

## MATERNAL DEPRIVATION RECONSIDERED\*

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THE concept of "maternal deprivation" is one that rapidly caught the imagination of both the general public and professional workers. It became widely accepted that severe distortions in a child's early family life could have long-lasting effects on his later development, and "maternal deprivation" has been thought to be the cause of conditions as diverse as mental subnormality, delinquency, depression, dwarfism, acute distress and affectionless psychopathy [1, 2]. Most writers have recognized that the experiences covered by the term "maternal deprivation" are diverse and complex, but nevertheless there has been a tendency to regard both the experiences and the outcomes as one syndrome which can be discussed as a whole [3]. Thus, in Ainsworth's critical review of the topic in 1962 [1], the term "deprivation" was repeatedly used in the summary of findings as if it were a single entity, although earlier in the paper she had indicated that it was not. Furthermore, in recent years theorists have been inclined to the view that most of the ills of deprivation are accountable for in terms of lack of an attachment to a mother-figure [1, 4, 5].†

The purpose of this paper is to question these assumptions. It will be suggested that "maternal deprivation" includes many different types of experiences involving lack, loss and distortion; that little progress is likely to occur until the separate effects of each experience are determined [6]; that different psychological mechanisms account for different types of outcome; and finally that the term "maternal deprivation" is misleading in that in most cases the deleterious influences are *not* specifically tied to the mother and are *not* due to deprivation. Reference to the Shorter Oxford English Dictionary shows that deprivation means "dispossession" or "loss". While loss is probably an important factor in one of the syndromes associated with "maternal deprivation" a review of the evidence suggests that in most cases the damage comes from "lack" or "distortion" of care rather than from any form of "loss".

As there are several reviews [1, 2, 6-12] which summarize the findings on the various effects of deprivation and several critiques [6, 13-15] which discuss the assets and deficits of the many studies of maternal deprivation, these aspects of the topic will not be considered here. Instead attention will be focussed on "*why*" and "*how*" children are adversely affected by those experiences included under the term "maternal deprivation"; I shall take for granted the extensive evidence that many children admitted to hospital or to a residential nursery show an immediate reaction of acute distress; that many infants show developmental retardation following admission to a poor quality institution and may exhibit intellectual impairment if they remain there for a long time; that there is an association between delinquency and broken homes; that affectionless psychopathy sometimes follows multiple separation experiences and institutional care in early childhood; and that dwarfism is particularly seen in children from rejecting and affectionless homes. The evidence on factors which modify the effects of deprivation has been discussed elsewhere [7] and this

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† Nevertheless, Bowlby has been careful to point out on several occasions that other factors are also important.

evidence will be used to analyse the psychological mechanisms which might account for the six main syndromes of childhood associated with maternal deprivation.\* Depression will not be discussed as this has mainly been studied in adults [16]. The important evidence that children differ in their response to stress [7, 11, 16] will also not be considered.

#### *Acute distress*

Largely as a result of Bowlby's emphasis on the value of studying children's immediate responses to separation experiences [17] there is now a substantial body of evidence on what happens in these circumstances [7]. Nowhere is this better illustrated than in the Robertsons' films. Most work has been concerned with the effects on children of their admission to hospital or to a residential nursery. It is well established that many (but not all) young children show an immediate response of acute distress and crying (the period of "protest"), followed by misery and apathy (the phase of "despair") and finally there is a stage when the child becomes apparently contented and seems to lose interest in his parents ("detachment" in Robertson's and Bowlby's terms).

There is considerable individual variation in how children respond and not all children are upset by the experience. Nevertheless the pattern as described is a common one in children between six months and four years of age.

It is evident that several factors must be operative. One of these is the type of care provided during the separation. Experimental studies have shown how distress may be reduced by provision of toys, and clinical investigations have demonstrated how measures designed to make hospital admission less traumatic can help alleviate children's unhappiness while away from their parents. The Robertson's films have also illustrated how children looked after in a good family setting adapt to separation much better than children in hospital or in a residential nursery. All these findings indicate that quite apart from the experience of separation, what happens to the child during separation can make a big difference to whether or not he reacts by showing severe distress.

On the other hand, there is a good deal of evidence to suggest that, in some circumstances, separation itself can be a disturbing influence. For example, experimental studies with toddlers have shown how very brief departures of mothers may lead to immediate distress. Perhaps the most convincing evidence that separation is one key variable is the finding that the presence of sibs or other familiar persons greatly reduces children's distress following admission to hospital or in some other stress situation. Distress seems to be less even though the accompanying person neither provides nor improves maternal care. A further pointer to the importance of separation is the fact that distress is rarely seen in infants under six months. It is significant that children show most distress at an age just after they are beginning to show attachment to their parents. Separation is probably stressful then just because it is interrupting an important bond at a time when children have difficulty maintaining a relationship through an absence.

It may be concluded that the syndrome of acute distress following hospital ad-

\* It is not suggested that any of these syndromes is entirely explicable in terms of 'deprivation'. Genetic and biological factors are also important but will not be discussed here. Rather, possible mechanisms will be discussed only with respect to that part of the variance which is due to 'deprivation'.

mission is due in considerable part to a child's separation from his family, although poor care and unpleasant experiences also play an important role. But, is separation *per se* the crucial factor? Recent evidence suggests that probably it is not.

So far as rhesus monkeys are concerned this has been well demonstrated in Hinde's very important studies [18–20]. He has emphasised three findings all of which point toward the conclusion that the basic variable is disturbance in the mother-infant interaction, not separation as such. First, infants' distress is a function of the characteristics of both the pre-separation and the contemporaneous mother-infant relationship. Second, changes in the mother-infant interaction following reunion largely depend on the mother. Third, infants who have been temporarily removed from their usual living group show *less* distress on their return than do infants who have remained "at home" but whose mothers have been removed for a period. Accordingly, in rhesus monkeys separation seems to have its deleterious effects by virtue of its alteration of the mother-infant interaction. When separation is *not* associated with any disturbance in this interaction, then ill-effects are minimal. When separation is associated with a disturbed relationship ill-effects are maximal.

Does the same apply to human infants? The evidence is meagre but what findings there are are certainly consistent with Hinde's view. The role of the mother in mother-infant interaction may well be different in humans, but disturbance in the relationship still seems to be the crucial variable. For example, in the two cases studied, the Robertsons' films show that children separated from their family and placed in the private home of people they had only met for the first time a few days ago did *not* exhibit the acute distress of similar children placed in a residential nursery. In both situations the children's physical needs were well met and there was a probably adequate provision of toys and activities. What differentiated the private home from the nursery was the provision of an intense individual interaction between the child and *one* person (the same person throughout the separation experience).

It is suggested that the syndrome of acute distress occurs when there is a lack of opportunity for the infant to manifest attachment behaviour or where the mother-infant interaction associated with attachment is distorted or disrupted for some reason. However, the evidence that distress in hospital or some other stressful situation is much reduced by the presence of a sib or friend, even though the mother remains absent, strongly suggests that there is nothing specific about *mother*-attachment.

In summary, the syndrome of distress is probably due in part to a disruption of the bonding process, but the bonding is not necessarily with the mother. Thus, so far as this syndrome is concerned, the description "deprivation" is correct, as "loss" is a key variable. The adjective "maternal" is somewhat misleading as it appears that it is loss of a person to whom the child is attached which matters. Nevertheless, it is only slightly inaccurate because the person to whom infants are usually most attached is the mother.

#### *Developmental retardation*

Do the same mechanisms apply to the other syndromes associated with "maternal deprivation"? "Developmental retardation" will be considered first as the only other short-term consequence of much importance. The findings here are quite different. First the association with age differs in that there is no lower age limit. Infants under the age of six months in institutions where there is little stimulation vocalise little

and become socially unresponsive [7]. Deviations in language, social and motor development have been reported as early as the second month. Severe retardation has been found in children born in, or admitted to institutions in the first month of life at a time when they have yet to develop any attachments and when they have a very limited ability to differentiate between the adults providing care. This stands in sharp contrast to the syndrome of distress which is rare before six months.

Secondly, developmental retardation seems to be completely reversed by increasing social, tactile, and perceptual stimulation without altering any other aspect of institutional life and without altering the child's separation from his family. Furthermore this reversal occurs even though the stimulation is given by someone who is not providing maternal care. There are now some half-dozen independent studies all producing closely similar results which provide evidence for this conclusion [7]. Thirdly, some institutions do not give rise to developmental retardation in spite of the fact that the children in them have all experienced separation from their parents.

Developmental retardation then, is due to a *lack* of stimulation and not to a *loss* of stimulation. Accordingly, privation is a more correct description than deprivation. Moreover, it is a lack of stimulation which matters and not mother's presence, so that "experiential" is a more appropriate adjective than "maternal". Altogether, the psychological mechanisms appear quite different to those operating in the case of the syndrome of distress.

#### *Intellectual impairment*

In turning to the long-term consequences of "maternal deprivation" it is appropriate to start with intellectual impairment, which may follow on from developmental retardation if the infant remains in a poor quality institution. As one might expect, comparable mechanisms seem to be operative.

The main findings to be taken into account are as follows—parent-child separation and broken homes are *not* associated with mental retardation; an institutional upbringing is often accompanied by intellectual impairment but this effect is found only with some institutions; similar effects stem from depriving circumstances in the child's own home; and retardation is more evident with respect to language and verbal skills, perceptuo-motor skills seem less susceptible to the retarding effect of privation.

If we focus on institutions first, it is apparent from several studies that if the provision of child-care is improved then the children's intellectual growth also increases. It follows from these findings that really good institutions should not cause any intellectual retardation and indeed that seems to be the case. It appears that it is not whether you are brought up at home or in an institution which matters for cognitive growth but rather the type of care you receive. It is more difficult to provide adequate opportunities for intellectual development in institutions but it can be done.

If it is the quality of care which matters, then mental retardation should also be apparent in children who remain with their own family but whose home life provides little stimulation: that *is* the case. For example, the early studies of canal boat children and of children from isolated mountain communities all showed that verbal abilities were seriously retarded and were more so in older children than in youngsters, suggesting progressive impairment due to deprivation of some aspect of experience. The importance of experiential factors is also demonstrated by the many studies

which have shown that children in large families have a poor verbal intellectual development compared with children in small families [6]. Whereas the exact mechanism involved remains uncertain, the effect seems to be environmental rather than genetic.

The conclusion that "stimulation" is necessary for intellectual growth does not take us very far unless we can specify what sort of stimulation is needed. Is it social, sensory or linguistic stimulation which matters and is it the quantity or quality of stimulation which is relevant?

There are numerous animal studies which have shown that a lack of sensory stimulation can have a profound effect on development. For example, animals reared in darkness show later deficiencies in perceptual discriminations and visual learning. These animals also show defects in the retina and visual cortex so that the effects are neural as well as behavioural. However, these experiments are concerned with highly specific effects of highly specific sensory restriction and so are of very limited relevance to the question of "maternal deprivation" in man. Casler [22] has nevertheless suggested that pure perceptual restriction plays a crucial role in the retardation of institutional children. This may well be the case in conditions of severe global retardation (as in the worst types of old-fashioned institution) but it appears less likely to be the main factor in more ordinary circumstances of privation.

Perhaps the two key findings are (1) that environmental privation leads largely to an impairment in *verbal* intelligence and (2) that the effects are similar in this respect for children reared in their own homes and for those brought up in institutions. Consideration of the situation of children reared in large families (one of the circumstances associated with verbal impairment) makes it clear that a mere reduction in the *amount* of sensory, social or linguistic stimulation is unlikely to provide an explanation, although impairment in the quality of any of these might. It has been suggested that children in large families show impaired verbal intellectual development because their contacts are more with children than with adults with the result that their language environment is less rich and complex than in smaller families. However, it may be the *clarity* of the language environment rather than its complexity which is the key variable. Preliminary studies of family conversations by Friedlander [20] suggest that the presence of several children tends to lead to a tumultuous clamour in which several people speak at once at several different levels.

Much the same conclusions stem from an examination of environmental influences on language development [21]. In babies the main stimulus to vocalization is provided by non-social *verbal* stimulation rather than by non-verbal *social* stimulation—in other words a tape-recorded voice has more effect than a silent person. But to be effective the words must be meaningful to the child—a mere repetition of words is not enough. The same applies to the effects on language development in older pre-school children. If deprived children are given extra play sessions with an adult this has no significant effect on language unless there is also talking. But the special provision of sessions when adults deliberately engage children in conversation has been shown to have a significantly beneficial effect on language development.

In summary with respect to mental retardation, the evidence suggests that an absolute restriction of any type of stimulation can have deleterious effects but probably the single most important factor concerning verbal intellectual development is

the child's language environment.\* How much he is talked with is important, but the content of the conversational interchange he experiences is more important. Because it is necessary that adults develop and respond to the child's speech, in all ordinary circumstances it is necessary for the verbal stimulation to be provided by people. Nevertheless, it is the conversation that matters, the mere presence of an interested adult is not enough. Probably with all forms of stimulation the distinctiveness and meaningfulness of stimuli are more important than the absolute level of stimulation. So again the effect is explicable in terms of "privation" which is "experiential" (especially linguistic) rather than "maternal deprivation".

### *Dwarfism*

The next syndrome to consider is "deprivation dwarfism", a condition found in children who have experienced extreme and long-standing emotional deprivation [9]. It has usually been assumed that *emotional* deprivation can lead to dwarfism even when nutritional intake remains adequate. I suggest that this is probably wrong and that inadequate food intake is usually the correct explanation.

Possible mechanisms include endocrine dysfunction, anorexia following depression, distortion of diet, and malabsorption. There is not time to consider the evidence on these in detail. Suffice it to say that although each may play a part in individual cases the evidence is against any constituting the main mechanism [7]. In contrast, there are two recent studies which both point to the importance of underfeeding. First, confirming Davenport's earlier study with chimpanzees, Kerr *et al.* [24] showed that when infant rhesus monkeys are reared under conditions of total social isolation but normal opportunities for dietary intake they developed gross behavioural abnormalities but their growth rates were entirely normal.

The importance of underrearing has been shown more directly in a well controlled study by Whitten and his colleagues [25]. Thirteen maternally deprived human infants with height and weight below the third percentile were investigated. The inadequate mothering at home was simulated in hospital by solitary confinement for two weeks in a windowless room, but the infants were offered a generous diet. In spite of the continuing emotional and sensory deprivation all but two showed accelerated weight gain. Following this period of understimulation, the infants were given a high level of mothering and sensory stimulation but the diet remaining as before. This caused no change in rate of weight gain.

Following this study, three other infants were investigated. They were not admitted to hospital nor were the parents told of the suspected diagnosis of maternal deprivation. Instead, under the guise of investigation of caloric intake, feeding was carried out by mothers in the presence of an observer, no attempt being made to alter maternal handling or social circumstances. All infants gained weight at a markedly accelerated rate and the mothers subsequently admitted that the infants ate more food during the experimental period than previously, although the diets were duplicates of what the mothers *claimed* that they fed the infants. Other evidence also suggested that the mother's dietary histories were often grossly inaccurate.

The findings are not conclusive in that short-term weight gain was studied rather than a long-term increase in height and the infants were younger than most cases of

\* Other aspects of the environment may well be more important for the growth of other types of cognitive functions.

“deprivation dwarfism”. In individual children a variety of mechanisms may operate but the balance of evidence suggests that, overall, impaired food intake is the most important factor. The impaired food intake may be due to either the child being given insufficient food or to his eating too little because of poor appetite.

Again “privation” needs to be the term rather than “deprivation” and in this case the adjective should be “nutritional” rather than “maternal”.

### *Delinquency and antisocial disorder*

The strong association between “broken homes” and delinquency has commonly been held to demonstrate the seriously deleterious long-term effects of disruption of affectional bonds [4]. However recent evidence suggests that this view is probably mistaken and that the harm comes from distortion of family relationships [16].

The relative importance of bond disruption and distorted relationships may be assessed by comparing homes broken by death (where family relationships are likely to have been fairly normal prior to the break) and homes broken by divorce or separation (where the break is likely to have been preceded by discord or a lack of affection). Several independent studies have all shown that the delinquency rate is much raised when the parents divorce but it is only slightly above expectation when one parent dies.

This suggests that it may be the discord and disharmony *preceding* the break (rather than the break itself) which led to the children’s delinquency. If that is correct, parental discord should be associated with antisocial disorder in children even when the home is unbroken. There is good evidence that this is indeed the case. In children from unbroken homes there is a strong association between parental marital disharmony and antisocial disorder in the sons. Antisocial disorder seems to be a function of a tense unhappy and quarrelsome home—only incidentally is it associated with family break-up as such.

The same conclusion applies to temporary separations. In our own studies we examined the issue with respect to separations of at least one month’s duration [16]. Separations which had occurred as a result of family disorder or disharmony (usually break-up following a quarrel) were associated with antisocial disorder in the children. On the other hand, separations for other reasons (mainly hospital admission or a convalescent holiday) were *not*. Transient separations as such were unrelated to the development of antisocial behaviour; they only appeared to be so when separation occurred as a result of family discord.

As to the type of discord or disturbed relationships which predisposes the child to delinquency only very limited evidence is available. Our own studies suggested that both active discord and lack of affection were associated with the development of antisocial disorder but the combination of the two was particularly harmful. Any type of prolonged family discord was associated with an increased risk of antisocial disorder but a good relationship with one parent went some way towards mitigating the harmful effect of a quarrelsome home. In short, the findings emphasized the importance of good relationships in personality development but did not suggest that any one specific type of defect in relationships was of predominant importance. Furthermore, the harm appears to come from disturbed family relationships in general and *not* specifically from a distorted relationship with the mother.

In the case of delinquency, then, neither “maternal” nor “deprivation” seem appropriate terms. Rather, the association is explicable in terms of some type of “family discord” or “disturbed relationships”.

### *Affectionless psychopathy*

The last syndrome to be discussed is that of “affectionless psychopathy”. In spite of this being the condition first associated with maternal deprivation [26], it is the one on which there is the least satisfactory evidence. At first it was regarded as a common consequence of prolonged separation experiences but it is now clear that this is not generally so. This is shown, for example, by Bowlby’s follow-up study of young children admitted to a T.B. sanatorium [27]. However, an examination of the findings of different studies suggests that the child’s *age* is a key variable in this connection. Bowlby’s original study of forty-four thieves suggested that affectionless psychopathy was particularly associated with frequent changes of mother-figure during the first two years. Perhaps the damaging experience is failure to form bonds or attachments, rather than any breaking of bonds. To examine this possibility it is necessary to search for environments which lack what is required for attachments to develop—this is provided by the old-style large long-stay institutions—and then to see what happens to children who spend a prolonged period in this environment during the phase of development when attachments normally form—namely the first two or three years of life.

There is surprisingly little known about children with such an experience but what little there is supports the suggestion that this may be the crucial factor leading to affectionless psychopathy [7].

Thus, Pringle and her colleagues found that emotionally stable institutional children had generally remained with their mothers until well after the first year and so had had the opportunity of forming bonds prior to admission. Similarly, the stable children had more often experienced a dependable and lasting relationship with a parent or parent-substitute after going into care. The results of a failure to form bonds may also be examined by studying children reared in an institution from infancy and then comparing those placed in homes before three years when bonds may develop more readily, and those not placed until after three years when bond-formation may not occur for the first time so easily. This comparison is provided by Goldfarb’s studies which showed that the children who remained in an institution until after three years were especially characterized by an inability to keep rules, a lack of guilt, a craving for affection and an inability to make lasting relationships.

Further evidence is provided by Wolkind’s recent study of children in care [28]. Psychiatric disturbance in these children took several forms but the characteristics of indiscriminate friendliness and lack of social inhibitions were a special feature of children admitted before the age of two years. This suggests that a failure to form bonds may lead to a particular type of disturbance.

No firm conclusions are yet possible from the patchy findings of these diverse studies. Nevertheless, the evidence is certainly compatible with the view that a failure to form bonds in early childhood is particularly likely to lead to attention-seeking, uninhibited indiscriminate friendliness and finally to a personality characterized by a lack of guilt and an inability to form lasting relationships. As a sub-issue it may be



asked whether the bonds have to be with the mother or whether any bonds will serve to prevent this harmful outcome. There is no decisive evidence on this point but circumstantial evidence strongly suggests that it is bond formation which matters and that in this context the bonds do *not* have to be with any particular person.

So with respect to "affectionless psychopathy", the term "maternal deprivation" is again rather inaccurate. It is a question of "privation" rather than "deprivation" and in so far as it is bonding which is crucial, rather than the mother, "bond privation" might be the best description.

#### CONCLUSION

In the time available it has not been possible to consider all the various alternatives to the suggestions put forward here, nor has it been possible to outline in any detail the evidence upon which the arguments have been based. These have been discussed at some length elsewhere [7]. However, it should be evident that the concept of "maternal deprivation" is a complex one which includes a number of quite different experiences with quite different outcomes. Unless we make careful distinctions between these we are unlikely to make any progress in disentangling the various psychological mechanisms which are involved. Further research is required but it is suggested that the evidence to date indicates that the syndrome of acute distress is probably due in part to a disruption of the bonding process (not necessarily to the mother); developmental retardation and intellectual impairment are both a consequence of experiential privation; dwarfism is usually due to nutritional privation; delinquency follows family discord; and affectionless psychopathy may be the end-product of a failure to develop bonds or attachments in the first three years of life.

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