

Box 3

7

4

Excerpts / Questions

State Issues

Campaign Health Analysis

Haseltine

Convention Speech

HRC Schedule

Debates

Debate Sources

Platform

Campaign Talking Points

Campaign H.C. Talking Points

Article

Welfare

Bioethics Commission

Signing Statements

FDA Cancer Drugs

Foster

Welfare

Breast Cancer / Cancer Event

Census and Poverty Report

Immigration

Genetics

Cancer

DPC Talking Points:

National Cancer Anniversary

Polls

Press Clips

Press Statements

Premium Increase

Prevention Medicare

Private Market Premiums

Providers

Prudent day person

Nursing Home

Op ed

Oxygen

Per Capita Caps

POTUS Medicaid Plan Description

ANA

New York

NIH Research Funding

NOA on Managed Care

Nurses

Medicare Part A/B

Medicare/aid offer

Medicare/aid Key issues document

Medicare Savings Proposals

Medicaid Background

Medicaid Stories

Medicaid and Women

Medicare Choices

Members delta on Medicaid / Medicare

ENCLOSURES FILED OVERSIZE ATTACHMENTS

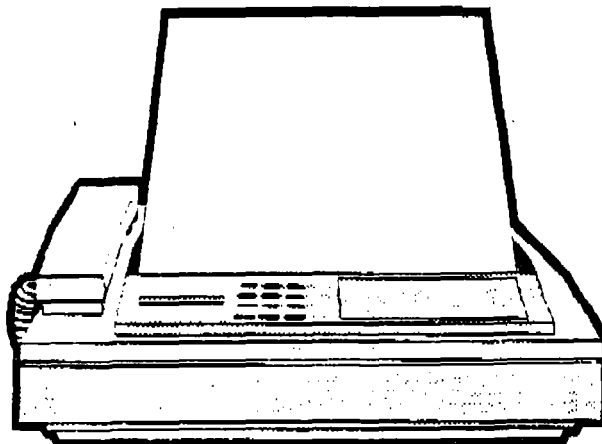
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NARA 8293

U.S. Department of Labor

Office of the Assistant
Secretary for Policy
Washington D.C. 20210

FAX COVER SHEET



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MESSAGE:

ATTACHED - ANSWER TO THE "IS-IT-UTILIZED"
QUESTION.

force surveys probe for the reason for the absence. Even when parental leave is a possible response to code, it may be underestimated. People on leave do not necessarily report having a job, and, therefore, they are not recorded as absent from work. Moreover, the absence-from-work approach by definition does not cover people on leave who are unemployed, but in some countries they account for a substantial proportion of those on leave. An additional limitation is that, even when it is possible to get a count of those on parental leave, it remains impossible to know how many employed persons may have been eligible to take leave but did not. Rather, one must relate the leave taken either to all employed or to a particular subgroup. While not ideal, some useful information can be obtained in this way.

As an indication, Table 5.3 shows total absences from work by women (data for men are statistically unreliable) on maternity and leave for other reasons (family or personal) during the reference week in selected E.U. countries for 1983 and 1992. As can be seen, these categories form a very small percentage of women's employment, just under 3 per cent for the E.U. as a whole in 1992. However, they account for a much larger proportion, often between 10 and 20 per cent, of employed women with at least one child

under five years of age. The proportion and number of employed women on maternity leave and leave for other reasons has increased. It is quite possible that this reflects an increasing use of parental leave as more and more countries were enacting such provisions. No definite conclusion can be derived, however, until parental leave actually appears as a separate reason for absence from work.

Table 5.4 shows figures on absences from work due to maternity and, separately, parental leave in the only three countries where the distinction currently is possible (the Netherlands, Sweden and the United States). While the data are not strictly comparable, two points stand out. First, the proportion of people absent from work due to parental leave is highest (almost 3 per cent) in Sweden. This is not surprising given that leave provisions are both more solidly entrenched in that country and there is considerable flexibility in taking it. Second, this type of leave mainly affects women in all three countries.

Chart 5.2 shows trends in absences from work due to parental leave in Sweden from 1981 to 1994. Three types of absences are considered: paid parental leave at birth, unpaid parental leave and other paid parental leave. For both men and women, absences, mainly reflecting paid parental leave, rose over

Table 5.3 Absence from work for reasons of maternity leave (A) and for other reasons, including personal/family reasons (B)

		Women ^a			
		A Thousands	B Thousands	A + B as a % of female employment	A + B as a % of employed women with children under 5 years
Belgium	1983	10.8	7.8	2.3	7.1
	1992	13.9	14.9	2.6	9.7
Denmark	1983	13.9	12.2	3.1	13.2
	1992	24.5	11.0	4.1	18.4
France	1983	122.7	34.1	2.6	9.6
	1992	157.1	22.5	2.5	9.7
Germany	1983	33.7	27.3	1.0	-
	1992	206.8	163.1	3.7	19.9
Italy	1983	-	-	-	-
	1992	82.9	41.3	3.1	11.3
Netherlands	1983	-	-	-	-
	1992	17.1	3.7	1.2	6.6
Portugal	1983	-	-	-	-
	1992	14.4	-	1.7	6.1
Spain	1983	-	-	-	-
	1992	16.1	15.6	1.7	6.2
United Kingdom	1983	36.0	52.9	1.7	11.0
	1992	123.9	83.7	2.9	13.7
EC-12 ^b	1983	228.5	144.9	1.5	8.5
	1992	667.1	363.0	2.9	12.6

- Data not available

* Data unreliable

a: Women 15-49 years old.

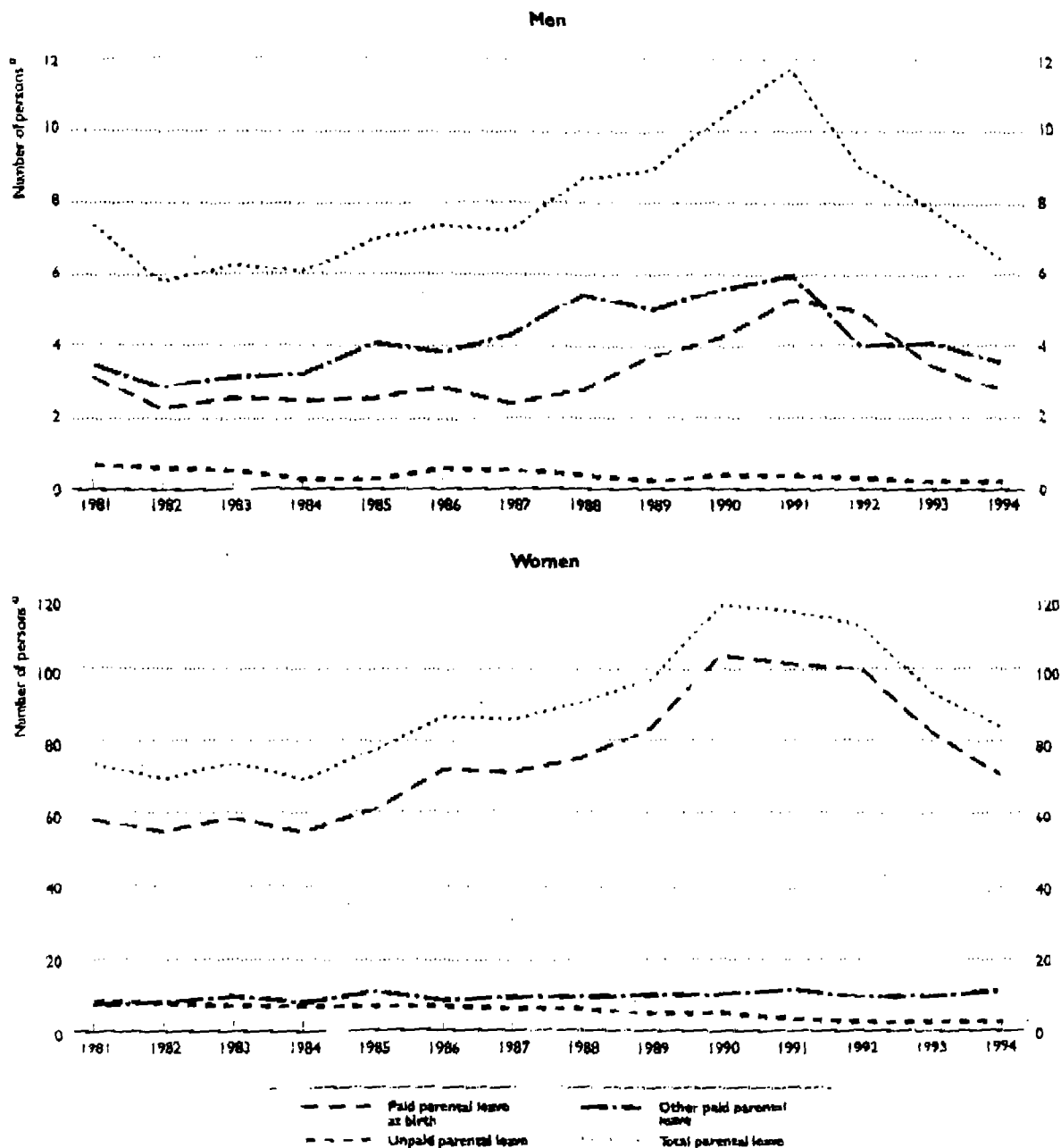
b: The total figures in the two last rows also include Greece, Ireland, Italy (for 1983) and Luxembourg.

Source: Eurostat on the basis of each country's labour force survey.

EMPLOYMENT OUTLOOK

Chart 5.2

Persons absent from work due to parental leave in Sweden, 1981-1994
Thousands



a) The scale of the chart relating to women is 10 times greater than the scale of the chart relating to men.

Source: Unpublished data provided by Statistics Sweden on the basis of the labour force survey.

Table 5.4. Absence from work due to maternity/parental leave in the Netherlands, Sweden and the United States

Country	Reason(s) for absence	Men		Women		Total	
		Thousands	% of men's employment	Thousands	% of women's employment	Thousands	% of total employment
Netherlands (1992)	Maternity leave	-	-	24	1.14	24	0.41
	Parental leave	6	0.16	8	0.38	14	0.24
	Total	6	0.16	32	1.52	38	0.65
Sweden (1992)	Paid parental leave at birth	4	0.18	101	4.90	105	2.47
	Other paid parental leave	4	0.18	9	0.44	13	0.31
	Unpaid parental leave for nursing child(ren)	-	-	3	0.15	3	0.07
	Total	8	0.37	113	5.48	121	2.85
United States (January 1994)	Childcare problems	5	0.01	17	0.03	22	0.02
	Other family/personal obligations	68	0.11	275	0.50	343	0.29
	Maternity or paternity leave	-	-	236	0.43	236	0.20
	Total	73	0.11	528	0.95	601	0.50

Sources: National submissions

the 1980s. However, there was a reversal of the trend in the 1990s. Between 1991 and 1994, the number of men on leave declined about 44 per cent while women on leave declined 28 per cent. This may be partly a result of the sharp recession which increased job insecurity and may discourage those in jobs from taking leave; it may also owe something to the decline in the level of parental benefit in the 1990s.

E. IMPACT OF PARENTAL LEAVE AT THE MICROLEVEL: RESULTS FROM SPECIFIC SURVEYS OF WORKING PARENTS AND ENTERPRISES

The job guarantee attached to parental leave is usually expected to reinforce continuous labour force attachment - where previously activity would have been interrupted - to the possible benefit of both workers and enterprises. Workers can avoid some of the costs of re-entry into the labour market and are able to keep the benefits of accumulated work experience and seniority with their employer. Employers will retain their trained labour force and, depending on how they cope with replacing workers, may avoid recruitment and training costs for new workers.

However, legislated leave only presents working parents with a choice. Parents may choose to use the option or not, depending on the extent to which the legislation meets their real needs and aspirations. The impact on enterprises will, in turn, depend on the extent to which their employees use the leave and return to their job. Enterprises are able to influence their employees' decisions concerning the leave through the type of adjustments they adopt. Thus, the impact on working parents and enterprises cannot be analysed separately. The actual behaviour of working parents and enterprises, and the factors entering their

decisions, will ultimately determine the effectiveness of parental leave regulations. There is currently a dearth of empirical information on these issues and special surveys are needed. The remainder of this section is based on the results of a few such surveys.

1. Impact of parental leave on working parents

The three central issues taken up in this subsection are *i)* the actual utilisation of the leave; *ii)* the rates of return to work after the leave; and *iii)* the long-term impact of parental leave on career development.

Take-up of parental leave and the characteristics of leave-takers

Utilisation of parental leave entitlements has two dimensions: the proportion who start using their entitlement when they become eligible and whether the whole duration of leave or only part of it is actually taken. In addition, since flexibility to take leave on a part-time basis is one of the most recent developments in some systems, it is interesting to know how much this is used.

In most countries with some data, the initial take-up rate is very high. In Sweden, Norway and Finland, parental leave is used by nearly all eligible working families.¹⁷ It is also very high in Denmark (82 per cent of those eligible) and in the western part of Germany (96 per cent in 1991) (European Commission Network on Child Care (1994)). High take-up rates are not, however, always the case. In the Netherlands, only 27 per cent of eligible women and 11 per cent of eligible men used the new leave entitlements introduced in 1991. In France, less than 100 000 workers were on parental leave in 1992 which, taking into

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Centers for Disease Control
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Jennifer Kline
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White House
Washington, DC 20500

8/24/95

Dear Jennifer:

It was a pleasure talking to you on Monday. I have enclosed some articles for your review on bonding and attachment and the importance of the caregiving relationship in the early years of life. I have a wealth of information on this topic, however am only sending a sample. I would welcome the opportunity to talk at length with you in the near future if you think it would be helpful and appropriate. I have sent information that looks at attachment from a developmental psychology, infant research and psychoanalytic perspective. If you find you need more information on some of the early pioneers such as Margaret Mahler, John Bowlby or Selma Fraiberg please don't hesitate to call. If you do not already have it, I suggest you order: The Earliest Relationship, by T. Berry Brazelton and Bertrand Cramer. I have xeroxed a couple chapters for you. The book discusses not only attachment theory, but also addresses practical and clinical issues. The book highlights the interdependence of the parent-infant pair. I hope you find this information helpful. I will be coming to Washington in the near future and would welcome the opportunity to meet you if I can be of further assistance.

Sincerely,

Camille Smith

D. Camille Smith, M.S., Ed.S

Behavioral Scientist

Centers for Disease Control and Prevention

NCEH/BDDD, Mailstop F-15

4770 Buford Highway

Atlanta, Ga. 30341

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Brazelton, B. & Cramer, B. The Earliest
Relationship (1990) Addison-Wesley
Publishing Co.



PART ONE

Pregnancy: The Birth of Attachment



The same soul governs the two bodies . . . the things desired by the mother are often found impressed on the members of the child which the mother carries at the time of the desire.

—LEONARDO DA VINCI, *Quaderni*

Introduction

For all parents-to-be, three babies come together at the moment of birth. The imaginary child of their dreams and fantasies and the invisible but real fetus, whose particular rhythms and personality have been making themselves increasingly evident for several months now, merge with the actual newborn baby who can be seen, heard, and finally held close. The attachment to a newborn (whose contribution to the relationship will be explored in detail in Part II) is built on prior relationships with an imaginary child, and with the developing fetus which has been part of the parents' world for nine months.

In order to understand the "earliest" interactions between parent and child, we must step back briefly to examine these still earlier relationships. The forces, biological and environmental, that lead women and men to desire children, and the fantasies to which these desires give rise, can be seen as the prehistory of attachment. Then, during pregnancy and the nine months of adjustment, physical and psychological, to the growing fetus, there is a progression of stages which might be described as the dawning of attachment. Because the drive toward parenthood, the fantasies, and the experience of pregnancy are necessarily not parallel in men and women, we will look at the ways in which a father adjusts to an unborn child in Chapter 3.

1

The Prehistory of Attachment

Each woman's pregnancy reflects her whole life prior to conception. Her experiences with her own mother and father, her subsequent experiences with the oedipal triangle, and the forces that led her to adapt to it more or less successfully and finally to separate from her parents, all influence her adjustment to this new role. Unmet needs from childhood and adolescence are part of the desire to become pregnant and, then, to adapt to the condition of pregnancy. After examining how these early experiences and needs are reflected in the desire for a child, we will look at the transformations brought about by pregnancy itself, and at the further reshuffling of emotions and fantasies as a woman develops her new identity as a mother.

Gender Identity

Many forces act together to bring about a sense of identity for each gender. Most people have a mixture of these feelings, but a core identity predominates. This "core gender identity" (the subjective sense of belonging to one sex) appears to develop from the beginning of life, under the influence of both biological and environmental forces.

1 / HORMONAL INFLUENCES. Sex chromosomes determine the differentiation of the ovary and the testes in the developing fetus. Then, at "critical" moments of fetal development, high levels of cir-

culating androgens determine the formation of typical male external genitalia. A dominant level of androgens will give a genetically female fetus male external genitalia. The clitoris will be enlarged at birth and appear to be a penis. The testicular sac is developed, and the baby's physique is masculinized.

John Money and Anke Ehrhardt (1972) have also demonstrated that behavioral and emotional sex differentiation may be influenced in the uterus in the same way. Sex hormones have a direct influence on the brain, affecting the formation of important neurotransmitters as well as fostering the growth of nerve cells. Sex hormones affect the hypothalamus, an area of the brain closely related to behavior regulation. Both male and female animals exposed to high levels of prenatal androgens exhibit mating and other behavior characteristic of the male. In human beings, however, while hormones play a role in the development of external genitalia and, possibly, in brain development, it is the interplay between such biological forces and environmental factors that determines behavior.

2 / ASSIGNED SEX. At birth, a sex is assigned to the baby on the basis of the appearance of the external genitalia. This assignment plays a determinant role in developing gender identity. Money and Ehrhardt have shown this dramatically in their study of children born with external genitalia that differ from their chromosomal sex orientation (Money & Ehrhardt, 1972). This is the case with the female fetuses mentioned above, who were exposed to androgenic hormonal influences and who demonstrated "male" genitalia at birth. These children are raised as boys, and the perceptions and behavior of those around them determine their subjective conviction of being boys. Money and Ehrhardt showed that by age two, gender identity is fixed in the child's mind.

Similarly, a genetically male fetus that is insensitive to the influence of androgens during fetal life will look female at birth, with a vagina and the external characteristics of a female. Such children will be raised as girls. From the first, parents will treat them as female, and they will grow up thinking of themselves as female. Only when puberty or infertility leads them to seek medical attention is their true

genetic sex discovered. Meanwhile, having thought of themselves as female, they have behaved as such.

These "experiments of nature" demonstrate how powerfully parental and social expectations based on assigned sex can reinforce intra-uterine hormonal influences. For these children, childrearing practices are influenced by the appearance of genitalia, and not at all by the genetic sex. Social pressures, role assignment, and parental expectation determine their subjective sense of gender identity and subsequent behavior.

3 / INNATE BEHAVIORAL DIFFERENCES. Although many researchers have tried to differentiate inborn behavioral differences in newborn boys and girls, few differences have been shown consistently. Newborn boys do not exhibit more motor activity than girls, but the quality of their motor behavior may be different. The male infant's motor activity seems to be more vigorous, but short lived in the duration of each motor act, while the same motor behavior is smoother and peaks more slowly in females. While boys tend to show higher levels of irritability, this may be related to a higher incidence of prenatal and birth complications in males (Parmelee & Stern, 1972). Newborn boys seem to look at objects for shorter but more active periods, while newborn girls are slower in buildup of attention, but pay attention for longer periods. Female infants may be more sensitive to touch, taste, and smell and show more oral activity and behavior (Maccoby & Jacklin, 1974; Korner, 1974). While these innate sex differences are less pronounced than individual differences unrelated to sex, they can influence early interaction (Cramer, 1971).

4 / PARENTAL ATTITUDES. From the first recognition (or assignment) of the baby's sexual identity, parents feel differently toward a baby boy and a baby girl. A mother must see parts of herself more easily in a girl and is likely to set the boy up as a counterpart to herself. Fathers cannot help but wish for a male child to identify with, a girl to feel more tenderly about. These unconscious labels determine to some extent how they will treat the new baby. Since our cultures have fostered strong sex-stereotyped behavior for so long, it is almost inevitable that a boy will be played with more vigorously and a girl

will be nurtured more gently. A father is more likely to toss a boy baby into the air; a mother is likely to protect her daughter from such play. Our vocal behavior is also set by past experiences of our own. We are likely to talk softly and soothingly to a girl, to attempt to excite and stimulate a boy with the same words. The rhythm of interaction between parent and child is likely to be low-keyed and slow for a girl, with more dramatic ups and downs and shorter intervals for boys. There is increasing evidence that mothers tend to talk to and to handle girls more than they do their boy babies. These labelled behaviors are so deeply ingrained in all of us by our own parents' handling that we are unlikely to be able to change them by conscious determination. How parents feel about maleness and femaleness will have a powerful influence on gender identity, and will be transmitted to the infant in subtle ways through every interaction. Identification with her mother's behavior toward her and a father's participation in a little girl's nurturant behavior may reinforce her wish to become a mother in later life.

5 / BODILY SENSATIONS AND IMAGERY. The developing infant's sensations—especially around the genitals—may influence the psychic concept of the self belonging to one sex or the other. Since boys' genitals are more exposed and more available to self-handling as well as to handling by the caregiver, the early experiences of exploration, masturbation, and of valuing one's genitalia can lead to more exhibitionism and externalizing of sexuality in the male. In the female, privacy, wonder at her genitalia and its meaning and value, and internalizing of sensation are more likely. These differences in sensual experience based on differences in the sexual characteristics of the body will deepen and grow throughout life and continue to influence gender identity. A girl's questions about what her genitalia and breasts are expected to do will recur often as she grows up. When she reaches the age of menstruation, these questions become heightened all over again. Her unseen and untested reproductive organs will be woven into her fantasies of pregnancy. Robert Stoller has described these fantasies as vital to a female's development of her identity and argues for the concept of primary femininity (Stoller, 1976). In his view, a girl develops a feminine identity from early infancy. This notion of

the primacy of feminine identity has altered Freudian theories of penis envy. In Freud's view, a girl sought to replace what she did not have, the penis, by using her body to generate a baby. Females needed the material evidence of the intactness of their bodies that came from creating a child. A healthy baby became reassuring proof that a woman's internal organs were productive and healthy and resolved her "inevitable" penis envy. Freud also pointed out that a little girl's fantasies about having a baby of her own allow her to imagine herself the equal of her all-powerful, life-giving mother. These assumptions of early psychoanalytic theory were generated in a sexist society which not only segregated male from female psychodynamics, but interpreted female psychology from the point of view of a woman's longing to be male. Until the psychoanalyst Helene Deutsch wrote her two-volume analysis *The Psychology of Women*, little actual attention was devoted to woman's psychological development. In her volumes, the emphasis is still on the woman's envy of the dominant male. Not until fairly recently have analysts begun to look for a "feminine core identity" in young girls' development which is not determined by "penis envy." Bodily sensations and the imagery of the female child form the early foundations. Much later, the psychological work done during pregnancy and the early adjustment to the baby will fulfill the nurturant aspect of this evolving identity.

The Wish for a Child

A woman's desire for a baby is fueled by many different motives and drives. In any individual woman, it would be impossible to tease all these apart. However, to give a sense of the power and complexity of this desire, and to help in understanding the turmoil of pregnancy, we will attempt to identify some of the most important of these ingredients. They include identification, the fulfillment of various narcissistic needs, and attempts to recreate old ties in the new relationship to the child.

1 / IDENTIFICATION. All women have experienced some form of being mothered. As a baby girl is nurtured, she is likely to engender

the fantasy of becoming the nurturer rather than the nurtured. As her own autonomy develops, she will begin to assume the postures of women who are close to her. She will learn by imitation how mother figures behave. Those around her are likely to delight in her imitations, reinforcing them, and strengthening her unconscious identification with her mother and mothering figures.

Early in the second year, a toddler will cuddle a doll or a toy animal. She will hold the "baby" close to her left breast, nurturingly, as her mother has done. As she cuddles it, she will rock it gently, look down into its face with soft eyes, a receptive expression, and a crooning voice, as if she expected the doll to look up at her and to croon back. As she walks around with "her baby," she walks taller. Her gait becomes more adult, with more certain steps. A toddler's feet are generally wide apart and tentative at times as she explores her world, but when she picks up her beloved toy, she becomes the adult she is imitating. Her gestures, her rhythms, her facial and vocal behavior could not have been taught to her. She has absorbed them by imitation, through her own experiences of being cuddled and carried and by identification with her mother or other mothering figures to whom she has been exposed. It is no coincidence that this behavior peaks in the second year, coinciding with the toddler's thrust toward autonomy. As her need to be on her own alternates with her desire to be treated like a baby, she acts out each of these roles: the independent mother and the helpless baby. When asked to name the "baby" she is carrying, she is most likely to name it after herself. As the second and third years progress, the words she uses for the baby will express the ambivalences of her developing identity—at one time, the "good baby" she wants to be and at another, the "bad baby" she also wants to be. As her identity evolves, her nurturant play makes clear that she is incorporating important parts of her mother.

By the age of five or six, a girl may begin to deny this nurturant role from time to time. She may begin to identify with more masculine behaviors, to disavow any desire to play with dolls or a "baby," and to prefer trucks or climbing. In our present society with its trend toward unisex treatment of small children, we are likely to see girls who will only wear trousers, or, given an audience, who stagger around with the "macho" gait often adopted by little boys. But, often, more

nurturant play is likely to reappear when girls are alone together, or with their mothers.

2 / THE WISH TO BE COMPLETE AND OMNIPOTENT. Among the narcissistic motives that fuel the wish for a child are the wish to maintain an idealized view of oneself as complete and omnipotent, the wish to duplicate or mirror oneself, and the wish to fulfill one's ideals. We use the term "narcissistic" to refer to this work of developing and maintaining a self-image and also to the degree of investment in that image. Narcissistic work is expressed in psychic life by fantasies, among which is the fantasy of being complete and omnipotent. One of the basic postulates of the psychoanalytic theory of narcissism is that there is a tendency to gratify these fantasies of completeness and omnipotence, and that on this gratification is built a human being's ultimate sense of self. This tendency will be in continuous interplay with opposing tendencies, such as the wish for object-relationships, objects representing essentially what is not the self and what is separate from it. The need to be omnipotent is also in conflict with sexual drives, with the need for stimulation from others, and with acknowledgement of reality, since we need others to fulfill our needs and are constantly confronted with our insufficiencies and incompleteness. These opposing forces create conflicts that can be solved only by compromise. The kinds of compromise will be determined by the choices of investments, of love objects, of interests and pursuits. In this way, conflict is a main force behind development, creating opportunities for new relationships, for new functions, for new solutions (whether normal or pathological).

The desire to be complete is fulfilled both by the condition of pregnancy and by a child. For some women, the wish to be pregnant predominates: pregnancy offers an opportunity to be full, to be complete, to experience the body as potent, productive. Pregnancy makes up for feelings of emptiness and for concerns about the body's being incomplete. This pregnancy wish is already seen in the play of small children. Girls and boys try to portray a pregnancy by inflating their abdomens with pillows or by puffing out their stomachs. Abdominal pain, stool retention, or difficulties in gastrointestinal function may

be an unconscious but related part of this identification with the adult role of pregnancy.

The narcissistic wish to complete oneself through a *child* is more differentiated: the mother will view the desired child first as an extension of her own self, as an appendage to her body; the child bolsters her body image, giving it an added dimension which can be proudly displayed.

3 / THE DESIRE FOR FUSION AND ONENESS WITH ANOTHER.

Along with the wish to be complete is the fantasy of symbiosis, of fusion of oneself and the child. Together with this wish for oneness with the child is a wish to return to oneness with one's own mother. This desire is a vital phase in normal development, a fundamental fantasy in the maintenance of self-esteem, and an important part of adult love life. The opportunity for gratifying such fantasies of symbiosis during pregnancy makes it a time for dreaming and for revelling in fantasies of union. After birth, the development and maintenance of maternal attitudes of attachment depend on a woman's recapturing these fantasies of oneness with her own mother. The child-to-be holds the promise of a close relationship, a fulfillment of childhood fantasies.

4 / THE WISH TO MIRROR ONESELF IN THE CHILD. Mirroring is a fundamental dimension of narcissism, of the development and maintenance of a healthy self-image. One tends to love one's own reproduced image. A woman's wish for a child is bound to include the hope that she will duplicate herself. This hope keeps alive a sense of immortality: the child will be a living testimony of one's continued existence. This wish for a mirror image extends to ideals and family tradition: the child represents a promise of continuation, an embodiment of these values. The child is seen as the next link in a long chain that unites each parent with his or her own parents and ancestors. The power of such filiation creates endless expectations: the child will bear the family features, the family name; he or she may assume a trade that characterizes the family, or the name of a famous ancestor. The many rituals surrounding birth, such as baptism, and other traditions strengthen this strong and necessary feeling of identity between children and their families.

The term "mirroring" has generally been used to describe a vital function of the *mother*, that of providing the infant with an image of his or her own self. Infants see on their mothers' faces the effects of their behavior, thus learning about themselves (Winnicott, 1958). Here we use mirroring to refer to a woman's dreams of the perfectly responsive baby who duplicates her ideal self and who will let her know how successful she is as a mother. Any fear of an imperfect baby threatens this self-image and must be repudiated. The wish for a child includes a wish to see reflected on the child the marks of one's creativity and one's capacity to nurture.

5 / FULFILLMENT OF LOST IDEALS AND OPPORTUNITIES.

Parents imagine the future child as succeeding wherever they failed. However young they may be, by the time they conceive a child, parents are confronted with limitations and the need for compromise. They know they cannot realize all the dreams of power, beauty, and strength that they entertained in childhood. Young adults must come to grips with the acknowledgement that they are mortal, limited in their options and capacities, and committed to a particular career and life choice.

The child-to-be represents, then, a chance to reverse this series of compromises and limitations. The imaginary child enshrines the parent's ego-ideal. She will be a token of perfection. She will carry on the sorely tried quest for omnipotence. The future child is not only an extension of the mother's body, he or she is an extension of what Kohut (1977) called her *grandiose self-image*. The fantasy child must, therefore, be perfect, must realize every potential dormant in the parents.

Evidence of these wishes abounds, both in everyday experience and in the offices of child psychiatrists. Parents become very involved in a child's looks, motor performances, and, later, scholastic achievements. Values that have been highly prized by the parents may become an "obligation" for the child. The more they have failed, the more they must press the child to succeed. If a mother wishes to be more independent, the infant will have to be autonomous. If a father saw himself as unintelligent, the child will have to go to Harvard. However hidden and grandiose the wish, the future child will have the mission

to fulfill it. The reverse of such grandiosity is the inevitable fear that the baby will be a failure. This fear, too, must be suppressed, for it threatens to confirm the parents' own failures all over again.

While it is easy to see how these narcissistic wishes may interfere later with a child's development, it is vital to understand that they are indispensable as well. They prime the mother for attachment: she must see her child as unique, as a potential redeemer of lost hopes, and as all-powerful in fulfilling her wishes. How else could she develop the feeling that her baby is the most precious thing in her life, worthy of all of her attention? How else could she develop what Winnicott has called "primary maternal preoccupation," made up of an otherwise totally unacceptable state of complete altruism and self-denigration?

A mother's tremendous neglect of her own narcissistic needs after birth is possible because *they are now allocated to the baby*. She can disregard them in herself, because the child will gratify them all later on. Mothers can tolerate the tremendous selfishness of babies because in caring for them, they are vicariously catering to their own selfish needs and wishes. The more a mother succeeds in giving to a future child, the more she will fulfill her own wishes and expectations for herself as a successful adult.

Nature gave mothers nine months to entertain doubts, fears, and ambivalence about the child to come. Counterbalancing these feelings is this important fantasy of the perfect child. When the time comes, the baby will offer the mother the certainty that she can create, that her body functions well, and that her unfulfilled ideals and hopes will finally be realized. This hope helps to keep mothers in a state of positive, anticipatory illusion during pregnancy and to protect them against overwhelming doubt and anxiety.

6 / THE WISH TO RENEW OLD RELATIONSHIPS. The wish for a child also includes the wish for a new partner with whom to replay old relationships. A child holds the promise of renewing lost ties, the loves of childhood, and thus will be endowed with attributes of important people in the parent's past. This potential is dramatically illustrated when a child appears to be a replacement for a dead parent, sibling, or friend. It is fascinating to see how often a pregnancy is started after a woman has lost a close relative (Coddington, 1979).

Children always carry the potential for renewing old relationships. In Part IV, we will see how this affects early interaction. The promise of renewing past attachments is an incentive for having a child. The child of fantasy is endowed with magic powers: the power of undoing the old separations, of negating the passage of time and the pain of death and disappearance.

A new child is never a total stranger. Parents see in each baby-to-be a possibility of reviving attachments that may have been dormant for years, a new opportunity to work them through. The feelings contained in these previous relationships will once more be played out, in an effort to resolve them.

In an analytic situation, we would call the child-to-be a transference object, that is, unconscious feelings and relationships of the parents will be transposed onto the child. The process of transference in itself has curing effects, precisely because it revives old, lost bonds. To this extent, we could describe the child to come *as a healer*: he or she holds the promise of re-creating dormant relationships that provided gratification in the past.

7 / THE OPPORTUNITY BOTH TO REPLACE AND TO SEPARATE FROM ONE'S OWN MOTHER. In her wish for a child, a woman experiences a unique form of *double identification*. She will simultaneously identify with her own mother *and* with her fetus, and thus will play out and work through the roles and attributes of both mother and baby, on the basis of past experiences with *her* mother and *herself* as a baby. By bearing a child, she will achieve a long-cherished dream of becoming like her own mother, making her own the magical and envied attributes of creativity. She will now match her all-powerful mother, reversing her submissiveness to her and her sense of inferiority in the oedipal rivalry. She can now become the Earth Mother, realizing her creative potentials, often while her real-life mother is mourning her own lost capacity to bear children. While this may involve guilt, it also provides sources of renewed self-esteem. The wish for a child may also include a wish to restore images of her mother, whom she felt she had damaged because of her envy. A woman may dream of offering her new child to her mother, as a token of gratitude. The reemergence of the relationship to her own mother is a very

intense process during pregnancy. It can be revealed in dreams, in fears, and in a *rapprochement* to her mother. A new relationship can emerge. In cases where this relationship was fraught with heavy conflict, this evolution can be impeded, and the conflict may be intensified.

The yearnings and fantasies just described do not exhaust the varied forces and social pressures that weave together into the wish for a child. But we hope that they are enough to suggest the power and complexity of this wish. The identifications, the healthy narcissistic needs, the longing to re-create old relationships will all energize a woman's capacity to mother and nurture. As they rearrange her dreams and emotions, they set the stage for attachment to the baby.

2

The Dawn of Attachment

The Work of Pregnancy

The nine months of pregnancy offer parents-to-be the opportunity for psychological as well as physical preparation. The psychological preparation, unconscious as well as conscious, is closely interlocked with the physical stages of a woman's pregnancy. After nine months, most parents feel a sense of completion and of readiness. When this time is cut short, as it is in premature labor, parents feel raw and incomplete. When there are physical complications, they endanger the psychological adjustment.

The psychological work of pregnancy may surface as turmoil or anxiety. Emotional withdrawal or regression to a more dependent role in other relationships within the family are common in this period. The prospect of responsibility for a new baby lends a sense of urgency. A parent-to-be needs to withdraw or regress in order to reorganize. The anxiety within both parents may carry them back to the struggles and ambivalent feelings of earlier adjustments. This mobilization of old and new feelings provides the energy necessary in the huge job of adjusting to a new baby.

Both expectant parents and those who care for them must understand the power and ambivalence of the feelings that accompany pregnancy. Prenatal visits, whether with obstetricians, nurses, pediatricians, or, in certain cases, psychiatrists, must allow for the expression of a wide range of positive and negative feelings. In the authors'

experience, pregnancy—like many other critical phases of life—is perceived differently by psychiatrists and pediatricians. The former are consulted in cases of crisis and troubled outcome and thus are alert to the potential for neurotic or psychotic problems in pregnancy. The latter are more likely to be impressed by a mother's amazing capacity to rearrange her whole life toward the welfare of her child. By looking at the stages of pregnancy from our dual point of view, we hope to illuminate this remarkable period and also to trace within it the birth of parental attachment.

The work of pregnancy can be seen as three separate tasks, each associated with a stage in the physical development of the fetus. In the first stage, the parents adjust to the "news" of pregnancy, which is accompanied by changes in the mother's body, but not yet by evidence of the actual existence of the fetus. In the second stage, the parents begin to recognize the fetus as a being who will eventually be separate from the mother. This recognition is confirmed at the moment of "quickening," when the fetus first announces its physical presence. Finally, in the third and final stage, the parents begin to experience the coming child as an individual and the fetus contributes to its own individuation by distinctive motions, rhythms, and levels of activity.

Stage One: Accepting the News

"I'm having a baby!"

In the past, a mother waited after a missed period for further confirmation of pregnancy from her own body. Changes in the color and sensation of the nipple, "morning sickness," or weariness made the fact of conception gradually more certain. Nowadays, parents are likely to receive the "news" from a physician after a pregnancy test, or even from a chemical reaction in a home pregnancy test.

However and whenever the news comes, parents will know that they have stepped into a new phase of their lives. Their feelings of dependence on their own parents must give way to responsibility. Their one-to-one relationship with each other must evolve into a triangle.

Initially, both parents are often euphoric. But almost at once the

euphoria is replaced with a dawning awareness of future responsibility. When conception is planned, this awareness may have been faced already to some extent, but the reality of pregnancy requires a new level of adjustment; soon there will be no turning back.

The "work" of pregnancy now begins in earnest. The prospect of parenthood throws adults back to their own childhood. No adult looks back on childhood as unmitigated pleasure. The struggles of growing up are mobilized each time an adolescent or young adult faces a crisis and, in pregnancy, these struggles are raw once again. The first fantasy of most parents-to-be is one of avoiding the struggles of their own childhood and of becoming perfect parents. "Not one like my mother." "My father tried, but he got everything wrong." "I certainly hope I can do better than they did!" What is it that parents wish to do better? Is it to protect their child from an imperfect world, or from the perceived negative sides of themselves? The latter is the more likely. As we mentioned earlier, all parents hope that they will be able to shield the new infant from their own feelings of inadequacy, or from the perceived failures of their own lives. With this magical wish that their own inadequacies can be conquered, parents-to-be see themselves as completely nurturant, completely positive—ready to create the perfect child.

Behind this fantasy is also ambivalence. At some point, all parents-to-be begin to wonder why they ever let themselves in for such an adjustment. "Do I really want to be a mother, a father? If I don't, have I hurt this baby already? Can I hurt an unborn baby with my fears, my negative feelings?" Especially for a pregnant woman, the depth of the caring involved in this adjustment makes her so vulnerable that her magical thinking about hurting her fetus becomes very real. All pregnant women dream about the possibility of having a defective child. Not only do they dream of all possible aberrations, but in waking, they rehearse what they would do if their child were born handicapped. Any danger to the fetus that they may have read or heard about will be called up at some time during pregnancy. The barrage of information now available about the effects of drugs, food, tobacco, alcohol, or pollution on the developing fetus only exacerbates the fears that universally haunt pregnant women.

In order to overpower such fears and her underlying ambivalence,

a mother-to-be must mobilize more and more defenses. She must begin to idealize the infant, to visualize the baby as perfect and as completely wanted. The work of overpowering the negative forces escalates the positive wishes for the baby and for being the perfect parent.

As a pregnant woman struggles through this turmoil of ambivalent emotions, she will be especially available to the support of others. A physician or nurse or friend who is an experienced mother will be accepted readily. An expectant mother often develops a strong transference to any supportive professional at this time. She yearns for understanding of her powerful emotions, for mothering as she prepares to be a mother. Professionals or family members who can accept this temporary dependency on the part of a mother without being overwhelmed will be helping to launch a stronger family.

During this time, many women tend also to withdraw into themselves. The rebalancing of hormones and other physical processes is paralleled by emotional adjustments, and a great deal of time and energy is needed to achieve a new stability. Days may be spent in daydreaming, nights in sorting out strongly ambivalent dreams. When this inner work is successful, a mother can eventually look forward wholeheartedly to her new role. But she may spend a great deal of her own and her family's energy in the attempt. In the process, she will, in all likelihood, withdraw somewhat from her previous relationships. She may even unconsciously blame her husband and others for her condition, even while, simultaneously, feeling a sense of elation. Now and then, she is likely to feel that she has been forced into this role. Such feelings may represent her effort to share or displace responsibility for the overwhelming adjustment, and may also represent a realistic reaction under certain social and economic conditions.

A woman's most immediate task is to accept the "foreign body" now implanted within her. She may experience the embryo as an *intrusion* by her mate, and may temporarily want to withdraw from the man who has impregnated her. Just as her body lowers its defenses against this "foreign body" and comes to accept and shelter it, the mother, too, must come to experience the child-to-be as a benign part of herself.

Often, in an effort to accept her new condition, a woman will turn to her own mother or her mother-in-law. But here, too, she may feel

ambivalent. Morning sickness and other physiological symptoms may serve to express the negative side of her ambivalence, while consciously she may be adapting with enthusiasm to her role. All pregnant women face this ambivalence, which surprises and disappoints them. Feelings of helplessness, of inadequacy, may even express themselves in the wish for a spontaneous abortion. While the disappointment and feelings of guilt that accompany either the bleeding of a threatened abortion or the reality of one belie this ambivalence, they are always there. Only gradually does the drive toward motherhood, with all the powerful components that we saw earlier, transform this ambivalence into fuel for the work of pregnancy, into the positive anticipation and energy of the later months.

Stage Two: First Stirrings of a Separate Being

At some point during the fifth month of pregnancy, a mother will feel the first butterfly motions of her baby-to-be. These delicate, stroking sensations will gradually turn into vigorous activity. After the confirmation of pregnancy, the moment of quickening is the next landmark event for expectant parents. This news, too, will be eagerly shared with husband, family, and friends.

Until this moment, mother and baby-to-be are one. Until this first fluttering of life, a mother can entertain the narcissistic image of total fusion with her child. Now, psychologically speaking, the baby has begun to "hatch." The earliest attachment may be said to begin here, for there is now a separate being, the possibility of a relationship. Quickening is the child-to-be's first contribution to the relationship.

When the mother begins to recognize the life of her fetus, she will unconsciously put herself in its place, identify with it. Her fantasies will be based on her infantile relationship to her own mother. Dinorah Pines reported a vivid instance of this two-layered fantasy. One of her patients had a series of dreams in which she became progressively younger as the pregnancy progressed; shortly before birth, she dreamt of herself as a baby sucking at the breast, "thus combining the representation of herself as the mother and as the newborn child" (Pines, 1981). The new concreteness of the baby, supplemented by ultrasound images and the now visible body changes in the mother, brings both

a new reality and new fantasies to the pregnancy. The mother can identify with the now evident fetus and also replay her own wishes of fusion and symbiosis with her mother. This fantasized "return to the womb" allows for yet another working through of unfulfilled dependency needs and symbiotic wishes. It is as if—through the mediation of her unborn child—the mother can "plug back into" the rewarding aspects of her early relationships with her mother, refueling and revitalizing herself. Curiously, this resembles the way toddlers dart back to their mothers, finding in that contact new energy to pursue their development toward individuation (Mahler et al., 1975). Pines points out that pregnancy offers mothers a new opportunity for working through separation conflicts, promoting a new phase in their process of disengagement (individuation) from the original symbiotic relationships (Pines, 1981).

This regressive trend can also activate conflict and pathological reactions. It may be experienced as a threat to identity, for it reawakens strong feelings of fusion between the mother and her own mother. If the mother's need for dependency is too great and unfulfilled (in some teenage mothers, for example), she will experience her fetus—and later, her baby—as a rival, and may treat the infant as an envied sibling. In this case, mothering will seem a heavy burden and even a frustration of her own needs. When things go well, however, this regression to symbiotic identification with the baby will lead to renewed psychic energy and also a source of empathic knowledge of what a baby is all about.

Recognition of a father's role helps a mother see the baby as separate from herself. If she remains aware that her pregnancy resulted from an act on the father's part as well as her own, and, ideally, of the *father's wish for a child*, she will avoid falling prey to the illusion that she alone produced the baby. When a woman chooses single parenthood, and especially when she chooses artificial insemination, these issues may be clouded. A woman who uses a man simply to fertilize her, or uses a sperm bank, is more likely to entertain the illusion that the baby is the result of her own omnipotent creativity. Her fears and doubts, as well as her hopes, will be heightened.

Acknowledging the father's role not only helps a mother-to-be with the job of separating from the fetus, and of differentiating it from her fantasies, but reassures her that she alone will not be responsible for

any successes or failures. This can cushion her fears of inadequacy and her anxiety about her new role. If the relationship with the father has been fraught mainly with resentment and conflict, this may be projected onto the child-to-be. But if the relationship is sound, if the father endorses his responsibility as a co-creator and doesn't flee from his role, the mother will have a better chance of recognizing that the child is a separate being, with a separate potential for growth. As we will see later, the wish for a child also holds many promises for the father, thus bolstering his own attachment to his future offspring.

The beginning of fetal movement, and the recognition that the baby is a reality, heighten the mother's self-questioning. Periods of depression and elation may come over her unpredictably. Her fantasies about the baby become more specific. During this period, she may begin to dream about the perfect boy or the perfect girl. Her preference for one or the other may begin to surface, or she may repress her real wishes for fear of endangering the fetus. The traditional belief in the "evil eye" and the superstitious rituals surrounding pregnancy are expressions of the universal desire for a perfect baby and the associated fear that the mother will do something to endanger the fetus. So concerned are mothers-to-be with their own struggles that intelligent women often express surprise and gratification when told that all women worry during pregnancy.

The rehearsal for an abnormal infant continues during this period. By the time the infant is born, a woman will have worried about every possible kind of problem her baby may present. She will have rehearsed in her dreams and fantasies what she must do if she is presented with a Down syndrome baby, or a cerebral palsied infant, or one who embodies any of the abnormalities that she has heard of in either her own or her husband's family. Hence, a premature or an impaired infant comes less as a surprise to a mother than as a disappointment for her lack of success in all the effort she has made during pregnancy. She will have rehearsed and even mobilized forces for helping her deal with the failure, but she must still face her grief at losing the "perfect" baby she dreamed of as a reward for her work.

The experiences of diagnostic amniocentesis and of ultrasound techniques for visualizing the fetus have a complex effect on this work of adjusting to a baby and a new role. Although mothers (and fathers) profess a hunger to know the sex of the baby (which can be determined

by amniocentesis), a surprising number (about 40 percent) do not wish to be told. The pregnant woman's curiosity and amazement at seeing her baby visualized on a screen in the third month is accompanied both by awe and by a fear of looking too deeply below the surface. The work of adjusting to her ambivalent feelings and fears about the fetus has just begun. She is not ready to face the baby as a reality yet. Many first-time expectant mothers who watch the screen on which the fetal movements are being visualized express mixed emotions. They see the fetus as inadequate, fearsome, or incomplete. They turn away from the screen as if it were too frightening or overwhelming. "Is that a real baby?" "He looks so tiny and helpless." They find unbelievable the obstetrician's reassurance that the fetus is normal and need to hear it over and over. Until they themselves feel the fetus's movement in the fifth month, this poorly visualized, shadowy creature is likely to be seen as unreal, vulnerable, fearsome. Such feelings are a reflection of the mother's struggle with her own ambivalence. She needs more time to get ready for the baby.

Elizabeth Keller, a Child Development Fellow at Boston Children's Hospital Medical Center, compared mothers and fathers who were told the sex of the baby after amniocentesis or ultrasound with parents-to-be who didn't know the sex of their baby until birth (Keller, 1981). One might expect attachment to, and early personification of, the newborn baby to be enhanced by foreknowledge of the baby's sex. Not at all. The parents who knew the baby's sex took longer to personify and recognize the individuality of the baby after birth. It seems there may be a protective system at work—protecting the parents and the baby from a too-early attachment. The work of attachment to an individual baby takes time and early attempts to consolidate it may be rejected. Once again, this points up the problem of adjusting to a premature infant, for whom this work of attachment has been foreshortened.

Stage Three: Learning about the Baby-to-Be

During the last few months of pregnancy, parents see the fetus as increasingly separate and increasingly real. Names are often chosen

during this time, houses are rearranged to accommodate the baby, and plans are made for leave from work and for childcare. As parents muse about names, select baby clothes, or paint the nursery, they begin to personify the fetus. During this same time, the fetus is now also playing its role. As fetal motion and levels of activity begin to fall into cycles and patterns, the mother can recognize and start to rely on them. Her response can be seen as a very early form of interaction. She will begin to read into these patterns, giving the baby-to-be a temperament, a personality, sometimes even assigning a sex (Sadovsky, 1981). A mother with older children will compare the behavior of this fetus with that of her earlier ones. She will label these perceived characteristics "quiet," "aggressive," "like a dancer," "like a football player," and so forth, giving meaning to them in the process. It is as if the mother needed to personify the fetus so that he or she will not be a stranger at birth.

Many of the observations of pregnant women over the centuries are being confirmed by modern ultrasound. In order to understand the rich variety of fetal activity to which parents are responding as they endow their unborn baby with an individual personality, we will look briefly at what is now known about fetal development.

1 / FETAL MOVEMENTS. The full repertoire of movements of the newborn baby can be seen before birth, in the fetus (Milani Comparetti, 1981). A great deal of motor development takes place during pregnancy, preparing for adaptation after birth. For instance, breathing movements are now known to be present as early as 13–14 weeks. These rapid, irregular breathing movements are associated with low-voltage, high-frequency "electrocortical" activity in the brain (Boddy et al., 1974). Fetal movements have been the object of particular attention, because they can be studied by noninvasive methods and because they have diagnostic value. As an extreme example, marked decrease and cessation of fetal movements indicate impending fetal death. Fetal movements are affected by various agents: alcohol, tobacco, sedatives, maternal emotional stress.

Fetal movements evolve in intensity and form during pregnancy.*

*Because of new imaging techniques, this chronology is being refined all the time.

Around 6–7 weeks, smooth, circular movements of the body are seen. These movements become more complex as time goes on.

Around 13–14 weeks, flexion and extension movements, opening and closing of the hands, swallowing, and breathing movements are present. Mechanical stimuli produce a startle response, and the fetus's ability to habituate to stimuli can be demonstrated.

Around 15 weeks, a fetus will suck on its fingers.

Between 16 and 20 weeks, mothers first perceive fetal movements.

Around 20–21 weeks, one can see isolated segmental movements of fingers, foot, eyelids.

Around 26–28 weeks, a stimulation by sound will induce a startle response or trunk and head rotation, and an increase in heart rate (Janniruberto & Tajani, 1981).

There can be great variations from one fetus to another. While recordings have shown that the mean number of daily fetal movements increases from about 200 in the 20th week to a maximum of 575 in the 32nd week (then to a mean of 282 at delivery), the number in an individual fetus can range from 50 to 956.

Mothers' reports concur with objective measures of fetal movements in 80–90 percent of cases. Fetal movements are affected by various stimuli, increasing after exposure to sound, and also after light stimulation. Ninety percent of fetuses move more during ultrasound exposure. Touch and pressure on the mother's abdomen also trigger an increase.

2 / CYCLES OF ACTIVITY. The states of consciousness observable in the newborn—quiet, alert, sleep, REM sleep, and so on (see Part II)—are observable in the fetus. These states appear to occur in cycles. During maternal sleep, a rhythmic rest–activity cycle of 40–60 minutes was observed over twenty years ago (Sterman, 1967). A rhythmic rest–activity cycle of 40–80 minutes has been noted more recently, in both awake and sleeping mothers (Granat et al., 1979). A marked circadian rhythm of fetal movements has been shown as well (Roberts et al., 1977). This periodicity in fetal activity was not found to be correlated with gestational age, nor with fetal sex, birth weight, or with assessment of newborn behavior such as the Apgar score. Rather,

it seems to be connected to intrinsic physiologic properties of the fetus, and may be affected by maternal activity.

In the later months of pregnancy, any woman can tell what times of day her fetus will be active. Most women predict that peaks of fetal movement will occur at times of inactivity for them. Although this association has been attributed to their available awareness during rest periods, there is reason to believe that the observation is correct. The fetus may begin to "adjust" to the mother's rest–activity by reciprocal activity and inactivity. When she is active, it will be quiet. When she is quiet, it will begin to "climb" the uterine walls. The lactic acid of muscular activity, which peaks as the mother rests after activity, has been thought to stimulate fetal movements. A fetus's predictability and adjustment to its mother's rhythms become further evidence for the mother of his or her existence as a person, a person who can "adjust to her," as well as to the pressures of her life.

When asked to keep a record of a fetus's rest and activity, mothers can make extremely accurate predictions after two or three days of conscious attention to these cycles. Such regular, organized cycles dominate fetal behavior. Distinctions between states of activity in the fetus become more and more evident to the mother. In the last trimester, women can tell when their baby is in (1) *deep sleep* (quiet and essentially unresponsive to outside stimuli with, at most, an occasional jerk of an extremity), (2) *light sleep* (quiet, but with bursts of repetitive movements of the extremities, hiccoughs, and, occasionally, slower thrusts of the arms or legs, or trunk), (3) *active awake* ("climbing" the uterine wall, with bursts of thrusting, vigorous movement), and (4) *alert but quiet* (apparently waiting and receptive to external stimuli, with smoother, more directed movements, often in response to external events).

3 / RESPONSES TO STIMULI. Of the species that are helpless at birth (altricial), humans are the only one in which all the sensory systems are capable of functioning before birth (Gottlieb, 1971). Immature neural tissue functions before nerve-ending receptors are present, before myelinization is complete. Stimulation apparently plays a role in the maturation of sensory organs. This maturation appears to

be accelerated or slowed down by increased stimulation or lack of stimulation, respectively.

As early as day 49 after fertilization, the fetus will bend its head away from the site of stimulation when the face is touched lightly near the mouth. Sometime between day 90 and day 120, the so-called "righting reflexes," in which the fetus attempts to keep its head in balance, begin to appear. At about six months, the fetus is capable of responding to auditory stimulation. At this time, fetal heart rate changes in response to sound stimulation have been recorded.

In the last trimester, there are discrete evoked responses of the fetal cortex that can be measured with noninvasive techniques (Rosen & Rosen, 1975). Electrodes applied directly to the fetal scalp after rupture of the membranes demonstrate a rich range of responses to sound, touch, and visual stimuli. Observing whether the fetus is able to habituate to these is one way of measuring fetal well-being; if the fetus keeps on responding with no change, it may be under stress (Hon & Quilligan, 1967). Using maternal reports and confirming them with fetal behavior during ultrasound monitoring, we [TBB] became convinced that the fetus in the last trimester responds reliably to visual, auditory, and kinesthetic stimulation (Brazelton, 1981a).

When a bright light is shone on the mother's abdomen in the fetus's line of vision, it will startle. If a softer light is used in the same position, the infant turns actively but smoothly toward it. A loud noise next to the abdomen will also produce a startle, while if a soft noise is used, the baby will turn toward it. When stimuli are offered while the fetus is in a quiescent state resembling sleep, the responses are less predictable, more subdued, and the fetus habituates to them more rapidly. These differentiated responses to external stimuli can be perceived as signals by the mother. If these signals coincide with her own responses, they may initiate the beginnings of synchrony between mother and child.

While in the womb, the fetus is being preconditioned to maternal sleep-wake rhythms and to the mother's style of reactivity. Not only have newborn babies experienced their mother's rhythms in the womb, but auditory and kinesthetic cues from her are now "familiar." No wonder a newborn already prefers a female to a male voice at birth (Brazelton, 1979). The fetus's reaction patterns are shaped and made ready for "appropriate" cues after birth.

Meanwhile, the parents are learning about their baby. Toward the end of pregnancy, mothers report more and more differentiated responses. They say that their babies react one way to a Bach concert—with smooth, rhythmic kicks—and an entirely different way to rock music—sharp, jerky movements. When they announce this, they are proudly stating that the baby is an aware, competent being already. The baby is not only aware of the environment, he or she is demonstrating a readiness to meet it. Parents now begin to see their babies as strong enough to survive in the outside world. The more parents can imagine an unborn child as a competent, interacting individual, the more confident they can be about the baby's ability to survive labor and delivery.

As a mother gets closer to delivery, however, her fears about having damaged her infant once again weigh more heavily. In fact, so raw are these fears that few women can even speak of them in the last month. They *must* be repressed or they can become overwhelming. To balance these fears, the parents continue to personify their child. The fetus's characteristic movements and responses become of heightened value in demonstrating its integrity. The more a mother can see her unborn baby as a separate person, the more protected she feels from her own imagined inadequacy and incompetence. Mothers who can see their child-to-be as strong and resilient may even perceive the child as an ally in the difficult task of delivery.

The Task at Birth

During the forty weeks of pregnancy, the growth of the fetus is paralleled by a progressive development in the mother's image of the baby. As we have seen, this image is based both on narcissistic needs and yearnings and also on perceptions of the fetus's development: quickening, activity, patterns of response. Thus, when birth occurs, the mother has long been prepared to cope with (1) the shock of the anatomical separation, (2) the adaptation to a particular infant, and (3) a new relationship which will combine her own needs and fantasies and those of a separate being. Not only is pregnancy a period of rehearsal and anticipation, it is also a phase during which old relationships have a chance to be reshuffled, as well as a continuing

confrontation between wish fulfillment and the acknowledgement of reality.

When the moment of delivery arrives, the mother must be ready to create a new bond, and also to be amazingly available to enter that condition Winnicott described as a form of "normal disease," a state of total involvement in which mothers become able to "step into the shoes of the baby" (Winnicott, 1986). Among the formidable tasks that face the mother at birth are:

1. An abrupt ending of the sense of fusion with the fetus, of the fantasies of completeness and omnipotence fostered by pregnancy;
2. Adapting to a new being who provokes feelings of strangeness. Michel Soulé has described these as feelings of *unheimlichkeit* (Soulé & Kreisler, 1983);
3. Mourning for the imaginary (perfect) child, and adapting to the characteristics of her specific baby;
4. Coping with fears of harming the helpless child (often experienced in new mothers, for instance, as the fear of drowning the baby in the bath);
5. Learning to tolerate and *enjoy* the enormous demands made on her by the total dependency of the baby; in particular, she has to withstand the baby's intense oral cravings, and gratify them *with her body*.

All this represents a major psychological upheaval. It is as if a new mother must go through a complete "shake-up"; her previously held positions, her attachments, her image of herself are all subject to change. So pervasive is this upheaval, in fact, that it can resemble a transient pathological state. The result is a new maternal identification, a focusing of her affections, and an ability to acknowledge and adjust to an inescapable new reality (Brazelton, 1981b).

During this time, others (husband, family, doctor) can play a vital supportive role. For instance, a prenatal visit with the future pediatrician can be of great help. Young parents are particularly eager to establish a positive relationship with a benevolent figure interested in the future child's welfare (Bibring et al., 1961). Even one short visit will do much to allay parental fears and to prepare for mutual cooperation in later routine visits. One of the unconscious factors often

involved here is a desire for the physician to allay a mother's guilt by "allowing" her to have a child, reassuring her that her body is capable of carrying and delivering a healthy fetus.

Apart from her pediatrician or an understanding obstetrician, a mother, of course, has two important allies as she summons her energies to face these tasks. As we will see in the next chapter, the father of the baby is experiencing many upheavals, some different, some parallel to her own. And as we will see in Part II, their newborn baby will be a powerful force in their new lives, capable from the start of contributing to the growing relationship.

3

Attachment in Fathers-to-Be

As it is with women, a father's attachment to his baby is influenced by his own experience in childhood. In infancy, a boy may first identify with his mother, identifying with her childbearing and nurturing capacities. She seems all-powerful to him, the source of all gratification, stimulation, and care. Wishing to become as powerful as she, he identifies with her. Many boys simulate pregnancy with pillows and tenderly act out their capacity for childcare with dolls. In this make-believe play, they develop a core of identification with their mothers. Meanwhile, they are also beginning to identify with their fathers. Out of this interplay of opposing forces, a boy's identity develops. A young boy must integrate his core maternal identification with his growing identification with masculine behavior. The solution of this dilemma, the "paradox of masculinity" (Bell, 1984), will shape both his gender identity and his future fatherhood. Many resolutions are possible, including difficulties with sexual identity or a stern refusal to acknowledge any feminine attributes, as in the "macho" complex. A balanced resolution, however, makes possible a boy's future acceptance of his nurturing role, a capacity both to identify with a woman's pregnancy and to contribute to childrearing as a father. The conflict leads to adaptive solutions, preparing a boy for his role as a caring father.

Traditional fathers from our past have often been described as "aloof," absent, and not showing emotion (Bell, 1984). Whether this has been really true or not, in the past most boys remembered their fathers as non-nurturing. Has this been an assigned role or a real

observation? Have fathers in the past been more nurturing than reported? Have their so-called feminine inclinations and behaviors been merely shielded by an aloof or distant surface? Have there always been hidden nurturing forces in men which men, until recently, have not been permitted to express? Could the fathers of the present display such evident positive attachment to their pregnant wives and to their infants had they not perceived models in their fathers as well as in their mothers? In all likelihood, their fathers' model for nurturing played some role, though in no way parallel to that of mothers. Will this change in the future, or does this imbalance serve a lasting purpose?

The main developmental task of the boy, in the gradual achievement of fatherhood, is to relinquish his wish to be just like his mother and to bear children as she does. Not all men accomplish this task. Some persist in envying women's childbearing capacities and never accept that they must be excluded from this process. Unconsciously, they compete with their wives, exhibiting symptoms similar to the *couvade* of primitive tribes (in which men exhibit symptoms of pregnancy and labor), or else flee from these wishes by absenting themselves during their wife's pregnancy. Men who can successfully sublimate these wishes may feel renewed creativity, or increased professional productivity during their wife's pregnancy. Such rechanneled wishes may even become the incentive for choosing a career in a childcare profession.

The Wish for a Child in Men

A man's wish for a child, first grounded, as we said, in the desire of the boy to be like his mother, was described by Freud in the story of little Hans, a five-year-old boy who imagined that he too could bear his father's child. Other determinants, similar to those we described in women, are active. The narcissistic wish to be complete and omnipotent by producing and identifying with one's child is universal, as is the wish to reproduce (mirror) one's own image. This is certainly one reason why fathers are likely to prefer to have a boy. In India, the very name for the son, "putra," means "one who delivers from the hell called put" (Kakar, 1982). In the *Mahabharata*, one of the

fundamental sacred texts in India, it is said that the father himself is born as the son, and in the placing of his own seed in the womb, he has conceived his own self. This wish to reproduce one's own sex is stronger in men than in women; it may reveal a greater need in men to bolster and confirm their masculine identity, which is so constantly challenged. In one author's experience [BC]), nearly all children who are referred to psychotherapy for evaluation of cross-gender behavior are boys.

For fathers, sons are more likely to become the carriers of the father's unfulfilled ambitions than daughters. Fathers are more likely to be concerned about their sons' achievements, their progress in the areas of motor development, cognition skills, and scholastic achievement. A son often has the mission of shoring up a father's doubts about his masculine self-image. This is why fathers become so anxious when they see signs of weakness, insecurity, and lack of drive in their sons. Such weaknesses seem to reflect, in an amplified and socially visible form, the father's insecurity about himself. Possibly contributing to this strong identification is a man's deep-seated feeling that he can influence his son's masculine identification but not his daughter's outcome.

A woman, as we have seen, longs for a child to quiet doubts about her own fertility and reproductive capacity. The equivalent, in a man, is expressed in doubts about his potency, his power to make his wife pregnant. An extension of this is the father's need to raise a boy who shows all the signs of future manhood. While these stereotypes about sex roles are changing, the wish of fathers to duplicate their masculinity and power in their sons is still strong.

Fathers, like mothers, also need to renew old relationships with important persons of their past, and they expect their children to provide this link. Fathers wish to ensure the continuity of their lineage, "our only path to immortality," said Freud in *The Interpretation of Dreams* (Freud, 1955). Freud named his own sons after men he admired and loved; beloved teachers and admired historical figures. The practice of giving one son the first name that the father himself inherited from his father is a testimony of the powerful drive to maintain filiation and to find in one's child the loved attributes of one's ancestors.

A man's wish for a child is also influenced by his old oedipal rivalry;

Not only does having a child provide a way to equal one's father, but raising him provides an opportunity to do better than one's father. Each new father resolves to be a better father. Today, he turns to the abundant literature on child raising to provide himself with the technical know-how of fatherhood, in the hope that his informed fatherhood will be totally new, surpassing past methods.

All the threads described above weave together into the incentive to have a child, stirring new conflicts as well as offering new solutions to old conflicts. A wife's pregnancy is an important time for the consolidation of a man's identity. With it will come all the anxiety and self-questioning that besiege mothers. Each stage of pregnancy is a new challenge, as it is for women.

A Father's Feelings during Pregnancy

When a father first learns that his wife has conceived, a flood of different emotions assails him, some joyous, some anxious, many conflicting. Both the strength and the nature of these emotions will come as a surprise to most fathers.

One of the first reactions of the new father-to-be is a feeling of exclusion. Even though, when a child is wanted, both husband and wife share in the euphoric announcements to friends and relatives, the expectant father will soon feel upstaged. Not only does his wife begin to focus her attention—her energy and concern—on the unborn child, but she herself becomes the center of others' attention. Everyone asks about her mood and health; no one cares about his. Those around a pregnant woman are drawn to take care of her, and she expects the same solicitous concern from him.

This sense of exclusion is complicated by a father's feeling of responsibility for the pregnancy. He feels displaced, but at the same time, he feels that he has only himself to blame. Whatever his wife experiences, nausea or fatigue, appears to him to be his own fault. He takes responsibility to an irrational degree.

Now that fathers are more involved in planning for a baby—participating in prenatal visits to the obstetrician and the pediatrician, for instance—a natural competition between new mothers and fathers

begins early. Competition for the nurturing role is added to competition with the unborn baby for each other. This kind of competition can be alarming, unless both parents understand that it is a natural, and also a necessary, part of their growing attachment to their future child. Not only do these feelings stir up attachment, but they can strengthen rather than weaken the parents' bond to one another.

As the pregnant mother begins to make her inner adjustments, to slip into the fantasy world we have just described, the expectant father has his own adjustment to make. Will he be a good provider? Will he be able to free up time from his career, to be a nurturing father as well as a strong, dependable support for his wife? All these doubts, this turmoil, emerge when pregnancy is first acknowledged and help to prepare the father for his changing identity.

While women cannot flee from the facts of pregnancy, fathers have more leeway in the extent to which they will get involved. They can choose to withdraw, ignoring what is going on, while women have to submit to the physical process of pregnancy. Some fathers may be so shaken up by a pregnancy that they prefer to distance themselves from it, running to extramarital affairs, developing alcoholism, or sexual impotence. This kind of acting out may be based on the reawakening of bisexual conflicts. It also reflects another important force—the man's sense of being displaced. A prospective father may experience the child to come as a rival who robs him of his wife, the way his father or a sibling had robbed him of his mother in his own childhood. Since, as we pointed out earlier, a boy first identifies with his own mother, and then must repudiate this identification, these feelings are likely to be revived. For all these reasons, men are bound to have ambivalence about the child-to-be.

James Herzog described expectant fathers as falling into two groups (Herzog, 1982). One group acknowledged their feelings about the arrival of a first child by becoming empathic with and invested in their wives. The other group was made up of fathers who expressed little awareness of their feelings. The "attuned" men felt compelled, toward the end of the first trimester, to feed—in fantasy—the mother and the fetus. Making love was imagined as a form of nutriment to their pregnant wives, and somehow nurturing the growing fetus. Less attuned men complained that their sexual needs were not being fulfilled.

By saying things like "I am hungry for it all the time," they betray their own wish to be fed, in competition with the fetus. The expectant fathers were thus divided between those who nurtured their wives and those who felt disappointment at not being nurtured themselves and who were jealous of their wives and the baby.

As pregnancy progresses into the second trimester, the father-to-be is likely to show an increased concern with his own body. His unconscious identification with his wife intensifies, sometimes leading to bisexual and hermaphroditic fantasies. This shift again provides an opportunity for the reshuffling of forces that contribute to his masculine identity (Gurwitt, 1976).

In many Third World cultures, this increased identification with the pregnant wife is expressed in the *couvade* syndrome mentioned earlier. Men simulate the process of delivery, going through its various phases and manifestations. Those around them treat them as if they were suffering; they are catered to. Through this "play," they dramatize their envy of the procreating woman and their disappointment at being left out. As they take onto themselves the pain of the laboring woman, they participate in her process and are seen to be protecting her. More benign forms of this identification are found in the developed world, in the form of various aches and pains. Expectant fathers experience more nausea, vomiting, gastrointestinal disturbances, and toothaches than nonexpectant men.

Such turmoil and symptoms show convincingly that a man's wish to be pregnant, to be like the mother and the wife, is reawakened during pregnancy. When it takes the form of pains and symptoms, it is because this identification is unconsciously full of conflict and cannot be expressed. As men repudiate their feminine side, they feel angry at the pregnancy. Once they resolve these conflicts, they are able to feel an empathic identification with their pregnant wives.

In the last part of the pregnancy, fathers tend to sort out their relationship to their own fathers. Just as women tend to plunge back into their early relationships to their mothers, fathers need to turn to their own fathers (in fantasy or in reality) to bolster their emerging parental role. This anchoring of new roles with old childhood models is a theme that comes up again as parental identity unfolds during pregnancy. A man who enjoys a solid bond with his father is protected against fears of becoming too much like his mother.

In the third trimester, fathers, like mothers, experience anxieties about the future baby's health. They too have doubts that their offspring was adequately protected against their ambivalence, their rivalry, and their resentment. They feel anxiety about the future baby's normalcy and completeness and are in need of assurance. A father who "flees" at the end of pregnancy will do so either in reality (abandoning the family) or—more frequently—simply by showing emotional indifference or lack of involvement. This turning away is a defense against feelings of hostility against his wife—whom he experiences as preferring the baby—or against unresolved fears of identification with her.

These feelings are acknowledged by many fathers:

I began to think at this point that I might really be harboring some secret anger toward the baby. Before she was born, I used to joke in rather sadistic ways about birth defects and about child abuse, and finally my wife asked me why I did this. I came to realize that it was my way of ridding myself through humor of the fantasies which I carried around and couldn't verbalize in any other manner. . . . Basically, I have come to understand that these were fairly primitive feelings against the baby for displacing me. For a man, having a baby entails being denied a certain sense of specialness, and it means losing out as the center of attention (Bell, 1984).

The coming of a new member of the family, the baby, forces the father to accept the transition from a dual relationship to a triangular one. This awakens feelings of being the left out, third party, as we all experience in childhood when confronted by the intimacy of our parents, or when a sibling is born.

The "Absent" Father

Despite great advances in involving fathers during pregnancy and delivery, the forces that have historically excluded fathers are still strong. They are based on cultural recognition of fathers' natural ambivalence, as well as the fathers' own powerful doubts about being able to be protective and nurturant. We are gradually seeing that those factors can be modified by programs fostering fathers' involvement in

pregnancy and delivery, including childbirth education, Lamaze classes, prenatal visits, and family support programs (Samaraweera & Cath, 1982). Nevertheless, we must recognize that the lingering traces of exclusion which fathers still experience have deep roots in widespread historical and cross-cultural practice. The "gatekeeping" seen even in working mothers today still serves to keep fathers at a distance.

In only 4 percent of sample cultures is a "regular, close relationship" apparent between fathers and infants (West & Konner, 1982). Strict separations are enforced between men and women during labor and in the days following delivery in many cultures; in 79 percent of world societies, the father sleeps apart from mother and infant during the nursing period (Hahn & Paige, 1980).

Apart from the employment of the majority of mothers in our society, childbirth education groups and medical personnel are also important agents of change. They can have a powerful future impact in determining the new models for fatherhood, in promoting more active participation, and in enhancing nurturing proclivities in men.

The Father's Role in Supporting His Pregnant Wife

The process of pregnancy, the delivery, and early attachment is strongly influenced by the father's attitudes. The husband's emotional support during pregnancy contributes to his wife's successful adaptation to pregnancy, and the presence of the husband during labor and delivery is associated with reduced need in pregnant women for pain-relieving medication and with a more positive labor experience (Parke, 1986). A mother's competence in breast- or bottle-feeding is also influenced by her husband's attitude (Pedersen et al., 1982). The nature of marital relationships during the first trimester of pregnancy is strongly predictive of the mother's postpartum adjustment (Grossman et al., 1980). Perhaps most significant is the correlation between a mother's report of the father's involvement during pregnancy and clinical observations of the extent of her own involvement with the child throughout the first four years (Barnard, 1982). Many other more recent studies confirm clinical observations, not to mention everyday intuition: a father-to-be's presence and loving support help

a woman develop her maternal role. As modern families rarely allow for the maintenance of the support system based on the extended family (the mother's own mother, aunts, etc.), fathers play an increased role in the development and maintenance of maternal capacities. If the father also stays involved in a close love relationship with his wife, this will help prepare her to renounce the gratification of an exclusive attachment to her baby.

In turn, of course, fathers' involvement in pregnancy and delivery reinforces their own identity as participative, active agents, lessening the likelihood of their exclusion (Barnard, 1982). They are preparing for a more direct role after the baby's birth. Their continuing presence is thus rewarding in two ways: their own bond with their wives is maintained, and they begin to taste the joy of fatherhood.

Giving Fathers Their Due

Psychoanalysis has been concerned with a fantasized or mythical father: the bearer of the law, the forceful spokesman of reality, the holder of the knife that cuts the umbilical cord and threatens castration. Though the father could become an object of love (the negative Oedipus), little was said about a primary preoedipal infant love for the father. Even less was said about fathers showing positive, early attachments to the infant. Only mothers were studied—psychoanalytically—in dyadic love relationship with infants. More recently, studies have shown that the father has a *direct* influence on the child's development, enhanced by his attachment to the child from infancy on. This attachment is mediated by the mother's attitude toward the role of the father. Some mothers, in order to fulfill their own needs, tend to interfere with the reciprocal bond between infants and fathers, as if they were threatened by the infant's emancipation from the symbiotic unit. Mothers are gatekeepers, capable of enhancing or dampening father-infant attachment. If they promote a triangle, this opens the way for the child's future attachment. The mother's own experience of the oedipal triangle influences her child's opportunity to become close to his or her father.

One may wonder if the neglect of the father's role in so many

studies for so many years—all of which placed the emphasis on the early mother–child dyad—didn’t itself reflect the tendency to exclude the father from the mother–child relationship, such as is revealed by the historical and ethnological studies. Perhaps a universal fantasy of the father threatening the mother–baby relationship influenced even those studying that very relationship, blinding them to benign aspects of a father’s role.

Since learning to be a father is a developmental process, it is determined simultaneously by basic psychic energy and experience and by environmental forces. Basic psychological attitudes are supported or undermined by events, social pressures, and institutions (Klaus & Kennell, 1982; Brazelton, 1981b). Crucial touch points, such as the prenatal visit, prenatal classes, and support during labor and delivery, provide opportunities for fostering the development of fathering. And as we will see in Part II, newborns themselves are capable of distinguishing between parental responses and appear ready to captivate a father’s attention, however uninitiated.



PART TWO

The Newborn As Participant

It is fortunate for their survival that babies are so designed by nature that they beguile and enslave mothers.

—JOHN BOWLBY
*"The Nature of the Child's
Tie to His Mother"*



Introduction

Newborn babies are beautifully programmed to fit the parents' fantasies and to reward the work of pregnancy. From the first, they are active participants in shaping their parents' reactions to them. Parents are hungry for responses from their newborn. During pregnancy, they have dreamed of a smiling baby who snuggles neatly into their arms. They need a responsive infant to fuel the work ahead. The now outdated image of a baby who could neither see nor hear for several weeks after birth made parents blind to the very responses that can swiftly strengthen attachment. Today, the newborn's developed sensory powers are better known, and those of us who work with parents can help point out the extraordinary range of behavior in the repertory of an individual infant. Parents who appreciate and value this responsiveness are ready for a richer dialogue with their baby.

Part II will outline the complex capacities that are available in the normal human newborn, ready to reward adults for appropriate responses. These capacities, programmed into the baby, match universal expectations in parents. The baby's behavior and the parent's instinctive nurturing responses meet in the newborn period to fuel the growth of attachment between them. Energy is high at this time and the newborn is equipped to capture it.

When a mother holds her newborn in a comfortable, cuddled position, the infant molds into her body. On her shoulder, the infant

lifts his or her head to scan the room, then settles a soft, fuzzy scalp into the crook of her neck. As she automatically pulls the infant to her, a newborn will burrow harder into her neck, molding his or her body against hers, legs adjusting to fit her body. All of these responses say to her, "You are doing the right thing." If she leans down to speak in one ear, the baby turns to her voice and looks for her face. Finding it, the infant's face brightens as if to say, "There you are!" A newborn will choose a female voice over a male, as if to say, "I know you already and you are important to me."

As we will see, newborns' states of consciousness are responsive to mothers in similarly reinforcing ways. When they are crying, as their mother speaks to them, touches them, or holds their arms, they will quiet. Both mother and newborn feel the thrill of having "done the right thing." Each time something she does brings a response, whether quieting or waking or becoming alert, a mother feels her competence confirmed. If, on the other hand, an infant's ability to respond is disturbed or impaired, she feels her expectations violated. Both her attachment and her future relationship with this infant are put at risk.

Insecure new parents look for signals from their baby to reassure them that their caring attempts are on target. They need the baby's responses as a continuous confirmation of the appropriateness of their parenting. At a time when no extended family system provides advice and monitoring, the baby's behavior is the parents' best guide to each new effort.

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The Appearance of the Newborn and Its Impact

The baby's appearance stimulates parenting responses. The soft, rounded face; the fuzzy, fine hair and delicate skin with an incredibly soft feel; the short limbs and relatively long torso; the beautifully molded tiny hands reaching helplessly out—all of these are markers of "babyishness." We know now that there is a program in adults of many species that makes them want to reach out for and take care of any small, helpless member of their own species with certain specific physical characteristics.

The initial, bluish, rather mottled appearance of a newborn is due to dependence on the mother's oxygen in the uterus. The presence of a special kind of fetal hemoglobin has made it possible for the fetus to maintain a lower oxygen level. Until its lungs and circulation take over effectively, the newborn will be somewhat blue. This transition is miraculously short in most cases. All babies are born with "poor" color and with gasping, irregular respiration. The fact that babies are blue at birth has worried obstetricians unnecessarily, and they have too often instituted drastic measures to make the baby "pink up" or to get deep, regular respirations. This in turn has aroused anxiety in parents. With a little patience, the baby's color will improve anyway. Spanking babies or immersing them in cold-water baths to "shock" them into crying may not be necessary. Crying improves the air exchange more rapidly so that color and circulation improve. In a normal, healthy baby, this will happen rapidly and without harm.

When a new mother and father see their baby limp and blue in the

delivery room, they may imagine brain damage. Reassurance by a professional that this color and initial unresponsiveness is "normal" can be critical as they start to reach out to the baby. The battered appearance which most babies have after delivery can also arouse a mother's fears that she has damaged her baby in labor and delivery. She needs to hear that the molded head, the bruised, mashed areas are common, that they will heal and are not a sign of damage to the brain. The rapid changes in the initial appearance can be used to reassure parents that their baby's head is resilient and "normal."

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The Family Context of Infant Mental Health: I. Affective Development in the Primary Caregiving Relationship

KARLEN LYONS-RUTH
CHARLES H. ZEANA, JR.

Winnicott's (1960/1965) provocative comment that "there is no such thing as a baby" in the absence of sustaining caregiving relationships placed in dramatic relief the inseparability of infant and family context. In the current chapter, we review the most recent research relating family context and infant socioemotional development. We focus on emotional development because of its centrality to infant mental health.

Several themes emerge from this literature. In this chapter, we emphasize two major themes. The first theme is the intergenerational context of family relationships, including research support for the long-held clinical hypothesis that patterns of affect regulation, expectation, and behavior established in early relationships are likely to be carried over into later ones. This theme suggests that the "represented family" deserves attention as much as the "practicing family" (Reiss, 1989). The second theme we emphasize is the pervasive presence of mutual regulatory processes between infant and caregiver—regulatory processes that are gradually internalized as self-regulations by the infant. How affect expression and social behavior are

regulated within the family thus become what Winnicott might characterize as the initial "holding environment" of the developing infant.

Two other important themes are emphasized elsewhere in this volume and are mentioned only briefly here. The first is the complexity of the system of relationships within families as they affect infant mental health (see Crockenberg, Lyons-Ruth, & Dickstein, Chapter 3, this volume). It cannot be emphasized enough that focusing on dyadic interaction alone provides only one dimension of the family context of infant development and infant mental health. As Emde (1991) has pointed out, there are increasing levels of interdependent influences within families that are far more complex than our theories or our empirical efforts to date are able to accommodate. Although many advocate moving to a systemic level to consider family context, even this bypasses a myriad of individual, dyadic, and triadic influences on development within a family. Given that our knowledge base about any of these levels is limited, continued exploration of each of them is warranted. Still, much of what we do not yet understand

about infant development results from necessarily oversimplified models.

A final theme from current research is that families function as part of a larger community of social relationships, economic roles, values, and institutions (Bronfenbrenner, 1979; see Sameroff, Chapter 1, this volume, and Garcia Coll & Meyer, Chapter 4, this volume). Families exist in communities and need effective community institutions to support their functioning, particularly as family structures lose their extended, multigenerational nature. We would almost be entitled to another paradoxical claim that parents don't raise children; communities raise children. However, many of the family supports operating in communities remain invisible until social conditions erode these supports and we recognize them by their absence (Garbarino & Sherman, 1980). For example, despite intense family efforts, family structures and values are often eroded in impoverished communities by unemployment, high infant and adult mortality rates, health hazards associated with job conditions and poverty, and alternative adolescent value systems born of hopelessness. Conversely, in affluent communities, children may experience a variety of conditions that buffer the impact of family problems, including other adult role models available through friends and their families, schools that maintain their access to productive jobs, after-school programs with good adult supervision, safe neighborhoods in which lack of effective family supervision is less hazardous, and peer cultures that promote hopefulness and motivation. Thus, the family context must always be assessed in relation to the quality of family stresses and supports contributed by the community.

These four major themes are represented in the model of family context shown in Figure 2.1. As should be already clear, and as subsequent discussion reinforces, however, the model in Figure 2.1 is schematic and probably considerably underrepresents the complexity of the interrelations among the various elements of the model.

THE INTERGENERATIONAL CONTEXT OF PARENT-INFANT RELATIONSHIPS

Parental Contributions

As the first child is born and a family unit is established, one might imagine that new parents

learn their parenting skills "on the job," as they become immersed in this new and all-absorbing experience. However, several lines of evidence indicate that the parent-infant relationship is not constructed *de novo* from the time of the child's birth, but is powerfully preconditioned by aspects of the parents' adaptation that are evident prior to parenthood. A number of family research teams have shown that mothers' and fathers' psychological adaptation and quality of marriage before the birth of the first child predict the quality of parenting during the early years (Belsky, Lang, & Rovine, 1985; Cowan & Cowan, 1987; Cox et al., 1985; Heinicke, Diskin, Ramsey-Klee, & Given, 1983; Lewis, Owen, & Cox, 1988). For example, Cowan, Cowan, Heming, and Miller (1991) reported that men and women who were more dissatisfied with themselves, their marriages, or their jobs before becoming parents were also more dissatisfied with their parenting roles, and experienced greater stress in connection with the parenting experience.

Other studies have documented the transmission of aspects of parental behavior across generations, using both retrospective reports and prospective designs. For example, the literature on child abuse has long reported the statistical tendency for parents who were abused in childhood to be more likely to abuse their own children (Belsky & Pensky, 1988; Herrenkohl, Herrenkohl, & Toedter, 1983; Parke & Collmer, 1975). Processes of intergenerational transmission generalize beyond abusive behaviors per se, however. In a prospective study of family interaction patterns across four generations, using the Berkeley Guidance Study archives, Elder, Caspi, and Downey (1986) found that personality, marital tension, and parenting styles tended to covary within families across generations. This correlated constellation of parental qualities was in turn related to child behavior, with conflicted, unstable parents experiencing marital tension and displaying irritable parenting behavior, which tended to produce irritable and explosive children. If unstable parental personalities and marital tension did not find expression in punitive parental behavior, however, there were few effects on children. Thus, an adult's behavior in both marital and parenting roles was foreshadowed by aspects of the adult's childhood behavior and the qualities of his or her earlier relationships with parents. Though the study of Elder and colleagues did not focus specifically on the parenting of infants, similar

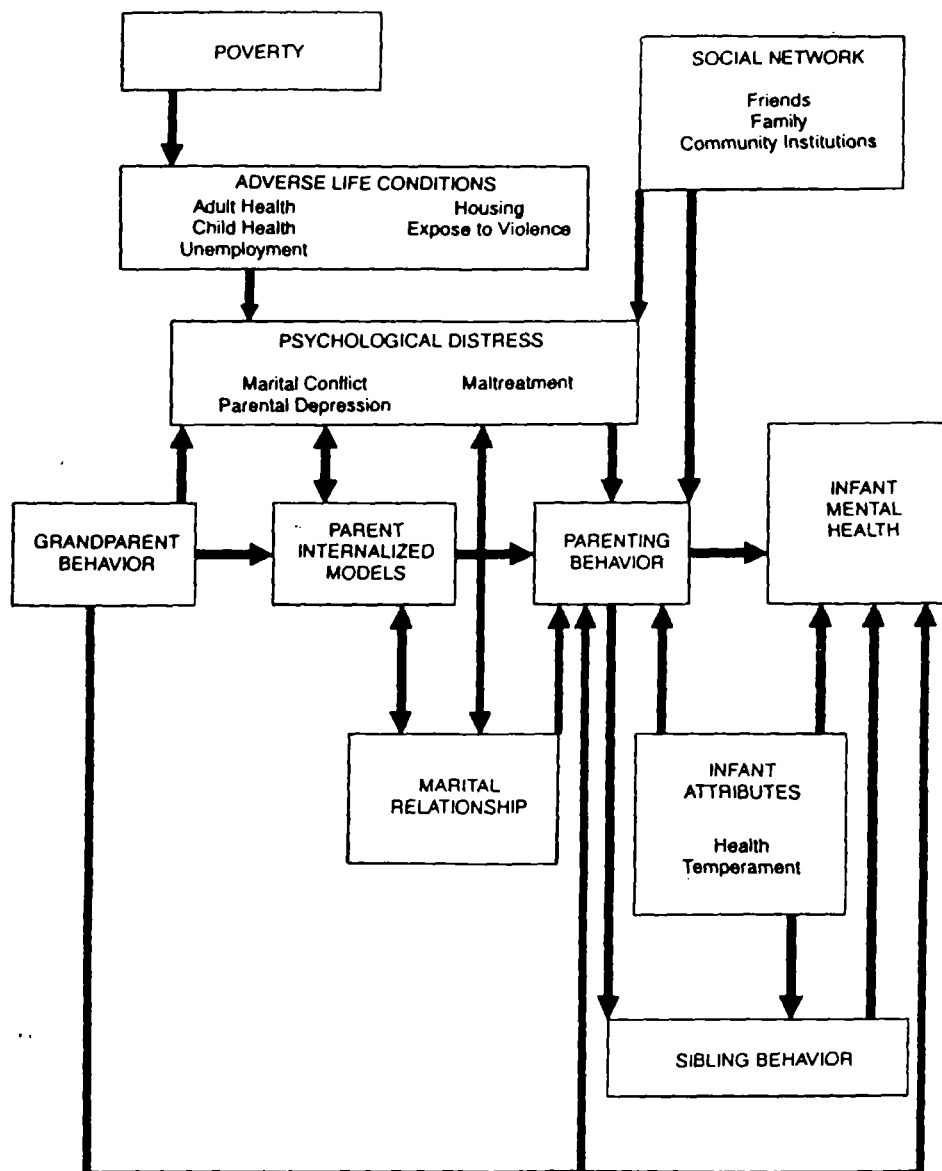


FIGURE 2.1. The family context of infant mental health.

effects of childhood family patterns on parenting behavior toward infants are also evident in a variety of studies (Cox et al., 1985; Hall, Pawlby, & Wolkind, 1979; Lyons-Ruth, Zoll, Connell, & Grunebaum, 1989; Ricks, 1985).

Recent work derived from attachment theory has further elaborated our understanding of the intergenerational transmission of relational patterns by exploring the mental representations, or internal models of attachment relationships, that accompany and may mediate these behav-

ioral continuities. According to attachment theory, as patterns of interaction and affective response are repeated in close relationships over time, children build expectations about future interactions with parents and others that guide their interpretations and behaviors in new situations. As these expectations and interpretations become elaborated and organized, they are termed "internal working models" of relationships. These working models of self and others tend to perpetuate themselves in the absence of

specific influences for change, and to become incorporated as stable interpersonal tendencies that endure over time (Bowlby, 1973; Bretherton, 1985).

Main, Kaplan, and Cassidy (1985) have demonstrated that when parents' representations of attachment relationships are explored in an open-ended interview format, the degree of cognitive and affective "coherence of mind" displayed in the interview can be reliably rated. "Coherence of mind" characterizes adults who are judged to have autonomous internal models. Such coherence is judged from several factors, including open valuing of relationships; consistency between abstract interpretations and specific affective memories; absence of passivity, confusion, marked emotional oscillation, and defensive distancing from negative affects; and the ability to reflect objectively on past experiences. Autonomous internal models are in turn associated with parental sensitivity in responding to infant emotional signals and with the security of infant attachment behavior in relation to the parent (Ainsworth & Eichberg, 1991; Crowell & Feldman, 1988; Grossmann, Fremmer-Bombik, Rudolph, & Grossmann, 1988; Zeanah et al., 1993). Three recent studies have further demonstrated that autonomous adult models of attachment assessed prior to the birth of the first child are predictive of the quality of the infant-parent relationship at 1 year (Benoit & Vidovic, 1991; Fonagy, Steele, & Steele, 1991; Ward, Botyanski, Plunket, & Carlson, 1991).

Intergenerational transmission, then, involves not only organized patterns of behavior that are brought to the task of parenting, but organized ways of thinking and feeling in relationships that accompany these interaction patterns. Work on internalized models has also begun to identify a subgroup of parents whose early relationships with their own parents had been painful and conflicted, but whose adult representations and parenting behaviors were coherent and sensitively responsive. In confirmation of Fraiberg, Adelson, and Shapiro's (1975) clinical observations, these parents were characterized by an ability to reflect openly on past painful experiences and to accept the negative aspects of those experiences without marked defensiveness, while still valuing attachment relationships (Main et al., 1985; Grossmann et al., 1988). Other recent work suggests that such openness to reflect on a painful past and escape the cycle of repetition may be facilitated by the presence of one

good relationship in the parent's past (Egeland, Jacobvitz, & Sroufe, 1988) or by the presence of a supportive spouse (Quinton, Rutter, & Liddle, 1984). A new generation of intervention studies, assessing social as well as cognitive outcomes, is also beginning to confirm that a responsive therapeutic relationship increases the likelihood that a mother with a difficult family history will establish a secure attachment relationship with her infant (Beckwith & Rodning, 1991; Jacobson & Frye, 1991; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Lieberman, Weston, & Pawl, 1991).

Infant Contributions: Temperament Models and Measurement Issues

If adults bring to the parenting relationship a set of internal models and behavioral strategies derived partly from past relationships, infants are viewed as coming with their own intrinsic tendencies for experiencing and expressing emotions, which influence how they engage with caregivers. These hypothesized biological predispositions have been studied under the concept of "infant temperament." Though few dispute that temperament is an important developmental variable, there is less consensus (and no small amount of controversy) regarding its meaning and measurement.

There are essentially four major contemporary theories of temperament. The first and best-known, proposed by Thomas, Chess, and their colleagues (Thomas, Chess, Birch, Hertzog, & Korn, 1963; Thomas, Chess, & Birch, 1968; Thomas & Chess, 1977; Chess & Thomas, 1989), is that "temperament" refers to individual differences in stylistic aspects of behavior. Although considering temperament constitutional in origin, Thomas and Chess believe that infants' temperaments are products of ongoing interaction between their endogenous characteristics and their environments.

By interviewing parents in depth about everyday behaviors in their infants, these researchers defined nine dimensions of temperament: activity level, rhythmicity of biological functions, approach-withdrawal in novel situations, adaptability to changes in routine, intensity of affective expression, predominant mood, persistence, sensory threshold, and ease of distractibility when upset. In addition, they defined three patterns of these dimensions that classified the vast

majority of their sample: "Easy" infants were disposed to be rhythmic, adaptable, approaching, generally positive in mood, and mild in intensity; "difficult" infants were irregular, unadaptable, withdrawing, negative, and intense; and "slow-to-warm-up" infants were low in activity, withdrawing in new situations, slow to adapt, mild in intensity, and negative in mood.

Difficult temperament was expected to place a child at increased risk for behavioral problems, and in fact, difficult temperament at the age of 3 years was associated with concurrent and subsequent behavioral problems. Difficult temperament in infancy, however, was not associated with later behavioral problems (Thomas et al., 1968).

The major problem for those investigating Thomas and Chess's temperament dimensions has been the bias inherent in parent report instruments. Although low to moderate convergent validity has been demonstrated for parent questionnaires, they have failed tests of discriminant validity repeatedly, as many parental characteristics that ought to be orthogonal to infant temperament have been demonstrated to be related to parental ratings (Sameroff, Seifer, & Elias, 1982; Seifer, Sameroff, Barrett, & Krafchuk, 1992; Vaughn, Bradley, Joffe, Seifer, & Barglow, 1987; Wolk, Zeanah, Garcia Coll, & Carr, 1992; Zeanah, Keener, & Anders, 1986). Thus, parent ratings of infant difficult temperament reflect not only possible biological differences among infants, but also differences in personality characteristics among parents and differences among infants attributable to environmental rather than biological factors. How to separate the component of parents' ratings that reflects presumed biological contributions from the components that reflect parental perceptions and environmental influences remains a major methodological problem in the field. There has also been only moderate agreement among different measures of difficult temperament (Goldsmith, Riesser-Danner, & Briggs, 1991), although there is general agreement among investigators that the construct concerns negative emotionality (Bates, 1989). Similarly, when parents of infants are asked which infant behaviors they find most difficult, they tend to cite negative mood and unadaptability (Hubert, 1989).

The second major theory of temperament is that of Buss and Plomin (1984), who define "temperament" as the inherited aspects of personality apparent in the first year of life. They

review evidence indicating that emotionality, activity, and sociability all have significant genetic contributions. According to this theory, genetic contributions do not make temperamental traits immutable, but emotionality, activity, and sociability should be among the more stable personality traits (Plomin, 1987; Goldsmith et al., 1987). Not surprisingly, this theory has inspired research that has been useful in behavioral genetics, although the insistence that temperamental attributes be genetically influenced and apparent in the first year of life has been criticized (Chess & Thomas, 1989; Hinde, 1989b; Rutter, 1989).

The third major theory is that "temperament" refers to biologically based individual differences in the reactivity of the central nervous system and in self-regulation (Rothbart & Derryberry, 1981; Rothbart, 1989). At the level of individual experience, this theory concerns differences in energy, interest and affect (Goldsmith et al., 1987). Although clearly positing biological differences at multiple levels (e.g. autonomic, cognitive, neuroendocrine), this model of temperament in infancy has again been studied primarily through a parent report questionnaire (Rothbart, 1981). Nevertheless, this theory has inspired other investigators to begin to examine the relations between behavior and physiology more directly.

Porges and colleagues (Porges & Roosevelt, *in press*) have developed a physiological measure of central nervous system reactivity. In this model, vagal tone and vagal reactivity are considered indices of the basic substrates of behaviors involved in movement, emotional regulation, and communication. Pathology in the physiological substrate greatly increases the risk for deviant behavior, although involvement of higher centers may modulate or exacerbate this risk. There is now preliminary evidence of vagal abnormalities in regulatory disordered infants (DeGangi, DiPietro, Greenspan, & Porges, 1991; Greenspan & Wieder, Chapter 18, this volume). Similarly, Fox and Stifter (1989) have demonstrated a relationship between vagal tone and vagal reactivity and social behavior in infants. Infants with greater vagal tone are more reactive, more facially expressive, and more responsive to the environment, and also have a broader array of attentional strategies, than infants with low vagal tone.

Kagan and colleagues have developed a more specific, physiologically based single dimension of behavioral inhibition or shyness. Kagan,

Reznick, & Snidman (1987, 1988, 1989) have developed a laboratory assessment of behavioral inhibition. They have demonstrated continuity from ages 2 to 6 years in children who are extreme on this dimension, as well as extreme on related physiological correlates (Kagan et al., 1988, 1989). The dimension of behavioral inhibition may be important in selected samples, since parents with anxiety disorders have children who are prone to behavioral inhibition (Rosenbaum et al., 1988).

The fourth theory of temperament is similar to the third, although it is distinguished by its more narrow and explicit focus on affects. Goldsmith and Campos (1986) argue that "temperament" represents individual differences in the probability of experiencing the primary emotions and emotional arousal. Temperamental dimensions are believed to form the emotional substrate of later emerging personality characteristics. For example, fearfulness is asserted to influence later shyness, and persistence to influence later achievement motivation (Goldsmith et al., 1987). Detailed longitudinal evidence from early infancy is needed to evaluate this model.

In the context of the infant-caregiver relationship, an important additional construct in studies of temperament is that of "goodness of fit" (Thomas et al., 1968). This refers to the fit between the infant's temperamental attributes and the opportunities, expectations, demands, and responses of the caregiving environment. The fit between these two determines adaptation. Seifer and Sameroff (1986) have advanced and broadened the goodness-of-fit construct by incorporating subjective relationship experiences of infant and parent as they transact over time. Essentially, they discuss temperament as a within-the-person construct, but one that in infancy is defined in the context of the primary caregiving relationship. In this model, adverse temperamental attributes have weak links with subsequent maladaptation unless contextual responses support the link. Indeed, what represents an adverse temperamental trait may vary widely across different caregiving environments, and different environments may even elicit or suppress temperamental dispositions differently. Environmental aspects of goodness of fit include factors affecting caregivers' interpretations of a particular infant in a particular context; factors defining infant behavior in the family and other caregiving contexts; and intrapsychic, interpersonal, socioeconomic, and cultural caregiver perspectives that affect child behavior.

In summary, what these approaches have in common is a focus on dispositional differences in social behavior that are rooted in the infant's central nervous system and that affect how the infant approaches, interacts in, and experiences social relationships. These dispositions are expected to be reasonably stable over time, situations, and relationships. During infancy, however, consistent evidence for stable, biologically based differences in social behavior is still largely lacking. A new generation of studies is now attempting to bring together twin study designs and physiological assessments with more objective observer ratings of infant social behavior. A fuller exploration of the ramifications of these various models for infant mental health awaits further advances in the assessment of infant temperament and physiology that can begin to separate biologically based dispositions from influences of caregiver regulation.

MUTUAL REGULATORY PROCESSES

Emotion Regulation in Infant-Parent Relationships During the First Year

Research in the 1970s and 1980s on infant-parent interaction and its relation to infant development revealed the central role of parents' responsiveness to infant signals in mediating infant cognitive and linguistic development, as well as infant sociability (e.g., Bradley & Caldwell, 1980; Cohen & Beckwith, 1979). Various investigators have also documented the tendency for maternal sensitive responsiveness to infant cues to remain stable over time, even though the infant's capacities and the specific parenting behaviors required in response to those capacities change dramatically over the first 3 years of life (Ainsworth, Blehar, Waters, & Wall, 1978; Pettit & Bates, 1984; Belsky, Taylor, & Rovine, 1984; Clarke-Stewart, 1973). Working from this central understanding, more recent researchers have attempted to broaden our understanding of responsive parent-infant relationships in two complementary directions.

One set of recent advances has come from the shift to a more molar, organizational view that social interaction is organized in enduring patterned attachment relationships (Hinde, 1989a; Bowlby, 1969). The organizational perspective

represented by attachment theory (Ainsworth et al., 1978; Bowlby, 1969; Sroufe & Waters, 1977) provides one of the most integrated accounts of the functioning and development of the infant-caregiver relationship during the first 3 years, and continues to generate new knowledge critical to the understanding of infant mental health. A second and complementary shift has been to examine parent-infant interaction through a much more detailed, process-oriented lens, bringing into focus the rich fabric of emotional exchanges between parent and infant and the developmental changes affecting processes of emotion regulation during infancy and toddlerhood.

The detailed study of interactive processes between infant and caregiver during the first year is beginning to fill in our understanding of how the parent's overall organization of attachment experiences interacts with the developing capacities of the infant as a social partner. Both the more organizational and more process-oriented approaches have converged in emphasizing the importance of emotional signals as social regulators and in detailing the processes through which infant-caregiver interactions are internalized as self-regulatory patterns by the infant. These emerging emphases on emotion and self-regulation are also beginning to promise new insights into early indicators of conflict, defense, and maladaptation in early social relationships. We first review recent work describing processes of regulation in the infant-parent relationship, and then move to the more organizational level, currently represented most clearly in work on patterns of attachment relationships.

Psychobiologists remind us that biological regulation is a component of all close relationships, and that the first function of the infant-caregiver system is the physiological regulation of both members of the dyad (Hofer, 1987; Reite, Short, Seiber, & Pauley, 1981). Pipp and Harmon (1987) have further suggested that, at the most basic level, the infant's sense of security may result from adequate homeostatic regulation within the caregiving relationship, with the earliest form of "security of attachment" encoded physiologically in the experience of nondisruptive and need-satisfying regulation of early states.

One impressive experimental demonstration of the interrelations between caregiver responsiveness and infant physiological regulation in the first days of life was a study by Sander, Julia, Stechler, and Burns (1972). These investigators

randomly assigned newborn infants who were waiting to be given into foster care either to the regular hospital routine for the first 10 days, or to a rooming-in relationship with a single nurse who cared for and fed the infant on demand. The regular hospital routine consisted of care in the newborn nursery by a rotating series of nurses who fed the infant on a preset schedule. The two intermediate conditions of demand feeding in the nursery and scheduled feedings by a rooming-in nurse were also evaluated. Regardless of rooming-in status, demand feeding during the first 10 days promoted earlier differentiation of day-night sleep cycles in the first days of life and greater individual stability in feeding behavior and sleep-wake cycles—stability that persisted over the first 2 months of life. Infants who had rooming-in caregivers during the first 10 days had longer awake periods and longer sleep periods by the second 10 days of life. The authors concluded that the responsiveness of the environment influences the organization of infant functioning from birth.

As the infant becomes more available for extended social exchanges after 2 months of age, investigators have documented the patterns of mutual social regulation in face-to-face play that become part of the infant's repertoire. In these process-oriented studies of early regulation of social play, researchers have found that both infant and mother tend to match the partner's direction of affective change and that the influence is bidirectional, with each partner responding to changes in the other's behavior (Beebe, Alson, Jaffe, Feldstein, & Crown, 1988; Beebe, Jaffe, Feldstein, Mays, & Alson, 1985; Cohn & Tronick, 1988). Cohn and Tronick (1988) also noted that infants were more likely to respond to changes in their mothers' behavior if the mothers were responsive to changes in their behavior. Tronick and Cohn (1989) have further found that matching of states within social play episodes increases from 3 to 9 months of age. These repeated patterns of social responsiveness come to be recognized, remembered, and anticipated by the infant in future interactions, with evidence of negative affect and disrupted behavior by the infant if the mother fails to respond as expected (Cohn & Tronick, 1983). Furthermore, evidence indicates that infants carry these patterns over to their interactions with others, at least as early as 3 months of age (Field et al., 1988). Beebe and Lachman (1988) have pointed out that the presence of such expectations constitutes evidence for very early internal represen-

tations of self and others. They have also stressed the developmental role of these early experiences of affective matching in fostering a sense of mutuality and contributing to the development of intersubjective sharing by the latter half of the first year.

However, even in the highly structured face-to-face interaction situation, more than 70% of mother-infant time is spent in unmatched states, with movement from mismatched states to matched states (and vice versa) occurring every few seconds (Tronick & Cohn, 1989). Gianino and Tronick (1988) observed that infants who experienced more of the "reparative" sequences—that is, movements from mismatched to matched states—were more likely to actively signal their mothers when the mothers were not responding contingently. Thus, Gianino and Tronick have argued that the repair of interactive errors and movement from miscoordinated states to coordinated ones may be important in refining interactive and coping skills and in providing the infant with developmental experiences of reparation and effectance. Gianino and Tronick (1988) have further described two classes of regulatory behaviors at the infant's disposal: other-directed behaviors and self-directed behaviors. If the infant is not successful in redirecting the caregiver's behavior to help the infant in regulating negative affect states, several self-regulatory behaviors are at the infant's disposal, including looking away from a disturbing event, self-soothing as seen in thumb sucking, or self-stimulating behaviors.

Several studies suggest that similar processes of affect regulation and interactive history may underlie both infant behavior in early face-to-face play and later patterns of infant attachment behavior. Both Tronick, Ricks, and Cohn (1982) and Cohn, Campbell, and Ross (1991) found that 6-month-old infants who tried, via positive expressions, to elicit a maternal response in the "still-face procedure" (a procedure where mothers are instructed to remain impassive) were more likely to be classified as securely attached at 12 months (see also Kiser, Bates, Maslin, & Bayles, 1983). Infants who showed few positive elicitations at 6 months were more likely to have parents who were overcontrolling or undercontrolling in face-to-face play, as well as more likely to be classified as insecure at 12 months (Tronick et al., 1982). Other work also suggests that intrusive, overcontrolling maternal behavior may be differentially associated with both early gaze aversion in face-to-face play and later

avoidant behavior after a brief separation (Belsky, Rovine, & Taylor, 1984; Cohn, Tronick, Matias, Connell, & Lyons-Ruth, 1986; Egeland & Farber, 1984; Isabella & Belsky, 1991; Isabella, Belsky, & von Eye, 1989; Lyons-Ruth, Connell, Zoll, & Stahl, 1987; Malatesta, Culver, Tesman, & Shepard, 1989).

Looking at developmental changes in mother-infant facial affects during face-to-face play from 2½ to 7 months, Malatesta and her colleagues (1989) found that the rate of infant smiling changed dramatically over that time. The infant's initial rate of smiling at 2½ months did not predict later security of attachment behavior. However, infants who increased in smiling from 2½ to 7 months relative to other infants were found at 22 months to display secure attachment behaviors, whereas infants who decreased in smiling relative to other infants displayed insecure attachment behaviors in later assessments. Presumably, affect regulation patterns becoming established in the early parent-infant relationship were responsible for the large individual changes in smiling behavior during the first half-year of life. Work by Belsky and colleagues has also shown that an infant's change from high to low negative emotionality during the first 9 months is related to favorable maternal personality characteristics and to the mother's sensitive responsiveness to her infant (Belsky, Fish, & Isabella, 1991; Fish, Stifter, & Belsky, 1991).

Early patterns of parent-infant affect regulation are also related to parental psychiatric symptomatology. Field (1984) has found that infants of mothers with high levels of depressive symptoms showed less differentiated responses to normal and still-face interactions, remaining unresponsive in both conditions. Cohn et al. (1986) found two differentiated patterns of behavior among infants of depressed mothers: Infants of withdrawn depressed mothers displayed protest and distress, whereas infants of intrusive depressed mothers showed gaze aversion. At 18 months of age, a majority of the infants of low-income depressed mothers were found to display insecure attachment patterns (Lyons-Ruth et al., 1990). More thorough reviews of patterns of early interaction among clinical populations, such as infants of depressed or maltreating parents, are available in other chapters in this volume.

These early mutual play behaviors during which facial affects are elicited and matched may be one route through which infants construct a

sense of the expressive meaning of different emotional displays. It will come as no surprise to clinicians who treat infants to learn that the newborn infant is capable of producing almost all of the muscle movements that underlie facial patterns for the basic emotional displays (Oster & Ekman, 1977), and that emotions such as sadness, anger, disgust, fear, joy, interest, and surprise can be identified reliably from the facial displays of infants aged 1 to 9 months (Izard, Huebner, Risser, McGinness, & Dougherty, 1980). As Zahn-Waxler, Cummings, and Cooperman (1984) point out, however, what to infer about the affective and cognitive components of these expressions is less clear. By 6 months or later, there is clear evidence that facial displays carry specific expressive meaning for the infant (LaBarbara, Izard, Vietze, & Parisi, 1976; Nelson, Morse, & Leavitt, 1979; Oster, 1981; Stenberg, Campos, & Emde, 1983). More recently, Lewis, Alessandri, and Sullivan (1990) have studied anger expressions in 2- to 8-month-old infants; they suggest that the ability to link facial expressions both to internal states and to appropriate motivational contexts is functional by at least 2 months of age, but that an infant's cognitive level influences the infant's interpretation of whether specific environmental contexts have emotional implications.

These data, which extend downward the time of onset of the infant's ability to correctly express and interpret emotional cues, provide support for Trevarthen's (1980) long-held view that infants are preadapted from birth to interpret affective displays as information regarding subjective state and are intrinsically motivated to establish affective communication with others. In keeping with this view, Trevarthen (1980) has labeled the first several months of life as the period of "primary intersubjectivity," stressing the importance during this period of the infant's consolidating a broad sense of the potential for shared emotional experience and of the strategies for achieving, "commenting" on, and exiting from these shared affective moments. It is also important to keep in mind that affective states are communicated and regulated by many cues other than facial expressions, such as vocal tone and contour, gaze behavior, and the timing and quality of physical touch. However, the infant's discrimination and differential response to these cues have not yet received systematic study (see also Stern, 1985, for his discussion of vitality affects).

The infant's ability to differentiate and use

affective information in facial and bodily cues is an important prerequisite for another important process by which infants use the affective responses of familiar caregivers to regulate their own emotional responses and behavior in situations of uncertainty. As infants move into the second 6 months of life, they increasingly look to their familiar social partners for affective cues to guide their behavior in situations of unfamiliarity or uncertainty—a process referred to as "social referencing" (Klinnert, Campos, Sorce, Emde, & Svejda, 1983). As an infant becomes more mobile, social referencing of the parent serves as an anticipatory affective guide to inform the infant about sources of danger or pleasure, and serves to regulate the infant's affect and behavior from a distance. The sense of shared emotional states and mutually regulated affective displays underlying this behavior builds on the earlier processes of affective matching in face-to-face play observed during the first 6 months of life.

Searching out and using others' affective expressions for emotional and behavioral guidance appear to be established by about 9 months of age (Campos, 1984). A majority of infants by 1 year are observed to look to adult emotional expressions in ambiguous laboratory situations that produce uncertainty, such as being faced with unfamiliar people (Feinman & Lewis, 1983), unusual moving toys or animals (Hornik, Risenhoover, & Gunnar, 1987; Walden & Ogan, 1988), or an apparent dropoff in the laboratory floor surface (Sorce, Emde, Campos, & Klinnert, 1985). Infants are less likely to approach these novel aspects of the environment when a parent displays fearful affect and are more likely to approach when positive affect is displayed. Infants also retain this information and use it to regulate their behavior in later encounters with the same objects (Hornik et al., 1987). By 1 year of age, infants look to fathers as readily as mothers, and to unfamiliar adults when mothers are not providing signals (Hirshberg & Svejda, 1990; Klinnert, Emde, Butterfield, & Campos, 1986; but see also Zarbatany & Lamb, 1985). Infants appear to become more proficient in the use of social referencing with age: Children over 1 year of age look to parents more quickly, more directly, and more often than do younger infants (Klinnert, 1984; Walden & Ogan, 1988; Hornik & Gunnar, 1988).

Individual differences in social referencing have been less systematically studied, but some evidence suggests that social referencing is more

likely among infants of easy temperament (Feinman & Lewis, 1983) and that fathers who express more marital satisfaction are more likely to be referenced (Dickstein & Parke, 1988). Other work finds that by 1 year of age the frequency of an infant's social referencing of the mother is related to the overall organization of the attachment relationship between mother and infant. Infants with ambivalent attachment relationships, who tend to increase the intensity of their attachment behaviors in general, also increase their social referencing behavior compared to securely attached infants; by contrast, infants in avoidant attachment relationships, who tend to displace attention away from the attachment relationship, show decreased social referencing compared to secure infants (Dickstein, Thompson, Estes, Malkin, & Lamb, 1984).

Bretherton (1984) further relates the infant's social referencing behavior to other indicators of a broad capacity for mutual sharing of subjective states toward objects and events that emerges during the last quarter of the first year. Trevarthen and Hubley (1978) label this the period of "secondary intersubjectivity," because the focus is not on sharing affects *per se* but on constructing shared meanings and references to the external world. Bretherton, McNew, and Beeghly-Smith (1981) discuss this period after 9 months of age as a time when infants have acquired a "theory of mind," or an awareness that others, although separate and distinct from themselves, may be induced to share a similar psychological viewpoint. This achievement of secondary intersubjectivity, or the deliberate creation of mutually held subjective states toward aspects of the environment, is also seen in the infant's seeking to share a focus of attention with others (Murphy & Messer, 1977; Scaife & Bruner, 1975) and in the infant's deliberate communication of intentions and desires through gestures and "protolanguage" (Bates, 1979), as well as in social referencing behavior. Trevarthen (1989) has also hypothesized that 9-month-olds' stranger anxiety may be another expression of the infants' new sensitivity to the sharing of subjective meaning, with concomitant fear and distrust of unfamiliar others who may be uncomprehending.

This literature on social referencing and secondary intersubjectivity has not yet been extended to infants at social risk. However, clinical descriptions of the lack of cautious behavior among young children who have been seriously neglected point to potential disruptions in the

development of normal social referencing behavior in dangerous situations (Malone, 1967). Conversely, infant social referencing behaviors provide one clear path through which parental anger or fearfulness may be monitored and used by the infant for self-guidance (see Zahn-Waxler & Kochanska, 1988).

The Attachment System: Self-Regulation of Distress and Comfort Seeking

Other insights into the caregiver's contribution to emerging patterns of infant self-regulation come from research on attachment relationships. In Bowlby's (1969) initial formulation of the importance of the infant's emotional tie to the primary caregiver, he laid out an organizational perspective on the understanding of infant and caregiver behavior that has been critical to subsequent research. This perspective emphasized the development of a goal-corrected partnership between infant and caregiver, in which a number of superficially dissimilar infant and caregiver behaviors are organized around the larger goal of maintaining the infant's sense of security.

Bowlby focused particularly on the period after 9 months of age, when the infant's active maintenance of physical access to the caregiver becomes prominent. He referred to the set of organized behaviors through which the infant self-regulates a sense of security as the "attachment behavioral system." These behaviors include the infant's actively maintaining physical proximity to a familiar caregiver and, if alarmed or distressed, retreating to the caregiver for a sense of safety and for soothing of distress. Lack of access to a familiar caregiver is capable of provoking alarm and protest in itself as the infant experiences the lack of availability of a safe haven. Since close physical contact with the caregiver is a central component of effective soothing of distress in infancy, attachment research has most vividly illuminated Winnicott's (1960/1965) central metaphor of the "holding environment." Although these attachment behaviors become increasingly visible in the infant's repertoire toward the end of the first year, striking individual differences are also seen; these reflect both temperamental differences and the pattern of affect regulation that has developed between infant and caregiver over the first year.

Bowlby's concept of a goal-corrected attachment behavioral system led Ainsworth and her colleagues to the further discovery that several patterned subtypes of infant-parent attachment behavior could be observed by the end of the first year, each characterized by a distinct strategy in relation to attachment goals. Ainsworth et al. (1978) referred to these patterns as "secure," "avoidant," and "ambivalent" attachment organizations, with a fourth subtype, termed the "disorganized/disoriented" attachment pattern, identified more recently by Main and Solomon (1990). These organized patterns are now understood to have affective as well as behavioral and representational components (Cassidy, 1993) and to be evident in parent and infant behavior throughout the first 3 years and beyond.

Infants who are secure in their attachment relationships often show some protest when being left alone or left with a stranger in an unfamiliar place by the time of the first birthday. This protest often includes obvious distress, disruption of play and exploration, and rejection of comforting from an unfamiliar adult. When the mother returns, the infant greets her warmly and often seeks to be near her or in physical contact with her, calms quickly if distressed, and returns comfortably to play and exploration (see Ainsworth et al., 1978, for additional description). Attachment research also indicates that among stable, middle-class families, secure attachment behaviors show a high level of stability over the 12- to 18-month age range (Connell, 1976; Waters, 1978). Harmonious interaction and absence of overt ambivalence during reunions remain the predominant patterns of infant behavior through 20 months of age and probably beyond, although fewer systematic studies of reunion behavior have addressed the preschool period (Cassidy, Berlin, & Belsky, 1990; Greenberg & Slough, 1991; Main et al., 1985). When observed, parents of secure infants are likely to be sensitive and responsive to the full range of infant affective signals; when interviewed, parents of secure infants are likely to display coherent and autonomous internal representations of their own earlier attachment relationships in childhood. Secure attachment relationships are viewed as organized by a stance of open emotional communication between partners.

As noted above, three alternative organizations of infant attachment behavior have been observed when caregiving conditions are less optimal. Each of these self-regulated patterns of

infant behavior is, in turn, related to a particular organization of parental thinking about attachment issues. An infant who displays an "avoidant" behavioral organization does not react with protest to the mother's departure in an unfamiliar setting. Instead, the infant typically diverts attention from her exit, explores actively while she is out of the room, and is friendly to the unfamiliar adult in the room. This independent-appearing behavior often looks quite positive to an observer. However, an avoidant infant also does not immediately acknowledge the mother's return to the room, averting his or her gaze when the mother enters and initially moves away from her if she approaches.

The behavior of an avoidant infant is understood to represent a strategy for dealing with the stress of separation, rather than indicating an absence of stress *per se*. Main and Weston (1982) have argued that avoidant behavior represents an organized defensive strategy to avoid distress by directing attention away from information related to the mother's departure, and by displacing both anger and attention onto inanimate features of the environment. In support of this hypothesis, Malatesta et al. (1989) found that avoidant infants more frequently displayed a pressed-lips expression that is thought to index suppressed anger. Paradoxically, when observed at home, avoidant infants have been found to be more angry and distressed around their mothers than secure infants (Ainsworth et al., 1978), and their mothers have been rated as more covertly rejecting of their infants (Ainsworth et al., 1978; Lyons-Ruth et al., 1987; Main & Weston, 1982). In addition, mothers of infants who showed the pressed-lips expression under stress were more likely during the first 6 months to have shown mock surprise to infant anger and a lack of interest to infants' expressions of interest (Malatesta et al., 1989).

This affect regulation strategy on the infants' part is paralleled by analogous parental affect regulation strategies during the adult attachment interview. Parents of avoidant infants are more likely than other parents to minimize the importance of attachment relationships and of experiences of anger and distress in general, and to use idealization and inability to recall specific memories in order to avoid confronting negative affects (Cassidy & Kobak, 1988; Main et al., 1985). At the parental level, this strategy is termed a "dismissing" representational model of attachment relationships.

A second alternative attachment organization is termed "ambivalent" attachment. This behavior pattern is characterized by distress at the mother's absence and contact seeking at her return, mixed with direct or displaced anger and resistance and a failure to be fully comforted and able to return to play. The heightened distress and angry behavior often shown by ambivalent infants have been interpreted by Main and Hesse (1990) as strategies of exaggerating attachment behaviors in order to elicit a response from less responsive caregivers. When observed at home, mothers of ambivalent infants have been more disengaged and less responsive to infant crying than mothers of secure or avoidant infants (Ainsworth et al., 1978; Belsky, Rovine, & Taylor, 1984; Lyons-Ruth et al., 1987). In face-to-face play at 6 months, mothers of ambivalent infants were found to initiate the fewest interactions (Kiser et al., 1983). When mothers of ambivalent infants did respond to crying, they were less likely to comfort by tenderly holding the infants and more likely to try to calm the infants by talking or more distanced touching, such as stroking or patting (Miyake, Chen, & Campos, 1985). In other work, infants who showed sadness at reunions in the second year had mothers who were more likely to have ignored expressions of sadness in early face-to-face play, while infants who were angry at reunion had mothers who showed mock surprise to expressions of sadness (Malatesta et al., 1989). When interviewed, parents of ambivalent infants are more likely to reveal either a passive and confused stance or an openly angry stance toward their own parents, both characterized by continued internal affective overinvolvement with their parents and a pervasive sense of their inability to please their parents (Main & Hesse, 1990; Main et al., 1985). This parental stance is termed a "preoccupied" representational model of attachment relationships.

The avoidant and ambivalent patterns of infant behavior under stress occur frequently in nondisturbed family settings, and their relative rates of occurrence may also be related to cultural norms emphasizing either independence from or involvement with relationships (Grossmann et al., 1988; Miyake et al., 1985; Oppenheim, Sagi, & Lamb, 1988). The infant's propensity to experience distress in a variety of situations (a temperamental disposition) is also related to whether insecure behavior takes an avoidant or ambivalent form, but propensity toward distress is *not* related to whether the in-

fant displays secure or insecure strategies *per se* (Belsky & Rovine, 1987; Vaughn, Lefever, Seifer, & Barglow, 1989). Both avoidant and ambivalent patterns are also seen as representing organized strategies of response to stress.

As noted earlier, prior to the birth of an infant, analogous organized strategies of affect regulation can be identified in parents' verbal representations of attachment relationships. Presumably, through the developing process of parent-infant affect regulation during the first year, parental regulatory strategies come to be internalized as self-regulating patterns of infant behavior. Some of the precursors of later attachment strategies seen in earlier patterns of face-to-face play and social referencing behavior have already been noted.

The consistency and organization characterizing avoidant and ambivalent (and secure) attachment patterns set them apart from the third type of less optimal attachment behavior, which is termed "disorganized/disoriented" behavior. Disorganized/disoriented attachment behavior may have special relevance to family contexts of loss, trauma, or psychopathology (Main & Hesse, 1990; Lyons-Ruth, Repacholi, McLeod, & Silva, 1991; Main & Solomon, 1990). Infants who show disorganized/disoriented behavior do not consistently manage distress and approach tendencies by avoidance and displacement, as in the avoidant attachment pattern; nor do they consistently voice their distress at separation and actively seek contact when their mothers return, as in the secure or ambivalent pattern. Instead, both approach and avoidance tendencies appear to be activated and vie for expression. The particular forms and combinations of conflict behaviors exhibited tend to be fairly idiosyncratic from child to child, but they include unpredictable alternations of approach and avoidance toward the mother, as well as other conflict behaviors (e.g., prolonged freezing or stilling, or slowed "underwater" movements). Hence the term "disorganized/disoriented" refers to the apparent lack of a consistent strategy for organizing responses to the need for comfort and security when under stress. On interview, parents of disorganized/disoriented infants tend to show indicators of lack of resolution of loss or trauma. Unresolved loss or trauma is indexed by areas of less coherent or irrational thought processes during the interview or by signs of affective flooding (Ainsworth & Eichberg, 1991; Main et al., 1985; Main & Hesse, 1990).

Although the disorganized/disoriented behav-

iors were initially observed by Main and colleagues among infants from middle-class families, more recent evidence indicates that infants of depressed, maltreating, or alcoholic mothers are particularly likely to show these behaviors (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Lyons-Ruth et al., 1990; O'Connor, Sigman, & Brill, 1987). Infants displaying highly avoidant forms of disorganized strategies, as compared to more approach-oriented disorganized behaviors, appear to be particularly likely to have parents with serious psychosocial problems and to be at risk for later behavior problems themselves (Lyons-Ruth, Alpern, & Repacholi, 1993; Lyons-Ruth et al., 1991; Carlson et al., 1989).

Mastery Motivation in Relational Context

In addition to the attachment motivational system, another motivational system apparent during infancy is "mastery motivation." Infants in the second half of the first year increasingly direct their attention toward exploring, influencing, and controlling the environment. Although the breadth of definitions used by different investigators vary, most agree that the enthusiasm, pleasure, interest, and persistence that infants demonstrate as they explore the environment, attempt to solve problems, and approach challenging tasks reflect mastery motivation.

Because mastery behaviors are believed to be pleasurable in and of themselves, mastery is considered to be intrinsically motivated and self-reinforcing (Harter, 1978; Hunt, 1965; White, 1959). Mastery motivation has been shown to be stable over time and to be related to subsequent cognitive competence (Jennings, Yarrow, & Martin, 1984; Messer et al., 1986; Yarrow, Morgan, Jennings, Harmon, & Gaiter, 1982; Yarrow et al., 1983).

Mastery behaviors are thought to reflect early precursors of individuals' competence. Morgan and colleagues (Morgan, Harmon, & Maslin-Cole, 1990; Morgan, Maslin-Cole, & Harmon, 1991) assert that "mastery" refers to what a child is doing to increase competence and to how the child is trying to achieve greater competence. "Competence," in their model, refers to skills that the child has already mastered. Most of the research examining mastery in infancy has assessed it in relation to later cognitive rather than social competence (Jennings et al., 1984; Messer et al., 1986).

In Bowlby's (1969) organizational model, mastery (or, in his terms, "exploratory motivation") is seen as operating in a reciprocal relationship with the attachment motivational system, such that when the infant is not distressed or alarmed and the attachment system is not highly activated, the interest/exploratory system takes over, with its motivational push for the infant to examine novel features of the environment. Infants who have ready access to a familiar comforting and soothing person will then spend less time in states of distress or alarm and more time exploring and learning (see also Ainsworth et al., 1978).

Perhaps because of the emphasis on intrinsic motivation, contextual influences on mastery motivation have not received much attention, but the available research is consistent with Bowlby's model. Yarrow et al. (1984) reported that parental stimulation was associated with persistence at problem solving and practicing skills. Frodi, Bridges, and Grolnick (1985) found that mothers who supported their infants' strivings for autonomy (i.e., who were sensitive and noncontrolling during interactions), and who had more flexible child-rearing attitudes, had infants with greater persistence in mastery tasks at 12 and 20 months. Redding, Harmon, and Morgan (1990) found that depressed mood in middle-class mothers was inversely correlated with their infants' task persistence and task competence at 12 and 24 months and with their task pleasure at 24 months.

A variation on the assessment of mastery that is more relationship-based involves a tool use procedure in which mothers are available to help toddlers solve difficult problems. Matas, Arend, and Sroufe (1978) developed a procedure for 2-year-olds in which a child must enlist the caregiver's assistance to deal with challenging tasks. The investigators found that socially competent toddlers approached problem-solving tasks with flexibility, resourcefulness, and an ability to use their caregivers for assistance without being overly dependent. Caregivers of more competent toddlers were more supportive and gave assistance when needed. Behaviors of mothers and infants were predicted from the infants' attachment classifications 1 year earlier. Employing the tool use procedure, Hron-Stewart, Lefever, and Weintraub (1990) found that higher problem-solving scores were related to more maternal involvement and provision of play materials.

Crowell and Feldman (1988) modified the

tool use procedure to make it applicable across a range of ages from 24 to 54 months. They found that mothers and children's behaviors were related to the mothers' attachment classification and to the mothers' report of child behavior problems (Crowell & Feldman, 1988; Crowell, Feldman, & Ginsburg, 1988). Although the tool use task and the Crowell and Feldman modification of it comprise challenging tasks presented to a child, they do not constrain the mother's responsiveness; therefore, unlike other mastery procedures, they assess the parent-child relationship as it functions under different types of stresses.

Thus, although the original theoretical emphasis in regard to mastery was on its intrinsic motivation, there is growing evidence that mastery motivation is influenced by an infant's relationship with the primary caregiver. Caregivers who are emotionally available and who promote rather than control infants' exploratory behaviors have infants who demonstrate greater task persistence, greater pleasure in goal-directed behavior, and greater subsequent social and cognitive competence. Furthermore, Aber and Allen (1987) have presented evidence that in family situations where comfort is rarely available and infants' attachment concerns are chronically activated, the infants' exploratory activity and "secure readiness to learn" are compromised, with resultant decreases in cognitive growth and mastery. Though their initial data and theorizing concerned maltreating families, more recent evidence suggests that deficits in cognitive and linguistic development may be more broadly characteristic of infants with disorganized attachment relationships, rather than confined only to the smaller population of maltreating families (Lyons-Ruth et al., 1991; Morisset, Barnard, Greenberg, Booth, & Spieker, 1990).

The Regulation of Evaluative Standards and Affects in Toddlerhood

As infants become toddlers and move into the second half of the second year, another cognitive advance occurs with the onset of symbolic representational capacity and the associated emergence of self-awareness, evaluative standards, and the "early moral emotions" (Case, 1985; Emde, Johnson, & Easterbrooks, 1988; Kagan, 1981). The rapid emergence of language

after 18 months of age is one of the most striking signs of this advance. Other signs of new capacities that can be seen toward the end of the second year include the child's recognition of the self in mirrors and video images (Lewis & Brooks-Gunn, 1979); the emergence of "no" as an indicator of a new level of autonomy (Spitz, 1957); and the appearance of self-conscious emotions such as embarrassment (Lewis, Sullivan, Stanger, & Weiss, 1989). This cognitive advance forms one of the underpinnings of the so-called "terrible twos," in that the toddler's newly acquired capacities introduce new elements into the parent-child relationship.

In toddlerhood, children are able to keep their own goals in mind over longer sequences of activity and to judge whether they have achieved their goals. This emerging ability to self-generate standards of mastery and to monitor whether they are met forms one basis for toddlers' frequent "nos," with toddlers becoming more resistant to being distracted from their own goal-directed plans. Toddlers are also able to construct value labels or normative standards based on the evaluations of others, and are able to remember and represent their own and others' past feelings in relation to a particular event (Kagan, 1981). They begin to show distress or concern over violations of these newly constructed standards, reacting negatively to such things as broken plates, dirty clothes, or disapproved behaviors. They also are acquiring the capacity to evaluate the self as "good" or "bad," and become subject to emotions of self-consciousness, shame, or anxiety over a perceived inability to meet self-generated or normative standards.

Toddlers, in Kagan's view, once aware that standards (qualities of goodness or badness) exist, are intrinsically motivated to meet them. However, a child's own mastery standards or goals may conflict with parental goals. In addition, the moral standards of parents are often unclear to a young toddler who is just beginning to construct a cognitive domain of morally judged actions. Therefore, younger toddlers, in particular, often test to see which classes of activity are subject to evaluative judgment. Emde and Buchsbaum (1990) have described the increased rates at about 8 months of age of both parental prohibitions and infant social referencing, with the infant presumably looking more frequently to the parents to resolve newly emerging uncertainties about which acts are valued and which acts are prohibited. Both the

child's need to meet self-generated standards and the need to identify those activities that violate norms may appear willfully provocative to parents.

Emde et al. (1988) hypothesize a developmental sequence in which internalization of parental "dos" and "don'ts" begins to be demonstrated in the presence of the parent by 24 months of age. Maintenance of parental standards in the parent's absence is a more complex developmental acquisition not clearly in evidence until 36 months of age or beyond (Emde & Buchsbaum, 1990; Buchsbaum & Emde, 1990). Crockenberg (Crockenberg, 1991; Crockenberg & Litman, 1990) has adopted a relational process-oriented view of parental limit setting and child compliance, arguing that the negotiation of a balance between the goals of the parent and the goals of the 2-year-old is best viewed as a two-way process of conflict resolution, rather than as a one-way process of discipline or socialization of the child by the parent. Kuczynski and Kochanska (1990) also cite evidence that parents' control strategies may provide models for their toddlers' own social behaviors, and that learning to express one's own wishes and negotiate for their inclusion in joint plans during toddlerhood may provide some of the underpinnings for effective social behavior at later ages (Dunn & Munn, 1987; Patterson, 1982; Trickett & Kuczynski, 1986). Crockenberg and Litman (1990) point out that a toddler's "no" is both conceptually and empirically distinct from angry defiance, and should be seen as a statement of the child's emerging autonomous viewpoint.

Consistent with a variety of other research is the finding that highly power-assertive behavior on the part of the parent is more likely to lead to defiant child behavior, whereas reasoning and negotiation, combined with a direct statement of the parent's needs, are more likely to result in the child's acquiescence to parental requests and internalization of parental standards (Crockenberg & Litman, 1990; Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987; Kochanska, 1991). These researchers also point out that child compliance negotiated in an atmosphere of mutual respect for the other's needs has a very different psychological meaning and developmental trajectory than does child compliance coerced through excessive parental punishment, as seen in the compulsively compliant behavior of some maltreated children (Crittenden & DiLalla, 1988).

At the same time that toddlers are constructing an understanding of parental standards, they are also showing increasing evidence of empathy and guilt in response to others' distress (Emde Johnson, & Easterbrooks, 1988; Radke-Yarrow & Zahn-Waxler, 1984). Zahn-Waxler and colleagues have described a variety of expressions of concern, anxiety, remorse, reparation, and/or acknowledgment displayed by 2-year-olds when they have caused distress to others, as well as when they are merely bystanders; the conclusion is that empathic perceptions of others' emotions, as well as awareness of parental standards, contribute to the toddler's construction of early dos and don'ts (Cole, Barrett, & Zahn-Waxler, 1992; Zahn-Waxler, & Radke-Yarrow, 1990; Zahn-Waxler, Radke-Yarrow, & King, 1979). Emde et al. (1988) have discussed the "early moral emotions" of pride, shame, and guilt as complex emotions that do not correspond to discrete facial expressions, do not emerge until 24 to 30 months of age, and depend on the cognitive appreciation of another's evaluation of the self's performance in relation to a rule or goal. Lewis (1992) further differentiates these self-conscious evaluative emotions along a global-specific dimension: He sees a global negative self-evaluation underlying the experience of shame, but a more limited negative evaluation of a specific action or outcome underlying the toddler's experience of guilt.

Parents' regulation of interactions centering around situations of wrongdoing or others' distress has important consequences for the toddler's developing experience and internal regulation of shame and guilt. Consistent with Crockenberg's work, Chapman and Zahn-Waxler (1982) found that compared to toddlers of parents who used physical punishment or power assertion, toddlers whose parents used explanations and/or love withdrawal (disapproval or physical withdrawal) displayed higher levels of guilt and reparative behavior, as well as altruistic behavior generally. These parents who did *not* use physical coercion also tended to be empathic and sensitive in their interactions with their children generally, so that the parents' empathy for the toddlers was consistent with their demands that the toddlers be empathic toward others.

However, Chapman and Zahn-Waxler (1982) also found that more extreme forms of love withdrawal were associated both with avoidant responses and with attempts to make up with

the parents, leading the authors to note that the tension and ambivalence generated for some young children by love withdrawal appeared to result in excessive guilt that was inappropriate to the situation. In contrast, more matter-of-fact parental explanations, with more moderated levels of affect, resulted in levels of toddler guilt and responsibility more in keeping with the circumstances.

In other work, Zahn-Waxler and colleagues have found that 2-year-olds exposed to repeated parental conflict at home exhibited more negative arousal to conflict than children from low-conflict homes, including increased empathic distress and comforting of the victim, and increased angry behavior toward the perceived aggressor (Cummings, Zahn-Waxler, & Radke-Yarrow, 1981; Cummings, Iannotti, & Zahn-Waxler, 1985). The authors speculated that the toddlers' assumption of responsibility during conflicts might index or lead to inappropriate guilt and a misplaced sense of personal causality for the conflict.

Zahn-Waxler, Cummings, Iannotti, and Radke-Yarrow (1984) also reported that 2- and 3-year-old children of mothers with unipolar depression were more likely than children of well mothers to become preoccupied and upset when exposed to conflict or distress, and were less aggressive and more appeasing in play with other toddlers; again, these findings suggested a heightened sensitivity and possible sense of responsibility for others' distress. The toddlers with depressed mothers also made more frequent and varied comforting responses when the mothers simulated distress. Anecdotally, the authors also observed that depressed mothers were more likely to elaborate and personalize their (simulated) expressions of sadness and to implicate the children as a cause of this distress. In addition, on interview, depressed mothers were especially likely to endorse guilt-inducing (or, in Lewis's terms, shame-inducing) strategies for regulating the toddlers' behavior and to express disappointment in their children. Thus, a toddler's exaggerated caretaking and distress may be directly responsive to a mother's disciplinary and affect regulation strategies.

Research evidence indicates that the way in which the parent and toddler traverse this period of emerging moral evaluation, increasing empathy, and increasing desire for self-regulation is conditioned by aspects of the parent-child relationship during the first year. As Zahn-Waxler and Kochanska (1988) have noted,

"Whether [feelings of guilt and responsibility] initially take healthy or maladaptive forms seems inextricably linked to the quality of the attachment relationship with the caregiver" (p. 244). In a study of 44 middle-income families, Heinecke, Diskin, Ramsey-Klee, and Oates (1986) also found that a child's modulation of aggression at age 2 was predictable from prebirth characteristics of the family, including the mother's scores on measures of adaptation, competence, and warmth, and the positive quality of the husband-wife relationship; these were, in turn, related to greater maternal responsiveness to infant need at 1 month and 24 months.

These data further support the results of studies in the attachment tradition indicating that sensitive and responsive parenting during the first 2 years of a child's life sets the stage for more flexible and cooperative assertiveness when the child is a toddler. Stayton, Hogan, and Ainsworth (1971) found that infants with sensitive and responsive caregivers were both more likely to comply with parental requests at 9 months of age and more likely to be classified as securely attached at 12 months. Other research, predicting forward from secure attachment relationships at 12 months to later toddler behavior, has found that toddlers who display secure attachment behaviors as infants are rated more highly on a variety of indicators of both autonomy and cooperation at 24 months. Toddlers with histories of secure attachment resemble all other toddlers in showing a relatively high rate of noncompliance with parental requests. However, they are more likely to be cooperative and affectionate with their mothers than are toddlers with other attachment histories. They show greater flexibility and persistence at a difficult and frustrating task, yet are also more likely to request appropriate assistance from their mothers if the task is beyond their reach (Londerville & Main, 1981; Matas et al., 1978). By contrast, toddlers who have had insecure attachment relationships as infants smile less often at their mothers, ignore them more when together, and are rated lower on the quality of affective sharing with mothers. Toddlers with insecure attachment histories also direct more anger, physical aggression, and noncompliance toward their mothers and do not use them as effectively for help with a difficult task (Londerville & Main, 1981; Matas et al., 1978).

In summary, as young children reach their third birthdays, they have constructed a sophisticated repertory of skills and strategies for com-

municating and negotiating in relationships—strategies that are substantially shaped by their parents' own representational models of relationships. At the age of 3, a child is on the threshold of a broadening social world of nonfamily playmates and teachers. Prospective longitudinal data confirm that the skills and strategies developing in the emotional crucible of early relationships with parents will be brought to new relationships outside the family in succeeding years. Aspects of ego resilience, sociability, warmth, and hostile aggression with peers during the preschool and early school years, and of dependence, anger, and flexible autonomy with teachers and other adults, are all predicted by aspects of attachment and adaptation observable in the infant and toddler period (Arend, Gove, & Sroufe, 1979; Lyons-Ruth et al., in press; Oppenheim et al., 1988; Sroufe, Fox, & Pancake, 1983; Waters, Wippman, & Sroufe, 1979). Thus, early affect regulation strategies and the associated representational models of self and other emerging from infant-parent relationships have consequences beyond the infant period *per se*. Current longitudinal research points to the relatively enduring nature of the patterns of emotional relatedness constructed during the first 3 years of life.

CONCLUSIONS

Recent developmental literature on early socio-emotional development is converging on a relational perspective (e.g., Sameroff & Emde, 1989). This perspective emphasizes both the stability over time of the affective quality of the relationship, and the organizational coherence of patterns of relational behavior through which this affect regulation is accomplished. The work on relational processes in infancy reviewed here is also leading to a reconsideration and reworking of the earlier psychodynamic theories that have guided much previous clinical work with infants and adults. The discoveries that patterns of affect regulation and relational behavior are constructed and internalized by the infant from the earliest emotional dialogues with parents, and that these representational models are then brought to the task of interacting with new and unfamiliar social partners, is breathing new life into the relationally based theories of Bowlby, Sullivan, and British object relations theorists (see Bretherton, 1991), while leading to radical revisions in some of the early developmental

processes posited by theorists such as Mahler (see Lyons-Ruth, 1991; Stern, 1985) and Freud (see Emde, 1983; Emde et al., 1988; Zahn-Waxler & Kochanska, 1988).

Although stability and organization in early relationships have been clearly demonstrated, they account for only part of the developmental picture. More methodological work is needed to define aspects of infant temperament that are initially independent of relational influences, and to specify how relational and temperamental contributions to early development may moderate or potentiate one another. Other genetic and biological influences on behavior not treated here, including cognitive endowment, perinatal problems, and physical disabilities, also exert important influences on both infant and caregiver. However, the recent emergence of relational models has been partly fueled by earlier studies indicating that the influence of biological factors in early development, such as cognitive endowment or birth complications, is powerfully shaped by the early social environment (Bradley & Caldwell, 1980; Sameroff & Chandler, 1975), and conversely that positive patterns of relationship are relatively robust in the face of serious infant problems, such as marked prematurity and perinatal difficulties (Goldberg & DiVitto, 1983; Goldberg, Perrotta, Minde, & Corter, 1986).

As the evidence for relational stability accumulates, developmental researchers are also turning their attention to the complementary question of how to conceptualize and document lawful processes of relational change (Belsky et al., 1991; Egeland et al., 1988). Of particular interest are changes in relational patterns or infant behaviors associated with later maladaptive outcomes. Some evidence for the influence of marital or therapeutic relationships on a parent's relationship with an infant has already been cited, but we have much further to go in specifying the processes that lead to change. Evidence reviewed here suggests that change processes are likely to be based on the availability of additional relational partners and to involve the reorganization of complex internal representations having cognitive, affective, and behavioral components.

Finally, the subtle processes of affect communication between parent and infant, and the associated construction by the infant of internal representational models, establish a critical link between the emerging self of the infant and the social and cultural factors influencing his or

her parents and grandparents. As outlined in our initial model of family factors influencing infant mental health, from the beginning of life the infant is an emotional participant in the larger world of cultural differences, life stresses, and socioeconomic inequities shaping the parents' world (McLoyd, 1990).

REFERENCES

- Aber, J. L., & Allen, J. P. (1987). The effects of maltreatment on young children's socioemotional development: An attachment theory perspective. *Developmental Psychology*, 23, 406-414.
- Ainsworth, M. D. S., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment*. Hillsdale, NJ: Erlbaum.
- Ainsworth, M. D. S., & Eichberg, C. G. (1991). Effects on infant-mother attachment of mother's unresolved loss of an attachment figure or other traumatic experience. In P. Marris, J. Stevenson-Hinde, & C. Parkes (Eds.), *Attachment across the life cycle* (pp. 160-186). London: Routledge & Kegan Paul.
- Arend, R., Gove, F., & Sroufe, L. A. (1979). Continuity of individual adaptation from infancy to kindergarten: A predictive study of ego-resiliency and curiosity in preschoolers. *Child Development*, 50, 950-959.
- Bates, E. (1979). Intentions, conventions and symbols. In E. Bates (Ed.), *The emergence of symbols: Cognition and communication in infancy* (pp. 33-68). New York: Academic Press.
- Bates, J. E. (1989). Applications of temperament concepts. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 3-26). New York: Wiley.
- Beckwith, L., & Rodning, C. (1991, April). Stability and correlates of attachment classifications from 13 to 36 months in a sample of preterm infants. In R. S. Marvin & J. Cassidy (Chairs), *Attachment during the preschool years: Examination of a new measure*. Symposium conducted at the biennial meeting of the Society for Research in Child Development, Seattle.
- Beebe, B., Alson, D., Jaffe, J., Feldstein, S., & Crown, C. (1988). Mother-infant vocal congruence. *Journal of Psycholinguistic Research*, 17(3), 245-259.
- Beebe, B., Jaffe, J., Feldstein, S., Mays, K., & Alson, D. (1985). Interpersonal timing: The application of an adult dialogue model to mother-infant vocal and kinesic interactions. In T. Field & N. Fox (Eds.), *Social perception in infants* (pp. 217-247). Norwood, NJ: Ablex.
- Beebe, B., & Lachmann, F. M. (1988). The contribution of mother-infant mutual influence to the origins of self- and object representations. *Psychoanalytic Psychology*, 5(4), 305-337.
- Belsky, J., Fish, M., & Isabella, R. (1991). Continuity and discontinuity in infant negative and positive emotionality: Family antecedents and attachment consequences. *Developmental Psychology*, 27(3), 421-431.
- Belsky, J., Lang, M. E., & Rovine, M. (1985). Stability and change in marriage across the transition to parenthood: A second study. *Journal of Marriage and the Family*, 47, 855-865.
- Belsky, J., & Pensky, E. (1988). Developmental history, personality, and family relationships: Toward an emergent family system. In R. A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 193-217). New York: Oxford University Press.
- Belsky, J., & Rovine, M. (1987). Temperament and attachment security in the Strange Situation: An empirical rapprochement. *Child Development*, 58, 787-795.
- Belsky, J., Rovine, M., & Taylor, D. (1984). The Pennsylvania Infant and Family Development Project, III: The origins of individual differences in infant-mother attachment—Maternal and infant contributions. *Child Development*, 55, 718-728.
- Belsky, J., Taylor, D. G., & Rovine, M. (1984). The Pennsylvania Infant and Family Development Project, II: The development of reciprocal interaction in the mother-infant dyad. *Child Development*, 55, 706-717.
- Benoit, D., & Vidovic, D. (1991, April). Transmission of attachment across three generations. In C. H. Zeanah (Chair), *Parental representations of attachment: Links across generations*. Symposium conducted at the biennial meeting of the Society for Research in Child Development, Seattle.
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bradley, R. H., & Caldwell, B. M. (1980). The relation of home environment, cognitive competence, and IQ among males and females. *Child Development*, 51, 1140-1148.
- Bretherton, I. (1984). Social referencing and the interfacing of minds: A commentary on the views of Feinman and Campos. *Merrill-Palmer Quarterly*, 30, 419-427.
- Bretherton, I. (1991). Pouring new wines into old wine-skins: The social self as internal working model. In M. R. Gunnar & L. A. Sroufe (Eds.), *Minnesota Symposium on Child Development: Vol. 23. Self process and development* (pp. 1-41). Hillsdale, NJ: Erlbaum.
- Bretherton, I. (1985). Attachment theory: Retrospect and prospect. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development*, 50(1-2, Serial No. 209), 3-35.
- Bretherton, I., McNew, S., & Beeghly-Smith, M. (1981). Early person knowledge as expressed in gestural and verbal communication: When do infants acquire a "theory of mind"? In M. E. Lamb & L. R. Sherrod (Eds.), *Infant social cognition: Empirical and theoretical considerations* (pp. 333-373). Hillsdale, NJ: Lawrence Erlbaum.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Buchsbaum, H. K., & Emde, R. N. (1990). Play narratives in 36-month-old children. *Psychoanalytic Study of the Child*, 45, 129-155.
- Buss, A. H., & Plomin, (1984). *Temperament: Early developing personality traits*. Hillsdale, NJ: Erlbaum.
- Campos, J. (1984). A new perspective on emotions. *Child Abuse and Neglect*, 8(2), 147-156.
- Carlson, V., Cicchetti, D., Barnett, D., & Braunwald, K. (1989). Disorganized/disoriented attachment relationships in maltreated infants. *Developmental Psychology*, 25(4), 525-531.

- Case, R. (1985). *Intellectual development*. Orlando, FL: Academic Press.
- Cassidy, J. (1993, March). *Emotion regulation within attachment relationships*. Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans, LA.
- Cassidy, J., Berlin, L. J., & Belsky, J. (1990, April). *Attachment organization at age three: Antecedent and concurrent correlates*. Paper presented at the Seventh International Conference on Infant Studies, Montreal.
- Cassidy, J., & Kobak, R. (1988). Avoidance and its relation to other defensive processes. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp. 300-323). Hillsdale, NJ: Erlbaum.
- Chapman, M., & Zahn-Waxler, C. (1982). Young children's compliance and noncompliance to parental discipline in a natural setting. *International Journal of Behavior and Development*, 5, 81-94.
- Chess, S., & Thomas, A. (1989). Issues in the clinical application of temperament. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 377-386). New York: Wiley.
- Clarke-Stewart, K. A. (1973). Interactions between mothers and their young children: Characteristics and consequences. *Monographs of the Society for Research in Child Development*, 38(5-6, Serial No. 153).
- Cohen, S. E., & Beckwith, L. (1979). Preterm infant interaction with the caregiver in the first year of life and competence at age two. *Child Development*, 50, 767-776.
- Cohn, J. F., Campbell, S. B., & Ross, S. (1991). Infant response in the still-face paradigm at 6 months predicts avoidant and secure attachment at 12 months. *Development and Psychopathology*, 3, 367-376.
- Cohn, J. F., & Tronick, E. (1983). Three-month-old infants' reaction to simulated maternal depression. *Child Development*, 54, 185-193.
- Cohn, J. F., & Tronick, E. (1988). Mother-infant face-to-face interaction: Influence is bidirectional and unrelated to periodic cycles in either partner's behavior. *Developmental Psychology*, 24(3), 386-392.
- Cohn, J. F., Tronick, E., Matias, R., Connell, D., & Lyons-Ruth, K. (1986). Face-to-face interactions of depressed mothers with their infants. In E. Tronick & T. Field (Eds.), *Maternal depression and infant disturbance* (pp. 31-44). San Francisco: Jossey-Bass.
- Cole, P. M., Barrett, K. C., & Zahn-Waxler, C. (1992). Emotion displays in two-year-olds during mishaps. *Child Development*, 63, 314-324.
- Connell, D. B. (1976). *Individual differences in attachment: An investigation into stability, implications, and relationships to structure of early language development*. Unpublished doctoral dissertation, Syracuse University.
- Cowan, C. P., & Cowan, P. A. (1987). Men's involvement in parenthood: Identifying the antecedents and understanding the barriers. In P. Berman & F. A. Pedersen (Eds.), *Men's transition to parenthood* (pp. 145-174). Hillsdale, NJ: Erlbaum.
- Cowan, C. P., Cowan, P. A., Heming, G., & Miller, N. B. (1991). Becoming a family: Marriage, parenting, and child development. In P. A. Cowan & E. M. Hetherington (Eds.), *Family transitions* (pp. 79-109). Hillsdale, NJ: Erlbaum.
- Cox, M. J., Owen, M. T., Lewis, J. M., Riedel, C., Scalf-Mclver, L., & Suster, A. (1985). Intergenerational influences on the parent-infant relationship in the transition to parenthood. *Journal of Family Issues*, 6(4), 543-564.
- Crittenden, P. M., & DiLalla, D. L. (1988). Compulsive compliance: The development of an inhibitory coping strategy in infancy. *Journal of Abnormal Child Psychology*, 16, 585-599.
- Crockenberg, S. (1991, April). Conceptual issues in the study of child compliance, noncompliance and parental control. In G. Kochanska & L. Kuczynski (Chairs), *New perspectives in child compliance, non-compliance, and parental control*. Symposium conducted at the biennial meeting of the Society for Research in Child Development, Seattle, WA.
- Crockenberg, S., & Litman, C. (1990). Autonomy as competence in two-year-olds: Maternal correlates of child compliance, defiance, and self-assertion. *Developmental Psychology*, 26, 961-971.
- Crowell, J. A., & Feldman, S. S. (1988). Mothers' internal models of relationships and children's behavioral and developmental status: A study of mother-child interaction. *Child Development*, 59, 1273-1285.
- Crowell, J. A., Feldman, S. S., & Ginsburg, N. (1988). Assessment of mother-child interaction in preschoolers with behavior problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, 27, 303-311.
- Cummings, E. M., Iannotti, R. J., & Zahn-Waxler, C. (1985). Influence of conflict between adults on the emotions and aggression of young children. *Developmental Psychology*, 21(93), 495-507.
- Cummings, E. M., Zahn-Waxler, C., & Radke-Yarrow, M. (1981). Young children's responses to expressions of anger and affection by others in the family. *Child Development*, 52, 1274-1282.
- DeGangi, G. A., DiPietro, J. A., Greenspan, S. I., & Porges, S. W. (1991). Psychophysiological characteristics of the regulatory disordered infant. *Infant Behavior and Development*, 14, 37-50.
- Dickstein, S., & Parke, R. D. (1988). Social referencing in infancy: A glance at fathers and marriage. *Child Development*, 59, 506-511.
- Dickstein, S., Thompson, R. A., Estes, D., Malkin, C., & Lamb, M. E. (1984). Social referencing and the security of attachment. *Infant Behavior and Development*, 7, 507-516.
- Dunn, J., & Munn, P. (1987). Development of justification in disputes with mother and sibling. *Developmental Psychology*, 23, 791-798.
- Egeland, B., & Farber, E. A. (1984). Infant-mother attachment: Factors related to its development and changes over time. *Child Development*, 55, 753-771.
- Egeland, B., Jacobvitz, D., & Sroufe, L. A. (1988). Breaking the cycle of abuse. *Child Development*, 59, 1080-1088.
- Elder, G., Caspi, A., & Downey, G. (1986). Problem behavior and family relationships: Life course and intergenerational themes. In A. Sorensen, F. Weinert, & L. Sherrod (Eds.), *Human development: Interdisciplinary perspectives* (pp. 293-340). Hillsdale, NJ: Erlbaum.
- Emde, R. N. (1983). The prerepresentational self and its affective core. *Psychoanalytic Study of the Child*, 38, 165-192.
- Emde, R. N. (1991). The wonder of our complex enterprise: Steps enabled by attachment and the effects of relationships on relationships. *Infant Mental Health Journal*, 12, 164-173.
- Emde, R. N., & Buchsbaum, H. K. (1990). "Didn't you hear my mommy?": Autonomy with connected-

- ness in moral self-emergence. In D. Cicchetti & M. Beeghly (Eds.), *The self in transition* (pp. 35-60). Chicago: University of Chicago Press.
- Emde, R., Johnson, W. F., & Easterbrooks, A. (1988). The do's and don'ts of early moral development: Psychoanalytic tradition and current research. In J. Kagan & S. Lamb, (Eds.), *The emergence of morality* (pp. 245-277). Chicago: University of Chicago Press.
- Feinman, S., & Lewis, M. (1983). Social referencing at ten months: A second-order effect on infants' responses to strangers. *Child Development*, 54, 878-887.
- Field, T. (1984). Early interactions between infants and their post-partum depressed mothers. *Infant Behavior and Development*, 7, 517-523.
- Field, T., Healy, B., Goldstein, S., Perry, S., Bendell, D., Schanberg, S., Zimmerman, E. A., & Kuhn, C. (1988). Infants of depressed mothers show "depressed" behavior even with nondepressed adults. *Child Development*, 59, 1569-1579.
- Fish, M., Stifter, C. A., & Belsky, J. (1991). Conditions of continuity and discontinuity in infant negative emotionality: Newborn to five months. *Child Development*, 62, 1525-1537.
- Fonagy, P., Steele, H., & Steele, M. (1991). Maternal representations of attachment during pregnancy predict the organization of infant-mother attachment at one year of age. *Child Development*, 62, 891-905.
- Fox, N. A., & Stifter, C. A. (1989). Biological and behavioral differences in infant reactivity and regulation. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 169-183). New York: Wiley.
- Fraiberg, S., Adelson, E., & Shapiro, V. (1975). Ghosts in the nursery. *Journal of the American Academy of Child Psychiatry*, 14, 387-421.
- Frodi, A., Bridges, L., & Grolnick, W. (1985). Correlates of mastery-related behavior. *Child Development*, 56, 1291-1298.
- Garbarino, J., & Sherman, D. (1980). High-risk neighborhoods and high-risk families: The human ecology of child maltreatment. *Child Development*, 51, 188-198.
- Gianino, A., & Tronick, E. Z. (1988). The mutual regulation model: The infant's self and interactive regulation, coping, and defense. In T. Field, P. McCabe, & N. Schneiderman (Eds.), *Stress and coping* (pp. 47-68). Hillsdale, NJ: Erlbaum.
- Goldberg, S., & DiVitto, B. (1983). *Born too soon: Preterm birth and early development*. San Francisco: W. H. Freeman.
- Goldberg, S., Perrotta, M., Minde, K., & Corter, C. (1986). Maternal behavior and attachment in low birthweight twins and singletons. *Child Development*, 57, 34-46.
- Goldsmith, H. H., Buss, A. H., Plomin, R., Rothbart, M. K., Thomas, A., Chess, S., Hinde, R. A., & McCall, R. B. (1987). Roundtable: What is temperament? Four approaches. *Child Development*, 58, 505-529.
- Goldsmith, H. H., & Campos, J. J. (1986). Fundamental issues in the study of early temperament: The Denver Twin Temperament Study. In M. E. Lamb, A. L. Brown, & B. Rogoff (Eds.), *Advances in developmental psychology* (Vol. 4, pp. 231-283). Hillsdale, NJ: Erlbaum.
- Goldsmith, H. H., Riesser-Danner, L. A., & Briggs, S. (1991). Evaluating convergent and discriminant validity of temperament questionnaires for preschoolers, toddlers and infants. *Developmental Psychology*, 27, 566-579.
- Greenberg, M. T., & Slough, N. (1991, April). Attachment security and its correlates in preschool children: Validation of reunion assessment. In R.S. Marvin & J. Cassidy (Chairs), *Attachment during the preschool years: Examination of a new measure*. Symposium conducted at the biennial meeting of the Society for Research in Child Development, Seattle.
- Grossmann, K., Fremmer-Bombik, E., Rudolph, J., & Grossmann, K. E. (1988). Maternal attachment representations as related to patterns of infant-mother attachment and maternal care during the first year. In R. A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 241-260). New York: Oxford University Press.
- Hall, F., Pawlby, S., & Wolkind, S. (1979). Early life experiences and later mothering behavior: A study of mothers and their 20-week-old babies. In D. Shaffer & J. Dunn (Eds.), *The first year of life: Psychological and medical implications of early experiences* (pp. 153-174). New York: Wiley.
- Harter, S. (1978). Effectance motivation reconsidered. *Human Development*, 21, 34-64.
- Heinecke, C. M., Diskin, S. D., Ramsey-Klee, D. M., & Given, K. (1983). Pre-birth parent characteristics and family development in the first year of life. *Child Development*, 54, 194-208.
- Heinecke, C. M., Diskin, S. D., Ramsey-Klee, D. M., & Oates, D. S. (1986). Pre- and postbirth antecedents of 2-year-old attention, capacity for relationships, and verbal expressiveness. *Developmental Psychology*, 22(6), 777-787.
- Herrenkohl, E. C., Herrenkohl, R. C., & Toedter, L. J. (1983). Perspectives on the intergenerational transmission of abuse. In D. Finkelhor (Ed.) *The dark side of families: Current family violence research* (pp. 305-316). Beverly Hills, CA: Sage.
- Hinde, R. A. (1989a). Ethological and relationships approaches. In R. Vasta (Ed.), *Annals of child development* (Vol. 6, pp. 251-285). Greenwich, CT: JAI Press.
- Hinde, R. A. (1989b). Temperament as an intervening variable. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 27-33). New York: Wiley.
- Hirshberg, L. M., & Svejda, M. (1990). When infants look to their parents: I. Infants' social referencing of mothers compared to fathers. *Child Development*, 61, 1175-1186.
- Hofer, M. A. (1987). Early social relationships: A psychologist's view. *Child Development*, 58, 633-647.
- Hornik, R., & Gunnar, M. R. (1988). A descriptive analysis of infant social referencing. *Child Development*, 59, 626-634.
- Hornik, R., Risenhoover, N., & Gunnar, M. (1987). The effects of maternal positive, neutral, and negative affective communications on infant responses to new toys. *Child Development*, 58, 937-944.
- Hron-Stewart, K. M., Lefever, G. B., & Weintraub, D. (1990, April). *Correlates and predictors of mastery motivation: Relations to mother-child problem-solving, temperament, attachment, and home environment*. Paper presented at the Seventh International Conference on Infant Studies, Montreal.
- Hubert, N. (1989). Parental subjective reactions to perceived temperament behavior in their 6- and 24-month-old children. *Infant Behavior and Development*, 12, 185-198.

- Hunt, J. McV. (1965). Intrinsic motivation and its role in psychological development. In D. Levine (Ed.), *Nebraska symposium on motivation* (Vol. 13; pp. 189-282). Lincoln, NE: University of Nebraska Press.
- Isabella, R. A., & Belsky, J. (1991). Interactional synchrony and the origins of mother-infant attachment: A replication study. *Child Development*, 62, 373-384.
- Isabella, R. A., Belsky, J., & von Eye, A. (1989). The origins of infant-mother attachment: An examination of interactional synchrony during the infant's first year. *Developmental Psychology*, 25, 12-21.
- Izard, C. E., Huebner, R., Risser, D., McGinness, G., & Dougherty, L. (1980). The young infant's ability to produce discrete emotion expressions. *Developmental Psychology*, 16, 132-140.
- Jacobson, S. W., & Frye, K. F. (1991). Effect of maternal social support on attachment: Experimental evidence. *Child Development*, 62, 572-582.
- Jennings, K. D., Yarrow, L. J., & Martin, P. P. (1984). Mastery motivation and cognitive development: A longitudinal study from infancy to 3.5 years of age. *International Journal of Behavioral Development*, 7, 441-461.
- Kagan, J. (1981). *The second year: The emergence of self-awareness*. Cambridge, MA: Harvard University Press.
- Kagan, J., Reznick, S., & Snidman, N. (1987). The physiology and psychology of behavioral inhibition in children. *Child Development*, 58, 1459-1473.
- Kagan, J., Reznick, S., & Snidman, N. (1988). Biological bases of childhood shyness. *Science*, 240, 167-171.
- Kagan, J., Reznick, S., & Snidman, N. (1989). Issues in the study of temperament. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 133-144). New York: Wiley.
- Kiser, L. J., Bates, J. E., Maslin, C. A., & Bayles, K. (1983). Mother-infant play at 6 months as a predictor of attachment security at thirteen months. *Journal of the American Academy of Child Psychiatry*, 25, 68-75.
- Klinnert, M. D. (1984). The regulation of infant behavior by maternal facial expression. *Infant Behavior and Development*, 7, 447-465.
- Klinnert, M. D., Campos, J. J., Sorce, J. F., Emde, R. N., & Svejda, M. (1983). Emotions as behavior regulators: Social referencing in infancy. In R. Plutchik & H. Kellerman (Eds.), *Emotion: Theory, research, and experience: Vol. 2. Emotions in early development* (pp. 57-86). New York: Academic Press.
- Klinnert, M. D., Emde, R. N., Butterfield, P., & Campos, J. J. (1986). Social referencing: The infant's use of emotional signals from a friendly adult with mother present. *Developmental Psychology*, 22(4), 427-432.
- Kochanska, G. (1991, April). Child compliance and noncompliance and the origins of conscience. In G. Kochanska & L. Kuczynski (Chairs), *New perspectives in child compliance, noncompliance, and parental control*. Symposium conducted at the biennial meeting of the Society for Research in Child Development, Seattle.
- Kuczynski, L., & Kochanska, G. (1990). Development of children's noncompliance strategies from toddlerhood to age 5. *Developmental Psychology*, 26(3), 398-408.
- Kuczynski, L., Kochanska, G., Radke-Yarrow, M., & Girnius-Brown, O. (1987). A developmental interpretation of young children's non-compliance. *Developmental Psychology*, 23, 799-806.
- LaBarbera, J. D., Izard, C. E., Vietze, P., & Parisi, S. (1976). Four- and six-month-old infants' visual responses to joy, anger, and neutral expressions. *Child Development*, 47, 535-538.
- Lewis, J. M., Owen, M. T., & Cox, M. J. (1988). The transition to parenthood: III. Incorporation of the child into the family. *Family Process*, 27, 411-421.
- Lewis, M. (1992). *Shame: The exposed self*. New York: Free Press.
- Lewis, M., Alessandri, S. M., & Sullivan, M. W. (1990). Violation of expectancy, loss of control, and anger expressions in young infants. *Developmental Psychology*, 26(5), 745-751.
- Lewis, M., & Brooks-Gunn, J. (1979). *Social cognition and the acquisition of self*. New York: Plenum Press.
- Lewis, M., Sullivan, M. W., Stanger, C., & Weiss, M. (1989). Self development and self-conscious emotions. *Child Development*, 60, 146-156.
- Lieberman, A. F., Weston, D. R., & Pawl, J. H. (1991). Preventive intervention and outcome with anxious-attached dyads. *Child Development*, 62, 199-209.
- Londerville, S., & Main, M. (1981). Security of attachment, compliance, and maternal training methods in the second year of life. *Developmental Psychology*, 17(3), 289-299.
- Lyons-Ruth, K. (1991). Rapprochement or approachment: Mahler's theory reconsidered from the vantage point of recent research on early attachment relationships. *Psychoanalytic Psychology*, 8(1), 1-23.
- Lyons-Ruth, K., Alpern, L., & Repacholi, B. (1993). Disorganized attachment classification and maternal psychosocial problems as predictors of hostile-aggressive behavior in the preschool classroom. *Child Development*, 64, 572-585.
- Lyons-Ruth, K., Connell, D. B., Grunebaum, H., & Botein, S. (1990). Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. *Child Development*, 61, 85-98.
- Lyons-Ruth, K., Connell, D. B., Zoll, D., & Stahl, J. (1987). Infants at social risk: Relations among infant maltreatment, maternal behavior, and infant attachment behavior. *Developmental Psychology*, 23(2), 223-232.
- Lyons-Ruth, K., Repacholi, B., McLeod, S., & Silva, E. (1991). Disorganized attachment behavior in infancy: Short-term stability, maternal and infant correlates and risk-related subtypes. *Development and Psychopathology*, 3, 377-396.
- Lyons-Ruth, K., Zoll, D., Connell, D., & Grunebaum, H. U. (1989). Family deviance and family disruption in childhood: Associations with maternal behavior and infant maltreatment during the first two years of life. *Development and Psychopathology*, 1, 219-236.
- Main, M., & Hesse, E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism? In M. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research and intervention* (pp. 161-184). Chicago: University of Chicago Press.
- Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood and adulthood: A move to the level of representation. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development*, 50(1-2, Serial No. 209), 66-104.

- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the preschool years: Theory, research and intervention* (pp. 121-160). Chicago: University of Chicago Press.
- Main, M., & Weston, D. (1982). Avoidance of the attachment figure in infancy: Descriptions and interpretations. In C. M. Parkes & J. Stevenson-Hinde (Eds.), *The place of attachment in human behavior* (pp. 31-59). New York: Basic Books.
- Malatesta, C. Z., Culver, C., Tesman, J. R., & Shepard, B. (1989). The development of emotion expression during the first two years of life. *Monographs of the Society for Research in Child Development*, 54 (1-2, Serial No. 219).
- Malone, C. A. (1967). Guideposts derived from normal development. In E. Pavenstedt (Ed.), *The drifters: Children of disorganized lower-class families* (pp. 85-103). Boston: Little, Brown.
- Matas, L., Arend, R. A., & Sroufe, L. A. (1978). Continuity of adaptation in the second year: The relationship between quality of attachment and later competence. *Child Development*, 49, 547-556.
- McLoyd, V. C. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development. *Child Development*, 61, 311-346.
- Messer, D. J., McCarthy, M. E., McQuiston, S., MacTurk, R. H., Yarrow, L. J., & Vietze, P. M. (1986). Relation between mastery behavior in infancy and competence in early childhood. *Developmental Psychology*, 22, 366-372.
- Miyake, K., Chen, S., & Campos, J. J. (1985). Infant temperament, mother's mode of interaction, and attachment in Japan: An interim report. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development*, 50(1-2, Serial No. 209), 276-297.
- Morgan, G. A., Harmon, R. J., & Maslin-Cole, C. A. (1990). Mastery motivation: definition and measurement. *Early Education and Development*, 1, 318-319.
- Morgan, G. A., Harmon, R. J., & Maslin-Cole, C. A. (1991). Play assessment of mastery motivation in infants and young children. In C. E. Schaefer, K. Gitlin, & A. Sandgrund (Eds.), *Play diagnosis and assessment* (pp. 65-86). New York: Wiley.
- Morisset, C. E., Barnard, K. E., Greenberg, M. T., Booth, C. L., & Spieker, S. J. (1990). Environmental influences on early language development: The context of social risk. *Development and Psychopathology*, 2, 127-149.
- Murphy, C. M., & Messer, D. J. (1977). Mothers, infants and pointing: A study of a gesture. In H. R. Schaffer (Ed.), *Studies in mother-infant interaction* (pp. 325-354). London: Academic Press.
- Nelson, C. A., Morse, P. A., & Leavitt, L. A. (1979). Recognition of facial expressions by seven-month-old infants. *Child Development*, 50, 1239-1242.
- O'Connor, M., Sigman, M., & Brill, N. (1987). Disorganization of attachment in relation to maternal alcohol consumption. *Journal of Consulting and Clinical Psychology*, 55, 831-836.
- Oppenheim, D., Sagi, A., & Lamb, M. (1988). Infant-adult attachments on the kibbutz and their relation to socioemotional development four years later. *Developmental Psychology*, 24, 427-433.
- Oster, H. (1981). "Recognition" of emotional expression in infancy? In M. E. Lamb & L. R. Sherrod (Eds.), *Infant social cognition* (pp. 85-125). Hillsdale, NJ: Erlbaum.
- Oster, H., & Ekman, P. (1977). Facial behavior in child development. In A. Collins (Ed.), *Minnesota Symposium on Child Psychology* (Vol. 11, pp. 231-276). New York: Thomas A. Crowell.
- Parke, R. D., & Collmer, C. W. (1975). Child abuse: An interdisciplinary analysis. In E. M. Hetherington (Ed.), *Review of child development research* (Vol. 5, pp. 509-590). Chicago: University of Chicago Press.
- Patterson, G. R. (1982). *Coercive family process*. Eugene, OR: Castalia.
- Pettit, G. S., & Bates, J. E. (1984). Continuity of individual differences in the mother-infant relationship from six to thirteen months. *Child Development*, 55, 729-739.
- Pipp, S., & Harmon, R. J. (1987). Attachment as regulation: A commentary. *Child Development*, 58, 648-652.
- Plomin, R. (1987). Developmental behavioral genetics and infancy. In J. Osofsky (Ed.), *Handbook of infant development* (pp. 363-414). New York: Wiley.
- Porges, S. W., & Roosevelt, J. D. (in press). Physiological basis of temperament. In J. Noshpitz (Ed.), *Basic handbook of child psychiatry*. New York: Basic Books.
- Quinton, D., Rutter, M., & Liddle, C. (1984). Institutional rearing, parenting difficulties, and marital support. *Psychological Medicine*, 14, 107-24.
- Radke-Yarrow, M., & Zahn-Waxler, C. (1984). Roots, motives and patterning in children's prosocial behavior. In E. Staub, D. Bar-Tal, J. Karylowski, & J. Reykowski (Eds.), *The development and maintenance of prosocial behavior: International perspectives on positive morality* (pp. 81-99). New York: Plenum Press.
- Redding, R. E., Harmon, R. J., & Morgan, G. A. (1990). Maternal depression and infants' mastery behaviors. *Infant Behavior and Development*, 13, 391-395.
- Reiss, D. (1989). The represented and the practicing family. In A. J. Sameroff & R. Emde (Eds.), *Relationship disturbances in early childhood* (pp. 191-220). New York: Basic Books.
- Reite, M., Short, R., Seiber, C., & Pauley, J. D. (1981). Attachment, loss, and depression. *Journal of Child Psychology and Psychiatry*, 22, 141-169.
- Ricks, M. (1985). The social transmission of parental behavior: Attachment across generations. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development*, 50(1-2, Serial No. 209), 211-227.
- Rosenbaum, J. F., Biederman, J., Gersten, M., Hirschfield, D. R., Meminger, S. R., Herman, J. B., Kagan, J., Reznick, S., & Snidman, N. (1988). Behavioral inhibition in children of parents with panic disorder and agoraphobia. *Archives of General Psychiatry*, 45, 463-470.
- Rothbart, M. (1981). Measurement of temperament in infancy. *Child Development*, 52, 569-587.
- Rothbart, M. K. (1989). Temperament in childhood: A framework. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 59-73). New York: Wiley.
- Rothbart, M., & Derryberry, D. (1981). Development of individual differences in temperament. In M. E.

- Lamb & A. L. Brown (Eds.), *Advances in developmental psychology*, Vol. 1. Hillsdale, NJ: Erlbaum.
- Rutter, M. (1989). Temperament: Conceptual issues and clinical implications. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 463-479). New York: Wiley.
- Sameroff, A. J., & Chandler, M. J. (1975). Reproductive risk and the continuum of caretaking casualty. In F. D. Horowitz, E. M. Hetherington, S. Scarr-Salapatek, & G. M. Siegel (Eds.), *Review of child development research* (Vol. 4, pp. 187-244). Chicago: University of Chicago Press.
- Sameroff, A. J., & Emde, R. N. (Eds.). (1989). *Relationship disturbances in early childhood*. New York: Basic Books.
- Sameroff, A. J., Seifer, R., & Elias, P. K. (1982). Sociocultural variability in infant temperament ratings. *Child Development*, 53, 164-173.
- Sander, L., Julia, H., Stechler, G., & Burns, P. (1972). Continuous 24-hour interactional monitoring of infants reared in two caretaking environments. *Psychosomatic Medicine*, 34, 270-282.
- Scaife, M., & Bruner, J. S. (1975). The capacity for joint visual attention in the infant. *Nature*, 254, 265-266.
- Seifer, R., & Sameroff, A. (1986). The concept, measurement and interpretation of temperament in young children: A survey of research issues. *Advances in Developmental and Behavioral Pediatrics*, 7, 1-43.
- Seifer, R., Sameroff, A., Barrett, L. C., & Krafchuk, E. (1992). *Infant temperament measured by multiple observations and mother report*. Paper presented at the Ninth International Conference on Infant Studies, Miami.
- Sorce, J. F., Emde, R. N., Campos, J. J., & Klinnert, M. D. (1985). Maternal emotional signaling: Its effect on the visual cliff behavior of one-year olds. *Developmental Psychology*, 20, 195-200.
- Spitz, R. A. (1957). *No and yes: On the genesis of human communication*. New York: International Universities Press.
- Sroufe, L. A., Fox, N., & Pancake, V. (1983). Attachment and dependency in developmental perspective. *Child Development*, 54, 1615-1627.
- Sroufe, L. A., & Waters E. (1977). Attachment as an organizational construct. *Child Development*, 48, 1184-1199.
- Stayton, D. J., Hogan, R., & Ainsworth, M. D. S. (1971). Infant obedience and maternal behavior: The origins of socialization reconsidered. *Child Development*, 42, 1057-1069.
- Stenberg, C. R., Campos, J. J., & Emde, R. N. (1983). The facial expression of anger in seven-month-old infants. *Child Development*, 54, 178-184.
- Stern, D. (1985). *The interpersonal world of the infant*. New York: Basic Books.
- Thomas, A., & Chess, S. (1977). *Temperament and development*. New York: Brunner/Mazel.
- Thomas, A., Chess, S., & Birch, H. G. (1968). *Temperament and behavior disorders in children*. New York: New York University Press.
- Thomas, A., Chess, S., Birch, H. G., Hertzog, M. E., & Korn, S. (1963). *Behavioral individuality in early childhood*. New York: New York University Press.
- Trevarthen, C. (1980). The foundations of intersubjectivity: Development of interpersonal and cooperative understanding in infants. In D. R. Olson (Ed.), *The social foundations of language and thought* (pp. 1-34). New York: Norton.
- Trevarthen, C. (1989). Le emozioni intuitive: L'evoluzione del loro ruolo nella comunicazione tra madre e bambino [Intuitive emotions: Their changing role in communication between mother and infant]. In M. Ammaniti & N. Dazzi (Eds.), *Affetti: Natura e sviluppo delle relazioni interpersonali* (pp. 97-139). Rome: La Terza.
- Trevarthen, C., & Hubley, P. (1978). Secondary intersubjectivity: Confidence, confiding, and acts of meaning in the first year. In A. Locke (Ed.), *Action, gesture and symbol: The emergence of language* (pp. 183-229). London: Academic Press.
- Trickett, P. K., & Kuczynski, L. (1986). Children's misbehaviors and parental discipline strategies in abusive and nonabusive families. *Developmental Psychology*, 22, 115-123.
- Tronick, E., & Cohn, J. F. (1989). Infant-mother face-to-face interaction: Age and gender differences in coordination and the occurrence of miscoordination. *Child Development*, 60, 85-92.
- Tronick, E., Ricks, M., & Cohn, J. F. (1982). Maternal and infant affective exchange: Patterns of adaptation. In T. Field & A. Fogel (Eds.), *Emotion and early interaction* (pp. 83-100). Hillsdale, NJ: Erlbaum.
- Vaughn, B. E., Bradley, C. F., Joffe, L. S., Seifer, R., & Barglow, P. (1987). Maternal characteristics measured prenatally predict ratings of temperamental difficulty on the Carey Infant Temperament Questionnaire. *Developmental Psychology*, 23, 152-161.
- Vaughn, B. E., Lefever, G. B., Seifer, R., & Barglow, P. (1989). Attachment behavior, attachment security, and temperament during infancy. *Child Development*, 60, 728-737.
- Walden, T. A., & Ogan, T. A. (1988). The development of social referencing. *Child Development*, 59, 1230-1240.
- Ward, M. J., Botyanski, N. C., Plunket, S. W., & Carlson, E. A. (1991, April). The concurrent validity of the Adult Attachment Interview for adolescent mothers. In H. Steele (Chair), *Parental representations of attachment: Links across generations*. Symposium conducted at the biennial meeting of the Society for Research in Child Development, Seattle.
- Waters, E. (1978). The reliability and stability of individual differences in infant-mother attachment. *Child Development*, 49, 483-494.
- Waters, E., Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. *Child Development*, 50, 821-829.
- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-333.
- Winnicott, D. W. (1965). The theory of the parent-infant relationship. In D. W. Winnicott, *The maturational processes and the facilitating environment* (pp. 37-55). New York: International Universities Press. (Original work published 1960)
- Wolk, S., Zeanah, C. H., Garcia Coll, C., & Carr, S. (1992). Factors influencing parents' perceptions of temperament in early infancy. *American Journal of Orthopsychiatry*, 62, 71-82.
- Yarrow, L. J., MacTurk, R. H., Vietze, P. M., McCarthy, M. E., Klein, R. P., & McQuiston, S. (1984). Developmental course of mastery motivation during the first year of life. *Developmental Psychology*, 20, 492-503.
- Yarrow, L. J., McQuiston, S., MacTurk, R. H., McCarthy, M. E., Klein, R. P., & Vietze, P. M. (1983). Assess-

- ment of mastery motivation during the first year of life. *Developmental Psychology*, 29, 159-171.
- Yarrow, L. J., Morgan, G. A., Jennings, K. D., Harmon, R. J., & Gaiter, J. L. (1982). Infants' persistence at tasks. *Infant Behavior and Development*, 19, 131-141.
- Zahn-Waxler, C., Cummings, E. M., & Cooperman, G. (1984). Emotional development in childhood. *Annals of Child Development*, 1, 45-106.
- Zahn-Waxler, C., Cummings, E. M., Iannotti, R. M., & Radke-Yarrow, M. (1984). Young offspring of depressed parents: A population at-risk for affective problems. In D. Cicchetti & K. Schneider-Rosen (Eds.), *New directions for child development: No. 26. Childhood depression* (pp. 81-105). San Francisco: Jossey-Bass.
- Zahn-Waxler, C., & Kochanska, G. (1988). The origins of guilt. In R. Thompson (Ed.), *Nebraska Symposium on Motivation: Vol. 36. Socioemotional development* (pp. 183-258). Lincoln: University of Nebraska Press.
- Zahn-Waxler, C., & Radke-Yarrow, M. (1990). The origins of concern. *Motivation and Emotion*, 14, 107-130.
- Zahn-Waxler, C., Radke-Yarrow, M., & King, R. A. (1979). Child rearing and children's prosocial initiations towards victims of distress. *Child Development*, 50, 319-330.
- Zarbatany, L., & Lamb, M. (1985). Social referencing as a function of information source: Mother versus strangers. *Infant Behavior and Development*, 8, 25-33.
- Zeanah, C. H., Benoit, D., Barton, M., Hirshberg, L., Regan, C., & Lipsitt, L. (1993). Representations of attachment in mothers and their one year old infants. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 278-286.
- Zeanah, C. H., Keener, M. A., & Anders, T. F. (1986). Developing perceptions of temperament and their relation to mother and infant behavior. *Journal of Child Psychology and Psychiatry*, 27, 499-512.

3

The Family Context of Infant Mental Health: II. Infant Development in Multiple Family Relationships

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INFANT-CAREGIVER RELATIONSHIPS IN THE CONTEXT OF THE FAMILY

Recent societal changes in the roles of women and in the structure of the family have invited a consideration of other family members as sources of influence on infant development. One manifestation of the look beyond mothers is the now common tendency to use the terms "parent" and "caregiver" in discussing the processes of infant development, to avoid implying that these relational functions are specific to women or even to biological relatives (see Oppenheim, Sagi, & Lamb, 1988). Another manifestation is a consideration of influences beyond the primary caregiver. Although investigators have been aware of the potential importance of this new emphasis, until relatively recently studies in which researchers have attempted to identify the family sources of differences in infant development have recruited subjects from a pool of "nuclear" families of European descent—in each of which there are two parents, a male who works outside the home and a female who does not. These are the families that have been viewed

as, and indeed may have been, "normative" in U.S. culture during the early years of family-based infant research. In these families, mothers may well have had a disproportionate influence on infant development because of their almost continuous availability, and the relative lack of availability of fathers, grandparents, and others who might otherwise exert a powerful influence on the course of infant development.

Missing from studies of family influences on infant development until the middle to late 1970s were families in which fathers were absent (or at least not living with mothers and infants), and in which others (notably the mothers' mothers) were household members and available to play a central family role. The inclusion of families such as these, in which mothers were often poor, young, and nonwhite, in studies on infant development expanded our understanding of what in fact always had existed—a range of family constellations. There is now a growing research literature on such constellations, and with it a growing understanding that a mother's current family relationships affect the way she cares for her infant, and through her,

the infant's development (Crockenberg, 1988a; Lewis, 1987; Parke & Tinsley, 1987).

Despite this recognition of the roles other family members may play in the life of the developing infant, the focus of many of the early studies of this genre was on the impact of family members on the mother's effectiveness as a parent. Concern with infant outcomes in this research has been limited to indirect effects—benefits accruing to the infant by virtue of the social support family members provide the mother, and the improvement in her parenting as a result of that support (see Crockenberg, 1988a, for a review). From this perspective, what differs across family contexts is the extent to which a mother requires support from others in order to exhibit the pattern of responsive, sensitive caregiving identified from normative samples as predictive of positive infant mental health (e.g., a secure attachment to the mother), as well as the source of that support. In studies of adolescent mothers, an infant's maternal grandmother has often been targeted as the major source of social support to the mother; in two-parent, middle-class families in which mothers work outside the home, the father has more frequently been identified as the mother's primary support person.

Emphasizing the mother's centrality and focusing on the indirect effect of other family members on the infant's development can neglect potentially important direct effects of other family members on infant development. Fathers, grandparents, and siblings have direct contact with infants. Sometimes the contact is brief or sporadic, as when grandparents visit once a year. Often, however, it is extensive and emotionally significant to the infant, as in the enduring relationships that develop between infants and older siblings (with whom they may, in fact, spend more time than they do with their parents). When this kind of extended, emotionally significant contact characterizes a particular infant-other relationship, it is reasonable to assume that the relationship may contribute in important ways to the infant's early experiences within the family and may account for some of the variation we observe in infant mental health. By neglecting such influences, we have missed opportunities to explain differences in infant development more accurately and completely, and to identify possible sources of both pathology and mental health in an infant's environment.

In the review that follows, we present the extant research on family contexts of infant

development; describe its limitations; discuss its implications for mental health professionals; and briefly suggest research that needs to be carried out if we are to understand what experiences, with whom, are necessary for infants to develop in ways identified as competent and adjusted in modern Western culture.

THE FATHER'S ROLE IN INFANT DEVELOPMENT

The best description of contact between infants and their fathers is that it is highly variable both across families and during the course of infancy itself. Fathers' involvement is typically reported in terms of the amount of time they spend in contact with, or the frequency with which they engage in specific activities with, their infants during a week's time. Those amounts and frequencies are in most cases dramatically lower than those of mothers. In a study by Pedersen, Yarrow, Anderson, and Cain (1979) of a small sample of middle-class parents and their 5-month-old infants, mothers were responsible for the care of babies without the fathers present about 6 hours a day on average. Fathers averaged 30 minutes a day as sole caretakers of their infants.

When fathers are in contact with their infants, they are very likely to engage them in play (Kotelchuck, 1976; Nugent, Yogman, Lester, & Hoffman, 1988; Richards, Dunn, & Antonis, 1977). Caretaking by fathers is typically less frequent on average than play and is more variable across families. Moreover, these studies most often include in their samples fathers who are working full-time and mothers who are not, with the consequence that the fathers who do the most caretaking are excluded from these estimates. In studies comparing primary caregiving fathers with traditional fathers, differences favoring greater involvement or more intimate involvement of the primary caregiving father are sometimes, but not always, reported (Field, 1978; Lamb, 1982).

Father-infant interaction probably differs in quality as well, just as mother-infant interaction does, although differences in the quality of father-infant interaction have been investigated infrequently. One consequence of this variability in amount, type, and quality of interaction is that it is difficult to generalize from existing research about a father's impact on an infant's developing social competence and mental health.

Indirect Effects

Social Support

As might be anticipated in a context that views the mother as the primary caregiver of the infant, much of the research on the father's influence on infant development has focused on "indirect effects"—the influence the father has on the developing infant by virtue of his relationship with the infant's mother. One specific way the father is thought to influence the mother's care of the infant is through the "social support" (i.e., the emotional, instrumental, and informational help) he provides her. "Emotional support" refers to expressions of empathy and encouragement that convey to the mother that she is understood and capable of doing a good job in that role. When the father of the baby is also the mother's partner, the mother's sense that the relationship is secure and that she is loved, despite the inevitable decrease in time they have for each other, may be a critical aspect of emotional support.

Several recent reviews have documented the importance of social support for the quality of the care mothers provide their infants, and have identified the mothers' partners, typically the children's fathers, as the primary source of that support in families where the fathers live with the mothers and infants (Crockenberg, 1988a; Parke & Tinsley, 1987). In two studies, emotional or child care support from fathers correlated positively with observed maternal competence in the form of emotional consistency, contingent responding, and warmth and pleasure in parenting (Dickie & Matheson, 1984; Levitt, Weber, & Clark, 1986). In the latter study, more positive maternal affect was related in turn to secure infant-mother attachments. Other studies confirm that social support (especially emotional support) from the father correlates with mother and infant behavior, as well as the security of the mother-infant attachment (Crnic, Greenberg, Ragozin, Robinson, & Bashman, 1983; Durrett, Otaki, & Richards, 1984). These findings suggest a possible indirect effect of the father's support on infant emotional development mediated through the mother's behavior, but they leave open the possibility that the father may have a more direct influence on infant development.

Studies of at-risk mothers are frequently cited as providing the strongest evidence that partner support affects maternal behavior in ways that

support infant development (Crockenberg, 1987a; Quinton & Rutter, 1985). In these studies, mothers with childhood histories of separation and rejection avoided negative patterns of interaction (e.g., abuse, coercion) with their toddlers when they had good social support from their partners. In the absence of such support, the "at-risk" mothers were significantly more likely to engage in dysfunctional parenting with their children. Although the possibility that the same maternal qualities that led to the selection of supportive partners also accounted for the apparent effect of partner support on maternal behavior, the research raises the possibility that the greatest impact of differences in paternal behavior on infants may occur when mothers are at risk for poor parenting by virtue of their own developmental history. How partner support affects maternal behavior under these circumstances remains obscure, however. One possibility is that the partners' stability and support reduces the stress the mothers experience in their lives or increase their ability to cope effectively with the stresses they do encounter (Cobb, 1976; Dean & Linn, 1977). Alternately, in providing mothers with ongoing emotional support, partners may compensate for or even alter mothers' "working models of relationships" in ways that allow them to be empathic and emotionally responsive toward their infants (Fraiberg, 1980).

Although the explanations offered for the observed "effect" of partner support on the maternal behavior of women at risk for poor parenting are intriguing and perhaps even compelling, the possibility remains that the pattern of influence may be considerably more complex. Fathers who provide mothers with emotional support may also participate more fully in child care. In doing so, they may encourage positive affect and competent behavior in their infants, which in turn elicits sensitive and responsive caregiving from mothers and contributes to the infants' social-emotional development (e.g., secure infant-mother attachment relationships). A systems perspective on family relationships requires that we consider the multiple ways each family member may influence the others, rather than assuming a pattern of linear influence that conforms to our assumptions about the likely direction and source of influence on development in families (Marvin & Stewart, 1990). The research on the marriage relationship in relation to parenting behavior

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and infant development comes closest to capturing this systems view of development with families.

The Role of Marriage in Infant Development

The role of marriage in infant development is a process involving multiple interdependent family relationship patterns. Marriage is affected by the arrival of the child; marriage has an indirect impact on infant development by influencing each parent's relationship with the child; and marriage has a direct impact on the child's development by providing an affective context within which development occurs.

There is evidence that marital satisfaction decreases with the birth of a child (Belsky & Pensky, 1988) to a relatively greater degree than the general decreases in satisfaction that occur in nonchildbearing couples (Markman & Clements, 1991). It is noteworthy, moreover, that the content of marital dissatisfaction following the child's birth generally involves finances, communication, and intimacy, rather than difficulties with the child per se. Marriage also influences child development through its impact on each parent's relationship with the infant. A supportive husband-wife relationship prior to and during the postpartum period facilitates adjustment to new parenting roles (Grossman, Eichler, & Winickoff, 1980; Russell, 1974), enhances parental feeding skill (Pedersen, 1975), and predicts interactional competence with infants (Lamb & Elster, 1985). Pedersen, Anderson, and Cain (1980) reported further that increased rates of negative behavior within marriages were related to increased rates of negative behavior directed by mothers to their infants. Marital satisfaction has been associated with security of the mother-infant, but not the father-infant, attachment relationship (Goldberg & Easterbrooks, 1984; Howes & Markman, 1989). In the latter study, the association was found between premarital assessment of the relationship and subsequent attachment, suggesting that poor marital quality precedes difficulties in the parent-infant relationship.

Marital dissatisfaction or discord may be expressed in a variety of ways, and has also been shown to predict parenting behavior and infant development. Dickstein and Parke (1988) found a pattern of distance or withdrawal by unhappily as opposed to happily married fathers, and

a trend toward overinvolvement by unhappily married as opposed to happily married mothers. Moreover, although happily and unhappily married fathers displayed similar amounts of positive affect during a laboratory procedure, unhappily married fathers did not provide contingent affect displays in response to their babies' bids, and they gave less clear affective signals during referencing episodes than infants of happily married fathers. Other studies have also found that the quality of the marriage generally has a greater impact on the father-infant than on the mother-infant relationship (e.g., Belsky, Gilstrap, & Rovine, 1984; Lamb & Elster, 1985; Volling & Belsky, 1985).

Marriage further influences infant development by providing the affective climate within which development occurs. In the context of marital dissatisfaction, disruptions occur in the domains of emotional communication and regulation processes. Among other features, more negative affect is expressed and reciprocated between spouses in dissatisfied as opposed to satisfied marriages (Gottman, 1979). Although most of the research linking marital conflict with child development has focused on older children (Crockenberg & Covey, 1991), Cummings, Zahn-Waxler, and Radke-Yarrow (1981) found that even by 1 year of age infants were aware of others' anger and affectionate interactions, and had their own emotional responses to them. The more frequently the infants observed interparental anger, for example, the more distress they expressed.

In sum, these studies demonstrate the complexity of the family relationships infants enter, and lend support to the view that any "effects" on the developing infant must be viewed and studied with this complexity in mind.

Direct Effects

Attachment

Research linking the father's behavior during infancy directly to differences in infant social-emotional development has focused almost exclusively on the infant-father attachment relationship. Contrary to the view that the quality of all the infant's attachments relationships is derived from the security or insecurity of the infant-mother bond, Main and Weston (1981) reported that infants formed independent attachment relationships to mothers and fathers,

based on the history of their interactions with each. In addition, infants with secure attachment relationships with both parents were more empathic during toddlerhood to an adult in distress, suggesting that secure attachments with fathers had a demonstrable effect on the infants' development. Easterbrooks and Goldberg (1990) were unable to replicate this apparent benefit of two secure infant attachments, however, in predicting ego functioning in kindergarten-age children, and in neither study did secure father-infant attachments buffer children against the apparent ill effects of insecure attachment relationships with their mothers. Thus, the contribution of the infant-father attachment relationship to the infant's current and subsequent development remains uncertain. It may be that infants in these studies spent too little time with fathers relative to mothers for the infant-father relationships to serve as a protective buffer, but with greater contact the fathers' impact on the infants' development would also be greater. If so, encouraging nurturant fathers to take on a greater share of infant care may be an effective intervention strategy in families where mothers, for whatever reason, are less able to parent effectively.

Support for greater father involvement comes from research indicating that fathers' involvement as alternate caregivers with their infants and toddlers when mothers are employed may promote healthy development in the form of secure attachments and less frequent defiant behavior. In Belsky and Rovine's (1988) study of infants who were left in alternate care during their first year, those whose mothers worked more than 20 hours a week were at significantly greater risk of developing insecure attachments with their mothers. This was not the case, however, for infants who were cared for by their fathers in their mothers' absence. There is other evidence that fathers may play an important role in a range of behaviors that reflect children's competence in relation to autonomy issues and emotional regulation during the second year of life. We turn to those studies next.

Autonomy and Regulation

By their second year, infants are increasingly aware of their own separateness from parents—an awareness that is apparent in the frequency with which they refuse, at least initially, to go along with their parents' proposed plan of action. Both mothers and fathers experience these

refusals, and it makes sense that both should play important roles in determining how their toddlers learn to balance their own needs and wishes with those of others—autonomy within a social context.

Only two research teams have studied father-toddler interaction in relation to this developmental task. Goldberg and Easterbrooks (1984) studied 72 infants aged 20 months and their parents; Belsky, Youngblade, Rovine, and Volling (1989) studied 100 children aged 3 years and their parents. In both studies, poor marital quality was associated with more negative and intrusive behavior or less emotionally supportive behavior on the part of fathers, but not mothers. Moreover, fathers' behavior was associated in turn with distinctive patterns of child behavior. At 20 months, children of fathers who provided less emotional support were more discontent (boys) or less task-oriented during a problem-solving task (girls) (Goldberg & Easterbrooks, 1984). At 3 years, children of fathers who were negative and intrusive were negative and disobedient (Belsky et al., 1989). These studies are consistent with the view that fathers probably play an important role in influencing affective development and the way autonomy issues are expressed during the second and third years of life. It is unclear, of course, whether these correlational studies reflect a father-to-child influence. We assume that this is the case, just as we assume a mother-to-child influence in studies in which mother and child behavior correlates positively. It is possible, however, that a father response to child behavior that has developed in the context of the mother-child relationship, or in direct response to marital conflict. Regardless of origin, however, the negative quality of the father-toddler relationship is noteworthy and indicates the importance of including fathers in advice/interventions offered to families in support of infant mental health.

Acknowledging that infant development occurs in response to the broader family environment that includes fathers may have an important impact on maternal mental health as well. Caplan (1989) has argued and demonstrated that there is a widespread tendency to "blame mothers" for maladjustment in their children. In nine clinical journals at three points in time (1970, 1976, and 1982), 72 types of child psychopathology were attributed to mothers; none were attributed to fathers. Moreover, the investigators reported that mothers were never described in purely positive terms, whereas this

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was often the case for fathers. Recognizing that fathers have a role in early social-emotional development may be an important step in the early prevention of psychopathology in children, and in protecting mothers from the grief and shame to which they may be subjected by mental health professionals who wrongly hold them solely responsible for the developmental problems of their children.

One way fathers as a group are known to differ from mothers in their interaction with their infants is their greater likelihood of engaging in physical play. In the next section, we review the data and consider the possible implications of this difference for infant development and infant emotional regulation in particular.

Physical Play

As summarized in Tinsley and Parke (1984a) and as reported above, play is the most common activity fathers engage in with their infants. Although mothers play with infants more than fathers by virtue of the greater amount of time they spend with them, fathers spend a greater proportion of their time in play with their infants than do mothers (37.5% vs. 25.8% as reported by Kotelchuck, 1976). More significantly, fathers are especially likely, and more likely than mothers, to engage in play characterized by physical movement and associated with increased infant arousal. Yogman (1982) reported, for example, that for infants between the ages of 2 weeks and 6 months, the most common types of games fathers played involved moving the infants' limbs. These limb movement games constituted 70% of all father-infant games during this age period, but only 4% of mother-infant games. These initial findings have been replicated a number of times by different investigators using infants of different ages. Power and Parke (1983) reported that fathers played more bouncing and lifting games with their 8-month-old infants than did mothers, although this difference was apparent primarily with fathers and boys. Similar differences have been reported by Lamb (1977a) between fathers and infants at 7-8 months.

As infants get older and become more motorically competent, the physical games fathers engage in with their infants change. Fathers' play remains more "physical" than mothers', however, with more "rough-and-tumble" contact and other types of gross motor activities (Lamb, 1977b, between fathers and infants at 15, 18, and

24 months; Clarke-Stewart, 1978, for infants between 15 and 30 months of age; and Teti, Bond, & Gibbs, 1988, for 18-month-old infants). The character of fathers' rough-and-tumble play with 2-year-olds also differs by child gender. As reported by McGuire (1982), with girls the play typically involved giving rides or "letting her jump on me"; for boys it was more often mock fighting or specific sports.

The evidence is consistent in suggesting that fathers provide a certain kind of physical activity for their infants, perhaps especially for their male infants, to a greater extent than do mothers. The significant question for our purpose is the effect this experience can be expected to have on the development of competence in infancy or subsequently. There are several possible effects. Because physical play is arousing, fathers may use this opportunity to help their infants learn to modulate arousal. They may take the lead both in bringing their infants' arousal level up and in bringing it down. Or, in failing to do so, they may contribute to problems of emotional regulation that occur throughout infancy. To our knowledge, there are no empirical data linking differences in fathers' behavior to infants' emotional regulation.

We may speculate also that infants exposed to physical activities will develop a greater enjoyment of and interest in such activities as they grow older. This interest and enjoyment may be an important contributor to acceptance in peer groups in which this type of play is normative, most notably boys' peer groups, and an important precursor to the development of skill in sports for both sexes. To the extent that fathers engage in less physical play with their female infants, they may be inadvertently circumscribing the opportunities girls have for experiencing success later in childhood and during adolescence, by decreasing the likelihood that they will choose a physical activity as a source of personal or professional satisfaction. From this perspective, enjoyment of physical activity would be viewed as evidence of an infant's "social competence," with potential implications for mental health at later periods of development.

Only Tinsley and Parke (1987) have examined the association between father-infant physical play and children's current or subsequent behavioral development. They reported a borderline association between fathers' physical play and infants' raw Bayley Scales of Infant Development mental scores, but no association between fathers' physical play and infants' physical devel-

opment. Differences in fathers' linguistic and cognitive stimulation were similarly unrelated to differences in infant development (Hunter, McCarthy, MacTurk, & Vietze, 1987; Teti et al., 1988). Why does fathers' behavior fail to correlate with infant play and test performance? One possibility is that fathers in these studies spent much less time with their infants than mothers, and the differences in their behavior made no difference in infant development for that reason. In families where mothers and fathers share the care of their infants to a greater extent, the effect of differences in fathers' behavior on infant development may be greater. These infants should have a greater opportunity to experience their fathers' distinctive patterns of interaction and to be affected by them than would other infants.

Support for this proposition comes from Pedersen, Suwalsky, Cain, Zaslow, and Rabinovich's (1987) investigation of the impact of relatively greater amounts of time alone between fathers and infants on both the fathers' and the infants' subsequent behavior. Fathers who spent more time alone with their infants engaged in more varied activities with them at home with the mothers present, and were significantly more likely than fathers with less contact to exhibit behaviors indicative of intimacy and attachment (such as eye-to-eye contact, close holding, and positive affect). Their infants differed even more strikingly from infants who spent less time alone with their fathers: They signaled their fathers more frequently, explored objects more, and showed more reciprocal positive affect with them. These findings were not an artifact of differences in maternal behavior between the two groups, nor were they confounded by a child's gender, a mother's employment, or differences in infant-father interactions apparent at three months. The investigators note, moreover, that exploratory behavior correlates with cognitive ability in infants and toddlers, and it has also been identified as a correlate of a secure infant-mother attachment relationship (Hazen & Durrett, 1982).

It appears that the experience of caring for their young infants alters the fathers' behavior as well as that of the infants—perhaps by raising their sense of efficacy in interacting, as Pedersen et al. (1987) suggest, as well as their own feelings of attachment to their infants. Fathers who spend more time with their infants may also become more expert in developing strategies for eliciting and maintaining their in-

fants' interest and involvement, and may facilitate their cognitive development as a consequence. Evidence from Ninio and Rinott (1988) that fathers who spent more time in infant care perceived their infants as more competent than fathers who spent less time in caregiving is consistent with this possibility. One implication of the change in father-infant interaction as a result of greater caregiving experience is that there may be long-term effects on the children's development that are not immediately apparent. Thus, the impact of differences in fathers' behavior with their 18-month-old infants documented by Teti et al. (1988) may be more apparent later in the children's development. If fathers increase their interaction with their infants during the second year of life, it may take some time before the effects of the differences fathers bring to their interaction have an impact on the infants' functioning.

Summary

As long as fathers' time with their infants can be recorded in terms of number of times or minutes a week, fathers may have relatively little impact on areas of infant development in which mothers are very actively involved. To the extent that fathers are more involved with their infants, or to the extent that they engage in behaviors or activities that mothers do not, or only minimally, engage in, we can anticipate greater paternal influences, for better or worse, on the course of infant development in general and mental health specifically. This is an important qualification of research findings that might otherwise be interpreted to mean that fathers are of no importance in understanding the development of individual differences in social competence in infancy.

In our view, clinical practice and intervention with families should be informed by research as well as by theory. If this is to occur, researchers need to identify fathers who play active roles in their infants' development, and consider how differences in their behavior contribute to differences in the way those infants develop. We need to know about fathers in a range of racially, ethnically, and economically diverse families, with mothers who are either more or less competent. We also need follow-up studies to determine the impact on infants of certain salient father behaviors (such as rough-and-tumble play), especially those that may serve to promote gender-differentiated behavior. In the absence of

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good research evidence, as practitioners we need to be attuned to the probability that fathers who are highly involved in their infants' care probably contribute in significant ways to their current functioning as well as to their long-term development.

GRANDPARENTS' ROLE IN INFANT DEVELOPMENT

Demographic studies of the prevalence of grandparental status and contact—there are roughly 22 million grandparents in the United States; approximately 70% of older people are grandparents; and three out of five grandparents see their grandchildren at least once a week, while nearly half see a grandchild every day—suggest that there is considerable potential for grandparents to influence development (see Tinsley & Parke, 1987, and Werner, 1984, for reviews). In non-Western cultures, this potential for grandparental influence on the course of development is even greater (Werner, 1984). Frequent babysitting help by grandparents also seems to occur, regardless of geographical location or ethnicity. According to Werner (1984), child care/babysitting assistance by grandparents has been reported among both middle-class and working-class blacks in the South (Jackson, 1971), among three-generation Mexican-American working-class families in the Midwest (Sena-Rivera, 1979), and among Native Americans in the Southwest (Red Horse, Lewis, Feit, & Decker, 1978). However, middle-class U.S. grandparents as a group are less likely to be involved in daily or weekly care of the grandchildren than are less affluent grandparents (Neugarten & Weinstein, 1964).

Although the term "grandparents" includes both grandmothers and grandfathers, in reality grandmothers typically play the more central role when their grandchildren are infants. There are some important exceptions to this generalization, however, and we consider these in the review that follows. As with fathers, the impact of grandparents on infant development is probably both indirect through the help and emotional support they provide the infants' mothers, and direct through their contact and interaction with the infants themselves. As both Crockenberg (1981) and Tinsley & Parke (1984b) point out, in providing support for mothers, grandparents also provide their grandchildren with loving care.

Indirect Effects

In families with fathers present, grandmothers are often the second most frequent source of support mentioned by mothers. In others, most notably the families of unmarried adolescent mothers, they are often the primary source of support, and in some instances better sources of support than the fathers (whose own needs may compete with the babies' for the mothers' time). In a study of English teen mothers (Crockenberg, 1988b), most of whom were married or living with the fathers of their babies, grandmothers were identified as "very frequent" source of support in roughly half the families, with only fathers more frequently so identified. When specific types of help and support were identified, grandmothers were more frequent sources of support than fathers only in the key area of "baby minding," an activity that involved caring for the infants for relatively long periods of time when the mothers were not present in their homes.

In a U.S. sample of teen mothers, fewer than 60% of whom were married or living with the babies' fathers, maternal grandmothers were identified most often as a "very frequent" source of support, with fathers in second place (Crockenberg, 1987b). Maternal grandmothers more frequently changed diapers, bathed and dressed the babies, and engaged in baby minding than any other group of support persons, including fathers. When paternal grandmothers were considered as well, grandmothers were the most frequent source of support in every category, including feeding, getting up at night with the babies, housework, and advising and encouraging the mothers. The centrality of the grandmother as a source of support for the adolescent mother and as a caregiver for the young infant suggests that her effect on the infant and the mother-infant dyad may be substantial, and that professional services directed toward support and development of both the adolescent mother and her baby should consider the grandmother as a key player in the family dynamics (Crockenberg, 1986).

There is evidence that the social support provided by grandparents is associated with "better"—that is, more nurturant or more sensitive and responsive caregiving—by the mothers who are the recipients of the support. This appears to be the case in U.S. samples, and also cross-nationally. Feiring and Taylor (1982) found that in their low-income, primarily black inner-city

sample, mothers who were rated as involved and responsive also perceived a high amount of positive support from the "secondary parents," who were most frequently the mothers' mothers. In the Crockenberg (1987b, 1988b) studies cited above, family support, especially support that was provided on a daily basis, was positively associated with responsiveness to crying among mothers of 3-month-old infants in both English and U.S. samples. Moreover, the association between social support and maternal behavior remained significant after differences in responsive attitudes, ethnicity, a mother's early separation from her own family, and current life stress were taken into account statistically. These are important controls, because it is possible that while social support from a grandmother correlates with maternal behavior, the association may be an artifact of the link between the way a mother was parented as a child and the way she parents her own infant. Moreover, to the extent that we attribute the "effect" on the mother's behavior solely to the presence or lack of current social support, we may fail to provide the services or design an intervention appropriate to the specific family situation.

Other investigators have reported no salutary effect of grandmothers' social support on the maternal behavior of teen mothers, perhaps because mothers who are receiving the most support by the second year of their infants' lives may be less competent than other mothers and receive more support for that reason (Crockenberg, 1987b; Oyserman, Radin, & Saltz, 1991). Nevertheless, qualitative aspects of grandparent behavior are strongly associated with a mother's nurturant behavior toward an infant. In the Oyserman et al. (1991) study, a grandmother's nurturance toward an infant between 12 and 24 months was the best predictor of a teen mother's nurturance with her infant in families with no grandfather or father present. When both a grandmother and a grandfather were present, however, grandfather nurturance was the only significant predictor of a teen mother's nurturance. Whatever the explanation, these findings suggest that it may be premature to conclude that grandfathers are uniformly less important than grandmothers in the lives of their infant grandchildren.

Another indirect influence grandparents exercise on infants' development is through the role they play in supporting fathers, who in turn provide support for mothers, and in approving or disapproving fathers' involvement in child

care (Parke & Tinsley, 1988). Tinsley and Parke (1987) reported, for example, that fathers and mothers of 7-month-old infants were similar in the extent to which they made use of grandparents as sources of support, although fathers reported greater satisfaction with contact with their own parents than with their wives' parents.

As is the case for research linking social support from fathers with infant development, a strong argument can be made for an indirect effect between grandparent contact and infant development. Providing mothers with assistance may reduce some of the stress associated with the care of an infant and may encourage sensitive, responsive, involved maternal behavior. No clear evidence of such an indirect effect on infant competence or infant mental health is available, however. Moreover, the fact that much of the assistance involves direct care of an infant argues very strongly that at least some of the "effect" on the infant's development is the result of the grandparent's direct contact and interaction with the infant. Evidence in support of a direct effect of grandparents on infant development is considered next.

Direct Effects

The likelihood that grandparents promote infant development in significant ways is consistent not just with the frequency of contact between grandparents and infants, but with the nature of the interaction that occurs when they are together. Several studies of infants of different ages suggest that grandparents interact with their grandchildren much as parents do with their children, and that infants treat their parents and their grandparents almost interchangeably in some circumstances.

Feinman and Roberts (1985) reported that 12-month-old infants behaved differently with their mothers than with most other adults with whom they interacted regularly. They did not differentiate, however, between their mothers and grandmothers. Myers, Jarvis, and Creasey (1987) reported similarly that the only difference in reaction to mothers and grandmothers, in a version of the Strange Situation, was that infants were more frequently in proximity to their mothers than to their grandmothers when both were in the room. Infants did not cry more or less at the leaving of mothers or grandmothers, nor did they show a differential change in play after mothers or grandmothers left or returned.

In contrast, their behavior to a stranger differed clearly and significantly from their behavior with mothers and grandmothers, suggesting that the similarity in their interaction with mothers and grandmothers was unique. The results of these studies are particularly impressive because, in both, none of the grandmothers lived in the same household as the grandchildren, although the grandmothers did see the grandchildren very frequently. Thus, it appears that infants who have frequent contact with grandmothers interact with them in ways that are similar to the way they relate to their parents, and that make the grandmothers potentially powerful sources of influence on infant development and infant mental health.

Similar to the influence of fathers on their children, the impact of grandparents on the development and well-being of their grandchildren undoubtedly depends on the extent and quality of the grandparent-grandchild contact, as well as on the quantity and quality of the parent-child interaction. When parents are fully engaged with their children and the interactive styles of parents and grandparents are similar, the impact of grandparents may be largely "redundant" with respect to the outcomes typically studied, as Lamb (1979) has suggested with respect to father-mother effects. Through the overlap in their behavior with the experiences parents provide their infants, grandparents may create a more efficient learning system for the grandchildren. The impact of grandparental involvement and interaction may be most apparent in infant development, however, when the parents are relatively uninvolved or unskillful and the greater involvement and skill of the grandparents may compensate for this lack.

Evidence that grandparents serve as backup socialization agents and contribute in significant ways to the development and mental health of their grandchildren comes from several sources. Rutter (1985) has reported evidence that a child with a psychiatrically disturbed parent is less likely to show psychological disturbance in turn if a "supportive adult," who is usually a relative and most often a grandmother, has played an active role in the child's care. Werner and Smith (1982) identified children from their longitudinal study on Kauai who were at risk for poor development, but who by age 18 showed no sign of deviant outcomes. During infancy, one protective factor was the absence of prolonged separations from the mother, including separations due to maternal employment, *without adequate*

child care. Many of these resilient children experienced long separations from their mothers, but were cared for by other family members—typically grandmothers who provided them with consistency and love. This involvement of grandmothers and grandfathers usually continued throughout childhood and adolescence, and in interviews at age 18, many of the resilient children "gave credit to their grandparents for the nurturance they had received in childhood and the structure and guidance they had provided for them in adolescence" (Werner, 1984, p. 98).

Further evidence that grandmothers' involvement in the care of their grandchildren during infancy may foster their social-emotional adjustment comes from a study by Benn and Saltz (1989) of adolescent mothers and their infants. All grandmothers lived with their daughters and grandchildren, but they varied in the extent to which they were involved in the care of the infants. Infants of grandmothers who were most directly involved in their care were more likely to be securely attached to their mothers than were other infants. The inference that this effect was a direct one is based on other evidence from the study, which indicated that the mothers themselves were not, by their own report, particularly good caregivers to their infants. The investigators suggest, however, that because not much was required of the mothers, they may have been playful and nurturant during the times they were together with their infants (much like fathers in two-parent families), fostering a secure attachment thereby. From this perspective, the grandmothers' role was primarily to limit the infants' demands to a level that was manageable for the mothers. Another intriguing possibility, which is consistent with a systems approach to infant mental health, is that the grandmothers may also have nurtured the infants in a way that promoted secure attachments with themselves and the positive affect and confident exploratory behavior that accompany such attachments. These infant behaviors may have elicited a degree of engagement and responsiveness from the adolescent mothers that in turn contributed to the secure attachment between mothers and infants. These data confirm Bronfenbrenner's (1979) thesis that a critical factor in a child's development is the active involvement of at least one adult who is simply crazy about the child. Clearly, a grandparent can be that person, and facilitating such grandparent-grandchild relationships may be an impor-

tant preventative measure in fostering children's mental health.

Grandparents as Primary Caregivers

In many contexts, grandparents take on the primary role of nurturing and socializing children, which is typically allocated to parents in middle-class Caucasian families. Werner (1984) reports, for example, that fosterage or informal adoption by grandparents has been common in Polynesian island societies, and that in modern Hawaii grandparents continue to "*hanai*" grandchildren, especially if a daughter bears an out-of-wedlock child. Not only is the practice of surrogate parenting not diminishing; in certain groups (most notably in some poor black communities), it appears to be increasing as male unemployment, the number of out-of-wedlock births not placed for adoption, and the incidence of drug addiction among young black parents rise (Burton & Dilworth-Anderson, 1991). Burton (1990) reports that in one black community in which economic circumstances have undermined the ability of black males to contribute to the support of their families, teenage childbearing combined with grandmother surrogate parenting has become an acceptable and highly functional life course strategy. Early childbearing is encouraged to give grandmothers the "opportunity to experience the parent role" while they still have the energy to care for young children; young mothers contribute to the family by caring for the great-grandmother generation.

Emphasis on the beneficial effects to infants of grandparent care should not lead us to overlook the possibility of undesirable consequences for infants and grandmothers alike. Not all grandmothers wish to take on the role of surrogate parent to an infant or young child, and this is particularly likely to be the case when grandmotherhood occurs "too early." In an interview study of black grandmothers, Burton (1985) found that women who became grandmothers before the age of 38 were unhappy with the role because it interfered with other activities and relationships. From the infants' point of view, such reluctant grandmothers often rejected the role themselves, leaving the great-grandmothers to take on the responsibility of caring for the new babies. From the great-grandmothers' own accounts, this was a daunting task for women in their 60s or early 70s, often in poor health,

and frequently caring for several grandchildren and great-grandchildren (Burton, 1989). By the second year of life, if not sooner, caregivers must create safe environments for increasingly mobile infants, and they must be able to set limits on behavior in kind but firm ways. In many cases, aging grandparents may not be up to the task, at least in the absence of extensive support from professionals and from other family members.

To our knowledge, there has been no research on adverse effects of grandparent care on infants; however, this may become available in the not too distant future, given the prevalence of relative care of infants and children while mothers are employed outside the home (Klein, 1985). A child may also suffer emotionally as a result of such informal arrangements if a falling out between the grandmother and mother, or a change in the mother's life, results in the abrupt removal of the infant from an important attachment figure. Differences between mothers and grandmothers with respect to expectations for behavior and implementation of routines may also be problematic for children where caregiving is shared, especially if the adults criticize each other publicly.

None of these potential pitfalls of grandparental care argues against the involvement of grandmothers as supplementary or surrogate parents. They suggest, however, that assistance in anticipating and resolving potential conflicts between the caregiving adults may be critical to the success of this venture. In one study of adolescent mothers, young mothers spoke forthrightly about their conflicts with their mothers (and partners) over child care, and endorsed a plan that would include those with whom they shared caregiving responsibility in the delivery of advice on child care (Crockenberg, 1986). Social welfare professionals are often in a position to legitimate grandparents as alternate or supportive caregivers of infants and young children and to arrange for the financial and other resources that will make this caregiving economically feasible. Werner (1984), citing Red Horse et al. (1978), reports, however, that welfare case workers are often reluctant to place children (especially infants) with grandparents who are themselves poor and members of an ethnic or racial group stigmatized in our predominantly Anglo-American culture, despite a history of extended family involvement within such groups (Hill, 1977; Martin & Martin, 1978; Red Horse et al., 1978).

Grandfathers

Parke and Tinsley's (1988) chapter on the role of grandfathers in the context of the family summarizes the relatively limited information available on grandfathers and their infant grandchildren. Although grandfathers were more behaviorally responsive to unfamiliar infants in a waiting room than men at any other stage of life except fathers of young children, and although they approach and touched unfamiliar infants more often than other men (Feldman & Nash, 1978, 1979; Feldman, Biringen, & Nash, 1981; Feldman, Nash, & Curtrona, 1977), other evidence suggests that their direct involvement in the care of their own infant grandchildren is relatively limited in comparison with that of grandmothers (McGreal, 1985). In Crockenberg's (1987b, 1988a) studies of U.S. and English adolescent mothers, grandfathers were never identified as frequent or very frequent sources of social support by the young mothers when the infants were 3 months old. Like the grandfathers in Tinsley and Parke's (1984b) research, however, the grandfathers in these studies often provided financial support to their adult/teenage children that was meant to benefit their grandchildren as well.

Tinsley and Parke's (1987) and Parke and Tinsley's (1988) reports of their research on grandfathers confirm that grandfathers are less competent than grandmothers and parents when they are instructed to play with their infant grandchildren, and that this lack is apparent in the infants' behavior. When infants were with their grandfathers, they laughed and smiled less and fussed more than when they were with parents or grandmothers. Presumably, the relatively lower interactive competence of grandfathers is a function of experience, and grandfathers who interact more with their infant grandchildren will be more skilled than those who interact less.

There are some exceptions, moreover, to what appears to be low grandfather involvement and likely low grandfather influence on development during infancy. In a study by Radin, Oyserman, and Benn (1989), grandfathers and grandchildren who lived in the same home were studied. The mothers in these families were all adolescents, and the fathers of the infants were absent from the households. The level and quality of a grandfather's involvement, rather than his presence per se, were associated with infant emotional development and behavior at 12 and 24

months. When grandfathers were highly nurturant, infants, especially females, showed less negative affect in potentially stressful situations—less fear during administration of the Bayley, and less anger, fear, or distress during the Strange Situation. High grandfather nurturance was also associated at 24 months with less compliance with the teen mothers. High grandfather restrictiveness was similarly associated with less cooperation with the teen mothers at both ages.

This is the clearest evidence to date of the possible impact of grandfather involvement in infant development, and indicates the importance of considering qualitative differences in grandfather behavior. As the investigators suggest, however, the impact of even "positive" grandfather behavior may not be entirely beneficial when considered from the viewpoint of the family system as a whole. For example, a nurturant grandfather may inadvertently undermine a teen mother's attempt to exercise control over her 2-year-old. Alternatively, the grandfather may be compensating for an overcontrolling mother whose own overcontrol accounts for the infant's lack of compliance. Because collinearity (correlations between the behavior of grandfathers and other family members) was not controlled for in the Radin et al. study, it is also possible that some of the influence attributed to grandfathers was an artifact of the influence of the mothers and grandmothers on infant development.

Summary

Infants and grandparents who regularly see each other interact in much the same way as infants and parents, suggesting that some grandmothers and grandfathers may be important sources of influence on infant development. Benefits of grandparental contact are most apparent when infants are otherwise at risk for poor development by virtue of their parents' characteristics or the context of their lives, and grandparents provide the consistent loving care associated with good development outcome.

The available research is consistent with the view that grandparents are an extremely valuable resource in promoting infant mental health. It suggests that one way professionals can address the mental health needs of infants is by providing grandparents with information about child care and by creating opportunities for them to develop skills for being effective sup-

port persons to their children, the infant's parents. In discussing what they valued in the way their mothers gave support, English adolescent mothers focused on their mothers' respect for their autonomy as a key feature (Crockenberg, 1988b). "She tells me what she thinks," they would say, "but she lets me make my own decisions because I am the baby's mother."

SIBLING INFLUENCES ON INFANT DEVELOPMENT

Indirect Effects

Like research on fathers, early research on the effect of siblings on infant development focused on how the presence of an older sibling or siblings altered the infant's relationship with the mother. In contrast, however, the emphasis with siblings has been on possible negative effects on infants of having older siblings because of the demands older siblings place on mothers, which in turn may affect their ability to engage with the infants. More recently, interest in the possible effects of siblings on infant development has shifted to effects that occur by virtue of an infant's direct contact with a sibling or siblings.

Direct Effects

Dunn wrote in her 1983 review that "little is known about the behavior of very young infants with their older siblings" p. 792, in part because studies have focused on the impact of an infant on an older sibling, rather than the reverse. That infants have very frequent contact with older siblings has been well documented, however, both in diary studies and in observational studies carried out in many cultures. In Lawson and Ingleby's (1974) study of second children, for example, by 1 year of age infants spent almost as much time in interaction with their siblings as they did with their mothers, and far more time than with their fathers. Although no current data are available, we would speculate that among the families of employed mothers in the United States, infants may frequently spend more time with older siblings than they do with either parent. It behooves us, therefore, to consider what the impact of that contact might be on an infant.

Sibling Caretaking

In cultures where older siblings serve as alternate caregivers for their infant siblings, infants appear to form similar attachments to mothers and siblings. Nearly all the infants in Ainsworth's (1967) Ugandan study became attached both to their mothers and to others who shared in their care, typically older sisters. Gussi infants, who were also cared for by both mothers and siblings, showed a similar pattern of attachment to both. And Kikuyu infants in Kenya showed positive affective responses to both mothers and their sibling caregivers as early as 7 months of age (Leiderman & Leiderman, 1974).

Although it is likely to be less extensive and more supervised, and therefore, potentially less helpful to mothers than the care provided by fathers or grandparents, older siblings in modern Western cultures do care for their infant siblings or attempt to do so (Dunn, 1983). There is evidence, moreover, that this care may be effective in providing comfort and security to infants in potentially frightening or stressful circumstances. In Stewart's (1983) study of infants and older siblings in the Strange Situation, more than half of the 4-year-olds attempted to reassure their infant siblings during separation from the mothers, and the infants for their part were calmed by the siblings' intervention. When a stranger entered the room, most of the infants moved closer to the siblings, using them as a "secure base," and only then began to respond to the stranger in a friendly manner. Evidence from an earlier study of infant attachment by Schaffer and Emerson (1964) indicated that infants became attached to older siblings as indicated by the distress at the siblings' absence, pleasure at their return, and preference for them as playmates. In Dunn and Kendrick's (1982) study, 50% of 14-month-old infants with older siblings were reported to miss them in their absence.

Findings of attachment and separation distress raise the possibility that infants abruptly separated from older siblings who have served as attachment figures and comforters may experience a significant loss, accompanied by depressed affect and inhibited play. Such separations may occur, for example, when an older child enters school, when both children are placed in different child care programs, or when siblings are placed with different parents as the result of a divorce or in different foster settings.

Siblings also appear to serve as a secure base for the exploration of infant siblings, and in the role of comforter in the course of longer separations of infants from parents. In the natural setting of a yard at a private home, 16 infants aged 22 months moved farther away from their mothers and stayed away longer when older siblings were present (Samuels, 1980). Heinicke and Westheimer (1966) reported that infants showed less distress at admission to a residential nursery when they were admitted with siblings. These findings suggest that placing infants in child care with older siblings when both parents work outside the home may have a similar effect of reducing any distress associated with the separation, as well as providing parents with another perspective on the infants' experience in their absence. This prediction is consistent with our earlier discussions of father and grandparent effects on infant development; like them, siblings may play a greater role in shaping the infants' experience and hence their development when parents are not available to the infants, or for whatever reason do not provide nurturant, responsive care.

Imitation and Interaction

Older siblings offer infants the opportunity to learn specific behaviors through imitation, through reciprocal interaction, and sometimes through direct teaching. Studies reviewed by Dunn (1983) of both Canadian (Pepler, Corter, & Abramovitch, 1982) and British (Dunn & Kendrick, 1982) families indicated that more than 25% of all interactions between infants between 12 and 24 months of age and their older siblings were imitative, with most of these involving imitation of the older by the younger siblings. Presumably this means that older siblings are potentially powerful models for younger siblings for all kinds of behavior, including those that parents would prefer they did not learn. The study by Dunn and Kendrick (1982) indicated that infant siblings became increasingly aggressive over time, presumably as a result of their exposure to older siblings, although comparison with infants without siblings were not made. Infants may also develop behavioral repertoires or cognitive skills by virtue of interacting with their siblings, who not only perform the behavior themselves, but also create the affective or material context that leads to the adoption of specific behaviors. Dunn and Kendrick (1982)

reported anecdotally, for example, that by 14 months of age, younger siblings demonstrated behavior indicating some understanding of what would annoy the older siblings. In one instance, an infant sibling took on the identity of the older sibling's imaginary playmate in a move that could not have been the result of simple imitation. They also reported demonstrations of prosocial behaviors by infant siblings during the second year of life—behaviors that were attuned to the affective needs of their older siblings.

Turn taking is another skill infants develop in interaction with others. To investigate the role older siblings might play in the development of turn-taking competence, Vandell and Wilson (1987) observed 26 second-born infant boys and girls interacting with their mothers, with their 3- to 6-year-old siblings, and with an unfamiliar peer. In contrast to their interactions with mothers, infants' interactions with siblings involved less turn taking and less contingent responsiveness. Nevertheless, infants with more turn-taking experience with either mothers or older siblings subsequently engaged in more turn taking with peers. Apparently, infants learn more about turn taking through their interaction with their mothers, but skillful siblings may also encourage the development of turn taking skills. Whether the association between sibling turn taking involves a causal influence is unclear, however, because mother and sibling behavior covary.

Sibling-created play experiences may also facilitate infant cognitive and linguistic development, especially when the age space between older and younger siblings is relatively large, although the extant research fails to demonstrate such an effect (Teti, Bond, & Gibbs, 1986; Gibbs, Teti, & Bond, 1987). Although infants in more widely spaced infant dyads experienced a more intellectually and socially stimulating environment than infants where spacing between siblings was closer, there were no associations between any measure of infant-sibling interaction and the infants' cognitive level as assessed on the Bayley Mental Development Index, as observed in the infants' solitary play, or as observed in their linguistic development. In contrast, several aspects of mothers' interaction with infants significantly predicted infant Bayley Mental scores and their level of solitary play, both concurrently and between 12 and 18 months (Teti, Bond, & Gibbs, 1988). The investigators propose that the more limited time

widely spaced siblings spend together may account for the lack of association between more sophisticated sibling play and linguistic interactions and infant cognitive development. Another possibility is that just as fathers and grandparents may have the greatest impact on infant development when mothers are less involved or less competently involved with their infants, so also may older siblings have a greater impact on their infant siblings under such circumstances.

Summary

The potential for siblings to influence the development of their younger siblings is great in view of the amount of time they typically spend together. The clearest evidence to date of such an influence is in the role older siblings play in providing comfort and security to infant siblings in times of distress and separation from parents. It is also clear that infants imitate older siblings, and we need to know more specifically how this tendency may contribute to the development of competent or incompetent infant behavior, especially in circumstances where parents are less available either as models or as interactive partners for their infants than is typical. For example, do sibling interaction and the positive affect that occurs in the course of that interaction serve as protective factors for infants being cared for by depressed mothers? Or, alternatively, does extensive contact with an angry, aggressive older sibling increase the likelihood that an infant will develop similar behavior? One implication of older sibling influence on infant development, through both modeling and condition setting, is that behavior that has a certain origin for an older child may have an entirely different origin for a younger child.

CONCLUSION

As this chapter reflects, research delineating the subtle processes of early emotion regulation and research documenting the complexity of family systems have largely proceeded independently. One emerging research frontier exists at the interface of these two areas. How are the regulatory influences of multiple social partners integrated in an infant's emerging construction of social and subjective reality? How do we properly conceptualize both the dyadic and systemic nature of family relationships? What developmental and contextual factors influence

the salience of different relationships or different levels of family process at particular points during the first 3 years of life? The questions become particularly pressing in relation to families with negative, dysregulated patterns of interaction and caregiving, especially where conflicting patterns of regulation may be experienced during early development. These complex questions are now motivating new analytic approaches and new conceptual frameworks (Hinde, 1989), with substantial progress on these questions likely to be evident in succeeding editions of this handbook.

REFERENCES

- Ainsworth, M. D. S. (1967). *Infancy in Uganda: Infant care and the growth of love*. Baltimore: Johns Hopkins University Press.
- Belsky, J., Gilstrap, B., & Rovine, M. (1984). The Pennsylvania Infant and Family Development Project I: Stability and change in mother-infant and father-infant interaction in a family setting at one, three, and nine months. *Child Development*, 55, 692-705.
- Belsky, J., & Pensky, E. (1988). Marital change across the transition to parenthood. *Marriage and Family Review*, 12, 133-156.
- Belsky, J., & Rovine, M. J. (1988). Nonmaternal care in the first year of life and the security of infant-parent attachment. *Child Development*, 59, 157-167.
- Belsky, J., Youngblade, L., Rovine, M. J., & Volling, B. (1989). *Patterns of marital change and parent-child interaction*. Paper presented at the biennial meeting of the Society for Research in Child Development, Kansas City, MO.
- Benn, R., & Saltz, E. (1989). The effect of grandmother support on teen parenting and infant attachment patterns within the family. In N. Radin (Chair), *Teen mothers: Their fathers, their mothers, their boyfriends and their babies*. Symposium presented at the biennial meeting of the Society for Research in Child Development, Kansas City, MO.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Burton, L. (1985). *Early and on-time grandmotherhood in multigeneration black families*. Unpublished doctoral dissertation, University of Southern California.
- Burton, L. (1989). *Black grandmothers as a family resource: Perspectives on social service needs*. Paper presented at the National Conference on Mental Health and Aging, University of California at Los Angeles.
- Burton, L. (1990). Teenage childbearing as an alternative life-course strategy in multigenerational black families. *Human Nature*, 2, 123-143.
- Burton, L., & Dilworth-Anderson, P. (1991). The intergenerational family roles of aged black Americans. *Marriage and Family Review*, 16, 311-330.
- Caplan, P. (1989). *Don't blame mother: Mending the mother-daughter relationship*. New York: Harper & Row.
- Clarke-Stewart, K. A. (1978). And daddy makes three: The

- father's impact on mother and young child. *Child Development*, 49, 466-478.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300-314.
- Crnic, K. A., Greenberg, M. T., Ragozin, A. A., Robinson, N. M., & Basham, R. B. (1983). Effects of stress and social support on mothers and premature and full-term infants. *Child Development*, 54, 209-217.
- Crockenberg, S. (1981). Infant irritability, mother responsiveness, and social influences on the security of infant-mother attachment. *Child Development*, 52, 857-865.
- Crockenberg, S. (1986). Professional support for adolescent mothers: Who gives it, how adolescent mothers evaluate it, what they would prefer. *Infant Mental Health Journal*, 7(1), 49-58.
- Crockenberg, S. (1987a). Predictors and correlates of anger toward and punitive control of toddlers by adolescent mothers. *Child Development*, 58, 964-975.
- Crockenberg, S. (1987b). Support for adolescent mothers during the postnatal period: Theory and research. In C. F. Zachariah Boukydis (Ed.), *Research on support for parents and infants in the postnatal period* (pp. 3-24). Norwood, NJ: Ablex.
- Crockenberg, S. (1988a). Social support and parenting. In H. Fitzgerald, B. Lester, & M. Yogman (Eds.), *Theory and research in behavioral pediatrics* (pp. 141-174). New York: Plenum Press.
- Crockenberg, S. (1988b). English teenage mothers: Attitudes, behavior and social support. In E. J. Anthony, C. Koupernik, & C. Chiland (Eds.), *The child in his family: Vol. 8. Perilous development: Child raising and identity formation under stress* (pp. 93-103). New York: Wiley.
- Crockenberg, S., & Covey, S. L. (1991). Marital conflict and externalizing behavior in children. In D. Cicchetti (Ed.), *Rochester Symposium on Developmental Psychopathology: Vol. 3. Research and clinical contributions to a theory of developmental psychopathology* (pp. 235-260). Rochester, NY: University of Rochester Press.
- Cummings, E. M., Zahn-Waxler, C., & Radke-Yarrow, M. (1981). Young children's responses to expressions of anger and affection by others in the family. *Child Development*, 52, 1274-1282.
- Dean, A., & Lin, N. (1977). The stress-buffering role of social support. *Journal of Nervous and Mental Disease*, 165(6), 403-417.
- Dickie, J. R., & Matheson, P. (1984). *Mother-father-infant: Who needs support?* Paper presented at the meeting of the American Psychological Association, Toronto.
- Dickstein, S., & Parke, R. D. (1988). Social referencing: A glance at fathers and marriage. *Child Development*, 59, 506-511.
- Dunn, J. (1983). Sibling relationships in early childhood. *Child Development*, 54, 787-811.
- Dunn, J., & Kendrick, C. (1982). *Siblings: Love, envy and understanding*. Cambridge, MA: Harvard University Press.
- Durrett, M. E., Otaki, M., & Richards, P. (1984). Attachment and the mother's perception of support from the father. *International Journal of Behavioral Development*, 7, 167-176.
- Easterbrooks, M. A., & Goldberg, W. A. (1990). Toddler-parent attachment: Relation to children's socioperational functioning during kindergarten. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, research, and intervention* (pp. 221-244). Chicago: University of Chicago Press.
- Feinman, S., & Roberts, D. (1985, April). *Infant's interaction with grandparents, relatives, and adult friends of the family*. Paper presented at the biennial meeting of the Society for Research in Child Development, Toronto.
- Feiring, C., & Taylor, J. (1982). *The influence of the infant and secondary parent on maternal behaviors*. Unpublished manuscript, Educational Testing Service.
- Feldman, S. S., Biringen, Z. C., & Nash, S. C. (1981). Fluctuations of sex-related self-attributions as a function of stage of family life cycle. *Developmental Psychology*, 17, 24-35.
- Feldman, S. S., & Nash, S. C. (1978). Interest in babies during young adulthood. *Child Development*, 49, 617-622.
- Feldman, S. S., & Nash, S. C. (1979). Sex differences in responsiveness to babies among mature adults. *Developmental Psychology*, 15, 430-436.
- Feldman, S. S., Nash, S. C., & Cutrona, C. (1977). The influence of age and sex on responsiveness to babies. *Developmental Psychology*, 13, 675-676.
- Field, T. M. (1978). Interaction behaviors of primary versus secondary caretaker fathers. *Developmental Psychology*, 14, 183-185.
- Fraiberg, S. (Ed.). (1980). *Clinical studies in infant mental health: The first year of life*. New York: Basic Books.
- Gibbs, E. D., Teti, D. M., & Bond, L. A. (1987). Infant-sibling communication: Relationships to birth-spacing and cognitive and linguistic development. *Infant Behavior and Development*, 10, 307-323.
- Goldberg, W. A., & Easterbrooks, M. A. (1984). The role of marital quality in toddler development. *Child Development*, 55, 504-515.
- Gottman, J. (1979). *Marital interaction: Experimental investigations*. New York: Academic Press.
- Grossman, F. K., Eichler, L. S., & Winickoff, S. A. (1980). *Pregnancy, birth, and parenthood*. San Francisco: Jossey-Bass.
- Hazen, N., & Durrett, M. (1982). Relationship of security of attachment to exploration and cognitive mapping ability in two-year-olds. *Developmental Psychology*, 18, 751-759.
- Heinicke, C. M., & Westheimer, I. J. (1966). *Brief separations*. New York: International Universities Press.
- Hill, R. (1977). *Informal adoption among black families*. New York: National Urban League.
- Hinde, R. A. (1989). Ethological and relationships approaches. In R. Vasta (Ed.), *Annals of Child Development* (Vol. 6, pp. 251-285). Greenwich, CT: JAI Press.
- Howes, P. W., & Markman, H. J. (1989). Marital quality and child attachment: A longitudinal investigation. *Child Development*, 60, 1044-1051.
- Hunter, F. T., McCarthy, M. E., MacTurk, R. H., & Vietze, P. M. (1987). Infants' social-constructive interactions with mothers and fathers. *Developmental Psychology*, 23, 249-254.
- Jackson, J. J. (1971). Sex and social class variations in black aged parent-adult child relationships. *Aging Human Development*, 2, 96-107.
- Klein, R. P. (1985). Caregiving arrangements by employed women with children under 1 year of age. *Developmental Psychology*, 21, 403-406.
- Kotelchuck, M. (1976). The infant's relationship to the

- father: Experimental evidence. In M. E. Lamb (Ed.), *The role of the father in child development* (pp. 329-344). New York: Wiley.
- Lamb, M. E. (1977a). Father-infant and mother-infant interaction in the first year of life. *Child Development*, 48, 167-181.
- Lamb, M. E. (1977b). The development of mother-infant and father-infant attachments in the second year of life. *Developmental Psychology*, 13, 639-649.
- Lamb, M. E. (1979). Parental influences and the father's role: A personal perspective. *American Psychologist*, 34, 938-943.
- Lamb, M. E. (1982). *Nontraditional families: Parenting and child development*. Hillsdale, NJ: Erlbaum.
- Lamb, M. E., & Elster, A. B. (1985). Adolescent mother-infant-father relationships. *Developmental Psychology*, 21, 768-773.
- Lawson, A., & Ingleby, J. D. (1974). Daily routines of preschool children: Effects of age, birth order, sex and social class, and developmental correlates. *Psychological Medicine*, 4, 399-415.
- Leiderman, P., & Leiderman, G. (1974). Familial influences on infant development in an East African agricultural community. In E. J. Anthony & C. Koupennik (Eds.), *The child in his family*: (Vol. 3, pp. 305-330). New York: Wiley.
- Levitt, M. J., Weber, R. A., & Clark, M. C. (1986). Social network relationships as sources of maternal support and well-being. *Development Psychology*, 22(3), 310-316.
- Lewis, M. (1987). Social development in infancy and early childhood. In J. D. Osofsky (Ed.), *Handbook of infant development* (2nd ed., pp. 419-493). New York: Wiley.
- Main, M., & Weston, D. R. (1981). The quality of the toddler's relationship to mother and to father: Related to conflict behavior and the readiness to establish new relationships. *Child Development*, 52, 932-940.
- Markman, H. J., & Clements, M. (1991). *Why fathers' pre-birth negativity and a first-born daughter predict marital problems: Results from a ten year investigation*. Paper presented at the biennial meeting of the Society for Research in Child Development, Seattle.
- Martin, E. P., & Martin, J. M. (1978). *The black extended family*. Chicago: University of Chicago Press.
- Marvin, R., & Stewart, R. (1990). A family systems framework for the study of attachment. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 51-86). Chicago: University of Chicago Press.
- McGreal, C. E. (1985). *The grandparent-grandchild relationship during the neonatal period*. Paper presented at the biennial meeting of the Society for Research in Child Development, Toronto.
- McGuire, J. (1982). Gender-specific differences in early childhood: The impact of the father. In N. Beail & J. McGuire (Eds.), *Fathers: Psychological Perspectives*. London: Junction Books.
- Myers, B. J., Jarvis, P. A., & Creasey, G. L. (1987). Infants' behavior with their mothers and grandmothers. *Infant Behavior and Development*, 10, 245-259.
- Neugarten, B., & Weinstein, K. (1964). The changing American grandparent. *Journal of Marriage and the Family*, 26, 197-205.
- Ninio, A., & Rinott, N. (1988). Fathers' involvement in the care of their infants and their attributions of cognitive competence to infants. *Child Development*, 59, 652-663.
- Nugent, J. K., Yogman, M., Lester, B., & Hoffman, J. (1988). The father's impact on infant development in the first critical year of life. In E. J. Anthony, C. Koupennik, & C. Chiland (Eds.), *The child in his family: Vol. 8. Perilous development: Child raising and identity formation under stress* (pp. 117-142). New York: Wiley.
- Oppenheim, D., Sagi, A., & Lamb, M. (1988). Infant-adult attachments on the kibbutz and their relation to socioemotional development four years later. *Developmental Psychology*, 24, 427-433.
- Oyserman, D., Radin, N., & Saltz, E. (1991). *Determinants of nurturant parenting in teen mothers living at home*. Unpublished manuscript, University of Michigan.
- Parke, R. D., & Tinsley, B. J. (1987). Family interaction in infancy. In J. D. Osofsky (Ed.), *Handbook of infant development* (2nd ed., pp. 579-641). New York: Wiley.
- Parke, R. D., & Tinsley, B. J. (1988). The role of grandfathers in the context of the family. In P. Bronstein & C. P. Cowan (Eds.), *Fatherhood today: Men's changing role in the family* (pp. 236-250). New York: Wiley.
- Pedersen, F. A. (1975, September). *Mother, father and infant interactive system*. Paper presented at the annual convention of the American Psychological Association, Chicago.
- Pedersen, F. A., Anderson, B. T., & Cain, R. L. (1980). Parent-infant and husband-wife interactions observed at age five months. In F. A. Pedersen (Ed.), *The father-infant relationship* (pp. 71-86). New York: Praeger.
- Pedersen, F. A., Suwalsky, J. T. D., Cain, R. L., Zaslow, M. J., & Rabinovich, B. A. (1987). Paternal care of infants during maternal separations: Associations with father-infant interaction at one year. *Psychiatry*, 50, 193-205.
- Pedersen, F. A., Yarrow, L. J., Anderson, B. J., & Cain, R. L. (1979). Conceptualization of father influences in the infancy period. In M. Lewis & L. A. Rosenblum (Eds.), *The child and its family* (pp. 45-66). New York: Plenum Press.
- Pepler, D., Côtter, C., & Abramovitch, R. (1982). Social relations among children: Siblings and peers. In K. Rubin & H. Ross (Eds.), *Peer relationships and social skills in childhood* (pp. 209-227). New York: Springer-Verlag.
- Power, T. G., & Parke, R. D. (1983). Patterns of mother and father play with their 8 month old infant: A multiple analyses approach. *Infant Behavior and Development*, 6, 453-459.
- Quinton, D., & Rutter, M. (1985). Parenting behavior of mothers raised "in care." In R. Nicol (Ed.), *Longitudinal studies in child psychology and psychiatry* (pp. 157-201). Chichester, England: Wiley.
- Radin, N., Oyserman, D., & Benn, R. (1989). *The influence of grandfathers on the young children of teen mothers*. Paper presented at the biennial meeting of the Society for Research in Child Development, Kansas City, MO.
- Red Horse, J. C., Lewis, R., Feit, H., & Decker, M. (1978). Family behavior of urban American Indians. *Social Casework*, 59, 67-72.
- Richards, M. P. M., Dunn, J. F., & Antonis, B. (1977). Caretaking in the first year of life: The role of fathers' and mothers' social isolation. *Child: Care, Health and Development*, 3, 23-26.

- Russell, C. S. (1974). Transition to parenthood: Problems and gratifications. *Journal of Marriage and the Family*, 36, 294-301.
- Rutter, M. (1985). Resilience in the face of adversity. *British Journal of Psychiatry*, 147, 598-611.
- Samuels, H. R. (1980). The effect of an older sibling on infant locomotor exploration of a new environment. *Child Development*, 51, 607-609.
- Schaffer, H. R., & Emerson, P. E. (1964). The development of social attachments in infancy. *Monographs of the Society for Research in Child Development*, 29(3, Serial No. 94).
- Sena-Rivera, J. (1979). La familia Chicano. In E. Corfman (Ed.), *Families today* (Vol. 1, pp. 67-128). Washington, DC: U.S. Government Printing Office.
- Stewart, R. B. (1983). Sibling attachment relationships: Child-infant interactions in the Strange Situation. *Developmental Psychology*, 19(2), 192-199.
- Teti, D. M., Bond, L. A., & Gibbs, E. D. (1986). Sibling-created experiences: Relationships to birth-spacing and infant cognitive development. *Infant Behavior and Development*, 9, 27-42.
- Teti, D. M., Bond, L. A., & Gibbs, E. D. (1988). Mothers, fathers, and siblings: A comparison of play styles and their influence upon infant cognitive level. *International Journal of Behavioral Development*, 11(4), 415-432.
- Tinsley, B. J., & Parke, R. D. (1984a). Fatherhood: Historical and contemporary perspectives. In K. McCluskey & H. Reese (Eds.), *Life span development: Historical and generational effects* (pp. 203-248). New York: Academic Press.
- Tinsley, B. J., & Parke, R. D. (1984b). The contemporary impact of the extended family on the nuclear family: Grandparents as support and socialization agents. In M. Lewis (Ed.), *Beyond the dyad* (pp. 161-194). New York: Plenum Press.
- Tinsley, B. J., & Parke, R. D. (1987). Grandparents as interactive and social support agents for families with young infants. *International Journal of Aging and Human Development*, 25(4), 259-277.
- Vandell, D. L., & Wilson, K. S. (1987). Infants' interactions with mother, sibling, and peer: Contrasts and relations between interaction systems. *Child Development*, 58, 176-186.
- Volling, B., & Belsky, J. (1985, April). *The interaction of marriage and parenting*. Paper presented at the biennial meetings of the Society for Research in Child Development, Toronto.
- Werner, E. E. (1984). *Child care: Kith, kin, and hired hands*. Baltimore: University Park Press.
- Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A longitudinal study of resilient children and youth*. New York: McGraw-Hill.
- Yogman, M. W. (1982). Development of the father-infant relationship. In H. Fitzgerald, B. Lester, & M. W. Yogman (Eds.), *Theory and research in behavioral pediatrics* (Vol. 1, pp. 221-279). New York: Plenum Press.