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Language Comprehension and Expression Among Adolescents Who Have Experienced Childhood Physical Abuse

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The present study compared the expressive and receptive language abilities of adolescents who had experienced physical abuse as children with the abilities of a closely matched control group who had not experienced maltreatment. Comprehension abilities of the two groups (as measured on a standard test) did not differ significantly. There were also no significant differences in expressive vocabulary. The syntactic expression of the abused group was significantly more impaired than that of the non-abused group. In addition, two aspects of functional communication were impaired significantly. The abused used significantly less self-related language and also had a significantly greater tendency to engage in self-repetition. The two groups did not differ significantly, however, on several other aspects of functional communication. Explanations of the results are offered. It is also suggested that there are individual differences in the types of problem experienced by the physically abused group.

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Keywords: Adolescents, childhood physical abuse, language expression, language comprehension

Introduction

The effects of neglect and impoverished linguistic stimulation upon children's language development have long been of interest to developmental psychologists. More recently, the focus has moved to the effects of abuse upon the language abilities of infants and young children. Such research has clinical implications because limitations in specific language skills of maltreated children are thought to play a role in the problems that they display often in meeting social and academic expectations (Cicchetti, Toth & Hennessey, 1989; Coster & Cicchetti, 1993). To our knowledge, however, there has been no systematic examination of the effects of childhood abuse upon adolescents' language abilities. Thus, we do not know whether documented effects of abuse upon early language development are reduced by the time that the child reaches adolescence. In order to redress the balance to some extent, the present study investigated the language abilities of adolescents who had records of childhood physical abuse. This study must be viewed, however, as no more than a first step in gleaning knowledge because it is based upon cross-sectional rather than longitudinal procedures.

Caution is required when discussing 'the abused group'. Different types of abuse (e.g. physical and sexual) may lead to different patterns of communication problems (Blager, 1979). Often, however, studies of abused children confound types of abuse (Coster, Gersten, Beeghly & Cicchetti, 1989). The present study attempted to control for this by excluding adolescents with records of sexual abuse, while recognizing that all abuse usually entails some form of emotional abuse and neglect.

Current models of abuse do not view the effects of maltreatment as resulting from single acts, but from a 'complex interplay of multiple influences within the child and family, as well as in the immediate and broader physical and social environment' (Coster & Cicchetti, 1993, p. 26). Maltreatment acts are considered to be 'an extreme manifestation of dysfunctional interaction' (Coster & Cicchetti, 1993, p. 26). Physically abused children are expected to have experienced rejecting maternal communication (Crittenden, 1981), reduced rates of verbal stimulation (Wasserman, Green & Allen, 1983) and lack of a consistent, warm, sensitive and contingent parent interaction style relative to non-abused children (Coster & Cicchetti, 1993). Whether the environment becomes more accommodating of communicative development as the child grows into adolescence has received little attention. Certainly adolescents have a greater potential than children for establishing important relationships outside the parental home. Nevertheless, Coster and Cicchetti (1993) maintain that aspects of the environment may remain negative: social services often move individuals from one care-relationship to another and, even when children stay with

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parents, often studies show little improvement in the family interaction patterns (Bousha & Twentyman, 1984; Mash, Johnson & Kovitz, 1983).

Physical abuse and the environmental factors associated with it affect not only communicative development but also cognitive and socio-emotional development. Abused children are often overcompliant, passive and exhibit a lack of control over social situations (e.g. Aber, Allen, Carlson & Cicchetti, 1989). According to a developmental organizational perspective (Cicchetti & Stroufe, 1978; Greenspan, 1981; Stroufe, 1979), socio-emotional and cognitive skills mediate communicative development and, in turn, language development affects cognitive and socio-emotional development (e.g. ability to establish good peer relationships). Also, in the abused child's case, continued experience of separations or dysfunctional interactions may result in them not having the adequate inner resources or social support to develop skills that enable them to move easily from competency in one type of task to competency in another (Coster & Cicchetti, 1993). Even if environmental factors improve, it may in some senses be too late (unless therapeutic intervention occurs) because communication anxieties based upon the first model relationship may persist (Coster & Cicchetti, 1993; Lynch & Cicchetti, 1991; Main, Kaplan & Cassidy, 1985). The few follow-up studies with older children suggest problems with language development (Oates, Davis & Ryan, 1980), as well as with other aspects of development, that may affect communication, such as self-esteem (Martin & Beezley, 1977), self-concept (Kinard, 1980), trust in others (Zimrin, 1986) and social behaviour (Oates, Peacock & Forrest, 1984). Low self-esteem (Martin, 1980) and anxiety (Briere & Runtz, 1988) are also common characteristics of adults with a history of childhood abuse.

Adolescent Language

The aim of the present study was to collect a sample of adolescent data using similar categories to those looked at in children so that indirect comparisons may be drawn. However, one problem encountered was that, with few exceptions (e.g. Nippold, 1993, 1994; Romaine, 1985), there was relatively little relevant research about normal adolescent language development. Nippold (1993) has studied subordination and sentence length as indicative of syntactic ability, literate and figurative lexicon as indicative of semantic expression, and interpersonal negotiation and slang expression as indicative of pragmatic expression. In this study, we use some of these measures, namely subordination and figurative speech, but in the main we develop our own measures of adolescent language. We also redefine many communicative categories because the same category may measure different characteristics of children's development from those of adolescents. (For instance, the minimal response (e.g. 'mmhmm') is a useful measure of redundant speech in young children's speech, but for adolescents, who use language in a more multi-functional manner, it may also be used to encourage or support communication of another speaker (see Edelsky, 1993, p. 208.)) In doing this, we draw upon socio-linguistic research which has a well-developed framework for understanding adults' and young people's use of language (see Tannen, 1993).

Expressive and Receptive Language

The study focuses upon expressive language in social interactions as well as receptive language (comprehension on a standardized test). Three aspects of language expression in social interactions are examined: language use, syntactic expression and semantic expression. Four areas of language use are studied and it is suggested that these are affected particularly by communication anxieties. Firstly, anxieties about self-expression may decrease the motivation to communicate thus creating an *interaction style geared at minimal involvement* (Braunwald, 1983). These anxieties may have been learnt from the first model relationship. Certainly abused children tend to exhibit minimal interactional involvement, with fewer requests for information (Coster et al., 1989), fewer utterances (Ounsted, Oppenheimer & Lindsay, 1974) and a more frequent use of minimal responses (e.g. 'yes') to direct questions relative to non-maltreated children (Lynch & Roberts, 1982).

The second aspect of language use examined is *discussion of self and others*. Articulating one's internal states is thought to be vital for growth towards the ability to control situations (Fatoot, 1993; Santostefano, 1978). Abused toddlers discuss self less frequently than non-abused toddlers in mother–child dyads (Cicchetti & Beeghly, 1987; Coster et al., 1989). Early rejection experiences may make it difficult for abused adolescents to discuss themselves especially if there has been no therapeutic intervention and when it has been difficult to establish trusting relationships. However, in their talk about others' thoughts, feelings and actions, abused children appear to function more adequately (Coster et al., 1989). In childhood, this ability to discuss others is considered to be an important step towards being aware of and able to conceptualize others. In adolescence, there is no such clear developmental function of 'other language'. Thus there is not a good rationale for expecting the latter to differ between physically abused and non-abused adolescents.

A third feature of functional communication examined here is *redundancy*. This is prevalent in abused children's speech (Coster et al., 1989). Redundancy in adults (as measured by the use of fillers, e.g. 'you know', O'Barr & Atkins, 1980; Ng & Bradac, 1993), has been associated with anxiety in speech and being of low status. Without therapy, such features of the abused child's language may persist into adolescence.

Fourthly, the use of language to *encourage* the communication of another speaker is considered. This area is difficult to examine in young children who use language frequently to serve instrumental rather than supportive functions, and are not as developed in their socio-emotional and cognitive skills as adolescents. It is possible, however, that abused adolescents' notions of social support are less developed than non-abused's because the former have experienced rejection from the care-giver relationship, and a non-supportive style may have been modelled from this (see Coster & Cicchetti,

1993). Supportive minimal responses, as measured in adult speech (Edelsky, 1993, p. 208), are examined in the present study. In addition, general questioning is seen to encourage communication flow and thus may occur less frequently among a physically abused than a non-abused control group.

The present investigation also considered syntactic expression. Coster et al. (1989) suggest that lack of syntactic complexity documented in older toddlers may persist into later life because others tailor their behaviour to the child's simple speech by themselves using less complex levels of expression with the child (see Bellinger, 1980); the child responds in a similar manner and the process repeats itself.

The final aspect of language expression examined here is semantic expression. This is measured in children by examining their vocabulary. There is mixed evidence of differences in the expressive vocabulary of abused and non-abused children. While some studies document a difference (e.g. Coster et al., 1989), others do not (e.g. Allen & Oliver, 1982; Culp et al., 1991; Gersten, Coster, Schneider-Rosen, Carlson & Cicchetti, 1986). Differences appear to arise in social interactions among older children but are less likely to emerge in standardized tests with younger children. It is not clear that there will be vocabulary differences in adolescence because the abused and control samples are closely matched for education and knowledge. A sophisticated understanding of word meaning also is indicated by the use of figurative speech (Nippold, 1993). This may be a more appropriate measure of adolescent semantic expression, and it is also investigated here.

In addition to language expression, language comprehension differences on standardized tests which require no oral input are examined. Some researchers have found comprehension to be affected detrimentally in physically abused children (Culp et al., 1991; Fox, Long & Langlois, 1988), others have not (Allen & Oliver, 1982; Cicchetti & Beeghly, 1987; Coster et al., 1989). It appears that severely abused rather than less severely abused (Fox et al., 1988; McCauley & Swisher, 1987) and older rather than younger children (Martin, Beezley, Conway & Kempe, 1974; Oates et al., 1984) are more likely to exhibit impoverished comprehension. However, on the whole, sexually abused children are more likely to experience comprehension difficulties than those physically abused (e.g. Blager & Martin, 1976). Thus, comprehension differences are not predicted.

Context of Study, Hypotheses and Research Questions

The hypotheses were constructed with respect to Coster and Cicchetti's (1993) suggestion that many aspects of the abused individuals' environments improve little, as well as with respect to the present sample and control group. The abused adolescents in this study had experienced different types of care, but no therapeutic intervention. The control group was matched closely in order to control for differences that might have emerged from current home and schooling environments as well as experience of different care relationships. At the time of the study, both groups were experiencing 'short-stay' (average 6 months) in special schools. Peer interactions were considered. On the basis of the previous discussion, it was hypothesized that the physically abused pairs would use a social interactional style geared towards minimal involvement and would show less discussion of self, less supportive communication and more conversational redundancy than non-abused adolescents (repetition of self was redefined in a manner which would lead us to predict that this would occur more frequently among the abused). It was not predicted that there would be differences in 'discussion of others'. It was predicted that there would be differences in syntax. No differences were predicted in vocabulary use or in comprehension.

In addition to these issues, the relationship between language reception and expression was examined in order to address the question of whether physically abused individuals who had better comprehension powers performed more ably within the social interactions, or whether these variables were independent. Moreover, syntactical complexity has been found to be correlated with measures of expressive vocabulary (Nelson, 1973). Thus the relationship between syntax and the other expressive language measures was examined. Coster et al.'s (1989) research suggests that there was a relationship between syntactical maturity and ability to discuss self in a non-maltreated but not in a maltreated sample, and a relationship with 'discuss other' in both samples.

Method

Subjects

There were two adolescent groups: 20 physically abused (10 males and 10 females) and 20 non-abused adolescents (10 males and 10 females). At the time of evaluation all subjects were residents of one of two similar social work/educational establishments (abused and non-abused subjects were drawn from both). These were special residential schools for individuals who had been referred through the social services or by their previous school for a whole variety of reasons, such as: the school or the parent(s) was finding the child's behaviour difficult to control; difficult family relations either with father, mother or siblings; detected abuse or neglect; recurrent truancies; problematic relationships with peers; getting into trouble and, in the case of a minority, committing offences which were drug- or car-related. All subjects were involved with care programmes which generally involved a gradual reintegration to their families. Family contact was encouraged at weekends and 1–2 nights per week, although the level of leave depended upon individual progress and circumstances. The physically abused group appeared to have less contact with their biological parents than controls. The average stay of each resident was approximately 6 months, after which they returned home or moved to an alternative placement. All subjects came from families of lower socio-economic status (SES), as defined on a social class scale A–D (Congalton, 1963). All children were physically healthy with no obvious visual, speech or auditory impairment and only children from English-speaking backgrounds were selected. The control and abused group were also of similar mean age (15 years old) (see Table 1).

The control group consisted of those without a history of abuse and/or neglect. Physical abuse was defined here as 'any physical injury to a child when there is definite knowledge or reasonable suspicion that the injury was inflicted or knowingly not prevented'. In the physically abused group, abuse was

Table 1
Subject Characteristics

Group	*n*	Mean age (years)	Age range (years)	Males *n*	Females *n*
Abused	20	15.17	14.33–17.00	10	10
Control	20	15.25	13.75–16.00	10	10

documented by a legal record filed with social services, i.e. included on a non-accidental injury (NAI) register, and/or corroborated by an interview with the child's protective service/residential social worker. Sexual abuse was excluded (although there was suspicion, but no proof concerning one physically abused child). The onset of physical abuse prior to 6 years of age was the main criterion for selection. For four subjects, however, abuse was first evidenced after age 6, although it was suspected to have occurred prior to this. Severity of abuse (episodic/prolonged or mild/traumatic) was not used as a criterion in selection due to absence of precise records.

Procedure

The format and objectives of the study were introduced to the key professionals who provided educational and caring services to each child. Consent for participation was attained from parents or social service personnel. The experimenter knew none of the adolescents in the schools at the time when the study commenced. Each subject underwent a brief introductory interview. The experimenter explained that two separate sessions would be undertaken in order to test observational and memory skills.

Session 1: Peabody Picture Vocabulary Test (revised edition). The PPVT is a measure of receptive vocabulary and verbal IQ that has forms suitable for testing children from the age of 2 years 6 months upwards. In such tests, non-verbal responses are required, otherwise measures of comprehension might be confounded with those of production. This non-verbal element means that the test is particularly favoured by clinical psychologists for subjects who are withdrawn, emotionally impaired or educationally limited. The validity of the measure with disturbed children and adolescents is supported (e.g. Atlas, 1986). The subject was accompanied to a quiet room where the PPVT was administered in the standard manner (Dunn & Dunn, 1981). Although the experimenter had selected a list of 20 abused and 20 non-abused subjects in advance, at the time of testing the experimenter used only the list of names without the abuse status attached.

Session 2: Film viewing and questionnaire session. Initially the adolescents, in groups of four or six, were shown a feature film, 'The Commitments', 1 h 50 min in length. They were then placed in same-sexed pairs within either the abused or non-abused category (i.e. 10 abused and 10 non-abused dyads). Each pair was drawn from within the same home-unit (a unit comprises 14 individuals). This meant that each individual in the dyad was familiar with the other. The experimenter put each pair in a separate room and presented them with a 12-item questionnaire about the topic of the film together with a set of instructions (see Appendix). This questionnaire had been piloted 4 months previously with non-abused individuals who were not included in the main study. Questions leading only to Yes/No answers were avoided; some were in the form of indirect requests in order to encourage discussion. After being given the questionnaire, subjects were asked for permission to record the 10 min discussion. The exercise began after the experimenter had left the room, and thus the fact that the experimenter was not blind to group category in this part of the study was not expected to have affected the results. The timing of the 10 min started when the adolescents began their discussion.

Analysis

Receptive Language

The raw scores attained on the PPVT indicated receptive vocabulary development. These were transformed into verbal IQ scores and mental age equivalence scores.

Expressive Language

Each 10 min discussion was transcribed and linguistic and communicative analyses were performed. Six expressive language categories were redefined in a manner more compatible with adolescent development (syntax measurement, fillers, discuss self, discuss other, self-repetition, minimal response) and three further categories were examined (minimal responses for social support, general questions, figurative language).

Syntactic maturity was assessed with respect to number of minimal terminable units. It has been argued that the mean length of utterance (Brown, 1973) is not a valid measure of older children's syntactical abilities (Blake, Quartaro & Onorati, 1993; Scarborough, Resorla, Tager-Flusberg, Fowler & Sudhalter, 1991). Thus the present study used a measure of syntax, the mean *T*-unit length (MTUL), which is more valid for adolescents (Romaine, 1975, 1979). This was coded according to the rules devised by Hunt (1965). To count MTUL, every main clause with attached subordinate clause(s) was coded (i.e. *T*-units) and the total number of words within these segments of script was counted and divided by the total number of *T*-units. However, while some individuals generated lengthy *T*-units, thus scoring highly for MTUL, they used subordination infrequently. Thus a second measure, namely *T*-unit frequency, was also coded.

Expressive vocabulary development was assessed by calculating the total number of different words used and the total number of different nouns, different verbs and different other words used (i.e. pronouns, prepositions, adjectives, adverbs, etc.). Figurative expressions were also coded. The use of metaphors is an example of figurative language (e.g. ' he was a mad machine'). However, the non-literal expressions that occurred tended to be swear words, rude expressions or derogatory labels about individuals in the film (e.g. 'the old cow'). There were few instances of original figurative expressions (less than 10). Thus, this category was excluded from further analysis.

Coding the functional categories involved consideration of the linguistic and pragmatic contexts of utterances. For example, the word 'man' was sometimes used as a filler, but at other times as a functional noun. A preliminary coding of several transcripts by the two researchers highlighted discrepancies which were discussed and definitions for each of the coding categories were arrived at. These categories were used in the final coding and cross-coding and are described below.

(i) Minimal interaction style

Minimal responses. The first type of minimal response was that which provided a minimal answer (e.g. 'The manager'; 'Aye') to a question asked by the other subject. The second type is coded under 'Supportive Communication' (see below).

Information requests. Coster et al. (1989, p. 1029) defined

these as 'attempts to solicit specific verbal responses including requests for labels or for permission, and questions seeking explanations and descriptions'. They were redefined here as those questions relating to information about the experiment, the questionnaire and the film, and any other issues raised by the film, e.g. 'Who was the one with the blonde hair?', 'Where are we now?', 'What does that mean?'. The following types of question were not coded as information requests: 'Oh, were you about to say something?', 'Will we go onto 6?'

The total number of words used. This was measured as an indication of minimal contribution and 'powerfulness' (Kollock, Blumstein & Schwartz, 1985).

(ii) Discussion of self/other

Discuss self. In young children, a maturity in self-understanding is usually measured by their use of self-referent statements describing an act performed, e.g. 'I hit ball', or expressing emotion, belief, intent or other related psychological states relating to self, e.g. 'I sad' (Cicchetti, 1987; Coster et al., 1989). It seems inappropriate, however, to take 'action statements' (unless they indicate intention or belief) as indicative of adolescents' ability to express psychological states, although they may indeed indicate ability to exchange information about events engaged in by self. As the research of Montemayor and Eisen (1977) indicates, adolescents tend to describe self in terms of personality dimensions and beliefs rather than in action terms. Thus, two different measures of this category were taken. The first was the definition used with children, defined according to Coster et al. (1989) and taken as an indication of information exchange about self. The second definition excluded descriptions of behavioural acts and only referred to internal states and beliefs.

Discuss Other. Coster et al. (1989, p. 1029) defined this as 'statements that describe the psychological states (thoughts, feelings, actions) of others', e.g. 'he tried really hard'. However, because the aim was to measure internal state language (e.g. 'he feels sad'), the following statements were not coded: statements about outward actions ('she threw') or statements involving an evaluation of another (e.g. 'I think him with the orange hair, the singer, Decko. He was all right. He was a good actor in it.'), or preferences about others (e.g. 'I liked her with the blonde hair').

(iii) Redundancy

Fillers. These were defined using a different definition to that of Coster et al. (1989), who included not only redundant speech, but also what in adult language would be termed supportive minimal responses. The category of fillers used here only referred to words or phrases which filled conversational boundaries without adding to the information content of the conversation (e.g. 'you know', 'like', 'man').

Generalizations. These utterances made general statements, encompassing an 'everything else' element, but like fillers did not add substantially to the information content, e.g. 'and that', 'and everything', 'and stuff'.

Repetition. Repetition of self. Two different measures of self-repetition were taken. The first followed the definition of Coster et al. (1989, p. 1029): 'exact repetition of prior utterance either in full or partial or in response to clarification request' (see excerpt [1]), although repetition of minimal response answers were excluded.

[1] A: 'Just forget about that one?' B: 'It's still the same film'. A: 'Just forget about that one?'

The second definition was more restricted. Repetitions in response to clarification requests or which involved repeating a statement because it had not been heard properly (e.g. excerpt [2]), were excluded because they were not functionally redundant forms. In addition, statements which added content to the conversation were excluded (e.g. excerpt [3]). Here significant group differences were expected.

[2] B: 'like it just as much.' A: 'What did you say?' B: 'I think they would like it just as much.'

[3] A: 'I enjoyed every last bit of it.' (laughs) 'Well, not every last bit o' it. Almost every last bit o' it.'

Repetition of Other. This occurred when the speaker used all or part of phrases previously used by the other subject in such a way that no new content was added to the conversation:

[4] A: 'Lassies would like it better'. B: 'Aye, lassies would like it better.'

(iv) Supportive communication

General questions. This was a measurement of all questions and indicated attempts to sustain or initiate the interaction and keep the conversation flowing. The category included: information requests, questions which encouraged conversational flow without specifically asking for information; those which asked for an opinion; those which asked an interpersonal question (e.g. 'Oh, were you about to say something?'); rhetorical questions (e.g. 'You know how they had to get rid of the first drummer?'), or humorous questions, e.g. (talking about the tape recorder): 'Do you want to take it and sell it?' (laughs). Only one type of question, tag questions (e.g. 'I think it was a good film, wasn't it?'), were excluded, because these serve functions which include tentativeness (see Ng & Bradac, 1993).

Supportive Minimal Responses. The second type of minimal response was that used to give positive reinforcement to the other speaker during the latter's speech and to maintain the conversational flow:

[5] A: 'I like comedies that, em (pause). Just things that are funny.'B: 'Mmmhmm.'A: 'Same with you?'

Rater Reliability

Four of the 20 transcripts (i.e. the data from eight subjects), 345 conversational turns in total, were cross-coded by the two researchers. For the cross-coding, each rater read every word (and non-words, e.g. 'mmhmm') for the presence or absence of each feature. Rater reliabilities for each functional category were calculated in terms of a coefficient Kappa of agreement. For the reliability coding of all categories (except fillers and generalizations) the number of *statements* which both raters did not code as instances of each category were taken into account; coding by number of words would have led to a liberal estimation of reliability because many of these functional categories were comprised of several words. [Statements were grammatically meaningful utterances (in the stated or implied sense) or one word replies which constituted a complete conversational turn. Several statements could be embodied in one conversational turn]. In contrast, for fillers and generalizations, the number of *words* which both raters did not code were taken into account in the estimation of Kappa. This was because instances of the latter categories commonly consist of one or two words. The final estimations were as follows: minimal responses in answer to a question, Kappa = 1; minimal responses for positive reinforcement, Kappa = 0.98; fillers, Kappa = 0.97; generalizations, Kappa = 1; repetition of self, Kappa = 0.89; repetition of other, Kappa = 0.80; discuss self, Kappa = 0.95; discuss other, Kappa = 0.73; informal requests, Kappa = 0.90; and general questions, Kappa = 1.

Table 2
Partner Correlation Within Dyads of Both Abused and Non-Abused Groups on Expressive Language Measures

Category	Abused adolescents (10 dyads) r	Non-abused adolescents (10 dyads) r
Syntax		
MTUL	.60	.03
T-units	.26	–.05
Semantics		
Total nouns	.80*	.67
Total verbs	.90**	.81*
Total other words	.90**	.69
Total different words	.71	.76
Function		
Total words	.43	.46
Fillers	–.02	–.15
Self-repetition		
(i) Coster *et al.* (1989)	–.01	.56
(ii) Restricted definition	.10	.53
Repetition other	–.23	.22
Generalizations	.55	.19
Minimal responses		
Support	–.29	–.02
Answers	–.26	–.11
Questions	–.45	–.40
Info. requests	–.16	.72
Discuss self		
(i) With action statements	–.28	.06
(ii) Without action statements	.10	.23
Discuss others	–.24	.56

Note: *$p < .01$, **$p < .001$.

Dyadic Dependency

The analysis of individual behaviour within dyads is problematic. Dependency of each subjects' style upon the partner's behaviour must be accounted for (Kraemer & Jacklin, 1979). In order to assess the effect of one partner upon the other within the abused group and non-abused group, Pearson product moment correlations between partners were measured. Correlations for all categories (with the exception of MTUL) were based upon ratio measures which took account of the total number of words spoken by each partner. The rationale for this measure is discussed below. While the correlations were generally low for both the functional and syntactic measures of communication, correlations between partners were strong and positive for expressive vocabulary (see Table 2). Given that the latter correlations suggested a heavy dependence of partners upon each other in both samples, it is inappropriate to use individual scores in simple *t*-test analyses (Kenny, 1988; Kraemer & Jacklin, 1979). Kenny (1988) proposes that the dyad rather than the individual should be taken as the unit of analysis when there are no within-dyad variables and only between-dyad variables, as is the case in the present study. Roger and Nesshoever (1987), who used a design similar to that used in the present study, also used dyadic scores. The dyadic scores were calculated by taking the total score from each dyad rather than the average of the two members' scores. The exception was for the MTUL, where the total number of words in each *T*-unit were added together for both respondents and then divided by the total frequency of *T*-units for both speakers.

Table 3
Comparison of Abused and Non-Abused Groups on Receptive Language Measures

Category	Abused adolescents (n = 20) M	SD	Non-abused adolescents (n = 20) M	SD	t	p
PPVT	94.8	11.5	99.7	12.0	1.67	0.20
Mental age	14.3	2.6	15.2	2.1	1.32	0.26
Percentile score	44.1	32.4	54.5	25.7	1.20	0.28
Verbal IQ	96.3	15.3	101.2	11.6	1.23	0.29

Results

Receptive Language

The *p* measures reported are two-tailed since one-way hypotheses had not been specified in advance. No significant difference was observed between the receptive vocabulary scores of the abused ($M = 94.8$) and non-abused groups ($M = 99.7$) when measured by the PPVT: $t = 1.67$, p = n.s. (see Table 3). The *SD* for the abused group was greater than for the non-abused group: eight abused individuals had verbal IQs of below 90 (two below 75); only three non-abused individuals had scores lower than 90, but none had scores below 75 (see Table 3 and Table 4).

Expressive Language

The data required non-parametric statistical analysis. Mann–Whitney *U* tests were performed for each of the expressive language dependent variables (Table 5). The *p* measures reported are one-tailed for those measures for which one-way hypotheses had been specified, and two-tailed for expressive vocabulary and 'discuss other', for which no directional hypotheses had been specified in advance. Because there were multiple tests of significance, a Bronferroni correction was used, and results were interpreted as significant only at $p = .01$. Some subjects spoke at greater length than others (range for individual subjects was 58–822 words). This may affect the frequency of occurrence of the functional categories. Thus the frequency with which a particular dependent variable was used in each dyad was divided by the total number of words spoken (as is usual method in sociolinguistic studies) in the dyad and multiplied by

Table 4
Distribution of Verbal IQ scores of PPVT

Verbal IQ scores	Abused adolescents (n = 20)	Non-abused adolescents (n = 20)
Superior 125 and above	1	0
Bright average 110–124	4	4
Average 90–109	7	13
Low average 75–89	6	3
Borderline > 55 < 75	2	0

Table 5
Comparison of Abused and Non-Abused Groups on Expressive Language Measures

Category	Abused adolescents (10 dyads) *M*	*SD*	Non-abused adolescents (10 dyads) *M*	*SD*	*U*	*p*
Syntax						
MTUL	14.3	5.7	17.8	3.9	27.0	.04*
T-units	9.8	4.5	14.1	3.0	20.0	.01*
Semantics						
Total nouns	73.2	19.9	69.2	16.5	45.0	.72
Total verbs	69.7	15.9	65.9	12.7	44.0	.66
Total other words	178.3	56.1	167.8	40.4	46.0	.76
Total different words	303.0	56.5	321.3	83.7	43.0	.60
Function						
Total words	790.1	359.7	1035.4	323.8	30.5	.07
Fillers	27.1	14.1	15.9	7.2	22.0	.02*
Self-repetition						
(i) Coster *et al.* (1989)	3.3	2.8	1.3	1.5	27.0	.04*
(ii) Restricted definition	3.1	2.6	0.9	1.3	19.5	.01**
Repetition of others	5.0	3.5	2.5	2.4	28.0	.05*
Generaliztions	4.2	4.7	5.1	4.4	41.0	.24
Minimal responses						
Supportive	11.0	5.7	8.0	4.6	35.0	.13
Answers	17.1	27.1	4.8	3.4	27.0	.04*
Questions	21.6	11.6	11.7	5.9	23.0	.02*
Info. requests	5.8	6.6	2.9	3.0	34.0	.11
Discuss self						
(i) With action statements	35.7	16.6	51.9	9.6	20	.01**
(ii) Without action statements	31.8	15.7	49.5	9.1	17	0.005**
Discuss other	24.3	8.1	29.6	9.2	35.0	.26

Note: results are based on proportional measures of total speech sample rather than frequency counts.
*$p < .05$, **$p < .01$.

1000. Ratio measures were calculated for all the dependent variable categories of expressive vocabulary, with the exception of the MTUL. An alternative transformation would have been a division by number of utterances (with utterance being defined as a grammatical unit). However, the present transformation was conducted instead because some functional categories were a small part of an utterance and therefore could occur more than once within an utterance. Other categories, such as supportive minimal responses, stood alone as non-grammatical units that were not part of an utterance. They would have been discounted had utterances alone been coded. These were accounted for with a ratio measure based upon number of words.

Minimal interaction style. Against hypothesis, the non-abused dyads did not use a significantly greater number of words ($M = 1035.4$) than the abused group ($M = 790.1$), $U = 30.5$, $p = .07$. (The scores for individuals showed that the abused range was 58–822 words; the non-abused range was 227–804 words.) The physically abused group ($M = 17.1$) did not give significantly more minimal responses in answer to questions than the non-abused group ($M = 4.8$), $U = 27$, $p = .04$. Also against hypothesis, the groups did not significantly differ in their use of information requests.

Self/other language. As predicted, the two groups differed significantly in the frequency with which they discussed their own activities and internal states, $U = 20$, $p = .01$. The physically abused pairs discussed self less frequently ($M = 35.7$) than the non-abused pairs ($M = 51.9$). On the second measure of 'discuss self' which was considered a more appropriate measure of adolescent internal state language, the differences between the groups increased. The physically abused pairs discussed internal states and presented beliefs less frequently ($M = 31.8$) than the non-abused pairs ($M = 49.5$), $U = 17$, $p = .005$. As predicted, there was no significant difference in the frequency with which the two groups discussed others' internal states.

Redundancy. Self-repetition, as measured according to Coster et al.'s (1989) definition, did not occur significantly more frequently among the abused ($M = 3.3$) than among the non-abused group ($M = 1.3$), $U = 27$, $p = .04$. As hypothesized, the second more restricted measure of self-repetition produced significant differences between the groups: $U = 19.5$, $p < .01$. The abused ($M = 3.07$) used significantly more self-repetitions than the non-abused ($M = 0.87$). The abused group did not exhibit repetition of other to a significantly greater extent ($M = 5.0$) than the non-abused group ($M = 2.5$), $U = 28$, $p = .05$. The physically abused group did not employ significantly more fillers ($M = 27.1$) than

Table 6
Correlations of Verbal IQ With Expressive Language Measures

Category	Abused adolescents (10 dyads) *r*	Non-abused adolescents (10 dyads) *r*
Syntax		
MTUL	.36	.08
T-units	.48	–.23
Semantics		
Total nouns	.12	–.07
Total verbs	–.01	.03
Total other words	–.12	–.10
Total different words	–.06	–.23
Function		
Total words	–.02	.11
Fillers	–.20	.41
Self-repetition		
(i) Coster et al. (1989)	.35	.01
(ii) Restricted definition	.26	–.16
Repetition of others	–.10	.05
Generalizations	.09	.02
Minimal responses		
Supportive	.35	.78*
Answers	–.19	.05
Questions	–.11	.03
Info. requests	–.35	.15
Discuss self		
(i) With action statements	.65	–.28
(ii) Without action statements	.74	–.35
Discuss other	–.55	.11

Note: $^{*}p < .01$.

Table 7
Correlations of Syntactic Complexity (MTUL) With Expressive Vocabulary and Functional Language Measures

Category	Abused adolescents (10 dyads) *r*	Non-abused adolescents (10 dyads) *r*
Syntax		
T-units	.68	–.31
Semantics		
Total nouns	–.43	–.30
Total verbs	–.29	–.16
Total other words	–.75	–.10
Total different words	–.66	–.20
Function		
Total words	.58	.14
Fillers	–.67	–.17
Self-repetition		
(i) Coster et al. (1989)	.41	–.17
(ii) Restricted definition	.30	–.12
Repetition of others	–.72	–.28
Generalizations	.34	–.08
Minimal responses		
Supportive	–.01	–.04
Answers	–.89**	–.59
Questions	–.65	–.74
Info. requests	–.75	–.49
Discuss self		
(i) With action statements	.60	–.27
(ii) Without action statements	.59	.27
Discuss others	.24	.25

Note: $^{*}p < .01$, $^{**}p < .001$.

the non-abused group ($M = 15.9$), $U = 22$, $p = .02$. Against hypothesis, there were no significant differences between the groups for frequency with which generalizations were used.

Supportive communication. Against hypothesis, the abused and non-abused differed significantly in their use of general questions (including information requests), $U = 23$, $p = .02$, although the mean for the physically abused group was higher ($M = 21.6$) than that of the non-abused group ($M = 11.7$). Against hypothesis, there was no significant difference in the use of minimal responses during speech (i.e. supportive minimal responses).

Syntax and semantics. While there was no significant difference in the syntactical maturity (MTUL) of the physically abused group ($M = 14.3$) and the non-abused group ($M = 17.8$), $U = 27$, $p < .05$, the non-abused dyads used significantly more *T*-units ($M = 14.1$) than the abused dyads ($M = 9.8$), $U = 20.0$, $p = .01$. There were no significant group differences for the number of different words used in any of the three categories: nouns, verbs, or other words (see Table 5).

Correlations

The relationship between verbal IQ and expressive communication was generally weak in the abused group, with only a few exceptions (see Table 6). Individuals who had high verbal IQs also had a high score for 'discuss self' ($r = .74$) and for supportive minimal responses ($r = .35$). There was also a positive relationship between measures of syntax and verbal IQ ($r = .36$). Abused individuals with low verbal IQ were likely to exhibit a high proportion of talk about others, ($r = -.55$) and requests for information ($r = -.35$). For the non-abused group, expressive communication was more weakly related to verbal IQ than in the abused group. There were two clear exceptions. Those with a high verbal IQ in the non-abused group showed a high use of supportive minimal responses, and a high number of fillers.

There was a strong negative relationship between syntactic complexity (MTUL) and all but one of the categories of vocabulary (number of different verbs) for the abused (see Table 7). There was also a strong relationship between syntactic complexity and several of the categories of functional communication in the abused dyads. In particular, individuals who had a high measure of syntactical complexity used few fillers, did not engage frequently in repetition of others, gave few minimal response answers, asked few questions overall and engaged in few requests for information, although they engaged frequently in talk about their internal states and spoke more words in general. For the non-abused group, none of the vocabulary categories was related

strongly to MTUL. Only three of the functional communication categories were strongly related to MTUL. That is, those who showed high syntactical complexity, gave few minimal response answers to questions, asked few questions overall and made few requests for information.

Discussion

For expressive language, only three differences were found at the .01 level of significance. Before discussing these, it is important to reiterate reasons why cautious interpretation is required. Firstly, the sample size, though by no means atypical of previous studies (e.g. Coster et al., 1989), is nevertheless small. This is due partly to problems of accessing samples from the same educational and social backgrounds, matched for gender, age and physical abuse. Secondly, severity of abuse was not taken into account, largely because of lack of information from records, yet severe abuse (e.g. head injury) may cause intellectual impairment. In the present study, it was only by chance that the mean verbal IQ measures for the two samples were similar. Thirdly, dyadic scores were used and, while this is valid for the situation in which these youngsters found themselves, where abused youngsters daily interacted with other abused youngsters, it reveals only one side of the story. It does not tell us about the daily interactions between abused and non-abused individuals which are perhaps more typical of real life, and also which would have taken place in the establishments. While such dyadic pairings may have enhanced group differences, in fact, most partner correlations were low, with the main exception being expressive vocabulary.

The first main finding was the inhibited use of self-related language among the abused dyads relative to the non-abused dyads. This is similar to Coster et al.'s (1989) findings with children. Moran and Eckenrode (1992) have suggested that, if physical abuse occurs at an early age when self is at a critical stage of formation, then adolescent problems in this area may be greater than if abuse started later. Difficulties with self or self-esteem, and rejection by others, have been linked in adolescents to difficulties in academic achievement (Green, Vosk, Forehand & Beck, 1981; Parker & Asher, 1987). In the abused sample, those with high verbal IQs were likely to discuss self frequently. Causality, however, cannot be inferred. We cannot tell whether those with high verbal IQs generally perceive themselves as being more capable, which may in turn have made them more confident about discussing themselves. Or does an ability to discuss self lead to better verbal achievement? The same questions can also be asked concerning the relationship between talk about self and syntactic abilities. The relationship between talk about self and *T*-unit was strong ($r = .73$), as it was with MTUL. Not having the syntactical means to express oneself may indicate that the individual is less able to speak about self. Or, not discussing self may indicate that feelings of low self-worth have affected one's confidence about learning and expressing oneself in more complex terms.

The second main finding was that physically abused adolescents had a poorer level of syntax than the non-abused, thus fitting Coster et al.'s (1989) expectations that such difficulties are perpetuated. From the design of the present study, however, it is not possible to ascertain whether this is linked to a lack of verbal stimulation in childhood which is re-enforced because others then speak only in simple terms to the abused, or to low self-confidence about producing complicated sentences, or indeed to some other factor. The correlational study showed that those who had poorer levels of syntax also gave more minimal response answers than those with better syntax.

Thirdly, self-repetitions, although occurring infrequently, nevertheless occurred more frequently among the abused than the non-abused subjects. These results differ from those of Coster et al. (1989), who found no significant group differences. The latter defined repetition to include those statements made when the listener did not appear to respond to or hear the speaker. By excluding such statements from one of the measures in the present study, the difference between the abused and the non-abused groups increased. This suggests that the abused group's speech style was not repetitious because the partner did not hear or respond to the speaker. It is plausible that self-repetition, rather than being linked to general self-esteem and past rejection, is a reflection of impoverished language. This is based upon the findings that firstly, individuals who engaged more in self-repetition talked more about self ($r = .63$) and secondly, the abused group's use of fillers was positively correlated with their use of self-repetitions ($r = .57$). The former finding, that individuals who had problems talking about self did not necessarily exhibit self-repetition, highlights what appear to be individual differences in the types of problem experienced by adolescents who have experienced childhood physical abuse.

Against hypothesis, there was no significant difference in the two groups' abilities to offer minimal support. Indeed, the abused group showed an even greater mean use of questioning, and the means for minimal supportive responses were higher for the abused than non-abused dyads. It is possible that the skill of supporting communication is developed at a later stage in life, and is less affected by childhood abuse than those skills developed earlier (see Moran & Eckenrode, 1992). An alternate interpretation is that older children deal with interaction anxiety by trying to control the interaction so that they themselves do not need to offer much content, e.g. by directing the topic and interaction through questioning.

The predicted finding that the two groups would show no vocabulary differences occurred possibly because the subjects were well matched educationally, and because the specific topic of discussion was a film about which all subjects were expected to be equally knowledgeable. Notably, an attempt to compare the groups' use of figurative speech was not very fruitful because figurative speech was almost non-existent with the exception of abusive terms. It seems that neither group was particularly developed in this area.

Language comprehension was not related strongly to most of the categories of language expression among the

abused. Thus, those with better powers of comprehension were not necessarily better communicators (except in the use of self-related language). As predicted, the language comprehension of the abused adolescent sample was not significantly more impaired than that of the control group. This supports previous findings about the lack of effects of abuse upon the language comprehension abilities of young children (e.g. Allen & Oliver, 1982; Cicchetti & Beeghly, 1987), although it is at odds with findings for older children where comprehension difficulties have been observed (Gersten et al., 1986). It is possible that differences occur later in childhood then disappear in adolescence. Caution should be exercised, however, in interpreting the present findings, because the *SD* of the abused group was greater than that of the non-abused; two individuals in the former group had very low verbal IQs. Moreover, other features of comprehension were not examined, such as ability to follow and extract main ideas from extended narrative or argument, or to comprehend complex syntactic structures.

Conclusions and Future Directions

The three main results of this study are notable in light of the fact that comparisons were made with a closely matched control group, who may well have been more awkward in communication than other groups. Thus it appears that present schooling experience and the experience of more than one care-giving situation do not account for the differences in syntax, self-language or self-repetition. However, for many of the categories under examination (e.g. minimal interaction style) there were no significant differences between the groups. Although this suggests that the physically abused group were not more impoverished in their use of such speech features, the question arises about the extent to which the choice of control group contributes to the lack of significant differences. It would therefore be valuable for future studies to include a second matched control group from a 'normal' school to examine whether differences between the latter group and the physically abused group are more extensive.

A second valuable direction for future research is to determine whether the noted differences in this study place adolescents at a hindrance in other contexts. For example, if articulating one's internal states is vital for controlling situations (Fatoot, 1993; Santostefano, 1978) then it may have an important part to play in conflict resolution and peer relationships. Likewise, poor syntax, correlated here with a poor communication style, may limit one's ability to work collaboratively on tasks as well as to elaborate complex ideas in problem solving contexts. Also, as noted above, difficulties with self or self-esteem, and rejection by others, have been linked in adolescents to difficulties in academic achievement (Green, Vosk, Forehand & Beck, 1981; Parker & Asher, 1987). Thus it would be important to determine whether the associations observed in this study between discussion of self and verbal comprehension, and between discussion of self and the use of syntax, mediate this link with academic achievement.

Finally, it would be useful for future studies to replicate and explain individual differences in the type of problem experienced by adolescents who have experienced childhood physical abuse. Might there be two different types of communication difficulty, with some individuals exhibiting problems with self-related language and syntax and others showing a tendency towards redundant speech with impoverished content? Knowledge of such variations is important if intervention efforts are to prove successful in pin-pointing particular areas for improvement.

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Appendix

Please fill in the following information about yourself:

Male/Female: School:

Age:

What I would like you to do is help me find out what you think of the video you have seen today. Before starting you will find it easier if you quietly think to yourself for a few minutes about the points you would like to speak about, looking at the questions to give you an idea while you think.

You will now have 10 minutes to talk about the video to your partner. Please work through all the questions, BOTH saying as much as you can about EACH one. Read one question at a time and then try to answer it TOGETHER, TELLING YOUR PARTNER WHAT YOU THINK AND ALSO THINKING ABOUT WHAT HE/SHE HAS SAID. DISCUSSION IS IMPORTANT AND YOU DO NOT HAVE TO AGREE. THERE ARE NO RIGHT OR WRONG ANSWERS — YOUR OWN THOUGHTS ARE WHAT MATTER.

Once you feel you have BOTH said everything you want to on that certain question, then you should move on to the next. Remember you have 10 minutes to chat so do not feel you must rush through the list. Do try to keep talking as this will probably help you each to notice and remember things that you would maybe forget to say.

QUESTIONNAIRE ABOUT THE VIDEO

(i) What made you like or dislike the film? (You may find it helpful to talk about the parts of the video which you enjoyed and those which you did not enjoy.)
(ii) Can you think of certain people who would enjoy this video, e.g. would boys like it better than girls?
(iii) Do you prefer this type of film to other types, e.g. comedies, musicals, crime, science fiction? Say why you would or would not choose to watch it.
(iv) Say if and why you would or would not rather have seen this film in the cinema — Comfort, Special Effects, Atmosphere, Company.
(v) What would you have said this story was about? Are there any lessons to be learnt from it?
(vi) Were there any times during the film when you felt different emotions, e.g. sadness, fear, anger, happiness? What exactly about the events you saw made you feel this way?
(vii) Name one character whom you think was a good person and behaved rightly. What did this character do that made you think they were good?
(viii) Name one character whom you think was a bad person and behaved wrongly. What did this character do that made you think they were bad?
(ix) From all the characters, good or bad, which did you like best and why did you like them?
(x) Would you like to be any of the characters? If so, why?
(xi) Do you think that the things that happened in this film would happen in real life?
(xii) We were thinking of showing this film to some other young people. To help us decide whether to choose it again can you please tell us how you would rate it. (Marks out of 10.) Can you think of another film which you think would be better and if so, why is it better?