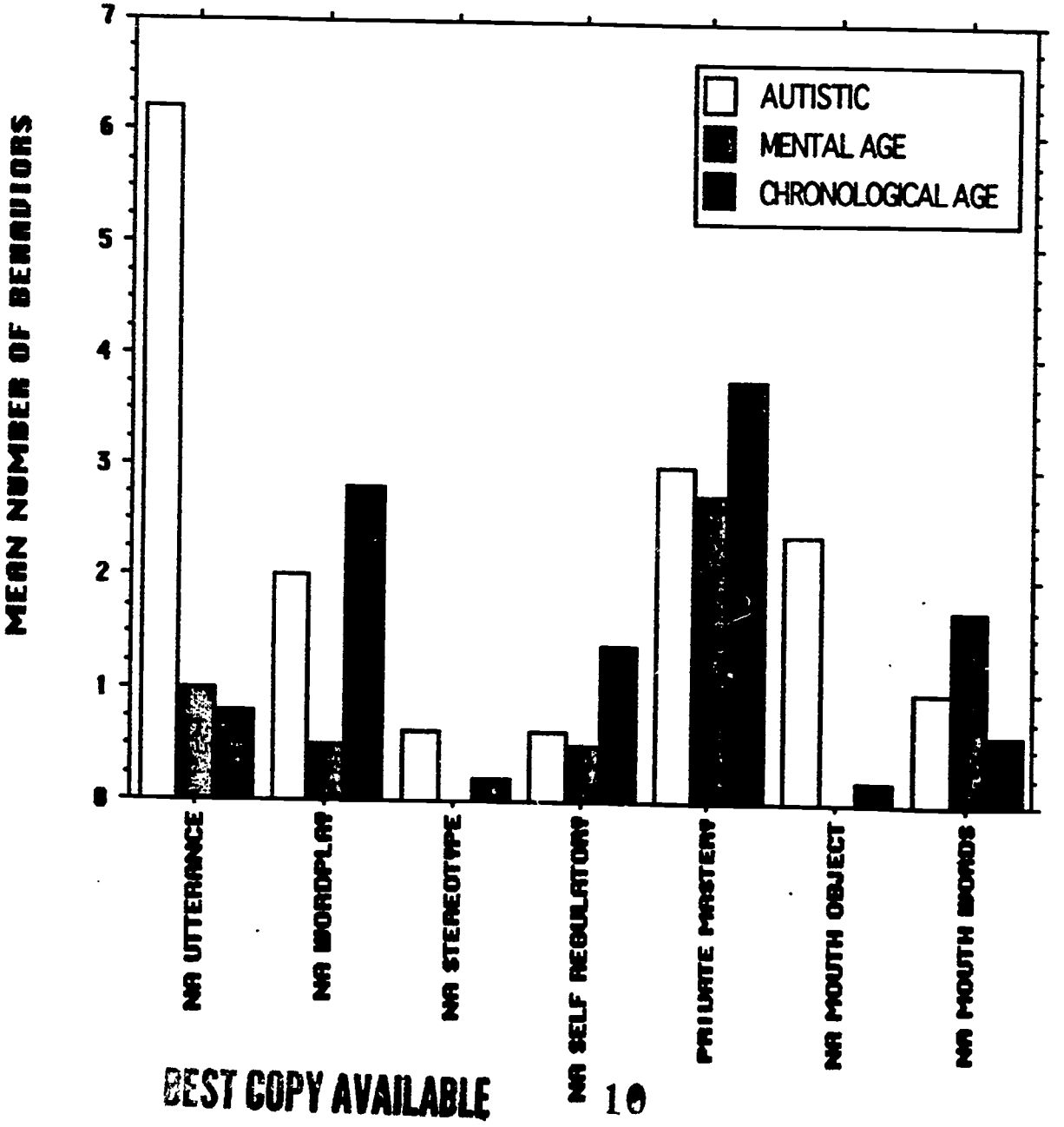

FIGURE 3. MEAN NUMBER OF CATEGORY OCCURRENCES WITHOUT ADULT

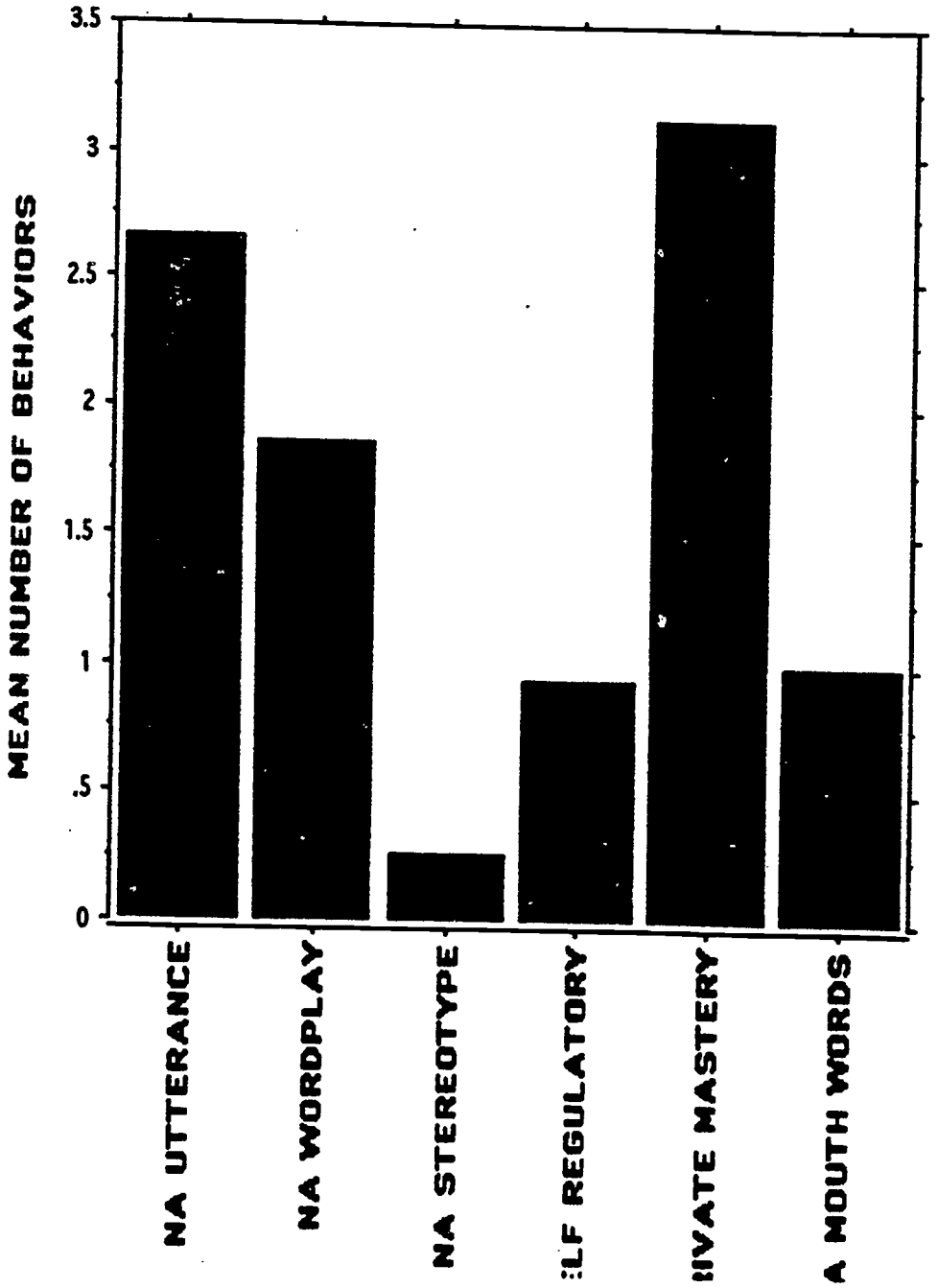

TABLE 1. DESCRIPTIVE STATISTICS FOR CATEGORIES BY GROUP FOR ADULT PRESENT

	Mean	Std. Dev.	Std. Error	Count	Minimum	Maximum	# Missing
UTTERANCE, Total	1.133	1.767	.456	15	0	6.000	0
UTTERANCE, AUTISTIC	.600	.894	.400	5	0	2.000	0
UTTERANCE, MENTAL AGE	2.200	2.683	1.200	5	0	6.000	0
UTTERANCE, CHRONOLOGICAL AGE	.600	.894	.400	5	0	2.000	0
WORDPLAY, Total	.600	.910	.235	15	0	3.000	0
WORDPLAY, AUTISTIC	0	0	0	5	0	0	0
WORDPLAY, MENTAL AGE	1.000	1.225	.548	5	0	3.000	0
WORDPLAY, CHRONOLOGICAL AGE	.800	.837	.374	5	0	2.000	0
STEREOTYPIC, Total	.267	1.033	.267	15	0	4.000	0
STEREOTYPIC, AUTISTIC	.800	1.789	.800	5	0	4.000	0
STEREOTYPIC, MENTAL AGE	0	0	0	5	0	0	0
STEREOTYPIC, CHRONOLOGICAL AGE	0	0	0	5	0	0	0
SELFREGULATORY, Total	.733	1.710	.441	15	0	6.000	0
SELFREGULATORY, AUTISTIC	.400	.894	.400	5	0	2.000	0
SELFREGULATORY, MENTAL AGE	1.800	2.683	1.200	5	0	6.000	0
SELFREGULATORY, CHRONOLOGICAL AGE	0	0	0	5	0	0	0
PRIVATE MASTERY, Total	1.200	2.178	.562	15	0	8.000	0
PRIVATE MASTERY, AUTISTIC	0	0	0	5	0	0	0
PRIVATE MASTERY, MENTAL AGE	2.000	3.391	1.517	5	0	8.000	0
PRIVATE MASTERY, CHRONOLOGICAL AGE	1.600	1.517	.678	5	0	4.000	0
MOUTH WORD, Total	1.867	2.748	.710	15	0	8.000	0
MOUTH WORD, AUTISTIC	2.600	3.715	1.661	5	0	8.000	0
MOUTH WORD, MENTAL AGE	2.000	2.828	1.265	5	0	6.000	0
MOUTH WORD, CHRONOLOGICAL AGE	1.000	1.732	.775	5	0	4.000	0

TABLE 2. DESCRIPTIVE STATISTICS FOR CATEGORIES BY GROUP FOR NO ADULT PRESENT

	Mean	Std. Dev.	Std. Error	Count	Minimum	Maximum	# Missing
NA UTTERANCE, Total	2.667	4.530	1.170	15	0	17.000	0
NA UTTERANCE, AUTISTIC	6.200	6.870	3.072	5	1.000	17.000	0
NA UTTERANCE, MENTAL AGE	1.000	.707	.316	5	0	2.000	0
NA UTTERANCE, CHRONOLOGICAL AGE	.800	.837	.374	5	0	2.000	0
NA WORDPLAY, Total	1.867	2.560	.661	15	0	9.000	0
NA WORDPLAY, AUTISTIC	2.000	2.550	1.140	5	0	6.000	0
NA WORDPLAY, MENTAL AGE	.800	.837	.374	5	0	2.000	0
NA WORDPLAY, CHRONOLOGICAL AGE	2.800	3.633	1.625	5	0	9.000	0
NA STEREOTYPE, Total	.267	.594	.153	15	0	2.000	0
NA STEREOTYPE, AUTISTIC	.600	.894	.400	5	0	2.000	0
NA STEREOTYPE, MENTAL AGE	0	0	0	5	0	0	0
NA STEREOTYPE, CHRONOLOGICAL AGE	.200	.447	.200	5	0	1.000	0
NA SELF REGULATORY, Total	.933	1.870	.483	15	0	7.000	0
NA SELF REGULATORY, AUTISTIC	.600	.894	.400	5	0	2.000	0
NA SELF REGULATORY, MENTAL AGE	.800	1.095	.490	5	0	2.000	0
NA SELF REGULATORY, CHRONOLOGICAL AGE	1.400	3.130	1.400	5	0	7.000	0
NA PRIVATE MASTERY, Total	3.133	4.051	1.046	15	0	13.000	0
NA PRIVATE MASTERY, AUTISTIC	3.000	5.612	2.510	5	0	13.000	0
NA PRIVATE MASTERY, MENTAL AGE	2.600	3.130	1.400	5	0	8.000	0
NA PRIVATE MASTERY, CHRONOLOGICAL AGE	3.800	3.899	1.744	5	0	8.000	0
NA MOUTH WORDS, Total	1.000	.926	.239	15	0	3.000	0
NA MOUTH WORDS, AUTISTIC	1.000	.707	.316	5	0	2.000	0
NA MOUTH WORDS, MENTAL AGE	1.400	1.342	.600	5	0	3.000	0
NA MOUTH WORDS, CHRONOLOGICAL AGE	.600	.548	.245	5	0	1.000	0

TABLE 3. PARTIAL CORRELATIONS

	UTTER...	WORD...	STER...	SEL...	PRIVA..	MOUTH...	MOU...	NA U...	NA ...	NA S...	NA S...	NA P...	NA ...	NA M...
UTTERANCE	1.000	.965	-.655	.761	-.191	.989	-.982	-.870	.647	.972	-.654	.859	-.110	.374
WORD PLAY	.965	1.000	.560	-.816	.268	-.969	.967	.822	-.748	-.980	.767	-.909	.220	-.254
STEREOTYPIC	-.655	.560	1.000	.330	-.201	.671	-.572	-.758	.015	.535	-.007	.304	.488	.931
SELF REGULATORY	.761	-.816	.330	1.000	.566	-.785	.748	.709	-.780	-.802	.761	-.786	.294	-.068
PRIVATE MASTERY	-.191	.268	-.201	.566	1.000	.304	-.168	-.453	.343	.233	-.290	.243	.090	.137
MOUTH WORD	.989	-.969	.671	-.785	.304	1.000	.973	.905	-.665	-.972	.667	-.871	.092	-.391
MOUTH OBJECT	-.982	.967	-.572	.748	-.168	.973	1.000	-.800	.724	.990	-.739	.882	-.195	.262
NA UTTERANCE	-.870	.822	-.758	.709	-.453	.905	-.800	1.000	.434	.803	-.420	.685	.134	.593
NA WORDPLAY	.647	-.748	.015	-.780	.343	-.665	.724	.434	1.000	-.780	.972	-.816	.521	.317
NA STEREOTYPE	.972	-.980	.535	-.802	.233	-.972	.990	.803	-.780	1.000	.796	-.914	.247	-.215
NA SELF REGULA...	-.654	.767	-.007	.761	-.290	.667	-.739	-.420	.972	.796	1.000	.828	-.606	-.331
NA PRIVATE MAS...	.859	-.909	.304	-.786	.243	-.871	.882	.685	-.816	-.914	.828	1.000	.437	.014
NA MOUTH WORDS	-.110	.220	.488	.294	.090	.092	-.195	.134	.521	.247	-.606	.437	1.000	-.668
NA MOUTH OBJECT	.374	-.254	.931	-.068	.137	-.391	.262	.593	.317	-.215	-.331	.014	-.668	1.000