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THE EFFECTS OF CHILD MALTREATMENT ON LANGUAGE DEVELOPMENT

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Abstract—The separate effects of child neglect, abuse, and their interaction upon language development as measured by the Preschool Language Scale were examined in four groups of children ($n = 79$) in a quasi-experimental design. There were three groups of maltreated subjects, all drawn from a treatment center: an abused only group ($n = 13$), a neglected only group ($n = 7$), and an abused and neglected group ($n = 31$); a non-maltreated group ($n = 28$) was drawn from a day care center. Abuse, neglect, and their interaction were used to predict both auditory comprehension and verbal ability as separate criteria in two stepwise multiple regression equations, where the variance attributable to gender and mother's status on Aid to Dependent Children had been removed. Child neglect was found to predict significantly both auditory comprehension and verbal ability. Neither child abuse nor the interaction between abuse and neglect significantly predicted either dependent variable. These findings suggest that child neglect may be the critical type of maltreatment associated with language delay.

Résumé—Dans quatre groupes d'enfants ($n = 79$) on a examiné, dans un cadre quasi expérimental, les effets distincts de la négligence et du mauvais traitement sur le développement du langage, ainsi que l'interaction de ces deux facteurs. On les a évalués en utilisant la "Preschool Language Scale." Les enfants, tous trouvés dans un centre de traitement, ont été répartis en 3 groupes: un groupe ayant souffert uniquement de mauvais traitements ($n = 13$), un groupe ayant souffert uniquement de négligence ($n = 7$) et un groupe ayant souffert de tous les deux ($n = 31$). Un groupe n'ayant souffert d'aucun mauvais traitement ($n = 28$) a été utilisé comme contrôle. Le mauvais traitement, la négligence et l'action mutuelle de l'un sur l'autre ont été comparés pour prédire à la fois la compréhension auditive et l'adresse verbale comme critères distincts dans deux équations de régression multiple à deux niveaux. Les variantes qui pouvient être attribuées soit au sexe de l'enfant, soit au niveau économique de la famille, ont été mises à l'écart. On a trouvé que la négligence prédisait, d'une façon significative, et la compréhension auditive et l'adresse verbale. Ni le mauvais traitement, ni l'action mutuelle des deux ne prédisait d'une façon significative ni l'un ni l'autre des facteurs dépendants variables. Ces résultats suggèrent que la négligence est plus délétère que les mauvais traitements (sévices) en ce qui concerne le développement du langage.

THE PREVIOUS literature on the effect of child abuse on language development has suggested that abuse contributes to delays in this area. For example, Johnson and Morse [1] studied 101 abused children, and reported that 19 were below normal in speech development. Galston [2] observed that children hospitalized after an abuse incident speak little during the hospitalization. Elmer* has stated, based on her studies, that language delays are very common in abused children and quite resistant to treatment.

The most extensive research in this area has been conducted by Martin and his associates

*Elmer, E. and unspecified colleagues. *Report on a Study of Abused Children*. Paper presented at American Psychiatric Association Meeting, Anaheim, California, Spring 1975. Quoted in Blager, F., and Martin, H. P., Speech and language of abused children. In: *The Abused Child: A Multidisciplinary Approach to Developmental Issues and Treatment*, H. P. Martin, (Ed.). pp. 83–92. Ballinger, Cambridge, Mass. (1976).

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[3, 4, 5, 6]. These studies all report lags in language development in different samples of abused children. Martin [4], administering either the Revised Yale Developmental Schedules (RYDS) or the Wechsler Intelligence Scale for Children to a sample of 42, reported that 38% had language scores 15 or more points below their full-scale scores after therapeutic intervention. Blager and Martin [6] report that their sample of 13 abused children scored average or above on the Peabody Picture Vocabulary Test (PPVT), the Templin-Darley Screening Test of Articulation, and the Illinois Test of Psycholinguistic Abilities (ITPA), but that a structural analysis of their speech showed them to average eleven months below chronological age in their syntactical quality. Martin [3] studied another sample of 13 abused children, again using the RYDS, and found that while they tested in the normal range overall, their language developmental quotients averaged 81.1, at the bottom of the low normal range. Martin [4] and Martin and Rodeheffer [5] have suggested that abused children lack the trust in their environment which these authors consider necessary for adequate language development; the abused child, in other words, is afraid to risk talking and thereby suffers language delay due to restricted practice.

The literature on child neglect has not addressed the neglected child's language development specifically; however, Polansky, Borgman, de Saix, and Sharlin [7] found that a neglected child's IQ rose when his mother improved in her ability to talk about feelings with her welfare worker, which suggests a possible link between a decline in neglect and an improvement in language. Furthermore, some inferential information is available from the literature on interventions with children judged to be at risk for poor cognitive development. Skeels and Dye [8] noticed that two children judged to be retarded made substantial gains in their IQs when they were transferred from an orphanage, where they had received institutional care only, to an institution for the retarded, where they were cared for by teenage female inmates. Skeels and Dye accordingly studied 13 children who were transferred to the institution as compared to a control group that remained in the orphanage. The transferred group gained an average of 27 IQ points, while the control group lost an average of 26 points over the same time span. Gray and Klaus [9] studied 88 black low socioeconomic status preschoolers. They were divided into two experimental and two control groups. The experimental groups received a special "summer school" and a home intervention program. The schooling provided skill training and attempted to instill attitudes thought to enhance scholastic performance. The home program provided materials to the mothers, and the home visitors encouraged parental care of the children. The experimental groups showed gains relative to the controls on both mental age and linguistic abilities. All of this literature suggests that children from potentially deprived backgrounds can improve on cognitive measures with intensive stimulation.

The previously cited authors who have reported language delays in abused children do not report that they screened their samples for child neglect. However, Bell [10], Blumberg [11], Fontana [12], Starr [13], and Galdston [2] all report that abused children are frequently, although not always, found to have been neglected also. This finding suggests that neglect should be examined separately from abuse for its effects on language. The possibility exists that the delays attributed to abuse in the previous literature are actually attributable to undetected neglect of the children in these samples. Elmer and Blager [14] report that psychotherapy is helpful in reducing the emotional problems and other developmental delays which often accompany abuse. Since both Elmer and Blager report that therapy alone is not effective in correcting language delays, however, it may be that these children's language delays are not due to the effects of mistrust of their environment alone.

The present study was designed to address these issues by examining separately the independent contributions of abuse and neglect to language delays. The contribution of abuse to language delays was conceptualized as the psychological effect of abuse, that is, that portion of the effect of abuse not attributable to such biological, proximal causes as neurological damage, hearing loss, or other organic deficits. Both receptive and expressive language were tested. It was hypothesized that neglect would be found to be associated with depressed scores in both receptive and expressive language, relative to scores of non-neglected children, due to the lack of stimulation provided by

the neglectful environment. Abuse was not expected to be significantly associated with delays in receptive language. On the assumption that Martin's hypothesis of mistrust of the environment was correct and that abused children lack practice with speech, abuse was hypothesized to be significantly negatively correlated with expressive language. The impact of the interaction of abuse and neglect was also examined; this factor was not expected to be associated with receptive language as significantly as neglect alone, because the child who is being abused as well as neglected is still being attended to at least some of the time and therefore is still receiving some stimulation.

METHOD

Subjects

Four independent groups of preschool children ($n = 79$) were used in this study. There were three groups of maltreated children, drawn from case records at the Family Resource Center (FRC) in St. Louis, a social service agency serving abusing and neglecting families: an abused only group ($n = 13$), a neglected only group ($n = 7$), and an abused and neglected group ($n = 31$). The non-maltreated group ($n = 28$) had no known history of either abuse or neglect, and was drawn from a day care center. The demographic variables of age, and family income (continuous variables), and maternal education, gender, race, maternal marital status, and maternal status on Aid to Dependent Children (ADC) (nominal variables) are presented by independent group in Table 1. Means are provided for continuous variables, and proportions within each group for nominal variables.

The four independent groups were tested for significant differences on each of these demographic variables, which might have been confounded with group status. Results of these tests are also noted in Table 1. The independent groups differed significantly on only two variables, gender and ADC status. The typical child in this study was 47 months of age, a little more likely to be male than female, white, had no father figure living in the home, usually had a negative maternal status on ADC, had a mother with a high school education, and had an annual family income of $8,593 (expressed in 1980 dollars).

Children who are admitted to the therapeutic preschool of FRC, from which the maltreated children were drawn, are routinely administered the Preschool Language Scale (PLS) [15]. The criteria for preschool admission, besides a history of actual or probable maltreatment, are that the child be between 2 years 6 months and 5 years of age (there are some exceptions to this) and found to have a developmental delay and/or a behavior disorder on results of a standard test battery. All of FRC's files containing the results of PLS testing were screened, but children with hearing problems or a bilingual background were excluded. Additionally, one neglected child was excluded because she showed evidence of neurological damage. Of the remaining 51 children, two (one abused, one abused and neglected) who completed the auditory comprehension section of the PLS were unresponsive and considered untestable on the verbal ability section; these were excluded from the analysis of verbal ability scores.

The assignment of subjects to maltreatment status was based on the therapist's assessment of the case, made without consultation with the investigators. All cases of sexual abuse or potential abuse only were excluded, as was potential neglect. The therapists' assignments were based on the Berkeley Planning Associates'** (Note 2) definitions of abuse and neglect.†

**Definitions used in the national evaluation demonstration grants for the Berkeley Planning Associates, 1974–1977, Berkeley Planning Associates, 3200 Adeline, Berkeley, California.

†Within "abuse" are such incidents as "attack, using implement," or "hit," "shoved," or "beaten" (p. 42). Within "neglect" are such items as "disregard of safety," "inadequate clothing," "inadequate nutrition," "inattention to health needs," or "refusal of guardianship" (p. 38). From *Preliminary Analysis of Client Characteristics, Services, and Outcomes: Evaluation of the Clinical Demonstration of the Treatment of Child Abuse and Neglect.* Contract #HEW 105–78–1108, 1981.

Table 1. Means (for Continuous Variables) and Proportions (for Nominal Variables) of Demographic Variables by Independent Groups

	Abused (n = 13)	Neglected (n = 7)	Abused and Neglected (n = 31)	Non-maltreated (n = 28)	Total (n = 79)	Significance of Difference Between Groups
Continuous Variables						
Age (mean in months)	50	47	43	48	47	n.s.*
Family income (mean expressed in 1980 dollars)	11,147	5,879	7,435	9,658	8,593	n.s.*
Nominal Variables						
Maternal education less than high school						
n	5	4	15	5	29	
%	38	57	48	18		n.s.**
High school						
n	7	3	14	17	41	
%	54	43	45	61		
More than high school						
n	1	0	2	6	9	
%	8	0	7	21		
Gender						
Male						
n	10	3	21	10	44	
%	77	43	68	36		$p < 0.05$**
Female						
n	3	4	10	18	35	
%	23	57	32	64		
Race						
White						
n	7	5	23	24	59	
%	54	71	74	86		n.s.**
Minority						
n	6	2	8	4	20	
%	46	29	26	14		
Presence of father figure in home						
Yes						
n	7	3	18	6	34	
%	54	43	58	21		n.s.**
No						
n	6	4	13	22	45	
%	46	57	42	79		
Maternal status on aid to dependent children						
Yes						
n	5	4	21	0	30	
%	38	57	68	0		$p < 0.001$**
No						
n	8	3	10	28	49	
%	62	43	32	100		

*Significance test one-way ANOVA with Scheffe comparisons.
**Significance test chi-square.

Non-maltreated cases were drawn from St. Agatha Day Care Center, a private Catholic agency serving a similar geographic area and socioeconomic class as FRC. Approximately 40% of all parents consented to have their children participate; all children of consenting parents were tested (n = 44). Exclusion criteria for the study were the same as for the maltreated groups; also excluded were children a) from families with incomes of over $20,000 a year (in 1980 dollars); b) over 5 years 6 months of age; c) with known or suspected history of maltreatment. (The first two additional

exclusions were designed to maximize the comparability of the non-maltreated with the maltreated groups.) Fifteen children were excluded according to these criteria, and one additional very young (2 years, 2 months) child proved untestable and had to be excluded also, leaving a final $n = 28$.

Measures

Language development was measured by the PLS, a screening device used to evaluate language competence in young children. It is divided into two sections, auditory comprehension and verbal ability, yielding an Auditory Comprehension Quotient (ACQ) and a Verbal Ability Quotient (VAQ), respectively. The auditory comprehension section requries only nonverbal responses, such as pointing, to spoken questions. The verbal ability section requires spoken answers.

The PLS has been found to have split-half reliability correlations of .78 to .92 [15]. Concurrent validity correlations have been reported as ranging from .59 and .68 with the PPVT, .66 and .70 with the Stanford-Binet LM, .70 with the Utah Test of Language Development, and .97 with the ITPA [15]. The pre-1979 version agreed in 65% of the cases with the Lee Clark Reading Readiness Test (LCRRT), while the 1979 version agreed with the LCRRT in 79% of the cases [15]. Both of these versions were used in this study with the maltreated groups, depending on the year the child was tested. All nonmaltreated subjects were tested with the 1979 version.

Procedure

The maltreated children were tested by several examiners on the FRC staff (not the present investigators). Parents of maltreated subjects had all signed consent forms for research participation as part of the FRC intake process. All of the non-maltreated children were tested by the principal investigator. The study was described to the parents of potential subjects in the non-maltreated group as one of language development (no mention was made of maltreatment).

Statistical Treatment

The two independent variables in this study are abuse and neglect. The design of this study can be conceptualized as a 2 (no abuse vs. abuse) x 2 (no neglect vs. neglect) analysis of variance (ANOVA) design, with four independent groups. There are two dependent variables, ACQ and VAQ. Gender and maternal status on ADC, however, would have to be used as covariate variables, as these were confounded with the independent variables; statistically significant differences were found on these between the four naturally occurring groups. Thus, statistical control is substituted for experimental control for these two variables. Because both of these variables are nominal rather than continuous variables, however, they may not accurately be used as covariates in an analysis of covariance treatment of the data. Multiple regression [16], using gender and maternal status on ADC as covariate independent variables; abuse, neglect, and their interaction as independent variables; and ACQ and VAQ separately as the dependent variables was selected as the appropriate statistical technique for analyzing the data for the presence of significant differences between groups in language ability.

RESULTS

Several of the previously quoted studies suggested that abused children are frequently found to have been neglected also. This finding was confirmed in this sample, as abuse and neglect were found to correlate .50 ($df = 77$, $p < .01$). Furthermore, ADC status was found to correlate .55 with neglect ($df = 77$, $p < .01$). Gender and abuse were correlated $-.36$, that is, boys were somewhat more likely than girls to be abused.

Table 2. Means and Standard Deviations of Independent Groups on the Preschool Language Scale

	Abused	Neglected	Abused & Neglected	Non-Maltreated
Auditory Comprehension Quotient (ACQ)				
$\bar{x}$	104.3	92.6	95.2	110.4
(*s.d.*)	(13.9)	(20.4)	(18.0)	(12.4)
Verbal Ability Quotient (VAQ)				
$\bar{x}$	99.6	82.0	90.0	108.5
(*s.d.*)	(15.5)	(23.8)	(17.1)	(18.4)

Table 3. Variables (Among "Confounded" Variables of Gender and Maternal Status on ADC and Predictor Variables of Abuse, Neglect, and Their Interaction) Making Significant Independent Contributions to Preschool Language Scale Scores.

	Beta Weights
Auditory Comprehension Quotient	
Variables	
Neglect	−.69269*
Gender	.17388
Maternal status on ADC	.06036
Abuse × neglect interaction	.57094
Abuse	−.29676
Verbal Ability Quotient	
Variables	
Neglect	−.99476**
Gender	.20314
Maternal status on ADC	.10936
Abuse × neglect interaction	.08955
Abuse	−.54639

*$F_{1,77} = 15.02$, $p < .001$
**$F_{1,75} = 16.29$, $p < .001$

Means and standard deviations on ACQ and VAQ by independent group are presented in Table 2. The results of the multiple regression equations are presented in Table 3. Neglect was the only variable making a significant independent contribution to the prediction of ACQ; F (1, 77) = 15.02, $r = .40$, $p < .001$. None of the other four variables made a significant independent contribution. Similarily, neglect was the only variable making a significant independent contribution to the prediction of VAQ; F (1, 75) = 16.29, $r = .42$, $p < .001$; none of the other four variables made a significant independent contribution.

DISCUSSION

The confirmation of the hypothesis of a significant association between neglect and both receptive and expressive language is consistent with the theory that lack of stimulation significantly hinders language development. The absence of a significant association for abuse casts considerable doubt on the previously advanced theories in this area, and this coupled with the significant finding for neglect suggests that what the previous investigators have been reporting was a "hidden neglect," rather than abuse, effect. The significant single-order correlation between abuse and neglect also supports this hypothesis. The lack of a significant association between the interaction of abuse and neglect and language delay also supports the hypothesis that neglect alone is more problematic for language development than abuse and neglect together.

Since this is a correlational field study, these findings cannot be interpreted as meaning that neglect actually causes language delay, only that these two variables are significantly associated. An obvious alternative explanation is the converse, that a language-delayed child is less interesting to adults than a normal child and is thus consequently neglected [17]. Furthermore, the maltreated samples are probably not representative of all abused and neglected children, as they originated in the small minority of these cases that have been detected and referred for, or have spontaneously sought, treatment. Another aspect of this study that limits its generalizability is the uneven distribution of cases across maltreatment status groups, particularly the low number of neglected-only cases.

The high single-order correlation between abuse and neglect suggests that a history of abuse is a fairly good predictor for a history of neglect, and vice versa, which means that a child who is referred for treatment for the effects of one of these should always be checked for the other. The results of this study imply that untreated effects of neglect might be responsible for the poor therapeutic outcome with respect to language skills that both Elmer and Blager report. Therapeutic programs for abused children have typically not included speech therapy or intensive language stimulation; rather, they have generally focused on emotional issues, apparently on the assumption that with the resolution of these the language will spontaneously improve [18]. One exception to this is the program reported by Blager and Martin [6], in which speech therapy was used and improvements on PPVT test scores were reported. The results of this program seem consistent with findings reported here, which together indicate that specific language therapy, to correct the effects of inadequate stimulation, is needed for many of these children. Future research is also needed into the specific neglecting behaviors that lead to language deficits, and into the most effective ways of remediating these deficits.

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