

# The Naive Theory of the Infant and Other Maternal Attitudes in Two Subgroups in Israel

Anat Ninio

Hebrew University, Jerusalem

NINIO, ANAT. *The Naive Theory of the Infant and Other Maternal Attitudes in Two Subgroups in Israel*. CHILD DEVELOPMENT, 1979, 50, 976-980. 104 mothers of 1- and 3-year-old children were interviewed. Half of the mothers were of high and half of low SES. Low SES mothers believed that infants acquire basic cognitive skills, such as vision, hearing, and comprehending speech, at a later age than high SES mothers. Low SES mothers also believed that the introduction of cognitively stimulating activities during the first years, such as buying the first book or starting to feed the self, should occur later than did high SES mothers. No status group differences were observed in the favored timetable of physical caregiving, such as toilet training or weaning. Nor were there status group differences on the strictness/leniency dimension or in the unwillingness to put pressure on infants for accelerated development. The naive theory of the infant as a cognitive being and the timing of cognitively enriching activities were found to belong to a common cluster, separated out from the rest of the maternal attitudes, in an analysis of the intercorrelation matrixes obtained in the two samples.

Authors writing on adult-infant communication (e.g., McFarlane 1974, Newson 1974, and Trevarthen 1974) have pointed out that caregiving adults behave as if they credited infants with fully human capacities, such as social responsiveness, thoughts, feelings, and the like. A major example for this kind of behavior is the early imputation of intentionality and content to the infants' protocommunicative behaviors, such as gestures, cries, or eye movements (Ninio & Bruner 1978; Ryan 1974). However, these authors usually observed Western middle-class subjects, and these beliefs might well be culture specific. There are some hints in the literature that cultural differences do exist in what people believe about the communicative potential of infants. For example, Tulkin and Kagan (1972) reported that some lower-class North American mothers did not believe that their 10-month-old daughters "possessed the ability to express 'adult-like' emotions or to communicate with other people" (p. 39). Tulkin and Cohler (1973), in a systematic investigation of maternal attitudes, found that middle-class mothers believed more than lower-class ones in the ability of infants to communicate and in the ability of mothers to understand and respond to their infants. In the middle-class sample, individual differences in this cluster of attitudes were correlated sig-

nificantly with the variance in a number of maternal behaviors, such as time spent face to face with the infant, proportion of reciprocal vocalizations, giving objects, etc. Cultural definitions of the communicative potential of infants are also thought to be a source of variability in the pattern of interaction and linguistic inputs to infants. For instance, baby talk is not used in a society where it is believed that infants possess fully adult speech comprehension from birth (Devereux 1949). In other societies where infants are considered capable of understanding speech at various later dates, the decision that the infant has started to comprehend speech is usually followed by pronounced changes in the way adults speak to him or act toward him (Blount 1972; Baldwin & Baldwin, Note 1; Bingham, Note 2; Ringler, Note 3).

Extrapolating from these findings, it is hypothesized that cultural differences exist in what people believe about the cognitive capabilities of infants at various ages. It is also hypothesized that these differences in the lay or "naive" theory of the infant are a source of variability in the readiness to introduce various changes in caregiving, for example, to start telling stories. The naive theory of the infant and attitudes on the timing of caregiving activities were studied in the present study, along

This research was supported by grants from the Human Development Center and the Faculty of Social Sciences of the Hebrew University of Jerusalem. The author's present address is: Department of Psychology, Duke University, Durham, North Carolina 27706.

[Child Development, 1979, 50, 976-980. © 1979 by the Society for Research in Child Development, Inc. 0009-3920/79/5004-0008\$00.75]

with some related maternal attitudes. The variables studied appear in tables 1 and 2. In all questions, the subjects were asked about their opinion on children and childcare in general, not in reference to their own children or their own parental behavior (e.g., "At what age is it expedient, in your opinion, to buy the first book?"). This procedure invites answers in terms of what people consider as socially desirable, or normative, and the problem of differential observer effect on the two status groups does not arise. In order to minimize the effect of interviewer variability, the questionnaire was fully structured, and the interviewers were only allowed to paraphrase the original questions in response to any queries.

Subjects were four groups of mothers, randomly sampled from the register of live births in Jerusalem. The first two samples consisted of 58 mothers of 3-year-old children, 30 of low SES and 28 of high SES. The second two samples consisted of 56 mothers of 1-year-old infants, 22 of low and 24 of high SES. The SES was measured by an 11-point scale (2–12) composed of father's occupation on a five-point scale and his education on a seven-point

scale (see Lieblich, Ninio, & Kugelmass 1972). All low SES families were so selected that they had a SES rating of 6 or less, and all high SES families a rating of 8 or more. No differences were observed between the same SES 3- and 1-year-old samples on any background variables, such as the mean SES rating, mother's and father's education, and occupational status. The mean SES rating of all low SES families was 5.45 (SD, 0.73); of high SES families, 10.53 (SD, 1.64). On SES rating and all the background variables, the differences between the two low and the two high SES samples were significant at  $p = .001$ .

Although the selection of the low and high SES samples was based only on the fathers' occupational and educational level, the low SES group turned out to consist almost solely of families of Asian-African country of origin, while the high SES group originated from European countries. Only two fathers and four mothers (out of a total of 104 pairs of parents) exhibited a deviant status/ethnic origin combination. Such a close correlation of SES and ethnic origin is a known feature of Israeli society (e.g., Matras 1965).

TABLE 1

TIMETABLE OF COGNITIVE DEVELOPMENT AND CAREGIVING ACTIVITIES IN TWO GROUPS

VARIABLE	Low SES		High SES	
	Mean (Months)	SD	Mean (Months)	SD
Cognitive Development				
Age at which baby starts to:				
See.....	1.85	1.52	.98	.53***
Hear.....	1.89	1.85	.54	.60***
Identify his mother.....	5.23	2.77	4.70	2.89
Think.....	9.27	5.82	5.04	4.48***
Understand intonation.....	9.61	6.79	5.85	4.23***
Understand words.....	10.27	5.23	7.17	2.67***
Identify pictures of objects.....	13.92	6.93	9.76	3.57***
Caregiving Activities				
Age at which it is expedient to:				
Start talking to the baby.....	1.91	2.53	.25	.20***
Stop breast-feeding.....	7.11	5.67	5.68	3.78
Wean baby from bottle to cup.....	12.10	6.92	12.49	6.03
Teach baby not to touch fragile objects.....	12.27	5.38	10.27	4.47*
Let baby start to feed himself.....	15.15	7.18	10.90	4.51***
Start toilet training.....	15.85	6.51	16.69	6.00
Start telling stories.....	16.55	11.00	10.96	6.36**
Start showing television.....	16.56	12.19	14.31	4.15
Buy first book.....	17.96	11.65	8.59	4.46***
Start talking of absent objects.....	20.87	6.94	13.45	8.30***

\* Group mean difference significant at  $p = .05$ .

\*\*  $p = .01$ .

\*\*\*  $p = .001$ .

TABLE 2

PROPORTION OF POSITIVE RESPONSES TO DICHOTOMOUS QUESTIONS AND TESTS FOR GROUP DIFFERENCES (%)

Question	Low SES	High SES	$\chi^2$
Belief in the possibility of influencing the rate of development:			
Is it possible to influence the onset of sitting? . . . . .	47.1	36.5	.78
Mentioned propping up as an activity influencing the onset of sitting . . . . .	91.7	65.0	. . . *
Is it possible to influence the onset of talking? . . . . .	78.0	96.1	5.83**
Mentioned talking to baby as an activity influencing the onset of talking . . . . .	97.6	95.8	.02
Pressure for acceleration of development:			
Should one buy a walker? . . . . .	36.5	24.0	1.35
Should one exercise the baby? . . . . .	75.0	72.0	.01
Should one buy a difficult toy? . . . . .	44.2	58.8	1.65
Should one send an infant to kindergarten with older children? . . . . .	33.3	27.5	.19
Strictness/leniency in caregiving:			
Should one feed the baby on schedule? . . . . .	69.2	65.4	.04
Should one put the baby to bed on schedule? . . . . .	78.8	88.5	1.13
Should one let a baby cry at night? . . . . .	27.5	27.5	.05
Should one insist on the child's finishing what he is given to eat? . . . . .	7.7	1.9	.84
Should one stop cooking and play with a baby that wants it? . . . . .	54.9	68.0	1.32
Sources of information on child development:			
Should one ask for advice from a pediatric physician? . . . . .	78.8	94.2	4.04*
Should one ask for advice from relatives? . . . . .	46.2	35.3	.85
Should one ask for advice from a pediatric nurse? . . . . .	94.2	88.5	.49
Should one ask for advice from neighbors or friends? . . . . .	50.0	39.2	.81
Should one look for advice in books on child development? . . . . .	48.1	84.6	13.95**
Do you like people giving advice to mothers on child rearing? . . . . .	49.0	25.5	4.79*
Do you like people commenting on the baby's rate of development? . . . . .	32.7	7.8	8.32**

\* Fisher's exact probability.

\*  $p < .05$ .\*\*  $p < .01$ .

While little is known about middle-class mothers originating from European countries, there exist anthropological descriptions of child-rearing practices of immigrants from some of the Asian and North African countries which suggest that these groups traditionally perceived of infants as relatively slow or late in cognitive development. For instance, it was reported that infants were seldom talked to, not played with, not supplied with toys, and so forth (Feitelson 1954; Goshen-Gottstein 1975; Kohls 1956; Weintraub & Shapiro 1968). Controlled observations on mother-infant interaction in families belonging to the two major subgroups revealed a pronounced difference in the quantity of language input infants from the two groups received during a similarly structured interaction (Ninio, Note 4), suggesting that traditional child-rearing practices are still in force. The results also suggest that middle-class European mothers might perceive infants as relatively more precocious than do lower-class Asian and North African mothers.

All mothers were tested at home in individual sessions. Mothers of 3-year-old infants were tested by 15 students of social work as a class project. The students received adequate

training to ensure uniformity of interviewing. Each student interviewed an equal number of low and high SES mothers. Mothers of 1-year-old infants were tested 4 months later by three trained interviewers. The latter sample was intended as a replication, necessary because of the great number of interviewers in the first sample. In addition, it served to examine the effect on the naive theory of the infant of actually having an infant in the relevant age range. Mothers of 1- and 3-year-old children were compared within each status group and were found to differ only on two out of 74 comparisons. The extent of replication raises the level of confidence in the reliability of the first sample and also shows that the difference between 1 and 3 years in the age of the infants does not influence the naive theory held by the mothers. The two samples were collapsed for further analysis into two status groups (the results are presented in tables 1 and 2).

Since the variances of the two groups were unequal, a  $t$  test was used which estimates the two variances separately. Group differences, where they exist, are in the magnitude of one full SD.

Lower-class mothers of Asian-African origin believe that infants acquire basic cognitive skills at a later age than do high SES mothers of European origin. This finding is consistent with the informal evidence offered by Tulkin and Kagan (1972) and the findings of Tulkin and Cohler (1973). The timetable of most of the caregiving activities is also relatively late in the low SES group. No differences were observed in three major areas of caregiving: weaning from the breast, weaning from bottle to cup, and toilet training. This is probably due to the equalizing influence of the well-baby clinic, which in Israel is a universal service, but which gives advice mainly on physical—as opposed to cognitive—caregiving.

Table 2 shows that lower-class mothers are less likely than high SES mothers to express a belief in the possibility of influencing the onset of talking, while a trend in the opposite direction is found for the belief in the possibility of influencing the onset of sitting. The two groups did not differ considerably on the rest of the variables studied.

In a further analysis, Kendall correlation coefficients were computed between each pair of variables and the intercorrelation matrix was analyzed by the Sattath-Tversky ADDTREE program (Sattath & Tversky 1977). This program describes the structure of a matrix of similarity measures as a similarity tree, namely, a set of nested classifications, the finer groupings nesting inside rougher ones. This analysis was performed for the two status groups separately. A moderately good fit was achieved; the coefficient of alienation was .09 in both groups.

In both groups all the cognitive timetable variables clustered in a single major "branch" of the similarity tree. This indicates that underlying the individual differences in the belief system about the cognitive capacities of infants there is probably a single factor, which is a general tendency to see the infant as more (or less) precocious. A number of caregiving variables also belonged to the same "branch." In both groups these were: when to start showing television; when to start telling stories; when to start the baby feeding himself; when to buy the first book; when to start talking to the baby; when to start teaching the baby not to touch fragile objects; when to start talking about absent objects. In the high SES European group only, three additional attitudes belonged to the same branch of the similarity

tree: it is possible to influence the onset of talking; one should *not* buy a walker; one should *not* send the child to kindergarten with older children. These attitudes were concordant with *early* timetables. The rest of the similarity trees were somehow different for the two status groups. This "cognitive cluster" is probably similar to Tulkin and Cohler's (1973) factor of "encouragement of reciprocity," which correlated with a number of important maternal behaviors, such as face-to-face vocalizations.

To recapitulate, the belief regarding what is the "right time" to begin with a new caregiving activity is, for some activities, connected with what the mother believes are the cognitive capacities of the infant. Those activities that are related to the naive theory of the infant consist mostly of providing cognitively rich stimulation to the infant. Some other caregiving activities are independent of the mother's image of the infant as a precocious or immature cognitive being. These are: beginning with toilet training, ceasing breast-feeding, and weaning to the cup. The "right time" for these changes in the life of the baby is not calculated on the basis of the attribution of cognitive capacities in either status group.

Additional evidence for this division between image-dependent and image-independent activities comes from the fact that the timetable of caregiving variables that do fall into the cognitive cluster are also those that have exhibited significant mean differences between the two status groups, while those variables that do not fall into the cognitive cluster have nondifferent means in the two samples. In other words, the evidence from intragroup individual differences converges to the same conclusion as the evidence from intergroup, culturally influenced, status, and ethnic group differences.

Additional research is now under way to explore the sources of these differences in the theory of the infant and their possible relevance to actual maternal behaviors.

## Reference Notes

1. Baldwin, A. L., & Baldwin, C. P. *Cognitive content of mother-child interaction*. Mimeographed. Center for Research in Education, Cornell University, Ithaca, N.Y., 1970.
2. Bingham, N. E. *Maternal speech to pre-linguis-*

tic infants. Mimeographed. Cornell University, Ithaca, N.Y., 1971.

3. Ringler, N. Mothers' language to their young children and to adults over time. Unpublished doctoral dissertation, Case Western Reserve University, 1973.
4. Ninio, A. Picture-book reading in mother-infant dyads belonging to two subgroups in Israel. Manuscript submitted for publication, 1979.

## References

- Blount, B. G. Parental speech and language acquisition: some Luo and Samoan examples. *Anthropological Linguistics*, 1972, **14**, 119-130.
- Devereux, G. Mohave voice and speech mannerisms. *Word*, 1949, **5**, 268-272.
- Feitelson, D. Education of the small child amongst the Kurdich community. [In Hebrew.] *Megamot*, 1954, **5**, 95-109.
- Goshen-Gottstein, E. R. Potentially harmful child-rearing practices. *Israel Annals of Psychiatry and Related Disciplines*, 1975, **3**, 85-104.
- Kohls, M. Cultural patterns and adjustment processes of Moroccan immigrants from rural areas. [In Hebrew.] *Megamot*, 1956, **7**, 345-376.
- Lieblich, A.; Ninio, A.; & Kugelmass, S. Effects of ethnic origin and parental SES on WPPSI performance of pre-school children in Israel. *Journal of Cross-cultural Psychology*, 1972, **3**, 159-168.
- Mcfarlane, A. If a smile is so important . . . *New Scientist*, 1974, **62**, 164-166.
- Matras, J. *Social change in Israel*. Chicago: Aldine, 1965.
- Newson, J. Towards a theory of infant understanding. *Bulletin of British Psychological Society*, 1974, **27**, 251-257.
- Ninio, A., & Bruner, J. S. The achievement and antecedents of labelling. *Journal of Child Language*, 1978, **5**, 1-19.
- Ryan, J. Early language development: towards a communication analysis. In M. Richards (Ed.), *The integration of a child into a social world*. Cambridge: Cambridge University Press, 1974.
- Sattath, S., & Tversky, A. Additive similarity trees. *Psychometrika*, 1977, **42**, 319-345.
- Trevarthen, C. Conversations with a two-month-old. *New Scientist*, 1974, **62**, 230-235.
- Tulkin, S. R., & Cohler, B. J. Childrearing attitudes and mother-child interaction in the first year of life. *Merrill-Palmer Quarterly*, 1973, **19**, 95-106.
- Tulkin, S. R., & Kagan, J. Mother-child interaction in the first year of life. *Child Development*, 1972, **43**, 31-41.
- Weintraub, D., & Shapiro, M. The traditional family in Israel in the process of change: crisis and continuity. *British Journal of Sociology*, 1968, **19**, 284-299.

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.