



FAMILIES CHILDREN AND CHILD CARE PROJECT

A prospective study of the effects of different kinds of care on children's development in the first five years

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CONTENTS

Aim	1
Policy background	1
Research to date	2
The British context – policy and practice	5
Conclusions	9
The Families, Children and Child Care Study	11
Research questions	12
Methods	13
Sample	13
Timeline	14
Outcomes and explanatory variables	15
References	18
Appendix - List of measures	25

Families, Children and Child Care

Aim

The aim of this prospective study is to examine the short and longer-term effects of five key types of child care on children's development between birth and the first year at school. The study will focus on the complex relationship between parental care (involvement, sensitivity and interaction with other carers) and non-parental care (type, quality and quantity), in influencing children's development. The characteristics of the different forms of care will be examined in detail. The study will also explore the processes whereby parents' attitudes, aspirations and personal circumstances, together with child care availability, ultimately result in different child care patterns.

Policy Background

The broad context for the study is one of rapid social change. Socio-economic, especially demographic, developments have produced an expanding labour market for all women, including those currently mothering young children. In combination with socio-political developments originally associated with the women's movement, these have altered people's roles and expectations as individuals and as family members. Of the 1.6 million women with children under five who are currently employed in the UK, for example, approximately 1.2 million were brought up by mothers who were not employed. The upbringing of their 1.4 million children represents a dramatic change in one generation. The once traditional division of labour between caring mothers working in the home and earning fathers bringing money in from outside it, is neither common practice nor widespread aspiration. In two-parent families, two incomes are becoming the norm, equality of opportunity in the workplace the expectation, and equal pay the aspiration. In contrast, in the increasing number of families primarily managed by a lone parent, even a single income is difficult to achieve. The family networks that enmesh nuclear families have changed too. Low birth rates over several generations have reduced the size of most kinship groups and geographical mobility, including urban drift from the countryside and suburban escape from inner cities, may fragment them. Furthermore, as the population ages, the burden of providing adequate pensions and elder-care increases so that both generations of adults may be equally committed (or aspiring) to paid employment. Informal child care by relatives is widespread (La Valle, 1999; Owen, et al., 1999) but even the presence of a grandmother or aunt just down the street offers parents no guarantee that it will be forthcoming (Crompton, 1995).

It is in this context that demands for purchased child care, for infants and toddlers as well as pre-school children, and for after school and holiday care for all ages, have been increasing since the early 1970's. The present government, having "nailed its colours to the mast of supporting the working women..." (Harman, 1999) is actively concerned with the demand and with supply.

Socio-economic policies, broadly described as "Welfare to Work", rely on the pull of paid employment and the push of poverty to reduce the numbers of benefit claimants, and on a National Childcare Strategy, including the Sure-Start initiative, to ensure their children's care and education.

Research to date

The first wave: non-maternal care as a risk to infants

"Does day care do children harm?" The question has been asked repeatedly in different ways, countries, settings and samples (Clarke-Stewart, 1989) and is still being asked, but no clear, scientific answer is forthcoming. The relationship between maternal employment and commercial day care is complex (Tresch Owen, 1984; Tresch Owen & Cox, 1988). Oversimplification of child care issues and polarisation of wide-ranging views into advocates and adversaries has bedevilled research in this area.

The first wave of research compared infants, toddlers and preschool children who had experienced other-than-mother care with those who had not. Scientific interest in possible developmental effects of day care was motivated by attachment theory with its emphasis on the importance of infants forming close emotional bonds with stable, responsive, loving caregivers. Regular separations into non-parental day care were thought likely to threaten the stability of infant-mother attachment, leading to an increased likelihood of insecure attachment and possibly to long term consequences for social development, self concept, and emotional development.

Evidence from successive studies is equivocal. Those comparisons of home-reared with day care children (Belsky & Steinberg, 1978; Belsky, Steinberg & Walker, 1982; Clarke-Stewart & Fein, 1983; Rutter, 1981) found no strong evidence that day care experiences might influence the quality of infant-mother attachment. However studies comparing the reunion behaviour and attachment security of infants with and without day care experience in the first year of life, found evidence that extensive non-parental care during that first year was associated with increased avoidance and insecurity in the infant-mother attachment (Jacobsen & Wille, 1984; Owen & Cox, 1988; Schwarz 1983). Some reviewers, including Belsky (1986; 1988) who had previously taken the opposite view, concluded that there was cause for concern (Gamble & Zigler, 1988).

Recent studies (Hoffman & Youngblade, 1999; Joshi & Verropoulou, 1999) produce inconsistent findings while reviews of the literature, specifically designed to provide evidence one way or another, interpret and criticise the same sets of research results to arrive at opposing conclusions. Hence, Morgan (1996) complained that child care had, for the last ten years "been hammered home as the catch-all miracle solution to a host of complex problems, which will transform the nation and open the gates of Utopia" although Ochiltree (1994) who carried out a substantial review for the Australian Institute of Family Studies had written of "endless research to find negative effects of non-parental care". And while Ochiltree concluded that "No evidence

has been found that good quality child care harms children”, her compatriot, Cook (1997), reviewed the same evidence and reached the opposite conclusion.

Why are consistent answers not forthcoming? Partly because the question "does day care do children harm?" confounds scientific enquiry by oversimplifying the issues. What types of day care does it refer to? Which children? What outcomes constitute harm? And if non parental care is to be considered as a discrete and consistent entity which may be harmful, is parental care to be considered as consistently benevolent, irrespective of the feelings, capabilities or circumstances of parents? However the key reason for disparate conclusions is that previous studies have employed a wide variety of methods, on very different samples, and with varying degrees of rigour.

The second wave: Quality of care and outcomes for children

The second wave of research, identified by Belsky as "The Effects of Infant Daycare Reconsidered" (1988), moved on to questions of the ecology of child care in relation to differences in measurable outcomes for children. It has generated calls for a moratorium on the search for negative results of day care – "Transforming the Debate.." – (Silverstein, 1991) as well as calls for researchers to liberate themselves from "an outmoded *Zeitgeist* and restrictive theoretical concepts, (so they) can advance the emergence of varieties of high quality, dependable, accessible child care to the benefit of children, parents and society" (McGurk, *et al.*, 1993).

This approach acknowledges the importance of the quality of care experienced by the child in non-maternal care, rather than the mere fact, or extent, of his separation from the mother (Moss & Melhuish, 1991). Looking beyond factors such as the age of entry, number of hours or type of child care, a range of questions was asked about qualities of the care-setting such as group sizes, staff qualifications and staff:child ratios. Work in the USA showed associations between these "regulables" and some child outcomes but not a sufficient explanation for their variance (NICHD, 1998). Although such variables may be important, it seems clear that processes and interactions contributing to the overall quality of care received may be the relevant attribute to investigate.

Much of the research on quality carried out in the early nineties in the United States highlighted the predominantly poor quality of observed care. A large scale study of day care centres, for example (Cost, Quality and Child Outcomes Study Team, 1995) showed that "... only one in seven centres provides a level of child care that promotes healthy development and learning... ". A major review of the evidence, carried out by a prestigious task force of the Carnegie Foundation (Carnegie Task Force on Meeting the Needs of Young Children, 1994) considered not only centres and family day care but also a wider range of non-parental child care arrangements often ignored by research. The report concludes that "Much (non-parental) child care for infants and toddlers is of substandard quality, whether it is provided by centres, family child care homes or relatives..." A study that compared regulated home care providers, non-

regulated providers and relative providers in New York found that "The highest percentage of inadequate care took place, surprisingly, in relatives' homes and the lowest in regulated homes." (Galinsky et al., 1994).

Poor quality care has repeatedly been shown to be related to lower cognitive and language development (e.g. Burchinal, 1995) and there is some agreement that high quality care can enhance them (McCartney, 1984), especially amongst children who are already at-risk for poor outcomes (Scarr & Eisenberg, 1993). Studies from the NICHD Early Child Care Research Network and others have found that good quality caregiving is associated with better cognitive and language development and also with more advanced social skills (Cost, Quality & Child Outcome Study, 1995; NICHD 1999). Quality of care is not the overriding factor for all children, though. For instance, behavioural problems of children of middle class families who started day care in the first year of life were not predicted by its quality, (Deater-Deckard, Pinkerton & Scarr, 1996) while Burchinal found that in the USA, quality may be more relevant for African-American than European-American children (Burchinal et al., 1995).

Caution is required in generalising American findings such as these to other parts of the world. Claims have been made that group care is of more uniformly good quality in some European countries such as Germany (Beller et al., 1996), Norway (Borge & Melhuish, 1995) and France (Balleyguier & Melhuish, 1996). Furthermore other American child care settings may differ markedly from European equivalents. "Home-Care Provision" (or "family daycare"), for example, is very different from UK "Childminding". Nevertheless, crucial advances in understanding day care quality have been made by the NICHD multi-centre project (NICHD Early Child Care Research Network, 1994).

The NICHD design was unusual in that it included care at home by mother or father amongst its categories of child care. Apart from Melhuish's studies of the care of children of first time mothers (Melhuish et al., 1990a; 1990b), home care by a parent has more usually been treated as a baseline (and sometimes as a gold standard) against which to measure all other kinds of care. Using detailed observations, researchers found substantial differences in quality between different child care settings (NICHD, 1996; 1997c; 1998). However, it has emerged that factors predicting the quality of paid child care vary not only across different types of non-maternal setting but also with a range of familial, child and relationship variables, especially mother-child relationships.

Current Research: Towards a comprehensive view of children's care

Early NICHD data, concerning the attachment security of toddlers in different kinds of care, showed that child care variables alone could not provide robust explanations for outcomes. Child variables, such as gender, and parental relationship variables, especially maternal sensitivity, had more bearing on attachment security than quality or type of child care variables. (NICHD, 1997d). Further exploration confirmed the prime importance of maternal sensitivity (NICHD 1999c). These findings are consistent with some earlier studies. Benn, for example, found that

irrespective of their care arrangements, employed mothers who provided sensitive responsive care had infants who were securely attached, while employed mothers who provided less sensitive care had infants who were insecurely attached, (Benn, 1986). Bates found that early entry into day care was associated with less social competence, but only in children with insecure attachments to their mothers (Bates et al., 1994). Melhuish, who had shown that children's language development was more strongly predicted by quality of infant-adult interactions (and social class) than by type of child care (Melhuish et al., 1990b), also produced data suggesting that the socio-emotional behaviour of infants in different types of child care was associated with gender and with measured temperamental difficulty (Melhuish, 1987). These and other relevant studies are well-summarised in *The Quality of Care and Attachment* (Melhuish, 1999). As Clarke-Stewart puts it: "...we need to talk about quality of both home care and child care in making generalizations about what is best for children's development" (Clarke-Stewart, 1999).

The British context – policy and practice

Under the present Government, extensive programmes are being designed to provide compensatory help for the least privileged children and parents and to improve educational opportunities and standards for all. Many of these initiatives involve non-parental child care. However research on the processes involved in parents' child care decisions, and on relationships between aspects of child care and a range of outcomes for different children and families, under different circumstances, is inadequate to support firm conclusions on the relative merits of different forms of child care. More reliable data are needed overall. In particular, data that reflect current British circumstances, attitudes and practices are urgently needed. They may be of use both to policy makers who must implement programmes, and parents who may be offered them,

1. Non-familial care in a home-setting: Childminders

Although British childminding is often assumed to be equivalent to American family daycare, or to the "day foster-care" schemes that are part of infant day care in some Scandinavian countries, childminding is a uniquely UK type of child care about which too little is known (Moss, 1999). More children under five in the UK are cared for by registered childminders than in any other formal care-arrangement, providing for seven times as many children under five as child care centres and nurseries (Owen et al., 1999) and an even higher proportion of children under eighteen months (Pugh, De'Ath & Smith, 1994).

The previous generation of parents regarded childminding as second best to nursery care (Holterman, 1995), and some members of the media and the public still perceive childminding as a low-cost, low-status child care option. This view is contradicted by a re-analysis of data from the Family Resource Survey, 1993-1996 (Moss, 1999) showing that compared with mothers who use nurseries, mothers who use childminders are more likely to be living in a marriage or stable partnership and to be working full time. Both mothers who use childminders and mothers who use nurseries are more likely than mothers using other forms of extra-familial care to be in

professional and managerial jobs: 56% compared with 37%. It has been suggested that parents lack of prior enthusiasm for childminding may reflect hidden concerns that one-on-one care operates as "substitute mothering" and the perceived threat that it might displace them in their child's affections (Leach, 1994). However, some reasons given by parents for preferring nursery care, such as concerns about individual carers working without backup, lack of educational provision for children and difficulty of registering and monitoring individuals, predate the inclusion of childminding in Early Years Development and Childcare Partnerships and the delivery of the National Childcare Strategy. Attitudes to childminding may be changing. A recent review for the DfEE (La Valle et al., 1999) reports that for children under five, parents chose registered childminding (along with daily nannies) as their "ideal" types of formal care.

2. *Non-familial care in children's own homes: nannies*

This is widely regarded as luxury-level child care but while expensive, it is the least regulated and supervised of all types. Attachment researchers have usually ignored such care because it seems inappropriate to classify it with other forms of day care, yet unnecessarily complicated to assign such a small group a separate classification, such as "substitute mothering" (Barglow, Vaughn & Molitor, 1987). Policy-makers and administrators have also tended to pay minimal attention to this kind of care because monitoring scattered individuals is expensive and it was assumed, until recently, that their numbers were dropping. In fact in many countries the numbers of nannies employed, daily and shared, as well as residential and individual, has been rising for some years (Martin & Roberts, 1984). In the interests of child protection, a duty to carry out police checks, take up references and verify the CV's of all who seek work as nannies has just been imposed on domestic employment agencies in the UK (January 2000). Any information about this child care sector will be welcome. However the new regulations will not cover the many nannies, perhaps a majority, who obtain positions without agency involvement, from personal advertisements and recommendations.

3. *Caregiver-child relationships in group care, attitudes of centre staff*

The literature suggests that infants in nurseries and child care centres form attachments to their caregivers that are independent of their attachments to parents. Stable caregivers who are well-known to the children evoke stronger attachment behaviours (Barnas & Cummings, 1994) and the security of such attachments appears to be a function of sensitive care (Howes & Hamilton, 1992a,b). Quality of care may be increased by training directed at increasing caregivers' sensitivity to infant needs (Galinsky, Howes & Kontos, 1995).

Secure attachments to caregivers have been shown to be associated with a range of positive outcomes for children such as more creative and sociable play (Howes, Matheson, & Hamilton, 1994), while breaches of that security, such as changes of caregiver, have been shown to be associated with negative outcomes such as increased aggression (Howes & Hamilton, 1993). However the applicability of such findings to the UK is confused by differences in the ways related variables are defined. A recent small-scale survey of nursery workers' views of a "key worker" approach to the care of children under three, for example, found general support for the approach but diametrically opposed views of what it meant. Some respondents saw and

welcomed keyworking as an opportunity to facilitate and support close relationships between designated staff and individual children, while others saw and supported the keyworker system only as liaison between the nursery and the assigned children's parents. This research further suggests that in the UK, close attachments between nursery-workers and infants are not always aimed for in training or aspired to in practice. "... the system is not designed to place a particular child under the particular care of individual members of staff. Care is taken by staff not to form strong, deep, emotional attachments that can occur when one to one care is given." (Elfer & Selleck, 1996).

4. *Hours in non-familial care*

Parents' working patterns are clearly associated with many aspects of child care. Among many differences between European and North American working patterns is a greater availability of part-time work for women in the UK and parts of continental Europe, especially work in managerial and professional jobs. This difference may effect the number of hours some groups of children spend in non-parental care; a variable which researchers have long seen as relevant to children's experience of care. Most of the evidence on this intuitively important variable is extrapolated from maternal working hours, often classified into "part time" or "full time" around cut off points such as 20 hours; used in several studies of young infants (Barglow et al., 1987; Belsky & Rovine, 1988) and in re-analyses of previous research (Belsky, 1988). More recent work considers the actual numbers of hours spent at work and in child care and suggests an important intervening variable between hours and outcomes: the NICHD early child care study found a negative relationship between hours of non-maternal care and maternal sensitivity (NICHD, 1997a).

UK studies suggest that while working hours remain an issue of great importance to mothers, expectations for family-friendly working hours and patterns may be rising. Five years ago a survey by the organisation Parents At Work (1995) showed that over two thirds of the 2000 respondents, 95% of whom were women in white collar jobs, worked longer than their contract hours, with 42% working fifty hours and 27% working sixty hours in many weeks. Although many mothers of young infants had left the workforce altogether because of the working hours expected of them, mothers of older children said that they accepted long hours as a fact of economic insecurities. At that time, almost two thirds wanted flexibility of hours to enable them to spend more time with their children when they were needed most, rather than an overall reduction in hours. These findings may have reflected the fact that part time work was relatively ill-paid and insecure. Almost every survey of the preferences of working parents (men as well as women) suggests that most would prefer jobs with shorter hours if they were equally secure, and rewarded pro rata (European Foundation for the Improvement of Living and Working Conditions, 1989; Garnsey, 1984; Marsh, 1991).

Recent studies suggest that increasing numbers of UK mothers now aspire to a real reduction in working hours. Possible explanations for this shift include the growth of short-term, contract employment, which makes long-term benefits seem a less important sacrifice, and the application of European Directives which are seen as protective. In a DfEE survey of parents' demand for

child care (La Valle, et al., 1999) 18% of parents expressed a preference for term-time, school-hours working and around 10% - mostly amongst those with higher qualifications - had returned to paid employment only because flexible working arrangements were available. In the Joseph Rowntree study entitled "Who Cares? Childminding in the 1990s" (Knight, et al., 2000), only 33% of mothers who used child care were employed full time.

Adult working hours and children's hours in non-familial care are clearly associated but the nature of the association cannot be assumed to generalise from one country or culture to another. It needs to be unpicked for British families. Furthermore it should not be assumed that the interests of the two generations are identical or that the traditional working day or week remains the norm. Children's hours with caregivers need to be assessed in their own right, free of the assumption that shorter hours are preferable. Consideration should be given to short weeks as well as short days, and to the possibility that, even for children for whom eight or nine hour days are clearly too much, three or four hour sessions may not just be less negative experiences but positive ones.

5. *Age of entry into non-familial care:*

Age of entry is thought to be an important predictor of children's adjustment and progress. In previous studies, child outcomes based on security of attachment have usually identified the youngest children as being of most concern (Belsky & Rovine, 1988; Rutter, 1991; Violato & Russell, 1994).

Children's age of entry into day care principally depends on parents' work and leave arrangements. In the United States, lacking federally mandated paid maternity leave, three months after birth is regarded as a long time to stay at home with a new baby. In the UK, although the youngest ages of infants for whom large numbers of parents seek full time day care are dropping, the 14, soon to be 18 weeks paid leave that are available to all, with extra time by negotiation for many, makes three months seem a very short time indeed. In many E.U. countries where child care is paid for out of public funds, generous provision for children over one year old is possible only because parents are expected, and enabled, to care for their own infants during that first, expensive year.

Studies suggest that age at entry to day care may be as important to mothers as to their children. The age of their youngest child is an important variable in women's satisfaction with paid work, and employment during the first year of a baby's life is seldom satisfactory to the mother (Briscoe, 1996). As Tresch Owen and Cox (1988) put it, "To find so little satisfaction among the employed mothers of young infants suggests that this may be a period of childhood when the balance of costs to benefits of working falls on the cost side for most mothers." Thus the positive effects of working that have been found for British mothers of older children (Joshi & Verropoulou, 1999) may not hold for mothers of infants. The more unsatisfactory it is to mothers to be apart from their infants, the more difficult it may be for their infants to accept secondary attachment figures amongst the available adults. We need to consider the possibility that infants' particular vulnerability in other-than-mother care may be partially the result, rather than solely the cause of mothers' distress.

6. *Levels of infection and group care*

Suggestions of a higher prevalence of common communicable illnesses amongst infants in nurseries have long been of concern. That concern increases as age of entry drops. A recent paper from the NICHD study of early child care (NICHD 1999, submitted) reports that American children who are in group care during the first two years of their lives do suffer more episodes of communicable illnesses such as urinary tract and gastro-intestinal infections and otitis media. In this population, from which the premature infants were excluded, there do not appear to have been any adverse developmental consequences.

Since factors that contribute to infection rates in groups of young children are likely to be situation-specific (Woodroffe, et al., 1993), comparable data for a UK sample are needed. As well as medical factors such as rates of immunisation against epidemic diseases and the availability of affordable medical advice, social factors may be important. The ease with which parents can take time off work to care for a sick child at home, share that care with a partner or call on help from relatives, for example, may all effect readiness to recognise the prodromal phase of an infection and withdraw the child from the group, as well as parents' ability to keep the child away from the group until the period of maximum infectivity is over. Factors such as breast feeding and birth order may also be important. Breast feeding lessens susceptibility to some infections while the exposure of later-born children to common infections brought home by older siblings may mean that they enter group care with higher levels of protection than first-borns. Within nurseries, space and hygiene regulations and their observation, and therefore staff training and ratios, may be contributory factors. Results of research carried out in the UK to date are conflicting and information about Otitis Media, an infection that is of central concern, is lacking (Roberts, 1996).

Conclusions

Whatever aspect of quality is considered, it is clear that more information is needed concerning the relationships between different types of child care, including maternal, parental or familial care, and their quality, and a range of outcomes for different children. Without more information, and information relevant to the present-day UK, overall assessments of the relative merits of different forms of child care, or of particular practises within them, cannot be relied upon.

Research on the quality and outcomes of child care has advanced our knowledge, usually demonstrating better child outcomes in paid care of higher quality compared to paid care of lower quality (NICHD, 1998). However a growing body of results from the USA have shown that it is not solely the form of care, or even its form and quality together, which determine the outcome for a child. Whatever the nature of the care provided, it is the quality of parent-child relationships which shape developmental outcomes. When the NICHD Early Child Care Research Network team (1997d) set out to unravel the effects of different forms of child care, including home care, on toddlers' attachment to their mothers, they found that the attachment

outcomes could only be understood in the context of child care if the security of each child's relationship with the mother, and the sensitivity of her parenting, were also understood. In statistical terms, the "interaction effects" in that American study are as powerful as the "main" ones.

The Families, Children and Child Care Study

This British study is working prospectively to investigate child, family and care characteristics and eventual outcomes for children and parents. It will study in detail the interactions between types of child care and specific characteristics of the child (such as gender and temperament); demographic characteristics of the family (such as socio-economic status); parental feelings and aspirations (such as commitment to their employment) and parent-child relationships, as they influence developmental outcomes.

The study seeks to assess the ways in which characteristics of a child's care at particular points in time contribute to developmental outcomes, hoping to produce robust assessments of quality. Moreover, the study seeks to understand the dynamics of the process of parental care choices (including external pressures and limitations on them) and to delineate the influence of different styles of parenting on children's responses to non-parental care. It is hypothesised that families make a vital contribution to the outcomes of child care for their children, not only through their choice of type, quality and amount of care, but also through their own expectations of, and relationships with, their children's caregivers and the explanatory "frames" they provide to enable children to make sense of their care arrangements and environments.

Unless account is taken of the family relationships, including parenting, which shape both adult choices of care and children's experiences of it, there cannot be sensible child care choices at national policy level or meaningful guidelines for parents making choices at personal levels. If we are to understand the effects of child care, personal, informal or purchased, on children's development, we must learn more about today's families and how they function at home and at work. One powerful way to do this is to study families while they are planning and making child care choices and while adults and children, separately and together, are experiencing their outcomes.

Research questions

1. What are the short- and long-term effects of different forms of child care on children's development?
2. How do parental and non-parental care interact in influencing child development outcomes?
3. What are the differences and similarities between the various types of child care?
4. How does timing and continuity in child care, coupled with daily hours, effect child development outcomes?
5. How are specific characteristics of the child (e.g. gender, temperament) related to the quality of child care experiences?
6. How do specific social demographic characteristics of the family (e.g. family structure, socioeconomic status) influence child care experiences and child development outcomes?
7. How does parental mental health influence child development outcomes?
8. How do parental perceptions and attitudes to child care influence child care experiences or child development outcomes?
9. What is the contribution to child development outcomes of the quality of child care?
10. What is the contribution of the family structure and economic circumstances to child care choice and satisfaction?
11. What is the contribution of parental adjustment, mental health and attitudes, to child care choice and satisfaction?
12. Can certain kinds of child care ('high quality' provision) compensate for adverse social circumstances such as poverty or developmental problems such as language delay?

[Families, Children and Child Care is a longitudinal study and the nature of the data is essentially correlational. In these research questions the term "effects" is used in the statistical sense.]

Methods

This prospective longitudinal study examines the ways in which differing patterns of child care and individual characteristics of both parents and children interact to influence developmental outcomes. Types and sequences of care to be investigated include home care by parent(s) ; paid care inside the home; childminding outside the home; group care in day nurseries or child care centres, public and private; and multiple provision.

Smaller-scale studies of issues of particular interest are also being conducted. These currently include a study of fathers who are their infants' principal caretakers; a study of infants who started other-than-parent care before they were six months old; and a laboratory study examining Attachment classification in relation to home observation of baby's response to separation and to a stranger.

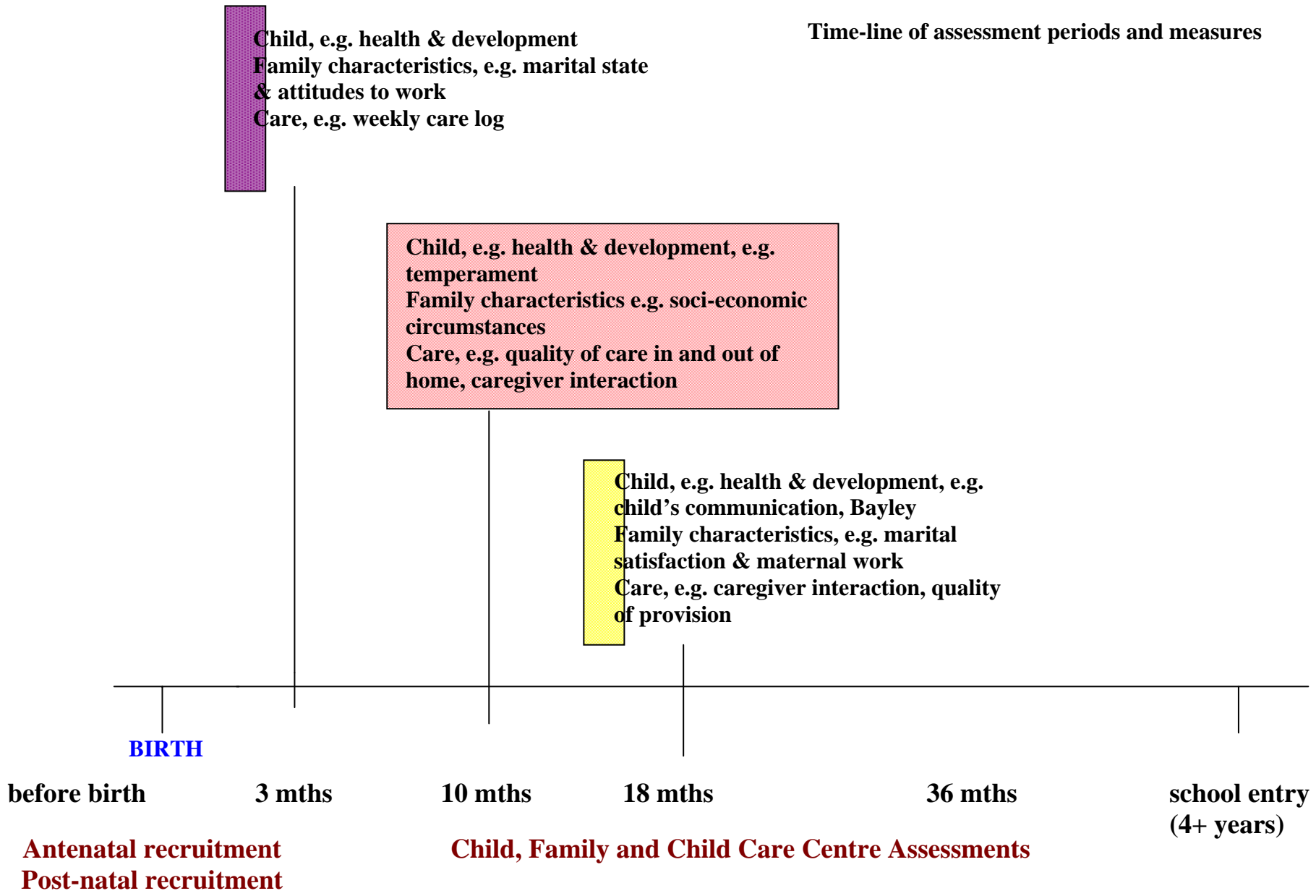
Sample

The families are being recruited antenatally and post-natally in two centres, Oxford and London. The children and families will be studied until school entry at around five years of age. The research aims to sample around 1,200 children, using a sampling procedure to include children from a range of backgrounds and child care settings.

Our methods include a variety of methodologies including direct observation in all types of child care setting, observation of structured videotaped parent-child situations, interviews, questionnaires and direct contact with the child.

A time-line follows.

Time-line of assessment periods and measures



Outcomes and Explanatory Variables

(Full details of the specific instruments can be found in the Appendix)

Outcomes

10 month

Difficult Behaviour (PSI)

Health (accidents, injuries, serious accident, illnesses/infections)

18 month

Cognitive development (Bayley Mental scale)

Language development (CDI)

Physical development (weight [normed] and Bayley motor development)

Health (accidents, injuries, serious accident, illnesses/infections)

Difficult behaviour (BSQ)

Sociability to visitor

Response to mother's departure

Attachment (subsample)

36 month

Cognitive development (BAS)

Language development (Reynell)

Health (accidents, injuries, serious accident, illnesses/infections)

Behaviour problems - mother, father (BCL), caregiver report (PBCL)

Prosocial behaviour - mother, father, caregiver (ASBI)

School entry

Cognitive development (BAS)

Academic readiness (Letter recognition + baseline assessment)

Health (accidents, injuries, serious accident, illnesses/infections)

Behaviour problems - mother, father, caregiver, teacher (Strengths & Difficulties)

Prosocial behaviour - mother, father, caregiver, teacher (Strengths & Difficulties)

7 years

Academic achievement (school records)

Behaviour problems - mother, father, teacher (Strengths & Difficulties)

Prosocial behaviour - mother, father, teacher (Strengths & Difficulties)

Explanatory Variables for 10 and 18 month outcomes

1. Child Care Explanatory Variables

Type of child care at 3m., 10m. and 18m.

Child care in first year

sum of: Child in non-maternal care prior to 3 months (yes/no)

At 3 months more than 12 hours per week (yes /no)

Child in non-maternal care prior to 10 months (yes/no)

At 10 months more than 12 hours per week (yes/no)

Quality at 10 months

Quality at 18 months

Quantity - Estimated number of hours per week B previous 6 months

Stability - number of child care changes over time 3-18 months.

Non-preferred child care

[in use or planned] different from one of choice (Yes/No)

2. Family explanatory variables

Socioeconomic/socioeducational risk at 3months, 10months, 18months

- Composite of: M education, F education, M work status, F work status,
Environmental adversity

Maternal Intergenerational risk - PBI control (high) + warmth (low)

Maternal mental health problems - (3m. and 10m. above EPDS cut-off, 18m GHQ cut-off)

Paternal Intergenerational risk - PBI control (high) + warmth (low)

Paternal mental health problems - (3m. and 10m. above EPDS cut-off, 18 m. GHQ cut-off)

Social Support 3m.

Marital adjustment 3m. + 18 m. (DAS)

Maternal Criticism of infant: (3m speech sample + 10m observed negative expressed emotion
+ 10m observed mother-child conflict)

Maternal Controlling parenting

3m. traditional scale from Modernity measure,

10m. video observed intrusiveness, controlling, CIS punitiveness, HOME
avoidance of restriction and punishment (reversed)

18m HOME avoidance of restriction and punishment, Conflict Tactics Scale

Paternal controlling parenting

3m traditional scale from Modernity measure,

(Subsample) 10 m HOME avoidance of restriction and punishment, CIS

punitiveness

18m Conflict Tactics Scale

Positive maternal interaction

10m. Maternal Videotaped interaction (positive expressed emotion,
responsiveness, facilitation, recognition of cues), CIS Positive relationship,
HOME Emotional and verbal responsivity, ORCE global ratings

18 m Home emotional and verbal responsivity

Home Cognitive stimulation -

10m HOME: Organisation of the environment, Provision of appropriate play
materials, Opportunities for variety in daily stimulation.

18m HOME Opportunities for variety in daily stimulation

Parental beliefs about negative effects of employment

(cost and negative effects scales from 3m. BCME)

Parental beliefs about positive effects of employment (benefits scale from 3m. BCME)

Parental work conflict and stress:

10m. MSA Worry about separation (21 items) and Separation effect on the child
(7 items). Maternal Work Commitment score, PSI parental distress

Relationships/structural arrangements with paid carer - 10m. and 18m satisfaction with child
care

3. Child explanatory variables

Birth risk indicator - perinatal complications, illness in first 3 months

Feeding problems - 3m. failed to breast feed, allergic to bottle milk, poor sucking

10m. problems introducing solids, allergies to some foods

Breast feeding (composite of age breast fed, expressing milk, use of bottle)

Difficult temperament -

3m. ICQ Difficult/demanding, Unadaptable, 3m. Crying

10m. ICQ Difficult, Unadaptable, Videotape rating of : Mood, Responsiveness (r), Irritability
18m TBAQ Anger proneness, fearfulness, persistence (r), pleasure (r).

Additional explanatory variables for 3 year outcomes

1. Child care

Type - Category of child care at the time of the 36 m assessment
Quality - 36m ECERS total + 36m. CIS Total + staff/child ratio + qualifications
Quantity - Estimated number of hours per week , previous 6 months
Stability - number of child care changes over time 18 to 36 months -
Non-preferred child care [in use or planned] different from one of choice (yes/no)

2. Family factors

Socioeconomic/socioeducational risk - Composite of:
M education, F education, M work status, F work status, environmental adversity
Maternal mental health problems 36m. GHQ above cut off
Paternal mental health problems 36m. GHQ above cut off
Maternal social support 36 m.
Marital adjustment and family conflict, DAS 36m, FAD 36m.
Maternal work conflict (work commitment and parental commitment)
Relationship/structural arrangements with paid carer, satisfaction scale

3. Child factors

Child temperament at 36 m - Emotionality, Activity, Sociability
Stable difficult temperament (top quartile at : time points, 3m., 10m., 18m. & 36m)

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Appendix

Timing and details of specific measures

Key

1. First column. Method of collecting data. If two methods are together with + it means both are necessary (e.g. observe and interview to complete HOME), if they are separated by / then either method may be used.

I	Interview
O	Naturalistic observation
Q	Self completion questionnaire
R	Records (child health record, educational record)
Test	Direct assessment of child
V	Videotaped structured interaction

2. Second column. Name of the informant or target of observations

M	Mother
F	Father/partner
C	Caregiver and/or head of caregiving establishment
T	Classroom teacher
Ch	Child

3. Third column. The construct, any specific measure, modifications where appropriate, plus references.

----- 3 Months -----

CHILD CARE 3m.

I	M	Type (ideal, actual and planned)
I	M	Child care demand (planning return to work or education)
I	M	Workplace support
I	M	Expectations of child care quality (based on Ogbimi, 1992)

Child Care for those already using at 3m or starting by 6m (supplementary visit, telephone)

I	M	Strategy for finding child care
I	M	Age of Entry
I	M	Quantity (hours per week, each type from birth)
I	M	Cost
I	M	Quality (settling procedure, communication with carer about child care)
I	M	Relationship with child care provider
I	M	Feeding decisions
I	M	Value of caregiver characteristics
Q	MF	Satisfaction with child care
Q	MF	Relationship with child care provider (NICHD)

Note: additional constructs from qualitative questions

FAMILY 3m.

Family Characteristics

I	M	Parental Age
I	M	Family Structure
I/Q(F)	MF	Ethnic Background
I/Q(F)	MF	Parental Education and literacy in English
I/Q(F)	MF	Socioeconomic Grouping (ESRC SOC, Rose & O'Reilly, 1998)
I/Q(F)	MF	Family Income
I	M	Maternal health (prenatal, hospitalisations, selected items SF36 (Ware et al., 1992; 1993)
Q	MF	Parental health behaviour (smoking/alcohol)
Q	MF	Mental Health, current Edinburgh Postnatal Depression Scale (EPDS, Cox, Holden & Sagovsky, 1987)
I	M	Life Events

Family environment

I	M	Environmental Adversity Index
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Family Relationships

I	M	Desired Work/parenting balance for mother
I	M	Family Social Support/Networks
I	M	Paternal involvement and availability
I	M	Communication between partners
Q	MF	Marital satisfaction: Dyadic Adjustment Scale (Spanier, 1976)

Parental Attitudes and Child Care Practices

I	M	Maternal attitudes about child/parenthood (Speech Sample)
Q	MF	Beliefs about the Consequences of Maternal Employment for Children questionnaire - Short form (11 items, 6 negative, 5 positive) (Greenberger, Goldberg, Crawford & Granger, 1988)
Q	MF	Attitudes to children, Traditional and Progressive. Parental Modernity Scale (Schaefer & Edgerton, 1985)
I	M	Feeding methods (breast, bottle, by demand etc.)
I	M	Feeding, inappropriate (solids, thickened milk etc.)
I	M	Sleeping, location of child
I	M	Use of preventative health care

For those using child care at 3m. or starting by 6m.

Q	MF	Separation Anxiety (MSA, 21 items) (De Meis, Hock & McBride, 1986)
Q	MF	Perceptions of separation effects (MSA 7 items)
Q	MF	Employment related concerns (MSA 7 items)
Q	MF	Personal Space (4tems, FCCC)
Q	M	Anxiety/criticism questions (3 items, FCCC)

CHILD 3m.

I+R	M	Early Risks - Birth history and perinatal complications
I/R	M	Weight at 3 months (standardised)
I/R	M	Illnesses/poor health, accidents, hospitalisations
I	M	Feeding problems
I	M	Sleeping Problems
I	M	Crying
I/Q(F)	MF	Temperament. Infant Characteristics Questionnaire - 6m. version short form, 16 items (difficult 6, unadaptable 4, dull 3, unpredictable 3; Bates et al., 1979)

----- 10 Months -----

CHILD CARE 10m.

Use of child care

I	M	Type (actual/planned)
I	M	Quantity between 4 and 10 months
Log	M	Detailed Quantity - current week
I	M	Age of Entry
I	M	Cost

Quality

I	MC	Settling procedure, communication, flexibility
I	C	Structural characteristics of paid care setting (adult:child ratios; staff qualifications; Staff pay; staff training; number of children enrolled ; registration with appropriate agency)
O+I	C	Safety and health (all settings including child's home -NICHHD Profile safety subscale, Abbott-Shimm, 1987; Home based paid care -FDCRS Basic Care, Harms & Clifford, 1989; Centre based - ITERS Personal care routines, Harms et al. 1990).
O+I	MC	Opportunity for learning (Child's home and Home based relatives etc.- HOME inventory -Variety in stimulation, Provision of play materials, Bradley & Caldwell, 1984; Childminders - FDCRS Space & furnishings, Language, Learning activities; Centre based - ITERS Listening and talking, Learning activities, Furnishings & display)
O+I	MC	Caregiver interactions (All settings including child's home - CIS Positive relationship; Punitiveness, Detachment, modified by FCCC for younger children, Arnett, 1989; HOME emotional & verbal responsivity; ORCE global ratings , NICHHD Early childcare research network, 1996; Home based paid care - HOME Avoidance of restriction and punishment)
O+I	MC	Social contacts and daily routine (Child's home and Home based relative etc. HOME Organisation of physical and temporal environment and Log, Centre based - timetable.)

FAMILY 10m.

Family Characteristics

- I M Family demographic changes - employment, socioeconomic grouping, income, family structure
- I M Maternal Health - General Health scale, SF-36 (Ware, 1993)
- Q MF Parental Mental Health. Edinburgh Postnatal Depression Scale (EPDS, Cox, Holden & Sagovsky, 1987)

Family Environment

- I M Environmental adversity changes - home characteristics
- O Safety of environment (Taken from Profile, Abbott-Shimm, 1987)
- O+I M HOME Organisation of environment; Provision of appropriate play materials; Opportunities for variety (Bradley & Caldwell, 1984)
- Log M Details of social interactions of child

Family Relationships

- Q MF Family functioning (General Functioning scale, Family Assessment Device (Epstein, Baldwin & Bishop, 1983)
- Q MF Parent-Child Dysfunctional Interaction (12 items, Parental Stress Index Short Form, PSI; Abidin, 1995)
- O M Stimulation and punishment style -HOME Emotional and verbal responsiveness; Avoidance of restriction and punishment - observed items only (Bradley & Caldwell, 1984)
- O M Sensitivity - CIS Positive relationship; Punishment, Detachment.
- OV M Sensitivity, ORCE global ratings
- V M Maternal sensitivity:- mood, physical affection, recognition of infant cues, maternal positive and negative expressed emotion, intrusiveness, responsiveness, facilitation, and controlling behaviour.
- V M Mother-child measures:- conflict. Mother-infant videotaped observational interaction assessment, play and mealtime:- (Stein, Woolley, Cooper & Fairburn, 1994; Murray, 1992; Murray et al., 1993)

Parental Attitudes

- Q MF Separation Anxiety (Maternal Separation Anxiety, 21 items) (DeMeis, Hock & McBride, 1986)
- Q MF Perceptions of separation effects (MSA, 7 items)
- Q MF Employment related concerns (MSA, 7 items)
- Q MF Parental Distress (12 items, PSI Short Form, Abidin, 1995)
- Q MF Work Commitment Scale - short form (14/17 items working, 8 items not working) (NICHD adaptation of Greenberger & Goldberg, 1989)
- Q MF Parental Commitment Scale (16 of 17 items) (Greenberger & Goldberg)

Supplementary Information – Fathers’ study 10 m.

V	F	Paternal sensitivity . Father-infant interaction videotaped assessments - as for mother-infant
O	F	Paternal sensitivity. CIS Positive relationship, Punitiveness, Detachment.
O+I	F	Paternal stimulation and discipline - HOME Emotional and verbal responsivity, Avoidance of restriction and punishment.
O+I	F	Primary caregiver fathers only: HOME Organisation of the Environment, Provision of appropriate materials, Variety of experiences.
I	F	Negotiation with M regarding responsibilities
I	F	Influences on parenting

[note - additional constructs from qualitative questions]

CHILD 10m.

I/R	M	Weight at 10m. (standardised)
I/R	M	Poor Health/ illnesses, accidents, hospitalisations and injuries, 4-10m.
Q	MF	Temperament. Infant Characteristics Questionnaire 13m version, 22 items (Fussy difficult 9, unadaptable 5, persistent 4, unsociable 3; Bates et al.,1979)
Q	MF	Difficult Child (12 items, PSI Short Form, Abidin, 1995)
V	Ch	Temperament - mood, responsiveness, irritability, positive social behaviour and exploratory behaviour. Mother-child videotape measures, play and mealtime: (Stein et al.,1994; Murray, 1992; Murray et al.1993).

----- 18 Months -----

CHILD CARE 18m.

Use of child care

I	M	Type (actual/planned)
I	M	Quantity of each type between 11 and 18 months
I	M	Number of caregivers encountered between 11 and 18 months
Log	M	Quantity - current previous week
I	M	Age of entry to any new child care since 10m
I	M	Cost
I	M	Significant events with regard to care,

Quality

I+O	C	[note - abbreviated if same child care used at 10 month assessment] Structural characteristics of care setting (adult:child ratios; staff qualifications; Staff pay; staff training; number of children enrolled ; registration with appropriate agency)
O+I		Safety and health (all settings including child’s home -NICHD Profile safety subscale; Home based paid care -FDCRS Basic Care; Centre based - ITERS Personal care routines).
O+I	MC	Opportunity for learning (Child’s home and Home based relatives etc.- HOME Variety in stimulation; Relative etc, HOME provision of play materials. Childminders - FDCRS Space & furnishings, Language & Reasoning,

		Learning activities. Centre based - ITERS Listening and talking, Learning activities, Furnishings & display)
O+I	MC	Caregiver interactions (All settings except child's home - CIS Positive relationship; Punitiveness, Detachment; All settings -HOME emotional/verbal responsivity, HOME avoidance of restriction and punishment, ORCE global ratings).
O+I	MC	Social contacts and daily routine (Child's home and Home based relative etc. and childminder - Log; Home based relatives - HOME Organisation of physical and temporal environment. Centre based - timetable).
Q	MF	Confidence and Satisfaction with care
Q	MF	Relationship with child care provider (NICHD)

FAMILY 18m.

Family Characteristics

I	M	Family demographic changes - employment, socioeconomic grouping, income, family structure
Q	MF	Parental mental health. General Health Questionnaire 28 items (GHQ, Goldberg & Williams, 1988)
Q	MF	Parents' own childhoods, Parental Bonding Instrument re Mother and Father (Parker, Tupling & Brown, 1979)
Q	MF	Parental personality - Revised NEO Personality Inventory (NEO PI-R) (Costa & McCrae, 1997) Short form , 36 items, used by NICHD <u>Family Environment</u>
I	M	Environmental adversity changes - home characteristics
O		Safety of environment, Profile.
O	M	HOME Opportunities for variety in stimulation, 2 items.

Relationships

O	M	Mother-child interaction - HOME Emotional and verbal responsivity and Avoidance of restriction & punishment.
Q	MF	Marital satisfaction: Mutual criticism (Hooley)
Q	MF	Use of discipline. Conflict Tactics Scale (Straus, 1979)

CHILD 18m.

I/R	M	Weight at 18m. (standardised)
I/R	M	Poor Health/ illnesses, accidents, hospitalisations and injuries 11-18m.
Test	Ch	Physical development. Bayley Motor Scale of Infant Development II, (Bayley, 1993)
I/Q	M	Language development. MacArthur Communicative Development Inventory - Toddlers. (Fenson et al., 1991)
Test	Ch	Cognitive Development. Bayley Mental Scale of Infant Development II, (Bayley, 1993)
Q	MF	Temperament. Toddler Behaviour Assessment Questionnaire (Goldsmith, 1996)
I	M	Behaviour difficulties -Behaviour Screening Questionnaire, 5 items (Richman et al., 1982)
O	Ch	Sociability to visitor - (Stevenson & Lamb, 1979)
O	Ch	Response to M's departure and return (Melhuish, 1987)

----- 3 Years -----

CHILD CARE 3years

Use of child care

Q	M	Type in use/planned
Q	M	Quantity between 19 and 36 m.
Q	M	Number of caregivers 19 to 36m.
Q	M	Age of entry to each type since 18 m.
Q	M	Cost of current care
Q	M	Significant events related to child care use.
Log	M	Previous week's care

Quality

I	C	Structural characteristics of care setting
O+I		Centre base care -Early Childhood Environment Rating Scale (ECERS, Harms & Clifford, 1980). Home based care - FDCRS and HOME. Child's home included only for those with no outside home experiences.
O	C	All settings -Caregiver Interaction Scale (Arnett, 1989)

FAMILY 3 years

Family characteristics

Q	M	Family demographics changes (marital status, family size, employment of parents, family finances)
Q	M	Social support (items from Brown & Harris, 1978)
Q	MF	Parental mental health. General Health Questionnaire, 28 items

Family relationships

Q	MF	Marital satisfaction (DAS, Spanier, 1976)
Q	MF	Family functioning (FAD, Epstein, Baldwin & Bishop, 1983)

Attitudes

Q	MF	Parental Modernity Scale (Schaefer & Edgerton, 1985)
Q	MF	Maternal Work Commitment Scale and Maternal Parental Commitment Scale (Greenberger & Goldberg, 1989) (M)

CHILD 3 years

Test	Ch	Cognitive development. British Ability Scales (BAS) short form (Elliot et al., 1984)
I(+R)M		Weight, illnesses, accidents, hospitalisations and injuries
Test	Ch	Language development. Reynell.
Q	MF	Temperament, Toddler Behaviour Assessment Questionnaire (Goldsmith)
Q	MF	Behaviour difficulties, home. Behaviour Checklist (BCL, Richman, Stevenson & Graham, 1982) (M+F)
Q	C	Behaviour difficulties, child care. Preschool Behaviour Checklist (PBCL, McGuire & Richman, 1988)
Q	MFC	Prosocial behaviour, selected items, Adaptive Social Behaviour Inventory (ASBI, Scott, Hogan & Bauer, 1992)

----- School Entry Age -----

CHILD CARE

- Q/I M History of care to date and details of current care, including routines plus significant events with regard to care, parental satisfaction, number of caregivers encountered, cost of children's care, relative to earnings/loss of earnings.
- Q/I M Weekly child care log
- I T School characteristics (class size, school size, staff:child ratio)
- I C Structural characteristics of other care settings (adult: child ratios; staff qualifications; enrolment of centre or home; registration with appropriate agency)

FAMILY

- I M Family demographics update (marital status, family size, employment of parents, family finances)
- I M Social support interview questions (Brown & Harris, 1978)
- Q MF Family functioning (FAD, Epstein, Baldwin & Bishop, 1983)
- Q MF Parental mental health (GHQ, Goldberg & Williams, 1988)
- Q MF Marital satisfaction (DAS, Spanier, 1976)

**O Mother-child videotaped interaction assessments - as before (M+Ch)

CHILD

- Test Ch Cognitive development. British Ability Scales (BAS) short form (Elliot et al., 1984)
- Test Ch Literacy. Letter Recognition (Clay, 1993)
- R Ch New Baseline Assessment (SCAA, to be published)
- Q M Weight, illnesses, accidents, hospitalisations and injuries
- Q MFCT Behaviour difficulties and prosocial behaviour. Strengths and Difficulties Questionnaire (Goodman, 1997)
- **O Ch Observation in classroom (Sylva & Stevenson, in press)

-----End of Key Stage One Assessment-----

(further funding will be sought)

CHILD

- R Achievement. SATs at age 7 (English, Maths, Science, from school records)
- Q MFT Behaviour difficulties and prosocial behaviour. Strengths and Difficulties Questionnaire (Goodman, 1997)