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A parent report instrument for early language assessment*

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ABSTRACT

A structured questionnaire for evaluating the level of communicative and linguistic development at 12, 16 and 20 months of age respectively was administered to the parents of 23 children for three different assessments. For a subsample of 14 subjects the questionnaire was filled in by the parents and by a trained observer in a two-hour observational session at home. The aim of the study was two-fold: (a) to verify the validity of the instrument and specifically its *predictive validity*; (b) to verify the *reliability* of the information given by parents through a direct comparison between the data in the questionnaire filled in by the parents and the data in the same questionnaire filled in by the observer. Results show that, on the basis of measures reported at 12 months, the instrument can predict linguistic development at 20 months as evaluated by means of a Vocabulary Checklist. Furthermore, the pattern of communicative and linguistic development reported by parents is consistent with that reported by the observer. Finally, the sample's lexical development exhibits a wide range of individual variation, with lexicons consisting of about 8 to 628 different words at 20 months of age.

INTRODUCTION

Historically, researchers of communicative and linguistic development during the early years of life have used direct longitudinal observation of

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children's spontaneous behaviour in a family environment as their preferred method. This type of approach, particularly in the 1970s, has led to a vast production of diary-type studies and case histories (cf. Bruner 1975, Camaioni, Volterra & Bates 1976, Clark 1974, Halliday 1975) which have told us much about the main phases, stages and modalities of early language development.

It became increasingly apparent in subsequent years, however, that even a productive methodological approach such as this had its limits. The first and most important limit is its relative lack of *generalizability*, i.e., the difficulty of applying direct longitudinal observation to large numbers of children. The second, related, limit lies in the difficulty of making a serious analysis of individual differences in language development, an analysis which requires the use of large samples, which are more likely to display inter-individual variation.

In an attempt to go beyond these drawbacks, a number of studies have been carried out over the past decade using indirect methods of assessment and evaluation of child language development by administering questionnaires and interviews to the parents of children aged from one to two years (Bates, Bretherton & Snyder 1988, Bretherton, McNew, Snyder & Bates 1983, Casadio & Caselli 1989, Dale, Bates, Reznick & Morisset 1989, Reznick & Goldsmith 1989, Snyder, Bates & Bretherton 1981). From these studies we know, first, that parents (particularly mothers) provide a *reliable* source of information on the communicative-linguistic development of their own children. Secondly, the instruments used have proved sensitive enough to detect *individual differences*, for example comprehension versus production differences and referential versus expressive styles, throughout the one-word stage (cf. Reznick & Goldsmith 1989, Snyder *et al.* 1981).

In a longitudinal study of 27 children Bates *et al.* (1988) found that a maternal record of infant vocabulary at 20 months (communicative development inventory (CDI) WORDS) was significantly correlated with the total number of words derived from a language sample recorded at home. The reported vocabulary at 20 months had predictive validity as well, correlating with both MLU and Peabody Picture Vocabulary Test at 28 months. In a subsequent study, Dale *et al.* (1989) gathered CDI WORDS data on five independent samples of 20-month-old children (total number of subjects: 226) and reported substantial validity correlations with the Bayley Mental Development Index, and particularly with a language subscore derived from that test. Other parent report instruments, focused on the first year of life, have tried to assess the developmental course of parents' perceptions and attributions about their infants' *vocal* behaviour (cf. Miller 1988). Also in this case, the parental reports of both general

vocal behaviour and specific sounds produced by the infants were generally consistent with the age norms available in the literature, 'although there was no independent verification of the presence of these behaviours in the repertoires of these particular infants' (Miller 1988: 137).

In sum, it is not difficult to recognize that parents, having far more access to the child's everyday experience than any other observer, can produce a more accurate estimate of the child's linguistic performance. However, to reduce or avoid parental bias (overestimation or underestimation), due to lack of professional training and to the socio-cultural nature of parental belief systems, parents should be asked only about *current* behaviours, with no reliance on retrospective or prospective reports (cf. Dale *et al.* 1990, Reznick & Goldsmith 1989). So defined, the parent report is likely to reflect what the child at present 'knows' or 'uses' frequently, more than what the parent knows about infant development at different ages and stages.

On the basis of the rather positive results of the above-mentioned studies, the present work was aimed at constructing and validating an instrument properly designed to evaluate the child's communicative and linguistic development during the second year of life. The instrument consists of a *structured questionnaire* in which parents are requested to indicate what kind of behaviour, whether communicative or not, is currently produced by the child inside six specific and highly familiar daily life contexts. Two forms of the questionnaire (I and II) were developed to measure the level of communicative-linguistic development at 12/16 months and at 20 months, respectively. Two goals were addressed in particular:

- A. to verify the instrument validity and specifically its *predictive validity*. To this end an evaluation was made of the instrument's capacity to identify the 'normal' developmental trend and, on the basis of measurements carried out at 12 months, to predict the rate of child language development at 20 months, as measured in terms of *vocabulary size*.
- B. to verify the *reliability* of the information provided by parents by means of a direct comparison between the data obtained from the questionnaire filled in by the parents and those obtained from the same questionnaire filled in by a trained observer during observation sessions carried at the child's home at 16 and 20 months of age, respectively.

Verification of the instrument's validity was performed using the total sample (23 subjects), while a subsample of 14 subjects was used to check the reliability of the parents' responses. As far as individual differences in early lexical development is concerned, in the present paper will be

analysed and discussed only data on the *rate* of word acquisition exhibited by our subjects during the one-word stage and the period of early word combinations (see Dromi, in press, for a detailed and up-to-date review of recent reports on both rate and content/composition of early vocabularies).

METHOD

Sample

The selected sample consisted of 23 families of uniform socio-cultural level (medium-high), as defined on the basis of the mother's educational level (high school certificate or degree) and the father's job (clerical worker/official, teacher, businessman, professional). All the families were Italian native speakers and lived in Rome. The distribution of children by sex and birth order was as follows: 12 females/11 males, 12 first born/11 second born. Nineteen mothers had jobs outside the home, mostly part-time. Only six children in the sample attended day nursery during the period of observation

Instrument

The questionnaire was constructed on the basis of the results of previous research (Bates, Benigni, Bretherton, Camaioni & Volterra 1979, Camaioni, Volterra & Bates 1976, Camaioni & Laicardi 1985, Caselli 1983, Volterra, Camaioni, Benigni & Bates 1981). This research had stressed two important characteristics of the child's early communicative-linguistic development, namely (a) its strong dependence on the physical and social context in which communication takes place; (b) the importance of considering not only *routine* contexts, in which the child is cared for in terms of his/her needs (food, changing diaper, sleep, etc.) but also *play* contexts, in which the parent-child interaction has no instrumental purpose and the child's attention can be concentrated on communication as such rather than on its normal consequences (for a more detailed analysis of play contexts see Camaioni 1989).

Two versions of the questionnaire were constructed (Forms I and II); they were similar for all the items specified below but Form II included additional items because of the child's communicative advances at the later age (see samples of the questionnaire¹ in the Appendix). The questionnaire comprises six different contexts, either routine or play, defined as follows:

[1] The complete 'Parent Report Instrument', which includes Forms I and II and guidelines on administration and coding, is available from Luigia Camaioni, Dept. of Developmental and Social Psychology, University of Rome La Sapienza, via dei Marsi 78, 00185, Roma.

1. What does the child do when he/she is hungry?
2. What does the child do when he/she wants to go out?
3. How does the child behave when he/she wants a toy?
4. When the preferred person is absent what does the child do to call her/him?
5. When you look at/read a book together, what does the child do?
6. When you play 'peekaboo' together what does the child do?

Within each context a set of behaviours, both communicative and non-communicative, of a motor, gestural, vocal and linguistic nature, that may be exhibited by the child, are specified. For each type of behaviour the parent is asked to indicate whether it is produced by the child and if so how frequently, responding on a three point scale: *never/sometimes/often*.

In addition to the above six contexts, Form I of the questionnaire (administered at 12-16 months) comprises two lists, one of words (15) and one of communicative gestures (15). The parent must indicate in these lists which words and gestures the child is capable of using, the situation in which they are used, and how frequently (*never/sometimes/often*). Finally, the questionnaire also includes a part dedicated to the evaluation of child's motor ability.

The two forms of the instrument differ in the following aspects. The 20 months questionnaire (Form II) includes, among the communicative behaviours the child may exhibit in each context, the production not only of vocalizations, gestures and words but also of simple sentences (2-3 words). Associated with the Form II questionnaire is a *Vocabulary Checklist*² (680 lexical items), which replaces the two lists of words and gestures included in the Form I questionnaire. The vocabulary checklist allows an independent measure to be obtained for the child's level of linguistic development at 20 months expressed in terms of 'vocabulary size'.

Procedure

The questionnaire was filled in by the parents at three different assessments, i.e., when the children turned 12, 16 and 20 months, respectively. For the 12 and 16 month assessments Form I was used, while Form II of the questionnaire was used at 20 months.

The questionnaire was completed also by a trained observer at 16 (Form I) and 20 months (Form II) of the child's life during a 3-4 hour observational

[2] This Vocabulary Checklist is an Italian adaptation of the CDI WORDS, developed by Bates and her colleagues, Center for Research on Language, University of California, San Diego.

session carried out at home. This was followed 1–2 days later, again at the child's home, by an audio-videorecorded observation (45 minutes' duration) of the child's behaviour in his/her daily interaction with the mother. The session was equally divided into three parts, corresponding to the following contexts: *meal*, *customary play*, *play with new objects*. The videotape session was carried out in order to enable a second observer to check and, if necessary, complete the questionnaire.

Questionnaire coding

All the questionnaires were coded using the following categories relative to both communicative and non-communicative, verbal and non-verbal, behaviour of the child: 1. CRYING (e.g., when the child is hungry he/she cries); 2. USE OF ADULT AS INSTRUMENT (e.g., when the child is hungry he/she leads the mother to where the food is); 3. SOLITARY BEHAVIOUR (e.g., when the child wants a toy, he/she gets it on his/her own); 4. POINTING (e.g., the child points to the desired toy); 5. REFERENTIAL GESTURES (e.g., the child places his/her hand to his/her ear, pretending to telephone); 6. VOCALIZATIONS (e.g., the child uses a special vocalization to refer to food); 7. WORDS (e.g., the child uses a special word to refer to food); 8. POINTING + WORDS (e.g., the child points to the desired object and refers to it by labelling); 9. SENTENCES (e.g., when the child wants a toy, he/she uses simple sentences such as 'give ball', 'my teddy-bear'). For each of the nine categories each subject received a total mean score, which was computed by adding up the single scores attributed to that category in the six contexts of the questionnaire and dividing by the number of contexts in which the category was reported to really occur. For the MOTOR ABILITY variable (e.g., the child crawls on all fours, the child goes up the stairs without support) each subject received a single score.

The same coding procedures were applied to all questionnaires, i.e. both to those filled in by the parent at 12, 16 and 20 months, and to those filled in by the observer at 16 and 20 months. Coding was carried out by three trained coders.

RESULTS

Verification of the instrument's validity

The first problem we addressed was the verification of the instrument's validity, in particular its predictive validity. In this connection reference was made to a number of previous reports. On the one hand, these reports documented the existence of significant positive correlations between the use of *performative gestures* (in particular, pointing) and language measures between 9 and 13 months (cf. Bates *et al.*, 1979); on the other, they identified the consistent production of *referential* or *symbolic gestures* by children at this age as a gestural modality complementary rather than alternative to the

verbal modality (children who use a greater number of referential gestures tend to display also a richer vocabulary; cf. Acredolo & Goodwyn 1985, Volterra & Caselli 1986). It was therefore deemed of interest to verify whether our instrument, although not based on the systematic observation of the children's behaviour under controlled conditions, did reflect the same developmental trend and allowed the same correlation pattern to be obtained. More specifically, we expected to find:

- (a) a significant positive correlation between pointing at 12 months and vocabulary size at 20 months;
- (b) a significant positive correlation between the production of referential gestures at 12 months and vocabulary size at 20 months;
- (c) no correlation between the use of crying and vocalizations at 12 months and vocabulary size at 20 months;

As far as the variables *solitary behaviour* and *use of adult as instrument* are concerned, no specific prediction was made. Moreover, there was expected to be no correlation between the level of motor development at 12 months, taken as an index of the child's general development, and his/her vocabulary size at 20 months. While the predictions expressed in points (a), (b) and (c) above respectively ensure convergent and divergent validity of the correlational pattern, the absence of correlation with the level of motor development ensures that we are not dealing merely with some general factor (maturation, learning, etc.).

Table 1 reports the Pearson correlation coefficients between the measures obtained from parental responses at 12 months and vocabulary size at 20 months. All our predictions are extensively confirmed. In particular, the correlation of pointing and the production of referential gestures at 12 months with vocabulary size at 20 months was significantly positive. Conversely, no correlation was found between the use of crying/vocalizations at 12 months and vocabulary size at 20 months. Of the two measures for which no specific prediction was made only the use of the adult as instrument showed a positive correlation with vocabulary size at 20 months. This is consistent with previous findings insofar as it indicates that the child prefers to use the adult as an instrument/agent rather than act on his/her own, in circumstances when he/she requests something.

As obviously expected, the number of words reported at 12 months was positively correlated with vocabulary size at 20 months. Furthermore, even the overall distribution across age of the different measures reflects the expected developmental trend, showing a strong decrease in the use of vocalizations between 12 and 20 months and a simultaneous increase in the production of words, while the frequency with which pointing and referential gestures are used shows no considerable variation with age (see Figure 1).

TABLE 1. *Predictive validity: Pearson correlation coefficients between parental report measures at 12 months and vocabulary size at 20 months*

Measures	Correlation with vocabulary size at 20 months
Pointing	$r = 0.52^*$
Referential gestures	$r = 0.37^*$
Vocalizations	$r = -0.25$ n.s.
Crying	$r = -0.26$ n.s.
Motor ability	$r = 0.21$ n.s.
Solitary behaviour	$r = 0.04$ n.s.
Use of adult as instrument	$r = 0.52^*$
Words	$r = 0.73^*$

$N = 23$; $df = 21$; $r = 0.325$; $*p < 0.05$

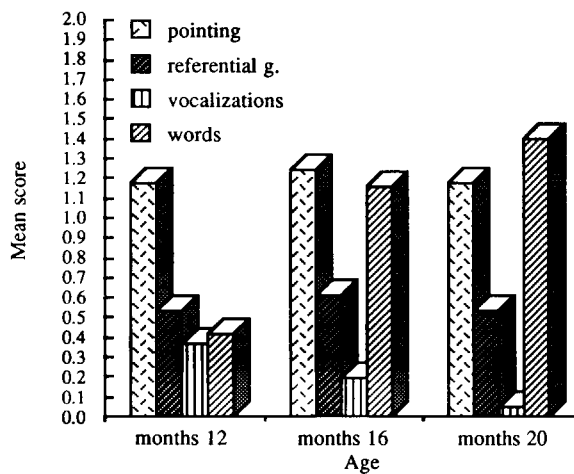


Fig. 1. Distribution of Pointing, Referential Gestures, Vocalizations, Words at 12, 16, 20 months of age for the total sample ($N = 23$).

Comparison between parents and observers

To verify the reliability of parental report, a direct comparison was carried out between the mean scores obtained from the questionnaires filled in by the parent at 16 and 20 months and the mean scores obtained from those filled in by the observer at the same age. The comparison was based on a subsample of 14 subjects for whom both assessments (parent/observer) were available (see Table 2).

As expected, parent mean scores were generally higher than the observer's for the same variable at the same age. This is due to the fact

TABLE 2. *Mean (standard deviation) scores of parental report measures and observer report measures at 16 and 20 months of life (N = 14)*

Measures	Parent		Observer	
	16 months	20 months	16 months	20 months
Crying	0.65(0.32)	0.71(0.25)	0.43(0.32)	0.37(0.55)
Use of adult as instrument	1.13(0.34)	1.02(0.42)	0.62(0.48)	0.52(0.45)
Solitary behaviour	1.84(0.22)	1.6(0.27)	1.59(0.29)	1.4(0.43)
Pointing	1.32(0.40)	1.2(0.43)	1.08(0.35)	1.2(0.33)
Referential gestures	0.65(0.33)	0.47(0.30)	0.42(0.23)	0.35(0.35)
Vocalizations	0.15(0.22)	0.06(0.12)	0.27(0.21)	0.17(0.32)
Words	1.18(0.70)	1.41(0.58)	1.1(0.52)	1.4(0.43)
Pointing + Words	—	1.15(0.53)	—	0.97(0.52)
Sentences	—	1.05(0.85)	—	0.78(0.68)
Motor ability (single score)	12.14(3.2)	—	5.85(2.38)	—

that, in any case, the observer has much less time than the parent to fill in the questionnaire. However, the data show clearly that parent and observer were comparable and consistent in recording the developmental course of children's communicative and linguistic behaviours. A more analytical inter-rater comparison was performed by calculating the intraclass correlation indices between the same measures reported by the parent and the observer at 16 and 20 months, respectively (see Table 3).

TABLE 3. *Intraclass correlation coefficients between parental report measures and observer measures at 16 and 20 months of life*

Measures	Age	
	16 months	20 months
Crying	ri = 0.13	ri = -0.25
Use of adult as instrument	ri = -0.22	ri = 0.23
Solitary behaviour	ri = 0.23	ri = 0.00
Pointing	ri = 0.27	ri = 0.22
Referential gestures	ri = 0.09	ri = -0.17
Vocalizations	ri = 0.28	ri = 0.77**
Words	ri = 0.72**	ri = 0.68**
Pointing + Words	—	ri = 0.59**
Sentences	—	ri = 0.77**
Motor ability	ri = -0.44	—

N = 14

** = $p < 0.01$

ri = intraclass correlation

The correlations were positive and highly significant for almost all the variables measuring the child's communicative-linguistic development,

namely VOCALIZATIONS (at 20 months), WORDS (at 16 and 20 months), POINTING + WORD (at 20 months), SENTENCES (at 20 months). One exception is the REFERENTIAL GESTURES category, where parent and observer did not show any correlation. No significant correlations were found between parent and observer for the remaining variables, i.e. CRYING, USE OF ADULT AS INSTRUMENT, SOLITARY BEHAVIOUR, POINTING, both at 16 and at 20 months.

It is interesting to note that the measures for which no inter-rater correlation was found do not refer to typically communicative or linguistic behaviours but rather to the 'quality' of parent-child interaction and to the parent's 'availability'. Furthermore, these behaviours tend to be influenced much more than others by the presence of an observer outside the parent-child dyad. The only exception, as we have seen, is the variable GESTURES, which detects a typically communicative behaviour but also a behaviour highly dependent on the 'familiarity' of the contexts, events and routines with which it is normally associated. It is therefore reasonable to find that the parent has more chance than the observer to detect such behaviour. Lastly, vocalizations are the only behaviour which tends to be detected more satisfactorily by the observer than by the parent (cf. Table 2), probably because of its low 'pregnancy' and of the difficulties involved in phonetic transcription (which are solved through observer training).

Early lexical development

Table 4 summarizes the distribution of total vocabulary size for the 23 subjects of our sample at different ages. It is worth noting that, while at 12 and 16 months of age vocabulary size was measured on the basis of a list of 15 words (that are very likely to occur in the expressive vocabulary of children in this age range), at 20 months it was assessed through a Vocabulary Checklist of 680 words.

The pattern of vocabulary production across age showed marked *individual differences* both at 20 months (range: 8-628) and at 16 months (range: 2-15); the inter-individual variation was much less systematic at 12 months, as reasonably expected. This finding is especially relevant given the homogeneous character of our sample of upper-middle-class children.

If we identify all the subjects who at 16 months produced 8 words or fewer, the reported vocabulary of these subjects at 20 months consists of less than 100 different words. On the other hand, all the subjects who at 16 months were reported to produce 9 words or more, exhibited a lexicon of more than 100 words at 20 months. Only two subjects (no. 10 and 23) could be defined as *atypical* in the sense that they produced more than 9 words at 16 months and less than 100 words at 20 months. It is also interesting to note that at 20 months of age all the subjects in the 'fast

TABLE 4. *Number of different words for each subject at 12, 16 and 20 months*

Sample	12 months	16 months < /= 8 Words	20 months < 100 Words	20 months Sentences*	24 months
1	0	4	65	0.6	253
2	4	5	15	0	36
3	1	5	10	0	130
4	2	2	8	0	223
5	4	7	27	0.3	38
6	4	6	14	0	57
7	0	7	34	0.2	39
8	5	7	79	0.2	—
9	3	8	50	0.2	170
10**	2	10	13	0.3	75
		> /= 9 Words	> 100 Words		
11	13	15	189	1.8	
12	4	10	316	1.7	
13	9	11	346	1.3	
14	14	15	517	1.3	
15	13	15	628	2	
16	10	13	355	2	
17	1	13	355	1.2	
18	3	10	216	2	
19	8	12	306	1.3	
20	9	12	202	1.1	
21	8	14	342	2	
22	7	12	262	2	
23**	4	12	60	0	
Mean	5.6	9.8	191.6	0.93	113.4
Range	0 – 14	2 – 15	8 – 628	0 – 2	36 – 253

* mean score
** Atypical subjects

learners group’ had begun to produce early word combinations (two-three words), while this was true only for some subjects in the ‘slow learners group’.

Finally, we carried out a follow-up on the sub-sample of ‘slow language learners’ (administering the same Vocabulary Checklist) in order to verify if they were able to reach at 24 months the criterion fulfilled by the ‘fast language learners’ at 20 months. Out of ten subjects half were reported still to use a vocabulary of less than 100 words at 24 months.

CONCLUSION

The results of this study, and particularly the comparison we made

between parent assessment and observer assessment of the same children's behaviour at the same ages, show the reliability and usefulness of a parental report instrument and provide further support for similar findings so far available only on American samples (cf. Bates *et al.* 1988, Dale *et al.* 1989). Parents are capable of making accurate and reliable assessments of the communicative-linguistic development of their own children provided that:

- (a) the instrument allows for the observation and recording of the behaviour *currently* displayed by the child;
- (b) the instrument obliges the parent to pay attention to *new* emerging behaviours (first words, first gestures, first sentences), which do not occur so rarely as to escape notice and not so often to be easily quantified;
- (c) the instrument obliges the parent to provide some suitable *examples* for each behaviour or ability of which the child is capable.

As far as early lexical development is concerned, the estimates of productive lexicon at 20 months derived from our instrument largely matched expectations based on previous studies showing a large variability in different subjects assessed around 18/21 months of age (e.g. Nelson 1973, Dromi 1987, Mervis 1987).

We suggest that such an instrument can be useful either for screening purposes in clinical and educational settings, and in research studies which need an overall evaluation of child language development. Of course the instrument needs further validation on the basis of samples reflecting a wider range of social class, family background and normal/atypical developmental course (e.g. pre-term infants, low birthweight infants, precocious infants). However, it is interesting to note that, within our middle-class sample, the questionnaire was sensitive to both developmental changes and individual differences in language production.

REFERENCES

- Acredolo, L. & Goodwyn, S. (1985). Symbolic gesturing in language development. *Human Development*, **28**, 40–49.
- Bates, E., Benigni, L., Bretherton, I., Camaioni, L. & Volterra, V. (1979). *Emergence of Symbols: Cognition and Communication in Infancy* (New York: Academic Press).
- Bates, E., Bretherton, I., & Snyder, L. (1988). *From First Words to Grammar. Individual Differences and Dissociable Mechanisms* (New York: Cambridge University Press).
- Bretherton, I., McNew, S., Snyder, L. & Bates, E. (1983). Individual differences at 20 months: analytic and holistic strategies in language acquisition. *Journal of Child Language*, **10**, 293–320.
- Bruner, J. S. (1975). The ontogenesis of speech acts. *Journal of Child Language*, **2**, 1–19.
- Camaioni, L. (1989). The role of social interaction in the transition from communication to language. In A. De Ribaupierre (ed.), *Transition Mechanisms in Child Development: The Longitudinal Perspective* (Cambridge: Cambridge University Press).

- Camaioni, L., & Laicardi, C. (1985). Early social games and the acquisition of language. *British Journal of Developmental Psychology*, **3**, 31–39.
- Camaioni, L., Volterra, V. & Bates, E. (1976). *La comunicazione nel primo anno di vita* (Torino: Boringhieri).
- Casadio, P. & Caselli, M. C. (1989). Il primo vocabolario del bambino. *Età Evolutiva*, **33**, 32–42.
- Caselli, M. C. (1983). Gestì comunicativi e prime parole. *Età Evolutiva*, **16**, 36–51.
- Clark, R. (1974). Performing without competence. *Journal of Child Language*, **1**, 1–10.
- Dale, P. S., Bates, E., Reznick, J. S. & Morisset, C. (1989). The validity of a parent report instrument of child language at twenty months. *Journal of Child Language*, **16**, 239–249.
- Dromi, E. (1987). *Early Lexical Development* (London: Cambridge University Press).
- Dromi, E. (in press). The mysteries of early lexical development: underlying cognitive and linguistic processes in meaning acquisition. In E. Dromi (ed.), *Language and Cognition: A Developmental Perspective* (Norwood, N.J.: Ablex).
- Halliday, M. A. (1975). *Learning How to Mean: Exploration in the Development of Language* (London: Edward Arnold).
- Mervis, C. B. (1987). Child-basic object categories and early lexical development. In U. Neisser (ed.), *Concepts and Conceptual Development* (New York: Cambridge University Press).
- Miller, C. L. (1988). Parents' perceptions and attributions of infant vocal behaviour and development. *First Language*, **8**, 125–142.
- Nelson, K. (1973). Structure and strategy in learning to talk. *Monographs of the Society for Research in Child Development*, **38** (1–2, Serial No. 149).
- Reznick, J. S. & Goldsmith, L. (1989). A multiple form word production checklist for assessing early language. *Journal of Child Language*, **16**, 91–100.
- Snyder, L. S., Bates, E. & Bretherton, I. (1981). Content and context in early lexical development. *Journal of Child Language*, **8**, 565–582.
- Volterra, V., Camaioni, L., Benigni, L. & Bates, E. (1981). Le prime parole. *Giornale Italiano di Psicologia*, **8**, 243–263.
- Volterra, V. & Caselli, M. C. (1986). First language acquisition through two modalities in deaf and hearing children. *The Italian Journal of Neurological Sciences*, **5**, 109–115.

APPENDIX OVERLEAF

APPENDIX

Form I, Context I

1. What does the child do when he/she is hungry?

(Please put a tick under one of the columns.)

	OFTEN	SOMETIMES	NEVER
(S) Tries to reach food	_____	_____	_____
(S) Goes towards the kitchen	_____	_____	_____
(P) Points to food	_____	_____	_____
(P) Points to the place where food is kept	_____	_____	_____
(A) Takes his/her mother towards the place where food is kept	_____	_____	_____
(G) Opens and closes his/her mouth pretending to eat	_____	_____	_____
(G) Lifts an empty container to his/her mouth	_____	_____	_____
(G) Lifts empty hand to his/her mouth	_____	_____	_____
(G) Describe which other gesture your child uses _____	_____	_____	_____
(C) Cries	_____	_____	_____
(V) Uses a vocal sound referring to food Which one? _____	_____	_____	_____
(V) Uses a word referring to food Which one? _____	_____	_____	_____