

# MOTHERS' RETROSPECTIVE REPORTS IN CHILD-REARING RESEARCH\*

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*One of the most commonly used sources of child-rearing research is the mother's retrospective report. This study compared mothers' current reports on their children's development with records of earlier reports made by the mothers to their pediatrician at the time of the unfolding of their children's development. Mothers' reports were found to be quite unreliable in some areas and quite reliable in others.*

ONE OF THE most commonly used tools of research on child-rearing practices is the retrospective interview. Investigators hope that by asking mothers appropriate questions they can find out how the mothers have raised their children and how these children have developed.

We conducted such a study, interviewing 225 mothers regarding the manner in which each had reared a child. The results were quite exciting in the number and nature of the findings. In reporting them at an APA meeting<sup>3</sup> and in preparing them for publication, we found ourselves hard-pressed to resist treating the mothers' reports as equivalent to the actual child-rearing practice. We began to see this as an especially serious problem in the light of the find-

ings of a careful study by Pyles, Stoltz and MacFarlane.<sup>1,2</sup> These *Es* evaluated the accuracy of mothers' statements regarding birth and developmental data by questioning them 21 months postpartum, in areas in which *E* had information from observation or past interviews. The authors report:

"Mothers tend to forget the illnesses and disturbances suffered during pregnancy; they tend to forget the injuries received at the birth of the child and use of instruments at that time; slight illnesses of the child during infancy are forgotten; and finally, mothers tend to remember that their children walk and had their first teeth at an earlier age than the primary records indicate."

The present study is an attempt to evaluate the accuracy of mothers' re-

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ports in areas of development that have been deemed important determinants of later personality functioning. The method of the study involved questioning mothers regarding their experiences in child rearing and comparing their testimony with the data from an "independent" source. More than one area of child rearing was studied since it seemed possible that the accuracy of the mothers' reports would vary in different aspects of child training.

#### METHOD

Following the conception of the study, our primary problem was to locate a sample of mothers whose earlier experiences in child rearing had been recorded in some currently available form. Our extended inquiries finally found us calling on a pediatrician in private practice whose devotion to his practice and interest in research had led him to develop a set of unusually systematic and detailed records. As a result of his interest, we were able to enlist the co-operation of a number of his patients. The interview schedule used with the mothers was brief and concentrated on a particular child in each family. Questions were asked concerning the child's feeding, toilet training, sleep patterns and developmental and health history.

Ss were selected from the pediatrician's files on the basis of the age of the child and geographical proximity. (Some families had moved from the city.) The final sample consists of 27 mothers each of whom were interviewed concerning one child they had raised. The mean and standard deviation of the ages of these children were 9.3 years and 2.0 years. Most of the fathers of the families in the sample were professionals. All of the interviewees were of the Caucasian race. The junior author served as interviewer. The mothers were not informed of the

true purpose of the study. Of the 30 mothers contacted, three could not or would not consent to interviewing. The interviews lasted between 30 and 45 minutes.

#### RESULTS AND DISCUSSION

*Interview behavior.* Almost every mother we interviewed experienced some difficulty in attempting to answer the questions. Many expressed regrets about not having kept records, while others seemed visibly disturbed by their inability to recall particular dates. Some illustrative remarks were: "Your memory about these things fades very quickly," "Are there really mothers who can remember any of these things?", "It's strange that he's only eight and I can't remember that far back," "You'd think I'd remember—it's surprising how you forget. I get her mixed up with the others," and "You know what I'm doing? I'm sort of thinking of this baby—my (present) two-year old."

A tabulation was made of the number of times each mother made this kind of remark during an interview. Included were expressions of difficulty in remembering, flat statements to the effect that they just didn't know and qualification of the information they gave, such as "I'm guessing," or "I'm not sure." Only one mother in our sample received a score of zero on this index; the mean score was 4.85 statements with a standard deviation of 3.01. A total of 131 statements of memory difficulty were made; TABLE 1 distributes these statements according to those interview areas in which they appeared, giving the number of questions in each area and the mean number of statements per question.

*Mothers' reports.* TABLE 2 gives the mean and standard deviations of reported length of breast feeding, age at

TABLE 1  
STATEMENTS OF MEMORY DIFFICULTY

Interview area	Mean number of statements per question	Number of questions per area	Number of statements of memory difficulty
Breast feeding	1	1	1
Weaning	13	1	13
Toilet training	4.67	6	28
Walking	7.63	8	61
Health	8.5	2	17

TABLE 2  
AGE (IN MONTHS) OF CHILD-REARING  
EVENTS AS REPORTED BY MOTHER

	Termination of breast feeding	Weaned	Completely toilet-trained	Started walking
Mean Age	3.10	14.94	29.83	13.40
Standard deviation	2.95	7.01	10.00	2.32
N	15*	27	23†	25‡

\* Only 15 of the 27 mothers had breast fed their children.

† Two cases were omitted because toilet training had not been completed at the time of the interview; two cases were omitted because the mothers' reports could not be coded.

‡ Two of the mothers' reports on walking proved uncodable.

which the child was completely weaned to cup, age at which his toilet training was complete and age when he started to walk. These data are based on the mothers' reports, and appear in terms of months. In those cases where the mother gave a range, the mid-point of the range was taken for the calculation of these results. The three responses based on personal records are included.

Fifteen, or 56 per cent of the mothers in our sample breast fed their children for two weeks or longer. In all but two cases the mothers' statements agreed with the doctor's records as to whether or not breast feeding had occurred. Both these cases were atypical in that breast feeding had occurred for no longer than two weeks. However, *under ordinary interview procedures these would have been classified as not having been breast*

*fed at all.* Although the mothers were interviewed regarding both bowel training and bed wetting, this breakdown did not prove useful, since the pediatrician's records treated these variables together in terms of age of completion of all toilet training. We therefore expressed all our data in this form. We were able to include in our analysis all but two of those cases where training was actually complete.

*Method of assessing accuracy of mother's report.* Because of the periodicity of the mother's visits to the pediatrician, most of our estimates of age of occurrence of developmental events are expressed in terms of an age range. If there was any possibility of misinterpretation of the pediatrician's records in any area, the case was omitted in analyses of this area. For this reason one case was dropped from the analysis of duration of breast feeding; three cases were dropped from the analysis of the age of weaning; three cases were dropped from the analysis of the age of the completion of toilet training; five cases were dropped from the analysis of the age at which walking was begun.

In explaining the procedure by which we determined whether there was a discrepancy between the mother's report to the pediatrician and her answer in our interview, let us use weaning as an example. If the mother's report of the age of completion of weaning fell within the range allowed for by the pediatrician's records, we judged that there was no discrepancy. If she answered in terms of an age range (no matter how wide), no discrepancy was judged to exist if there was any overlap between her range and the range derived from the records. The mean extent of the age ranges derived from the pediatrician's records varied for the different areas of development. For

duration of breast feeding the mean range was .92 months; for age of weaning the mean range was 4.95 months; for age of completion of all toilet training the mean range was 7.15 months. It can be seen that the mothers had a considerable degree of latitude in the determination of their accuracy; this suggests that our report underestimates the degree of discrepancy. No mother's report was judged discrepant with the pediatrician's records unless these records left no room for uncertainty.

In terms of these discrepancy criteria, 21 per cent of the mothers were judged discrepant in their reports of duration of breast feeding; the reports of 40 per cent of the mothers concerning the age of completion of toilet training were judged to be discrepant; the reports of 62 per cent of the mothers concerning age of weaning were judged to be discrepant.

It is interesting that the increase in percentage of "discrepant" mothers—from length of breast feeding, to toilet training, to weaning—parallels a similar increase in the number of their memory difficulties (TABLE 1). The pediatrician's records were precise as to age of walking, and in 75 per cent of the cases a discrete age, as opposed to a range, could be read from the records. In this area the reports of 25 per cent of the mothers were discrepant with the pediatrician's records.

Another approach is to examine the extent to which the mothers' reports dif-

fer from the data derived from the records. Because these latter data frequently appear in the form of an age range, we computed a mean "minimum" and mean "maximum" difference for each of these socialization areas. For instance, if a mother reported that her child had been weaned at 8 months, and the physician's records showed him to have been weaned sometime between 12 and 16 months, the maximum possible difference was 8 months, while the minimum was 4 months. Where a discrete age had been entered into the record, then the difference was expressed as one number and was considered as both the maximum and minimum. When a mother's report was not discrepant as defined above, a difference of zero was recorded.

Using the pediatrician's records as a standard, discrepancy scores were computed in two ways. The method of constant error computed direction of discrepancies by taking sign into consideration. By this method we could determine whether mothers' reports were overestimating or underestimating. The method of average error computed discrepancies without regard to sign. TABLE 3 presents the average and constant, minimum and maximum discrepancy scores for each of the developmental areas. (The distinction between the minimum and maximum differences was not especially relevant to the discrepancies involved in the age at which walking was begun, since in 75 per cent of the cases discrete ages

TABLE 3  
MINIMUM AND MAXIMUM DISCREPANCY SCORES IN MONTHS

<i>Developmental area</i>	<i>N</i>	<i>Mean constant error*</i>		<i>Mean average error</i>	
		<i>Minimum</i>	<i>Maximum</i>	<i>Minimum</i>	<i>Maximum</i>
Duration of breast feeding	14	+ .21	+ .04	.43	.68
Age of weaning	24	-2.12	-4.05	3.26	6.14
Age of completion of toilet training†	20	-6.70	-9.75	6.70	9.75

\* The pediatricians' records were used as the standard. A minus sign reflects underestimation on the part of the mothers; a plus sign reflects overestimation on the part of the mothers.

† The constant and average errors are equal in this case since all of the mothers underestimated.

were recorded in this area. In the case of walking, the mean constant error was  $-0.60$  months while the mean average error was  $.80$  months. Twenty cases were involved in this computation.)

These data show that the degree of discrepancy in the mother's estimation of duration of breast feeding and age of walking were quite small—in both cases less than a month. Inspection also reveals that in accordance with the Pyles, Stoltz and MacFarlane data,<sup>1,2</sup> (except for duration of breast feeding) those mothers who gave discrepant responses tended to underestimate the age at which these events occurred. This is especially true of toilet training, where *all* the mothers who gave discrepant responses underestimated the age at which training took place; it is also in this area that the largest mean discrepancy appears.

We wondered if mothers who gave discrepant responses in the weaning area tended toward discrepancies with respect to toilet training. Fifteen mothers had been included in both the weaning and toilet training analyses of discrepancy, and with them we performed a chi square test, using "discrepant—not discrepant" as our dichotomies. This test yielded a nonsignificant chi square, suggesting that, across these two areas in this small sample, mothers' unreliability was not consistent.

We also wondered if the number of siblings in the family was related to "in-accuracies," our hypothesis being that the larger the family the greater the opportunity for interference in memory. The range of siblings per family in our sample extended from two to five, with a median of three. Plotting frequency distributions in which accuracy was tabulated against number of children, we found a nonsignificant tendency for discrepancy to be related to number of siblings.

The physician's records also presented us with an ideal opportunity to compare the mother's memory of the child's health history with that noted by the doctor at the time of the illness. We used common childhood diseases for our analysis: measles, German measles, chicken pox and mumps. There was a total of nine cases in which a mother's report differed from the pediatrician's records regarding whether the child in question had had one of these ailments. In five cases, the mothers denied illnesses that were plainly recorded in the records; in four cases the mothers claimed illnesses that did not appear in the records, which the pediatrician felt reasonably certain the child had never experienced.

There is little we need add to this statement of results. Clearly, a basic method in child-rearing research may have a flaw. It seems at least possible that mothers' reports are not completely accurate. The extent of the possible inaccuracy seems to vary across areas of child-rearing epochs. One matter that troubles us is the alacrity with which newspapers and magazines manage to discover the results of child-rearing studies, reporting to eager parents the average age at which various functions develop. In the area of toilet training, to choose an outstanding example, such reports may be underestimates (in the present study, by from  $6.7$  to  $9.75$  months).

## REFERENCES

1. PYLES, M. K. AND J. M. MACFARLANE. 1934. The consistency of reports on developmental data. *Psychol. Bull.* 31: 596.
2. PYLES, M. K., H. R. STOLTZ AND J. W. MACFARLANE. 1935. The accuracy of mothers' reports on birth and developmental data. *Child. Develop.* 6: 165-176.
3. SHAFFER, J., S. A. MEDNICK AND J. SEDER. 1957. Some developmental factors related to field-independence in children. *J. Amer. Psychol.* 12: 399.