INFANT GAZE AVERTING
DURING SOCIAL INTERACTION

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ABSTRACT

The general aim of the present research was to investigate infant gaze averting during social interaction. Two preliminary hypotheses were examined : first, that infant gaze averting would occur spontaneously during social interaction, and second that any gaze averting would increase alongside developmental progress.

A short-term (nine week) longitudinal case-study approach with home visits was planned. Conducting the research in the participants' homes was novel for this area of study. Prior studies had all been conducted in a laboratory setting. Six mother-infant dyads agreed to participate. The primiparous mothers were all full-time caregivers with an age range of 21-26 years. The healthy, full-term infants were all aged approximately three months at commencement. There were three of each gender.

Visits to each pair occurred every nine/ten days. The following three sources of data collection were implemented: interview, observation and daily diary recording by the mother. Target behaviours noted were: episodes of active gaze averting and new developmental milestones (according to a developmental checklist formulated for the present study). Other relevant qualitative information was also gathered at each visit.

Although basically a qualitative study, quantitative data was incorporated in the form of graphs of each infant's gaze averting frequency and developmental progress. The main findings here were:

infant gaze averting did occur during interaction with mother and other caregivers for all six cases; the prediction that there is a relationship between gaze averting and developmental progress was not supported. Descriptive data provided an interesting and unexpected outcome. This was the discovery of three separate styles of gaze averting. These were described, their various criteria identified, and a classification system developed.

The results of the present study have important practical implications. They present a challenge to one current theory of psychopathology which maintains that gaze averting is abnormal and may be a precursor of autism. This has ramifications for the present diagnosic system and treatment of some childhood psychopathologies. The findings of the present study indicate that a re-think of perspectives regarding gaze averting (of all styles) may be required.

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CHAPTER ONE

INTRODUCTION

The broad aim of the present research is to investigate gaze averting behaviour in infants during social interaction. In this study (for practical reasons) it primarily involves interaction with the mother. Such disturbance to mother-infant communication is currently receiving a great deal of attention in the literature. As well, it is the centre of controversy regarding its appropriateness within the mother-infant dyad.

For clarity and readability, the masculine pronoun will be used when referring generally to an infant throughout this report.

The Social Infant

Social interaction between caregiver and infant is a critical experience in the infant's first phase of learning and participating in the world. It has been referred to as a "unique human interchange" (Stern, 1974; p.187). In dyadic interactions the infant acquires information about himself, about the caregiving person, and about the relationship. According to Keller & Gauder (1987), this knowledge forms the basis of cognitive concepts such as causality, motivational systems, self-evaluation. Tronick, Als, Adamson, Wise, & Brazelton (1978) state that in face-to-face interactions young infants begin to learn and define the rules of social interaction. Within these affective interchanges with caregivers they learn: (1) the consequences of their own behaviour;

(2) their caregiver's characteristics; and (3) cognitive and affective information necessary for identifying with their caregivers and for identifying themselves. Stern (1974) believes this communication system is an important source of nurturance for their cognitive and affective development. Field (1977) also endorses this view by saying that the first interactions between parent and baby set the stage for social, emotional and cognitive development.

The competence of the infant as an effective social partner was grossly underestimated for a long time (Papousek & Papousek, 1979; Trevarthen, Murray, & Hubley, 1981). It was believed, as Stern (1977) notes, that the infant arrived into the world "as a blank page to be written on by his experiences with life" (p43). Through experimental research it is now known that the newborn possesses a range of intrinsic perceptual inclinations, learning abilities, motor patterns, cognitive tendencies, and highly differentiated emotional states. (Ainsworth, Bell, & Stayton, 1974; Papousek & Papousek, 1979; Stern, 1977; Trevarthen et al., 1981). One such example of revealing research was that of Meltzoff & Moore (1977) which demonstrated the neonate's ability to imitate both facial and manual gestures (accomplished through an active matching process) aged just 12-21 days! Also, in order to demonstrate that young infants are social beings we need to evidence that they can discern between the social (person) world and the nonsocial (object) world. Ellsworth (in press) conducted a person-object differentiation experimental study. Her results showed clearly that infants behaved differently when presented with a dynamic interactive object than

with a person.

Gaze

Thus the infant arrives well-equipped for communication. Many infant development researchers maintain that central to this communicative process is mutual gaze or eye-to-eye contact (e.g. Brazelton, Koslowski, & Main, 1974; Field, 1977; Keller & Gauda, 1987; Moss & Robson, 1968; Slee, 1984; Stern, 1977). Moss & Robson (1968) state that "to be looked at is tantamount to being acknowledged; and to be acknowledged is a prerequisite for both social interchange and the establishment of more permanent attachments" (p.401). From the very beginning the infant finds the human face fascinating (Stern, 1977). Carpenter (1974) states that the very young infant prefers to look at the mother more than at strangers, appearing to discern the mother's face from that of another female. Fantz (1963) has experimentally shown with artificial stimuli that neonates prefer to look at simplified face-like patterns than non-face patterns.

In the neonatal period visual acuity is low, but there is rapid improvement in acuity and contrast sensitivity in the second and third month. Adult levels of competence are reached by three months of age, or soon after (Haith, 1978; Stern, 1974; Trevarthen et al. 1981). However the newborn's low acuity must not be regarded as a handicap to the visual regulation of complex psychological functions. According to Trevarthen et al. (1981), their resolution is perfectly adequate to allow the infant to perceive a well-lit

mother's face within two feet and to discriminate larger changes in her expression. (The newborn's focal distance is just eight inches (approximately) which, interestingly, is the distance from mother's face to infant's eyes in the feeding position).

Therefore, right from the outset caregiver and infant can, and do, enjoy a special type of mutual gaze. These long "loving" mutual looks are often accompanied by little in the way of vocal or facial behaviours from either side, according to Stern (1974). He speaks of "the aura of a very quiet magic moment" (p.209). These moments take on an added dimension of "specialness" for the caregiver when, at about six weeks, the infant effects precise eye-to-eye contact. This well-aimed visual orientating to the adult's eyes seems to mark the beginning of "strong" communication (Trevarthen, 1979; Trevarthen et al., 1981). During earlier mutual gazing, the young infant clearly orientated to the adult's face but directed his gaze obliquely, at the top of the head, or slightly to the side. Often this developmental landmark has a dramatic effect on the relationship, in that the mother may feel, for the first time, that she and the baby are finally "connected" (Stern, 1977).

The visual motor system normally reaches functional maturity at a point in development (approximately three months) when other motor behaviours are relatively less mature (White, Castle, & Held, 1964). Accordingly, as Stern (1974, 1977) points out, the gazing patterns between a mother and her infant of this age constitute the first dyadic system in which both partners have almost equal control and facility. The infant's focal distance has a range almost as

extensive as adults. The infant is equally as skilled as an adult in rapidly moving his eyes to pursue an object or hold a fixation, and he is equally capable of quickly accommodating his eyes to bring objects into focus. This developmental milestone is extraordinary when contrasted with the immaturity of most of his other systems, for example, speech, gesture, locomotion, manipulation of objects. (The two other motor systems which are quite developed at this point are sucking and head movements). Hence, mutual gazing is one of the earliest channels of communication open to the mother-infant dyad (Moss & Robson, 1968).

Gaze Averting

It was not until the mid 1960's that the importance of gaze as a crucial social and bonding behaviour began to be realized (Stern, 1977). Over the last two decades, as the literature endorsing this theory grew, so too has an undercurrent of concern regarding the phenomenon of gaze averting. This is just one of nine expressions of intentional negativity reported by Sylvester-Bradley (1981). However, this is the most typical form of infant negativity, and so is generally equated with it. Gaze averting involves the infant actively and deliberately avoiding a caregiver's eye contact. Sylvester-Bradley (1981) described gaze averting as "when the baby spent a disproportionately short time during the interaction looking at her mother" (p.10). He also differentiates between passive and active gaze averting. The former is when the infant stares at nothing in particular for a disproportionately long time (eg. an area of floor), and the latter is when the infant looks at

everything but the mother (high visual interest in surroundings). Active gaze averting, which involves the infant's will, is the focus of the present research.

Another definition of gaze averting comes from Keller & Gauda (1987) who document it as "an active behaviour which cuts off social interactions and is accompanied by mimical behaviour and head turning" (p.135). They point out that this definition of gaze averting is conceptually different from protesting (negative vocalization, fussing and crying with no eye contact) and simply not-noticing. What is under scrutiny here, therefore, is a looking-away behaviour at the infant's will which is not merely the protest signal for tiredness or upset.

There has traditionally been a theoretical link between gaze averting and psychopathology. Claims that gaze averting is "abnormal" feed the aforementioned concern regarding it as an infant behaviour. The precursors of this theory are Hutt & Ounsted (1966, 1970) who base these claims on the assertion that gaze averting is a persistent and characteristic feature in children with the syndrome of "early infantile autism" (Kanner, 1973). However the empirical reports of this behaviour in the literature are so numerous that it leads one to query the absoluteness of claims that gaze averting is pathological.

Incidental Reports of Gaze Averting

An early finding of Fitzgerald (1968), in infant visual-preference

tests, was that by about four months of age the infant attended longer to a stranger's face than to the face of the mother. This was explained in terms of the "discrepancy hypothesis", which predicts that the infant will pay most attention to objects which are moderately dissimilar from those things that they already know, (or of which they have already formed schemata). Thus, stimuli which are very familiar, or highly discrepant from what they have seen before, will receive relatively little attention. However, Sylvester-Bradley (1981) has since shown this explanation to be inaccurate with his naturalistically recorded infant-adult interaction studies. In a longitudinal study of five infants (aged between 6 and 26 weeks), attention to mothers, to strangers, and to two face-masks (one novel and one familiar) was compared. The results showed an overall decrease in visual interest to all stimuli after ten weeks of age. Apparently cognitive and perceptual dimensions are not the only controlling forces of infant attention. Like adult gaze, more complex social parameters play a vital role.

In line with this suggestion, Trevarthen (1979) hypothesized that the period from 11-20 weeks is a period of relative negativity of motivation toward others. He first notes the changing direction of visual attention in the two-month-old, who can elect to look at things of interest and can reject or avoid by looking away. He points out that this period separates an early interest in face-to-face interaction, during the second month of life, from the development of interpersonal games during the fifth and sixth months (such as "pat-a-cake" and "peek-a-boo").

There was a group of earlier researchers who did not believe that truly deliberate negativity, such as gaze averting, could be observed until the infant was quite a bit older than most reports stipulate. Spitz (1957), for instance, thought that it could only begin at eight or nine months after birth. This view aligns with that of most attachment theorists, who discuss only the positive aspects of the infant's behavioural repertoire. Such negative behaviour (which may weaken or interrupt social relationships) is not even discussed until the infant is six months old. Even then, the primary interest is in negativity toward strangers (eg. Bowlby, 1969; Solomon & Decarie, 1976). However, one attachment theorist who does acknowledge the occurrence of gaze averting in young infants is Robson (1967). He states that he has "seen a number of babies during the first three months of life who persistently avoid maternal eye contact" (p.19). Klein (1953b) (although also from the psychoanalytic school of thought) differs with Spitz and reports that such averting occurs from birth.

Brazelton et al. (1974) propose that the baby as young as one month naturally fluctuates between approach and withdrawal during interaction with the mother. Thus, during the negative part of the cycle gaze averting is one of several strategies used to withdraw. (Other strategies include crying, withdrawing into a sleep state, arching away).

Papousek & Papousek (1979) report "sudden head turns in the 'incorrect' direction", and interpret them as an avoidance mechanism (p.189). The response was discovered in newborns, however they

found that the avoidance function of the response became more evident in relatively difficult problem situations in four-month-old infants.

A study conducted by Stechler & Carpenter (1967) followed the behaviour of 14 infants from two to six weeks of age. It was discovered that guided turning-away from the face occurred in all subjects, reaching a peak at two or three weeks. They detected a controlled quality to the behaviour, and reported a range of intensity from a lowering of the eye-lids to rotating the head 80 degrees with a rigidly arched back and fussing.

There is a group of researchers who share a different perspective of gaze averting from the reports mentioned thus far. That is, they describe the behaviour in terms of the infant reallocating his attention from eye contact to other interesting stimuli, rather than rejecting face-to-face interaction. This throws a more positive light on the whole issue. As Stern (1977) writes: "Towards the end of the first half year of life, the infant's love affair with the human face is partially replaced by a consuming interest in objects to reach for, grasp, and manipulate ...Once this happens, the mother-infant interaction becomes quite different. Their play interactions become more a triadic affair among mother, infant, and object" (p.48). Stern calls this phenomenon the "shift to objects." Kaye & Fogel (1980) who discovered increases in periods of inattention to mother from 6 to 26 weeks, also viewed this as a shift in the infant's agenda. However, they describe it as "a shift from mere responsiveness to spontaneous, reciprocal communication"

(p.463). Schaffer (1977) speaks of a change in infant preferences over the first six months. The range of visual stimuli appears to extend to include animate objects and their actions, other than just the mother's face, as well as inanimate objects and their motions.

Therefore faces, especially mother's faces, occupy a declining share of their attention in favour of these new stimuli. A longitudinal study of 30 infants, aged between one and seven months, conducted by Lamb, Morrison, & Malkin (1987) also found this effect. They predicted that the face-to-face situation would become increasingly engaging over the first trimester of the first year following which interest would decline as the infant's capabilities and range of interests expand. The descriptive evidence obtained supported their hypothesis about developmental changes in infant behaviour. However, they found that the reduction in degree of interest did not usually occur until approximately five months and thereafter. In fact they report that the face-to-face situation is of greatest interest to and elicits the most positive interactions among infants between three and five months of age. A secondary finding in this study was that these infants seemed more interested in interaction with strangers than with their mothers, and were more likely to avert their attention from their mothers than from strangers. This discernment is in accord with findings of Fitzgerald (1968) and Schaffer (1977). Cohn & Tronick (1987), in their longitudinal study of dyadic states (following through three, six, and nine months of age), observed a definite move in the infant's interest to objects from the caregiver's face. By six months, time spent looking away from mother is more often spent attending to objects. A growing

body of infant development research therefore, reports gaze averting as a shift in focus rather than a turning-away or rejection. Such a theory depends on the infant's cognitive development. This theoretical perspective will be discussed later in the chapter.

Keller & Gauda (1987) conducted a six-year follow-up study with 20 children and their parents, commencing at two weeks of age. They identified three infant looking patterns; nongazers, high gazers, and gaze averters. Nongazers were defined as children with extremely little eye contact behaviour with either parent (10% of interaction time). Three infants were classified as nongazers. High gazers were infants whose eye contact with one or both parents exceeded the mean values of the total sample, (eg. more than 31% of the interaction time spent gazing at mother). Gaze averters failed to gaze at all at either or both parents during the interaction time, but not in a protesting or not-noticing manner. (As Keller & Gauder's definition of gaze averting, cited earlier in this chapter, makes clear.) Six infants were classified as gaze averters.

Another interesting research study conducted involving gaze averting was that of Field (1977). She compared gaze patterns of normal infants with those of high-risk infants; those born early, late or suffering from various congenital or hereditary problems. The latter group was of interest because they reportedly often have problems in interacting with their mothers. Many of them are hard to feed, unresponsive, fussy and cranky. The mothers may feel guilty, anxious or depressed, and disappointed in the infant's unresponsiveness and lack of cuddliness. These feelings can detract

from normal mother-infant interactions, (Trotter, 1987). Field found that normal infants gazed at their mothers more than did postmatures or high-risk prematures. Another discovery within this study was that an infant (in general) gaze averted most during an attention-getting condition, wherein the mother was most active and her behaviour more adult-like. It appeared that, in some cases anyway, maternal overstimulation was occurring.

A final group of researchers to be included here are those who have investigated the phenomenon of a "rejecting" baby. Thoman (1975) reported two "unusual" observations of her case example. Firstly, an infant spent more time than the other five case studies in the quiet alert state. So, just lying quietly and looking about was common practice for this baby. Secondly, when picked up and held this infant became drowsy and difficult to arouse, even with brisk stimulation tactics. The baby's behaviour was clearly affecting interaction between mother and child. (Amount of face-to-face contact time during feeding sessions was 16% at 10 days (of age) which dropped to 8% by 5 weeks.) So an intervention programme was implemented, designed to increase face-to-face positioning despite the infant's "rejecting response." The infant enjoyed being cradled for brief periods only, and was carried face outwards. Tests at six months revealed otherwise typical development. Thus, the challenge of a unique baby was met successfully by resourceful parents and successful interaction resulted. Thoman proposes: "A great deal of sensitivity would be needed by any parents before they perceived that holding and cuddling their infant actually reduced this attentiveness to his world" (p.189). Very similar behaviour

patterns were found in one infant of a twin pair at 16 weeks of age, by Kubicek (1980). The "normal" twin, providing the contrast, highlighted the infant's acute gaze averting. He was, at two years of age, diagnosed as autistic.

Finally, another rejecting baby in a twin set was reported by Kirkland & Deane (1984). This female infant behaved quite differently to her twin brother. Lazy sucking, absence of smiling response, quiet and undemanding when left alone, non-responsiveness to the human voice and low eye contact were her characteristic behaviours. Also, the parents felt that she actually disliked being cuddled. Kirkland & Deane pointed out the clear association between this infant's behaviours and infantile outism. This particular baby had very aware parents, who detected the differences, sought advice, and applied special efforts at establishing interactional synchrony with this baby. Thus, a healthy prognosis was acquired which may have otherwise eluded the family. Kirkland & Deane conclude that such cases of early infant "rejection" can lead to parent-infant asynchrony, and may become manifest in relatively permanent psychopathology such as infantile autism.

Hence, the incidental reports of infant gaze averting behaviour in the literature continue to multiply amid the surrounding theoretical controversy. This controversy will be elaborated upon in the upcoming section covering theoretical views of gaze averting.

Laboratory-based Studies

As the incidental reports of gaze averting behaviour increase, so too does the popularity of this phenomenon as a topic for experimental manipulation (Sylvester-Bradley, 1981). Such studies centre on perturbations of infant-adult exchanges by using artificially distorted maternal signals. The aim of such experimental procedures is to check the effects on adult-infant interaction. Researchers in this area of work are interested in the infant's capacities for coping with interactive stress and achieving the interactive goal. This goal (for both infant and mother) is to achieve a state of "mutual regulation" (Gianino & Tronick, 1985). Other terms used synonymously with this are; "matching", "attunement", "reciprocity", "synchrony." Although not exactly equivalent, these terms all describe the goal of interaction. The process is a feedback-regulated control system. Gianino & Tronick present a Mutual Regulation Model which incorporates these concepts, and also emphasizes that instances of imperfection not only occur, but are quite common. It is impossible to achieve a constant state of reciprocity. "Mismatches" (or normal disruptions to the synchrony between the partners) actually play an important role. Successful resolution of these lead the infant to developing a sense of effectiveness in the interactive sphere.

So, in this theory gaze averting is one communicative behaviour used to modify the partner's behaviour and repair the interactive error (or mismatch). The empirical studies artificially produce an interactive stress and monitor the infant's subsequent reaction.

Trevarthen (1979) reports that when adults are unresponsive, avoiding or aggressive, two-month-olds show tension or distress by facial expressions of fear, yawning, grimacing and frowning, as well as by gaze averting, crying, startle movements and threshing or struggling.

Murray (in press) used a "still-face" paradigm for some of her experimentation, wherein she asked mothers to suddenly go blank-faced during a "happy" interaction with their infant. Two-month-olds reacted by ceasing smiling, averting gaze from the mother's face, showing facial expressions of distress, crying and using self-comforting gestures. In a second experimental manipulation Murray presented a T.V.-image of each mother to her infant which was a replay (filmed moments before) and so the mother's behaviours were not coordinated with those of the infant. The infants turned away from this TV-image more often than in the control condition wherein the mother was on "live" closed-circuit television. They also looked puzzled, frowned and generally exhibited restlessness.

Tronick, Als, & Adamson (1979) explored the adaptability of the infant in a similar way. They found the same reactions to the still-face procedure as Murray subsequently did. Another perturbation implemented provoked a different response. By presenting the mother's face in profile only, the infant soberly attempts to initiate interaction. He doesn't gaze avert, but instead gives long intense stares, leaning slightly forward, and making calling vocalizations. A third perturbation Tronick et al.

(1979) implemented was to have the mother slow down her already infant-like speech when speaking to the infant. This tended to slow down all her actions. What was observed was very successful communication. There were periods when the infant would seem perplexed, but generally he was not disturbed by this change at all. What these results tend to underline is the adaptability of the infant in social interaction. The performances are organized and appropriate. Thus, the infant is adjusting his responses according to the mother's actions. One explanation for these results (Gianino & Tronick, 1985) is that because the mother remains unresponsive when the infant makes attempts to repair the interaction, then the infant's bids are repeatedly frustrated. This causes a stress outside the normal range of interactive stresses. The longer the distortion is continued, the more distressed he will become.

Thus, as well as the occurrence of gaze averting in the natural setting, it is also possible to experimentally produce and control it (Sylvester-Bradley, 1981).

Theoretical Perspectives

The theories regarding why infants gaze avert during social interaction are varied and numerous. The following is an attempt to classify the various explanations into several categories; Clinical, Biological, Attachment, Psychoanalytic, Developmental-Cognitive, Developmental-Other, Behavioural, Self-Regulation. Some researchers combine aspects from two or more of these perspectives. However the main "thrusts" of the theory are

assembled. The first three schools of thought differ from the others in that they state that gaze averting is an abnormal and detrimental behavioural pattern, and thus measures should be taken to eliminate it from the repertoire of interactive behaviours.

Clinical

Professionals in the psychiatric, psychological and paediatric arenas view gaze averting as an indicator of pathology. Mother-infant eye contact is one of the criteria used in the clinical setting to assess the adequacy of maternal-infant responsiveness and to document the need for developmental or psychological care. A lack of this criterion thus indicates autism, childhood depression or symbiotic psychosis of childhood; depending on the presence of the other vital criteria. A diagnostic tool which operates in this fashion is the Massie-Campbell Scale of Attachment Indicators During Stress (AIDS scale), (Massie & Rosenthal, 1984). The more widely recognized and highly regarded system of classification the Diagnostic and Statistical Manual of Mental disorders (1980), or the DSM III, also proposes an association between lack of eye contact and psychopathology. According to the DSM III, a main criterion for diagnosis of infantile autism is a pervasive lack of responsiveness to other people. It is "...manifested by a failure to cuddle, by lack of eye contact and facial responsiveness, and by indifference or aversion to affection and physical contact." Kanner (1973) first described the syndrome in 1943, and he spoke of children who exhibited "extreme autistic aloneness" and "abnormal relationships to people

and preference for pictures or inanimate objects." The DSM III also links gaze averting behaviour with reactive attachment disorder of infancy. The following are four of the quoted "developmentally appropriate signs of social responsivity" which should be present in the infant;(1) Visual tracking of eyes and faces by an infant more than two months of age;(2) smiling in response to faces by an infant more than two months of age;(3) visual reciprocity in an infant of more than two months, vocal reciprocity with caretaker in an infant of more than five months;(4) alerting and turning toward caretaker's voice by an infant of more than four months. Thus, an absence of these criteria (which is what occurs during a period of gaze averting) could contribute toward a diagnosis of reactive attachment disorder.

Biological

Hutt & Ounsted (1966, 1970) provide the major force behind this biologically-based theory. As previously mentioned, they view gaze averting as an abnormality, and in fact only discuss the behaviour in terms of autistic children. They propose that autistic children (ie. gaze averters) are in a state of high physiological and behavioural arousal. Normal adults in certain states of high arousal (such as embarrassment or fear) fail to fixate their gaze on their interaction partner, thus avoiding an arousing stimulus. Therefore, gaze averting apparently has the effect of reducing arousal. It is also believed that early visual behaviour is predominantly under genetic control, and so gaze averting is an innate component of high arousal. It is an unlearned response

occurring in all members of a species, but only put into action in situations of high arousal. Thus autistic children who, for various undetermined reasons (perhaps biochemical), are highly aroused exhibit this response constantly.

Another biological viewpoint of gaze averting differs from the mainstream Biological perspective in that it doesn't classify the behaviour as abnormal. This lesser-known theory is presented by Robson (1967), who is actually an attachment theorist. He believes the most plausible explanation rests with the ethological data on the potency of the "eye gestalt" as an evoker of gaze averting or flight responses in animals. In the overwhelming majority of animals empty gazing is the normal state of affairs amongst themselves. They only look at each other fixedly when they intend to take drastic measures or are afraid of each other. Hence they conceive a prolonged fixed look as being something hostile and threatening.

Attachment

Attachment theory proposes that face-to-face interaction is important to later infant-mother attachment (Blehar, Lieberman, & Ainsworth, 1977). So, it is believed that anxiously attached infants are more unresponsive and negative in early "en face" interaction, and their mothers are more impassive or abrupt.

Thus, attachment theory argues that negative behaviours are an avoidable consequence of inappropriate or insensitive mothering

techniques. It is seen as a product of frustration by external circumstances which is developmentally retrograde. The infant is social from the beginning. He seems to be programmed to "want" proximity and contact, judging by the fact that he is well-equipped with signalling systems that promote these outcomes. That is, they serve to activate approach and other appropriate behaviours in the adult. With a sensitive mother, negative behaviour, such as gaze averting, will not occur and the infant will naturally grow up into an obedient and easy-going child. (eg. Ainsworth, Bell, & Stayton, 1974; Bowlby, 1969).

Blehar et al. (1977) take a less extreme stance by saying that face-to-face is not the only context for early interaction that is linked to the quality of later attachment. Early interaction is relevant to both the feeding situation and close bodily contact. Also, the nature of interaction in the first three months, although extremely important, is not solely responsible for determining later behaviour and relationships. Interaction during subsequent months also plays a role.

Another criticism of attachment theory is that the focus is only on the positive and social behaviours of the infant, whereas research has shown that a wide range of contact denying behaviours exist (Sylvester-Bradley, 1981).

Psychoanalytic

The psychoanalytic school of thought regards gaze averting as

essential to developmental progress, and stresses the importance of conflict. Two influential theorists are Spitz (1957) and Klein (1953a) who actually differ slightly in their explanations. Spitz proposes that infant negativity is the product of frustration caused by a conflict between the infant's wishes and external circumstances. Klein, on the other hand, suggests that infant negativity is primarily the product of an internal conflict - between the self-destructive "death" instincts and the self-preservative "life" instincts. Although she stresses that negativity is related by the infant to his environment, she sees it as being essentially a defensive projection of innate hate and aggression which will occur in the early stages of infancy, whatever the infant's circumstances.

Despite these differences, both Spitz and Klein see the transcendence of negativity as playing a necessary part in developmental progress. This can either be achieved by more mature reality testing, or by working through what Klein refers to as the "depressive position." (This involves coming to understand that the world can not justifiably be split into entirely good and entirely bad halves.)

Developmental-Cognitive

Developmental writers have been increasingly interested in the issue of the infant finding a way of representing the mother (the external object) inside his mind during her absence (Bentovim, 1979). In Piagetian terms, the infant has a concept of "object" when he can

conceive of things as substantial, independent of himself, and existing in a context of spatial and causal relations even when they are not present to his perception (Bell, 1970). Reaching this cognitive milestone has important implications regarding gaze averting. If the infant has formed a cognitive schema of the mother's face, then constant gazing at her would lose importance as he can then instantly "image" her when required.

There is considerable controversy surrounding this object concept formation issue. Piaget did not believe that the infant could develop this fixed concept until around the ninth month of life (Bentovim, 1979). However, writers have been challenging this assertion more and more over the years. For example, Bower (1982) suggests that some sort of object permanence may develop earlier than the Piagetian ruling. He has described specific hand and arm movement responses indicating an ability to discriminate objects as early as eight days of age! Experiments with visual tracking, prediction and reaching of infants less than six months of age show that some concept of an object (capable of displacement, located outside the body and with its own shape and size) is present in what Bower calls "abstract" formulation right from the start. So, now many of the Piagetian claims stand corrected (Trevarthen et al., 1981). Two and three-month-olds may retain awareness of an object while it is out of sight provided the concealment is due to an easily understood obstruction by a nearer screen.

The other cognitive achievement relevant to this discussion is that of person-object differentiation. Sylvester-Bradley (1985) casts

serious doubts on the infant's ability to distinguish between people and things. He asserts that infants are not born with such an ability, but instead it is the product of psychogenesis. Any differences in behaviour toward an object versus a person is due to the infant's mood and experiences of the world. However, this can be challenged by a major factor : research deems very young infants to be social beings, and thus they must know the difference between people and things (eg. Ellsworth, in press; Meltzoff & Moore, 1977; Tronick et al., 1978). As Trevarthen (1979) says "Infants show distinctive behaviours to persons. In the second month after birth their reactions to things and persons are so different we must conclude that these two classes of object are distinct in the infant's awareness" (p. 322).

A further interesting point is that a study by Bell (1970) showed that the development of the concept of persons as permanent objects undergoes a process homologous to the acquisition of the concept of inanimate object permanence. It is also a more accelerated process. Hence, one can safely assume that the infant is developing a schema of the mother's face by the end of the first trimester of the first year. This has important implications with regard to gaze averting, at this time, in terms of the "shift to objects" perspective as discussed earlier in this chapter. Note that chronologically, the infant moves from interest in gazing at mother's face to interest in objects, which is the order of the concepts' development as suggested by Bell.

Developmental - Other

This category of theorists share the view that prolonged gaze or eye contact with the caregiver is an appropriate developmental task for a given stage (eg. Brazelton et al., 1974; Stern, 1974). Infants' looking and gazing at the caregiving persons increases with age due to the maturation of physiological and neurological systems up until the age of three or four months when this behaviour is mastered. Therefore, eye contact is an important interactional topic in the first months of life. Thereafter it should decrease in importance as the developmental task is achieved (Keller & Gauda, 1987). According to Keller & Scholmerich (1987); "Establishing relationships with primary caregivers can be described as the infant's developmental task in its first months of life. The means involved in this communication pattern, at least on the infant's part, were those that are functionally relevant at a certain developmental stage (such as looking and vocalizing)"(p.66).

Sylvester-Bradley (1981) proposed that development on other dimensions, such as vision and motor skills, would have an effect on the infant's gaze behaviour. The maturation of such skills would naturally increase the infant's interest in his immediate environment. Firstly, the infant's visual capacity reaches adult levels of competence at approximately three months (Haith, 1977) (as previously mentioned). Secondly, researchers (White, Castle, & Held, 1964; van Hofsten, 1979) report successful reaching and grasping of objects occurring just before five months. The period of three to five months, which encompasses the majority of the

incidental reports of gaze averting, is a "busy" time developmentally for the infant. Such achievement brings the infant's world much closer to him, and enables increased exploration which would account for less gazing-at-mother time. As Murray (in press) says; "At a time when the infant's acuity approaches that of adults and reach and grasp movements start to become effective, the infant's interest will be readily caught by some attractive object nearby. No longer is he captivated by the form of maternal responsiveness that was previously so engaging, and there is a decline in eye-to-eye contact and smiling to the mother"(p.29).

Behavioural

A behaviourist viewpoint is put forward by Papousek & Papousek (1979). Gaze averting is interpreted as an avoidance mechanism, not a conditioned response. Parents tend to modify their behaviour into simplistic repetitive patterns, in all modalities. At first, the infant may respond to the repetition with pleasure, due to recognition. However, once they are too familiar, the response to them can decrease and become habituated. Therefore, attention will switch elsewhere for entertainment. The adult's regulation of stimulation is particularly important during the first months after birth when the behavioural states change more frequently and irregularly. This leads to an observation made by Sylvester-Bradley (1981) that infants' reactions to similar circumstances were changeable and unpredictable - sometimes accepting games and sometimes rejecting them. There is a significant internal component involved. Infants have varying interests and moods which must be

taken into account.

Self-Regulation

Brazelton et al. (1974) argue that the gaze averting behaviour they observed was not so much a product of the quality of stimulation presented by the mother, but of a "basic regulatory mechanism" akin to that which maintains homeostasis in physiological parameters such as body temperature. Infants, therefore, are able to maintain some control over visual stimulation. Papousek & Papousek (1979) speak of the infant's "fundamental adaptive system" which serves a protective function. This set of mechanisms is involved in turning away unpleasant or noxious situations, and reduction, avoidance or interruption of informational input and processing. Thus, the organism is protected from a flood of information, particularly that which is difficult to process. In this way, gaze averting is judged as avoidance of the mother in situations when her behaviour violates the infant's expectancy. This has been interpreted by Koch (1968) as an "oversatiation" phenomenon.

Field (1977) has also linked infant gaze averting with maternal overstimulation. In her study which looked at the effects of experimental manipulations on infant-mother interaction, she found that the infants gaze averted most in the "attention getting" condition, wherein mothers increased their activity and provided more information. It certainly appeared to be an information overload for the infant. The infants' gaze averting provided pauses to process the information just received. In fact, Brazelton et al.

(1974) have suggested that respecting the infant's need to take a break from interaction is one of the most important conversational rules to be learned by the mother. Field concluded that both quantity and quality of stimulation contributed to the gaze averting.

Opposition to Brazelton et al.'s (1974) view, that it is purely the quantity of stimulation which is pertinent, is provided by the series of empirical studies on gaze averting (previously mentioned) which demonstrate that such negativity can be experimentally manipulated. This involves the infant's purposes which the automatic process suggested by Brazelton et al, does not. The homeostasis concept suggests it is a process beyond the infant's will or choice. So results provided by Brazelton, Tronick, Adamson, Als & Wise (1975), Murray (in press), and Tronick et al (1979) evidence that it is <u>not</u> an automatic response to perceptual overload. The concept of the infant developing "will", and behaving with intention has been the subject of separate research. Meltzoff & Moore's aforementioned imitation research (1977) demonstrated the infant's ability to act intentionally. Sylvester-Bradley (1981) states that "the conclusion to be drawn from unnatural experimental perturbations of infant-adult exchanges is that early negativity results from the frustration of infants' wills" (p. 9).

One final comment regarding this self-regulation concept is that Bruner (1973), in his paper on pacifier-produced visual buffering in infants, lists gaze averting as one of several buffering mechanisms at the infant's disposal. Sleep mechanisms, crying and gaze

averting are ways in which the infant seems to be able to break off encounters with the impinging world of stimulation coming from without and from within.

The Present Research

The area of infant social interaction contains so much "rich" information that the possibilities are endless regarding data collection. It is a realm of study which calls for a descriptive methodological approach. This seeks to discover patterns or themes rather than particular independent-dependent variable relationships. Thus, the present research project will use a descriptive case study approach to gather primarily qualitative information, rather than statistical data. The data-collecting tools will be qualitatively based; interview, observation and mother's daily recordings. The general aim is to investigate gaze averting by infants during social interaction in family settings and without experimental control.

Contributions

It is hoped that this piece of small-scale research will contribute to the existing literature in several ways. First, the empirical evidence reviewed here was gathered entirely from artificial experimental perturbations of infant-adult exchanges. Even the incidental reports of gaze averting all came from laboratory settings. There is very little data available on naturally-occurring gaze averting. "Natural" refers to the fact that it isn't elicited through experimental manipulation but rather

occurs spontaneously and in the infant's usual environment. Therefore, home visits of a non-intervention style are planned. This is because, as Sylvester-Bradley (1981) points out, without such data it is still not known what role negativity plays in normal development. It has been demonstrated that experimentally, young infants can be made to express such negativity. But, do they express negativity under normal circumstances? And, if so, is it similar in makeup to the experimentally-elicited gaze averting?

Second, this research will take the novel step of using the mother (parents) as reporters of the infant's day-by-day target behaviours. Deeming the parents to be authorities on their baby is long overdue. They, after all, live with them around the clock, and thus can provide a rich source of information. So, parental information from interviews and diary record will blend together with researcher observations.

Finally, this study will include a developmental check in the gathering of data. Each infant's general level of achievement in four major developmental categories will be monitored. This will provide a fuller picture of the possible interplay between gaze averting and general developmental progress.

Objectives and Hypotheses

Usually descriptive research, working primarily with qualitative data, is exploratory and hypothesis-generating, as opposed to hypothesis-testing. This study will combine elements of both styles

of research, exploring the area of research with an "open mind" but from a base provided by two tentative research questions.

The objectives of the present research are as follows:

1. To document gaze averting in infants, aged approximately three to five months, during social interaction in their family settings.

2. To record the developmental progress of these infants.

It is predicted that:

1. These infants will exhibit gaze averting during social interaction with their caregivers.

2. The infant's gaze averting behaviour will increase alongside progress in the four categories of developmental markers* selected for the present study.

* see Appendix E.

CHAPTER TWO

METHOD

Participants

The research participants were six mother-infant dyads who were recruited via the local Plunket Nurse, the Public Health Nursing team, and a local General Practice. The requirements were that the women be primiparous mothers with uncomplicated labours resulting in the delivery of healthy, full-term infants. The infants were all aged approximately three months at the commencement of the study. Five mothers were caucasian and married. The sixth was Maori, and living in a stable-defacto relationship. All were occupied as full-time caregivers. Their ages ranged from 21-26 years, (mean age 23.33 years). The socio-economic range of the participating families was determined using the Elley-Irving Socio-Economic Index (Buttle, 1980). Classifications according to the fathers' occupations ranged from 3-6. This showed a bias toward the lower end with two families at levels 3 and 6, and one each at levels 4 and 5.

Fathers of the infants were encouraged to be involved in the research when possible, but because of practical limitations (ie. work commitments) did not play as major a role as did the mothers.

Of the six babies, three were female and three were male. They had an age range of 25 days. Refer to Table 1 for details regarding

babies' ages.

TABLE 1 : The date of birth, age at introductory visit and age at final visit of each baby

Baby	A	B	C	D	E	F	
Pseudonym	Anne	Brian	Catherine	David	Edward	Fiona	
Date of Birth (Day/Month)	12/3	12/3	21/3	22/3	5/4	6/4	
Age at Introductory Visit (weeks/days)	15/5	15/4	14/3	14/4	12/4	12/4	$\bar{x}$ =14/2 σ =1/3
Age at Final Visit (weeks/days)	24/2	24/4	23/3	23/4	21/5	21/4	$\bar{x}$ =23/1 σ = 1/2

All six were totally breast-fed, as opposed to formula (bottle) -fed babies, with the exception of Edward who was complemented from time to time.

Materials

At the introductory session the following materials were distributed to each participating family:

A letter to research participants which outlined what the present research study would involve. This made clear the roles of participants and researcher, including ethical considerations (Refer to Appendix A).

A consent form for "involvement with babies", which was signed in duplicate by each participant mother (the father not being present at the introductory visit in each case), as well as by the researcher. (One copy remained with the participants). (Refer to Appendix B).

A sequence of 24 photographs reproduced from a video clip representing intervals of $^{1}/_{6}$ second. The video portrayed a mother interacting with her five month old baby in a face-to-face position actively attempting to gain the infant's eye contact. The baby was actively gaze averting; by turning his head, squirming in her arms, and closing his eyes. This sequence of photographs was used in the introductory session with each participant to "teach" them what active gaze averting might involve. A final photograph was added, taken after a two month lapse showing the same baby happily taking part in a face-to-face interaction "game" with his mother. (See Appendix C).

Blank weekly diary forms sufficient for a two month period were also distributed. On these mothers could log quite accurately; a. any new developmental milestones (see below), b. any clear displays of gaze averting (or "saying no" to face-to-face interaction), and c. other relevant information such as: baby's health, baby's sleep patterns, mother's feelings, trips out and other special events. (Refer to Appendix D).

A Developmental Checklist was prepared outlining major milestones between three and six months of age. (Barber & Williams, 1981; Furuno, O'Reilly, Hosaka, Inatsuka, Allman & Zeisloft, 1979). It included four categories; Gross Motor (G.M.), Fine Motor (F.M.), Social-Emotional (S.E.) and Cognitive-Perceptual (C.P.), and was provided as an aid for the mothers to record their infants' developmental progress (see Appendix E).

Procedure

The research design was a short-term longitudinal case-study approach with home visits. As the infant age period of interest was between three and five months (or 13-22 weeks) a nine week study was planned. Each dyad was visited eight times over a period of nine weeks.

They were visited in a set order (A-F, see Table 1) which corresponded with age. This buffered the age difference effect slightly. (Note the coincidental occurrence of three "twin" pairs: AB, CD, EF). Excepting minor adjustments from mothers (due, for

example, to a funeral) the visiting order remained fixed. A routine timetable with a nine to ten day cycle was achieved, thus ensuring standardized intervals between each case's visits.

Apart from the introductory visit which was one and one half hours, each session or home visit was of two hours duration. The eight sessions (for each case) were timetabled so as to span a day, ie. morning, afternoon and evening. This was designed so that the infant was observed across a range of his moods and activities. The activities included: feeding (both breast and solids), playing (either "solo", eg. kicking on the floor with toys, or interacting with someone, eg. mother), bathing, sleeping.

Only Sundays were excluded from the timetables. By spreading visits over different days working fathers were given opportunities (along with evening appointments) to be present and contribute.

The main purpose of the introductory session was to explain the research plan to the participants and to distribute required materials. Thus the gaze averting phenomenon was presented to each mother with the aid of the photographic sequence. In each case the father could not be present for this session and so it became the mother's responsibility to pass on all this information. It was emphasised that parents are the best authorities on their baby's behaviour and development as they live with them and care for them around the clock. The parents were thus used as "reporters" of their infants' activities. "Reporters" were taught what to watch

for with regard to:

a) "saying no" to face-to-face interaction, ie. gaze averting;

b) the list of documented developmental milestones.

They were also shown how to use the diary forms in order to record relevant events. Participants were encouraged to ask questions on any aspect of the study, consent forms were signed and personal timetables arranged for the next seven sessions. Besides the explanatory and administrative role of this initial session it provided an opportunity for basic information about the family unit (and the baby in particular) to be gathered; and also brief observation of the mother-infant interaction to occur.

The basic format of the remaining seven sessions did not alter from one to another. The interview would begin with the standard question: "How is [baby's name] doing?" This was intended to elicit a range of relevant information about; feeding, sleeping patterns, health/well-being of baby, and unusual activities in the last period (eg. trips away, vaccinations etc). Then the interview would narrow down to specifics;

a) gaze averting behaviour since the last visit - whether it was occurring, with whom it occurred, within what type of situation it occurred, whether it was changing in nature, whether it was increasing/decreasing in frequency etc.

b) developmental milestones observed in the last period (if any), and related information.

Whenever the baby was awake during a visit, (this could be all, some or none of the two hours), observations were made of his behaviour and interaction with his mother/parents. Interview and observation notes were made in duplicate at all times. This was so that the participants could retain a copy of everything noted down and add it to their growing research file which included materials distributed at the first visit. For the same reason, the researcher did not take away completed diary forms, but instead made copies during each session. If a baby was sleeping for any part of a visit this was the ideal time for copying. Discussion with mothers during these quieter periods provided additional information which clarified any ambiguities. So, the three sources of data were: interviews, observations and the diary forms.

At the final session some Evaluation Questions (Appendix F) were offered. These enabled the researcher to gain feedback from the participants regarding their subjective impressions as research participants. Also, arrangements were made at this last visit for the group to meet socially and to debrief. Thus, a small social function served as a "wind-up" to the study, and gave participants the opportunity to meet each other for the first time.

CHAPTER THREE

RESULTS

The results of each case will be reported individually with qualitative descriptive data playing a major role. The supporting quantitative data is presented in Figures 1 to 6. (See also Appendix G, for Tables G1 to G7 containing data). Three sources of data (interview, observation and diary) will be woven together to present each individual's patterns and to highlight any themes.

The results are organized into three sections. Section One reports the frequency of gaze averting data. Section Two gives an account of the developmental progress of each case in relation to the four chosen general areas. Section Three presents an unpredicted finding; the occurrence of different styles of gaze averting.

Section One: Frequency of Gaze Averting

Gaze averting behaviour occurred in all six cases, although in varying degrees and patterns. In terms of the quantitative data one unit of gaze averting refers to one interactional episode in which gaze averting was a predominant feature. That is, it does not mean one instance of gaze averting (e.g. one head-turn away), but rather one episode of gaze averting. Several instances may occur in an episode. Another important point with regard to interpreting the graphs is that the age at which a data number is plotted is not the exact age at which the behaviour(s) occurred. The seven plot points

of each curve correspond to the seven visits (V1-V6, following the Introductory Visit (IV)). Therefore the behaviours plotted at the Visit One (V1) age (for example) occurred between IV and V1.

Case A: Anne was one of the three "low" gaze averters of the study. Just two episodes were reported for this infant. They both occurred early in the study; between IV and V1 and then between V2 and V3. As Mother A had observed no previous gaze averting at the time of IV, it can be tentatively suggested that Anne's entire span of this behaviour fell between the ages of 15/5 and 19/1 weeks/days.

Case B: Brian was a "higher rate" gaze averter, exhibiting a total of 25 episodes over the duration of the study. He was one of two cases reported to be gaze averting before the commencement of data collection. According to the subjective (but spontaneous) comment from his mother at IV Brian "started this about a month ago." Certainly, his first frequency plot at V1 was comparatively high (10), being the highest recorded for his case, and in fact for the whole study. From there, his rate of gaze averting decreased quite rapidly with the exception of another high plot of eight episodes at V3, until it appeared to come to a halt completely by the end of the study (V7). Brian's span of gaze averting fell within the age range of 15/4 (earlier according to subjective information) to 23/1 weeks/days.

Case C: Catherine was another "low" gaze averter, exhibiting just two episodes. However, these two occasions were more separated by time than in Anne's case. The first occurred between V1 and V2,

followed by another, between V6 and V7. These were apparently Catherine's first shows of such behaviour. Her span of gaze averting occurred between the ages of 15/4 and 23/3 weeks/days. However, it should be noted that had the study continued, Catherine may well have exhibited further gaze averting. The same point can be made for all the cases, but more particularly for those who were still gaze averting at the last visit.

Case D: David was the "lowest" gaze averter in the study, demonstrating this behaviour only once. It was noted at V1, when he was aged 15/5 weeks/days. However, he was reportedly gaze averting before the study began, and had been doing so "for quite some time." Thus, David was the youngest baby to stop gaze averting, (and perhaps also the youngest to commence.)

Case E: Edward was the most frequent gaze averter in the study. Twenty eight episodes were logged in his diary. Previous gaze averting was not mentioned. His own particular pattern was variable and unpredictable, neither reliably increasing nor decreasing. As can be clearly seen on the figure, a unique W shape resulted. Edward's gaze averting ranged from 12/4 to 21/5 weeks/days, which was throughout the entire study. As previously mentioned, the gaze averting could well have extended into the weeks beyond the study.

Case F: Fiona was one of the "higher rate" gaze averters. Her frequency was however the lowest of the three (13). Her pattern was a low but consistent rate of gaze averting (two episodes reported at V1, and then one each for V2-V5) followed by a rise in the final two

periods. She finished on her high of four episodes reported at V7. Fiona's gaze averting episodes spanned the entire study; from 12/4 to 21/4 weeks/days. Fiona could well have continued her pattern of gaze averting beyond this age.

Summary (Refer to Figure 1): Gaze averting behaviour was recorded for all six case studies, and so Hypothesis One was supported. Three "low rate" gaze averters were Anne (2 episodes), Catherine (2), David (1), and three "higher rate" gaze averters were Brian (25), Edward (28), Fiona (13). There were 71 episodes in total. Five infants had gaze averting at the first data collecting session (V1), only Catherine's diary had nothing to immediately report. Thus, she was the oldest baby to first exhibit the behaviour, being 17/3 weeks/days at V2 when her first episode was reported. According to mothers' subjective reports, Brian and David had been showing gaze averting for "quite awhile" before the study began. At the conclusion of the study three cases (Catherine, Edward and Fiona) were still gaze averting, whereas the other three (Anne, Brian and David) appeared to have ceased the behaviour altogether. David was the youngest baby to cease gaze averting, being 15/5 weeks/days at V1 when his only episode was reported. So, he also demonstrated the shortest span of the behaviour, whereas Edward and Fiona demonstrated the longest spans (12/4 to 21/5 and 12/4 to 21/4 respectively). They gaze averted during their entire participation in the study (9 weeks). As Figure 1 shows, six very individual frequency patterns were obtained.

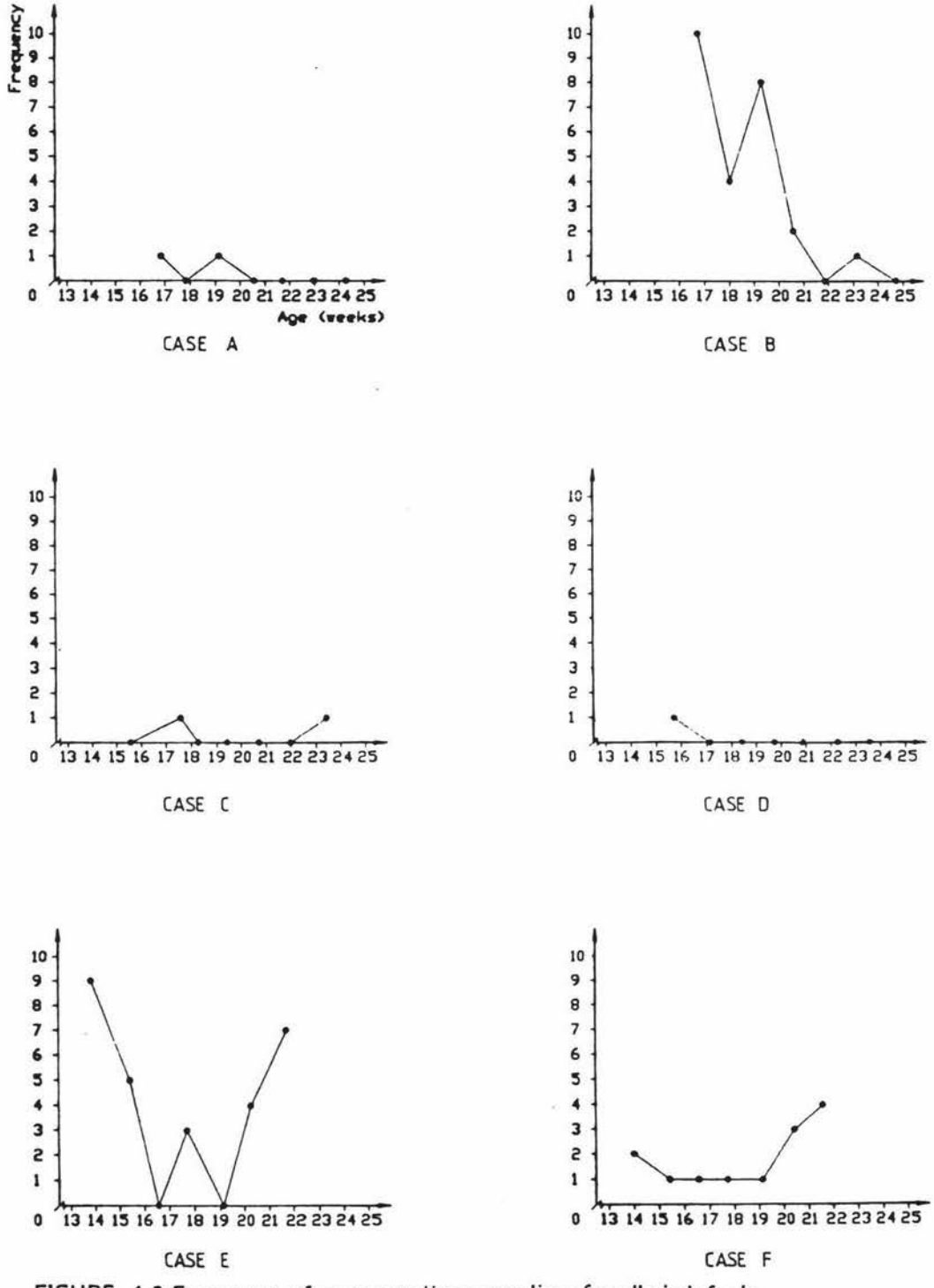

FIGURE 1 8 Frequency of gaze averting over time for all six infants.

Section Two: Developmental Progress

The four categories of developmental milestones monitored were Gross Motor (G.M.), Fine Motor (F.M.), Social-Emotional (S.E.), and Cognitive-Perceptual (C.P.). (Refer to Appendix E.) When compiling these developmental check-lists it was not intended that they be exhaustive with regard to development occurring between three and six months of age. However, most of the major milestones achieved within this infant-period of interest are included. It was not expected that the infants would complete the lists by the study's conclusion. The "older" steps are intended for up to six month olds (or older). Also, it was not expected that the infants would achieve these developments in a set order. (For example, a baby may gain a "4 month" step before a "3 month" one, and so on.) Rather, it was assumed that they would generally progress in competence over time.

Before describing these categories case by case, it should be noted that in five graphs a "ceiling effect" is observed. (See Figures 2(A), 3(A), 4(A), 5(A) and 5(B).) This occurs when all the steps on the relevant list had been achieved before the study was completed. On these graphs the line is discontinued when the maximum number of steps is reached, so as not to produce a misrepresentative plateau.

Gross Motor (Ten listed steps)

Case A: Anne had already achieved six of the ten G.M. steps at the start of data collecting. She then gained the remaining four steps

in two spurts: between V2 and V3 (aged 17/6 to 19/1 weeks/days), and between V4 and V6 (aged 20/4 to 23/0 weeks/days). Thus, there was nothing to report in this category at the final visit.

Case B: At the beginning of the study, Brian had developed three of the G.M. steps, and went on to gain five more during the study. So his final achievement was eight steps. The period of most activity was from V1 to V4, (aged 16/5 to 20/4 weeks/days) during which four milestones appeared.

Case C: Catherine had reached three milestones at the start of data gathering. She doubled this by the time of the final visit. Her relative spurt of development was between V4 and V6, (aged 19/3 to 22/0 weeks/days), wherein she gained two new steps.

Case D: David had already reached a high number of milestones before the study. He increased from an original six to the full list of ten by the conclusion of the study. The period of most development for him was between V1 and V4, (aged 15/5 to 19/4 weeks/days), during which he had gained one new step each visit, (three in all.)

Case E: Edward had, at commencement, displayed exactly half of the ten listed G.M. milestones. He gained three by the conclusion of the study, to bring his total to eight. His busiest stretch of time was from V2 to V4, (aged 15/3 to 17/5 weeks/days), wherein he gained a new step within each of the two periods.

Case F: Fiona had reached five of the G.M. milestones when data collecting began. She gained another four, and so had only one to attain when the study concluded. Her "spurt period" was from V1 to V4, (aged 14/0 to 17/5 weeks/days), during which she achieved three new steps.

Summary (refer to Figure 2): All six babies were well advanced in their G.M. development at the beginning of data collecting, (particularly Anne, David, Edward and Fiona.) They all, (with the exception of Catherine), continued to progress rapidly in this area. Anne and David completed the list of milestones, and Fiona (the youngest in the study) had only one left to conquer. Catherine was neither particularly ahead nor particulary behind with respect to age-related expectations. The ages at which developmental spurts of G.M. skills appeared, ranged widely: 14/0 through to 23/0 weeks/days. ('Spurts' tended to be periods of development (long or short) during which one new step per week was the approximate rate of growth.)

Fine Motor (Ten listed steps)

Case A: Anne had reached three of the ten F.M. milestones at commencement. For the first two data collecting visits she had no new developments. However from V2 until V6 she "took off" in this category, (aged 17/6 to 23/0 weeks/days), completing the ten steps. Especially busy was the period V2 to V3, (aged 17/6 to 19/1 weeks/days), in which four of the seven new steps appeared. Note: she reached the maximum number of steps at V6.

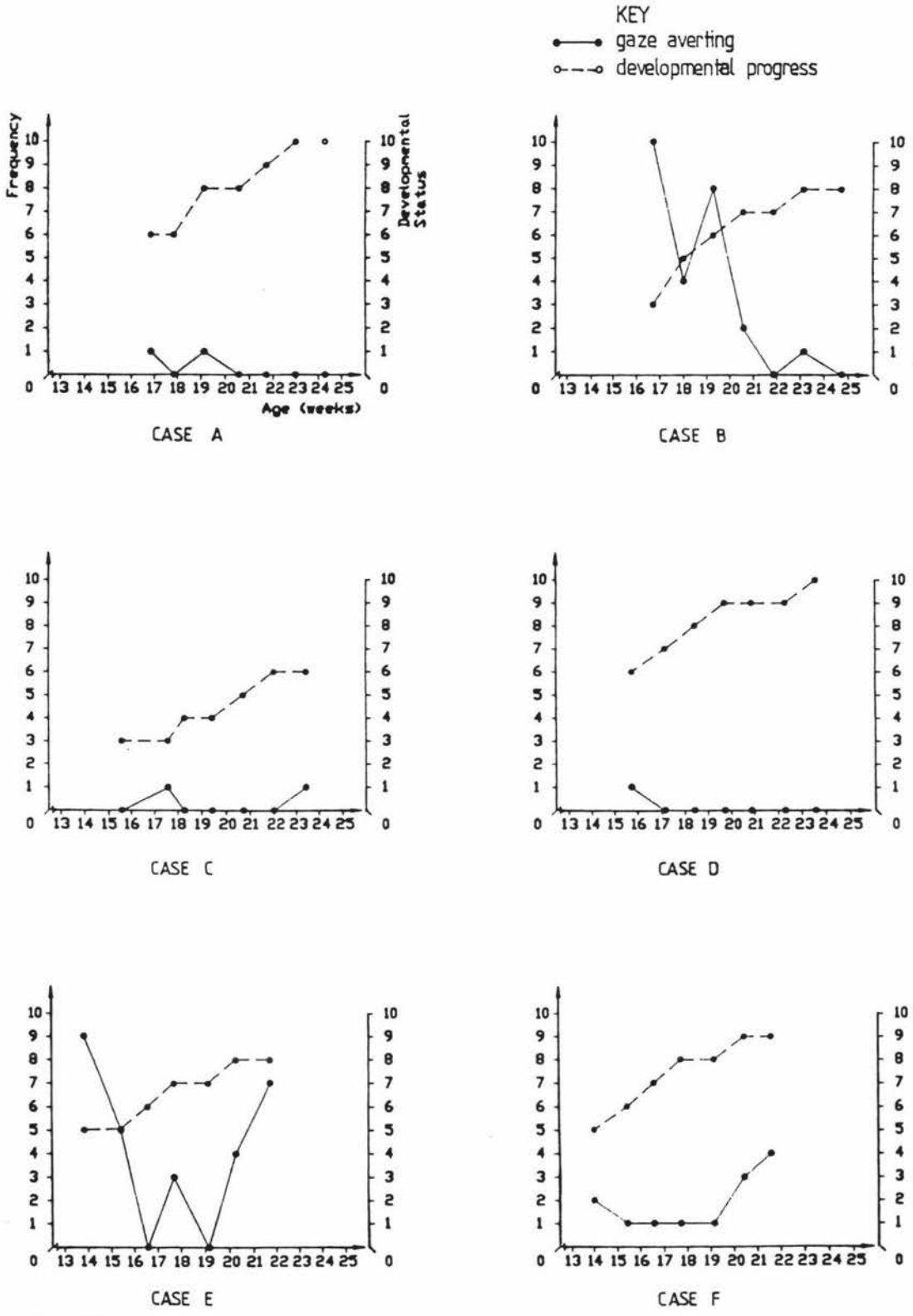

FIGURE 28 Progress of gross motor development and gaze averting over time for all six infants

Case B: Brian had reached three F.M. milestones initially. He displayed two busy periods with regard to this development. He immediately gained three steps between V1 and V2 (aged 16/5 to 18/0 weeks/days). At the end of the study, he had a less dramatic spurt of two new steps between V5 and V7, (aged 21/6 to 24/4 weeks/days). In all, he gained six steps during the study to reach a total of nine.

Case C: Catherine had just two F.M. steps at the beginning of the study. After fairly slow progress initially, she had a burst of activity between V5 and V7, (aged 20/5 to 23/3 weeks/days), wherein she picked up four milestones. She completed the study with eight of the ten milestones.

Case D: David was fairly advanced in this area at the start of the study. He had reached five of the ten milestones. He only gained one more step during the early weeks of the data gathering, but then between V5 and V7, (aged 20/6 to 23/4 weeks/days), he gained the final four to complete the list.

Case E: Edward had two of these developments at commencement. After a fairly slow first few weeks, he had a developmental spurt from V4 to V7 (aged 17/5 to 21/5 weeks/days), wherein four new steps were added to his F.M. repertoire. Thus, he concluded the study with a total of seven.

Case F: Fiona had two F.M. steps before the study began. She only gained one new step during the first five data collecting visits.

Then, from V5 to V7 (aged 19/1 to 21/4 weeks/days), she acquired three more to bring her total, at conclusion, to six.

Summary (Refer to Figure 3): The overall level of competence in the F.M. area was well within age-related expectations, although it was not quite up to the advanced level achieved in the G.M. area. (However Anne and David completed the F.M. list each at approximately 23 weeks. Also David was particulary competent at the commencement.) All six cases progressed steadily, and concluded at expected levels of competence. There appeared to be two general age ranges during which spurts of this development occurred. These were approximately: between 17 and 22 weeks of age (see Anne, Edward and Fiona), and between 20 and 24 weeks of age (see Brian, Catherine and David.)

Social-Emotional (Eight listed steps)

Case A: Anne already possessed three of the eight S.E. milestones when the study began. She then proceeded to attain the remaining five fairly rapidly, from V1 to V5 (aged 16/6 to 21/5 weeks/days). Therefore, for the final two visits there was nothing further to report as the S.E. list was completed.

Case B: Brian already had half of these steps at the beginning of data collecting. He acquired three more, to finish the study with a total of seven. These three steps were reported, one at a time, at three consecutive visits. So, his single positive gradient on this

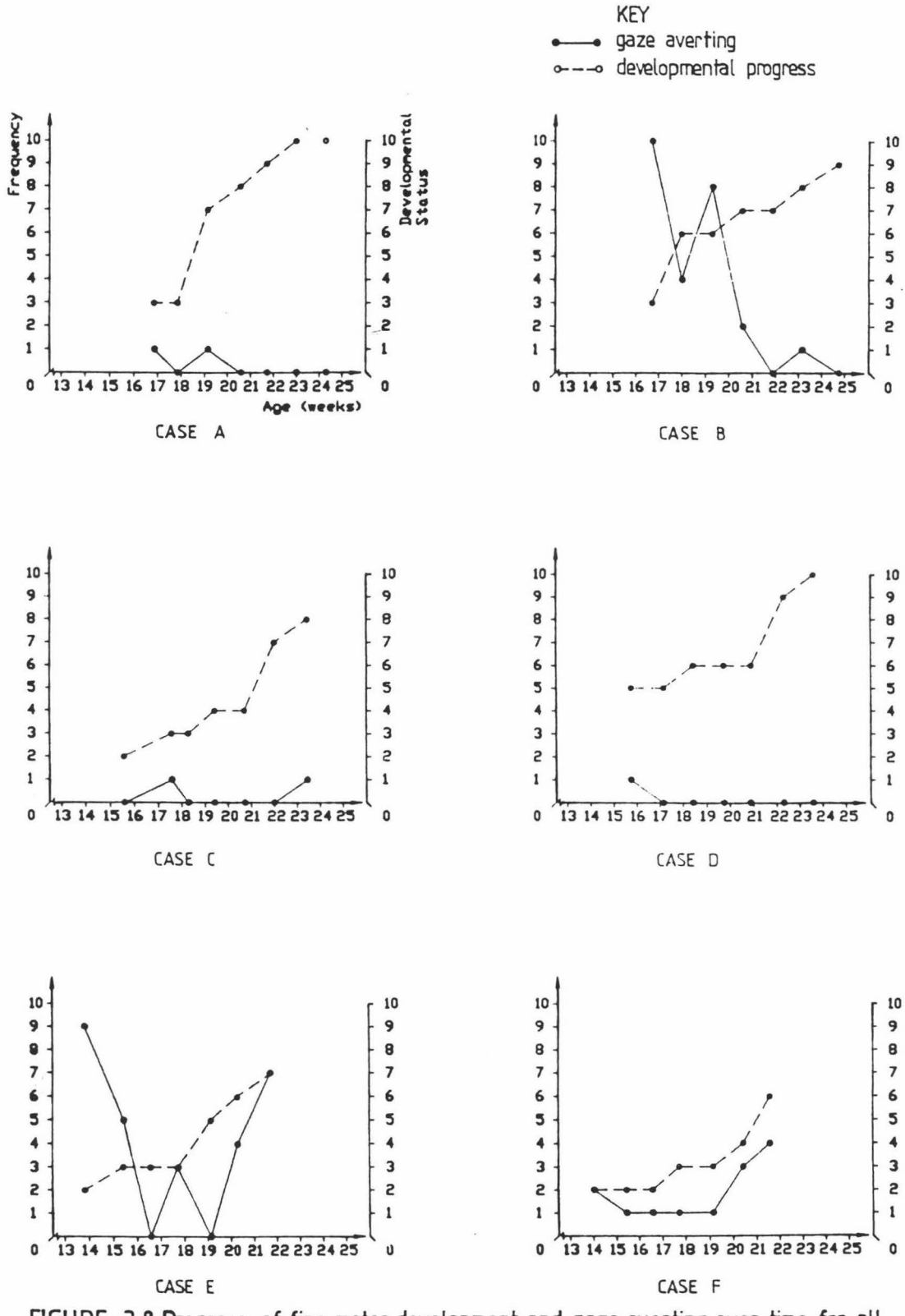

FIGURE 3 8 Progress of fine motor development and gaze averting over time for all six infants

developmental curve was from V2 to V5, (aged 18/0 to 21/6 weeks/days).

Case C: Catherine initially had three of the milestones. She increased to six during the study in a slow, but steady, fashion. There were no spurts of development, but instead three separate additions of one milestone between V1 and V2, V4 and V5, V6 and V7. This activity ranged from age 15/4 to 23/3 weeks/days.

Case D: David had four of the S.E. milestones in his repertoire at the beginning. He immediately picked up two more from V1 to V3 (aged 15/5 to 18/3 weeks/days). A long plateau (three visits) followed, in which no further development was recorded. Finally, a new step was gained in the final period, bringing his total to seven milestones.

Case E: Edward had three steps initially, and acquired three more in a slow but steady fashion during the study. The developments occurred between: V1 and V2, V3 and V4, V6 and V7. (Age span: 13/6 to 21/5 weeks/days).

Case F: Fiona's S.E. record was three separate additions of one milestone. She began the study with four milestones already in her repertoire so her final total was seven steps. Her pattern of development was a step gained between: V1 and V2, V3 and V4, V6 and V7. Her age span of this activity was 14/0 to 21/4 weeks/days.

Summary (Refer to Figure 4): There were no lags in development in

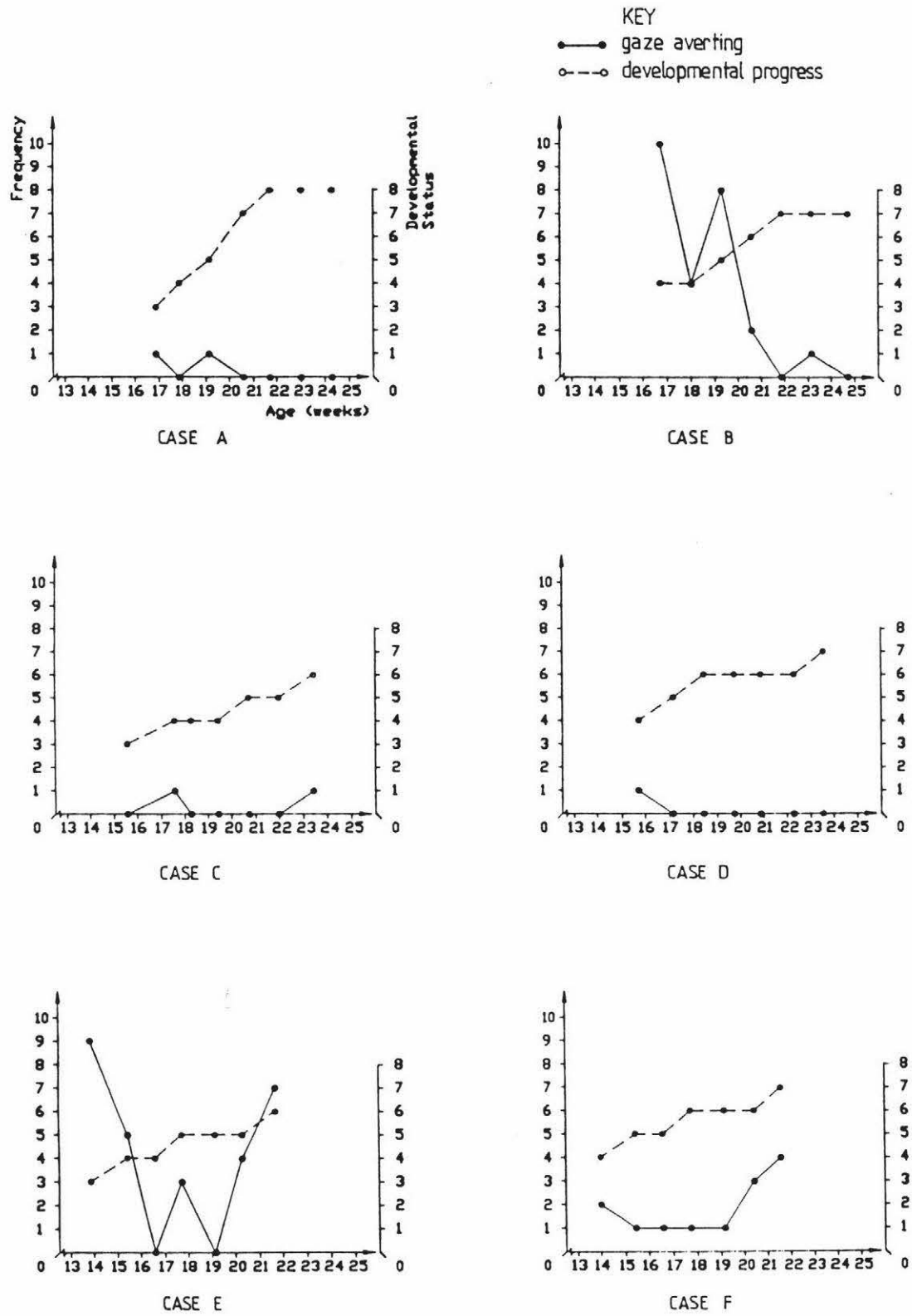

FIGURE 4 8 Progress of social-emotional development and gaze averting over time for all six infants

this category. All cases increased in competence over time. Anne, again, was particularly forward in her S.E. development. She gained five steps over the course of the study. She had reached the full eight milestones by the time she was 21/5 weeks/days old. The other five infants had reached six or seven milestones by a similar age, which was very acceptable progress. They each gained three new steps during the study. Catherine, Edward and Fiona shared the same pattern of growth in this area. That is, they each gained their steps one at a time, never two in two consecutive periods - a gain was always followed by a plateau. They displayed no spurts of development. Edward and Fiona gained their steps during the same periods of the study, and were almost the same age as one another doing so, (as they were just a day apart in age.) However, Fiona was one step ahead throughout. The spurts of development for Anne, Brian and David were all contained within the age range: 15/5 to 21/6 weeks/days.

Cognitive-Perceptual (Twelve listed steps)

Case A: Anne started the study with over half the list of C.P. steps already acquired (seven). She then proceeded to rapidly attain the other five steps from V1 to V5, (aged 16/6 to 21/5 weeks/days), leaving her mother nothing further to report at V6 and V7.

Case B: Brian had seven milestones initially and finished the study with all twelve developed. Four of the five steps, developed during

the study, appeared during just one data collecting period, between V3 and V4 (aged 19/2 to 20/4 weeks/days). Thus, by V4 Brian had completed all the C.P. steps.

Case C: Catherine had four C.P. milestones in her repertoire at the commencement and proceeded to rapidly gain a further seven throughout the study. This left her with only one to achieve at the conclusion of the study. Her main spurt of activity was between V3 and V6, (aged 18/2 to 22/0 weeks/days), when six of the seven new steps were attained.

Case D: David originally had exactly half of the C.P. steps (six), and he doubled this to end the study with all twelve steps acquired. His greatest developmental spurt was between V3 and V5, (aged 18/3 to 20/6 weeks/days), during which time he gained four new steps.

Case E: Edward began the study with four C.P. milestones, and concluded it with eleven. His main spurt of activity was between V5 and V7, (aged 19/1 to 21/5 weeks/days), when he acquired four new steps.

Case F: Fiona accelerated from six C.P. steps to twelve over the duration of the study. She only gained one new step throughout the first five data gathering visits. However, she suddenly developed five more steps between V5 and V7, (aged 19/1 to 21/4 weeks/days).

Summary (Refer to Figure 5): As with the G.M. development, all six infants were advanced in this area. Anne and Brian began with seven milestones, and completed the list of twelve before the study ended.

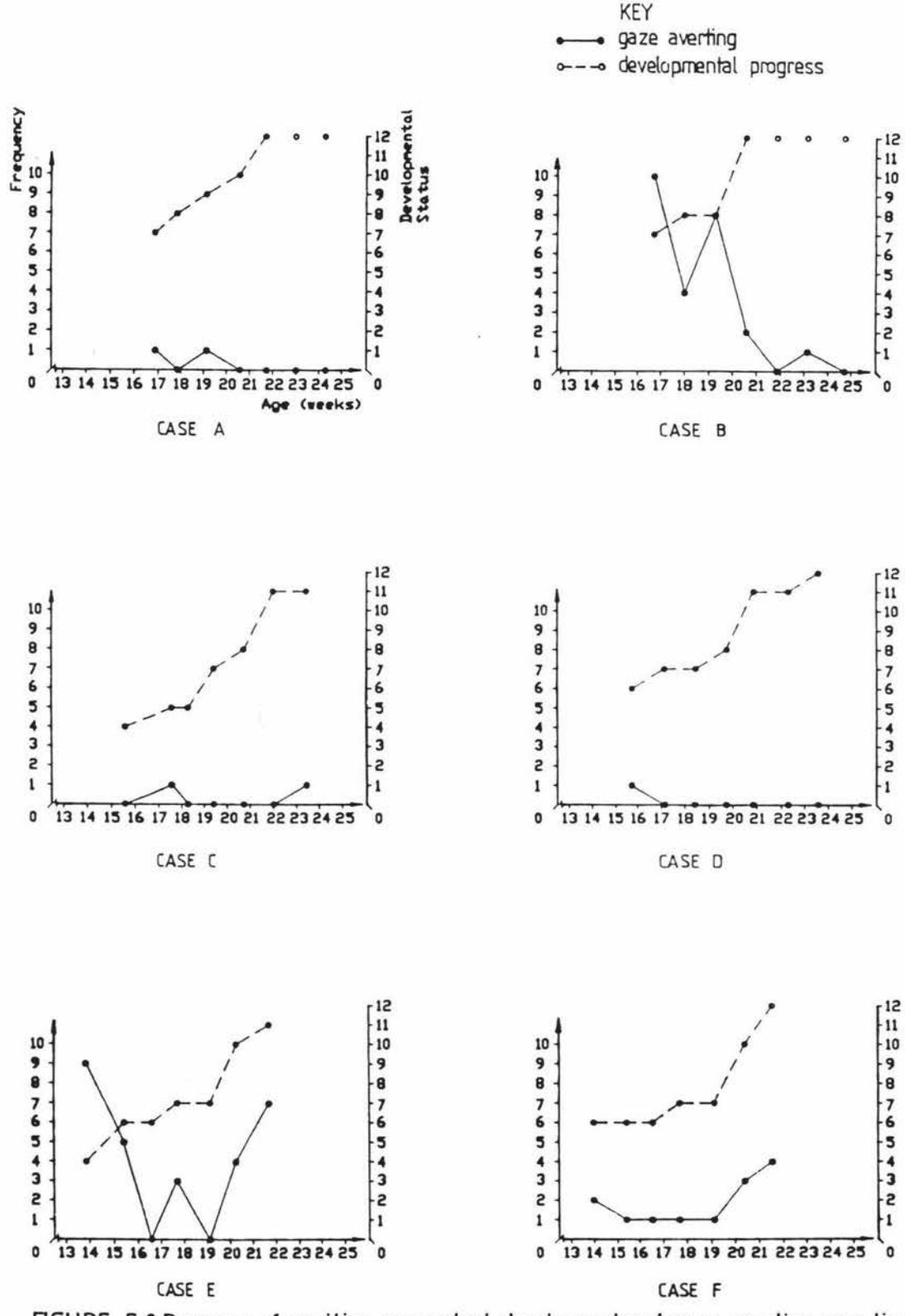

FIGURE 5 8 Progress of cognitive-perceptual development and gaze averting over time for all six infants

David and Fiona each began with six steps, and also completed the list. Catherine and Edward had achieved four steps each originally, and went all the way to eleven steps by conclusion. Catherine, David, Edward and Fiona all had their developmental spurts within the same age range: approximately 18 to 22 weeks. Brian's spurt was also within this age span, but it was much more condensed: 19/2 to 20/4 weeks/days. Anne's busy period was, in contrast, a bit more spread out: 16/6 to 21/5 weeks/days.

Summary

As shown on Figures 2-5, the gaze averting curves (from Figure 1) were superimposed on each developmental graph. This was done to test Hypothesis Two - that there is a relationship between progress in the four developmental areas and gaze averting. As there appeared to be no consistent pattern in this regard, this hypothesis is not supported. Gaze averting did not obviously increase (or decrease) as developmental progress was made.

Section Three: Styles of Gaze Averting

This section presents the finding of the existence of different styles of gaze averting. The following information was not drawn out with a research question, but instead came to light as the study unfolded and as gaze averting incidents were described and observed. Three mutually exclusive categories of looking away behaviour emerged from this qualitative data. These were labelled "buffering" (after Bruner, 1973), "distracted-business" and "play". Not all

infants exhibited all three styles, in fact, as Table 2 shows, there was only one such case (Fiona). Four babies were "uni-style" (displaying one style only) the remaining two were "multi-style".

TABLE 2: Styles of gaze averting exhibited by the six infants

	CASE:					
STYLE:	A	B	C	D	E	F
Buffering		✓			✓	✓
Distracted business			✓		✓	✓
Play	✓			✓		✓

Across these six infants buffering was the most frequent style of gaze averting (41 episodes in all). "Distracted-business" was the next most frequent (25 episodes). "Play" was by far the lowest-occurring looking away behaviour for this group (5 episodes). See Figure 6 (and Table G7 in Appendix G) for frequencies of each style per baby.

This style data was scrutinized in terms of the time scale in order to determine whether or not these babies exhibited a certain type of looking away at a particular age or stage. Whether or not the styles appeared in a set chronological order was also of interest.

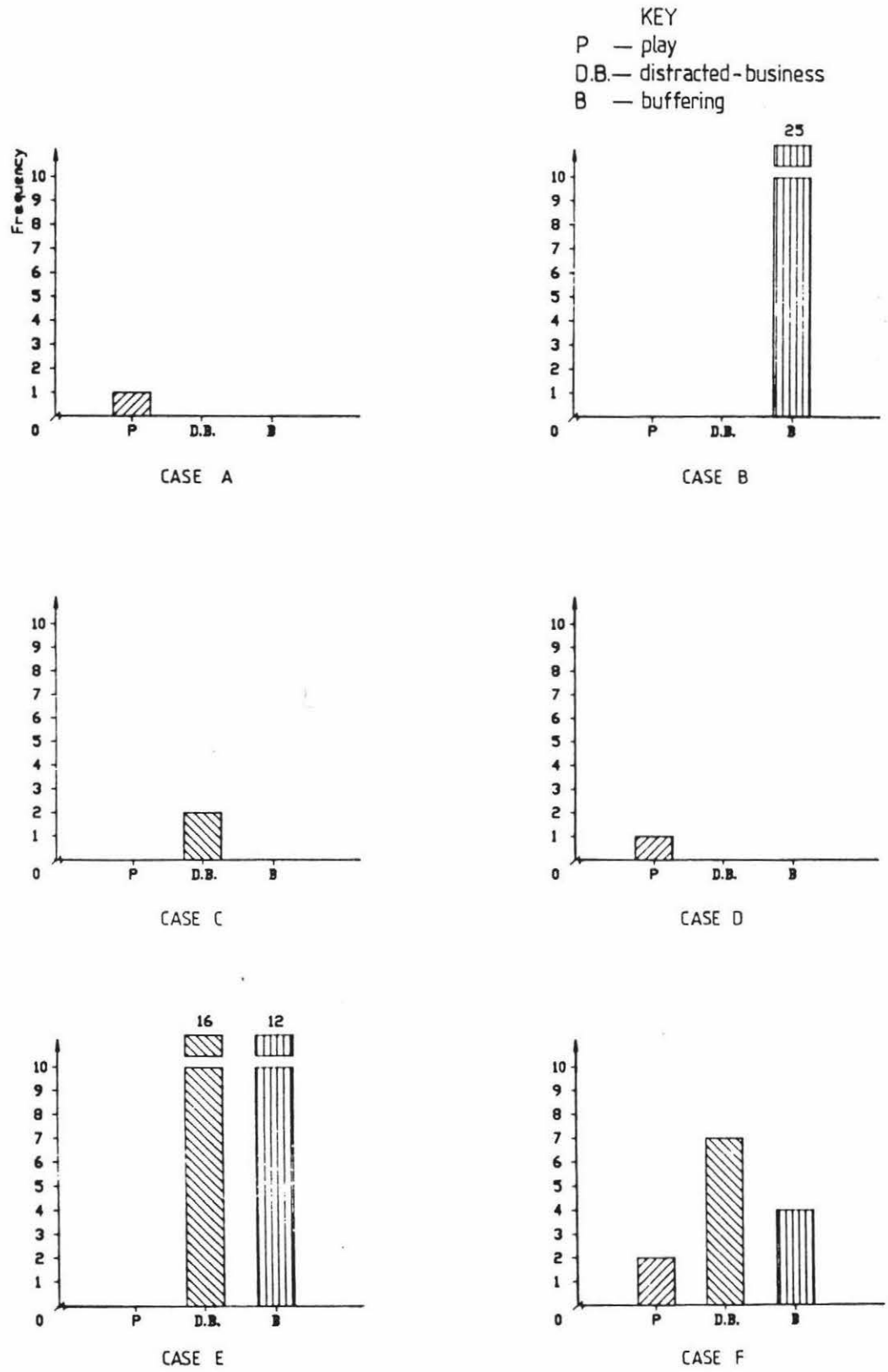

FIGURE 6 8 Frequency of the three styles of gaze averting for all six infants.

What was found was a fairly constant occurrence of all three styles over time. Within each of the categories of age analysed, there were characteristic levels of gaze averting for each style across the six infants. Thus, it appeared that (for this group of subjects anyway) no obvious developmental trends regarding style of gaze averting existed.

Individual Case Notes

Case A: Anne was an extremely contented , "easy" baby. She had slept through the night practically from birth and possessed a particularly even temperament. Her mother even commented that she left her plenty of spare time and "rarely cried." She was observed to be a very sociable and friendly infant, who tended to be in a playful mood at most visits.

She never exhibited gaze averting at the visits, preferring to constantly gaze up at the adults' faces. In particular, the new face (researcher) was keenly regarded (as expected) and smiled at. Her one style of gaze averting was of the play variety. Both reported episodes of this play gaze averting occurred with her father in the evening. It is interesting to note, that at 19 weeks of age, Anne was reported to be "noticeably playing up to Dad and her uncle." She would "chat" even more to them than to her mother. She used it to gain attention by chatting louder and louder until she was successful. She also greatly enjoyed social interaction games, such as peek-a-boo, from an early age. The following vignette is one of Anne's two case examples of play gaze averting:

The 19-week old baby was in a bouncinette in the early evening after being bathed and fed, up from a nap an hour earlier. Her father was sitting on the couch facing her. He attempted to elicit her attention by looking at her, leaning slightly closer and calling her name. She immediately turned her head right away from him and smiled. She then started to kick her legs and wave her arms in an excited fashion and occasionally gave a chortle of delight, all the while keeping her head averted. This continued for several minutes as the father talked to her, whistled, and so forth in an amused manner. The father then ceased, and after a short pause the infant turned back to him and gave him a smile establishing eye contact. He responded saying, "You are a little rascal, aren't you?"

Case B: Brian was a quiet-alert, serious and very astute little boy. He would stare at his visitor rather suspiciously for quite a section of the visit. (Although this did decrease as the study progressed). In fact, a definite "stranger-shyness" reaction was demonstrated at V3 (19/2 weeks/days) and V4 (20/4 weeks/days). Despite his cuddling into his mother (and father) on these occasions, his mother noted (at V1) that he seemed not so cuddly these days," preferring instead to be placed in his walker, or upright on the floor, to "play and have a good look around." Brian was not in the best of health for the majority of the study. In fact, the IV and V3 were the only visits wherein he was physically well. His mother remarked at V7: "he's had one long cold all winter!" (Also, he reacted badly to his 5 month vaccination (V5).)

His one style of gaze averting was the buffering. His 25 recorded

episodes contributed over half of all buffering episodes in the study (41). His parents commented that these episodes were pretty standardized in their makeup. It usually occurred with whoever was holding him (particularly if they were trying hard to establish eye contact). He would turn/drop his head and eyes, squirm within their grasp and, at times, grizzle. It was noted to be more common; a) "when tired or having an 'off' day", and b) in the face-to-face position on the knee. It occurred with anyone interacting with him. It was not person-specific. His mother actually remarked (at V2) that she enjoyed the chance to have someone else hold him so that she could then enjoy a "good talk with him" whilst he looked steadily at her. Hence, Brian did not gaze avert with <u>all</u> interactants, in <u>all</u> situations. The following case example typifies Brian's buffering gaze averting:

Mother was holding her 18-week old infant "en face" on her knee. This was an "off" day for him as he had a cold coming on. It was two o'clock in the afternoon and the baby had been up for a couple of hours. The mother looked away from her television programme and tried to gain her son's eye contact by repeating his name and making tongue-clicking noises. He immediately dropped his head (and eyes) and started moving his head from side-to-side in a restless manner. He wriggled a little and as mother continued to encourage him to look up he let out a little whimper. The mother then ceased her attempts and proceeded to change him in preparation for putting him down to sleep.

Case C: Catherine was alert and "chatty." She presented as a rather fragile baby at first. This was probably due to the fact

that she was born two weeks before her expected date of delivery. Also, it was necessary for her to live in a corrective hip-harness up until approximately two weeks before the study commenced (12½ weeks). Her mother commented at IV that she was "enjoying hassle-free baths and not having to cuddle a board."

This baby seemed from observation particularly intent on gazing up to her mother's face, "talking" and smiling. She appeared to watch her mother's every move. By V3, her father remarked that she either had very acute hearing or she was just very nosy! By this stage sound localization had developed (see Appendix E, C.P. list), and she would pick up whispers easily, immediately looking up if one even tiptoed past her basinette. Her parents had noted that from two months of age she was a lighter sleeper.

Catherine's one style of gaze averting, which she demonstrated just twice, was distracted-business. Her mother observed that during the periods in which no deliberate gaze averting occurred, there was still a subtle change in Catherine's looking behaviour. Although she did not actually avoid her mother's gaze, she would take longer to look at her. Her two episodes of distracted-business gaze averting both involved other people as the source of attention. The following case example is one of these episodes:

At 23 weeks of age the newly-awakened baby had been picked up by her mother, fed "one side", and put into the pram at mid-day for a short walk to her grand-parents' coffee shop. The baby was wide awake and very chatty. Once at the destination, the mother picked up her baby and held her on her knee in the face-to-face position. The infant

looked everywhere but straight ahead at her mother, whipping her head back and forth with a very alert expression. Meanwhile the mother was using the usual attention - eliciting behaviours: name-calling (in a sing-song type voice), jigging her on the knee, gentle shaking, tongue-clicking noises. However, the baby kept "flitting" from one visual stimulus to another. There were quite a few people in the shop, including a direct circle of admiring extended family around the pair. After a couple of minutes the mother proceeded to feed the baby and chat to her sisters.

Case D: David was a very active and alert baby. He was also very "smiley" with an interested expression. His sleep requirements were quite low for a baby of this age-group. He actually preferred to stand (and bounce) in the caregiver's lap, rather than sit!

The observation, from visits, was that he enjoyed long looks into the adults' eyes (both mother's and visitor's) accompanied by large grins. No apparent gaze averting occurred. However, as previously mentioned, David was one of the two babies who were reported to have had a pattern of gaze averting well before the study began. Then, he only displayed one episode during the study (right at the beginning), which was of the play variety. The following vignette outlines that episode:

It was 8 o'clock in the morning and the mother was standing in the kitchen holding the 15-week old infant over her shoulder. He had been up for nearly an hour, changed, and fed. The father was preparing to depart for work. He gave the mother a kiss good-bye and attempted to do the same with his son. He stood behind the

mother to look at the infant face-to-face, whereupon the baby turned away to look into his mother's neck. The father "followed" him for a couple more head turns and then gave up smiling and saying: "You little tyke!" The baby had a happy alert expression throughout this interaction and "bounced" a little in his mother's arms as if in anticipation of his father's "chase."

Case E: Edward was a quiet, calm infant with an alert manner. He often appeared solemn, but readily brightened and smiled at familiar people interacting with him. He investigated faces (particularly new ones) with a typical stare. After a couple of visits, smiles and "chatting" could quite easily be elicited from him. According to parental report, he was "not a great sleeper." (Broken nights and only "cat naps" for day sleeps.) Thus he was up and around a great deal of the day. However, being a patient and contented baby, he was not constantly demanding. As mentioned in Chapter Two, his breast-feeding programme was, at times, supplemented with a bottle. This was because he would spend the occasional night at his grandparents (without mother). The extended family (on the maternal side) was particularly involved with this baby. He took such changes in routine in his stride. He was used to a large number of people.

The gaze averting he exhibited was of two varieties; buffering and distracted-business. They occurred in fairly equal proportions throughout the time span, (12 episodes of buffering and 16 episodes of distracted-business). The buffering episodes consistently occurred with interactants who "pushed" for eye contact and held him

in a close face-to-face position. They occurred with a range of caregivers, although seven of the twelve episodes occurred with his father. He often held him "en face" in the air as part of a playtime routine in a bid to get Edward to look at and talk to him. (For example, when just home from work.) Seven of the twelve episodes occurred when Edward was one of the following: sick (with a cold), grumpy (tired), recovering from a vaccination reaction.

The distracted-business style was observed during home visits. In the early stages of the study Edward would gaze avert from his mother in preference to studying his new visitor. Other person-related looking away occurred when at a party surrounded by many people, and away on a week-long trip (near the end of the study) where many new faces were encountered. Episodes of distracted-business gaze averting in preference to an object also occurred. One such case occurred with the researcher when holding Edward at V2. Attempts to secure his eye contact were firmly ignored, as he much preferred to gaze at a large clock on the wall. Examples of other "interesting objects" during the weeks were: cars passing by in town, a light shining in the dark and the television. These distracted-business episodes occurred with a wide range of people and not more frequently with any one person.

The following are examples of Edward's buffering style and distracted-business style respectively:

a) This 17-week old male infant had woken at mid-day and was fed and changed. One-and-a-half hours later his father arrived home and

picked him up. The baby was quiet, calm and alert. The father held him up in the air at arm's length, "en face", and attempted to secure eye contact. The baby quietly, but firmly, averted his gaze by turning his head to one side. The father immediately "chased" for his gaze by following his head. The more he did this the more the baby resisted by dropping his eyes, head-turning and wriggling. After a couple of minutes the father handed him to his mother and left the room to eat lunch.

b) At 19 weeks of age the baby was outside with his parents, lying on a rug placed on the lawn. He was just up from a sleep, in a happy mood and very wide awake. His parents both in turn tried to elicit his attention by calling his name. He wouldn't even glance at them, looking everywhere else but at their faces. He "zipped" his head (and eyes) back-and-forth fixating on different things including trees moving in the wind, the dog frollicking nearby, and industrial noise over the back fence. After five minutes the parents gave up their attempts and began a private conversation. This was the baby's first experience of being outside lying on the lawn.

Case F: Fiona was an extremely social and outgoing baby. She greatly enjoyed a good "chat" with someone, especially with her mother. Also, she always had abundant smiles, grinning at her visitor on first contact. An alert baby, she investigated people "with her eyes almost popping out of her head", as her mother said. Her parents had already discovered that she loved an audience. She was a "fairly good sleeper" and had no health problems during the

study, (besides normal teething worries and an isolated bout of colic).

Fiona's mother made the comment (at IV) that she loved to study faces, especially when lying on her back looking up at a person leaning over her. However, her parents had noticed that such gazing was much less frequent when sitting on the person's knee. She was the only infant to exhibit all three styles of gaze averting. Her pattern was to display the distracted-business form in the early weeks, followed by the buffering form in the middle of the study, and finally the last section of data collecting showed up a "mixed bag" of all three styles. There was an increase in frequency during this final phase.

Her distracted-business episodes occurred with a range of people; four of these seven episodes (the most frequent style) occurred with her mother directly after feeding. The common description, from parental reports, of such occasions was: "she just wasn't interested in my face." They tended to be object-focused episodes, as opposed to the distraction of other people.

Of the four buffering episodes, it is interesting to note that three involved a visitor and the other was with her father when she was tired. Two of these four episodes occurred when Fiona wasn't happy; (tired on the one occasion and in teething pain on the other). Mother's reports of the episodes with less familiar people all included a common component; that the interactant had been quite "pushy" about gaining eye contact, had "come on too strong."

Play gaze averting occurred twice in Fiona's diary. They both happened in the final data collecting period, within a timespan of one week. They were similar situations in that in both cases Fiona was being bounced on the end of a knee after feeding. However, one case was with her mother and the other was with her father. She smiled throughout (and even chortled), but deliberately kept averted from her interacting parent, except for quick glances to check the reaction of the adult.

Note that in eight of the total thirteen episodes of gaze averting Fiona had just been breast-fed. What follows is a representative example, from Fiona's case notes, of the distracted-business style, the buffering style and the play style respectively:

a) Aged 14 weeks, this female baby was in bed with her mother after being fed. It was 8am, having woken from the night sleep twenty minutes earlier. She was contented, comfortable and rather "dreamy." She was held at arms' length on her mother's knee, "en face." However, when the mother called her name in a sing-song voice and jiggled her up and down with her knees the infant looked straight past her. She appeared to be fixating upon the bright orange bedhead behind the mother, just to the right of the mother's head. When her mother moved into the infant's field of vision, the baby shifted her gaze to the right of the mother's sight line. The baby sat perfectly still and quiet throughout. The mother spoke her name a few more times and as the baby kept looking away she proceeded to get out of bed, taking the baby

with her.

b) A young girl friend of the family was visiting early one evening. The 16-week old baby was not long out of bed, just fed, quiet and alert. The girl took the baby from the mother and proceeded to try and make the infant look at her. Whilst balancing baby on the sofa edge by holding her around the torso, the visitor (kneeling on the floor) pushed her face close to that of the baby. The baby reacted by deliberately averting her gaze. She turned her head from side-to-side as if to "escape". She also arched her back slightly, grimaced, but did not grizzle or cry. Once she grimaced the girl handed her back to her mother.

c) When 21 weeks old the baby was being bounced on her father's knee late one morning. She was happy and alert and had finished being fed and changed half an hour previously. (She had been out of bed for an hour). Her father was attempting to engage his daughter in interaction by calling her name, making tongue-clicking noises and bouncing her gently. The baby grinned and made squeaky noises and avoided her father's gaze most of the time. She spent most of these few minutes looking to her mother (to one side), with occasional fractional glances up to her father's face. The episode ended with her father laughingly handing her to the mother so that he could leave for work.

Criteria for Gaze Averting Styles.

On the basis of these gaze averting patterns drawn from all the case

notes, the following criteria were established for classification of the three styles.

"Buffering"

Baby's state: tired, stressed, grumpy, and/or not well (e.g. just had a vaccination, got a cold, teething.)

Setting: can occur with anyone, especially if that person is "chasing" for the infant's eye contact.

Typical behaviours exhibited: turning head and eyes from side-to-side, looking down, negative vocalizations, thrashing of limbs, arching back, looking dull or "glassy-eyed", shutting eyes.

Likely outcomes: the interactant tends to hand baby on to another, typically the mother. Alternatively baby is being put down to sleep. This behaviour is often regarded as a termination of interaction, or a rejection.

Usual explanation: "crabby" or "overtired."

"Distracted-business"

Baby's state: awake, alert, quiet or mildly active, in "interested"

frame of mind.

Setting: occurs with anyone, often in an unfamiliar environment or when there is something novel to look at in the usual environment (e.g. a bright colour, a moving object or a stranger).

Typical behaviours exhibited: either looking at anything and everything other than the interactant's face in a "flitting" manner, or fixating on one particular object in preference to the interactant's face. (Keeping eyes fixed on this even when his/her body is turned away by the interactant).

Likely outcomes: adult often switches attention from trying to gain infant's eye contact to that which has attracted the infant. May incorporate it into the interaction to become a three-way interaction, especially if it is an object, e.g. toy.

Usual explanation: "not interested in me "or" too busy to look."

"Play"

Baby's state: contented, alert, playful, ready to interact, well rested and recently fed.

Setting: occurs with someone familiar such as a parent (often the father).

Typical behaviours exhibited: deliberate turning head and eyes away from interactant. If "chased" for eye contact will turn head from side-to-side, emit chortle-type laugh or smile, bounce the body, glance occasionally to interactant's face.

Likely outcomes: generally an increase in positive tone, the "game" draws to a natural close.

Usual explanation: "cheeky" or 'rascal.'

CHAPTER FOUR

DISCUSSION

This chapter will be arranged as follows. First, the results will be discussed in light of the predictions made and the existing literature. Next, methodological limitations moderating the findings will be presented. Then theoretical implications will be discussed. Practical ramifications of the results will follow. Suggestions for future research and a summary of conclusions will close this section.

Examination of Results

As gaze averting behaviour was documented for all six single case studies, Hypothesis One is supported. This aligns with all the aforementioned incidental reports of spontaneous gaze averting in the literature. Thus, six "normal" healthy infants occasionally averted their gaze from the caregiver, during interaction, without any obvious manipulation. The fact that six very different profiles were obtained with respect to overall number of episodes, pattern of occurrence of episodes and age span across which the behaviour occurred, suggests that there are no "hard and fast" rules regarding the manifestation of gaze averting. Accordingly there must be a host of factors contributing to the occurrence of this behaviour. This is understandable considering the range of theories (quoted in Chapter One) which attempt to explain why gaze averting happens. No

single explanation could cover all possible situations - with varying personalities of infant and caregiver; different moods/interests; varying infant age and developmental stage; various environments, and so on.

With respect to the developmental markers monitored, all six infants progressed in competence throughout the course of the study. They were all within age-related expectations, and for the Gross Motor (G.M.) and Cognitive-Perceptual (C.P.) categories they were all advanced. Therefore, this was an ideal group on which to tentatively test the hypothesis regarding a relationship between this development and gaze averting behaviour - Hypothesis Two. It was rejected as there was no pattern to the changes in gaze averting shifts in relation to the developmental curves. Across all six infants gaze averting behaviour occurred when development was accelerated and when it had reached a plateau. In the same way, gaze averting was absent during periods of concentrated development and also when developmental progress was slow.

The identification of three distinct styles of gaze averting is revolutionary as far as the present literature is concerned. In determining the major themes involved, three criteria were isolated and served to form a classification system for the various styles of gaze averting. This is depicted diagramatically in Figure 7.

These criteria are in the form of bi-polar dimensions and each style is placed at one pole for each of the criteria. Firstly, there is "Personal interaction" which ranges from low to high depending on

	B DB	P
Personal interaction	low_____	high
	DB	B P
Attention source	object/other person_____	interacting person
	B	DB P
Feeling/Tone	tight/strained_____	relaxed/happy

FIGURE 7: Three bi-polar dimensions for classifying buffering(B), distracted-business(DB), and play(P).

the degree of involvement with other people. (Low means rejection or avoidance and high means choosing to interact freely). The second is labelled "Attention source", and is of two types according to what is interesting the infant at that moment; an object or a person other than the infant's interaction partner, or the interacting person. The third dimension is the "Feeling/Tone" which refers to the atmosphere within the interaction. Tight/strained and relaxed/happy are the two extremes on this dimension. Note that the idea of "will", which is believed to control such behaviours (Sylvester-Bradley, 1981), is not included in this classification system since it appears to be involved in all three styles of gaze averting and it is not an issue here.

Style 1 - Buffering: This style is characteristically non-interactional and synonymous with the gaze averting behaviour

focused on by the "concerned" schools of thought, (Clinical, Biological and Attachment). This form of gaze averting is in most danger of being labelled pathological. Paradoxically it does have people as its attention source, however, in a negative manner. The aim is to resist or avoid them. Understandably then, it is the one style observed in tense or strained situations. It appears to be the style of gaze averting to which the theorists from the self-regulation perspective were referring. As Stern (1974) describes it: "The infant contributes to the regulation largely through the control of gaze which allows him to titrate perceptual input of the stimulus events provided by the mother, so as to maintain his internal state within an optimal range" (p.210). The "automatic" homeostasis view, such as that of Brazelton et al. (1974), can be adapted to include the idea of a regulatory mechanism which involves the infant's active decision to avert when incoming stimulation reaches "overload."

Style 2 - Distracted-business: Many of the reported examples of distracted-business do not involve people, either for interaction or as the source of attention, when the focus of infant attention is objects. The examples of this gaze averting which do involve people are those when other people (not objects) are distracting the infant from looking at the interacting person. So, it is the only style which does not have the interactant as the focus. As it is likely that aspects of the environment (be it an interesting inanimate object or a novel person) are selected and preferred, the general atmosphere or mood is relaxed rather than tense. This style, then, is reminiscent of the situations described by those reporting cases

of incidental gaze averting in terms of a "shift to objects" (eg. Kaye & Fogel, 1980; Lamb, Morrison, & Malkin, 1987; Stern, 1977). It aligns with the Developmental theories of explanation which stress the concept of varying developmental tasks according to the infant's stage of cognitive, psychomotor, perceptual and social-emotional growth. Therefore, gaze averting is a product of certain developmental tasks, such as eye contact, vocalizing and establishing the primary social relationship, decreasing in importance (Keller & Scholmerich, 1987; Keller & Gauda, 1987; Murray, in press; Stern, 1977) as others take their place. These include; reaching and grasping becoming functional (van Hofsten, 1979; White et al., 1964), cognitive concepts such as object permanence and person-object differentiation being established (Bell, 1970; Bower, 1982; Ellsworth, (in press); Trevarthen, 1979), and visual competence reaching adult levels (Haith, 1977). What occurs, then, is a "normal" shift of interest according to the infant's developmental stage.

Style 3 - Play: This form of gaze averting is definitely interactional. People are the main attention source, and it occurs in a positive and relaxed atmosphere. Here, the infant uses gaze averting in a playful or teasing manner to initiate a game, and thus is begging participation from the partner. In this context, averting is paradoxical. The infant, on the one hand, seems to be resisting mutual gaze but is, on the other, taking part in a subtle two-way game. The participant's joyful mood is the distinctive feature.

In studying the mother and infant at play, Stern (1974) discovered that the mother alters her normal adult social gazing behaviour during play with her infant. She assumes the role of an almost continuous gazing "listener". This "unusual" behaviour makes up a major part of the infant's world of social stimuli, and elicits the most play from the infant. Thus, with the mother looking constantly throughout the play sequence, the infant does not need to use eye contact to gain her attention. He is free to cycle from looking to non-looking.

Trevarthen et al. (1981) report that after 15 weeks infants show signs of beginning to be "facetiously tricky" in themselves. They may make others laugh by comical, slightly aggressive behaviour. Such behaviour involves, besides smiling and other pleasure expressions, a measured partial avoidance of gaze and a "looking askance" that shows awareness of the other as a kind of opponent. Because the infant is exaggerately looking "off line" while maintaining contact with the other by means of brief (fractional) glances, and doing so in response to appreciative attention, the behaviour is clearly marked as a "performance", a kind of "acting up" for an "audience." So, this style of gaze averting is unlike the other two styles in that it is expressive-interactional as opposed to non-interactional.

Field speaks of the crucial importance of such games with caregivers in social development (Trotter, 1987). They introduce the infant to the rules of social behaviour. Being highly repetitive with simple roles for both partners, these games help infants learn such things

as give-and-take during conversations, and thus help them to grasp the turn-taking nature of social interaction. It is interesting to note that Jones (1979) divides eye contact into three categories: "Personal", "Referential", and "Game". The latter category includes all eye contacts which serve a specific role in a game and so has relevance to the play category of gaze averting in the current findings. Jones' other two eye contact categories do not tie in with the present study's gaze averting styles in the same way. The "Personal" category accounts for eye contacts made in an essentially social context, and the "Referential" category includes those eye contacts made during interaction when the child appears to be referring to something he's doing.

As far as common themes or patterns are concerned within the "style data" there is little to discuss. Each style was exhibited by a range of infants, all with different temperaments and environments. Also, the infants, with one exception, either were very "low rate" gaze averters or displayed two or more styles. There are a few points which merit a mention at this point. First, regarding the above mentioned "exception"; Case B, or Brian was the one infant to exhibit a greater quantity of episodes of one style of gaze averting. It is particularly interesting as it was the style which is controversial; buffering. It could be questioned as to whether he shared any characteristics with the case studies reported by Kirkland & Deane, 1984; Kubicek, 1980; Thoman, 1975; as being "rejecting" babies. Of the six case studies in the present research, Brian would be the first to be attributed psychopathology if a clinician were to observe him during the age period in which

this behaviour occurred. This raises an ethical point regarding Brian's possible status as an "at risk" baby. Final contact is to be made with each family on the submission of this thesis. This will provide an opportunity for Brian's parents to be asked if there are any issues regarding their infant which they wish to raise, or seek further advice upon. Referral on to an appropriate helping agency, if required, can then be provided.

The buffering style of gaze averting did appear, from the case notes, to be often associated with tiredness, sickness, or interaction with a person (often a visitor or newly-returned father) who "chased" for eye contact. Brian, in fact, was unwell for the majority of his home visits which is another possible explanation for his gaze averting profile.

The next common theme, to draw attention to, is the finding that infants had a higher tendency to gaze avert (across all styles) when held in a "close" face-to-face position than when more distanced from the interactant. This point leads to practical ramifications, as does the finding that "pushing" for eye contact encouraged gaze averting.

Another outstanding point is that in the five episodes of play noted in the present study, all of them occurred between the infant and the father. Although it only involves a small number, it hints at a possible emerging pattern with regard to this particular type of interaction. What are the characteristics peculiar to the father-infant relationship which lead to this type of play

interaction? Are we witnessing the emergent roots of an exclusive role fathers may have with their youngsters in that they roll around the floor in the active games with them (eg. tickling) more often than do mothers.

Methodological Limitations

It is important to draw attention to the methodological weaknesses of the present research which may qualify the results.

The first and most obvious issue is the ability to generalise from the results. As the present study dealt with six single cases and primarily their qualitative data, generalising was never a feasible aim. Issues of generality are the business of large-N studies and their tests of statistical significance. Also, these six infants although representing a wide range of socio-economic status, were mostly caucasian. Generalisation in terms of making statements about gaze averting or developmental progress of all infants is unwarranted. What can be and is done is a cross-comparison of the results obtained with the present theoretical perspectives and other studies. Thus, as with all single case studies, the sacrifice of generality was made for the richness and depth of information gathered.

Second, the subjectivity of the data gathering techniques must be acknowledged. Interview and observation procedures present the age-old problems of lack of objectivity. They leave the research open to experimenter-bias. There were no systematic checks built

into the study other than regular home visits. However, if one is aware of such a weakness at the outset then certain standardizations could be included to help counteract this. For example, the interview followed the same format on every visit for each case. The third source of data, the mother's daily diary forms, is also a possible area for subjectivity to play a part. The reporting mothers (parents) could well have been highly selective in deciding which behaviours and developments to record and comment upon. They could have been responding in a socially favourable way. This was reduced as much as possible by the initial careful explanation of: 1) the various precipitating factors of gaze averting, and how widespread it is as an infant behaviour; and 2) how the developmental markers were only approximate with regard to age at which steps are achieved. Also, when showing them the pictorial example of gaze averting at the introduction (see Appendix C), this was the only example provided as the three styles had not yet been isolated from the current data.

The analysis of the results also suffered the same methodological weaknesses. The "reporters" had a free rein, so to speak, with what they could write in the diary, and with what they could bring into the discussion with the researcher. This made it difficult to group the information systematically, to draw out themes and patterns. The wealth of the qualitative information gathered is more valuable than having data that is easily and neatly collated.

In conclusion, although it is acknowledged that the present descriptive approach left the study wide open to flaws, the

researcher considered it to be the most appropriate method of investigation for this particular project.

Theoretical Implications

Two major theoretical implications arise out of the findings of the present study. First, the schools of thought regarding gaze averting as a pathological behaviour are challenged. When enmeshed within a repertoire of abnormal or inappropriate behaviours, gaze averting could well be indicative of autism. The present results demonstrate the variations in infant gaze averting and thus the varying intentions of the infant. For example; self-regulating visual input when receiving too much information too quickly, looking at something or someone else in the immediate environment when bored with the caregiver's interaction, exploring the surroundings when certain visual and motor skills develop to a point where it's natural to do so, playing a rather "tricky" and complex interaction game with the caregiver, and so on. Therefore, it is limiting and perhaps dangerous to regard gaze averting in the uni-dimensional fashion that the Clinical, Biological and Attachment theorists do. That is, the premise that it always serves as a rejection or avoidance of interaction.

Rutter & Durkin (1987) report that it is not until approximately the end of the second year of life that the child's gaze begins to approximate the typical adult pattern of signalling. Similarly, Anderson, Vietze & Dokecki (1977) speak of the different vocalizing pattern of the infant to that of the mother in that the infant

looked less at the partner during his vocalizations than did the mother. Thus, to attribute to infants adult-like patterns of responding in the interaction setting may be a presumption of the above schools of thought. In particular, the signalling function of gaze may have been wrongly judged by them, in using the adults' "yardstick." This means a traditional, long-term theoretical view is now open to question and challenge.

The second implication of the present findings on reviewing the literature is the very clear need for a more integrated approach to the theory. In reviewing the literature, eight separate theoretical perspectives of gaze averting were identified and described. What became evident was that several authors contributed to two or more of these schools of thought. So, overlap occurs to a degree, and this must be more precisely accounted for.

First, the Clinical perspective would centre on the buffering style of gaze averting in the present study, as this involves the infant resisting interaction in a strained setting. It is the style which aligns most closely with the "abnormality" aspect of the Clinical view (Massie & Rosenthal, 1984).

Next, the Biological perspective has neither found support in the present findings, nor has it been entirely disproved. This denotes the idea of an automatic response beyond the infant's control. Gaze averting is an unlearned response put into action in situations of high arousal (Hutt & Ounsted, 1970). This is in contrast to the theory of infant will, or intentionality, (Sylvester-Bradley, 1981)

which underlines the present research. However, the present research cannot unequivocably state that Brian, who used the buffering style constantly in a protective manner, was wilfully gaze averting. It may have been a case of an automatic biological response within a child with a higher-than-normal physiological arousal. This warrants further investigation, as there may be two distinct situations with regard to the buffering style. One being the "normal" babies who use it intentionally to control perceptual input (ie. Self-Regulation), and the other being those babies who are tentatively diagnosed as autistic (or "at risk") and who manifest an automatic biological response to overflow of input.

The Attachment school of thought would, like the Clinical group, identify with the buffering style. As gaze averting is developmentally retrograde in their view, the "resisting" nature of this style would fit in with their theory of anxiously attached infants and impassive, abrupt mothers (Ainsworth et al., 1974).

Psychoanalytic theorists, who stress the importance of conflict to the phenomenon of gaze averting, would probably also most closely relate to the buffering style. However, a major difference is in the attitude regarding the appropriateness of the behaviour. Unlike the preceding three perspectives, the psychoanalysts regard it as playing a necessary role in developmental progress (Klein, 1953a; Spitz, 1957).

The Developmental researchers (both "Cognitive" and "Other") identify strongly with the distracted-business version of gaze

averting. As outlined earlier in this chapter, such looking away is contingent on the developmental stage of the infant. It involves an expected "shift" of interest, according to the infant's developmental status on cognitive, psychomotor, perceptual and social-emotional dimensions. (eg. Bell, 1970; Keller & Scholmerich, 1987; Haith, 1977; Murray, in press; White et al., 1964).

The Behavioural representation, puts forward the notion of habituation to repeated interaction patterns. This incorporates both buffering and distracted-business styles as it includes both the notion of an avoidance mechanism and a switch of attention. It appears to overlap with the Biological perspective in one regard (ie. "habituation"), and with the Self-Regulation perspective in that avoidance is suggested (Papousek & Papousek, 1979).

Finally, the Self-Regulation perspective relates to the buffering style of gaze averting. In fact, this theory and style provide the closest "match" in the present discussion. The notion of the infant wilfully controlling perceptual input, to avoid "overflooding", is the "other side of the coin" with respect to the Biological perspective, as previously mentioned. The quality of the interaction is the issue here (Brazelton et al, 1975; Sylvester-Bradley, 1981), as opposed to the quantity which the Biological theory proposes.

Practical Implications

There are two major practical implications arising out of the present results.

First, parental expectations of their infant in social interaction are affected. The importance of the parents taking their cues from their baby when interacting cannot be overemphasised. Thus, "taking a step back" when the baby shows buffering gaze averting; incorporating the stimulus of interest into the interaction when he shows signs of distracted-business gaze averting; and joining in the "spirit" of the game when the infant exhibits play gaze averting. Perhaps the most difficult of these three parental "alterations" (according to the literature) is letting the infant take a pause, in order to "catch his breath." Certainly, in the descriptive results of the present study, there appeared, repeatedly, the scenario wherein the adult was "pushing" or "chasing" for the infant's eye contact. It was almost as if they couldn't accept the refusal; they would not take "no" for an answer from the infant. Consequently, such an interaction became a battle, concluding (usually) unfavourably with the infant showing his frustration and distress with the situation. This would cause a stress outside the normal range of interactive stresses according to Gianino & Tronick's Mutual Regulation Model (1985). Therefore, a similar outcome to those of the laboratory studies of perturbations of infant-adult exchanges would occur. That is, the infant would be repeatedly frustrated, and an irreparable interactive "mismatch" would result in that situation.

Such an outcome could simply be avoided if the adult was to respect the infant's wishes and see him as an equal partner in the interaction exerting as much will and control in the situation as the adult. Researchers endorsing this advice include Brazelton et al., (1974); Field, (1977); Kaye & Fogel, (1980); Murray, (in press); Papousek & Papousek, (1979); Sylvester-Bradley, (1981). The negative reaction of some caregivers to their infant's buffering gaze averting grows out of the notion that such behaviour indicates a negative feeling toward the caregiver. An example of this common reaction is quoted by Robson (1967). "One mother of such an infant, after vigorous but unsuccessful attempts to catch his eye, angrily exclaimed: "Look at me" - she obviously felt rebuffed" (p.19). However, if adults were to see the behaviour in perspective - as saying "no" to further interaction for the moment, and not "no" to the caregiver per se - then such angry scenarios as the one above would not occur. Another strategy for the buffering situation (besides ceasing attempts to gain eye contact) is to increase distance between caregiver and baby. Hutt & Ounsted (1970) admitted that proximity had a definite bearing on the occurrence of gaze averting in their autistic children.

Practical advice regarding the distracted-business situation can also be found among the studies cited. Sylvester-Bradley (1981) speaks of changing the interaction when the infant appears bored with the situation and wants more than purely face-to-face conversation. So, when the environment has become more interesting than the adult, and thus a preferred visual stimulus, the adult may

attempt to "win back" the infant by initiating an interpersonal game or simply by "entertaining" with increased facial and vocal expressiveness. Slee (1984) evidenced that it is the mother's facial expressiveness that is the stimulus for attracting infant attention, and not simply gaze alone. (This was initially shown to be true in Kaye & Fogel's 1980 study.) Stern (1974) notes: "maternal gaze and the constellation of vocal and facial behaviours that may accompany it exert a strong effect on both eliciting and holding infant gaze" (p.204).

Another practical suggestion for the distracted-business gaze averting situation, according to Stern (1977), is to "go with" the infant. That is, by following the direction of the infant's attention, the caregiver can join in the newly formed interaction between the infant and the other stimulus (eg. a toy or another person). Thus, a triadic sequence is formed and the caregiver does not feel rejected or "left out," as in the Robson (1967) example.

As for the play gaze averting, the practical ramifications for the parents could be that they enjoy a whole realm of play interaction that they were missing out on when they saw the behaviour as a turning away or rejection. Thus, with the correct parental interpretation of the situation, both parties can benefit greatly.

The second major practical implication affects professionals in the clinical setting primarily. However, it also has ramifications for people in the social services industry and child care workers. The crux of the issue is that if, indeed, previous assumptions about the

pathology of gaze averting may be overstated, as the present research suggests, then those people continuing to operate on such a premise could be mis-labelling. This is relevant to those in the child psychology, social work, educational and medical settings. The following statement by Keller & Gauda (1987) outlines the "absoluteness" of the psychopathological perspective: "We consider assessment of eye contact behaviour between infants and primary caregivers at about three months of age to be a comparatively easy way of identifying children at risk" (p.140). Thus, clinicians with this view would be assigning the "at risk" label to <u>many</u> babies according to the numerous incidental reports of gaze averting, and the tentative indications from the present study that gaze averting is fairly common throughout infants in their first half year of life. The far-reaching and long-lasting effects of a misdiagnosis need not be spelt out. The "labelling" of an infant incorrectly could result in overeacting to and unecessarily interfering with families and children perceived to be "at risk."

This is not only tragic with "normal" healthy infants, it can also endanger those infants who are tentatively diagnosed as autistic or who manifest the "rejecting baby" syndrome (Kirkland & Deane, 1984; Kubicek, 1980; Thoman, 1975). As such an approach believes that mutual gaze, with the caregiver, is the healthy, "normal" and constant state of affairs throughout infancy, it would try and reinstate this behaviour to the averting infant's repertoire. Gaze averting would be actively discouraged, in the quest for a healthy prognosis. Such an overly zealous approach could do more damage in such cases. As Thoman (1975) and Kirkland & Deane (1984) evidenced,

in their successful handling of rejecting babies, a sensitive approach which respects the infant's dislike of close physical contact and direct eye-to-eye contact is necessary. By taking cues from the infant and increasing face-to-face positioning time periods and holding time gradually, interactional synchrony slowly was established.

Errors in diagnosis, however slight, can result in the implementation of inappropriate treatment strategies, or a treatment plan which isn't "tailor-made" for the particular case. Present treatment of autistic children centres on behavioural interventions (Jenson & Young, 1985). Behaviour therapy conducted in one-to-one teaching situations, although not a cure, it has been responsible for much of the success achieved in the treatment of autistic children. Significant advances have been made in teaching new skills (eg. functional speech, reading, self-help skills and social skills) and in managing inappropriate behaviours (eg. self-injury).

However such treatment requires large expenditures of time and effort. Also, costs are further compounded by the failure of autistic children to generalize skills taught from one situation to another, and the failure of skill maintenance over time. One strategy to ease these problems is advocated by Jenson & Young, 1985; Webster, Somjen, Sloman, Bradley, Mooney & Mack, 1980. That is, the involvement of parents and peers in the operant-conditioning to create a family-centred programme. As Lovaas, Koegal, Simmons & Long (1973) point out; a relatively untrained person can build "simple behaviours", like eye-to-eye contact. As autistic children

are renowned for their social aloofness (Ungerer, 1985), this behaviour is often the focus of initial attention. Therapy can then proceed to the more complex language skills.

Jenson & Young (1985) refer to such a primary programme (the "Get Ready Attending Programme") which progressively shapes eye contact using a prompt-fading sequence. Lovaas et al. (1973) also speak of the conditioning of "some simple behaviour... such as looking at the therapist"(p.135) as an introductory step. However, they then discuss the rather extensive theoretical structure associated with this "simple" behaviour for autistic children. For these children looking or not looking at another person has acquired special significance on a purely conceptual level. From this, Lovaas et al. predicted major changes in the autistic child who started to look at others. However, this was not the case as only very minor changes were found in the children who began using eye contact. Also, they point out the need for functional descriptions of autistic children, as vast individual differences appeared in their research leading to a wide range of different responses to the treatment applied. Lovaas (1987) also found distinctively different groups emerging from the data in his behavioural treatment experiments. He suggests that this implies different etiologies of the disorder. Thus, future theories of autism will have to identify these groups of children. This aligns with the discovery of various looking away styles in the current research. Therefore, with both "normal" and "at risk" children gaze behaviour is perhaps not as clear-cut and indicative as it might have once seemed.

Rutter (1968) states that social behaviour tends to be more malleable than level of cognitive functioning. So social withdrawal behaviours (such as gaze averting), unlike cognitive functioning, are generally lessened considerably with age. Also, social behaviours tend to be poor predictors of later development. Thus, from these assertions, together with those of Lovaas et al., it can be tentatively suggested that the degree of eye contact is not an optimum behaviour to focus upon regarding either diagnosis or initial treatment planning. As the preliminary results of the present study indicate the phenomenon of gaze averting is multi-faceted and complex. As Jenson & Young (1985) assert; possibly one of the most difficult behaviours to define and assess is "social relatedness", which includes gaze behaviour.

Future Research

An area surrounded by such controversy begs for further research. With the present methodological limitations and theoretical and practical ramifications in mind, a few suggestions for future research will be made.

First, there is definitely a place for further investigative research on spontaneous gaze averting in the "natural" setting. If nothing else, the present research has served to elucidate this point. There has been sufficient experimental manipulation of this phenomenon for widespread acceptance of the resulting conclusions. However the area of exploratory and descriptive study of infants in their "natural" setting is just beginning. As Sylvester-Bradley

(1981) pointed out, this is crucial in determining what role gaze averting plays in normal development. Future research along the lines of the present study should take note of the present methodological weaknesses, and thus improve upon these. In particular increasing; the number of single cases, the span of the longitudinal study (one to six months is suggested), and the objectivity with respect to the data collection methods is most important. One suggested way to tighten up these methods is to record instances rather than episodes of gaze averting. By equating all episodes of gaze averting, valuable information regarding their individual make-up is being lost.

The present findings demonstrate the advantage of qualitative data in such an area of study. The richness and depth of information gleaned outweighs, to a certain degree, the subsequent lack of generalisability and objectivity which quantitative studies provide. There is still a place for the large statistical studies, with objective measurement devices which could answer precisely such research questions as; is gaze averting more prevalent in boys or girls?, what is the age period which this behaviour spans?, what is the relative prevalence of the three styles of gaze averting (of the present study)?, are "uni-style" or "multi-style" babies more prevalent?, what role does specificity of interactant play, with respect to the three styles?, and so forth.

Of these three styles, the one which perhaps deserves special attention is buffering. Primarily because it is the one under focus by the school of thought against gaze averting. A large-scale study

which involves many "normal" infants exhibiting this style of gaze averting, (who are not of the "rejecting baby" syndrome), would be the ideal next step in supporting any theory stressing the behaviour's normality and usefulness. Data from such a study could then be compared with that from previous studies which declared gaze averting to be an abnormal behaviour. In this way, an attempt could be made to tease out the factors which <u>are</u> precursors of pathology. Further, experimental manipulations to produce this particular style of gaze averting could be useful, as far as confirming the factors which precipitate it are concerned.

Suggested topics for future qualitative research on gaze averting are: the mothering/parenting style of the caregiver, and the temperament of the infant. It is interesting to note, at this point, that it has been proposed that young infants differ in their visual focusing and prolonged gazing according to their activity level (Escalona, 1968). Inactive (passive, placid...) babies demonstrated these behaviours readily and frequently, whereas they were relatively rare in the active ones. Thus, it is feasible that the infant temperament type contributes to the occurrence, style and pattern of gaze averting.

The scope for further research on gaze averting by infants during interaction is enormous. If the practical consequences of such efforts is an improvement in the quality of interaction between mother (parent)-infant dyads, due to greater mutual understanding, then it truly deserves research attention.

Summary of Conclusions

The major conclusions of the present research are:

Infant gaze averting occurs spontaneously in the "natural" setting.

Further research may be required before thoroughly dismissing the notion of a relationship between gaze averting and developmental progress.

Gaze averting must not be conceptualized as a simplistic behaviour pattern with only a single possible cause, presentation and outcome. It is a complex and multi-faceted phenomenon. In the present study, three mutually-exclusive styles of gaze averting are presented and labelled as: "buffering", "distracted-business" and "play". They each have quite separate criteria for classifying episodes of gaze averting. Three bi-polar dimensions are offered for a preliminary classification system.

Gaze averting must not be judged on a single episode since many factors appear to precipitate it. There is needed, in certain areas of the literature, a shift in perspective regarding its appropriateness. Rather than immediately viewing it as a negative behaviour, one should take a closer look at the interaction and determine the causal factors and the particular style. Some of these "normal" causal factors isolated were: the infant needing to take a pause to process excess information (overstimulation occurring); the infant is bored with purely conversational interaction; the infant is attempting to use new-found skills in an

exploration of the immediate environment; the infant is simply exerting control as an equal social partner (directing the interaction wilfully); the infant is engaging in a facetious eye contact game (which has a teasing quality).

Some infants may be predisposed to a "rejecting" style, which is a more extreme form of the gaze averting styles described. However, theoretical and practical implications from the present study have a bearing on such atypical cases.

Finally then, infant gaze averting during social interaction can actually have productive consequences for both infant and caregiver. It is only when the caregiver misunderstands the intention of the gaze averting, and takes it as a "personal" comment, that it becomes distressing for both and developmentally unproductive for their relationship.

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AMMENDMENT

The author wishes to acknowledge the source of materials contained in the following appendices;

B: This consent form is taken from: Kirkland, J. Crying and Babies. (1985). London : Croom Helm.

C: This photographic sequence is taken from: Kirkland, J. & McKeever, C. (1986, July).

D: This diary form is taken from: Kirkland, J. Crying and Babies. (1985). London : Croom Helm.

E: The items for this developmental checklist were selected and modified from the following sources: Barber & Williams (1981) and Furuno, O'Reilly, Hosaka, Inatsuka, Allman, & Zeisloft (1979).

APPENDIX A

LETTER TO RESEARCH PARTICIPANTS

Thank you for agreeing to participate in my thesis research, your help is very much appreciated. My interest is in studying babies in the three - six month age range, particularly in interaction with their principal caregiver, ie. you! My information-gathering tools will be: discussions with you, a diary form for use between sessions and observations of your baby during various activities: playing, feeding, bathing, etc.

My requirements from you are:

(a) To make yourselves available to me in your home for eight two hour sessions, spanning approximately ten weeks. The majority of these sessions will just involve the two of you, but hopefully through including evening and Saturday sessions (as well as morning and afternoon ones) your partner will be present at times.

(b) To keep a diary between visits of certain behaviours that your infant may exhibit. This is not designed to be a tedious, time-consuming task, but more to act as a memo for you to remember issues to bring up at our next meeting.

(c) To adhere to the appointed sessions dates and times as closely as is practically possible. I am well aware that babies are

very unpredictable and thus difficult at times to make plans with very far in advance! So, where necessary, adjusted times can be arranged. Such hiccups in the procedure such as illness, clashes with other appointments, etc. are bound to occur; but hopefully to a minimal degree. Keeping as close as possible to laid down times is important for making the time intervals between sessions similar.

What you should expect from me:

There are a number of ethical considerations you should be made aware of:

(a) That you have the right to professional confidentiality. Thus, only I will have access to your name and address. Also, the completed thesis will be withheld from public domain until at least two years following its submission for marking. Finally, pseudonyms will of course be used throughout the written report.

(b) That you have the right to withdraw from the study at any stage. Natuarally, I hope to avoid such a situation and would hope that we could discuss any qualms you have before taking this step.

(c) That you have the right to know the results and conclusions

drawn from this study. Hence, I will provide you with a condensed summary of these on completion of the thesis. Also, you will have access to the full thesis, through me, if you so desire. I will be happy to answer any queries, or explain any points that may arise through your reading.

Joanna Taylor
Researcher
(Masterate Student in
Clinical Psychology)
Massey University

Contact point:
5 Carlson Street
Dannevirke
Ph: 46-674

APPENDIX B

Consent Form (2/83)

Involvement with babies

Please read carefully the following:

I understand that any information provided is confidential to professional persons involved, that I am free to refuse to answer any questions which are embarrassing or which may intrude on my privacy, and that I may withdraw my consent and discontinue participation at any time without prejudice.

I also understand that people involved in professional training sometimes have access to the material and that information gained may be used for instructional and research purposes but that the names of participants are not released.

I herewith consent to participate.

_____ _____

Signature of Parent-guardian Relationship to baby

_____ _____

Signature of Researcher-clinician Date

Name and address (printed)

_____

_____

_____

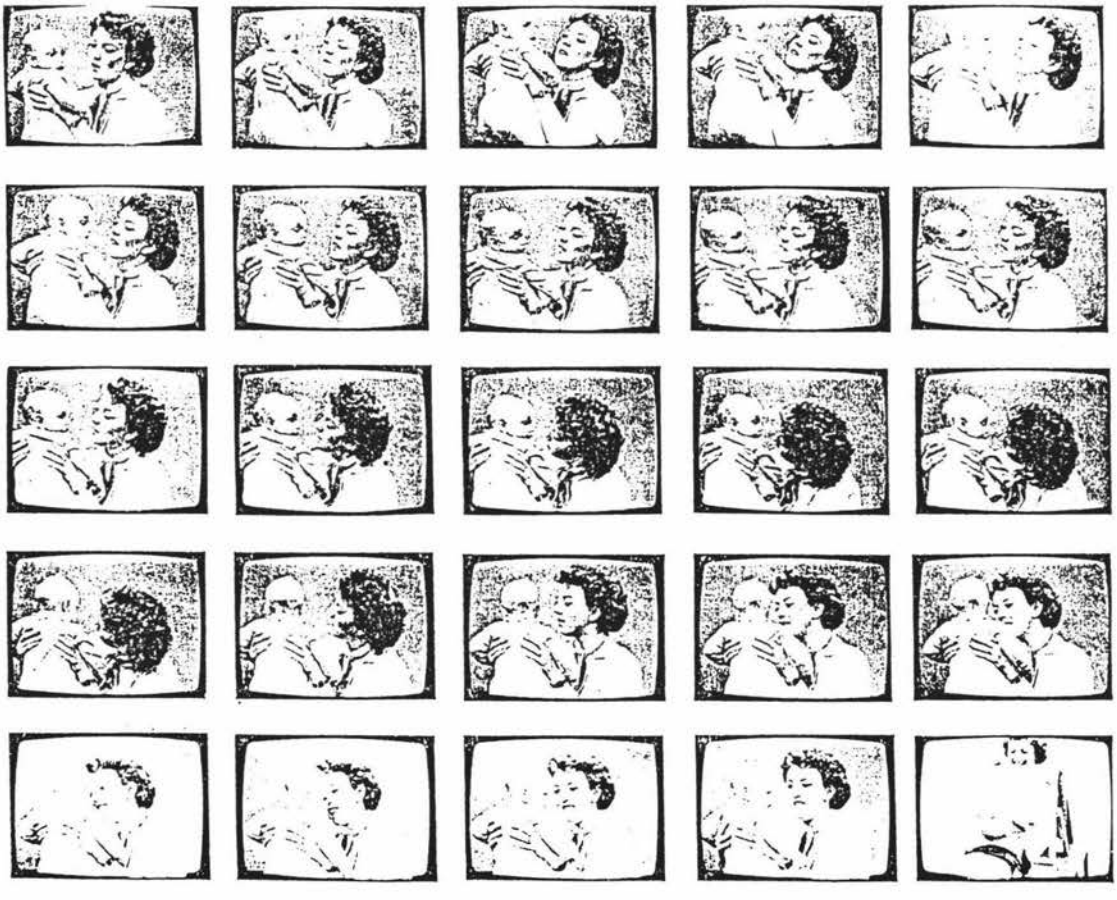
APPENDIX C

PHOTOGRAPHIC SEQUENCE

A 5-month old infant's resistance to his mother's persistent attempts to secure eye contact are portrayed in the series of 24 photographs. Every fourth frame is shown, respresenting intervals of 1/6 second.

The baby is raised and then lowered so that its downcast eyes can be aligned with his mother's (Row 1). Then the torso is twisted; still the baby appears to be looking at something else (Row 2). The mother next bends right over in order to establish eye contact, but is cut off with a slow blink (Row 3). The infant's head turning is mirrored by his mother (Row 4) but once again she is cut off (Row 5).

The final picture was taken 2 months later during a peek-a-boo game with a mirror shield. Clearly, the infant has no hesitation about taking part.

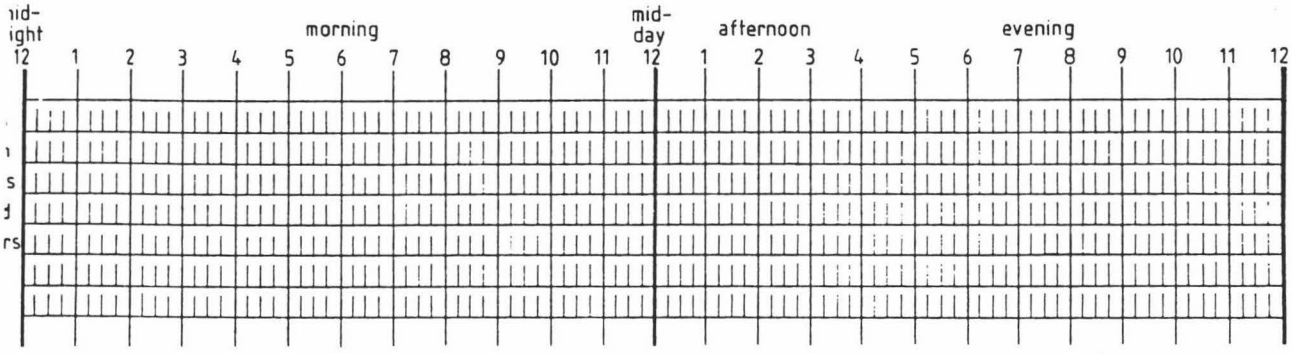


APPENDIX D

Diary form Parent name: _____ baby's name: _____ Start date: _____

Each of the little boxes stands for 15 minutes. When you have completed this sheet go onto another diary form.

For the present form: ✓ = episode of gaze averting G.M./F.M./S.E./C.P. = new developmental milestone (see Development Check li



Comments:

Sunday:

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Saturday:

APPENDIX E

DEVELOPMENTAL CHECKLIST

Gross Motor (Large Movements), G.M.

At approximately 3 months:

- When pulled to sitting position (from lying on back) there is little or no head lag (neck muscles strengthening)
- when placed on tummy: lifts head and chest wall up off surface - using forearms for support
- when lying on back, tends to now keep hands and head in "midline" position (rather than to side[s])

At approximately 4 months:

- rolling may begin (from tummy to back)
- sits with support at lower back (holding head steady)
- takes some weight on legs (rather than letting knees collapse when held in standing position)

From 5 months on:

- sitting without support (initially will use hands on floor for support)
- may be almost in constant motion: kicking vigorously, moving along floor/cot by pushing with feet etc. (ie. "creeping", or

crawling, may even begin)

- will be able to roll from side to side, ie. can now roll from back to tummy
- when held standing, takes own weight steadily on feet - and bounces!

Fine Motor (Small Movements), F.M.

At approximately 3 months:

- fascination with own hands and fingers: finger play in front of face (intertwining, clasping and unclasping etc.) - can go on for as long as 10 minutes
- can hold rattle/toy for a few seconds when placed in hand - may move it toward face but seldom can watch it at the same time (Incapable of hand-eye coordination yet.)
- clenched fist now disappearing - keeps hands open 50% of the time

At approximately 4 months:

- reaching and grasping skills further developed - can hold toy for longer and also now look at it at same time (hand-eye coordination developing)

From 5 months on:

- may spend most of time in hand and feet activities: calmly looking and investigating everything - shifting toys from hand to

hand etc.

- fingers now moving independently and can rotate wrist - thus aiding manipulation of objects
- can pinch finger and thumb together - also making picking up and manipulating small objects easier
- learning to release toys deliberately, ie. can now drop and throw!

Social-Emotional, S.E.

At approximately 3 months:

- social smile will be established - very preoccupied with human face
- shows range of vocalizations now, ie. different cries mean different things, eg. boredom, hunger, rage... Also, now babbling or cooing in delight when happy and/or socialising.
- responds with obvious pleasure to friendly handling and play; also in anticipation of favourite events, eg. feed, bath

At approximately 4 months:

- showing less interest in face-to-face interaction and maintaining eye contact
- discriminates strangers from familiar people - often showing preference for looking at them (because they are new and interesting)

From 5 months on:

- probably will have by now a distinct way of greeting parents (and other familiar people). May be different from person to person.
- social interplay in the form of games now assumes importance: eg. peek-a-boo, clap-handies, this-little-pig-went-to-market!, etc.
- lifts arms to mother/father
- still friendly with strangers, but may occasionally show some shyness or slight anxiety (especially if mother out of sight)

Cognitive-Perceptual, C.P.

At approximately 3 months:

- visual range probably still at only 8-10 inch focal range, however visually very attentive (Still watches blurred shapes and colours of mother's activities beyond this distance.)
- sudden loud noises still cause distress
- learning to connect sights and sounds, ie. turns to look toward a noise
- learning cause and effect, eg. that mother responds to crying

At approximately 4 months:

- vision expanding beyond original focal range (However can see better than an adult some close distances as eyes are closer together.)
- can now localise a sound

- using hands and mouth continuously as learning tools for exploring new objects
- may begin playing with own toes and feet

From 5 months on:

- listening to sound made by toys (eg. bashing highchair with rattle)
- memory developing rapidly now, thus can learn from experience
- "age of the mirror and me" - recognition of own face in mirror shows he's becoming more aware of himself
- due to more frequent upright position (sitting), has access to 360 degree range of vision, compared to 180 degree when lying down. Can easily follow people's activities across the room - moves head and eyes eagerly in every direction when attention is attracted.

APPENDIX F

Evaluation Questions

1. What aspects of the study did you like?
2. What aspects of the study did you dislike, or would have wished to change?
3. What would you have liked more of in the study?
4. What would you have liked less of in the study?
5. Have you found your experience as a research participant as you expected it to be when you agreed to participate, or was it different in some way(s)? How?
6. Would you recommend this experience to friends with a first baby?

Summary of Evaluation Answers

The following evaluation answer summaries are combined condensations of all the answers received from the six participating mothers:

1. "Thoroughly enjoyed it as it made us notice (little) developments that we otherwise wouldn't have, (eg. pinch grip, the way he rolled first etc.)."
   - "Learning what babies do, and when approximately."
   - "Liked having all the material (notes) for us (including baby) to keep and read over in years to come. (Also to refer to with future babies)."

- "Makes mothers think more."
- "I liked the company. Also, it was a break from the daily routine."

2. Four respondents replied "nothing" to this question. The remaining two made one comment each - both in reference to time span of study:

   - "Toward the end of the study I did not have much to look for as he had done most things on the checklist and gaze averting had declined. I felt this was a bit of a waste of time, although I do understand that he was a bit older than the babies you were (ideally) looking for." (Mother B.)
   - "I would have liked the study to continue a bit longer - as he got very active a couple of weeks later (including continued/increased gaze averting)." (Mother E).

3. No-one replied to this question.

4. No-one replied to this question.

5. Four respondents found the experience to be just as expected when they agreed to participate. Two respondents found differences:

   - "The study turned out to be not as bad as I thought it would be! I thought it would be an in depth study of our personal lives and I wasn't looking forward to that." (Mother B).

- "Yes, it was quite different in that it was a much more personal study as far as Fiona was concerned, and it wasn't too verbose and inflexible (ie. full of useless theories!) as I thought it might be"! (Mother F).

6. All respondents replied in the affirmative.

APPENDIX G

RAW DATA

TABLE G1: Frequency of gaze averting episodes and number of developmental steps gained for Case A, whereby G.M. = Gross Motor, F.M. = Fine Motor, S.E. = Social-Emotional, C.P. = Cognitive-Perceptual.

(N.B. Developmental figures are cumulative totals.)

Age (weeks/days)	Gaze Averting	G.M.	F.M.	S.E.	C.P.
16/6	1	6	3	3	7
17/6	0	6	3	4	8
19/1	1	8	7	5	9
20/4	0	8	8	7	10
21/5	0	9	9	8	12
23/0	0	10	10	8	12
24/2	0	10	10	8	12

TABLE G2: Frequency of gaze averting episodes and number of developmental steps gained for Case B.

Age (weeks/days)	Gaze Averting	G.M.	F.M.	S.E.	C.P.
16/5	10	3	3	4	7
18/0	4	5	6	4	8
19/2	8	6	6	5	8
20/4	2	7	7	6	12
21/6	0	7	7	7	12
23/1	1	8	8	7	12
24/4	0	8	9	7	12

TABLE G3: Frequency of gaze averting episodes and number of developmental steps gained for Case C.

Age (weeks/days)	Gaze Averting	G.M.	F.M.	S.E.	C.P.
15/4	0	3	2	3	4
17/3	1	3	3	4	5
18/2	0	4	3	4	5
19/3	0	4	4	4	7
20/5	0	5	4	5	8
22/0	0	6	7	5	11
23/3	1	6	8	6	11

TABLE G4: Frequency of gaze averting episodes and number of developmental steps gained for Case D.

Age (weeks/days)	Gaze Averting	G.M.	F.M.	S.E.	C.P.
15/5	1	6	5	4	6
17/1	0	7	5	5	7
18/3	0	8	6	6	7
19/4	0	9	6	6	8
20/6	0	9	6	6	11
22/2	0	9	9	6	11
23/4	0	10	10	7	12

TABLE G5: Frequency of gaze averting episodes and number of developmental steps gained for Case E.

Age (weeks/days)	Gaze Averting	G.M.	F.M.	S.E.	C.P.
13/6	9	5	2	3	4
15/3	5	5	3	4	6
16/4	0	6	3	4	6
17/5	3	7	3	5	7
19/1	0	7	5	5	7
20/2	4	8	6	5	10
21/5	7	8	7	6	11

TABLE G6: Frequency of gaze averting episodes and number of developmental steps gained for Case F.

Age (weeks/days)	Gaze Averting	G.M.	F.M.	S.E.	C.P.
14/0	2	5	2	4	6
15/3	1	6	2	5	6
16/4	1	7	2	5	6
17/5	1	8	3	6	7
19/1	1	8	3	6	7
20/3	3	9	4	6	10
21/4	4	9	6	7	12

TABLE G7: Individual and total frequencies of the three styles of gaze averting for all six infants.

STYLE:	A	B	C	D	E	F	Total:
Buffering	0	25	0	0	12	4	41
Distracted business	0	0	2	0	16	7	25
Play	2	0	0	1	0	2	5
Total:	2	25	2	1	28	13	71