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*Are Infant Crying and Maternal Responsiveness During The First Year Related To Infant-Mother Attachment at 15 Months?**

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Abstract

In this longitudinal investigation, Bell and Ainsworth's (1972) Baltimore study on maternal responsiveness, infant crying, and infant attachment security was replicated and extended. Each of the 50 families was observed at home during more than 20 hours, and infant crying behavior as well as maternal responses were recorded. Mothers and their infants were observed in the Strange Situation procedure at 15 months of age.

Descriptive results showed that infants produced about the same number of cry bouts across the first

40 weeks after birth, but the duration of the cry bouts decreased by half during this period. The duration of crying peaked in the first nine weeks. The descriptive data are remarkably similar to the findings of Bell and Ainsworth (1972). Maternal responsiveness influenced cry behavior. Contrary to our expectations, the more frequently mothers ignored their infants' cry bouts in the first nine-weeks period, the less frequently their infants cried in the following nine-weeks period, even if intervening variables like earlier crying and synchronous responsiveness were controlled for. 'Benign neglect' of fussing may stimulate the emergent abilities in infants to cope with mild distress. Extending an earlier report on this investigation (Hubbard & Van IJzendoorn, 1991), we found that crying at home did not differentiate between secure and insecure attachment classifications, and it was not related to Strange Situation crying. Mothers of avoidant infants responded most promptly to their infants' crying. The failure to replicate the Baltimore findings was interpreted in terms of 'differential responsiveness'.

Keywords: infants, crying, responsiveness, attachment, Strange Situation, mothers

Infant crying is universal, as is documented by numerous historical, anthropological, and

behavioral studies (Lutz, 1999). Infant crying is considered to be one of the precursors of attachment, defined as a relatively durable affective relationship between a child and one or more specific persons with whom it interacts regularly (Ainsworth, Blehar, Waters, & Wall, 1978). In attachment theory, crying is attributed to the function of maintaining the baby's proximity to protective adults (Bowlby, 1971), or more generally, of ensuring continuity of parental care and avoiding the possibility of parental entrenchment (Hirsh, 1999).

From an evolutionary perspective, Bowlby (1971) suggested that crying had acquired survival value because this type of behavior - together with behaviors like sucking and smiling - would unintentionally stimulate proximity to the caregiver, and therefore protect against attacks from predators, and other dangers threatening an infant in the environment of evolutionary adaptedness. Crying would have become part of the genetically programmed repertoire of the species, and it would continue to perform a survival-promoting function in the present environments in which the species is living (Bell & Ainsworth, 1972).

In more recent evolutionary theorizing emphasis is on the inclusive fitness at the level of genes (Hamilton, 1996), and on the inevitability of parent-offspring

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conflict (Trivers, 1974; 1985; Pinker, 1997). Parents are inclined to invest in their offspring because they share their genes, but they do not necessarily invest in only one of their children at the cost of the other siblings or even other relatives. Infants therefore have been evolutionary biased to trigger parental care and investment, and crying is considered to be one of the most forceful weapons in this struggle for the scarce commodity of parental time and attention (Pinker, 1997). Increased crying during a prolonged period of time might even enlarge the spacing between the siblings' births (Lummaa, Vuorisalo, Barr, & Lehtonen, 1998), and promote survival in times of adverse ecological conditions by signaling the infant's vigor (DeVries, 1984; Schepers-Hughes, 1985; Furlow, 1997). Hrdy (1999), however, also points at the limits of infant crying as a means of promoting parental proximity if the parent is already stressed and resources are scarce; in such circumstances crying might provoke parental neglect and even abuse with lethal consequences (e.g., Brewster et al., 1998). From an evolutionary perspective, 'infants do well to toe a fine line between signaling their distress and appearing too needy' (Hrdy, 1999, p. 462).

Not only does cross cultural evidence suggest that almost every human infant in every culture investigated thus far displays crying behavior, but cross-cultural studies also document that the number of crying bouts and the shape of the crying curve across the first year of life do not differ strongly between cultures (Barr, 1990). Between two and three months after birth a peak in crying has been discovered in many different cultures. This crying peak seems to indicate a universal bio-behavioral shift in response to the transition from life 'in utero' to becoming a relatively autonomous biological being.

For example, differences between the cry curves of several Western and African cultures (Barr, Konner, Bakeman, & Adamson, 1991) appeared to be absent even when large differences in parenting exist. The Kung show a virtual universal responsiveness to infant cry signals, because they are in constant contact with their infants, providing constant almost perfect system of feeding-on-demand.

Nevertheless, the pattern of crying bouts across the first year is about the same compared to several Western samples derived from populations with extremely different caretaking habits (Barr, 1990; see also St James-Roberts, Bowyer, Varghese, and Sawdon, 1994). This may reflect a biological predisposition to cry across widely varying caregiving arrangements (Barr, 1989; 1995; 1998). This result converges with data on the cross-cultural universality of attachment (Van IJzendoorn & Kroonenberg, 1988; Van IJzendoorn & Sagi, 1999). Although cross-cultural data only represent indirect and incomplete evidence for far-reaching statements about the genetic program of human species, cross-cultural studies at least do not appear to contradict the idea of crying as pre-programmed attachment behavior.

Even if crying would be one of the 'genetically biased' precursors of attachment, individual differences in amount and pattern of crying, may, of course, exist. Individual differences in infant crying are quite large and may range from one to as much as 17 min. per hour in the first nine weeks after birth. Therefore, the determinants of these differences have to be studied, and within a cybernetic model of attachment theory, crying may be hypothesized to be terminable by a quick response from the caregiver. If crying is seen as directed towards the goal of proximity to a protective adult, reaching that goal should be sufficient to end the crying behavior (Bell & Ainsworth, 1972; Ainsworth & Bell, 1977). In case of excessive crying, which can be counterproductive and even lead to maltreatment (Frodi, 1985), caregivers may have frequently delayed their responses too long, thereby bringing the attachment system to an almost interminable state of arousal.

From the perspective of attachment theory, therefore, responsiveness appears to play a crucial role in determining the individual crying curve, and it is hypothesized that promptness of a response increasing proximity between infant and a protective adult would be a decisive factor (Bell & Ainsworth, 1972). Type of response would be secondary to promptness, because essential to the cybernetic view on attachment is the idea that different behaviors may be effective in reaching the same goal (Bowlby, 1971).

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Not individual behaviors but the system's goal should be central to the study of attachment (Sroufe & Waters, 1979), and for that matter, of infant crying. In their seminal Baltimore study on infant crying and maternal responsiveness, therefore, Bell and Ainsworth (1972) focused on promptness of response with regard to infant crying bouts, and they found indeed that mothers who were more responsive early in the first year, had babies who were crying less later on. Furthermore, they found that security of attachment at 12 months was related to crying in the first and fourth quarter of the first year. Infants who were insecurely attached to their mother cried more at home during the first and fourth quarter than infants who were securely attached (Ainsworth et al., 1978). The sample was, however, rather small ($N=26$), and the authors considered their investigation as an exploration into uncharted territory (Ainsworth & Bell, 1977; Gewirtz & Boyd, 1977a).

In the current study, we would first like to test the relationship between crying and responsiveness in a larger sample, using more refined methods of data collection and more powerful methods of data-analysis, and more precise measures of crying and responsiveness. In the context of attachment theory, we emphasize promptness of response to crying as a potentially decisive factor in reducing cry behavior. Appropriateness of response appears to be more important in other domains, such as play or feeding (Ainsworth et al., 1978). The hypothesis is tested whether more responsive mothers indeed have infants who cry less in the last half of the first year.

Second, longitudinal studies carried out in the natural setting, and aiming at describing the precursors of attachment in the first year of life, are very much needed (Cassidy & Shaver, 1999).

Although parental sensitivity is reliably associated with attachment security, it is still unclear how responsiveness, defined as promptness or contingency of response, is related to security of attachment (DeWolff & Van IJzendoorn, 1997). We still do not know whether the amount of crying across the first year indeed differentiates between secure and

insecure infants in their second year of life. The crying behavior of insecure and secure infants differs strongly during the procedure to measure the quality of attachment, the Strange Situation procedure (Ainsworth et al., 1978) but it is unclear to what extent this crying behavior in the laboratory mirrors the crying behavior at home. We hypothesize that secure babies cry less at home than insecure babies during their first year of life (Ainsworth et al., 1978), and we want to test the suggestion that mothers who respond promptly to their infants crying, more often have securely attached infants.

In sum, we replicate and extend the original Baltimore study on maternal responsiveness, infant crying, and infant attachment security. Compared to an earlier report on the same sample (Hubbard & Van IJzendoorn, 1991), this paper presents different and more precise operationalizations of infant crying and maternal responsiveness. The paper also provides new information on the associations of infant crying and maternal responsiveness during the first year of life, with infant-mother attachment security. From the perspective of attachment theory, the inclusion of the Strange Situation classifications in this report is, of course, a crucial supplement to previous descriptions of the relations between infant crying and maternal responsiveness. To our knowledge, the present report on our longitudinal, naturalistic observation study describes the first complete test of Ainsworth and Bell's (1977) hypothesis that prompt maternal responses to infant crying during the first year of life decrease the infant's crying behavior, and stimulate a secure attachment relationship.

Method

Subjects

The sample consisted of 50 original Dutch (i.e. non-immigrant) families living in the western part of the Netherlands. The families were located through midwives and through city hall. All infants were normal, healthy, full term deliveries (except one caesarian delivery). The age of the babies ranged from three weeks (first observation) to 15 months (last observation with the Strange

Situation procedure). Twenty-six of the babies were boys; 27 were firstborn babies, and 23 were second-born babies. The mean educational level of the mothers was 5.3 ($SD = 2.4$) on a scale ranging from one (six yr. of schooling) to nine (16 yr. of schooling); the mean educational level of the fathers was 5.7 ($SD = 2.5$). Subjects are representative of young lower to middle class families with two parents in which parental roles are traditionally allocated.

Procedure

All subjects were visited twelve times at home at three week intervals during the first nine months. At 15 months after birth, mother and infant were invited to our laboratory to participate in the Strange Situation procedure. Home visits were scheduled at the mother's convenience; the only restriction being that morning, afternoon, and evening observations were needed to obtain a representative sample of the baby's crying behavior. Visits lasted for two hours (first sessions) to four hours or more (last sessions). The observation period started when the baby awoke and finished when the baby fell asleep (or after three hours if the baby was awake longer). Data of three successive observation periods was used to compute measures for crying and unresponsiveness. In an earlier report (Hubbard & Van IJzendoorn, 1991), we collapsed four successive observations to get periods (quarters) comparable to the Bell and Ainsworth (1972) design. Here we combine a minimum number of observations in order not to lose information. Three observations are a minimum because of the combination of morning, afternoon, and evening sessions. The mean total observation period at home was 21.8 hours for each subject.

An event recorder (Epson HX 20 portable mini-computer operating on batteries) was used to code the mother-infant interactions continuously. Because we will focus here only on promptness of interventions, regardless of type of intervention, the coding system will not be described in detail (see Hubbard, 1989). Bell and Ainsworth (1972) concluded that promptness of response, instead of its quality, was a decisive factor in influencing infant cry behavior. During the observation period, vocalizations of the baby and

the mother (if she was in the same room) were recorded with an audio registration unit. This unit contained three components: (1) a wireless FM-transmitter/microphone combination (type Sennheiser SK 1012-MKE 2012); (2) an Uher report 4400 portable stereo tape recorder; (3) a FM receiver (type Sennheiser/Telefunken EM 1008). In order to synchronize the event recorder and the audio registration unit on a time-reference axis, a time-code generator was used to write the time (coded by tone pulses) on track one of the tape recorder. The vocalizations of the baby and the mother were recorded on track two. The audio-registration unit was placed in the living room, out of sight of the mother. The FM transmitter/microphone combination was always placed in the room where the baby was. The observer could check in the living room if the baby was awake through earphones. When the baby awoke, the unit was started up. Even if the baby was crying out of earshot of the mother, it was recorded.

Infant crying and maternal unresponsiveness

Every cry-signal separated by a pause of two seconds from the next crying instance and with a minimal duration of five seconds was coded as a crying episode. Shorter vocalizations would have been more difficult to code reliably as cry behavior. In an earlier report (Hubbard & Van IJzendoorn, 1991) we aimed at replication of the Bell and Ainsworth (1972) results, and used a somewhat more global operationalization (a pause of four seconds). Tape recordings were analyzed with a time decoder, which displayed the timetable recorded during the observation. Given that there was synchronization between the time table of behavioral episodes (event recorder) and the time table of corresponding tape recordings, it was possible for the coders to make an accurate analysis of infant crying and the interventions of the mother, using the observers' coded observations as a guideline. Six coders analyzed the vocalizations of the baby either as a couple in the beginning or alone (after some 25 analyses). They were initially trained, using a record of infant crying (Wasz-Hoeckert, Lind, Vurenkoski, Lautanen, & Valanne, 1968) and our own tape recordings of crying. Vocalizations were analyzed twice before being coded as crying or non-crying. Disagreements between coders were coded as non-crying.

After the check by the second coder, the onset and finish of every crying episode was noted.

The onset and finish of every intervention was noted with respect to every crying episode. Because we used a sensitive wireless microphone the vocalizations of the mother were also available on track two of the tape-recording. Given the timetable recorded on track one, the onset of verbal interventions was noted from the tape-recording; the onset of non-verbal interventions was noted from the event recorder. Our frequency measure for maternal unresponsiveness was the percentage of infant cry episodes ignored by the mother. Our durational measure for maternal unresponsiveness was the percentage of the time the baby cried before or without a maternal response. These variables are independent from the number of cry bouts or duration of crying in the same observation period (see Results). Furthermore, our operationalization priority implies that unresponsiveness is the inverse of responsiveness. Although frequency and durational measures of crying and unresponsiveness were correlated, they represent different dimensions of the main variables. An infant may cry frequently for a short time, or infrequently but for a long period of time (Ainsworth & Bell, 1977). Because of this psychological difference we will treat both types of measures separately.

Intra observer and inter observer error variance due to measurement on the spot were eliminated because the time-tabled tape-recording of infant crying and maternal vocalizations made it possible to calculate duration of crying and the delay of interventions post hoc. The distinction between crying and non-crying was made by consensus. Agreement percentage for crying was 95% for a random sample of 60 visits out of a total of 600 visits. Reliability of duration of crying is reduced to the reading of onset and finish on a time reference axis. The mean agreement among coders for duration of unresponsiveness in case of verbal interventions was 98.4% for a sample of 60 visits. For non-verbal interventions mean agreement percentage was 95% (from a sample of 14 visits done by two observers).

Infant-mother attachment

The quality of the infant-mother

attachment relationship was measured through the Strange Situation procedure (Ainsworth et al., 1978). This procedure consists of eight episodes, the last seven of which last about three minutes each; episodes may be shortened, if the baby is very upset. After some final instructions (Episode 1), mother and infant are left in the laboratory playroom (Episode 2). In Episode 3 a stranger enters who after 3 minutes signals to the mother to leave (Episode 4). In Episode 5 the mother returns, she leaves again in Episode 6. The stranger re-enters the room in Episode 7, and in Episode 8 the mother returns once again. To assess the quality of the attachment relationship, the behavior of the infant is scored on six 7-point rating scales. The scales are for proximity and contact seeking, maintenance of contact, resistance, avoidance, search, and distance interaction. The pattern of scores in the two reunion episodes, supplemented with information from the other episodes, led to the classification of mother-infant dyads in insecure-avoidant attachment (A), secure attachment (B), or insecure-resistant attachment (C) (see for detailed descriptions of the coding system and the classifications: Ainsworth et al., 1978). Because the Strange Situation is a quite stressful procedure, many infants tend to cry some of the time during some episodes. In every Strange Situation episode, cry behavior was coded per five seconds intervals. Two observers independently coded 20 video-recorded Strange Situations. Inter-coder agreement for classification in the three main categories - A, B, or C - was 90%. The inter-coder reliability for cry behavior was .99. One of the coders - the first author of this paper - was trained by Brian Vaughn in a Strange Situation workshop at the University of Minnesota (Minneapolis), as well as in individual training sessions with Mary Main at the University of California, Berkeley. Forty-three subjects were willing to participate in this part of the project. Due to technical problems two Strange Situations video-recordings had to be excluded from the sample.

Results

Development of infant crying and maternal unresponsiveness

Frequency of cry bouts did not change across the first nine months. Although the first period of nine weeks showed the highest number of

bouts (see Table 1), a repeated measures analysis of variance did not confirm this trend: $F(3,47) = 2.14$, $p = .11$. Duration of infant crying, however, showed a peak in the first nine weeks, and a steady decrease of number of minutes per hour in which the infant cried throughout the second, third, and fourth period of nine weeks ($F(3,47) = 14.54$, $p < .001$). Post hoc paired comparisons of duration of crying in the nine weeks periods were significant, except for the comparison between the second and third period ($t(49) = 1.86$, $p = 0.69$), and the third and fourth period ($t(49) = 1.35$, $p = .183$).

The other comparisons were significant at a level of .01 or less. The number of cry minutes per hour in the first nine weeks (6.6) is similar to the findings of Wolff (1987), and Bell and Ainsworth (1972). The shape of the crying curve is fitted quite well into

the pattern Barr (1990) compiled on basis of several different longitudinal cry studies. Barr (1990) referred to a pilot study on half of the sample ($N = 25$), which is included in the present

report. The standard deviations of frequency and duration of crying were rather large, as was the range of number of cry bouts and duration of crying. Some babies cried more than 15 minutes per hour, whereas some babies did not cry at all. Individual differences in cry pattern were considerable (see Barr, 1990).

In sum, during the first nine months after birth babies produced about the same number of cry bouts per hour (10) across the nine-week periods, whereas duration of crying decreased by half (from 6.6 min. to 3 min.). That is, babies appeared to produce the same number of cry bouts throughout the first nine months but the length of the bouts decreased. Individual differences between babies' cry patterns were considerable.

Maternal unresponsiveness appeared to remain the same across the first nine months. In every nine-week period, somewhat less than half of the cry bouts were ignored by the mothers and they ignored about two-third of the number of minutes the

infants cried. This pattern remained stable for both frequency of maternal unresponsiveness as well as its duration ($F(3,47) = .22$; $p = .88$; and $F(3,47) = .36$, $p = .78$, respectively). Again, individual differences were large; some mothers responded to almost all cry signals of their infants, whereas others ignored their infants' crying in almost all cases.

Table 1:

Range, mean, median, and standard deviations for frequency and duration of infant crying in the first nine months ($N=50$)

Nine Week periods	Frequency of Crying ¹				Duration of Crying ²			
	M	(SD)	ME	Max-Min	M	(SD)	ME	Max-Min
First	12.5	(5.5)	12	30-2	6.6	(3.8)	7	17-1
Second	10.4	(6.3)	10	32-2	4.4	(3.1)	4	14-0
Third	10.6	(5.7)	10	27-2	3.6	(2.9)	3	18-0
Fourth	10.1	(5.9)	9	26-1	3.0	(2.2)	3	13-0

Footnotes: ¹ number of cry bouts per hour ² minutes per hour

Table 2:

Range, mean, median, and standard deviation for frequency and duration of maternal unresponsiveness in the first nine months ($N=50$)

Nine weeks periods	Frequency of Unresponsiveness ¹				Duration of Unresponsiveness ²			
	M	(SD)	ME	Max-Min	M	(SD)	ME	Max-Min
First	47	(19.9)	49	99-0	65	(19.8)	67	99-5
Second	46	(19.5)	45	84-8	68	(17.9)	68	99-19
Third	45	(18.2)	44	75-13	66	(16.5)	65	96-19
Fourth	46	(18.5)	44	86-0	65	(18.2)	70	99-20

Footnotes: 1) percentage of ignored crying (bouts per hour) 2) percentage of ignored crying (minutes per hour)

Table 3

Means and standard deviations of frequency and duration of maternal unresponsiveness for first and second-born infants

Nine-week period	Frequency				F(1,46)	Duration				F(1,46)
	First-born (N=27)		Second-born (N=23)			First-born (N=27)		Second-born (N=23)		
	M	(SD)	M	(SD)		M	(SD)	M	(SD)	
First	42	(20.8)	54	(16.9)	5.18*	59	(19.4)	72	(18.4)	5.57*
Second	42	(19.5)	51	(18.8)	2.88	64	(17.0)	72	(18.4)	2.97
Third	40	(18.7)	50	(16.1)	4.58*	60	(17.8)	72	(12.2)	7.10*
Fourth	41	(17.3)	53	(18.2)	5.23*	59	(19.5)	73	(13.2)	8.42**

Footnote: * $p < .05$

** $p < .01$

Birth order and sex of infants

Although in some studies significant interactions between birth order and sex of infant on crying were found (Bell & Ainsworth, 1972; Moss, 1974), multivariate analyses on frequency and duration of crying, with birth order and sex, as factors did not show any significant results. The absence of a main effect for sex of infant is similar to the Bell and Ainsworth (1972), and Crockenberg

and Smith (1982) studies. We did find, however, an effect of birth order on maternal unresponsiveness.

Mothers of second-born infants ignored about 10% more cry bouts than mothers of first-born infants, and they ignored about 10% more minutes of crying throughout the first nine months after birth. Repeated measures analyses of variance with sex and birth order as factors revealed significant main effects for birth order ($F(4,43) = 3.12, p = .025$; and $F(4,43) = 2.62, p = .048$ for duration and frequency of unresponsiveness respectively).

Mothers of second-born babies appeared to be less responsive to their infants' crying. Boys and girls appeared to be treated in the same way:

Stability of individual differences

Frequency of cry bouts was significantly correlated from one nine-week period to the next, indicating a moderate stability of infant crying across the first nine months. Duration of crying showed a stable pattern only for the first 27 weeks. The last nine-week period did not seem to be related to any previous period. For frequency and duration of maternal unresponsiveness, nine out of 12 correlations were significant, indicating a stable pattern of maternal reactions to infant crying across the first nine months (Bell & Ainsworth, 1972).

The influence of maternal unresponsiveness on infant crying.

The durational measures of infant crying and maternal unresponsiveness were not correlated, either within or across the four nine-week periods. Frequency of unresponsiveness in the first nine weeks was negatively correlated with crying in the second and

third nine-week periods. The more frequently mothers ignored their infants' crying bouts, the less frequently their infants cried in the following 18 weeks.

The significant correlation between

crying in the first period and unresponsiveness in the fourth indicated that influences may have to be interpreted bi-directionally (Bell & Harper, 1977; Sameroff, 1993). The less frequently a baby cried in the first nine weeks, the more cry bouts were ignored in the last nine-week period. It is difficult to understand, however, why crying in the first nine weeks did not influence unresponsiveness in the second or third nine-week periods. The delay of the effect makes it less plausible not to ascribe this significant correlation to chance factors: only three of 16 correlations were significant. A multivariate

Table 4:

Stability of infant crying and maternal unresponsiveness across the first nine months (N=50)

Nine Week Periods	Infant crying frequency			Maternal unresponsiveness: frequency		
	2	3	4	2	3	4
1	.40**	.14	-.10	.32*	.33**	.16
2	-	.54***	.10	-	.41**	.18
3		-	.37**		-	.33**
4			-			-
Nine Week Periods	Infant crying Duration			Maternal unresponsiveness Duration		
	2	3	4	2	3	4
1	.43***	.43***	.13	.37**	.36**	.34**
2	-	.42***	.22	-	.40**	.22
3		-	.16		-	.39**
4			-			-

*p<.05 **p<.01 ***p<.001

Table 5

Correlation between infant crying and maternal unresponsiveness across and within nine-weeks periods (N=50)

Infant Crying	Maternal unresponsiveness Frequency measures				Maternal unresponsiveness Duration measures			
	Nine-weeks period				Nine-weeks period			
	1	2	3	4	1	2	3	4
1	-.03	.15	.13	-.25*	.11	.12	.05	.06
2	-.33**	.18	-.01	-.14	-.06	.11	.11	-.03
3	-.27*	.14	.08	-.17	-.07	.16	.13	.00
4	-.06	-.07	-.04	-.07	.08	-.02	-.09	.02

* p<.05 ** p<.01

Table 6:

Hierarchical multiple regression on frequency of cry bouts in the second period of nine weeks (crying in the first period entering the equation first, and crying in the second period and unresponsiveness in the first period entering last)

Independent Variables	Crying in the second period					
	β	r_p	t	P	R ²	Fchange ²
Crying in period 1	.40	.42	3.2	.003	.16	9.44**
Unresponsiveness in period 1	-.32	-.35	-2.5	.015	.10	6.37*

Footnote: *p < .05 ** p < .01

approach may protect against capitalization on chance. To control for earlier crying and synchronous unresponsiveness a hierarchical multiple regression on frequency of cry bouts in the second period was carried out, with crying in the first period entering the equation first, and crying in the second period, and unresponsiveness in the first period entering last.

Table 6 shows that unresponsiveness in the first period was negatively related to crying in the second period, even if we controlled for possibly contaminating variables. Although earlier crying appeared to be the best predictor of later crying, maternal unresponsiveness added about 10% explained variance to the equation ($F(2,47) = 8.43$, $p < .001$, $R^2 = .26$). For crying in the third period only crying in the second period was a significant factor; crying in the fourth period was also predicted only by third period crying. Only in the first 18 weeks after birth maternal unresponsiveness appeared to make a difference.

Infant-mother attachment, infant crying, and maternal unresponsiveness:

The distribution of infant-mother attachment classifications consisted of 6 insecure-avoidant (A) dyads, 26 secure (B) dyads, and 9 insecure-resistant (C) dyads. This distribution shows a slight overrepresentation of insecure-resistant dyads compared to the Van IJzendoorn and Kroonenberg (1988) global distribution of 21% avoidant, 65% secure, and 14% resistant dyads ($N = 1990$). Mean number of five-seconds cry episodes in the Strange Situations was 20 ($SD = 16.7$). Neither sex of infant nor birth order was related to the attachment classification, or to the amount of crying in the Strange Situations.

We performed a canonical discriminant function analysis on attachment classification groups with measures of crying in the four nine-week periods, to test whether differences in cry behavior during the first year are reflected in different attachment classifications. Although crying during the Strange Situation procedure significantly ($F(2,38) 11.84$, $p < .001$)

Table 7:

Canonical discriminant function analysis on attachment classification groups with frequency and durational measures of maternal unresponsiveness as predictors of group membership ($N=41$)

Predictors	F_1	F_2		Attachment Classification					
				A		B		C	
	Discriminant Coefficients	Wilks Lambda		M	(SD)	M	(SD)	M	(SD)
Duration	-.79	1.08	.63*	43	(20)	47	(18)	46	(18)
Unresp.4									
Frequency	-.69	-.27	.75*	66	(26)	68	(18)	67	(14)
Unresp.4									
Duration	1.08	.70	.82*	29	(30)	53	(16)	46	(14)
Unresp.2									
Frequency	1.02	-1.32	.70*	57	(14)	69	(17)	72	(17)
Unresp.2									

discriminated between A ($M = 2$, $SD = 4.8$), B ($M = 18$, $SD = 14.3$), and C ($M = 37$, $SD = 14.2$), crying at home did not differentiate significantly between the three attachment classification groups. This result is contrary to Ainsworth and Bell's (1977) finding that duration of crying in the first and in the fourth quarter as well as frequency of crying in the first quarter significantly differentiated between insecure and secure infants. We also performed a canonical discriminant function analysis with measures of maternal unresponsiveness in the four nine-week periods, to test whether differences in unresponsiveness in the first year would be reflected in different attachment classifications at 15 months. Maternal unresponsiveness in the second and fourth period indeed differentiated insecure-avoidant infant-mother dyads from resistant and secure dyads ($Wilks = .63$, χ^2 ($df = 8$) = 16.79, $p = .032$).

Table 7 shows that mothers of avoidant infants ignored their infants' crying less than mothers of secure or resistant infants, especially in the second and fourth period. Mothers of avoidant infants may have been too quick responding to their infants' crying during the first year.

Discussion

The precision and reliability of our data on crying and responsiveness in the natural setting is unprecedented. Using advanced audio- and event-recorder equipment, and collapsing data of morning-, afternoon-, and evening-sessions across nine-week intervals leads to a firm descriptive basis for intra- and cross-cultural comparisons. More than 20 hours of observation were spent in each family. Descriptive results show that infants produce about the same number of cry bouts across the first 40 weeks after birth, but the duration of the cry bouts decreases by half during this period. The duration of crying peaks in the first nine weeks, and

decreases steadily thereafter (Barr, 1990). The descriptive data are remarkably similar to the findings of Bell and Ainsworth (1972). Even though Bell and Ainsworth (1972) used paper-and-pencil methods of data-collection and sometimes global estimates of time intervals (Lamb, Thompson, Gardner, & Charnov, 1985), the application of mechanical registrations of infant crying and maternal responsiveness in our study does not lead to different descriptions of average cry bouts and cry duration across the first year of life. In this respect, we have firmly replicated the impressively precise and reliable Baltimore data. Because our sample was almost twice as large, we were able to apply more powerful and reliable statistical methods to analyze the data, which led to diverging findings.

The variation in individual cry patterns is quite large: some infants almost do not cry at all, whereas other infants cry about 15 min. per hour. Duration of crying constitutes a continuum, which confirms Barr's (1989) idea that babies with colic do not represent a qualitatively different group. Individual differences in crying are moderately stable, except for the duration of crying in the last period of nine-weeks: after half a year, duration of crying appears to be disconnected from the earlier pattern. This pattern is similar to the lack of stability of infant negativity between six weeks and 15 months in a longitudinal investigation by St James-Roberts, Conroy, and Wilsher (1998b). In their study crying was stable between six weeks and five months, and between five months and 15 months, but not between six weeks and 15 months (see also De Weerth, van Geert, & Hoijtink, 1999). We do not find effects of birth order or sex of infant on crying behavior. Although boys are considered to be somewhat

more vulnerable to stress and other adversities (Zaslow & Hayes, 1986), they do not show a different cry pattern from girls during the first year of their life.

Maternal responsiveness to infant crying is stable across the first 40 weeks after birth. On average, mothers ignored somewhat less than half of their infants' crying bouts, and they ignored about two-thirds of the crying duration. Individual differences are large and stable. Responsiveness may therefore partly be considered a personality 'trait' (Bell & Ainsworth, 1972), maybe rooted in the mother's biography of attachment experiences (Main, Kaplan, & Cassidy, 1985; Van IJzendoorn, 1995). Maternal responsiveness is, however, also influenced by contextual constraints: mothers of second-born babies are more unresponsive than mothers of first-born babies. Wolff (1965, p. 93) already noted that "primiparous mothers with no experience will [respond] as soon as the baby starts to cry much more often than experienced mothers" (see also Gladding, 1980). Sagi (1983) demonstrated that having children stimulates competence in distinguishing between different cry signals, and that generally having experience with children leads to better cry discrimination. It may be that mothers of second-born infants ignored some types of crying that were not experienced as urgent calls for proximity. Furthermore, mothers of second-born infants need to divide their attention among two children. Mothers of first-borns may be less stressed and overwhelmed by child rearing tasks and other chores because they only have to care for one child. Donovan, Leavitt, and Walsh (1998) showed how home/work conflicts, marital problems, and maternal depression impaired the mothers' ability to discriminate small differences in infant cries.

Maternal responsiveness appears to influence the cry behavior, at least

during the first 18 weeks. The more frequently mothers ignore their infants' cry bouts in the first nine-weeks period, the less frequently their infants cry in the following nine-weeks period, even if intervening variables like earlier crying and synchronous responsiveness are controlled for. This result is, of course, contrary to Bell and Ainsworth (1972) who found that earlier unresponsiveness increased later crying; they did not control, however, for the possibly intervening variables (Gewirtz & Boyd, 1977a; 1977b). Because we do not find a relation between responsiveness and duration of crying, our results do not confirm Barr's (1989) statement that duration of crying would be most susceptible to manipulation. He found that more responsiveness led to less crying at two months of age (but not at four months; see Barr & Elias, 1988). Evidence that maternal responsiveness is a modulator of infant crying is, therefore, still conflicting and controversial (Barr & Elias, 1988), but several studies now appear to disconfirm the general concept that prompt maternal responses would lead to less infant crying (Landau, 1982; Moss, 1974). For example, St. James-Roberts et al. (1998a) found most mothers of persistent criers showed optimum sensitivity and affection, and they concluded that in the early months persistent crying often occurs in spite of optimal parenting. With growing age the amount of crying tends to decline, and any parenting differences between parents of moderate and persistent criers also disappear (St. James-Roberts et al., 1998a).

It is an established fact that infant-mother attachment classifications differ significantly in terms of crying during the assessment procedure. In our study as well as in others (e.g. Ainsworth et al. 1978), insecure-avoidant infants cry less than secure infants who cry less than insecure-resistant infants during the Strange

Situation procedure. The question is whether the crying behavior in a stressful laboratory setting is predictable from crying at home. In our study, crying at home does not differentiate between the three attachment classification groups, and it is not related to Strange Situation crying. The ecological validity of the procedure (Bronfenbrenner, 1979), however, can not be considered to be disconfirmed because the procedure is intended to create an extraordinary experience of condensed separations and reunions with the mother, which highlight the infant's attachment-exploration balance in stressful circumstances. In a study of five-month old infants who developed colic and infants without colic, Stifter and Bono (1998) also failed to find differences in attachment classifications at 18 months of age. Our study of a unselected, middle class sample confirms their finding in a group of infants who might have been constitutionally compromised, and certainly represent the more extreme ends of the crying continuum.

Maternal responsiveness in the second and fourth nine-week period does differentiate between attachment classification groups. Mothers of avoidant infants are more promptly responding to their infants' crying than mothers of secure or resistant infants. This finding disconfirms Bell and Ainsworth's (1972) original conclusion that prompt responses to infant crying would stimulate a secure attachment relationship. We found that prompt responses not only led to more crying later in the first year of life, but were also associated with insecure-avoidant attachments. It should be noted that the databases for the two studies are remarkably similar in terms of distributions of attachment classifications, and description of crying and responsiveness. Our larger sample allowed for more powerful multivariate statistical analyses with

adequate controls for preceding crying, and concurrent responsiveness.

Why are prompt responses to infant crying related to avoidant attachments? We would like to interpret this finding in terms of overstimulation (Belsky, Rovine, & Taylor, 1984; Main, 1981). Mothers of avoidant infants have been found to be more often dismissive of attachment-related issues and emotions (Fonagy, Steele, & Steele, 1991; Main et al., 1985; Van IJzendoorn, 1995). Mothers with dismissing attachment representations are supposed to be less able to deal with the negative emotions of their children (Hesse, 1999), as expressed, for example, by crying behavior. Prompt in responding to any cry behavior may be their strategy to control the expression of negative emotions in an early stage. In doing so, however, dismissing mothers may in fact unintentionally help increase crying behavior as the child is not allowed to explore and exercise its own emerging abilities to regulate the negative emotions. Mothers of avoidant infants may therefore respond too promptly to their infants' cry signals. This may be interpreted as an indication of a general bias to overstimulate, which was found to discriminate mothers of avoidant infants from the other infants in a longitudinal study (Belsky et al., 1984). Avoidance is hypothesized to be the infants' strategy to deal with overwhelming and somewhat excessive stimulation from the mother, and to allow for minimal overt expression of negative emotions (Main, 1981). Because mothers of resistant infants have been described as inconsistently responsive (Ainsworth et al., 1978), it is more difficult to find differences in maternal behavior between resistant and secure infants. This interpretation is, of course, post hoc and it should be confirmed in independent studies on different samples.

In a previous report, we introduced the concept of 'differential responsiveness' in order to interpret our unexpected findings (Hubbard & Van IJzendoorn, 1991). Differential responsiveness takes into account differences in meaning of different types of crying for the child, as well as the child's own resources to modulate its negative emotions. If the meaning of crying is dependent on acoustic characteristics of the cry pattern, and on the context in which the crying behavior is displayed, maternal responses should not be necessarily prompt to all crying bouts regardless of their meaning. Even if crying is a 'graded signal' and a typology of separate cries cannot be established, at least not exclusively on the basis of acoustic characteristics, maternal responses might have to incorporate contextual cues in order to be 'adequate' and not only 'prompt'. Adequacy of response is an important defining feature of the concept of parental 'sensitivity' (Ainsworth et al., 1978). Mothers are able to discriminate between different types of crying, certainly if contextual information is provided, and they might therefore be inclined to adapt their responses to the specific (contextual) characteristics of the cry bout. Sensitive mothers may be able to be differentially responsive to different types of crying behavior, and flexibly attune the timing as well as the content of their response to the specific needs and emotions of their child. Just as Hrdy (1999) suggested infants be advised to avoid crossing the line between effective expression of negative emotions and displaying overwhelmingly intense and aversive crying behavior, parents might be well advised to keep a balance between prompt and adequate responses to their infants' crying.

In attachment theory, the development of infant crying in relation to maternal responsiveness appears to be described in a coherent cybernetic and evolutionary

framework, and some empirical evidence to support the speculative model is available. However, much remains to be investigated and explained. First, it is unclear which role crying exactly played in the evolution of humankind. In attachment theory, crying is considered to promote proximity to a protective caregiver, but it has been suggested that crying could also have had the effect of attracting predators (Dollard & Miller, in Copi, 1972). Many animals tend to stop vocalizing when in danger, and this tendency may have been adaptive in preventing them from attracting attention of their enemies. It has been suggested that in the environment of evolutionary adaptedness mothers continuously carried their babies, to regulate their body temperature, and to prevent crying, defecation and urination from attracting predators (Blurton Jones, 1972).

Second, in attachment theory crying seems often to be considered a unitary concept, in which all kinds of distress vocalizations (fussing, crying) do fulfill the same function. We would like to suggest, however, that only severe distress vocalizations such as crying because of sudden pain, may fulfill the function of promoting proximity of a protecting adult to a helpless baby (Hubbard & Van IJzendoorn, 1991). If crying is interpreted as a graded signal (Murray, 1979; Protopapas & Eimas, 1997), and if crying is considered to acquire its meaning through contextual cues except when it is a pain cry (Wolff, 1987), an adequate response to crying may depend on the severity of the distress and the clarity of the message it conveys (Bowlby, 1971). Accordingly, differential responsiveness is called for.

Third, the empirical evidence for the relation between crying, responsiveness, and attachment is still inadequate and contradictory. The Bell and Ainsworth (1972) Baltimore

study was considered to be exploratory by its authors (Ainsworth & Bell, 1977); sample size was relatively small ($N = 26$), the collection of data was carried out with a somewhat global paper-and-pencil method, the coding of data sometimes had to be based on estimations of duration of crying and latency of response, and data analysis did not allow for controlling important intervening variables (Gewirtz & Boyd, 1977a; 1977b). Attempts to replicate the findings did not lead to unequivocal results (Belsky et al., 1984; Crockenberg & Smith, 1982; Crockenberg & McCluskey, 1986; Grossman, Grossmann, Spangler, Suess, & Unzner, 1985; Landau, 1982; Stifter & Bono, 1998; St. James-Roberts, Conroy, & Wilsher, 1998a). The current study provides the most complete replication and extension of the path-breaking Baltimore study, but we were unable to present unequivocal support for Bell and Ainsworth's (1972) model and preliminary findings.

In conclusion, crying does not appear to be central to attachment, at least if crying is defined as an undifferentiated compound of all kinds of fussing, sobbing, screaming, etc. We hypothesize that only those forms of crying indicating severe distress (e.g. crying with a long expiration pause) can be considered evolutionary biased (pre-) attachment behavior. From the perspective of attachment theory, the only adequate response in the case of severe distress vocalizations is closer proximity between protective adult and infant. If the infant experiences that its attachment figure is at hand in really stressful circumstances, it will develop feelings of trust, and a secure attachment relationship. But severe distress vocalizations constitute only a minor part of all crying behavior in natural settings (Wolff, 1987), and mild distress vocalizations may have to be responded to less promptly

('benign neglect') because those cries may be reinforced. Prompt responses may prevent the infant from coping with the mild distress itself (Landau, 1982). Future studies on the relation between infant crying, maternal responsiveness, and attachment security should include assessments of different cry 'types' as well as different measures of promptness and adequacy of parents' responses to their crying infants.

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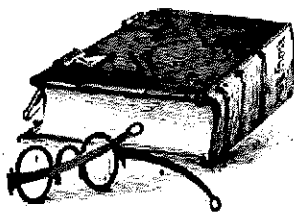
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Continued on page 19



LITERATURE MONITOR

This new section aims to bring to the attention of the readership of The Signal books, Journal articles, and similar resources likely to be of interest to the Infant Mental Health practitioner. It makes no claims at all to being exhaustive or indeed critical - but all the items appear relevant and interesting. Please send any suggestions of recent items that you might have to: paul@pbarrows.freemove.co.uk

Papers

'The psychoanalyst and the baby: a new look at work with infants' by Norman, J. (2001) *International Journal of Psychoanalysis*, 82: 83-100.

The author argues that objections to involving the infant in a relationship with an analyst have led psychoanalysts to overlook the possibility that the interaction between the infant and the analyst may be able to activate and retrieve those parts of the infant's inner world that have been excluded from containment and be conducive to a vitalization of the emotional disturbance that can then become worked through in the infant-mother relationship (...) three cases, at the ages of 6, 18, and 20 months are presented to illustrate what is considered to be a novel approach to work with infants.

'Le temps de voir, le temps de penser: Thérapies mère-bébé et observation' Prat, R. (2000) *Devenir*, 12 (3): 19-45.

During mother-baby therapies, if one refers to just one psychoanalytical model, one will come inevitably to a therapeutic dead-end or to theoretical incoherencies. The dialectics resulting from the framework of thought and from infant observation, according to the method used by Esther Bick, constitute a much richer and deeper import to treatment (...).

'Making the case for dedicated infant mental health services' Barrows, P. (2000) *Psychoanalytic Psychotherapy*, 14 (2): 111-128.

This paper seeks to demonstrate the case for establishing dedicated Infant Mental Health services. It is argued that the 0-3 age group is not well served by the current arrangement of mental health services [in the UK]... and it is suggested that the time is now ripe for Infant Mental Health to be given institutional recognition as a distinct specialism in its own right.

'Is the EPDS a magic wand? (1 & 2)' Elliott, S.A. & Leverton T.J. (2000) *Jnl. of Reproductive and Infant Psychology*, 18 (4): 279-308.

1. *A comparison of the EPDS and health visitor report as predictors of diagnosis on the Present State Examination.*
2. *'Myths' and the evidence base.*

'Psychotherapeutic treatment of traumatized infants and toddlers: a case report' Gaensbauer, T.J. (2000) *Clinical Child Psychology and Psychiatry*, 5 (3): 373-385.

This article describes the psychotherapeutic treatment of a 3-year-old boy traumatized at 22 months of age by a medical illness and its associated treatments... The case material illustrates the usefulness of active structuring of the child's play as a vehicle for understanding the child's experience of a trauma (...)

'Infant intersubjectivity: research, theory and clinical applications' Trevarthen, C. & Aitken, K.J. (2001) *J. Child Psychology and Psychiatry*, 42 (1) 3-48.

This article is an extensive review of the literature. We review research evidence on the emergence and development of active "self-and-other" awareness in infancy, and examine the importance of its motives and emotions to mental health practice with children (...) The relevance of infants' inherent intersubjectivity to major child mental health issues is highlighted by examining selected areas of clinical concern (...) and [we] comment on the efficacy of interventions that aim to support intrinsic motives for

intersubjective communication when these are not developing normally.'

Journals

Prisme (2000) 31

ISBN 2 921858 88 6

*Edition devoted to Infant Observation:
Observer les bébés: qu'en retire le
clinicien?*

*Contributors include E. Tuters; D.
Houzel; Y. Gauthier; B. Golse; E. Muir.
www.hsj.qc.ca*

J. Am. Acad. Child Adolesc. Psychiatry
40:1 January, 2001:

- 'When is an assessment an intervention? Parent perception of infant intentionality and language' *Reznick, J.S. & Schwartz, B.B.*
- 'Diagnoses and interactive patterns of infants referred to a community-based infant mental health clinic' *Keren, M., Feldman, R. & Tyano, S.*
- 'Infant and toddler pathways leading to early externalizing disorders' *Shaw, D.S., Owens, E.B., Giovannelli, J. & Winslow, E.B.*
- 'Disruptive behaviour in young children: What does it mean?' *Thomas, J.M. & Guskin, K.A.*
- 'Towards establishing procedural, criterion, and discriminant validity for PTSD in early childhood' *Scheeringa, M.S., Peebles, C.D., Cook, C.A. & Zeanah, C.H.*

Books

Spilt Milk: perinatal loss and breakdown
*Raphael-Leff, J. (ed.) (2000) London:
Institute of Psychoanalysis. ISBN 0
9537105 13.
www.psychanalysis.org*

Attachment and Development
*Goldberg, S. (2000) London: Arnold.
ISBN 0 340 73171 0
www.arnoldpublishers.com*



President's Perspective

Peter de Chateau

The Amsterdam congress is approaching sooner than we may think and the 7th of September 2001 is already the final deadline for submission of contributions to the scientific program. As you all know the theme of the congress is "BABY BIRTH TO THREE" with four sub themes: prevention, parents, poverty and policy. Three of these sub themes are well known and practiced in infant mental health issues, the fourth: poverty, however is still very little part of our daily clinical work and scientifically not considered very much in research on infant mental health matters. This is especially the case in countries with relatively speaking low mean income per capita.

An example of such a society and an extremely large and important fast developing one is the Peoples Republic of China. I came to think of this example reading Rowena Fong's paper in the WAIMH Handbook of Infant Mental Health. The Chinese society is an evolving society. Historical times and events have made a difference in attitudes and practices towards infant mental health issues. So for instance in the traditional society from feudal time to 1949 Confucianism prevailed and practices reflected male dominance. Also mental health concerns focused on preference for sons. Females were devalued because they could not carry on the family name, nor did the tradition permit them to perform rituals honoring male ancestors.

The next step was taken from 1949 to 1979, an era when communism and socialist ideologies prevailed, the emphasis was not on the individual or the family but on the country, putting principles and practices of valuing the socialist state first. China's severe overpopulation brought about a policy decision that should reverse attitudes towards female infants. In 1979 China implemented the single child policy, limiting families to

having only one child. The preference for sons however prevailed despite government efforts to eradicate what was labeled sexist thinking.

In a study from South-America reports were given of the consequences of precocious pregnancy and early bonds in adolescent mothers and their babies. In interactions with their babies these adolescent mothers had more difficulties in recognizing and responding adequately to their infants signals. There was hardly any oral communication. The emphasis was on visual and physical contact. The lack of verbalizations observed in the adolescent mother and baby dyads might lead to poor cognitive and linguistic abilities in the infants, conditioned by their mothers age and educational level and too few stimuli received by the children during the early stages of development. These situations transmitted from one generation to another constitute factors of poverty and potential risk.

In a number of Western countries the problem of custody of the child is creating increasingly problems in many areas. One is the upcoming idea and practice of joint custody. As a consequence of that notion - shared custody has been introduced in a number of instances. Where a child of divorced parents stays one week with either parent, the next week with the other one and so forth. What are the consequences for child development: Shared living calls for parental cooperation, ex-spouses living nearby and a certain stage of development of the part on the child. Divorce often also means a relatively poor environment for children.

These new emerging problems should be part of a discussion within WAIMH. I therefore do invite all of you having practical, clinical and/or research experiences with poverty and how it might affect the lives of young children to submit your abstract to the Amsterdam congress.

Some Principles of Infant-Parent Psychotherapy

Ann Morgan's Contribution

Frances Thomson Salo and Campbell Paul¹

In Australia generally there is vigorous interest in clinical work and research in the infancy field, and a very active Australian Association of Infant Mental Health with state branches in New South Wales, Queensland, South Australia, Victoria, and Western Australia. The following article describes a way of working therapeutically with infants which was developed at the Royal Children's Hospital, Melbourne, by Dr. Ann Morgan over twenty years ago. It continues to inform the clinical work there and is an important part of the teaching of the University of Melbourne Masters in Infant Mental Health which developed out of that work. Campbell Paul and I audio-taped six interviews with Ann Morgan over the course of a year and excerpts from them are quoted in italics.

Introduction

Ann Morgan's lifetime work has been with children, a passion that she brought from a childhood in Wales, to Australia. She shares Winnicott's journey from pediatrics to psychoanalytic intervention, as well as a capacity for creative thought which confronts but intuitively makes sense. She also shares an ability to look in the face of hate and name it, and the compassion and wisdom to know that love and hate are inextricably intertwined in all relationships.

Her approach to infant-parent psychotherapy is that when there is a problem between the mother and the infant the therapist works with both the mother and the infant, and that means not just having the infant present in sessions but actively working with the infant. This is different from most parent-infant psychotherapy in which the parents'

projections are contained and worked with but the therapist does not engage directly in therapeutic work with the infant. Ann Morgan emphasizes that a link must be made between the therapist and the baby as a subject in her own right which then allows a gap to be created between mother and baby, a space which allows growth.

Despite the current state of knowledge about the infant's capacities and needs, Ann Morgan thinks that it is still hard for therapists to see the baby independently of the mother's account and that when they do not 'see' the baby they have colluded with the parents in 'killing' her off. If the therapist does not work with the baby then something that is not faced in the mother is not faced in the baby. It then gets repeated in the baby and this leads to the intergenerational transmission of difficulty.

Where an infant is referred for an infant mental health consultation in hospital the work is shaped by different time constraints than work in an out patient setting. But the principles outlined in this paper will be equally relevant.

Ann Morgan's Clinical Background

Ann Morgan worked as a pediatrician for 35 years at the Royal Children's Hospital, Melbourne, a large pediatric hospital with an international reputation. In the southern hemisphere it has the largest concentration of infants who are literally in life-or-death situations, or suffer tertiary stages of illness. When Ann Morgan joined the Hospital's Department of Psychiatry the psychoanalytic orientation then prevailing helped shape her work. Nearly two decades ago she became the first Coordinator of the multidisciplinary Infancy Group, whose members are drawn from the fields of psychiatry, psychoanalysis, psychology, social work, nursing, and speech pathology.

It may help to give some case material before continuing. (The case example

which follows was first published in Thomson-Salo, Paul, Morgan et al, 1999.) About 20 years ago Ann Morgan was consulted about a seven-week old gaze-avoidant girl, Alana, whose parents thought she was blind, deaf and autistic. The mother had previously worked with autistic infants. The father thought there was some response to him although he was losing hope because of the baby's withdrawal.

When I first saw the baby she was wrapped in her blanket and cocooned, her hands lying very passively on the blanket, her eyes closed and sucking on the dummy, very unresponsive with all of us standing around her. The first thing I did was to talk to her very quietly, barely above a whisper and she stopped sucking immediately. Then I held onto her hand and stroked it a bit while I was talking to her. Unbelievably, she began to stroke my finger and then her own finger and it was as if she could feel both fingers, and she kept stroking her own finger and stroking my finger. All the time I was talking to her I was certain she heard me, that she was in fact aware of the other but also was making the other aware of her.

I think it meant a great deal to the mother when we talked about the fact that her daughter could hear perfectly well, that she was very aware of me and was, I think, both thinking about it and being very separate and thoughtful.

With evidence that the baby had not been irrevocably damaged, the parents were now able to let Ann Morgan see their painful struggle with ambivalence. They gave the staff a video that the father had made of his daughter having a bath. Alana, who had always been unable to look at her mother, had rolled over so that she was looking at the camera but the water was lapping over her face, of which her parents were totally unaware, and she was not struggling. Ann Morgan, in connecting with the baby, was able to lessen the power of the parents' representations that were

¹Footnote: 'A longer version of this article will appear in the Australian Journal of Psychotherapy later this year.'

already having such an effect on their daughter.

Ann Morgan's Contribution to Infant-Parent Psychotherapy

Ann Morgan's statement on behalf of the baby is unequivocal:

It's important to work with the baby because if you don't you can get caught up with working with the infant in the mother and you can lose the baby. So right from the start there is a statement that you have to work with the baby.

The Situation is Urgent for the Infant Longitudinal studies (Murray, 1997; Sroufe, 2000) as well as the neuro-biological evidence (Nelson, 2000; Schore, 2001) currently available bears out Ann Morgan's point about the situation being urgent for the infant and that therefore as much help as possible should be offered to her. The longer negative experiences remain unmodified the greater the likelihood that there will be changes in the brain which may mean that therapeutic work cannot ameliorate the early deprivation. Ann Morgan reflects Winnicott's view that the mother will recover from her illness but the baby may not.

The baby will be set in his development, either severely disturbed or psychotic but also hated because he has become so difficult. It may mean that even very early we can miss the boat. Often what has gone wrong for the baby girl is not picked up until she herself becomes pregnant.

Apart from Winnicott (1941), Lebovici (cited in Cramer, 1995), Ferholt and Provence (1976) and Greenspan (1992), the predominant paradigm in infancy work has been not to work directly with the infant but to work with the parents. Barrows (2000) summarized that it was unusual for direct work with the infant to be a main focus.

Working with the parents was seen to affirm them as parents and not to exacerbate guilt or envy. But we think that most parents, if they present with a distressed infant want help for their infant and welcome the therapist's direct intervention.

Ann Morgan has always worked with the parents and the infant.

Other clinicians have recently begun to move in that direction. Daws (2000) described how her clinical practice now included more holding of the infant. Norman (2001) describes direct work with a six month old girl, giving a fuller theoretical justification from a psychoanalytic point of view for direct work with the infant than we have the space for here.

Mother-Baby Issues Require Mother and Baby to be seen Together

I think you can help the mother a great deal without the baby being there but you're not working with the baby. If you don't have the baby in the room, you can help the mother so that she can begin to think, but what you're doing is working with her anxiety, with what's going on between her and you. Working with mother and infant together mobilizes the health in the dyad. In the following example the mother puts this into words:

In one session she put her baby in the pram so expertly that she did it without looking at him and then fed him with his face covered with a cloth, obliterating his face. The next time Ann Morgan talked to the baby, he was eager to come out of the pram. Ann asked if the mother thought it made a difference when Ann talked to the baby. The mother replied, 'Yes, because somehow I feel that things change; if he's not in the room then I'm stuck just repeating a story whereas I can see him differently if you are talking to him.'

Ann Morgan emphasises that it is very significant what happens to the baby in the room and how alert the therapist must be to that. The work with the infant frees the mother to start thinking in a wider way. Another mother said, several years after therapy, that if she had not been seen with her infant they could not have survived and she, the mother, might have gone mad.

Nearly all mothers can shift from looking at things totally from their own neediness and wanting you to mother them more, so that if you include the baby they feel more adult and that the need is in the baby. Then they can begin to think about that rather than only being in touch with their own needs. The mother can then hold more onto the thought that she is going to be able to parent and is an adult, even though she does not altogether want to be one.

What are the specific differences arising from having the infant present in infant-parent psychotherapy? Parents seem to find it therapeutic that the therapist is trying to understand the experience from inside the infant's world rather than looking from outside as if it were inexplicable. They see that, whatever the infant's difficulties, the therapist responds to a live person and the infant's response communicates to them in an important way that there is an undamaged part of the child. When the therapist does something relieving with the infant the mother in turn feels mothered and a good internal object can be experienced again.

But Ann Morgan acknowledges that Lebovici's (cited in Cramer 1995) view of the infant as a subject in her own right (with complex representations that may be influenced directly by a therapist) is difficult for therapists not to lose sight of, and they frequently do not see their interaction with the infant as significant.

The Therapeutic Intervention

It is well known amongst clinicians how quick the results in this work can sometimes be. Sometimes, even when infants who look as though they have given up are referred, a single session with an infant therapist is enough to reverse the cycle of despair. How do we understand what happens?

Infant-parent psychotherapy is usually seen as the therapist aiming to make conscious for the parent(s) the links with the past, whereas in the way of working described here, this does not necessarily have to take place. The aim of the therapeutic contact is that there is an experience in which consciously or unconsciously the difficult feelings are shared and the therapist's thinking about them is in some way communicated to the parent and infant. It is often verbal but need not be, and can be communicated through interaction or play.

The Core Principle is to 'be with the Baby'

For Ann Morgan, the core principle in infant-parent psychotherapy is to *be with the baby*, as well as with the

mother or parents. She elaborates the core principle:

1. The therapist relates to the infant as subject.
2. The therapist and the infant begin an exploration of not-knowing.
3. The therapist aims to make a link or connection with the infant.
4. The therapist offers the infant an experience (rather than the promise of a relationship).

1. The infant as subject

Ann Morgan sees the infant not as the object of investigation but as the subject. She works actively at making a connection with the infant.

I use my bracelet a lot and I hold it out so that the baby can hold it and then I gently pull back so that there is some pulling even with a very young baby. The baby then has an awareness of the other, of someone who recognizes the baby's agency, and as a result she can begin to sense her own agency.

Winnicott thought that unless the infant has a sense of agency in what she does, *the world is experienced only as an impingement. Infants use gaze and touch to explore their mother and the world around them, including the therapist. In offering ourselves to be related to, we give infants the possibility to be active in their knowing of the world. We are acknowledging the infant as a subject with her own sense of agency, which is extremely significant.*

The baby makes contact with me and is fascinated because I am fascinated with her. I am with another human being as with an adult and that is as powerful a recognition as possible and the infant recognizes that in me. In the intersubjectivity between the child and myself, I know that the infant understands that I understand, and she knows that what she is getting is communication.

2. An exploration of not-knowing

Ann Morgan describes as very important the point made by the Australian psychoanalyst, O.H.D. Blomfield (personal communication), that 'you look at an infant with already knowing eyes while knowing absolutely nothing about the infant in front of you.'

You bring all your experience to bear yet you hold it in abeyance so that you can look at the baby with absolutely not-

knowing eyes. It's like being 'without memory or desire' (Bion, 1970). I have a lot of knowledge about babies; I've been looking at them for a lifetime so I am more likely to see something about the baby. Yet it seems to me very important that when I'm with the baby, my looking at the baby is no different in some ways from the baby looking at me – there's an exploration of not knowing in both of us. That may be what you can offer the mother, an exploration of this unknown baby, by using your experience. But I think the significance of the infant is constantly being denied, as though somehow you can understand what is going on in the baby just by listening to the mother.

I think the essential element is to make a link with the baby and the rest follows because you can't really make a comment about the baby without thinking about the baby and the mother knows that.

3. The link

It's important for me to know what the baby sees in me as well as what I see in the baby and it's that link between us that really holds us together and that can quite often hold the baby. I can feel the link with the baby, that the baby has cottoned on to me and I have cottoned on to the baby, even if it's transient, and then I can begin to talk to the baby. How the baby responds to me is where I start from, I make a link with the baby so that somehow the baby recognizes that I recognize the baby, and also that I'm available for him to make a connection with me.

The purpose of the link is to allow a **gap**, a transitional space so that something can happen in that space.

I think that often with a baby who's continually on the breast, the link between mother and baby has broken down so that the baby has to be on the breast; the link is actual, concrete, and there's no gap. Then the baby's eye contact with you means that there is a gap beginning and what I think is important about helping the mother see this link, is that it allows a space in which something else can appear: in the mother's mind a thought or in the baby a beginning of a preconception.

Where, for example, a mother thinks that her sick child is going to die there may be no gap to let another in, no gap in which the mother might think that it might be better if the child died. There is therefore no gap in which the child can think her own thoughts. Without this space, there can be no integration.

What is important is that by the second or third session, some experience is repeated which the baby recognizes, and the baby has a feeling that she is there in her own right. The baby has a contact that is separate from and not through her mother, which in turn helps the mother realize that there is some separation. There is a look of relief on the baby's face and on the mother's, and you can see this as early as 4 months.

I think you can do the linking with the voice, even just with gaze, although if the baby is crying she needs the voice. And you can do it with a baby even meeting as infrequently as once a week. But what I think is terribly important is to have that link with the baby in the room with the mother. Because if you don't you are colluding with the mother in all kinds of ways, including with the rivalry with the infant in her, and if you have that link it somehow can break that nexus and you really can work with both.

4. Offering an experience

Ann Morgan emphatically disagrees that it could be damaging to relate to the baby and then drop out of the baby's life, if for example the contact was during a brief hospital admission.

Every link the infant makes opens up a world for him; it's not a relationship but an experience of connecting. I think that what one hopes if one is doing an intervention, even with a baby in hospital, is that the mother's response will be different and that in itself hopefully would alter the baby's relationship with the mother.

Ann Morgan agrees that babies can have a sense of the rhythm of the work, as they do in infant observation when the observer comes and goes.

What you could say to an older infant to help him understand would be that 'it's important to see you and then there'll be some time when I don't see you and then I'll see you again'. You could say 'how hard it is, you want to be with someone and then you're not with them.' I think that's important to put into words.

The fullest therapeutic experience comes when the therapist can make a space for the negative feelings to be explored without condemnation while at the same time conveying to the parents that the baby will be kept safe. There is acceptance of the verbal exploration of the hate at the same time that it is totally unacceptable to act on it

I think that even very ill parents know that the child is at risk and that something terrible is happening, and if no one is protecting the child this makes the situation worse for the parent. I was very keen on the double message when I started the Infancy Clinic, that the mother was given the message that she could be sick or anxious but that at the same time we would see that the baby was safe. And that not only the mother got the message but that the baby got the message. When therapists don't get the message through to the baby you can see that the baby gets flatter. He isn't being pulled into the message that 'I know what's going on, and I know that you know that I know'. That's the language that I find so important to convey to people who are not used to working with babies.

The firmness of Ann Morgan's position about working with the infant is part of her offering a strong coupling with the mother as the father ideally does. In this Ann Morgan is clear that she will protect the baby and work to help the mother's mind survive. Unlike Stern (Stern, 1995), she thinks that rather than the couple being the mother with her own mother, it is in the infant's best interests that the couple is the mother and the father.

The infant, the mother's mind and the couple all need to survive and it's an enormous struggle in the three of them as to which couple is going to survive, which one of the three is going to be excluded.

5. Love and Hate

Can we think of infant-parent psychotherapy as working with the intergenerational management of ambivalence and hate?

Awareness of the parents' ambivalence fractures the idealizing of mothers and motherhood. To say that the baby is loved is to say that the baby is also hated. I think that 'love' includes hate whereas 'being in love' does not include hate and we haven't got one word for love-and-hate. To me love is in the depressive position, you've gone through the schizoid stage where you have to have the split and an acute getting rid of hate. In the work we're dealing with primary feelings and relationships, which are, not only primary in so far as they are early but also they are feelings that we struggle with for the rest of our lives.

However wanted the baby is, her survival cannot be taken for granted. Having a baby faces the new parents with profound emotional issues. Pre-

conceptive ambivalence needs to be worked through. A strong couple, a mother united with the father, is the best guarantee of the infant's survival. The baby's arrival stirs up the mother's fear of loss of her sense of self, with the infant sometimes experienced as a parasite. Ann Morgan emphasizes that the father's envy and therefore hatred of the infant is triggered by the pressure the child exerts on the adult sexual couple in pulling the mother away from her relationship with the father. A strong relationship between the couple holds the father's feelings in check.

The hate really stems from the feeling of 'my life or yours' and the only way to separate psychically is to be able to tolerate the ambivalence. I think that that sense of losing our life if we allow an infant to grow is a developmental stage we all go through. That is something that Graham Greene says, the chains are around you after that. I think that, with good reason, that's part of the terror of losing your mind.

Where the triad may be most under attack is when the hate is hidden, for example in the mother's mind attacking the internal good object, as in post-natal depression.

Some mothers find it hard to just be with their babies, some find it unbearable facing the ambivalence. They either have to give constantly to the baby or may be busy with things that have to be done, and the baby often doesn't settle, leaving the mother with not-knowing her baby.

How does this link with a continuing psychosomatic symptom in the infant? The issues a mother faces with the arrival of her baby are sometimes literally and psychologically life-or-death issues, and the mother's mind frames the baby's world. As the psychosomatic language is the first language of the baby, psychosomatic symptoms can be seen as giving voice to the baby's emotional pain or a shared pain. The ghosts from the parents' past include unresolved traumatic experiences with internal and external objects. The infant may remind the parents of someone hateful and abusive, or an unmourned baby. She may remind the parents of a part of their own self which is hated and disavowed such as the needy, vulnerable part, or she may have been born ill or disabled which complicates the parents' ambivalence. She then collects these projections

and the cycle begins of hating the baby for what she represents and defending against the guilt of awareness of hate.

In being with the baby several aspects of parental hate are addressed. When the infant is seen as a subject the therapist does not accept the parents' wiping out of the infant and implicit in this is that the therapist can tolerate the parents' hate. The exploration by infant and therapist of the mind of the other gives the parents hope that the baby who has been hated may be able to be understood and has not been damaged. An additional reason for working with the baby and not just with the parents is that it is important not to work prematurely with the mother's hatred. With work with the infant the parents can see more easily that their fantasies of having totally damaged or killed off the infant are not reality. With Ann Morgan's intervention with Alana, the father understood immediately when Ann said that the baby could hear and see her, and the mother was able to take in what had happened even though she did not initially link it with her ambivalence.

6. Countertransference

The work in infant-parent psychotherapy is often short-term yet the projections in the transference and countertransference can be very powerful. Knowing that second by second the infant is influenced, and her personality shaped, by her environment exerts a pressure on the therapist. Ann Morgan sees the therapist as needing to find the life force and hang on. While including the infant in the work may be thought of as substituting too active an intervention in the place of thinking, or being driven by the need to relieve our anxiety or to act out a rescue fantasy that we could succeed where the parents have failed, we do not think that these are the motivations for direct work.

Many infant therapists think that the therapist has to bear a greater burden of pain when the infant is in the room and they can see that the infant's cues are being missed rather than when they only hear the absent child talked about. It can be difficult to get the balance right between attuning to the despair of the parents and of the infant, and intervening appropriately. The tightrope which therapists walk

is that with some very ill parents, if the therapists are experienced as taking the baby's side too quickly, they may risk losing the parents.

Conversely, the demands of the work may make therapists more vulnerable to collusion. Where there is no gap between mother and baby it is possible for the therapist to feel as immobilised as the baby does and to go along with what the family presents.

If you have an urgent demand from the mother and I've been caught up in it somehow, you then realize that somehow the baby has been excluded.

7. Not seeing the infant

We all miss the baby and have to keep working on it. It may be disturbing to have this pointed out. In many assessments the professionals would say the mother was lovely and had a very nice interaction and I used to get so angry because I'd say 'it's easy to love a baby, the baby's only got to smile and we smile'. What have they done with the other side, there's no way that the mother can feel sentimental like that all the time? They have absolutely blocked it out.

When therapists work only with the mother and do not see that the child's problems are being missed:

Then the baby disappears because the mother has killed off the baby so that she has the therapist and doesn't recognise the baby's need. But it's a killing off and the therapists don't have to face it. I come from a different point of view from a therapist who sees the mother. What I am consumed with is to keep the baby alive and to keep the baby in the world so that the baby isn't dropped. That's why I think it's always important that the mother knows she can only work with me if she knows I'm going to work with the baby too.

While understanding many of the reasons why some therapists do not work with the baby, Ann Morgan remains shocked that they do not see the baby.

Clearly there is the universal fear and dread of the infant, and one response is sentimentally to see the baby as perfect and therefore one still doesn't 'see' the baby. It is a very difficult thing to put the child as the subject of investigation. Once you start using your self in that, it's risky. I think it is really this fear that you are becoming emotionally involved with the infant.

8. Limitations in infant-parent psychotherapy

Where either parent is very sick, I think infant psychotherapy is not going to do very much as a brief intervention but you can protect the infant and every day that you protect the infant helps. Even, however, with active psychotherapy for the infant, which would help him in his own right, if the parents' illnesses are not also treated then that has repercussions.

8. Summary of the therapeutic action

When early in the infant's life the projections from the parents have hardened there has been a fixed identification of the infant with some internal object in the parents' mind rather than an empathic relationship with the infant. The work is then to create a gap between mother and infant, a transitional space, which may never have existed before. In that space the therapist can work with the parents' projections to try to make them more reality-oriented, and also with the infant so that the mother sees her differently. As the therapist becomes a container for the hate and the toxic projections for which the infant was previously the receptacle, what is reflected back to the mother is something saner. As the therapist accepts the hate, this allows some hope of loving, and being loved and valued. For the infant's part, being related to as a subject and without the projections that come from her parents is enormously relieving and hopeful. Just as child patients brought for psychotherapy often have a sense in the first meeting of how different the therapist is from what they've experienced before, it is the same with infants. The smile or laughter that frequently appears indicates the infant's relief.

Countless babies and their families are indebted to Ann Morgan, either directly for her clinical input or indirectly through her teaching and supervision. It seemed important that her thinking over forty years of clinical experience be more widely known.

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APPENDIX

The Royal Children's Hospital treatment model

Assessment stage

The tasks are to:

- Understand the emotional meaning of the situation in which the infant and parents find themselves
- Recognize the need for immediate intervention
- Make selective use of key theories e.g. psychoanalytic, attachment, and psychophysical regulation.

The intervention - There is a specificity

of intervention for each infant and family.

The aims are to:

- make an emotional connection with the infant through, e.g. gaze, touch, talking, playfulness
- help the infant to symbolize through the use of play with the body or with toys (or words and thinking)
- help the parents understand the baby's mind/body connections through
 - holding and containing of projective identification
 - making links
 - unhooking projections
 - creating space for ambivalence

The intervention may include:

- selective use of other intervention models, eg. developmental guidance, interaction coaching, brief serial treatment
- long term psychotherapy work with systems e.g. sharing the clinician's hypothesis with other hospital or community staff.

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Editorial

One of the most exciting aspects of all of WAIMH's activities is how truly international and multi-disciplinary it manages to be. No doubt this will be reflected in the range of presentations there will be in Amsterdam next year, but it is also very evident in this double-issue of the Signal which brings together two contrasting papers: one a major piece of empirical research from the Netherlands which has some far-reaching implications; the other, from the opposite side of the globe, addressing issues of clinical practice, but with equally important implications, challenging as it does the stance we often take in relation to working directly with infants.

This issue also begins a new section called Journal Monitor. The aim of introducing this section is to help readers keep abreast of relevant and interesting papers (and books) that they might otherwise miss. It would be greatly appreciated if readers of the Signal could send details of any such items that they think would interest their colleagues to the editor at: paul@pbarrows.freemove.co.uk. Please include full publishing details and (in the case of papers) a copy of the abstract.

Paul Barrows
Editor

NEWS & VIEWS

*Australian Branch of the
Mars Society*

Biennial Conference 2001

September 20-23

Christchurch, New Zealand

Conference theme: "Mothers,
Fathers and Infants - their Mental
Health"

Cheryl Beck on Panic and
Anxiety in Pregnancy and the
Postpartum, Patricia Crittenden
on Attachment Theory and
Clinical Applications in Infancy.

Conference organizer
Margaret Ettridge:
rg@ozemail.com.au

NEW PUBLICATION AVAILABLE!

"GUIDELINES FOR INFANT MENTAL HEALTH"

Published by

The Michigan Association for Infant Mental Health

The MI-AIMH Board of Directors is pleased to present the MI-AIMH Guidelines for Infant Mental Health Programs. Many people participated in the process from start to finish! The Committee Contributors included: Sally Stinson, Betty Tableman and Deborah Weatherston - Co-Chairpersons, and Kathie Albright, Kathleen Baltman, Melissa Kaplan-Evans, Cheryl Goldberg, Mary Grannan, Cathy Johnson, Judith Fry-McComish, Camy Nowinski, Carol Oleksiak, Mara Stein, and Dan Uchida. The full document is 16 pages in length and includes basic IMH beliefs, an overview of IMH services, program goals, family characteristics, typically used strategies, training and consultation, outcomes and measurement, and references. The Guidelines are intended to support the continuation of strong IMH programming as well as new initiatives in multiple service settings. They may be purchased for \$2.00 a copy from the MI-AIMH Central Office, Kellogg Center, Michigan State University, East Lansing, Michigan 48824-1022. If you would like more information you may also contact Tina Houghton at hought177@msu.edu.

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