

Feasibility Study for a Longitudinal Survey of the Impact of Out of School Childcare on Children

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Contents

	Page
Executive summary	4
Section 1 Introduction	13
1.1 Background	
1.2 Aims and objectives of the feasibility study	
1.3 Key methodological issues	
1.4 Methodology	
Section 2 Review of existing longitudinal research	16
2.1 Background	
2.2 Non-UK studies of after school care	
2.3 Non-UK studies of day care	
2.4 UK studies	
2.5 Ongoing longitudinal research in the UK	
2.6 Conclusions	
Section 3 Consultation with academic experts and key stakeholders	46
3.1 Background	
3.2 The range of out of school activities	
3.3 Outcomes of out of school activities	
3.4 Survey design issues	
3.5 Conclusions	
Section 4 Consultation with policy makers	60
4.1 Background	
4.2 Current and future policy priorities	
4.3 Out of school activities	
4.4 Outcomes of out of school activities	
4.5 Conclusions	
Section 5 Establishing the impact of out of school childcare on children	67
5.1 Background	
5.2 The impact of out of school provision on academic outcomes: Existing longitudinal research	
5.3 The impact of out of school provision on child outcomes other than academic performance	
5.4 Evaluating social context: Key variables mediating the relationship between out of school care and outcomes for children.	

5.5	Costs and benefits analysis	
5.6	Conclusions	
Section 6	Design features of a longitudinal study	77
6.1	Background	
6.2	Sample coverage and frame	
6.3	Sample size and design	
6.4	Sub-groups of interest	
6.5	Survey panel design	
6.6	Panel recruitment, attrition measures and non response analysis	
6.7	Role of qualitative research	
Section 7	Conclusions and recommendations	101
7.1	Background	
7.2	Questions for the feasibility study	
	References	108
	Appendices	115

Executive Summary

ES1 Introduction

ES1.1 This report assesses the feasibility of conducting a longitudinal survey to examine the impact of out of school childcare on children. The Thomas Coram Research Unit (TCRU) and the National Centre for Social Research took joint responsibility for preparation of the report. According to the tender specification produced by the DfES (formerly DfEE), an effective longitudinal study should seek to address some or all of the following issues:

- The impact of out of school care on outcomes for children;
- The differential impacts of different types of care;
- How quality of provision mediates impact on children;
- Relationships between children's views of their care and outcomes;
- The influence of time spent in out of school provision;
- How social and demographic variables influence outcomes;
- Outcomes for children with special needs.

ES2 Aims and objectives

The feasibility study aimed to provide the DfES with advice and guidance on the possibility of designing and implementing a longitudinal study capable of addressing the issues described above. It considered a range of appropriate research designs with reference to the relative costs and how effectively alternative designs might address the issues described. More specifically, the feasibility study aimed to provide answers to the following questions:

1. Could a longitudinal study provide reliable information on the specific impact of out of school provision given the great variety of other factors influencing outcomes for children?
2. Which longitudinal research designs would be most appropriate?

3. What would be the relative costs of implementing each identified research design?
4. Could existing longitudinal studies of appropriate age groups be developed to look at the impact of out of school care?
5. Would any methodologies other than a longitudinal study provide information on the impact of out of school care?
6. Would it be possible to collect data to explore issues around value for money and the costs and benefits of providing out of school childcare?

ES3

Methodology

The feasibility study has been conducted in five phases:

Phase 1: a review of national and international research literature;

Phase 2: a full review of longitudinal studies conducted in the UK;

Phase 3: a written report of the reviews and proposals concerning suitable longitudinal research designs;

Phase 4: consultation with experts, policy makers and stakeholders;

Phase 5: production of final report.

ES4

Reviews of existing longitudinal research

ES4.1

Studies were reviewed under three headings:

1. Non-UK studies of after school care
2. Non-UK studies of day care
3. UK studies

Detailed summaries of studies appear in Appendix B. In addition, the team provided details of two ongoing UK longitudinal studies, the Effective Provision of Pre-school Education (EPPE) study, and the Avon Longitudinal Study of Parents and Children (ALSPAC).

ES4.2

The review identified several longitudinal studies that looked at the impact of out of school provision on children, their families, and

communities. Evidence from those studies suggests that for some groups of children, the availability of supervised after school activities can reduce the risk of poor adjustment and incidence of problem behaviours. None of the studies found evidence of direct links between after school care arrangements and academic performance. Based on evidence from the review, it is safe to assume that effective longitudinal investigations into the impact of out of school provision in the UK are entirely possible. Effective longitudinal studies should take into account the complexity of environments in which children use out of school provision. New research should aim to address specific questions concerning the conditions under which provision may have an impact on particular groups rather than seek answers to more general issues.

ES5 Consultation with academic experts and key stakeholders

ES5.1 Participants in two seminars were given copies of a discussion paper based on the results of the literature review described above and asked to comment on three issues:

1. The range of out of school activities that might usefully be covered by the longitudinal study and the information that might need to be collected on different types of provision;
2. The range of outcomes a longitudinal survey might attempt to assess;
3. Appropriate survey designs able to gather adequate information on 1 and 2 above.

ES5.2 Participants concluded that it would be possible design a longitudinal study to identify potential causal relationships between participation in (different types of) out of school provision and changes in children's behaviour and attitudes. However for most children, a longitudinal study that focussed exclusively on academic outcomes would be looking for marginal effects with a background of high variation. For more specific subgroups of children, such as those from families of lower socio-economic status, the impact of out of school provision on

academic outcomes is likely to be of more significance; sampling strategies should aim to boost these groups. A longitudinal survey on out of school childcare would also provide useful information on patterns of arrangements, and how and why they change over time, and on gaps in provision for different types of out of school activities and for different groups of children and parents.

ES6 Consultation with stakeholders

ES6.1 Policy makers from the DfES and Treasury were interviewed. Information was sought on three issues:

1. The current and future policy priorities in relation to out of school childcare;
2. The range of out of school activities that might be covered by a longitudinal study and the information required on different types of provision;
3. The outcomes of out of school provision a longitudinal study should attempt to assess.

ES6.2 Policy makers felt a longitudinal study could potentially provide useful information necessary to assess the impact and effectiveness of childcare policies. Some believed that cost benefit analysis would be particularly valuable, especially were it to focus on the impact of provision on parental employment, household income and social exclusion. To monitor outcomes for all children and for different types of provision was seen as over ambitious by some. Others welcomed an increased emphasis on the benefits and outcomes of provision for children.

ES7 Design features of a longitudinal study

ES7.1 This section includes the research team's suggestions for:

- The sample coverage and frame;
- The sample design and size;
- Including sub-groups of interest;

- The survey panel design;
- Panel recruitment and attrition measures;
- The role of qualitative research.

ES7.2 *Sample coverage and frame* - The sample should be drawn from all children in the relevant age groups, regardless of whether they use formal, informal or no out of school provision. Two age cohorts should be used, one drawn from school Year 1 (4/5 years old), and the other from Year 4 (7/8 years old). Each group should be followed for a minimum of three years. Schools are probably the most suitable sample frame, as they can be used to stratify the sample and perhaps more importantly would allow the study to control for the impact of classroom effects on children outcomes.

ES7.3 *Sample design and size* – The sample would need to ensure that the survey included a sufficient number of users of different types of out of school provision, as well as ‘non-users’. We have therefore recommended that the achieved sample size for each cohort should be 4,000 at wave one and include: 500 children who attended an out of school club, 500 who were looked after by a childminder, 1,000 who received informal adult care and 2,000 who received no provision. In order to achieve the number of formal childcare users (i.e. who have used out of school clubs or childminders), it would be necessary to boost these groups through a screening exercise.

A multi-stage sampling design should be used, in which schools would be the primary sampling unit, classrooms sampled within schools, and pupils randomly selected within classrooms. Samples for the two cohorts should be selected independently.

For the sample sizes suggested, a sensible sampling design would involve selecting 260 schools for each cohort. Selection of schools should be stratified by external data, using data such as the Department

of Transport, Environment and the Regions (DETR) Index of Local Deprivation to boost the numbers of children from disadvantaged groups.

ES7.4 There is a considerable policy interest in specific sub-groups, including children:

1. from low income families;
2. in lone parent families;
3. from deprived areas;
4. from ethnic minority groups;
5. with special educational needs.

We would expect Groups 1 and 2 above to be adequately represented in a random sample of primary school children. We could boost Group 3 by using the DETR's Index of Local Deprivation. Other groups would need to be boosted through a screening exercise.

ES7.5 *Survey panel design* - Data should be collected via two contacts with parents per year, one face to face and the other via telephone. Information should be collected on all forms of out of school provision, including informal arrangements and self-care. Teacher assessments of pupils should be collected, but only for a sub-group of children to reduce the burden on school and teachers. Based on previous findings, it is also likely to be important to collect data concerning the quality of out of school provision, which would involve an assessment of (formal) childcare providers.

Based on the response of other similar surveys, we estimate that it should be possible to retain around two thirds of the original sample over a three year period.

ES7.6 *Panel recruitment and attrition measures* – To maximise initial response and minimise subsequent attrition, we recommend a combination of letters followed by a personal visit to secure agreement

to participate in the study. The short (six-month) interval between contacts should help retention. However, we would recommend establishing details of stable contacts with participants, and sending regular research updates. Payment of small financial incentives has also been found to aid retention in other longitudinal studies.

ES7.7 *Role of qualitative research* – Qualitative research is likely to play an important role at all stages of the investigation. In particular qualitative work can assist in the design of questionnaires, help in the development of study hypotheses, and provide more in-depth analysis of key issues emerging from survey results.

ES8 **Conclusions and recommendations**

By way of concluding, the research team offers the following answers to the feasibility study questions:

1. *Could a longitudinal study provide reliable information on the specific impact of out of school provision given the great variety of other factors influencing outcomes for children?*

A longitudinal study could provide reliable information on the specific impact of out of school provision. However, to be effective the study would need to identify, *a priori*, three things:

- which features of provision (e.g. type, quality, quantity, variety) that might influence outcomes are to be investigated;
- which outcomes are likely to be of interest;
- for which groups of children, families or communities are the relationships between potential causes and outcomes to be examined.

2. *Which longitudinal research designs would be most appropriate?*

Effective designs would involve collecting data on features of out of school services, individual differences of children, and the characteristics of families and local communities.

3. *What would be the relative costs of implementing each identified research design?*

Elements of study design that would influence costs cannot be specified until issues concerning the range of research questions a study aims to address have been resolved. For reasons of commercial sensitivity, more specific issues concerning cost are dealt with in a separate document provided for the DfES.

4. *Could existing longitudinal studies of appropriate age groups be developed to look at the impact of out of school care?*

Design features of the EPPE and ALSPAC studies (the two existing longitudinal studies of appropriate age groups) mean that neither is likely to be appropriate to monitor the impact of out of school childcare.

5. *Would any methodologies other than a longitudinal study provide information on the impact of out of school care?*

Investigations designed to study the impact of one set of variables on another usually need to establish causal relationships. Other research designs could collect cross-sectional data, but they would only provide evidence of association, relationships that are consistent with, but not evidence of, causal relationships. Consequently longitudinal research designs are likely to be the most effective when it comes to establishing robust evidence concerning the impact of out of school care on children. In the view of the expert panel of academic researchers, using methodologies other than a longitudinal design would not constitute an effective use of resources.

6. *Would it be possible to collect data to explore issues around value for money and the costs and benefits of providing out of school childcare?*

It would be possible to conduct a costs and benefits analysis. Most of the information required for this analysis could be collected from

parents. Benefits would be assessed by monitoring changes in parental employment and household income due to the availability of formal out of school childcare. Other potential benefits that might be assessed include those for children, schools and communities.

Section

1 Introduction

1.1 Background

1.1.1 This report describes the results of a study undertaken to assess the feasibility of conducting a longitudinal survey into the impact of out of school childcare on children. The Thomas Coram Research Unit (TCRU) and the National Centre for Social Research were jointly responsible for the work.

1.1.2 Recent and continuing expansion of¹ out of school care in England has prompted the Department for Education and Employment (DfEE) to consider commissioning a longitudinal study of the impact of out of school care on children. Two longitudinal studies in the UK are looking at the impact of non-parental care on pre-school children¹. However, none have so far addressed the impact of out of school provision on school-aged children. According to the tender specification produced by the DfES, an effective longitudinal study should seek to address some or all of the following issues:

- The impact of out of school care on outcomes for children;
- The differential impacts of different types of care;
- How quality of provision mediates impact on children;
- Relationships between children's views of their care and outcomes;
- The influence of time spent in out of school provision;
- How social and demographic variables influence outcomes;
- Outcomes for children with special needs.

¹ The Effective Provision of Preschool Education Project (EPPE), and the Avon Longitudinal Study of Parents and Children (ALSPAC).

1.2 Aims and objectives of the feasibility study

1.2.1 The feasibility study aimed to provide the DfES with advice and guidance on the possibility of designing and implementing a longitudinal study capable of addressing the issues described above. It considered a range of appropriate research designs with reference to the relative costs and how effectively alternative designs might address the issues described. More specifically, the feasibility study aimed to provide answers the following questions:

1. Could a longitudinal study provide reliable information on the specific impact of out of school provision given the great variety of other factors influencing outcomes for children?
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5. Would any methodologies other than a longitudinal study provide information on the impact of out of school care?
6. Would it be possible to collect data to explore issues around value for money and the costs and benefits of providing out of school childcare?

1.3 Key methodological issues

1.3.1 The feasibility study addressed several important methodological issues including:

- Sample strategy;
 - Panel design;
 - The role of qualitative research;
 - Data collection methods;
 - Key survey measures;
 - Cost benefit analyses;
-

- Outputs from the longitudinal survey.

1.4 Methodology

1.4.1 The feasibility study has been conducted in five phases:

Phase 1: a full review of the national and international research literature to identify approaches used in studies examining the impact of out of school care on child outcomes;

Phase 2: a full review of longitudinal studies conducted in the UK that have looked at the impact of childcare on pre-school children, and existing UK longitudinal studies of school age children;

Phase 3: production of a written report describing the results of the reviews undertaken in phases 1 and 2, proposals concerning suitable longitudinal research designs, and relative costs;

Phase 4: consultation with recognized experts in the field of longitudinal research, out of school provision, policy makers and stakeholder organizations;

Phase 5: production of final report.

1.4.2 The remainder of the report describes results from each phase of the feasibility study. Section 2 provides details of the research reviews conducted in phases 1 and 2 of the project. Section 3 describes the results of consultation with experts in the field of longitudinal research, out of school provision, and stakeholder organizations. Section 4 summarizes key points made in the course of interviews with policy makers. Section 5 looks at the possible design features of a longitudinal study. The conclusions we have drawn from the feasibility study are detailed in Section 6.

Section

2 Review of existing longitudinal research

2.1 Background

2.1.1 This section of the report describes studies identified in two separate reviews of the research literature. The first review was conducted at the Thomas Coram Research Unit over the summer months of 2000 as part of a separate project; it identified longitudinal studies described in the national and international research literature that examined the impact of out of school provision. Details of relevant articles were passed to the researcher working on the feasibility study.

2.1.2 Members of the feasibility study team conducted a second review; it examined English-language literature, published since 1980, using major databases. The review focused on longitudinal studies that investigated the impact of childcare on pre-school children, and UK longitudinal studies of school age children.

2.1.3 The team also searched bibliographic databases for details of longitudinal studies involving school children. Studies looked at three broad types of outcomes: *academic achievement*, *well-being* and *peer relationships*. Our aim was to establish whether studies of this type could provide additional information concerning appropriate research methods. The search of UK journals uncovered around one hundred reports of longitudinal studies; international databases revealed around 450. A random sampling of the studies we identified suggested that, in common with methods used in the childcare studies we have reviewed, longitudinal research with school aged children takes the same multivariate approach to measurement and data analysis. Consequently the team decided that a review of such an extensive literature at this stage would not be an effective use of time or resources.

2.1.4 Both reviews involved searches of the same bibliographic databases: the British Educational Index (BEI) is the major indexing service covering 350 UK journals concerned with education. Data from the BEI was supplemented by searches ERIC, the major US indexing service for education that covers 800 journals and many thousands of conference papers and unpublished reports. Education-line, an online journal service, is a developing collection of papers, reports, speeches and other documents about education published on the Internet. It is a project managed by British Education Index at the University of Leeds. Finally, more general social science databases were checked. These included the International Bibliography of the Social Sciences (IBSS) a very large, international indexing service, produced by the British Library of Political and Economic Sciences, and the Social Sciences Citation Index, produced by the Institute for Scientific Information. In addition, the research team identified ongoing projects (e.g. the EPPE study) looked for any findings relevant to the review.

2.1.5 The remainder of this section summarises the results of published longitudinal research under three headings:

1. Non-UK studies of after school care
2. Non-UK studies of day care
3. UK studies

Appendix B includes detailed summaries of each study, including information on aims, sample size, study design, measures used, and results. A fourth section provides summaries of the Effective Provision of Pre-school Education (EPPE) study, and the Avon Longitudinal Study of Parents and Children (ALSPAC) study, two ongoing longitudinal research projects being conducted in the UK.

2.2 **Non-UK studies of after school care**

2.2.1 We identified four longitudinal studies that looked at after school care:

1. Pettit, Laird, Bates & Dodge (1997);
2. Pettit, Bates, Dodge & Meece (1999);

3. Vandell & Ramanan (1991);
4. Posner & Vandell (1999)

All four studies looked at various aspects of the relationship between types of after-school care and outcomes for children. Studies 1,2 and 3 were all part of larger ongoing birth cohort projects. Study 4 was an independent project.

2.2.2 *Studies 1 and 2*

Both studies were part of the same project – the Child Development Project. The sample included birth cohorts (1987, 1988) from 3 cities in the US. Study 1 examined the relationship between patterns of after school care, in terms of complexity (more than 1 care setting during) and involvement (hours in care), and children’s subsequent social, behavioural and academic adjustments in grade 6.

The study included children with experiences of six types of after-school care:

1. Self/Sibling care
2. Sitter/Relative care
3. Neighbour care
4. Day-care centre
5. School-based program.
6. Activity oriented

The study used the following measures:

Behaviour problems

- Teachers completed the Teacher Report Form (TRF; Achenbach & Edelbrock, 1986) a 112-item checklist of child behaviour problems. The TRF also includes ratings on school performance.
- The Internalising and Externalising problems summary scores from the TRF were used in this study.
- Behaviour scores were derived from kindergarten teacher’s rating, and grade 6 teacher’s ratings.

Social competence in peer relations

- Teacher Checklist of Peer Relations (Coie & Dodge, 1988), a 7-item, 5-point scale.

Academic performance

- Based on records compiled for the most recently completed year. An overall average score was calculated across subjects (maths, reading, language art, spelling, social studies and science).

Data were analysed using correlations and Analyses of Covariance (ANCOVAs). The results from study 1 indicated that:

- high amounts of self-care predicted poorer adjustment even after controlling for socio-economic status and prior adjustment;
- poor adjustment outcomes for self-care were most apparent for children already displaying problem behaviour in kindergarten, and for children not participating in adult-supervised extracurricular activities;
- the impact of all types of care (except school-based programmes, where low rates of involvement precluded an examination of interactions) was moderated by socio-economic status and child gender.

Study 2 looked at the impact of after school on children's externalizing (e.g. aggression and delinquency) and internalizing (e.g. withdrawal and anxiety) problems at grades 6 and 7. As already noted, studies one and two reported data from the same investigation. The only difference is that study two reported a repetition of the child outcome assessment (specifically teachers' ratings) at grade 7.

The study used the following measures:

Parental monitoring

- A 9-item composite scale was used. Some were adapted from existing measures. Some items adapted from Capaldi &

Patterson (1989), and some developed specifically for the study. Ratings were on a 5-point scale.

Neighbourhood safety

- Adapted from the Self-Care Checklist (Posner & Vandell, 1994). 6-items on a 6-point scale.

Adolescent after-school time use

- Children phone interviews were coded using a modified version of the Posner and Vandell (1994) Activity Schedule. This instrument was used to determine the amount of time after-school (broken down to 12, 15 min intervals) the child spent with parents, other adults, or with no adult supervision; record the reported activities and child's location for each 15min interval.
- An activity Schedule was completed for each of the two days, providing 24, 15min intervals (3 hr each day).
- Independent verification of adolescents' time-use reports was obtained via separate interview with the mother.

A series of hierarchical regression analyses were computed to address the primary research questions. Results indicated that:

- after controlling for family background, externalising problems in children at grade 7 were predicted by unsupervised peer contact, lack of neighbourhood safety and low monitoring;
- the group at greatest risk were unsupervised adolescents living in low-monitoring homes in unsafe areas;
- the relationships described held only for adolescents high in problem behaviour at grade 6.

Findings demonstrated clearly how the impact of out of school provision on children could vary depending on characteristics of their families and communities. Unsupervised contact with other children was most likely to predict adjustment problems for adolescents living in families where supervision was minimal, in communities judged to be unsafe.

2.2.3

Study 3

The subjects were children of mothers who were part of the NLSY (National Longitudinal Survey of Youth) project. The NLSY was begun in 1979 as a survey of youth aged from 14 to 21 years. Children viewed as 'at risk' for developmental problems are likely to be over-represented in the sample. All children who were in 3rd, 4th and 5th grade at the time of the 1986 survey (N=390) were assessed for this study. Thus, while this study was a part of a longitudinal project, it was not itself longitudinal in that it did not measure effects over time. Children in the study experienced one of three types of after-school care: self-care, mother care, or other adult care (including relatives, non-relatives and centers).

The study used the following measures:

Mother questionnaires

- Including items covering marital status, family income, hours of employment, job satisfaction, age, education and child care.

Home Observations

- The HOME short form (Bradley & Caldwell, 1980) was used to measure quality of the home environment. 26 items scored on a yes/no basis. Items examine the extent to which the home environment provides cognitive stimulation and emotional support.

Child assessments

- A revised form of the Behaviour Problem Index (Peterson & Zill, 1986) filled by mother. 28 items assessing 6 domains on
 - Peer conflicts
 - Hyperactivity
 - Anxiety
 - Dependence
 - Anti-sociability
 - Being headstrong

- 2 scales from Harter's (1984) Self-Perception Profile of Children – Children were asked how they felt they were doing relative to other children cognitively and generally.
- A battery of cognitive assessments:
 - the Peabody Individual Achievement Test (PIAT)
 - the Peabody Picture Vocabulary Test (PPVT)
 - Digit span – the sub-scale of the WISC-R.

Data were analysed using chi-square tests, Analysis of Variance (ANOVAs) and ANCOVAs.

Results showed that:

- mother care after school was associated with: lower family incomes, more poverty and less emotional support;
- children in single mother (after school) care had lower PPVT scores and higher ratings for antisocial behaviours, anxiety and peer conflicts;
- self-care was associated with more behaviour problems; however, these problems disappeared when family income and emotional support were controlled.

2.2.4 *Study 4*

This study looked at the relationship between type of care and child development but only in a sub-population of low-income urban families. One hundred and fifty children were followed over two and a half years and measures were taken during grades 3, 4, and 5. Data for the study were collected from children, parents, teachers, and official records. Children had one of four care arrangements: formal after-school programme, self-care, informal arrangements with relatives or neighbours, and parental care.

The study used the following measures:

Demographic information:

- Interviews with parents, school records and police department census data.

Children's reports of their after-school activities:

- Telephone interviews developed from a structured diary (Carpenter, Huston and Spera, 1989);
- Standard set of questions ascertained primary activities, other people in the setting, and other people involved in the activity.

Children's performance and adjustment:

- Grades obtained from school records;
- Teacher reports based on responses to two sub-scales of the Child Adjustment Scale (Santrock & Warshak, 1979);
- Parent reports of child behaviour based on responses to the anti-social sub-scale of the Behaviour Problem Index (Peterson & Zill, 1986).

Data were analysed using partial correlations and Analysis of Variance (ANOVAs).

Findings from this study showed that:

- girls were more likely to engage in academic activities and socialising, whereas boys were more likely to play coached sports;
- children who attended after-school programs spent more time on academic and extracurricular activities, whereas children in informal care spent more time watching TV and hanging out;
- time spent in activities between 3rd and 5th grades was related to children's adjustment in 5th grade;
- child adjustment measured in 3rd grade was associated with time in different activities in 5th grade.

Based on these findings, research into the impact of out of school provision will need to take account of not only gender differences in what children do in out of school settings, but also the time children

spend across the range of activities available in different settings. In terms of impact, it is not simply a case of considering whether a child has access to provision; research will need to monitor what children do in out of school settings.

2.3 **Non-UK studies of day care**

5. NICHD study of early child care (1998);
6. NICHD study of early child care (1999);
7. Baydar & Brooks-Gunn (1991);
8. Vandell, Henderson & Wilson (1988);
9. Howes (1998);
10. Howes, Matheson & Hamilton (1994);
11. Lamb, Hwang & Bookstein (1988);
12. Wessels, Lamb & Hwang (1996);
13. Bagley (1988);
14. Lerner, Gunnarsson, Cochran & Haggland (1989).

2.3.1 *Studies 5 and 6*

The National Institute of Child Health and Human Development (NICHD) study is a prospective 3-year longitudinal study of over 1300 full-term healthy infants and families from 10 cities in the US. The study examines the concurrent long-term cumulative influences of variations in early child care experiences on the cognitive, linguistic, social, emotional and physical development of infants and toddlers.

The study used the following measures:

Measures used to control the non-random utilization of childcare by families:

- Income to needs ratio calculated as family income divided by a poverty threshold measure provided by the US Department of Labor;

- Mother's psychological adjustment using three scales of the NEO Personality Inventory (Costa & McCrae, 1985) and the depressive scale of the CES-D (Radloff, 1977).

Family and child predictors:

- Infant temperament based on 55 items from the Infant Temperament Questionnaire (Medoff-Cooper, Carey & McDevitt, 1993);
- Mother's behaviour assessed by the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984);
- Infant-mother attachment security assessed using the Ainsworth & Wittig (1969) strange situation procedure.

Characteristics of childcare:

- Age of entry;
- Quantity of care;
- Stability of care;
- Quality of care using the Observational Record of Caregiving Environment; (NICHD, 1996).

Child outcome measures:

- Maternal reports of behaviour problems using the Child Behaviour Checklist (Achenbach, 1991);
- Maternal reports of social competence using the Adaptive Social Behaviour Inventory (Hogan, Scott & Bauer, 1992).
- Laboratory assessments to assess self-control, compliance and problem behaviour.

Data were analysed using a series of ordinary least squares (OLS) regression analyses.

Results reported in study 5 showed:

- mothering to be stronger and more consistent predictor of child outcomes than childcare;

- little evidence that early, extensive, and continuous care was related to problematic child behaviour;
- among the childcare predictors, quality was the most consistent predictor of child functioning;
- none of the anticipated interactions among childcare factors or between them and family or child measures proved significant.

Results reported in study 6 showed:

- childcare was a small but significant predictor of maternal sensitivity and child engagement;
- more hours in childcare predicted less maternal sensitivity and less positive child engagement;
- higher quality childcare predicted greater maternal sensitivity;
- the effects of childcare on mother-child interaction were much smaller than the effects of maternal education, but were similar in size to the effects of maternal depression and child difficult temperament.

Patterns of association with childcare did not differ across ages of assessment.

2.3.2 *Study 7*

This looked at the effects of maternal employment, and childcare arrangements on cognitive and behavioural outcomes. The authors were specifically interested in timing of entry into work and continuity and intensity of employment in the first 3 year of life. Data came from the National Longitudinal Survey of Youth (NLSY). The study looked at six different childcare arrangements: mother, father, grandmother, other relative, non-relative or centre.

The study used the following measures:

Employment:

- Self-reports of employment status from mothers;

Childcare:

- Retrospective reports from mothers

Child outcomes:

- Peabody Picture Vocabulary Test (PPVT);
- Behavior Problems Index (BPI).

Sociodemographic covariates:

- Gender;
- Birth order;
- Marital status of mother
- Poverty status of family;
- Age of mother;
- Mother's education;
- Score on the Armed Forces Qualification Test (AFQT; Baker & Mott, 1989), a measure of mothers' cognitive ability.

Data were analysed using multivariate regression models.

Results indicated:

- no mean differences on outcomes scores between children whose mothers were employed and unemployed;
- effects on children co-varied with length of working week. The impact was least for children whose mothers worked less than 10 hours per week, slightly greater for those whose mothers worked more than 20 hours per week, and greatest for those whose mothers worked between 10 and 20 hours per week. The authors suggested mothers working part-time (10-20 hours a week) were most likely to have a number of different, somewhat ad hoc childcare arrangements than their full-time counterparts. This less stable arrangement might account for the non-linear relationship between impact on children and length of working week.

2.3.3

Study 8

This paper reported a longitudinal study of a very small (n=20) sample aimed at assessing the long-term consequences of experiences in

centre-based non-parental care. Measures looked mainly at adult/child interactions, child/child interactions, and self-esteem.

The study used the following measures:

- Observations of unstructured, indoor free play when children were aged 4 years and 8 years;
- Observation of triads of 8 years olds undertaking a series of structured tasks designed to elicit a range of social behaviours (Sitterlee, 1984);
- Mothers' ratings of peer relationships, compliance, task orientation and emotional well-being (Santrock and Warshak, 1979).

Data were analysed using hierarchical regression.

Results were consistent with findings from other studies: children attending better quality provision scored most positively on ratings of social competence.

2.3.4

Study 9

This was a longitudinal study looking at relationships between aspects of early childcare experiences and later adjustment to school involving 87 children.

The study used the following measures:

Childcare:

- Age entered child care, structure of care, and number of different child care arrangements;
- Quality of care measured on five dimensions of care – pre-service training of teachers, small groups (less than 25 children), low adult:child ratios (1:8), a planned, individualised education programme, and adequate physical space.

Family characteristics:

- Years of schooling achieved by mother;

- Parental status (single/married);
- Maternal employment.

School Adjustment:

- Teacher ratings of academic progress;
- Teacher ratings of school skills;
- Behaviour problems using the Child Behaviour Profile (CBP; Achenbach & Edelbrock, 1981);

Data were analysed using multiple regression.

Results showed that, when controlling for family variables and child characteristics:

- for girls, stable childcare arrangements predicted academic skills;
- for boys, stable and high quality care predicted academic skills.

2.3.5

Study 10

This longitudinal study looked at the impact of maternal, teacher and childcare histories on children's relationships with their peers. It followed a sample of 84 children from birth to the age of four years.

Measures used in the study were:

Adult relationships:

- Maternal attachment using the strange situation procedure (Ainsworth & Wittig, 1969);
- Teacher child relationship using the Waters and Deane (1985) Attachment Q-set;

Social Competence:

- Observation of 5 minute behaviour samples coded for gregariousness, complex play, hostile aggression and instrumental aggression;
- Teacher assessment of sociability using the California Q-Set (Block & Block, 1980).

- Sociometric interview with children asking questions about how much they would like children in their group as friends.

Data were analysed using Multivariate Analysis of Variance (MANOVA).

Results:

- relationship with teachers in early years settings and at the age of four was related to social competence with peers;
- maternal attachment relationships at 12 months and four years did not predict social competence with peers.

2.3.6 *Study 11*

This Swedish study tested 140 children four times, between the ages of 16 months and 40 months. Children attended either centre-based care, family day care, or stayed at home.

The study used the following measures:

Child characteristics:

- The Infant Behavior Questionnaire (IBQ; Rothbart, 1981), an 87 item questionnaire that scores infant temperament on six dimensions – activity level, positive emotionality, fear, anger/frustration, soothability, and undisturbed persistence.

Family Background and Home Environment:

- Weighted sums for maternal and paternal education and occupation using scales developed by Hollingshead (1975);
- The HOME inventory, a well-known observation schedule that assesses the amount of stimulation available in the home environment (Caldwell & Bradley, 1984);
- A checklist to assess quality of care received at home (Belsky & Walker, 1980).

Support:

- 24 questions asked of both parents about levels of support received from relatives, friends and neighbours.

Child personality:

- Mother or care providers ratings correlated with scores on the California Child Q-set (Block & Block, 1980).

Peer skills:

- Observations of child interactions rated using the Howes (1980) 23 item scale for rating peer play.

Sociability:

- Observations in the child's home using a procedure developed by Thompson and Lamb (1983).

Data were analysed using ANOVAs and multivariate longitudinal analyses.

Results:

- type of childcare had no impact on sociability or maturity;
- quality of care both at home and out of the home settings predicted social skills and personal maturity;
- scores on the HOME inventory (a measure of environmental quality in the home) had the most predictive value.

2.3.7

Study 12

Another Swedish study that compared 140 children attending either centre based care, family day care or staying in the parental home. Children were tested on five occasions at ages 16, 28, 40, 80 and 101 months.

The study used the following measures:

Child personality:

- California Q-set (Block & Block, 1980);

Verbal and mathematical abilities:

- language subscale of the Griffiths Developmental Scale (1970);
- verbal ability sub-scale of a school readiness test used in Swedish schools (Ljungblad, 1989);
- a standardized Swedish test of verbal ability (Haggstrom and Lundberg, 1990);
- a standardized test of mathematical ability (Ljung and Petterson, 1990).

Quality of alternative care:

- interview and observation checklists (Belsky & Walker, 1980);

Family background and home environment:

- the HOME inventory (Caldwell & Bradley, 1984);
- the Child Rearing Practices Report (Block, 1965), a 91 item Q-sort instrument covering a wide range of child-rearing attitudes and behaviours.

Parental attitudes towards non-parental childcare and parental involvement:

- questionnaire asking parents whether they preferred their child to stay at home, use family daycare or centre-based daycare;
- full-day diary recalls;
- the Parental Responsibility Questionnaire (Lamb, Hwang, Bookstein, Broberg, Hult, and Frodi, 1988) that asks questions such as ‘Who takes the child to daycare?’ and ‘Who buys toys for the child?’.

Data were analysed using Multivariate Analysis of Variance (MANOVA).

Results:

- children aged over 40 months in family day care scored worse on measures of ego-resilience, field independence (self-reliance), and ego-under control;
- children in centre based care scored better on tests of verbal and mathematical ability;

- parents whose children stayed at home had lower occupational status than parents of children in the other two groups;
- paternal involvement predicted verbal ability.

2.3.8

Study 13

A Canadian birth cohort study that followed 626 children considered ‘at risk’ up to the age of seven years. Children were divided into three groups: mother care for the entire period, day care under potentially stressful conditions, and all other types of day care. Mother and children were assessed during two home visits when the children were three and seven years of age.

The study used the following measures:

Mother:

- structured interview covering mothers’ mental health and adjustment;
- the Parenting Stress Questionnaire (Abidin, 1983);
- the Epidemiological Studies in Depression Questionnaire (Roberts and Vernon, 1983);
- the Rutter Child Behaviour Disorder Scale (Rutter, Tizard and Whitmore, 1967).

Child:

- the Peabody Picture Vocabulary Test (Altepeter, 1985);
- Type A behaviour for young children (Murray and Bruhn, 1983).

Data were analysed using a combination of correlations, chi-square tests and cluster analyses.

Results:

- children with experience of day care did not exhibit attachment problems;
- mothers who stayed at home were at greater risk from depression;
- maternal depression was associated with neurosis and depression in children.

2.3.9

Study 14

A Swedish study comparing peer relations among children with experiences of non-maternal day care and those who spent their early years at home. The initial sample comprised 120 children who were tested at age five years (n=102) and again at ten years (n=52).

Measures used in the study were:

- Interviews with mothers and children including a social network list of up to ten friends;
- Interviews with teachers to discuss children's behaviour.

Data were analysed using chi-square tests.

Results:

- early comparisons revealed group differences at age 5 years;
- by middle childhood, individual differences in the direction and pace of children's development were overtaking and obscuring the effects of early care arrangements;
- no differences between groups of children on aggressive or negative behaviour.

2.4

UK studies

2.4.1

We identified two UK longitudinal studies:

15. Wadsworth (1985);
16. Rigbey, Sanderson, Desforges, Lindsay and Hall (1999)

2.4.2

Study 15

Looked at the effects of parenting style and pre-school experience on children's verbal attainment on test of reading, sentence completion and vocabulary. Used data from the 1946 British cohort study (n=1676). Data were collected at two-year intervals until adolescence, and then at five-year intervals throughout adulthood.

The study used the following measures:

- Interviews conducted in the home to establish parental practices, how children spent their time and degree of independence, parental discipline methods, children's habits and dreams, health, family structure and mother's assessment of self and child.
- Children's reading, sentence completion and vocabulary assessed (Douglas, 1964).

Data were analysed using t-tests of mean differences.

Results:

- pre-school experience was linked with verbal attainment, but was not nearly as influential as maternal education;
- pre-school attendance had no significant impact on verbal scores among children whose mothers were under stimulating.

2.4.3 *Study 16*

This investigation used data from a large cohort study (n=4487) of children born in Sheffield between 1990 and 1991 to examine links between health data and a new outcome measure, the Infant Index which looks abilities in literacy, maths, social behaviour and independent learning among primary school children.

The study used the following measures:

- Interviews collecting routine health care information;
- The Edinburgh Postnatal Depression Scale (Cox, Holden & Sagorsky, 1987);
- The Infant Index a teacher's rating scale to assess literacy, maths, social behaviour and independent learning (Desforges & Lindsay, 1995).

Data were analysed using logistic regression.

Results: Factors predicting poor Infant Index scores included

- male gender;
- low birth weight;
- lack of breast feeding at one month;
- postnatal depression;
- number of pregnancies;
- ethnicity;
- pre-school education experiences;
- poor housing.

This study demonstrates the complex array of variables including childcare arrangements, that can influence intellectual and behavioural outcomes for children. More specifically, the study found any pre-school placement (nursery school, day nursery, or playgroup) to be good for children (as assessed by the Infant Index) compared with no pre-school placement.

2.5 Ongoing longitudinal research in the UK

2.5.1 One objective of the feasibility study has been to consider how existing longitudinal studies of appropriate age groups could be developed to look at the impact of out of school care. Two studies currently being conducted in the UK fall into this category: the Effective Provision of Pre-school Education (EPPE) study, and the Avon Longitudinal Study of Parents and Children (ALSPAC) study.

2.5.2 The Effective Provision of Pre-school Education (EPPE) Project

The EPPE project is following over 3000 children from the time they enter pre-school education aged three, until they reach the age of seven. The study began in 1997, and is due to finish in 2003. What follows is a summary of the research design.

The EPPE project has eight stated aims (Melhuish et al, 1999):

1. To describe the 'career paths' of children and their families from entry into pre-school at age three, to the end of their second year in primary school.
2. To compare and contrast the developmental progress of children from varying social and cultural backgrounds and with different pre-school experiences.
3. To separate out the effects of pre-school experience from the effects of education in the period between Reception and Year 2.
4. To establish the impact of different pre-school centres on children's cognitive and social/emotional development.
5. To describe the characteristics of the most effective pre-school settings.
6. To investigate differences in the developmental progress of different groups of children (e.g. children for whom English is a second language, children from disadvantaged backgrounds and both genders).
7. To examine the medium term effects of pre-school education on educational attainment at Key Stage 1.
8. To look at relationships between use of pre-school provision and parental employment.

The sample includes pre-school centres from six English local authorities. It reflects a range of urban, suburban and rural areas, ethnic diversity and social disadvantage. Six types of pre-school provision are included in the sample:

- Local Education Authority nursery classes (n=25)
- Voluntary playgroups and/or pre-schools (n=34)
- Private day nurseries (n=31)
- Local authority (day care) centres (n=24)
- Nursery schools (n=20)
- Nursery schools combining education and care (n=7)

Over 3000 children from 141 different pre-school settings are taking part in the study. A further 200 children with no pre-school experiences have been recruited to act as a comparison group.

Children are first assessed at the age of three or four, depending on their age at entry to pre-school provision. Assessments include:

- Four cognitive tasks: verbal comprehension, naming vocabulary, knowledge of similarities seen in pictures, and block building;
- Social and emotional adjustment as rated by pre-school educators.

Children who change pre-school settings before entry into school are assessed on the same measures for a second time.

At entry to school, the research team assesses children on the same cognitive tasks, plus knowledge of the alphabet and rhyme/alliteration. Each child's reception class teacher rates social and emotional adjustment. The team assesses children again at the end of each school year. The study also includes data on standardised tests of reading and mathematics, and information from Standard Assessment Tasks (SATs). Attendance records and any evidence of special educational needs are included.

The project team collects data on the individual characteristics of children, including gender, language, health and birth order. Data collected concerning family characteristics include:

- Parental education;
- Occupation and employment history;
- Family structure;
- Child's day care history;
- Parental attitudes and involvement in educational activities.

Data collected on the characteristics of pre-schools, include:

- Group size;
- Adult: child ratios;
- Staff training;
- Aims;
- Policies;
- Curriculum;
- Parental involvement.

Members of the research team have carried out observations in all 141 settings using a standardised instrument to assess quality of the environment, a revised version of the Early Childhood Environment Rating Scale (ECERS; Harms, Clifford & Cryer, 1998). [A measure based on ECERS, the School Age Childcare Environment Rating Scale (SACERS) has been developed by the same team (Harms, Jacobs and White, 1995). See section 5.4.1 for more details]. In an undisclosed number of settings identified as offering good quality provision, the team will collect detailed qualitative data. The results will be used to generate guidance on good practice.

The research team will analyse data from children, families and pre-school settings using what they describe as an ‘educational effectiveness’ design. This will enable them to estimate the impact of type of provision, and individual centres, on children’s early school development.

2.5.3 *The Avon Longitudinal (ALSPAC) Study*

The Avon Longitudinal Study of Pregnancy & Childhood (ALSPAC) is part of a project being run in several different European cities, the European Longitudinal Study of Pregnancy & Childhood (ELSPAC).

The ALSPAC study, since renamed the Avon Longitudinal Study of Parents and Children, has several aims including:

- to determine which biological, environmental, social, psychological and psychosocial factors are associated with the survival and optimal health and development of the foetus, infant and child;
- to identify the complex ways in which environmental features may be associated with the optimal development, health and well-being of the child.

It aims to follow a cohort of children into adulthood, identifying factors associated, for example, with the realisation of full educational potential, health and happiness. Specific research questions relating to environmental features include:

- (a) Are children who are living with a single parent less likely to be healthy and develop normally? Can this be statistically 'explained' by factors such as nutrition, stress or environmental conditions?
- (b) Are there any detectable positive or negative effects on the health and development of the child of day care in early infancy while his/her mother is at work?

The ALSPAC study area is the county of Avon. It comprises a mixture of rural areas, inner city deprivation, leafy suburbs and moderate sized towns. At the planning stage, in order to assess the how representative children in this area were in relation to children in Britain as a whole, data from 13,135 children in the Child Health and Education Study were analysed. The Avon population was considered likely to be fairly similar to that of the whole of Great Britain.

To be eligible for the study, mothers had to be resident in Avon while pregnant. In addition, their expected date of delivery had to lie between 1st April 1991 and 31st December 1992 inclusive. The 14,000 children who form the basis of the project were born in 1991 and 1992. They reached the age of seven years in 1998-1999, at which point a half-day

examination of each child assessed various (mainly physical) characteristics. Data have also been collected on non-parental day care experiences. The quality of care children experienced in settings was assessed using provider self-report questionnaires. (The validity of self-assessment, without independent verification, as a means of assessing quality is evidently open to question).

At age 8, further tests are being undertaken, mainly assessing cognitive and behavioural attributes. The tests include the following:

- cognitive ability;
- speech and language;
- short-term memory;
- attention span;
- non-verbal accuracy;
- behaviour and bullying;
- locus of control;
- self-esteem;
- gender behaviour;
- antisocial activities.

Schools are to be sent questionnaires for all children eligible for the study that are in year 3. Since the children were mainly born across a 21-month period (April 91 – December 92) this spans 3 school years. The summer of 1999 saw the study contacts related to children born April – August 1991; summer term 2000 the children in year 3 will be those born September 1991 – August 1992, and in summer 2001 the eligible children in year 3 will be those born from September 1992. The following information is collected:

- behaviour of the child (including assessments of hyperactivity, conduct disorder and bullying);
- details of the school, including details of the environment, school ethos and teacher depression and anxiety;
- mathematical ability.

It is proposed that children continue to be followed throughout their school life and into adulthood. The study will collect data in the following ways:

- questionnaires to parents and children;
- hands on assessments in a clinic setting;
- collection of biological samples;
- questionnaires to teachers;
- links to educational and medical records.

Questionnaires to parents and children will obtain detailed data about the child's home and school environment, health and behaviour, attitudes and activities. Questionnaires to teachers will elicit details of the child's behaviour and abilities in the school setting. Questionnaires to the head teacher also identify features of the ethos of the school and the physical environment. With parental permission the ALSPAC team will be able to access national school SATS assessment results.

2.6 Conclusions

2.6.1 Our review of the research literature has identified four longitudinal studies that have looked specifically at the impact of after school care arrangements. The fact that these studies are reported in peer reviewed academic journals attests to their quality. Each of the studies has looked at the impact of after school care arrangements on later psychological adjustment and the incidence of problem behaviour. Statistically significant results suggest that, at least for certain groups of children, the availability of supervised after school activities can reduce the risk of poor adjustment and incidence of problem behaviours.

2.6.2 None of the studies found evidence of direct links between after school care arrangements and academic performance. Based on evidence from this review, it is safe to assume that effective longitudinal investigations into the impact of out of school provision in the UK are

entirely possible. Such a study would seek to assess whether the pattern of significant impact on behaviour and adjustment but non-significant impact on academic performance would be replicated in the UK.

2.6.3 Evidence accumulated from existing longitudinal studies has also highlighted several important clues concerning salient issues in conducting research into the impact of out of school provision. Perhaps most important is recognition of the fact that out of school provision takes place within an extremely complex environment. Failure to appreciate this complexity has bedeviled much research into children's services over the years. Many investigations have sought to answer over-simplified questions, resulting in seemingly contradictory conclusions. A longitudinal study into the impact of out of school provision is unlikely to provide unequivocal answers to questions of the type 'does provision have a positive impact on child development?'. Effective longitudinal studies should address questions of the type '*under what circumstances* can provision have a positive (or negative) impact on children, families and communities'. Results from the studies reviewed here suggest that for some children, some kinds of services can have a positive impact on development, while for other children the impact can be negative. Research questions need to reflect complex social environments.

2.6.4 Our review has served to identify many of the salient environmental features effective longitudinal research into the impact of out of school provision could take account of:

Child care characteristics:

- type of out of school care (including self-care);
- time spent in OSC;
- number of different OSC arrangements;
- quality of OSC.

Outcome variables (school based data):

- academic performance (language, literacy, mathematics);

- incidence of problem behaviours;
- peer relationships.

Outcome variables (individual differences):

- self-esteem;
- anti-social behaviour;
- social competence;
- anxiety;
- involvement in extra-curricular activities;
- cognitive development;
- language development.

Covariates (social environment):

- safety of neighbourhood;
- ethnic composition of neighbourhood;
- alternative local facilities;
- population density;
- social deprivation.

Covariates (family environment):

- mothers education;
- family composition;
- parental employment;
- paternal involvement;
- family income;
- emotional support from family/friends;
- housing;
- number of siblings;
- degree of parental monitoring

Covariates (individual differences):

- gender;
- birth weight;
- ethnicity;
- pre-school education experiences.

2.6.4 Vandell and Posner (1999) have written at length about measurement in the context of research into after school provision. They concluded that effective longitudinal research might usefully take account of an approach known as ecological systems theory (Bronfenbrenner, 1989). The defining feature of ecological systems theory is recognition of the environmental complexity we have identified in our review of the available research evidence.

3 Consultation with academic experts and key stakeholders

3.1 Background

The literature review discussed in the previous section identified topics covered by existing longitudinal research and the range of research designs employed. The research team held a seminar of childcare and longitudinal research experts and another of key stakeholders, representing a range of interests in the childcare field, to discuss the implications of the review for any proposed longitudinal survey. A list of participants to these events is included in Appendix A. We asked participants at each of the seminars to comment on three issues:

1. The range of out of school activities that might usefully be covered by the longitudinal study and the information that might need to be collected on different types of provision;
2. The range of outcomes a longitudinal survey might attempt to assess;
3. Appropriate survey designs able to gather adequate information on 1 and 2 above.

The draft report, written after the consultation process, was circulated to those who took part in the seminars, as well as other longitudinal research and childcare experts who were unable to attend the seminar. Where appropriate the final report has been amended following suggestions made by those who commented on the draft report. (A list of those who provided feedback on the draft report is included in Appendix A).

3.2 The range of out of school activities

3.2.1 In relation to the type and nature of out of school activities the longitudinal survey should cover, participants identified three critical issues:

- While a major programme of expansion of out of school childcare is planned, the available evidence shows that most children do not use formal out of school provision². Furthermore, the number of children receiving formal care out of school declines with age, with a small proportion of those aged over eight having formal arrangements, a figure which declines even further once children start secondary school;
- Past research has shown that out of school arrangements can be very complex and include a combination of formal and informal provision, a range of recreational activities and self-care. Arrangements also tend to vary between term time and school holidays. The use of out of school services is likely to change over short periods due to changes in parental employment, children's preferences and needs, and availability and accessibility of local provision for example. Arrangements for older children in particular are likely to be variable and ad hoc;
- Out of school activities children are involved in can vary considerably depending on the type of provider, their aims and resources available. Due to this variety, the task of classifying providers and assessing the quality of their provision could be complex.

Considering the above issues and the aims of the longitudinal study, participants made a number of recommendations about the type of information the survey should collect on out of school activities.

3.2.2 *School and term time provision*

Participants felt it would be important to collect information on both term time and school holiday arrangements. While the former are likely

² The DfEE survey on Parents' Demand for Childcare showed that in the (term time) week prior to the survey, 5 per cent of primary school children had used an out of school club and 4 per cent a childminder. The corresponding figures were higher when using a longer reference period, in the previous year between 14-15 per cent of primary school children were reported as having used an out of school club and between 7-10 per cent a childminder.

to have a greater impact on children, information on the latter could be important to explore links between provision and parental employment.

Data on the availability of out of school provision at different times and days is also important to explore the link with parental employment. Existing evidence indicates that formal group based care is not sufficiently flexible to meet the needs of many working parents. The increase in atypical working hours (e.g. evening, night and weekend) particularly in female dominated occupations means that there is likely to be a growing interest in the need for and the availability of provision outside normal working hours.

3.2.3 *Type of out of school activities*

Participants felt information should be collected on all non-parental care, from formal and more structured provision (e.g. out of school clubs and study support) to informal care (e.g. by relatives and friends) and including self-care and care by other children.

The information on provider types should be as detailed as the budget allows. As a minimum, participants agreed that any proposed study should collect enough information to enable the classification of providers under the following headings:

- formal group provision – e.g. breakfast, after school and holiday clubs and out of school study support;
- formal individual provision – e.g. mainly childminders, nannies and au pairs might also be included in this group, but the main interest is in childminders, as it will be discussed Section 4;
- informal care - e.g. provided by relatives and friends, including informal support networks such as ‘baby sitting circles’;
- sport, creative and recreational activities – e.g. including special interest clubs and open access facilities;
- self-care and care by other children – e.g. latter could include children under the age of fourteen for example.

Some of those who commented on the draft report emphasised that it will be important to be clear about the definition of different types of provision covered by the survey, given some of the ongoing debate in the childcare field about what constitutes childcare. This would relate in particular to out of school hours learning and open access provision. Moreover, given that one of the aims of the National Childcare Strategy is to enhance play (as well as care and educational experiences) some felt that the role of ‘play’ should feature prominently in the survey.

3.2.4 *Number of arrangements*

Participants believed that a major contribution of any longitudinal survey could be the provision of comprehensive data on the extent to which children use a variety of arrangements. Longitudinal data could provide a picture of patterns of arrangements among different groups and how they change over time. It could also answer some crucial questions relating to the factors that determine multiple arrangements and changes over time (e.g. extent to which they are supply driven, or determined mainly by parents’ needs and/or children’s preferences).

The need to capture this complexity militates against undertaking a study focusing exclusively on main providers (as did some of the US studies reviewed in Section 2). Moreover, in order to establish the outcomes of out of school childcare, it is essential to have a measure of quantity (e.g. time a child spends in different types of provision). However, it might not be practical, or indeed necessary, for the longitudinal survey to adopt the approach used by the Parents’ Demand for Childcare Survey³, which collected information about *all* the time children were not at school or were looked after by their parents. The longitudinal survey could establish some criteria for excluding the more ad hoc and occasional arrangements.

³ La Valle I, Finch S, Nove A, Lewin C, *Parents’ Demand for Childcare*, DfES Research Report, March 2000 edition

3.2.5

Quality of provision

Participants felt that assessing the quality of out of school care would be essential given that one of the main aims of the survey is to explore the impact of different types of provision. However, as in the area of pre-school provision, quality is a complex concept. Consequently adequate and robust assessment could prove very costly.

Aspects of quality to be monitored could include:

- Aims of provider - e.g. to provide study support, specific activities, recreational activities, support for children with special educational needs etc.;
- Facilities – e.g. equipment, open space, transport to and from school, health and safety standards;
- Staff – e.g. staff/child ratio, staff’s experience, training and qualifications
- Accessibility - e.g. facilities for children with disabilities and special needs, provision reflecting the cultural diversity and needs of the local community;
- Environment – e.g. child centred provision, peer relationships
- Parental needs –e.g. opening times, flexibility and reliability.

It might prove difficult, if not impossible, to find a single measure of quality applicable to all types of out of school provision. Finding a way of comparing the quality of formal and informal childcare, for example, is likely to represent a significant challenge.

Parents’ and children’s assessment of quality was seen as important, particularly as there is an increasing emphasis on consulting children and involving them in the planning out of school activities. A team from TCRU has recently submitted a draft report to the DfES describing research into parents and children’s views on quality in out-of-school provision. The qualitative research concluded that stakeholders have different views on quality in out of school provision.

Greatest consensus was found on the importance of health and safety issues and the role of out of school provision as a place for children to play and have fun. Views differed on issues such as the relative importance of staff training and experience. The study may inform the selection of research tools used to assess the quality of provision.

An increasing amount of information on the quality of (formal) providers should be available soon, with the introduction of the National Standards (e.g. OFSTED reports) and the Working Families Tax Credit (e.g. accreditation of services for children over 7). These could provide some useful measures of quality, as would some relatively straightforward ‘input’ measures that could be collected from providers (e.g. staff’s qualification/experience, types of activities provided).

Some form of observation-based assessment of quality could be considered, but its cost effectiveness would need to be carefully assessed given the issues highlighted earlier. Moreover, as discussed later, it is possible that when looking at some types of outcomes, the focus might be on comparing very different forms of provision, such as self-care with formal adult supervision.

One person who provided feedback on the draft report emphasised that since most out of school care is and will probably continue to be provided by relatives and friends, in considering issues around the quality of provision, it would be important to look at the need for support and training of informal carers of disabled children.

3.3 Outcomes of out of school activities

3.3.1 From the little we know about patterns of use of formal out of school childcare, participants felt it could be difficult to establish the impact of (different types of) provision on children. It was noted that most of the US studies reviewed by the research team focused on simple comparisons (e.g. children who looked after themselves with those who

received some type of provision). However, the expected increase in formal out of school provision, and the availability of information enabling researchers to sample geographical areas with different levels of provision, might make this task more feasible.

The types of child outcomes mentioned by participants were broadly in line with those identified in the research review in Section 2. In addition, people believed it would also be very important to monitor the impact of out of school provision on family life.

3.3.2 *Impact on a child's individual characteristics*

The individual outcomes identified by participants included:

- social skills;
- mental health;
- self-esteem and maturity;
- attitude to learning;
- creativity and problem solving skills;
- behavioural problems.

In looking at these outcomes, it would be important to compare the impact on different groups of children, such as disabled children and those with special educational needs, from different ethnic minority groups and with different family circumstances.

For older children (e.g. over eleven years of age) the following might also be monitored:

- drug/substance abuse (including cigarette smoking, alcohol, and use of soft drugs);
- involvement in crime;
- teenage pregnancy.

Information on these issues could be collected from a variety of sources including children and parents, teacher assessment and school records on truancy and exclusion.

Some of the outcomes listed above (e.g. behavioural problems, criminal activities, etc.) only apply to a minority of children and an appropriate sample strategy would need to be devised to boost the number of children likely to display these characteristics, for example, by over sampling geographical areas where the incidence of these problems is higher than average.

3.3.3 *Impact on a child's academic performance*

While it would be important for any study to collect information on children's academic performance (e.g. test and exam results), participants argued that the study should not focus mainly on this type of outcome. First, they believed that after controlling for school effect and family background, in most cases out of school childcare is unlikely to explain any significant variation in academic performance. Second, the role of *most* out of school activities is not to improve academic achievement; they tend to have a wider role.

In some specific circumstances (e.g. children with particular problems or gifted children) it might be appropriate to attempt to explore the impact of some types of out of school provision on academic performance e.g. study support. However, it might prove difficult to sample an adequate number of children in these groups, receiving a sufficient amount of certain type(s) of provision to carry out this analysis. Moreover, the DfES Study Support team have already commissioned a longitudinal survey of the impact of study support on GCSE results⁴.

⁴ Information about this study was provided by the Study Support team which funds the survey in collaboration with the National Youth Agenda and a number of universities. The survey started in 1998 and included 9000 pupils who took their GCSEs in 2000. Initial survey results will be available in March 2001. Data were not available when going to press.

3.3.4 *Impact on the family*

Participants felt a longitudinal study should monitor the impact that the availability and use of different types of out of school provision might have on the family, in particular on parental employment, employability and household income.

Detailed information on how parental income might change as a result of the availability of out of school provision could form an important part of any costs and benefits analyses. Increased parental employment (and therefore higher revenue from taxes and lower expenditure on benefits) is likely to represent the most substantial benefit for the public purse.

3.3.5 *Wider impact*

Given the outcomes for children and their families discussed above, participants felt it might be possible to draw some conclusions about the wider benefits of out of school provision. For example, there might be benefits for the local community, as an increase in participation in out of school activities could result in lower levels of vandalism and youth crime. Similarly, if these activities were found to have a positive effect on children's behaviour, schools might experience lower incidence of behavioural problems, truancy and exclusion.

Participants expressed some doubts about the extent to which a longitudinal study might be able to establish wider benefits. An inherent weakness of many studies in relation to this type of analysis is the absence of control groups (e.g. groups of children in areas where there is no formal provision). It may be possible to establish associations by using a 'before and after' experimental designs (e.g. assess the level of youth crime in an area before and after an increase in formal out of school services are increased), although such a design would rely on the availability of areas with the required characteristics (e.g. level provision of formal childcare). Alternatively, it might be possible to use a quasi-experimental approach by introducing statistical

controls, this would involve a multivariate analysis which controls for the covariates that affect a particular outcome, so that one can draw conclusions about the impact of out of school childcare after controlling for other key influences that might affect the outcome being investigated. However, we are likely to be dealing with types of behaviour that affect a small number of children and young people. Consequently an adequate sampling strategy to boost these groups would be required.

3.4 Survey design issues

Various survey design issues were discussed with academic experts including:

- Sample strategy;
- Suitable sampling frames;
- Survey design.

These are discussed briefly in the rest of the section, and then expanded in the Section 6, where we present our proposal for the methodology for a longitudinal study of out of school childcare, which was informed by the suggestions made by the academic experts.

3.4.1 *Sample strategy*

The discussion with academic experts regarding the sample design started with the assumptions that: first, the research population would consist of all school children, regardless of patterns of use (or non-use) of out of school provision; and second, that to provide information on the impact of out of school childcare on children of different age groups within a reasonable time scale, the longitudinal survey should include two cohorts: a younger cohort of 4-5 years old, and an older group of 7-8 years olds.

The experts were asked to consider a number of options regarding the composition of the cohorts in terms of age. For example, should the younger cohort start with 4 year olds (who are at school), given that not all 4 year olds are at school and therefore they are a self-selected group? Or should the cohort start with 5 year olds, given that at this age education becomes compulsory and the overwhelming majority of 5 year olds are in full-time education? The recommendation of the experts was that children should be selected by school year, as this would allow for control of classroom effects. It was suggested that the younger cohort should be selected from Year 1 (i.e. age 4/5) and the older cohort from Year 4 (i.e. age 7/8).

Regarding the ‘life’ of the two cohorts, the panel recommended that the younger cohort should be followed till at least Year 3 (i.e. age 6/7) and the older one till Year 6 (i.e. age 9/10) at the end of primary school. Some of the areas of interest mentioned earlier (e.g. drug/substance abuse, youth crime, etc) would require following the older cohort for longer. However, with an older group the nature of the study would change somewhat as ‘childcare’ is not longer relevant for this group, the focus would shift to access, or lack of it, to various youth services and the impact these might have on different groups of young people.

3.4.2 *Sampling frame*

Two sampling frames were considered: primary schools and Child Benefits (CB) records. The above suggestion regarding the sample composition would require the use of schools as sampling frame, in addition there would be other advantages in using schools to select the sample which are discussed below.

A sample of selected via primary schools will be implicitly clustered and would therefore be very cost effective to contact (assuming that the initial contact will be face to face). The other key advantage of using schools as a sampling frame is the availability of information on

schools (e.g. test results, entitlement to free school meals, number of children with special education needs), which could be used to stratify the sample. The Common Schools Basic Database in particular (if this were available at the survey sampling stage) would allow a very cost effective and powerful sample design, particularly if some sub-groups of interest needed to be boosted.

The other advantage of using schools as primary sampling units is that it makes the task of collecting additional information on the child's academic performance (e.g. Key stage results) and psychological profile (e.g. through teachers' assessment) much more manageable, as a limited number of schools would need to be contacted. It is also likely that a high proportion of children from the same school use the same formal centre based providers, making the task of collecting data from providers more manageable. However, as some children change schools over the life of the panel, the number of schools and providers that will need to be contacted will inevitably increase.

Selecting the sample from schools will of course mean that children who are not in school at the time of the survey (e.g. educated at home, permanently excluded) will not be included in the sample. However, children not in school represent a very special population and if this were of interest an alternative way of selecting this group would need to be developed of the limited information available on sample members.

CB records would provide a good sample source (and indeed have been used for many large surveys on childcare). They would have the advantage of covering all children in the relevant age groups, including those not at school either because of parental choice or of permanent exclusion. However, compared with schools, they represent a far less cost effective way of selecting the sample.

3.4.3 *Survey design*

There was general agreement that since at the first contact baseline data will be collected, this will constitute a comprehensive exercise requiring face-to-face interviews with parents, and possibly other key informants such as teachers and out of school care providers.

Given that comprehensive and detailed information would be required on out of school childcare arrangements, some believed that two contacts a year might be required, possibly one face to face and one telephone. However, some expressed reservation about this suggestion because of the burden it would place on respondents.

3.5 **Conclusions**

3.5.1 In conclusion, participants believed that a longitudinal survey on out of school childcare would help to fill some major gaps in our knowledge of patterns of arrangements, and how and why they change over time. It could also provide invaluable information on gaps in provision for different types of out of school activities and for different groups of children and parents.

In relation to outcomes, it was believed that it could prove difficult, but by no means impossible, to establish a causal relationship between participation in (different types of) out of school provision and changes in children's behaviour and attitudes. For most children, a longitudinal study would be looking for marginal effects with a background of high variation. However, an analysis of the impact of out of school provision on some specific groups of children might be more feasible and could prove extremely valuable. The main challenge here would be to devise a sampling strategy to boost these groups.

Monitoring the impact of out of school provision on the family was considered equally important and likely to be less problematic. As other studies have shown, it is possible to establish the impact that the

availability of different types of childcare has on parental employment and household income.

Section

4 Consultation with policy makers

4.1 Background

4.1.1 The research team conducted a series of interviews with policy makers as part of the consultation process. We interviewed seven representatives from the DfES and two from the Treasury. (See appendix A for list of interviewees). Interviewees were asked to comment on the proposed aims and coverage of the longitudinal survey.

The interviews covered issues similar to those discussed with academic experts and stakeholders, although the focus of the former was more on respondents' information needs and policy interests, and less on methodological issues and design options.

In the interviews information was sought on the three broad issues:

1. The current and future policy priorities in relation to out of school childcare;
2. The range of out of school activities that might be covered by a longitudinal study and the information required on different types of provision;
3. The outcomes of out of school provision a longitudinal study should attempt to assess.

The draft report, written after the consultation process, was circulated to those who took part in the interviews, as well as other policy makers with an interest in the study, but who could not be involved in the consultation process due to the tight timetable. Where appropriate the final report has been amended following suggestions made by those who commented on the draft report. (A list of those who provided feedback on the draft report is included in Appendix A).

4.2 **Current and future policy priorities**

4.2.1 All respondents believed that the next few years would be a period of consolidation, with no major shifts in childcare policies and programmes. Consequently they felt this was an ideal time to design and launch a longitudinal study on out of school childcare.

Given current and future developments in childcare policy, interviewees identified a number of areas of interest that ought to be linked to the aims of any longitudinal study, including:

- The availability of out of school childcare when parents need it, with a particular interest in demand for provision at non-standard times from parents with ‘atypical’ work patterns;
- The cost of out of school childcare and if and how this might deter some groups of parents from using certain types of formal provision;
- Better integration between school and out of school provision so that parents can be provided with a more ‘holistic’ service;
- Improvement in provision in deprived areas and for disadvantaged groups;
- The impact of Working Families Tax Credit (WFTC) on the take up of formal care and parental employment patterns;
- Robust evidence on the benefits of out of school childcare, that is if and what ways do children and their families benefit from the investment of public money in out of school provision;
- The outcomes produced by different types of provision and more crucially by provision of different quality.

Other areas of policy interest identified by respondents were linked to the issues listed above, but they focused on providers (rather than users). These included:

- The barriers to the provision of out of school childcare, with a particular concern about the declining number of childminders;

- The sustainability of out of school schemes and the ability of most schemes to become financially viable;
- The recruitment, retention and training of childcare workers;
- The introduction of a new regulatory framework reflecting an increasing emphasis on the quality of provision.

Feedback on the draft reported provided by the Social Exclusion Unit stressed their interest in the study as it would provide valuable information on the impact of out of school childcare on children and families experiencing, or at risk of experiencing, social exclusion. Two dimensions of this were highlighted as being of particular interest, that is, the role of out of school childcare in:

- increasing employment opportunities for parents and thereby increasing household income levels (particularly for lone parents and teenage mothers);
- having a possible early preventative role for young people for later outcomes such as low educational attainment, truancy, anti-social behaviour and crime.

4.3 Out of school activities

4.3.1 Policy makers' views on the type and nature of out of school activities to be covered by the longitudinal survey were broadly in line with the suggestions made by academic experts and stakeholders. Like the latter, policy makers thought that information should be collected on:

- All non-parental care (formal and informal), with a particular interest in self-care and care by other children;
- Term time and holiday provision and information about availability during these periods; it was seen as very important to find out more about the ability of different types of providers to respond to parents' needs for care at different times, including non-standard times;

- Detailed information on the type and nature of provision, although it was recognised that broadly defined provider groups might be used for most of the analysis;
- Different patterns of arrangements and the factors which cause these to change over time; there was a particular interest in why parents use informal instead of formal provision and whether the introduction of the WFTC might change this;
- All respondents felt it would be important to have some information on the quality of provision. Some regarded a robust and objective measure of quality as essential to make the survey worthwhile. However, others took a more pragmatic view and thought that the resources available for any study might only allow for the collection of some proxy measures of quality (e.g. accreditation). It was also pointed out that the development of quality measures for the survey should take into account work currently being conducted by the DfES on best practice and quality.

4.3.2 Policy makers would also like the survey to gather the following information on out of school activities:

- How much parents currently pay for out of school childcare and how much they are prepared to pay, as discussed earlier, getting the cost of provision right is one of the main policy priorities at the moment;
- If and to what extent schools are facilitating the provision of out of school childcare, as the ultimate aim is to provide a complete 'package' of school and out of school care. There was also some interest in (the small number of) schools that have a continental timetable (i.e. half a day) and those at the other end of the spectrum that provide extended hours;
- The Study Support team would also like any survey to identify study support activities; this information would need to be collected from providers and is likely to require some over

sampling to ensure enough children who are involved in study support activities are included. The team could provide the necessary data to do this.

4.4 Outcomes of out of school activities

4.4.1 As discussed earlier, one of the current policy priorities is to assess the benefits of investing in out of school childcare and the types of childcare the government should invest in to achieve its policy aims. Given these priorities, all respondents agreed that one of the key aims of the longitudinal study should be to establish the outcomes of different types of provision. However, views differed in relation to the type of outcomes the survey could realistically monitor and should therefore focus on.

4.4.2 Impact on children

There was a great deal of interest in the impact the provision of out of school childcare might have on children, with a focus on what were broadly termed as the ‘Sure Start type of outcomes’. The latter were very similar to the child outcomes identified in Section 3, such as prevention/reduction of:

- behavioural problems;
- truancy;
- exclusion from school;
- under achievement;
- youth crime;
- drug abuse;

And also improvements in:

- self-esteem;
- motivation and attitude to learning;
- maturity.

There was also an interest in looking at the impact of self-care (or care by other children) in terms of health and safety (e.g. whether children

who look after themselves are more accident prone), school work, and anti-social behaviour.

While there was a considerable interest in outcomes for children, like the experts and stakeholders, some policy makers doubted whether, given the current patterns and levels of use of formal provision, it would be possible to establish a causal relationship between childcare provision and outcomes. However, it was generally believed that a longitudinal study should explore all possible ways of determining outcomes at least for children in deprived areas and from disadvantaged groups. When it came to the broader aim of assessing outcomes for all children and for different types of childcare, some believed that the feasibility and cost of doing this should be carefully considered, as this might not represent the most cost effective way of using the resources for this study.

Comments received on the draft report emphasised that:

- While it might be difficult to monitor the outcomes for older children, as most do not receive any formal provision, there is a great policy interest in both older primary school children (i.e. aged 8 and over) and secondary school children, with a particular interest in identifying the gaps in provision and their possible negative effects, including the impact of self and peer care;
- There is also great interest in children with disabilities and special educational needs and those from ethnic minority communities, while the complexities of sampling these groups were recognised, it was felt they should be given a high priority when choices are made about the scope and coverage of the study.

4.4.3 *Impact on families*

When it came to the impact on families, there was general agreement that this should be one of the key aims of a longitudinal survey and in

particular the study should determine the extent to which provision of (different types of) out of school childcare can help to eradicate child poverty. Respondents felt a study should collect detailed information on the employment and financial circumstances of families who use different types of provision (and those who do not). There was also an interest in how any changes in circumstances might be linked to the availability of provision (or lack of it) and the introduction of the WFTC.

Feedback received after the circulation of the draft report also suggested that the survey should consider the role of fathers, something that was not done by the studies reviewed in Section 2, which focused almost exclusively on mothers. In particular it was argued that a longitudinal survey of this type should not miss the opportunity to explore the (changing) role of fathers in relation to their children, and how this might affect their employment decisions, as well as the division of parental responsibilities within the family.

4.5 Conclusions

4.5.1 Generally there was a great deal of support among policy makers for conducting a longitudinal study. It would fill major information gaps that have so far prevented the proper assessment of the impact and effectiveness of some childcare policies and initiatives. An assessment of the costs and benefits of providing out of school childcare was considered to be one of these major gaps a study should aim to fill. Some believed that this analysis should focus on the impact of out of school childcare on parental employment and household income, and on the social exclusion agenda. An attempt to monitor outcomes for all children and for different types of provision was perhaps seen as too ambitious, and maybe as not representing the most effective use of resources. But this was by no means a unanimous view, and some welcomed the move away from an almost exclusive emphasis on the impact on parental employment and an increased emphasis on the benefits and outcomes for children.

Section

5 **Establishing the impact of out of school childcare on children**

5.1 **Background**

5.1.1 This chapter addresses the question of whether a longitudinal study could provide reliable information on the specific impact of out of school provision given the great variety of other factors that influence outcomes for children.

5.2 **The impact of out of school provision on academic outcomes: Existing longitudinal research**

5.2.1 The four US out of school studies reviewed by the research team each reported significant differences between children who used formal out of school provision and those who typically experienced other arrangements such as self or parent care. Two of the studies (Pettit et al, 1997; and Posner & Vandell, 1999) collected data on academic performance.

5.2.2 Pettit et al (1997) reported links between type of care and academic outcomes for children in grade 5 (aged around 11 years). Children from families defined as low socio-economic status gained some modest academic benefits from experiences in informal adult supervision. Children from the same families who attended formal provision had fewer subsequent behaviour problems, and higher levels of social competence. The authors concluded that any potential advantages from attending formal centre-based care depended largely on the quality and developmental appropriateness of the provision.

5.2.3 The impact of out of school provision on academic performance was clearly measurable in this study. However, impact varied according to the socio-economic status of the children's families, the quality of care

they experienced, and the amount of time spent in non-parental care (see 2.6.1). The authors highlighted the importance of considering ecological context when looking at the impact of out of school provision on children's development.

5.2.4 In a study of low-income urban children, Posner and Vandell (1999) collected children's report card grades from school records. Grades from five periods were used, assessing abilities in reading, maths, social studies and language arts. Evidence of differences between children from different ethnic backgrounds led the authors to do separate analyses on data from African American and White children. African American children did better academically when they spent less time in out of school provision on playing coached sports, and more time socialising. White children who spent more of their time in out of school provision doing unstructured outdoor activities received lower grades. The clear implication is that a study looking at impact will need to take account of activities children typically engage in whilst attending out of school provision; a simple comparison between attendance and non-attendance is likely to be insensitive to the effects of specific activities.

5.2.5 This second study was also able to identify measurable differences in academic performance attributable to the impact of out of school provision. Again, the authors chose to highlight the importance of considering ecological context in studies designed to assess the impact of out of school provision. They identified the socio-economic status and ethnicity of children's key intervening variables, as well as the quality of provision children experience.

5.2.6 The two longitudinal studies that collected data on academic outcomes included children who had experienced a range of different out of school arrangements:

- Group settings such as after school clubs or day care centres providing after school facilities;
- Formal adult supervision from such as a childminder;
- Informal adult supervision from a relative or neighbour;
- Peer (children under the age of 15), sibling or self-care;
- Parental care.

As a minimum a longitudinal study should aim to include a sample of children with experience of each of these five types of care. Parental surveys conducted in England provide information about numbers of children likely to be attending different types of formal and informal provision. However, much less is known about the numbers likely to be in the peer, sibling, or self-care group. Certainly the numbers are likely to increase with age. In their US study, Pettit et al (1997) reported that 6% of children in 1st grade (aged around 7 years) spent 4 hours or more per week in this type of care, compared with 31% of children in 5th grade (aged around 11 years). Based on these US studies, for each child a survey might usefully include their main provider only, defined as the setting in which they spend most time each week. On evidence from the same studies, time spent in non-parental settings can influence child outcomes. Consequently it would be useful to collect appropriate data.

5.2.7 Results from these two studies suggest it is entirely possible to design a longitudinal study capable of identifying the impact of out of school provision on children's academic performance. Effect sizes are likely to be small, particularly for children from higher socio-economic status families. However, the authors of both studies concluded their reports by underscoring the importance of monitoring the social or ecological context in which out of school care is provided. Our review, in Section 2, of important longitudinal studies into the impact of day care on outcomes for children provided useful evidence on the range of factors on which data might be collected.

5.3 The impact of out of school provision on child outcomes other than academic performance

5.3.1 As noted elsewhere, participants in our panel discussions argued that a longitudinal study into the impact of out of school provision should not focus exclusively on academic outcomes. First, they believed that after controlling for school effect and family background, in most cases out of school childcare would explain only small variations in academic performance. Second, the role of most out of school activities is not to improve academic achievement; with the exception of specialist learning support activities, out of school providers tend to have a wider role.

Evidence from other research suggests an appropriately designed longitudinal study could detect several individual outcomes for children:

- social skills;
- mental health;
- self-esteem and maturity;
- attitude to learning;
- creativity and problem solving skills;
- behaviour problems.

Information on each of these variables could be collected using any of the widely available standardised self-report questionnaires or through interviews with children, parents or teachers. The chosen method would depend largely on the amount of required. To keep the burden of additional work to a minimum, the amount of time required from teachers should probably be kept to less than two hours per class. In looking at these outcomes, it would be important to compare the impact on different groups of children, such as those with special educational needs, from different ethnic minority groups and with different family circumstances such as lone parent families, and families whose children are eligible for free school meals. A sample of children in each group

could be selected from each class. Data from children and teachers on the outcomes listed above would need to be collected no more than once every twelve months.

For older children (e.g. over eleven years of age) the following might also be monitored:

- drug/substance abuse (including cigarette smoking, alcohol, and use of soft drugs);
- involvement in crime;
- teenage pregnancy and sexual behaviour.

Information on these issues could be collected from a variety of sources including children and parents, teacher assessment and school records on truancy and exclusion.

Some of the outcomes listed above (e.g. behavioural problems, criminal activities, etc.) only apply to a minority of children. Consequently, an appropriate sample strategy would need to be devised to ensure sufficient numbers were included in any survey.

5.3.2 *Impact on the family.* The impact of poverty on outcomes for children is well documented. Poverty is the single most significant risk factor for child development. As a result, some of the effects out of school provision might have on child outcomes may be due, at least in part, to the effects that attending provision has on parental employment and income. An effective longitudinal study should monitor the impact that the availability and use of different types of out of school provision may have on parental employment, employability and household income.

5.4 **Evaluating social context: Key variables mediating the relationship between out of school care and outcomes for children.**

5.4.1 *Childcare characteristics.* As noted in Section 2, previous research has assessed the following:

- type of out of school care (including self-care);
- time spent in OSC;
- number of different OSC arrangements;
- quality of OSC.

Information concerning type of out of school care, time spent in provision and the number of different arrangements experienced by a child could be collected from parents either in interview or via a questionnaire. Quality of provision is likely to be more difficult to assess. Quality is inevitably a relative construct: different groups of stakeholders have different views on what constitutes good quality out of school provision. Any instrument designed to evaluate quality will inevitably reflect some explicit, or implicit, definition of quality in out of school provision. Because quality is a relative construct, it is impossible to come up with a definition that everybody will be happy with. However quality is measured or assessed, some degree of compromise is inevitable. The School-age Care Environment Rating Scale (SACERS; Harms, Jacobs & White, 1996), is one of the few instruments of its kind. Based on other materials designed to assess group and family day care environments, SACERS is an observation schedule designed for use by researchers or providers wanting a measure of global quality in school-aged care environments. The authors recommend users undertake training in the use of the SACERS that involves rating video material. Adequate training is likely to include one half-day watching video material, and at least three visits to practice administering the scale. Administration of the scale takes around two hours. A short version of the SACERS, using 17 of the 49 original items, has been developed by White, Marchessault, Li & Brouhard, (1994). This short version might provide a more economical alternative to administering the full scale. The scale would

probably need to be administered by people employed in a junior research grade post (e.g. equivalent to university grade 1A). A similar instrument, the Family Day Care Environment Rating Scale (FDCERS; Harms & Clifford, 1989) might be used to assess the quality of childminding settings.

Assessments would need to be conducted only in each child's main provider. It is likely that in any school class, some children are likely to be attending the same out of school provision. Without data on which to base estimates, it is impossible to predict accurately the proportion of children likely to be attending the same out of school provision. Conversely, where children change their main provider during the course of any proposed study, quality assessments would need to be repeated. Accurate data on rates of change have not been completed, so once again it is difficult to estimate how many additional quality assessments may be required as a consequence.

5.4.2 *Social environment.* Evidence reviewed in Section 2 suggests data on at least three important aspects of children's immediate social environment should be collected:

- safety of the neighbourhood;
- ethnic composition of neighbourhood;
- alternative local facilities;
- population density.

Collecting information on variables of this kind should enable the study to make important links between the provision of out of school care and families experiencing, or at risk of experiencing, social exclusion. Data held by local authorities are likely to be the most useful source when answering questions of this kind.

5.4.3 *Family environment.* Evidence from existing research suggests an effective longitudinal study should collect data on:

- mothers education;

- family composition;
- parental employment;
- paternal involvement;
- family income;
- housing;
- number of siblings.

Data of the type described would enable the study to explore links between paternal employment, involvement in family life, and outcomes for children. Interviews or questionnaire data could provide the necessary information.

Other studies suggest that the impact of non-parental care on children may vary according to the degree of parental monitoring they are typically subject to, and the extent of emotional support they get from their family and friends.

5.5 Costs and benefits analysis

A crucial element of the study would be to provide an assessment of the economic costs and benefits of various out of school options. Most of the information required for this analysis would be collected from parents. On the costs side this would include:

- The costs to parents and others (e.g. employers) of out of school childcare fees/wages and other associated costs (e.g. transport);
- The costs to the public purse of WFTC.

For the purpose of this analysis, the public subsidies for out of school provision (e.g. the funding provided by the out of school childcare and the learning support initiatives) could probably be ignored, as they consist mainly of funding for set up costs. Similarly 'help in kind' (e.g. free use of school premises and equipment, teachers' and parents' time) could be excluded from the costs analysis, as it would be expected to

have a rather small overall effect on the overall costs. However, a person who provided feedback on the draft report argued that in some cases out of school clubs could not survive without the type of 'help in kind' and unpaid work described above and an analysis which excluded these could underestimate the true costs of providing out of school childcare.

The benefits would be assessed mainly by monitoring changes in parental employment. This would require the collection of detailed information on:

- Any training and learning undertaken which could potentially improve parent's position in the labour market and their employability;
- Moves from unemployment to (sustainable) employment ;
- Moves from temporary/casual employment to permanent/long term work;
- Increases in parental working hours;
- Improvements in job level.

A key element of the benefits would consist of the calculation of the financial benefits resulting from the employment changes described above, that is: increased disposable income for parents', and higher revenue from taxes and lower expenditure on benefits for the state.

Other potential benefits of out of school provision to be assessed by the study could include:

- For children, the medium and long term social and economic benefits of living in families with higher income levels;
- For schools, lower incidence of behavioural problems, truancy and exclusion;
- For the wider community, lower levels of vandalism, youth crime including drug and alcohol abuse - as discussed later these aspects

of the study could only be investigated if the survey was extended to cover older children (e.g. aged 11-12 and over).

5.6 Conclusions

5.6.1 On the basis of existing evidence, it is possible design a longitudinal study to identify potential causal relationships between participation in (different types of) out of school provision and changes in children's behaviour and attitudes. However for most children, a longitudinal study that focussed exclusively on academic outcomes would be looking for marginal effects with a background of high variation. For most children, their experiences in out of school provision are unlikely to have a profound impact on academic achievement.

5.6.2 For more specific subgroups of children, such as those from families of lower socio-economic status, the impact of out of school provision on academic outcomes is likely to be of more significance; sampling strategies should aim to boost these groups.

5.6.3 Impact on child outcomes may not be the only important information a longitudinal study could provide. A longitudinal survey on out of school childcare would help to fill some major gaps in our knowledge of patterns of arrangements, and how and why they change over time. It could also provide invaluable information on gaps in provision for different types of out of school activities and for different groups of children and parents. While measuring impact on child outcomes might be the overriding priority of a study of this kind, without doubt a longitudinal study could provide other information vital to policy makers as out of school provision is expanded to meet parental demand.

Section

6 Design features of a longitudinal study

6.1 Background

6.1.1 This section outlines our proposed methodology for carrying out a longitudinal study covering the groups and research issues discussed in the previous sections. The proposed methodology covers: a core design (6.3); additional options relating to boosting certain groups (6.4); the use of qualitative research to develop hypotheses and typologies (6.7.2) and qualitative longitudinal research(6.7.3).

Given policy makers' requirements and experts' suggestions, it is clear that the research population for the study should consist of *all children of primary school age*, regardless of their patterns of use (or non-use) of formal and informal out of school provision. Given that the brief for this study is to assess the feasibility of conducting a longitudinal survey on the impact of out of school childcare, our proposed design is for a survey of primary school children. There is little out of school provision for older children and this is also likely to be rather different in nature from the type of provision used by younger children. However, it is important to emphasise that, as discussed in Section 4, there is a great interest among some policy makers in secondary school children, and in particular in the potential negative impact that lack of adequate out of school study support and other youth services might have on some vulnerable groups. The sample coverage is discussed in detail in Section 6.2.

6.1.2 As discussed in the previous sections there was an interest in different types of out of school provision and one of the key factors in determining our proposed sample design has been to ensure an adequate representation of children who:

- attend out of school clubs;

- are looked after by a childminder;
- receive informal adult care from relatives and friends
- do not receive any type of non-parental care.

There is also a considerable interest in self and peer care, however, to our knowledge there is no robust information available to estimate the number of children of different ages who look after themselves or are cared for by other children. It was therefore not possible for us to devise an adequate sampling strategy to ensure adequate representation of this group. The sample design is described in Section 6.3.

6.1.3 There is also a policy interest in specific sub-groups, including children:

- from low income families;
- in lone parent families;
- from deprived areas;
- from ethnic minority groups;
- with disabilities and special educational needs.

Section 6.5 considers how these groups can be adequately represented in the survey.

6.1.4 The range and complexity of the issues to be covered by the study mean that data will have to be collected from a range of sources, including parents (who will be the main source of information), teachers and childcare providers. A combination of qualitative and quantitative research methods will also be required to address adequately and in sufficient depth the key research questions. These issues are discussed in Sections 6.6-6.7

6.2 Sample coverage and frame

6.2.1 As mentioned above, the sample for the longitudinal survey should be drawn from all children from the relevant age group(s), regardless of their patterns of use (or non-use) of formal and informal out of school provision.

6.2.2 Age and number of cohorts

Given the DfES's need for data on children of different age groups, starting a longitudinal survey with two cohorts would seem the most sensible option. To cover a wide age range, the younger cohort could include children recruited in Year 1 (i.e. age 4/5) and followed till Year 3 (i.e. age 6/7). The older cohort could start with a group of Year 4 children (i.e. age 7/8) and follow them till Year 6 (i.e. age 9/10).

The older cohort could be followed for longer, if the DfES decided to explore the issues related to secondary school children that were discussed in Section 4.

6.2.3 Sample frame

As discussed in Section 3, schools (in the state sector) are likely to represent the most suitable sample frame. They could be used to stratify the sample and could provide additional information about individual pupils. Selecting by school year (rather than child's age/date of birth) is probably the best selection procedure, as it would allow for control of classroom effects.

Obtaining a sample of children from schools will raise important issues relating to confidentiality and the burden placed on schools selected for the study. Pupil information is provided by (secondary) schools for another major DfES survey series, namely the Youth Cohort Studies (YCS). For these surveys, the sample is gathered directly by the DfES from schools in the state and private sectors. Opt in or opt out exercises are not required for state sector schools as the DfES has ownership of information on pupils in these schools. This procedure seems to result

in a high level of co-operation (around 80 per cent of schools usually agree to co-operate with YCS), and we would recommend this procedure be considered for the longitudinal study on out of school childcare. The timetable for the study would also need to consider the time required to seek the approval of the DfES's Star Chamber, which is required for all survey involving schools.

Clearly any issues of confidentiality and data protection would need to be given careful consideration and the exercise would require considerable time and planning. As with all surveys strict standards of confidentiality and anonymity would need to be adhered to. Some of the topics covered by the study might be regarded as sensitive by respondents and an important element in gaining the co-operation of parents and schools is the assurances of confidentiality given at the outset. It is vital that all such assurances are factually correct and honoured, and that study's participants should have confidence in them. In particular, respondents are entitled to complete assurance that no information which could be used to identify them will be made available without their agreement to anyone outside the research team.

6.3 Sample size and design

6.3.1 As discussed above the key factor that has informed our proposed sample strategy has been the need to include in the survey a sufficient number of users of different types of out of school provision, as well as 'non-users'. From the 1999 Parents' Demand for Childcare Baseline Survey we have estimated that a random sample of Year 1 and Year 4 children would include:

1. at least 6% of children who attend an out of school club (formal provision);
2. at least 6% of children who are looked after by a childminder (formal provision);
3. at least 25% of children who receive informal adult care from a relative or friend (informal provision);

4. at least 59% of children who use no provision (formal or informal).⁵

The estimates above are based on reported childcare use in the previous (term time) week in the Parents' Demand for Childcare survey. It must be noted that these figures relate to data collected early in 1999. Depending on the effect of various policy initiatives to expand out of school provision, these figures might be different (with probably a higher proportion of formal childcare users) by the time the longitudinal survey is conducted. It is therefore recommended that the sample design is reviewed once more up-to-date figures from the repeat Parents' Demand for Childcare survey are available. It must also be emphasised that the figures above represent the likely sample distribution at wave 1 of the survey. We have no way of estimating how patterns of use out of school provision might change over time, although given current policy developments in the childcare field, one might expect the proportion of formal childcare users to increase somewhat, and conversely the number of non-users to decrease. It is more difficult to speculate on likely changes in the size of the informal childcare user group.

6.3.2 *Sample size*

In order to conduct analysis of children using different types of childcare and have an adequate control group of non-users, we would recommend that at wave 1 each cohort should include at least 500 children from each of the four groups listed above. However, we would recommend that the samples were larger for the last two categories to allow for a possible decrease in the size of these groups due to the expansion of formal out of school care. Therefore, for a total achieved sample size of around 4,000 at wave one, the sample could be split so that approximately 500 children attended an out of school club, 500

⁵ The figures do not add up to 100% because a small proportion of children use other forms of childcare not listed above, such as nannies and au pairs.

were looked after by a childminder, 1,000 received informal adult care and 2,000 received no provision. The assumption behind the recommended sizes for different (non) user groups is that most sub-group analysis will include a maximum of 4-5 groups, fairly evenly distributed in terms of number of cases included in each group, so that most bases for the sub-group analysis will be over 100 cases (analysis based on less than 100 cases would not be regarded as sufficiently robust). Clearly, this assumption will need to be reviewed once the coverage of the survey and the sub-group analyses required have been agreed.

To achieve the sub-group totals listed above, we would recommend the following sample design for both cohorts. A core sample of school children should be sampled at random and an interview attempted with each selected case. In addition, a screening exercise should be run to boost the samples of children who attend an out of school club or are looked after by a childminder. To undertake such a screening exercise successfully, accurate and up-to-date estimates of the use of childcare would be required – these could be obtained from the repeat Parents' Demand for Childcare survey.

6.3.3 *Core sample design*

The panel of academic experts consulted for this project advised that, to explore fully the relationship between out of school childcare and outcomes, the influence of schools, and even better classrooms, on the children should be controlled. This is because school environment is likely to exert a stronger influence over children than out of school care. If not controlled for, school effects could mask associations between out-of-school childcare and outcomes.

In theory, one method of controlling for school or classroom effects is to include externally collected measures of these influences in data

analyses. However, in reality it is not possible to control completely for all these factors. Statistically speaking, it is better to control for the influence of the school/classroom directly by, for example, including random effects that represent the influence of schools and classrooms in multi-level models⁶.

To control effectively for school or classroom factors, adequate samples of children are required in each selected school. Therefore, we would recommend that a two-stage sampling design be employed: schools would be the primary sampling unit (PSU) and pupils then randomly selected within each school year. An additional advantage of using a multi-stage sampling design is that the selected sample of children would be clustered. This would reduce both operation and fieldwork costs (compared to a simple random sample of children).

We would recommend that the samples for the two cohorts (Year 1 and Year 4) be selected independently, i.e. as if they were for two distinct surveys. Although it would be more efficient in terms of costs to select the cohorts from the same schools, the extra burden on each school of involving two school years would be detrimental to the study⁷.

Several factors need to be considered before deciding on the number of schools to select for the survey. The fewer schools selected, the greater the precision with which school and classroom-level factors are measured and hence the ‘better’ they are controlled. This is because the fewer schools selected the larger the number of pupils in each (for a fixed total sample size). In addition, the fewer school selected the greater the savings in field costs described above. However, enough schools need to be selected so that sufficient numbers of the more rare out of childcare types could be achieved.

⁶ Goldstein, H. (1995). Multilevel Statistical Models. London: Edward Arnold: New York, Wiley.

⁷ Note that some schools would be selected for both the Year 1 and Year 4 samples by chance.

We would therefore recommend that the minimum number of schools be selected so that at least 500 children in each childcare type would be achieved from the core sample and screening exercise. Assuming that there is an average of 45 pupils in a school year⁸, we estimate that approximately 260 schools would be required to achieve this.

For each selected school, a random sample of 18 children in the relevant year would be selected for the core sample. An interview would then be attempted for every child (4680) in the core sample. Table 6.1 shows the likely composition of the core sample assuming a response rate of 80%.

Note that various strategies could be employed to cope with the relatively few schools that have less than 18 pupils in a particular school year. For example, purely for the purposes of selecting the sample, one could combine these smaller schools with other “similar” (in terms of geography, type etc.) schools, so that no PSU contained less than 18 pupils in the relevant school year.

6.3.4 *Screened sample design*

All the children in the selected schools who were not selected for the core sample (7020) would be included in the screening exercise. This screening exercise would be undertaken on the doorstep, with a subsequent interview undertaken dependant upon the use of out of school childcare reported in the screening questionnaire. Those children who were reported as attending an out of school club or as being looked after by a childminder would be included in the cohort and interviewed.

The likely compositions of the screened sample and the resultant total sample are summarised in Table 6.1. (It has been assumed that the response rate to the screening questionnaire is 80% and the subsequent response rate for those selected for interview is 90%.) As can be seen,

⁸ OFSTED (1999). ‘A Review of Primary Schools in England, 1994 – 1998’. The Stationery Office.

such a design would achieve more than 500 children at wave 1 that attended an out of school club and more than 500 that were looked after by a childminder.

Table 6.1 – Composite of sample from proposed design

	Estimated use	Core sample	Screened sample	Total
No provision	59%	2209	0	2209
Informal adult care	25%	936	0	936
Childminder	6%	225	303	528
Out of school club	6%	225	303	528
		3595	606	4201

6.3.5 *Efficiency*

For reasons of efficiency, it is common for sampling strategies to be designed so that each unit (in this case, each child) has the same (or at least similar) chance of being selected in the sample. This is because sampling units with unequal probability produces an additional design effect (due to the resulting differential sampling weights) that is equivalent to a reduction in the effective sample size.

For this study, we have recommended that the Year 1 and Year 4 cohorts be sampled independently. To maximise the efficiency of estimates for the core sample, one sample of schools would be sampled proportional to the number of Year 1 pupils and then a second sample proportional to the number of Year 4 pupils. By sampling a fixed number (18) of children from the relevant school year, the core samples for both cohorts would be selected with equal probability.

The sampled selected via the screening process would be selected with unequal probability. However, without prior knowledge of the number

of children in each school receiving out of school care or being looked after by a childminder, this is unavoidable. The effect of this would be a reduction in precision for estimates in these childcare types.

By designing the sample to maximise the power to make comparisons across different types of childcare, we are reducing the precision with which population measures are estimated (compared to alternative designs). If the aim of the study were to obtain population estimates rather than to be able to compare across types of childcare, then the sample should be redesigned to reduce the design effects.

It should be noted that children selected from the same school would tend to be more homogenous than children in the general population. This would be true for most survey measures collected because, as well as sharing school characteristics, pupils from the same school would be geographically clustered. The effect of selecting a sample that is clustered in this fashion is equivalent to a reduction in the total sample size. Therefore, national measures would be estimated with reduced precision. This is a necessary consequence of designing a study that allows comparison between different types of out of school provision.

Rather than estimate the loss of efficiency on estimates caused by clustering and disproportionate sampling, it would seem more appropriate to estimate their effect on the power with which differences in outcome could be detected, as this is the key focus of the study. Note that these estimates of power represent the probability that a real difference in the population is observed as a significant difference in the survey.

Table 6.2 shows power estimates for detecting various real differences in outcome between the group of children attending an out of school club ($n = 528$) and those looked after by a childminder ($n = 528$). As it is not possible to predict the likely loss in power due to clustering and

disproportionate sampling, we have considered a range of estimated design effects.

As an example, consider an outcome where the ‘true’ (unmeasured) rates are 5% for one sub-group and 10% for the other. If the design effect was 1 (which represents the situation where there is no loss in power), then the probability that we would detect a significant difference (at the 5%) level from the survey data is 87%. If however, the design effect was 2 (which represents a loss of power equivalent to halving the effective sample size), then we would be less likely to detect a significant difference (at the 5%) level from the survey data, as the power would be 59%.

Table 6.2 – Estimated power to detect differences between childcare types

	Deff = 1	Deff = 1.5	Deff = 2
5% & 10%	87%	71%	59%
10% & 15%	69%	52%	41%
10% & 20%	100%	96%	90%

6.3.6

Stratification of schools

Further improvements could be made to the sampling design by selecting the sample of schools (for both cohorts) stratified by external data. This would result in both samples being more representative of the population of schools. Statistically, it is optimal to stratify the sample by factors that correlate with the outcome measures of interest. This results in a reduction in the sampling variance, and hence an improvement in the power of analyses. The expert panel suggested a number of potential measures that could be used to stratify the sample, including the Department of Transport , Local Government and the Regions (DTLP), formerly known as DETR) Index of Deprivation, as well as data available from schools (e.g. school performance data).

Using the DETR Index of Deprivation would involve merging deprivation scores to the sampling frame of schools based on the postal code of the school. This is making the assumption that deprivation in the areas (however defined) in which the schools are located correlate with the deprivation of areas in which the pupils live. In practice, it would be simpler to use school-level data, as the measures could be merged directly into the sampling frame.

In addition to stratifying by the Index of Deprivation or school data, one would also want to stratify the sample further by factors such as region and type of school.

6.4 Sub-groups of interest

6.4.1 As discussed above there is a policy interest in specific sub-groups, including children:

1. from low income families;
2. in lone parent families;
3. from deprived areas;
4. from ethnic minority groups;
5. with special educational needs.

Groups 1 and 2 above would be expected to be adequately represented in a random sample of primary school children. For example, the Parents' Demand for Childcare survey included a quarter of lone parents and a quarter of families whose total annual income was below £10,400. However, groups 3 to 5 above would need to be boosted in order to achieve an adequate representation in the longitudinal survey. Strategies for boosting these are discussed in the rest of the section.

6.4.2 *Children from deprived areas*

It would be possible to boost children in deprived areas by splitting the sampling frame of schools into strata based on the DTLP (formerly DETR) Index of Local Deprivation or school-level data, and then sampling disproportionately within each stratum. For example, the sampling strategy could be designed so that half of the schools selected

are in the lowest 10 per cent of deprived areas based on the Index of Deprivation. This would also have the advantage of indirectly boosting many other sub-groups of possible particular interest, although at this stage, we are unable to predict the likely effects of varying the sampling strategy on the representation of different sub-groups.

6.4.3 *Children from ethnic minorities & SEN*

The proportion of children aged between 4 and 7 that belong to an ethnic minority is estimated in the 199 Parents' Demand for Childcare survey to be about 11%⁹. Therefore, for the proposed study, we would expect approximately 440 children in each cohort to belong to an ethnic minority (if the achieved sample size was around 4,000 for each cohort).

If the number of children in ethnic minorities was to be boosted, then it would (in theory – but see later discussion) be possible to include a question on ethnicity in the screening interview (see section 6.3.3) and to over-sample children from ethnic minorities at the screening stage. We estimate such a procedure could more than double the number of children in ethnic minorities, so that more than 900 were included in each cohort. However, it would not be possible to obtain sufficient samples to obtain precise estimates within specific ethnic groups.

Without specifically screening for children with special educational needs (SEN), each cohort would include about 360 children with SEN. By over-sampling children with SEN via the screening exercise, we estimate that 720 children with SEN could be obtained in each cohort, of which 250 children would have statements of special educational needs.

Although in theory it would again be possible to boost the samples of children with SEN and belonging to ethnic groups using the screening

⁹ La Valle, Finch, Nove, Lewin (2000), Parents' Demand for Childcare, DfEE Research Report 176

exercise as described, we would recommend that the boost samples be obtained from the annual school census. Our reluctance on using the screening exercise to obtain these boost samples is that, by adding sensitive questions on ethnicity and SEN to the screening questionnaire, we would risk undermining the success of the exercise.

As the annual school census contains standardised information on ethnicity and SEN for each school child, it could identify children directly to be included in the boost sample. To maintain the efficiency of the fieldwork, these boost samples should be in the same schools that were selected for the main survey as much as is possible. However, if larger boost samples were required, then top-up samples could be obtained directly from the annual school census data.

6.5 Survey panel design

6.5.1 In this section we discuss key panel design issues, including:

- The most appropriate ways of and timing for collecting data from parents;
- School teachers' assessment;
- Assessment of quality of childcare provision;
- The estimated survey response, panel attrition and non-response analysis.

6.5.2 *Data collection from parents*

To meet policy makers' need for information on out of school childcare discussed earlier, detailed information will be necessary from parents on the different types of formal and informal provision children have during term time and school holidays. The data collection approach would need to strike a careful balance between collecting comprehensive information on children's arrangements over a given period, and avoiding placing too big a burden on respondents. Considerable development work is likely to be required to find the right approach. At this stage it seems the following are likely to be required:

- Comprehensive coverage of out of school arrangements, including at non-standard times, formal and informal providers, self and peer care;
- Criteria for classifying providers under two broad headings, such as ‘regular/main’ and ‘irregular/occasional’, with less detailed information collected about the latter and with the possible exclusion of the most occasional and ad hoc arrangements.

In our view, two contacts a year with parents will be required to collect the above information, attempting to collect this kind of data less frequently (e.g. once a year) is likely to result in poor quality data due to recall problems.

We are proposing that:

- The first of the two yearly contacts with parents should be face to face and collect comprehensive information on childcare arrangements, as well as the range of issues of interest discussed in the previous sections. At the first wave the interview would be of an average length of 60 minutes, while this could be reduced to 45 minutes at subsequent face-to-face contacts as less information is likely to be required.
- The second yearly contact could consist of a short (average 30 minutes) telephone interview, focusing on any changes in out of school arrangements and the reasons for these changes. Information on childcare costs and changes in parental employment and income could also be collected during the second interview, given that these would be crucial components of the costs and benefits analysis.

Suitable timing for the contacts could be:

- April-May for the main face to face interview, which would collect data on the autumn and spring term arrangements, as well as Christmas and Easter holidays;
- Sept.-Oct. for the telephone interview, which would collect information on the summer term and holiday arrangements, as well as provision at the start of the academic year. This would seem a good time to pick up and explore the reasons for any changes in arrangements (e.g. due to change of school, child's age and needs, etc.)

6.5.3 *Teachers' assessment*

As discussed in the previous section, teachers' assessments would be important to gather information on some key child outcome measures (e.g. social skills, self-esteem, attitude to learning, etc.). However, given the sample strategy we have proposed above (i.e. using schools as sampling units), the collection of this information could place an unacceptable burden on schools and individual teachers. So we are proposing that:

- Teachers' assessment should be carried out for a sub-group of children in each school, with each classroom teacher being asked to complete assessments for around eight pupils;
- Assessments should be kept short, each assessment should take an average of 15 minutes to complete and teachers would be asked to do this once year, thus participation in the study would involve two hours of each classroom teacher time once a year.

Groups of particular interest for which assessments might be carried out were outlined in the previous section. Ultimately, the criteria for selecting children for the teacher's assessment would also have to take into account practical considerations, as well as policy interest, to avoid placing a too heavy burden on teachers who might be working with a higher than average proportion of children from groups of interest.

It should also be noted that because a small number of children from each school and classroom will be assessed by their teacher, for the analysis of these data the ability to control for classroom and school effects would be considerably reduced.

6.5.4 *Assessment of childcare quality*

As noted previously, a robust assessment of quality of provision will require an assessment of formal providers (i.e. out of school clubs and childminders). We would therefore recommend that the quality of a child's main formal provider (i.e. the ones used for most hours) be evaluated by trained researchers using the instruments described in the previous section.

We have no way of estimating the number of providers that would need to be assessed at each wave, as this will depend on two crucial factors we have currently no robust data on, namely: how many children in the same classroom are likely to use the same (main) formal provider; and how often a child changes (main) formal provider. A reasonable estimate of how many formal providers will need to be assessed at each wave could only be made after the first wave of interviews with parents have been carried out. This estimate would then need to be reviewed at subsequent waves to take into account changes of (main) formal provider.

6.5.5 *Survey response*

Efforts should be made to ensure maximum levels of response with all parents and children selected for the first wave of the sample. Below we highlight some strategies for maximising survey response and panel retention. For subsequent waves, attempts should be made to contact all those that responded to the initial wave, regardless of their response histories. This will reduce the effect of panel attrition and will maximise the precision of cross-sectional estimates.

In Table 6.3, we present the estimated response for Wave 1. Figures are based on the responses of the Parents’ Demand for Childcare survey, which is similar to the proposed longitudinal survey in terms of target group and data collection method. Finding the equivalent information for the longitudinal element is far more difficult. There are fewer longitudinal surveys, and no recent ones with a similar combination of target group, interval between contacts and data collection methods. Nevertheless, based on our experience and the information from some other established longitudinal surveys (e.g. ALSPAC¹⁰), we have included in Table 6.3 an estimate of response at different waves. These estimates assume that considerable resources would be invested in a range of measures aimed at maximising survey response and panel retention.

Table 6.3 – Estimated response rates for each wave of the survey

Wave	Data collection method	Response rate	Year 1 cohort Achieved sample	Year 4 cohort Achieved sample
1	Face-to-face	80%	4,200	4,200
2 (6 months)	Telephone	75%	3,150	3,150
3 (12 months)	Face-to-face	73%	3,070	3,070
4 (18 months)	Telephone	66%	2,770	2,770
5 (24 months)	Face-to-face	69%	2,900	2,900
6 (30 months)	Telephone	62%	2,600	2,600

Note – only responding cases at wave 1 would be re-issued for further waves.

6.5.6 *Non-response analysis*

As well as reducing the sample size and hence precision of the survey estimates, non-response also causes systematic biases in survey estimates. This is because the characteristics of non-respondents tend to be systematically different from those of respondents, as they are not a

¹⁰ Response rates for ALSPAC: 1 month 88%, 6 months 82%, 15 months 79%, 18 months 80%, 24 months 75%, 30 months 74%.

random subset of the sample. This is the main reason why strenuous efforts are made to maximise response rates.

Because there will always be some proportion of the sample that does not respond, statistical methods of reducing the effects of non-response bias need to be considered. Non-response analyses that take account of non-contact and refusal separately should be performed for every wave of the survey, making use of all the information that has been collected at previous waves. In addition, efforts should be made to collect information about non-respondents from other sources. For example, the annual school census would seem an ideal source. It includes information on the children's ethnic group, eligibility for free school meals and special educational needs, all of which could be associated with non-response.

6.6 Panel recruitment, attrition measures and non response analysis

6.6.1 A successful longitudinal study requires a high baseline response at the first wave of data collection, and a low level of sample attrition at later waves. This section suggests some strategies for maximising initial response, minimising subsequent attrition and carrying out non-response analysis.

6.6.2 *Maximising initial response*

The first approach to parents could be in the form of a letter explaining the aims and the content of the study, and emphasising the importance of their participation. This could then be followed by a personal visit from an interviewer to explain more about the research and secure agreement to take part.

The study focuses on the care, well-being and development of children, topics of very high salience for the parents of young children, so this task is likely to be relatively easy. The research might be presented to parents as evidence of the government's interest in the needs and circumstances of young children and their families, which would also

help to generate goodwill towards the study and persuade parents to take part.

The initial interview with the parent is likely to be fairly long and detailed. While a lengthy interview can influence response, it is advisable to be honest when respondents ask about the likely interview length before agreeing to take part. That way, interviewers retain the goodwill of participants and are more likely to be granted permission to re-contact them at the end of the interview.

6.6.3 *Retention*

In terms of both keeping in touch with respondents between waves of data collection and retaining their interest and commitment, the relatively short (six-month) interval between waves would work to the study's advantage. Panel members would be unlikely to forget about the survey between contacts, and the proportion moving in each interval would be small.

Interviews at the second and subsequent waves are likely to be shorter than the first interview (particularly the telephone ones), this would reduce the response burden and go some way towards ensuring parents' continuing willingness to participate.

However, to achieve the kind of response rates estimated earlier on, measures to minimise attrition would still be necessary to ensure contact details are kept up-to-date and to retain the panel members' interest and co-operation. Contact could be maintained in several ways. One method often employed on longitudinal surveys is the collection of details of a 'stable contact' at the first interview. A stable contact is someone who would know the respondent's new address and phone number should they move, but who is unlikely to move him/herself.

Another way of retaining parents' commitment to and interest in the study is to send Christmas cards and leaflets with study results to panel

members. These would remind them of their involvement in the study and give them the opportunity to report recent or imminent changes of address and telephone number. The number of calls and change of address cards received on other panel surveys suggests that such a strategy can be worthwhile.

Regular contact with cards and information leaflets would help to foster a sense of ongoing membership among the panel. The leaflet would also demonstrate the richness and intrinsic interest of the data, and demonstrate the utility of the study to policy makers concerned with the needs of children and families. Each of these factors could be expected to have a positive impact on response to the survey.

It may also be possible to track movers to their new addresses through various publicly available records.

6.6.4 *Incentives*

For ‘one-off’ surveys, financial or other incentives are not normally used. However, involvement in a longitudinal study such as this one represents a significant response burden and a considerable commitment to the study. It may be helpful to acknowledge this with an incentive. Incentives are paid for some of the major longitudinal surveys in this country. For example, on the British Panel Household Survey, £7 is given to panel members at each wave, while on the Survey of Low Income Families, a £10 gift voucher is offered to panel members on second and later contacts.

The literature indicates that incentives tend to boost response (particularly if given *before* respondents agree to take part)¹¹, and both surveys mentioned above enjoy a high rate of sample retention. The goodwill and willingness to reciprocate which is generated by

¹¹ Nicolaas G and Lynn P, ‘The use of respondent incentives in surveys’, *Survey Methods Centre Newsletter*, vol. 18 no. 2, pp 3-8, 1998.

incentives can lead to a higher *quality* of response, as well boosting the numbers who respond, both at first contact and then throughout the life of the study.

Given that the survey is focused on children, more child-oriented incentives or ‘thank yous’ could be used as well as, or instead of, financial incentives to parents. On the Health Survey for England, participating children are given small presents as a ‘thank you’, such as colouring books, sticker and pens. Such presents can help to foster goodwill among parents as well as children, and at a relatively low cost.

6.7 Role of qualitative research

6.7.1 In a study of this scale and complexity qualitative research would need to play an important role at all stages and:

- Help to develop typologies and hypotheses to be covered in the statistical research;
- Assist with the design of the questionnaire;
- Provide a more in-depth analysis of key issues emerging from the survey results.

6.7.2 *Qualitative research and the development of typologies and hypotheses*

As mentioned earlier, considerable development work is likely to be required before suitable data collection instruments are finalised. Before the survey questionnaire is designed in depth interviews could be carried out to:

- Develop typologies of the different packages of out of school childcare arrangements;
- Identify the key factors that determine why different arrangements are made so they can be monitored in the statistical research;
- Generate hypotheses about the different dimensions of quality of provision that matters in different contexts and for different actors.

6.7.3 *Qualitative research and questionnaire development*

The initial exploratory stage described above could be followed by systematic testing of key questions to be explored by the survey, including:

- The suitability of different approaches for the collection of information on out of school childcare arrangements;
- The cost effectiveness and feasibility of collecting data on different measures of quality of provision;
- The cost effectiveness and feasibility of gathering suitable data on different child outcome measures.

Two techniques are increasingly used at the questionnaire design and development stage: expert panels and cognitive pilots. We would strongly recommend both of these be used to ensure the validity of data collection instruments.

At an early stage of questionnaire development, it would be advisable to submit key questions and measures to an ‘expert panel’, consisting of a small group of researchers and childcare experts. Given the number and complexity of the issues to be covered by the survey, it might prove necessary to seek the advice of the panel on more than one occasion.

Cognitive interviews are qualitative in nature. They make use of techniques drawn from cognitive psychology, to uncover aspects of the response process that are usually hidden. Cognitive interviews can highlight where respondents misunderstand survey questions or key concepts, do not know or cannot recall the needed information from memory, use an inappropriate strategy for making a judgment, or prefer to hide certain information or provide a socially desirable answer.

6.7.4 *Longitudinal qualitative research*

Longitudinal qualitative research could be extremely useful to follow up groups of particular policy interest and to unpack some of the more

complex and sensitive issues, which could not be adequately explored in a structured interview. For example:

- Exploring among vulnerable groups the different types of impacts of different kinds of formal provision that occur and why they happen;
- The nature of the impacts on different age groups of self-care and care by other children;
- The kind of impacts on children and their families of the availability of different types of arrangements, and in particular if and how certain types of provision improve parents' employability and lead to an increase in household income, and the effect that this has on children;
- The link between quality of provision and outcomes; for example, case studies would be extremely useful to explore the defining features of good quality provision in different contexts and how this results in positive outcomes for children and their families;

Exploring the underlying factors that can lead to the breakdown of different types of out of school care and the factors that might prevent breakdown occurring.

Section

7 Conclusions and recommendations

7.1 Background

7.1.1 In the introduction to this report we set out six questions the feasibility study set out to address:

1. Could a longitudinal study provide reliable information on the specific impact of out of school provision given the great variety of other factors influencing outcomes for children?
2. Which longitudinal research designs would be most appropriate?
3. What would be the relative costs of implementing each identified research design?
4. Could existing longitudinal studies of appropriate age groups be developed to look at the impact of out of school care?
5. Would any methodologies other than a longitudinal study provide information on the impact of out of school care?
6. Would it be possible to collect data to explore issues around value for money and the costs and benefits of providing out of school childcare?

This concluding section will examine each of these six questions.

7.2 Questions for the feasibility study

7.2.1 *Could a longitudinal study provide reliable information on the specific impact of out of school provision given the great variety of other factors influencing outcomes for children?*

Existing research reviewed in Section 2 of the report includes several examples of effective longitudinal studies that have provided reliable information on the specific impact of out of school provision. Studies have examined the impact of out of school provision on outcomes for children, for families and communities.

However, there are lessons to be learnt from the review concerning the design of impact studies. Most important is the need to appreciate the complexity of the context in which children use out of school provision. As this question implies, because so many different factors influence children's intellectual development, it would be difficult to design a study capable of identifying a universal causal link with out of school provision. As existing research has demonstrated so conclusively, relationships between non-parental care and outcomes for children vary depending on features of children, their homes, their communities and their care settings.

A longitudinal study could provide reliable information on the specific impact of out of school provision. However, to be effective the study would need to identify, *a priori*, three things:

- which features of provision (e.g. type, quality, quantity, variety) that might influence outcomes are to be investigated;
- which outcomes are likely to be of interest;
- for which groups of children, families or communities are the relationships between potential causes and outcomes to be examined.

Of course the answers to those three questions need to be grounded firmly in existing theory and evidence.

Research questions need to be framed in such a way as to address the specific conditions under which specific outcomes might be expected. Rather than asking 'does provision have an impact', questions would more usefully ask 'under what conditions might provision have an impact'.

The opinions of our panel of experts in longitudinal research design were entirely consistent with this view. They felt it would be difficult, although by no means impossible to establish causal relationships between participation in different types of out of school provision and

changes in children's behaviour and attitudes. For most groups of children, a study would be looking for marginal effects with a background of high variation. However, for some specific groups (e.g. children from low-income families) it might be much easier to identify the impact of out of school provision. The challenge for a longitudinal study would be to devise a sampling strategy to boost representation of these groups.

Perhaps equally as important, a longitudinal study could also examine the impact of out of school provision on family life with particular reference to parental employment and household income.

Stakeholder organisations and policy makers felt a longitudinal study could make a valuable contribution to our understanding of how parents and children put together combinations of different services to suit their needs, and how and why patterns of use change over time.

7.2.2 *Which longitudinal research designs would be most appropriate?*

Evidently the issue of which research designs would be most appropriate is contingent on the range of research questions a study aimed to address. Evidence from existing longitudinal research suggests that, in general, effective designs would need to allow for collecting data from several domains, including features of out of school services, individual differences of children, and the characteristics of families and local communities. More specific issues concerning research design are dealt with in Section 5.

7.2.3 *What would be the relative costs of implementing each identified research design?*

In any research study, staff salaries account for the largest single element of costs. Longitudinal research is relatively costly because it involves retaining staff over long periods of time to undertake fieldwork and panel maintenance. The greater the level of detail

required in terms of information collected, the more staff are likely to be required.

Estimates of cost need to be based on study design features including sample sizes, the number of contacts with study participants, the range of variables on which information is to be collected, and the level of detail required. These elements of study design cannot be specified until issues concerning the range of research questions a study aims to address have been resolved. Some general indication of costs might be gained from examining budgets attached to other longitudinal studies such the EPPE project.

For reasons of commercial sensitivity, more specific issues concerning cost are dealt with in a separate document provided for the DfES. There we have estimated separately the costs of different waves of a longitudinal study to demonstrate the effects of having different numbers and types of contacts with study participants.

7.2.4 *Could existing longitudinal studies of appropriate age groups be developed to look at the impact of out of school care?*

Neither of the two main existing longitudinal studies on childcare in England, EPPE and ALSPAC, are likely to be appropriate to monitor the impact of out of school childcare. ALSPAC is a local study and therefore it would not be suitable to provide data generalisable to the rest of the country. In addition, children in the ALSPAC sample were (mostly) born in 1991 and hence would be too old to qualify for this study.

The EPPE project would also not be suitable. First, the six Local Authorities in which the project is based were not selected at random. Second, the group of children recruited for the project was obtained via pre-school centres and hence children that did not attend pre-school centres were, by design, excluded. Therefore, because the sample of

children is not a truly random sample, one could not generalise study conclusions to the national population of children.

We understand that the DfES is planning a longitudinal survey of young people. While at this stage decisions regarding the design of this study have probably not been finalised, a suggested option was to start the survey with a cohort of Year 9 (i.e. age 13/14) pupils¹². Given the potential overlap between the longitudinal survey of young people and the one on out of school childcare, it would be advisable for the DfES teams responsible for the respective studies to keep in close touch and explore the potential benefits and feasibility of linking the two studies.

7.2.5 *Would any methodologies other than a longitudinal study provide information on the impact of out of school care?*

A key reason for doing longitudinal research is that prospective data is usually much more reliable than retrospective data. The quality of the latter can be poor due to recall problems and post-hoc rationalisation (e.g. views about motives and reasons for doing something are often influenced by outcomes). In some cases (e.g. when detailed information is required) it is simply not possible to collect retrospective data. In a study of the type proposed, it would not be possible to collect most of the data required retrospectively, and even when it would be possible, it would be likely to be of poor quality and not very reliable.

Investigations designed to collect reliable evidence concerning the impact of one set of complex variables on another usually need to establish causal relationships. Without longitudinal data, research into complex outcomes such as children's development can often only collect evidence of association or co-variation; such relationships are consistent with, but not evidence of, causal relationships. Consequently longitudinal research designs are likely to be the most effective when it

¹² La Valle I, Shepherd P, *Feasibility Study for a Longitudinal Survey of Young People*, unpublished report for the DfES, May 2000

comes to establishing robust evidence concerning the impact of out of school care on children.

In the opinion of the expert panel of academic researchers, and the research teams from TCRU and NCSR, cross-sectional research designs would not deliver sufficiently robust information concerning impact of provision on children for the reasons noted above. For that reason, we have not developed details of cross-sectional designs and their associated costs. Given the required outcomes, cross-sectional studies would not represent an effective use of resources.

7.2.6 *Would it be possible to collect data to explore issues around value for money and the costs and benefits of providing out of school childcare?*

We believe that it would be possible to conduct a costs and benefits analysis. Most of the information required for this analysis would be collected from parents. On the costs side this would include:

- The costs to parents and others (e.g. employers) of out school childcare fees/wages and other associated costs (e.g. transport);
- The costs to the public purse of WFTC¹³.

The benefits would be assessed mainly by monitoring changes in parental employment and household income due to the availability of formal out of school childcare, and the resulting financial benefits; that is: higher disposable income for parents; higher revenue from taxes and lower expenditure on benefits and for the state.

Other potential benefits of providing out of school childcare could also be assessed, although estimates of these might be more tentative, these include:

- For children, the medium and long term social, economic and health benefits of living in families with higher income levels;

¹³ For the purpose of this analysis, the public subsidies for out of school childcare (e.g. administered through the out of school childcare initiative and learning support schemes) could probably be ignored, as they consist mainly of funding for set up costs. Similarly 'help in kind' (e.g. free use of school

- For schools lower incidence of behavioural problems, truancy and exclusion;
- For the wider community, lower levels of vandalism, youth crime including drug and alcohol abuse, and teenage pregnancy.

premises or equipment, teachers' and parents' time) could be ignored, as it would have a rather small effect on the analysis.

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Appendix A – Participants in consultation stage

Seminar of academic experts

Sofka Barreau - Thomas Coram Research Unit, Institute of Education

Sally Dench - Institute for Employment Studies

Rebecca Goldman – DfES

Heather Joshi - Centre for Longitudinal Studies, Institute of Education

Heather Laurie -Institute for Social and Economic Research, University of Essex

Ivana La Valle- National Centre for Social Research

Tony Munton - Thomas Coram Research Unit, Institute of Education

Pat Petrie - Thomas Coram Research Unit, Institute of Education

Kevin Pickering - Survey Methods Centre, National Centre for Social Research

Susan Purdon - Evaluation Unit, National Centre for Social Research

Roger Thomas - Survey Methods Centre, National Centre for Social Research

Richard White - DfES

Seminar of key stakeholders

Sofka Barreau - Thomas Coram Research Unit, Institute of Education

Lisa Butterworth - Pre-School Learning Alliance

Mary Crowley – Parenting Education Support Forum

Ivana La Valle- National Centre for Social Research

Liz Lester – Kids Club Network

Heather Montague-Barnett – Central Council for Education and Training in Playwork

Tony Munton - Thomas Coram Research Unit, Institute of Education

Denise Poore - National Childminding Association

Carena Rogers - National Council for One Parent Families

Barbara Scorrel - DfES

Jill Wiltshire - DfES

Policy makers interviews

Charles Fuller - Regulation of Daycare and National Standards Team, DfES

Corinne Leppard, Childcare Unit, DfES

Lucy Makinson – Treasury

Caroline Slocock - Head of Childcare Unit, DfES

Colin Stiles - Childcare Unit, DfES

Dan Rosenfield - Treasury

Shirley Trundle - Head of Opportunity and Diversity Group, DfES

Jill Wiltshire - Childcare Unit, DfES

Zelda Wilkins - Study Support Team

Specialist advisers

Norman Glass – National Centre for Social Research

Peter Lynn - Survey Methods Centre, National Centre for Social Research

Jane Ritchie – Qualitative Research Unit, National Centre for Social Research

Academic experts, key stakeholders and policy makers who provided feedback on the draft report

Academic experts

Sally Dench - Institute for Employment Studies

Norman Glass – National Centre for Social Research

Roger Thomas - Survey Methods Centre, National Centre for Social Research

Jane Ritchie – Qualitative Research Unit, National Centre for Social Research

Key stake holders

Pam Boyd – Education Extra

Anne Longfield- Kids Club Network

Robert Orr – Pen Green

Alison O’Grady – New Opportunities Fund

Rachel Scott – KidsActive

Policy makers

Gillian Dollamore – Social Exclusion Unit

Barbara Hearn – Children and Young People’s Unit

Corinne Leppard - Childcare Unit, DfES

Lucy Makinson – Treasury

Colin Stiles - Childcare Unit, DfES

Dan Rosenfield - Treasury

Barbara Scorer - Childcare Unit, DfES

Shirley Trundle - Head of Opportunity and Diversity Group, DfES

Jill Wiltshire - Childcare Unit, DfES

Appendix B – Research study summaries

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>1. Pettit, Laird, Bates & Dodge (1997)</p> <p>Patterns of after-school care in middle childhood: risk factors and developmental outcomes.</p> <p>USA</p> <p>Longitudinal</p> <p>Aim – To identify patterns of after-school care in terms of involvement and complexity, and then to examine:</p> <ul style="list-style-type: none"> Variations in these patterns as a function of SES (Socio-Economic Status and child sex. Relations between these patterns and children’s subsequent social, behavioural and academic adjustment in grade 6 The extent to which these predictive relations continued to be sig. after controlling for SES, gender, and adjustment. 	<p>This study was part of an ongoing Child Development Project.</p> <p>Sampling Birth cohorts (1987, 1988) from 3 different cities (Nashville, Knoxville, Bloomington).</p> <p>Schools considered (by school personnel) representative of each community were selected</p> <p>Recruitment Parents were approached at the time of kindergarten pre-registration.</p> <p>75% of the parents agreed to participate.</p> <p>15% of children attending these schools did not pre-register. The parents of these children were approached on the 1st day at kindergarten.</p> <p>The Subjects N=585 at 1st assessment</p> <p>1st assessment prior to kindergarten. (age 5), then every year through to grade 7 (age 13).</p> <p>3.3% - average attrition per year</p> <p>The current study is based on an assessment conducted at the end of the 5th grade.</p> <p>N=466 – sample for this study</p> <p>51% boys</p> <p>16% ethnic minorities</p> <p>32% single parent families</p> <p>40.5 – M SES score (based on Hollingshead index of social status), indicating a predominantly middle-class sample.</p>	<p>Types of after-school care</p> <ol style="list-style-type: none"> Self/Sibling care Sitter/Relative care Neighbour care Day-care centre School-based program. Activity oriented <p>Time in care included not only afternoon care, but also mornings and evenings.</p> <p>The after-school measures used for this report were only for grades 1, 3 and 5.</p> <p>For each child it was determined whether s/he had either ‘no involvement’ or ‘any involvement’ (at least 1hr/w) with each type of care.</p> <p>The ‘any involvement’ category was subdivided to:</p> <ul style="list-style-type: none"> 1-3 hr/w + 4 hr/w 	<p>The original (Child Development Project) sample was assessed every year from kindergarten to grade 6.</p> <p>Some very general questions pertaining to after-school care had been included in the standard questionnaire pack that was sent to parents each year.</p> <p>However, the bulk of the current assessment is based on detailed home interviews with mothers.</p> <p>Data was collected during the summer at the end of the 5th grade.</p> <p>These data were collected during a guided recall procedure in which the mother was first prompted to recall major life events, and then recall type, and amount, of child care up to the 5th grade.</p> <p>Thus data on care up to the 5th grade were retrospective</p> <p>A 2nd interviewer listens to audiotapes of 12% of the interviews for independent scoring.</p> <p>Teachers’ ratings were collected at the beginning of the academic year. N returned = 428.</p>	<p><i>After School care</i></p> <ul style="list-style-type: none"> Type Hours/week Complexity of care = the no. of childcare settings in which the child was involved each year (max 6) Index of overall involvement in care = the total no, of waking, non-school hours of non-parental care. After-school measures were taken for grades 1, 3 and 5. <p><i>Accuracy of mother’s recall</i> Comparing information provided in the interview with information provided in the standard questioners. The authors say: “Inspection of the patterns of disagreement revealed that the mothers appeared to mention using fewer types of care arrangements in the guided recall interview that they described in the yearly follow-up assessments. Given the fairly large differences in scoring, in breadth of categories, and in assessment format, we interpret these concordances as providing evidence of the meaningfulness of the mothers’ retrospective reports”</p> <p><i>Behaviour problems</i></p> <ul style="list-style-type: none"> Teachers completed the TRF (Teacher’s Report Form). 112-item checklist. The TRF also includes ratings on school performance. The Internalising and Externalising problems summary scores were used in this study. <ul style="list-style-type: none"> Internalising problems scores based on 34 items for both sexes, and consisting of scales indexing withdrawn behaviour, anxious/depressed behaviour, and somatic complaints. Externalising problems scores on 35, consisting of scales indexing aggression and delinquency. Behaviour scores used in this report were those derived from kindergarten teacher’s rating, and grade 6 teacher’s ratings. <p><i>Social competence in peer relations</i></p> <ul style="list-style-type: none"> Teacher Checklist of Peer Relations. A 7-item 5-point scale. These scores were available for kindergarten and grade 6. <p><i>Academic performance</i></p> <ul style="list-style-type: none"> Collected during the springs of grade 6. Based on records compiled for the most recently completed year. An overall average score was calculated across subjects (maths, reading, language art, spelling, social studies and science). 	<p>Links were found between school-aged children’s non-parental after-school care experience and the children’s later behavioural and academic achievement.</p> <p>High amounts of self-care predicted poorer adjustment even after controlling for socio-economic status and prior adjustment</p> <p>Poor adjustment outcomes for self-care were most apparent for children already displaying problem behaviour in kindergarten, and for children not participating in adult-supervised extracurricular activities.</p> <p>The impact of several types of care was moderated by socio-economic status and child sex.</p> <p>Authors concluded that findings underscored the importance of considering ecological context in seeking to understand children’s after school experiences and their role in children’s development.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>2. Pettit, Bates, Dodge & Meece (1999)</p> <p>The impact of after-school peer contact on early adolescent externalising problems is moderated by parental monitoring, perceived neighbourhood safety, and prior adjustment.</p> <p>USA</p> <p>Longitudinal</p>	<p>This study was part of an ongoing Child Development Project.</p> <p>Sampling Birth cohorts (1987, 1988) from 3 different cites (Nashville, Knoxville, Bloomington).</p> <p>Schools considered (by school personnel) representative of each community were selected</p> <p>Recruitment Parents were approached at the time of kindergarten pre-registration.</p> <p>75% of the parents agreed to participate.</p> <p>15% of children attending these schools did not pre-register. The parents of these children where approached on the 1st day at kindergarten.</p> <p>The Subjects</p> <p>N=585 at 1st assessment</p> <p>1st assessment prior to kindergarten. (age 5), then every year through to grade 7 (age 13).</p> <p>3.3% - average attrition per year</p> <p>The current study is based on assessments conducted at the end of the 5th grade, and at grade 6 and 7.</p> <p>N=466 – sample for the initial assessment in this study conducted at the end of year 5.</p> <p>51% boys</p> <p>16% ethnic minorities</p> <p>32% single parent families</p> <p>39.1 – M SES score (based on Hollingshead index of social status), indicating a predominantly middle-class sample.</p> <p>N=342 where used for the main analysis, the children for whom complete data sets were available.</p>		<p>Interviews with mothers (90min). One part focused on different types of after-school care. Another part on parental monitoring and neighbourhood safety</p> <p>Phone interviews (40 min) with children in the winter and spring of grade 6 focusing on children’s after-school experiences.</p> <p>Each child was asked to recall her/his after school experience for the present and preceding day</p> <p>Reporting on preceding day first</p> <p>The Phone interviews took part in the evening Tue-Fri.</p> <p>Teacher’s rating questionnaires - in grades 6 and 7.</p>	<p><i>Parental monitoring</i> A 9-item composite scale was selected for use.</p> <p>Some items adapted from Capaldi & Patterson (1989) some developed specifically for the study.</p> <p>Rating was on a 5-point scale</p> <p><i>Neighbourhood safety</i> Adapted from the Self-Care Checklist.</p> <p>6-items on a 6-point scale.</p> <p><i>Adolescent after-school time use</i> Children phone interviews were coded using a modified version of the Posner and Vandell (1994) Activity Schedule.</p> <p>This instrument was used to:</p> <ul style="list-style-type: none"> Determine the amount of time after-school (broken down to 12, 15 min intervals) the child spent with parents, other adults, or with no adult supervision. Record the reported activities and child’s location for each 15min interval. <p>An activity Schedule was completed for each of the two days, providing 24, 15min intervals (3 hr each day).</p> <p>As an independent verification of adolescents’ time-use reports was obtained via separate interview with the mother.</p> <p><i>Externalising Behaviour problems in grade 6 and 7</i> The child’s teacher completed the 112-item Child Behaviour Checklist-Teacher Report Form.</p> <p>Only the subset of the externalising problems scores was used in this study – 35 items 3-point score.</p>	<p>Unsupervised peer contact, lack of neighbourhood safety, and low monitoring incrementally predicted grade 7 externalising problems, after controlling for family background factors.</p> <p>The greatest risk was for those unsupervised adolescents living in low-monitoring homes and unsafe neighbourhoods.</p> <p>A sig. relation between unsupervised peer contact and problem behaviour in grade 7 held only for those adolescents who already were high in problem behaviour in grade 6.</p> <p>The authors concluded studies of the impact of out of school care need to consider the individual, family and neighbourhood contexts in which care is experienced.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>3. Vandell & Ramanan (1991)</p> <p>Children of the National Longitudinal Survey of Youth: Choices in after-school care and child development.</p> <p>Longitudinal</p>	<p>Sampling The subjects were children to mothers who were part of the NLSY (National Longitudinal Survey of Youth).</p> <p>The NLSY was begun in 1979 as a survey of youth aged from 14 to 21 years. The original sample was identified through a random selection of counties, and enumeration of district-block groups, and a subsequent screening of 75,000 households. In 1986 the survey was broadened to include data from 4,953 children of the original female NLSY respondents.</p> <p>This sample of children in an overrepresentation nationally of children who were born to adolescent, less educate, minority, and economically disadvantaged mothers, and as such may be viewed as 'at risk' for developmental problems.</p> <p>The Subjects All the children who were in 3rd, 4th and 5th grade at the time of the 1986 survey.</p> <p>N=390 199 girls; 191 boys</p> <p>159 – Black 158 – White 73 – Hispanic</p> <p>47% - family income below the poverty line.</p> <p>52% - single parent families</p> <p>Mean age of mother when the child was born = 17 years</p> <p>76% lived in urban area</p>	<p>Types of care</p> <ul style="list-style-type: none"> • Latchkey – home alone, or with a sibling less than 15 years old • Mother care • Other adult care (relative, non-relative, centre) <p>N= 28 – latchkey care N=248 – other adult care N=114 – mother care</p>	<p>Personal home interviews.</p> <p>Interviews for the child sample are carried out in conjunction with the Main NLSY79 interviews (with the mother).</p> <p>The main interviews with mother are conducted yearly; child interviews are carried out every 2 years.</p> <p>For this study only the 1986 survey was used.</p>	<p><i>The Mother Supplement</i></p> <ul style="list-style-type: none"> • Mother questionnaire - for demographic details, and information about childcare. • The HOME short form – quality of the home environment. 26 items scored on a yes/no basis. Items examine the extent to which the home environment provides: <ul style="list-style-type: none"> - Cognitive stimulation - Emotional support • A revised form of the Behaviour problem index – filled by mother. 28 items assessing 6 domain on <ul style="list-style-type: none"> - Peer conflicts - Hyperactivity - Anxiety - Dependence - Antisociability - Being headstrong <p><i>The Child Supplement</i></p> <ul style="list-style-type: none"> • 2 scales of Harter's (1984) Self-Perception Profile of Children – Children were asked how they felt they were doing relative to other children cognitively and generally. • A battery of cognitive assessments: <ul style="list-style-type: none"> - PIAT – the Peabody Individual Achievement Test - PPVT – the Peabody Picture Vocabulary Test - Digit span – the sub-scale of the WISC-R. 	<p>Mother care after school was associated with:</p> <ul style="list-style-type: none"> • Lower family incomes • More poverty • Less emotional support <p>In other areas (child's sex, age, race family marital status, mother's age, and cognitive stimulation) families did not differ in their selection of after-school care.</p> <p>Children in single mother (after school) care had</p> <ul style="list-style-type: none"> • Lower PPVT scores • Higher ratings for antisocial behaviours, anxiety and peer conflicts <p>Latchkey care was associated with more behaviour problems. However, these problems disappeared when family income and emotional support were controlled.</p> <p>The authors concluded additional research should address children's and mother's experiences of low income, low support families and how better access to out of school childcare might influence outcomes for them.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>4. Posner & Vandell (1999)</p> <p>After-school activities and the development of low-income urban children: A longitudinal study.</p> <p>USA</p> <p>Longitudinal</p> <p>Aim</p> <ul style="list-style-type: none"> To identify child and family characteristics that are associated with children's after-school activities. To examine the relations over the 2.5 year period between activities and children's social, emotional, and academic adjustment. 	<p><i>Sampling</i></p> <p>Letters describing the study and asking for demographic details were sent to parents of 3rd graders in 9 elementary schools.</p> <p>These schools were selected because they had high proportions of children who qualified for lunch subsidies.</p> <p>50% of families responded and of these 88% agreed to participate.</p> <p>From the pool of willing respondents:</p> <ul style="list-style-type: none"> All African American families were selected. All family using after-school programs. From the remaining pool, White children were selected using a conditional random stratification plan that ensured equal no. of boys and girls. <p><i>Subjects</i></p> <p>At 3rd grade</p> <ul style="list-style-type: none"> N=216 9.1 – mean age <p><i>Demographics</i></p> <ul style="list-style-type: none"> 48% African American 54% girls 55% single parent 12.8 mean maternal education 61% employed mothers 98% below the median of family income. <p><i>At 5th grade</i></p> <p>For 2.5 years children were followed if they attended any school in the area. By the end of the 5th grade:</p> <ul style="list-style-type: none"> N=194 Enrolled in 46 different 	<p><i>In 3rd grade:</i></p> <ul style="list-style-type: none"> 34 attended formal after school programs. 15 were in self-care. 46 in informal arrangements with relatives or neighbours. 121 in parental care mainly mothers. <p><i>In 5th grade:</i></p> <ul style="list-style-type: none"> 26 in formal after school programs. 17 were in self-care. 30 in informal arrangements with relatives or neighbours. 121 in parental care mainly mothers <p>40% of the children experience at least one change of care during the study period.</p> <p>Only 17 children attended programs all 3 years, and all of those attended a program for 5 d/wk.</p>	<p>Children were followed over 2.5 years.</p> <p>After- school arrangements were monitored during 3rd, 4th and 5th grade.</p> <p>Data collection</p> <p><i>Demographic information</i></p> <ul style="list-style-type: none"> From mother at the outset of the study and every subsequent year. School records - for eligibility of lunch subsidy. 1990 census tract for the neighbourhood household income. The municipal police department for reported crimes. <p><i>Children's reports of their after-school activities</i></p> <p>Phone interviews that were modified from a leave behind, temporally structured diary developed by Carpenter et al. (1989).</p> <ul style="list-style-type: none"> 3 interviews in 3rd grade. 5 interviews in 4th and 5th grade. Interviews were at least 6 weeks apart. The interviews covered the time between school dismissal and 6 to 6.30. Interviews were conducted in the evening (6.30 – 8.00). Children whose families did not have a phone were interviewed at school. A standard set of questions was used to ascertain: <ul style="list-style-type: none"> The primary activity for each 15-min interval during the targeted period. Who else was present in the location. 	<p><i>Academic grades</i></p> <ul style="list-style-type: none"> Obtained from school records. 5 grades were obtained for: reading, maths, social studies, science, and language. An overall grade average was computed <p><i>Teachers reports of child behaviour</i></p> <p>Ratings of work habit and emotional well-being were based on 2 subscales of the Child Adjustment Scale (5-point scale).</p> <ul style="list-style-type: none"> The 7-item Work Habit Scale. The 9-item Emotional Well Being Scale. <p><i>Parent reports of child behaviour.</i></p> <p>Using the Antisocial Behaviour subscale (3-point scale) of the Behaviour Problem Index.</p>	<p>The 1st set of analyses examines the relationship between child and family characteristics and after-school arrangement.</p> <p>The 2nd set of analyses looks at the relationship between after-school arrangements and children's adjustment.</p> <p><i>Variables associated with children's after school activities:</i></p> <p>Various ANOVAs, t-tests and linear trends were carried out.</p> <ul style="list-style-type: none"> African American children spent more time in transit after school. Girls were more likely to engage in academic activities and socialising, whereas boys were more likely to play coached sports. Only in the white sample – children in single parent families spent more time in outside, unstructured activities. Socialising time increased from 3rd to 5th grade. Only in African American sample: <ul style="list-style-type: none"> Time in non-sport activities increased between 3rd and 5th grades; time spent in transit decreased; and TV watching peaked at 4th grade. Children who attended after-school programs spent more time on academic and extracurricular activities. Children in informal care spent more time watching TV and hanging out. <p><i>Children's prior adjustment and their subsequent time in activities.</i></p> <p>Partial correlations were used.</p> <ul style="list-style-type: none"> Time spent in activities between 3rd and 5th grade was related to children's adjustment in 5th grade. Child adjustment measured in 3rd grade was associated with time in different activities in 5th grade. African American children who had obtained better academic grades and/or were better adjusted emotionally as 3rd graders were:

	<p>schools.</p> <ul style="list-style-type: none"> Family demographics were the same. <p>Sig demographic differences between White and African American children.</p> <p>White children were more likely to:</p> <ul style="list-style-type: none"> Reside in two-parent families. Have employed mothers. Have higher family income. <p>African American children were more likely to live in neighbourhoods with:</p> <ul style="list-style-type: none"> Higher rates of reported crimes. Lower median income. 		<ul style="list-style-type: none"> Who, if anyone was doing the activity with the child. Spot check calls were made during the afternoon to evaluate the accuracy of children's recall. These were then cross-referenced with 12% of 3rd grade interviews, 15% 4th grade interview and 18% 5th grade interviews. Agreement was 85%, 65% and 75% respectively. Interviewer reliability was determined on 29% of random calls for 3rd graders, 25% for 4th graders, 17% for 5th graders. 		<ul style="list-style-type: none"> More likely to engage in extracurricular activities in 5th grade. Less likely to spend time in outside unstructured activities. White children who had better grades at 3rd grade, or had better work habits were more likely to engage in academic activities after school at 5th grade. Children who were better adjusted emotionally at 3rd graders were more likely to engage in extracurricular activities in 5th grade. <p><i>Children's cumulative time in activities and their adjustment in 5th grade.</i></p> <p>Partial correlations.</p> <ul style="list-style-type: none"> African American children received higher academic grades in the 5th grad when they spent less cumulative after-school time playing coached sports and more time socialising. They were also better adjusted emotionally in the 5th grade if they spent more time in extracurricular activities in the previous 3 years. White children who spent more time in unstructured activities between 3rd and 5th grades received poorer academic grade; lower teacher ratings of emotional adjustment and work habits; and higher mother-reported behaviour problems in 5th grade.
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STUDY	POPULATION	DESIGN (Data collection)	DESIGN (Variables)	MEASURES	RESULTS
<p>5. NICHD (1998)</p> <p>Early child care and self-control, compliance, and problem behaviour at 24 and 36 months</p> <p>USA</p> <p>Longitudinal</p> <p>Aim- To examine multiple features of care and their effects on the child social development.</p>	<p>Sampling Expecting mothers were recruited from hospitals in or near Little Rock, during selected 24hr sampling periods in 1991.8,986 women were visited in the hospitals of them 5,416 made the eligibility criteria for the study.</p> <p>A subset of gp selected according to conditional-random sampling plan designed to ensure participating families reflected the demographic diversity of the catchment area:</p> <ul style="list-style-type: none"> - 10% mother did no graduate from high school. - 10% single mothers - 10% ethnic minorities <p>When infants were 1 mth old 1,364 families were enrolled in the study.</p> <p>Demographics:</p> <ul style="list-style-type: none"> - 53% mothers were planning to work full time. - 23% part time - 24% s home for the 1st year - 24% ethnic minority gps. - 10% did not finish high sch - 14 % single mothers <p>Exclusion criteria:</p> <ul style="list-style-type: none"> - Mother under 18 - Mother not conversant in English - Family planned to move - Child was hospitalised for more than 7 days - History of substance abuse. <p>At age 2 data was collected of 1,085 children and at 3 from 1,041.</p> <p>Compared with non-participants from the originally sample, participants:</p> <ul style="list-style-type: none"> - Came form higher income-to-needs ratios (2.88 vs 2.01) had more educated mothers (14.4 vs 13.2) - more two-parent families (78% vs 27%) - who identified themselves as white not Hispanic (78.51% vs 63.78%) - mothers scored higher on measure of maternal psychological adjustments. 	<p>Data was collected between 1-36 months of age.</p> <p>Demographics info.</p> <ul style="list-style-type: none"> - At 1 month - Mothers completed questionnaires during a home visit. <p>Childcare usage</p> <ul style="list-style-type: none"> - At 3 months intervals via the phone - 1, 6, 15, 24, 36 months through face-to-face contact with mothers <p>Observations of non- maternal care + Interviews with caregivers:</p> <ul style="list-style-type: none"> - 6, 15, 24, 36 months: <p>Children's behavioural functioning:</p> <ul style="list-style-type: none"> - At 24, 36 months - In the lab and at home <p>Mother's psychological functioning; mother-child interactions; and quality of home environment:</p> <ul style="list-style-type: none"> - At 15, 24, 36 moths - In the lab and at home 	<p>Variables presented in the order in which they were entered into analyses.</p> <p>1. Covariates - selection effects</p> <p>A. Income-to-needs ratio family income divided by poverty threshold.</p> <p>B. Mother's psych. adjustments - NEO personality Inventory + 0 CES-D.</p> <p>2. Predictors</p> <p><i>Child temperament</i> 55 6-point items from a Infant Temperament Questionnaire administered at 6 months.</p> <p><i>Positive maternal behaviour</i></p> <p>a. Videotaped episodes of mother-child interaction (in the home at 6, 15 m, or in the lab at 24, 36 m) were coded to derive a number of scores.</p> <ol style="list-style-type: none"> i. At 15 m – 4-point rating for sensitivity to non-distress; positive regard; and intrusiveness. ii. At 24 m – negative regard was included iii. At 36 m – addition of 3 7-point ratings of supportive presence; respect for autonomy; hostility. <p>b. HOME – the Home Observation measurement of the environment taken at home at 6, 15, 36 m. Factor analysis of the HOME was conducted at each age and only the 1st factor was retained for analysis. Variable with loadings greater than 0. 4 were summed at each age of measurement.</p> <p><i>Attachment security</i> Ainsworth and Witting (1969) Strange situation procedure.</p> <p>3. Child Care characteristics <i>Age of entry into care.</i> At least 10 hr/w.</p> <p><i>Quantity</i> - 0 hr/w</p>	<p>Child outcome measures This information for most of the following was obtained at both 24 and 36 months</p> <p><i>Maternal and caregiver reports of behaviour problems and social competence</i></p> <ol style="list-style-type: none"> a. The Child Behaviour Checklist – 2/3 (a 99 item inventory). Mother and caregiver (if in care for more than 10 hr/w) were both asked to rate the child's behaviour over the past 2 months. b. The adaptive Social Behaviour Inventory. <p><i>Laboratory assessments</i></p> <ol style="list-style-type: none"> a. The clean-up task- a 5 min video clip of mother child tidying up after a 14 min play session. Child behaviour rated on a 5-point scale for: <ol style="list-style-type: none"> i. Compliance ii. Assertive non-compliance iii. Positive non-compliance iv. Dyadic co-operation v. Negative affect b. The Bayley Scale for Infant Development. c. Compliance with Bayley Test examiner (24 mth only). After administering the 10 min test, the examiner asked the child to pass him a toy. 2 types of compliance scored: <ol style="list-style-type: none"> i. Willingness to attempt the task ii. The child's response to the request. d. The Forbidden toy task (36) Resistance to temptation. A brief play period, 2.5 min of not being allowed to play with one particular toy (videotaped), then being allowed to play with the toy. <ol style="list-style-type: none"> i. Active engagement time. ii. Minimal engagement time. e. The 3 boxes interaction procedure. Active, off-task child behaviour, coded on a 4-point scale. <ol style="list-style-type: none"> i. Activity level ii. Sustained attention iii. Negative mood <p><i>Child-care observations</i> Child behaviour in care was collected as part of the ORCE.</p> <ol style="list-style-type: none"> a. Coded behaviours <ol style="list-style-type: none"> i. Negative social interaction ii. % complies iii. Autonomous self assertion iv. % defies b. Ratings of several aspects of children's behaviour. <ol style="list-style-type: none"> i. Negative mood ii. Sustained attention iii. Activity level 	<p>Data reduction Two sets of principle factor analyses:</p> <ol style="list-style-type: none"> a. Maternal reports – 5 factors extracted: <ol style="list-style-type: none"> i. Cleanup comply ii. Mother-reported problems iii. Mother-reported social competence iv. Cleanup defy v. Three box negative b. Laboratory assessments – 2 factors extracted: <ol style="list-style-type: none"> i. Caregiver-reported problems ii. Child-care non-comply <p>Solutions at the two ages were quite similar.</p> <p>Validating composite DV Examine each DV for evidence of external validity (i.e. that id sig. covaries with at least 3 of the 6 external correlates. 11 DV's were included in the final analysis</p> <ol style="list-style-type: none"> a. At 24 months: <ol style="list-style-type: none"> i. Cleanup defy ii. Mother-reported probs. iii. Mother-reported social competence iv. Three box negative v. Caregiver-reported probs. vi. Child-care non-comply b. At 36 months: <ol style="list-style-type: none"> i. Mother-reported probs. ii. Mother-reported social competence iii. Cleanup comply iv. Three box neg./resist v. Caregiver-reported probs. <p>Cumulative childcare effects <i>At 24 months</i> The lower the quality of care the more problem behaviour and the less social competence.</p> <p>Later entry to care assoc. with more problems reported by caregiver.</p> <p>Less stable child-care arrangements assoc. with more problem behaviour but less non-compliance in care.</p> <p>More time in group-type care assoc. with more compliance in the lab and less non-compliance in care. Mother-reported problems and social</p>

			<p><i>Stability</i> No. of different child care arrangements.</p> <p><i>Group type of primary care</i> A child is in a gp care if s/he is in care (home or centre) with at least 3 other (non-sibling) children.</p> <p><i>Quality</i> ORCE – A 44-min observation cycle which was specifically designed for this study. At each age of measurement, each study child was observed on 2 days for a total of 4 44-min cycles. Two composite measures of quality were created:</p> <p>a. The Positive Caregiving Frequency.</p> <p>i. At 6 months - 9 categories: – shared positive affect, positive physical contact, responds to vocalisation, asks questions, other talk to infant, stimulates infant’s development, facilitates behaviour, reads to infant.</p> <p>ii. At 15, 24, 36 m – 5 additional categories: positive talk; restricts child activity; negative talk; negative physical contact; child unoccupied.</p> <p>b. Positive caregiving Rating –</p> <p>i. At 6,15, 24 - summing of 5 qualitative ratings made at the end of each observation child: sensitivity; responsiveness to non-distress; positive regard; stimulation of cognitive development; detachment; flat affect.</p> <p>ii. At 36 m – two additional categories were added: fostering exploration; intrusiveness.</p>		<p>competence became less sig. When family variables were controlled.</p> <p>Child and family factors accounted for sig. variance in some of the other outcomes:</p> <p>More economically and psychologically advantaged mothers reported fewer behaviour problems and described their infants as having easier temperament, and as being more socially competent.</p> <p>Girls were characterised by mother as more socially competent than boys were.</p> <p>More positive mothering was assoc. with less problem behaviour and with more compliance with mother in the lab.</p> <p>2-year-olds with secure attachment histories were more compliant during cleanup.</p> <p><i>At 36 months</i> Better quality childcare – children more co-operative and compliant with mother; less negative in interaction with mother and more able to resist the forbidden toy; and according to caregivers exhibit fewer behaviour problems.</p> <p>Children with more group-type care- less negative during the 3 box play; more able to resist forbidden toy; fewer behaviour problem in care.</p> <p>For al but one of these DV, the sig. effect of the child care block was no longer sig. onc4e family variables w3re controlled, suggesting that effect of child-care quality maybe mediated by family processes.</p> <p>Child and family factor contributed in the same way as they did in the previous section.</p> <p>In view of the modest effects of childcare in the commutative-experience analyses, the authors carried out a few additional analyses to address the issue of age specific effects.</p> <p>They themselves qualify this approach as “exploratory and even opportunistic model-building approach” so I will not get into it.</p>
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STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>6. NICHD (1999)</p> <p>Childcare and mother-child interaction in the first 3 years of life.</p> <p>USA</p> <p>Longitudinal</p> <p>Aim- To investigate the association between the amount, quality, and stability of childcare and mother-child interaction when children were 6, 15, 24 and 36 m old.</p>	<p>Sampling Expecting mothers were recruited from hospitals in or near Little Rock, during selected 24hr sampling periods in 1991.8,986 women were visited in the hospitals of them 5,416 made the eligibility criteria for the study.</p> <p>A subset of this gp was selected according to a conditional-random sampling plan designed to ensure that the participating families reflected the demographic diversity of the catchment area:</p> <ul style="list-style-type: none"> • 10% mother did no graduate form high school. • 10% single mothers • 10% ethnic minorities <ul style="list-style-type: none"> • When infants were 1 m old 1,364 families were enrolled in the study. <p>Demographics:</p> <ul style="list-style-type: none"> • 53% mothers were planning to work full time. • 23% part time • 24% s home for the 1st year • 24% ethnic minority gps. • 10% did not finish high sch • 14 % single mothers <p>Exclusion criteria:</p> <ul style="list-style-type: none"> • Mother under 18 • Mother was not conversant in English • Family planned to move • Child was hospitalised for More than 7 days • History of substance abuse. <p>Mother-child interaction data collected when the children</p>		<p>Data was collected between 1-36 months of age.</p> <p>Demographics info.</p> <ul style="list-style-type: none"> • At 1 month • Mothers completed questionnaires during a home visit. <p>Childcare usage</p> <ul style="list-style-type: none"> • At 3 months intervals via the phone. • 6, 15, 24, 36 months through face-to-face contact with mothers <p>Observations of non- maternal care + Interviews with caregivers:</p> <ul style="list-style-type: none"> • 6, 15, 24, 36 months: <p>Children's behavioural functioning:</p> <ul style="list-style-type: none"> • At 24, 36 months • In the lab and at home <p>Mother's psychological functioning; mother-child interactions; and quality of home environment:</p> <ul style="list-style-type: none"> • At 6, 15, 24, 36 moths • In the lab and at home 	<p>1. Mother-child interaction measures</p> <p>a. Videotaped episodes of 15- min mother-child interactions (in the home at 6, 15 m, or in the lab at 24, 36 m) were coded to derive a number of scores.</p> <ul style="list-style-type: none"> • At 15 m – 4-point rating for sensitivity to non-distress; positive regard; and intrusiveness. • At 24 m – negative regard was included • At 36 m – addition of 3 7-point ratings of supportive presence; respect for autonomy; stimulation to cognitive development, hostility. <p>b. Child behaviour rating scales (4-point scale)</p> <ul style="list-style-type: none"> • At 6, 15 and 24 m – positive mood, negative mood, activity level, sustained attention, sociability to others (at 6 m only). • At 36 m – enthusiasm, negativity, persistence and affection to mother. <p>A-priori composites of maternal care and child engagement of mother were formed from the individual ratings were.</p> <p>Stability of DV's over time were measured using correlations. Correlations between mother sensitivity at the different ages were, and correlations between child engagement at different ages were highly sig., but in the latter case they did not indicate strong relations.</p> <p>Correlation between mother sensitivity and child engagement were moderately strong, nevertheless the authors examined maternal & child behaviour in different analysis.</p> <p>2. Childcare predictors</p> <p><i>Quantity</i> – 0 hr/w</p> <p><i>Stability</i> No. of different child care arrangements.</p> <p><i>Group type of primary care</i> A child is in a gp care if s/he is in care (home or centre) with at least 3 other (non-sibling) children.</p> <p><i>Quality</i> ORCE – A 44-min observation cycle which was specifically designed for this study. At each age of measurement, each study child was observed on 2 days for a total of 4 44-min cycles. Two composite measures of quality were created:</p> <p>a. The Positive Caregiving Frequency.</p> <ul style="list-style-type: none"> • At 6 months - 9 categories: – shared positive affect, positive physical contact, responds to vocalisation, asks questions, other talk to infant, stimulates infant's development, facilitates behaviour, reads to infant. • At 15, 24, 36 m – 5 additional categories: positive talk; restricts child activity; negative talk; negative physical contact; child unoccupied. <p>b. Positive caregiving Rating –</p> <ul style="list-style-type: none"> • At 6,15, 24 - summing of 5 qualitative ratings made at the end of each observation child: sensitivity; 	<p>Controlling for selection, chil, and family variables the relations between feature of child car and mother-child interactions at the various ages were analysed by means of a repeated measures general linear mixe-model analysis.</p> <p>Childcare and mother-child interaction in the whole sample. More hours in care predicted less maternal sensitivity and less positive child engagement (at the block level).</p> <p><i>The no. of hours in care was not differentially related to maternal sensitivity (or positive engagement) at the 4 time periods.</i> (at the block level).</p> <p>Sig. effects within the selection, child ,and family blocks of variable indicated that mothers were more sensitive when:</p> <ul style="list-style-type: none"> • Families had greater income-to-needs ratios. • Mother were more educated. • Children were female and were described as having easier temperament. • They were less depressed and had less separation anxiety. • Married or living with a domestic partner. <p>The within block analysis for <i>child positive engagement</i> were exactly the same as above.</p> <p>Childcare and mother-child interaction in the sample observed in childcare.</p> <ul style="list-style-type: none"> • Higher quality of care predicted greater maternal sensitivity. • More hours in care predicted less child engagement.

	<p>were 6, 15, 24 and 36 m old were available for 1,272, 1,240, 1,150, 1,139 respectively.</p> <p>Compared with families with at least 1 observation of mother-child interaction, those who dropped out:</p> <ul style="list-style-type: none"> • Had lower maternal education. • Had higher separation anxiety. • More likely to be without a partner. • More likely to be African America. <p>Compared to parents who completed all 4 observations of mother-child interactions, those who were missing 1-3 observations:</p> <ul style="list-style-type: none"> • Had less income • Less maternal education • More maternal symptoms of depression and separation anxiety • Perceived their infants to be more difficult • Were more likely to be single • More likely to be ethnic minority. <p>Children who spent 10, or more hr/w in care, were eligible to be observed in care. Of those eligible:</p> <ul style="list-style-type: none"> • 78.6% were observed at 6 m • 77.4% at 15m. • 85.8% at 24 m. • 90.3% at 36 m. 			<p>responsiveness to non-distress; positive regard; stimulation of cognitive development; detachment; flat affect.</p> <ul style="list-style-type: none"> • At 36 m – two additional categories were added: fostering exploration; intrusiveness. <p>1. Covariates</p> <p>a. Income-to-needs ratio family income divided by poverty threshold.</p> <p>b. Child temperament 55 6-point items from a Infant Temperament Questionnaire administered at 6 months.</p> <p>c. Marital status</p> <p>d. Maternal depressive symptoms.</p> <p>e. Maternal separation anxiety. Both d, & e measured by the NEO personality Inventory + 0 CES-D.</p>	<p>Within block analysis for:</p> <ul style="list-style-type: none"> • Mother sensitivity – same as above but without the child’s gender effect. • Child positive engagement – without the spouse effect. <p>Type of care (dummy coded) did not change the findings.</p>
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STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>7. Baydar & Brooks-Gunn (1991)</p> <p>Effects of maternal employment and child-care arrangements on pre-schoolers' cognitive and behavioural outcomes: Evidence from the children of the national Longitudinal Survey of Youth (NLSY)</p> <p>USA</p> <p>Retrospective; Birth cohort</p> <p>Aim – to examine the effects of maternal employment and childcare arrangement on cognitive and behavioural outcomes at ages 3-4 years old.</p>	<p>Sampling: NLSY data (1,181 total sample)</p> <p>S = 572</p> <p>White (the authors excluded blacks and Hispanics)</p> <p>3-4-year olds</p> <p>49.9% girls</p> <p>58.1% first born</p> <p>Maternal Characteristics: 21.4 – mean age at birth</p> <p>22.2% under 20 at time of birth</p> <p>11.8 – mean years in education</p> <p>27.3% did not complete high school</p> <p>84.5% were married at the time of the 1st survey</p>	<p>Maternal employment in the first 3 years of life: timing of entry into work</p> <p>Continuity and intensity of maternal employment in the first year of life.</p> <p>Child care arrangements</p> <ul style="list-style-type: none"> - Mother - Father - Grandmother - Other relative - Non-relative - Centre 	<p>Variables</p> <p>1. Employment (hr/week) for each of the 3 years</p> <ul style="list-style-type: none"> - Not employed - 1- 10 - 11-20 - More than 20 <p>2. Employment commenced in</p> <ul style="list-style-type: none"> - 1st year - 2nd year - 3rd year <p>3. Any employment for more than an hour during the 2nd or 3rd year.</p> <p>4. Mixed employment</p> <p>5. Mean work hours per week at each quarter of the 1st year.</p> <p>Covariates:</p> <ul style="list-style-type: none"> - Gender - Birth order - Marital status - Poverty status - Age of mother - Education of mother - Mean AFQT (Armed Forces Qualification test) score 	<p>PPVT-R (Peabody Picture Vocabulary Test – Revised)</p> <p>BPI (Behavioural Problem Index) Only administered to the 4 year olds; 2 items referring to school behaviour were excluded.</p>	<p>The differences between the means of the PPVT-R and the BPI scores of children whose mothers were employed or unemployed during the 1st year of life were not sig.</p> <p>The authors tested various regression models (11 in total). Only the sig. results are reported.</p> <p>The magnitude of the effect of maternal employment during the 1st year exceeds the effect of other patterns of entry. (Employment in the 1st year had detrimental effects on both PPVT and BPI)</p> <p>More hr/week in employment the more negative effect for the child.</p> <p>The relationship between timing of entry and outcomes was not linear. Entry in the 2nd quarter was more detrimental than entry in the 1st. Generally entry in the 4th quarter was better than the first 3.</p> <p>Grandmother' care was most beneficial for <i>cognitive development</i> of children in poverty.</p> <p>As for <i>behavioural development</i>, mother care was most beneficial care for boys; babysitter was most beneficial care for girls.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>8. Vandell, Henderson & Wilson (1988)</p> <p>A longitudinal study of children with day-care experiences of varying quality.</p> <p>USA</p> <p>Longitudinal – it was a follow-up of a 1993 study – do not have the paper</p> <p>Aim – To examine possible longer-term consequences of day-care quality.</p>	<p>N=20</p> <p>10 girls (in a table later on, it appear that there were 11 girls)</p> <p>4-year olds – 1st observed 8-years-old – final observation</p> <p>Middle class</p> <p>12 children in good quality care at age 8.</p> <p>N=15 – parents are married. N=5 – parents remarried or divorced.</p> <p>N=13 – started child-care under 1 year of age. N=7 – over a year-old.</p> <p>Current after school arrangement:</p> <ul style="list-style-type: none"> • 4 return home to mum • 2 home alone • 14 adults supervision. 	<p>6 centres</p> <p>3 good quality – not profit 3 poor quality – proprietary</p> <p>In the initial study (at age 4) the centres were classified into good, moderate and poor quality. The moderate category was eliminated this time due to sample being smaller.</p> <p>Quality dimensions</p> <ul style="list-style-type: none"> • More trained staff • Better materials • Better adult/child ratios • Lower enrolment • Smaller classes 	<p>At age 4 16-min observations of unstructured, indoor free play.</p> <p>Behaviours observed for 20s intervals and recorded over 15s intervals.</p> <p>At age 8 Videotapes of a 45-min triadic play session in a lab play room.</p> <p>Video-cameras were concealed</p> <p>Triads were composed of one child from each day care quality gp (good; moderate; poor).</p> <p>If that weren't possible, other 8-year-olds of the community were used.</p> <p>A triad was never composed of 2 children from the same quality day-care.</p> <p>8 triads were videotaped.</p> <p>4 triads were composed strictly of children who were subjects in the follow-up study.</p>	<p>At age 4</p> <ul style="list-style-type: none"> • Positive/negative interactions with peers. • Positive/negative interactions with adults • Solitary play • Unoccupied behaviours. <p>At age 8 <i>Tasks</i></p> <ul style="list-style-type: none"> • A 15-min co-operative task – children worked together to build a Lego model. • A 15-min free play. • A 10-min of competitive game. • A 5-min conflict resolution task – children were to divide coins (1 quarter, 3 nickels, 3 pennies) among themselves. <p>The above sessions were coded using a 15 s checklist of the following behaviours:</p> <ul style="list-style-type: none"> • Friendly interactions • Unfriendly interactions • Solitary play <p>Observers were blind the children's day-care history.</p> <p>IN ADDITIONS - The videotapes of the above sessions were observed (by different observers) and each child rated (at the end of the recording session) on a 5-point Likert-type scale assessing:</p> <ul style="list-style-type: none"> • Social competence with peers • Positive affect • Ability to handle frustrating situations • Empathy • Acceptance by peers • Self-esteem • Ability to negotiate conflict • Impulse control <p><i>Mother's ratings</i></p> <ul style="list-style-type: none"> • A questionnaire outlining <ul style="list-style-type: none"> - Demographic information. - Day-care history • A 28-item 5-point scale. Scores for: <ul style="list-style-type: none"> - Peer relationships - Compliance - Task orientation - Emotional well being. <p><i>Peer ratings</i></p> <p>Children were interviewed individually, and asked to nominate which of the triad members best fits the following description:</p> <ul style="list-style-type: none"> - Co-operative - Disruptive - Shy - Fights - Leader <p>2 points was a the max score.</p>	<p>Social class was determined using a principal components analysis of 4 variables:</p> <ul style="list-style-type: none"> • Maternal and paternal education. • Maternal and paternal occupational status defined by the Hodge-Siegel-Rossi Index. <p>Family social class was higher in families that selected better quality care, although all families could be classified as middle class.</p> <p>Hierarchical regressions were used to determine the effect of day-care quality after removing the effect of family social class.</p> <p><i>Children from better quality day-care centres:</i></p> <ul style="list-style-type: none"> • Had more friendly interactions and fewer unfriendly interactions with peers; • Were rated as more socially competent and happier; • Received fewer 'shy' nominations from peers. <p><i>There was sig. continuity between behaviours at 4 and behaviours at 8</i></p> <ul style="list-style-type: none"> • Positive interaction with adults at 4 was positively related to ratings of empathy, social competence, and peer acceptance at 8. • Unoccupied behaviour at 4 was negatively related to rating of empathy, conflict negotiation, and social competence at 8.

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>9. Howes (1988)</p> <p>Relations Between Early Child Care and Schooling</p> <p>USA</p> <p>Longitudinal study</p> <p>Aim - Examine the relationship between aspects of early childcare and school adjustment.</p>	<p>Sampling: a laboratory elementary school.</p> <p>87 children (46 girls)</p> <p>45-57 months old pre-intervention</p> <p>69% white; 13% Hispanic; 12% black; 6% Asian-children were selected to attend the school on the basis of the demographic distribution of the US.</p> <p>The children attended 81 different day care centres prior to attending school.</p> <p>Family demographics:</p> <ul style="list-style-type: none"> - 70% - 2-parent families - 14 years – 0 of maternal education. 	<p>Children attended a half-day mixed kindergarten and kindergarten program for 2 years and then graduated to a full day 1st grade.</p> <p>Class size: 25-30</p> <p>2 members of staff.</p>	<p>Predictors</p> <p>Child care:</p> <ul style="list-style-type: none"> - age at entry - length of day - no. of different childcare arrangements <p>Quality of care:</p> <ul style="list-style-type: none"> - staff qualification - gp size (Ξ25) - low (1:8) ratio; - individualised educational program - adequate physical space. <p>Family characteristics:</p> <ul style="list-style-type: none"> - maternal education - status (1/2 parents - maternal employment 	<p>Childcare: a questionnaire.</p> <p>Quality of care was assessed by 2 childcare consultants. For this measure only the last childcare arrangement was used.</p> <p>Family characteristics: taken from pre-enrolment and 1st grade forms.</p> <p>School adjustments at the end of 1st grade:</p> <ul style="list-style-type: none"> - academic achievement (rated by the teacher on a 1-3 point scale) - School skills (17-item questionnaire, also rated by teacher. - The Achenback and Edelbrock CBP (Child behavioural Profile), completed by parents. 	<p>15 children left school between enrolment and 1st grade.</p> <p>A correlation was carried out to examine the relationship between childcare and family characteristics. Correlation's were computed separately for girls and boys</p> <p>Children who had</p> <ul style="list-style-type: none"> - A working mother or - A single mother <p>were more likely to</p> <ol style="list-style-type: none"> 1. enter care at an earlier age 2. enrol in more than one care arrangement 3. attend a full day program 4. no relation with quality of care <p>1 2 and 3 (above) were true for children who had highly educated mothers, however, these children were not more likely to attend a full day.</p> <p>Multiple regression was used to examine the relationship between school adjustments and early childcare when family variables are controlled. (family variables entered as block and childcare characteristics step-wise)</p> <p>Academic skills were predicted by stable childcare in girls; and by stable and high quality childcare in boys.</p> <p>After family characteristics were accounted for, academic progress, school skills and low behaviour problems in both sexes were predicted by high quality stable child care.</p> <p>They also used a number of t test to assess a number of more specific questions but found no sig. differences.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>10. Howes, Matheson & Hamilton (1994)</p> <p>Maternal, teacher, and child care history correlates of children's relationships with peers.</p> <p>USA</p> <p>Longitudinal</p> <p>Aim – Examine the relationship between</p> <ul style="list-style-type: none"> • Maternal attachment security and children's social competence with peers, and • Children's security with their childcare teachers and their social competence with peers. 	<p>N=84</p> <p>0 – 4-years-old (N=94 at 0)</p> <p>41 Girls</p> <p>White European -American</p> <p>Middle class</p> <p>2-parent families</p>	<p><i>Entry into child care</i></p> <ul style="list-style-type: none"> • 30 children entered childcare as infants: M age=5.4 m; 14 girls. 1st observed at M age=20.8 m; and again at 4 M age=50.3 • 7 as young toddlers: M age=18.7 m; 3 girls. 1st observed at 23.3; and again at 4 M age=50.4 • 37 as older toddlers: M age=32.7 m; 19 girls. 1st observed at M age=38.9 m; and again at 4 M age=50.3 • 10 as pre-schoolers: M age=40.5 m; 5 girls. Observed once at 52.5 months. <p>Childcare arrangement</p> <p><i>Toddlers</i></p> <ul style="list-style-type: none"> • 76% of the children observed as toddlers were in family day-care homes. Many of which were unlicensed. The remainder were in day centres. • 4.2 = M adult/child ratio. <p><i>3-years-old</i></p> <ul style="list-style-type: none"> • 91% of children observed at 3-year olds were in childcare centres. • 5.5 = M adult/child ratio. • 3.9 = M ECERS (Early Childhood Environmental Rating Scale) score. The ECERS assesses quality of care. A 7-point scale. A rating of 3 indicates minimally acceptable quality, 5 very good quality. <p><i>4-year-old</i></p> <ul style="list-style-type: none"> • 84% of children were at centre care. • 6.2 = M adult/child ratio. • 4.2 = ECERS score. 	<p>Variables</p> <ol style="list-style-type: none"> 1. Maternal attachment - 2 levels: <ul style="list-style-type: none"> - At 12 months - At 48 months. 2. Teacher-child relationship – 2 levels <ul style="list-style-type: none"> - Upon entry - At age 4. 3. Social competence assessed at age 4 – 2 levels: <ul style="list-style-type: none"> - Familiar setting – at the care centre - Unfamiliar setting – in a 2-hour long playgroup. <p>All observers were blind to the hypothesis.</p> <p>Different observers collected the toddler, 3-year-old, 4-year-old and playgroup data.</p>	<ol style="list-style-type: none"> 1. Maternal attachment <i>At 12 months</i> Strange Situation procedure: 62% secure, 22% avoidant, 13% ambivalent, 6% disorganised. <i>At 48 months</i> Mother-child reunion after a 2-hour play with unfamiliar peers in unfamiliar setting. Carol Rodning assessed the mother-child attachment. 2. Teacher-child relations The Waters and Deane (1985) Attachment Q-Set was used Teachers and children were observed by 2 observers for 8 hrs. 3. Social competence <i>Behaviour staples</i> 3 5-min observations 20 min apart for both familiar and unfamiliar settings. Each time sample was broken into 15 20 sec intervals. 4 variables were derived from these observations: <ul style="list-style-type: none"> • Observed gregarious • Complex play • Hostile aggression • Instrumental aggression. <i>Californian Child Q-Set</i> This scale was completed by the teacher and age 4. Scores on this test are associated with receiving peer visual attention and sociometric status. For their analysis, the authors used both individual item scores and scores for ego-resiliency and ego-control. Ego –resiliency and ego-control scores were derived by correlating raw item scores with criterion sorts provided by Block & Block (1980a) for each construct. <i>Sociometric interview</i> At the end of the play group session Picture sociometric interview were collected. Children were shown pictures of all other children and were asked to rate how much they would like to have each child as a friend. Children then sorted pictures into 'a lot', 'some', 'not at all'. A child in the 'a lot' bowl would receive 3 points, 2 for 'some' and 1 for 'not at all'. 	<ul style="list-style-type: none"> • Relationship with both initial and 4-years-old teachers was related to social competence with peers. • Maternal attachment relationships at 12 m and 4 years did not predict social competence with peers.

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>11. Lamb, Hwang Broberg & Bookstein (1988)</p> <p>The effects of out-of-home care on the development of social competence in Sweden.</p> <p>Swedish</p> <p>Longitudinal</p> <p>Aim – As stated in the title.</p>	<p>Sampling Names of parents on the waiting lists for childcare facilities were obtained from municipal authorities in all areas of the city of Goteborg.</p> <p>Children’s characteristics in the sample group were compared with those of a representative sample of 10% of all 10-24 –m-old In Goteborg.</p> <p>The groups only differed in that children in the family day care gp had parent who had sig. Higher Hollingshead scores, and mothers of children in this gp were also sig. older.</p> <p>Subjects N = 140</p> <p>70 girls</p> <p>First born</p> <p>Initial assessment 11-24 m.</p> <p>2-parent families</p>	<p>Centre day care n=53</p> <p>Family day care n=33</p> <p>Homecare n=54</p>	<p>Initial assessment at 16 m. then 3, 12 and 24 m later.</p> <p><i>Initial assessment a 16 m</i> Done over two visits</p> <ul style="list-style-type: none"> • Demographic details. • A baseline measure of children’s characteristics and social style prior to enrolment in care. • Assessment of stranger sociability • A 30 min observation of child interacting with a peer of similar age. • Rating of the quality of home care. <p>6 weeks later</p> <ul style="list-style-type: none"> • Quality of childcare facilities. <p>The same measures were taken 12 m and 24 m later.</p> <p>15% of the sessions were conducted by 2 observers.</p>	<p><i>Child characteristics</i> The IBQ – a standardised parent report measure of infant temperament. An 87 items yielding scores on a 6-point scale.</p> <p><i>Family and home</i></p> <ul style="list-style-type: none"> • Maternal & paternal Hollingshead scores – weighted sums of education and occupation. Range 8-66. • The HOME inventory – 45 items measuring the amount of stimulation in the home environment. The inventory yields scores on 6 subscales and a total score. The authors used only the total score in their analyses. • In phase 3, observers completed 4 subscales of the preschool version of HOME, which was more appropriate for the age of the children at that time. • Belsky & Walker checklist to assess quality of care obtained at home. This includes 13 positive and 7 negative events, and the observer notes whether each occurred at least once during a 3-min sample unit. The environment was sampled 3-4 times per occasion and scores were averaged. <p><i>Support</i> 24 questions were asked of both parents about the contacts and support received from relatives, friends, and neighbours. Mothers and fathers responses were used to create independent composite scores based on conceptual relatedness, and internal coherence of the scales was later assessed. Items with coefficients smaller than 0.30 were dropped.</p> <p><i>Child personality</i> Children’s scores for field independence, ego resilience and ego control were computed by correlating the ratings assigned by mother or care providers on the 100-item CCQ (California Child Q-set).</p> <p><i>Peer skills</i></p> <ul style="list-style-type: none"> • 2 consecutive 15-sec observation units. • For each observation unit, the observer recorded the incidence of any 23 discrete behaviours or states, and rated the quality of peer play observed using the Howes (1980) 6-point rating scale. • 3 peer interaction scores were derived: <ul style="list-style-type: none"> - Positive peer related behaviour. - Negative peer related behaviour - The total no. of units during the play. <p><i>Sociability</i></p> <ul style="list-style-type: none"> • Assessed upon the observer-interviewer arrival at the child’s home. • Child’s response rated in 8 contexts (5-point scale) in phase 1; in 5 contexts in phase 2; and non in phase 3. • Observer’s own overall impression (9-point scale). All phases • All ratings were added to yield a single score of 9-49 for phases 1, and 6-34 in phase 2. In phase 3 only the observer’s rating 1-9. 	<p>Of 140 children, 115 maintained the original care setting for phases 1& 2, and 84 for phase 3.</p> <p>All analyses were computed twice, once for the sub-sample of 115, and once on the sub-sample of 84.</p> <p>Type of childcare had no apparent impact on the children’s sociability or personality maturity as measured 24 m after the study began.</p> <p>The children in the family day-care gp appeared to come from more advantaged backgrounds, to experience fewer negative incidents in their care facilities, and to spend less time in out-of-home care than did children in centre care.</p> <p>The quality of care received both at home and in the out-of-home care, reported family social support, and child gender predicted personality maturity and observed social skills with familiar peers and unfamiliar adults.</p> <p>Scores on the HOME inventory had the most reliable and consistent predictive value.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>12. Wessels, Lamb & Hwang (1996)</p> <p>Cause and causality in day care research: an investigation of group differences in Swedish childcare.</p> <p>Sweden</p> <p>Longitudinal</p>	<p>Sampling Participants were recruited from the waiting lists for the public day care centres in Goteborg.</p> <p>Subjects were only included in the study if they were</p> <ul style="list-style-type: none"> • Between 12-24 months • Were 1st born, or at least had no sibling younger than 12. • Lived with both parents • Had no prior experience of day care. <p>Subjects – initial assessment N=140</p> <p>15.9 = M age</p> <p>41.05 = M Hollingshead score for mothers.</p> <p>43.54 = M Hollingshead score for fathers.</p> <p>Children were assessed on 5 occasion between the 16-101 months of age.</p> <p>84% (N=122) of the families participated in all 5 phases of data collection.</p>	<p>Of the initial sample: N=140</p> <ul style="list-style-type: none"> • 54 subjects obtained place in centre care • 33 accepted places in family day care • 59 remained at home. <p>Of the final sample: N=122</p> <ul style="list-style-type: none"> • 42 had begun the study in centre care. • 30 in family day care • 50 at home. 	<p>Data were collected on 5 different occasions. At ages:</p> <ol style="list-style-type: none"> 1. 15.9 months 2. 28 months 3. 40 months 4. 80 months 5. 101 months <p><i>Phase 1</i></p> <ul style="list-style-type: none"> • 1st home visits to gather data on: <ul style="list-style-type: none"> - Demographics - Care arrangements - Child temperament - Child's initial response to a visiting adult. • In a 2nd home visit the quality of the home environment was assessed: <ul style="list-style-type: none"> - The HOME inventory. - Belsky & Walker observation checklist • A visit to the day care facilities took place 2 weeks after the 2nd home visit. <p>Data were collected on:</p> <ul style="list-style-type: none"> - Quality of care - Belsky & Walker observation checklist - Children interaction with peers - Interviews with staff to obtain ratings. <p><i>Phase 2 and 3</i></p> <ul style="list-style-type: none"> • Home visit – parents were asked to describe the children's personality using: <ul style="list-style-type: none"> - Block and Block - The California Child Q-set (CCQ) • Centre visits: <ul style="list-style-type: none"> - Quality of care was assessed - Belsky & Walker observation checklist - Carers were interviewed about their training, professional experience and staff turn over. <p><i>Phases 3 and 4</i> Maternal and paternal child-rearing attitudes were assessed using:</p>	<p>Dependent Measures</p> <ul style="list-style-type: none"> • Child personality – The CCQ – a 100-item measuring personality along 3 dimensions: <ul style="list-style-type: none"> - Ego-resilience - Ego-undercontrol - Field independence • Verbal abilities: <ul style="list-style-type: none"> - At 28 and 40 months using the language subscale of the Griffiths Developmental Scales. - At 80 months - the verbal ability subscale of a school readiness test used in Swedish schools. - At 101 months – A standardised Swedish test. • Mathematical Ability <ul style="list-style-type: none"> - At 80 months - the numerical subscale of the school readiness test. - At 101 months – A standardised test of mathematical ability (simple algebra and mathematical problem solving). <p>Independent Measures</p> <ul style="list-style-type: none"> • Quality of alternative care – The Early Childhood Environment Rating scale (ECERS) showed ceiling effect, the authors therefore interview and observations to assess quality of care. <ul style="list-style-type: none"> - Care givers provided information on adult/child ratios; the amount of time each child spent in the centre; and the length of the longest day in the nursery. - The Belsky and Walker (1980) spot observation check list. This includes 13 positive and 7 negative events. • Family background and home environment: <ul style="list-style-type: none"> - Maternal and paternal Hollingshead scores - The HOME inventory - The Belsky and Walker spot observation check • Parental attitudes were assessed in 	<p>Up to 40 months children in family day care had higher scores on ego-resilience and field independence and lower scores on ego-undercontrol in comparison with children in the other 2 groups.</p> <p>Beyond 40 months, children in family day care had lower scores on ego-resilience and field independence and higher scores on ego-undercontrol.</p> <p>Children in centre care had higher verbal and mathematical ability scores than children in the other 2 groups.</p> <p>Parents whose children stayed home had sig. lower status occupation than parents to children in the other 2 groups.</p> <p>There were no sig. Group differences in the HOME scores, or the Belsky and Walker scores.</p> <p>In comparison with children in family care, children in centre care:</p> <ul style="list-style-type: none"> • spent more time away from home than children in family care. Differences were sig. only for phases 1 and 2. • Interacted with more peers and more adults <p>Mothers who were unable to obtain ideal placements for their children were less likely to consider that arrangement ideal in phase 2; mothers who did obtain the ideal placement were more likely to still consider that arrangement ideal in phase2.</p> <p>When the actual and ideal type of care were not matched in phase 2 parents expressed sig. lower levels of satisfaction that did parents whose actual arrangements were considered ideal.</p> <p>Type of care obtained at the beginning of the study was the type of care the mothers</p>

			<ul style="list-style-type: none"> • Q-sort instrument (91-items) • Child Rearing Practices Report (CRPR) <p>With each parent separately.</p> <p>The CCQ was also used in phase 4.</p> <p><i>Phase 5</i></p> <ul style="list-style-type: none"> • Home visit – type of care received in each of the intervening years was assessed. The CCQ was also used. • Centre visit – quality of care was assessed. 	<p>each of the first 3 visits by asking the parents to indicate what type of care they consider ideal.</p> <ul style="list-style-type: none"> • Paternal involvement: <ul style="list-style-type: none"> - From full-diary recalls provided by the two parents, who were asked to recall the previous day and the previous nonworking day from midnight to midnight. No. of min fathers spent with children was computed and the weighted sums of weekday (x5) and weekends (x2) scores were combined to obtain a single score. - Paternal responsibility questionnaire 	<p>preferred in phase 2.</p> <p>Higher levels of paternal involvement predicted higher verbal ability at 28 m. At 40 m, only scores on paternal time involvement were correlated with higher verbal abilities.</p> <p>Parental child-rearing attitudes predicted the children's ego resilience and field independence at both 40 and 80 m.</p>
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STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>13. Bagley (1988)</p> <p>Day care, maternal mental health and child development: evidence from a longitudinal study.</p> <p>Canada</p> <p>Longitudinal – focusing on the last follow-up</p> <p>‘At risk’ children</p>	<p>Sampling</p> <p>The first 65 births on the risk register of each of the ten health clinics in Calgary occurring from January to June 1980 were selected for the study.</p> <p>“650 comparison subjects were drawn from the 650 at risk children, being the child of the same sex born immediately following the at risk birth and seen at the same clinic” (not clear what the comparison Ss were matched for, the authors do not report on any gp differences)</p> <p>Mothers were contacted by letter, between 24-32 m after the birth.</p> <p>N=782 initial interview (not clear when -I think at age 3)</p> <p>N=626 final assessment at age 6-7.</p> <p>Girls/boys proportion – unknown</p> <p>All were 2 parent families</p> <p>Only 14 mothers did not finish high school.</p> <p>50.1% had beyond high school education</p> <p>69% of fathers had technical or professional qualifications beyond high school.</p> <p>80.5% were living in detached houses.</p> <p>Thus sample is predominantly middle class.</p>	<p>Type of care</p> <ul style="list-style-type: none"> • Mother care for the entire school period • Day care under potentially stressful conditions, including 2 of the following: <ul style="list-style-type: none"> - Entering day care for 20+ h/w before the age of 18 m. - Experiencing fulltime day care (20= h/w) continuously for at least 3 years. - More than 3 changes in day care settings. - Mother had complained about poor quality of the care setting. • All other types of day care. 	<p>Mothers and children were assessed during 2 home visits when children were:</p> <ul style="list-style-type: none"> • 3 years old • 6-7 years old. 	<p>Age 3 (very little detail)</p> <ul style="list-style-type: none"> • The Denver Developmental Screening (apparently at this age it was found that day care had a positive effect on child development) <p>Age 6-7</p> <p><i>Mother</i></p> <ul style="list-style-type: none"> • Skilled interviewer administered a structured 1 hr questionnaire. • A questionnaire on demographic details and child care arrangements. • The Parenting Stress Questionnaire • The Epidemiological Studies in Depression Questionnaire • The Rutter Child Behaviour Disorder Scale – a 26-item scale in which the child is describe by mother along 4 dimensions: <ul style="list-style-type: none"> - Externalised or Aggressive behaviour - Internalised or Neurotic behaviour - Overactivity - Psychosomatic symptoms <p><i>Child</i></p> <ul style="list-style-type: none"> • Peabody Picture Vocabulary Test • A type ‘A’ behaviour for children 	<p>Children with several years of day care behind them did not display attachment problems when they entered elementary schooling.</p> <p>Mother who stayed home to look after several children were much more likely to be seriously depressed than mothers who returned to work during their child’s pre-school years.</p> <p>Maternal depression was associated with neurosis and depression in the child.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>14. Larner, Gunnarsson, Cochran & Hagglund (1989)</p> <p>The peer relation of children reared in day care centres or home settings.</p> <p>Sweden</p> <p>Longitudinal – Focusing on the final follow-up age 10</p> <p>(This was a poster presentation, so did not provide a lot of detail)</p>	<p>N=120 Initial sample</p> <p>Children were assessed at age 1, 5 and 10 years</p> <p><i>At age 5</i> N=102</p> <p><i>At age 10</i> N=52</p> <p>The home care group</p> <ul style="list-style-type: none"> • 38% single parents • No full time housewives <p>The centre care group</p> <ul style="list-style-type: none"> • No single mothers • 27% full time housewives. 	<p>Comparisons were made between home care and centre care.</p> <p>At age 1 N=60 in home care N=60 in high quality centre</p> <p>At age 5 N=35 in home care N=33 in centre care</p> <p>At age 10 N=26 in home care N=26 in centre care</p>	<p>Children were assessed at age 1, 5 and 10</p> <p>At age 10 Interviews were conducted with children</p>	<p>Social skills and peer relations</p> <ul style="list-style-type: none"> • Interviews with mothers • Interviews with children (including a social network list of up to 10 friends) • Sociometric exercise – choosing classmates as companion for 3 hypothetical activities. • Teacher’s behaviour ratings. 	<p>The findings of the earlier phased of the study revealed gp differences in the social experiences of the 1- and 5-year olds.</p> <p>By middle childhood, individual differences in the direction and pace of children’s development were overtaking and obscuring the effects of early care arrangements.</p> <p>No evidence was found that children from centre care demonstrated more negative or aggressive behaviour with peers of adults than did children with home care.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>15. Wadsworth (1985)</p> <p>Effects of parenting style and pre-school experience on children's verbal attainment; results of a British longitudinal study.</p> <p>UK</p> <p>Longitudinal</p>	<p>Sample The subjects were the 1st born babies of parents who took part in a large birth cohort longitudinal study.</p> <p>The cohort of parents was born in march 1946 in England, Scotland and Wales.</p> <p>The 2nd generation children selected for this study were all the single, legitimate first births to the wives of non-manual and agricultural workers, and 1 in 4 of all single legit. first births of wives of manual workers.</p> <p>N=1,676</p> <p>19-25 age of mother at birth</p>		<p>Data collection for the (1946) cohort members began in 1948 and were collected at 2-year intervals until adolescence, and then every 5 years during adult life. Last contact was made when subjects were 36 years old.</p> <p>In childhood data was collected by and community and school nurses.</p> <p>Data for the 2nd generation study was collected when the 1st born were 4 and 8 years old.</p> <p>In the 2nd generation study professional interviewers carried out semi-structured interviews with mother at home.</p>	<p>Home interviews were designed to collect the following information.</p> <ul style="list-style-type: none"> • Parental practice • How children spent their time and their degree of independence. • Parents' discipline methods • Childrens' habits and dream. • Health and illness • Family structure • Mothers assessment of herself and the child. <p>When children were 8-years old 3 additional assessment of verbal attainment were used:</p> <ul style="list-style-type: none"> • Reading • Sentence completion • vocabulary 	<p>Pre-school experience was an independent and sig. predictor of verbal attainment scores, however, its power was small when compared with mothers' education.</p> <p>Pre-school attendance had no significance in predicting the scores of children whose mothers wee relatively under-stimulating.</p>

STUDY	POPULATION	INTERVENTION	DESIGN	MEASURES	RESULTS
<p>16. Rigby, Sanderson, Desforges, Lindsay and Hall (1999).</p> <p>The Infant Index: a new outcome measure for pre-school children's services.</p> <p>UK</p> <p>Retrospective. Birth cohort.</p> <p>Aim - Determine whether a routine measure of attainments in primary school is sensitive to factors known to affect mental development.</p>	<p>Sampling: child health data set for the cohort of children born in 1990-1991 in Sheffield.</p> <p>4487 children (75% of the birth cohort had scores for the Infant Index).</p> <p>114 (out of 116) primary schools in Sheffield provided Infant Index scores.</p> <p>The Infant Index Scores were collected over 3 terms (there was no evidence for a trend over term time)</p>	<p>NA</p> <p>The study's aim was to establish a link between routinely collected health data and education data. There was no intervention.</p>	<p>A match between the health data set of the birth cohort and the infant Index scores.</p>	<p>The health data set includes health care information together with additional data collected for each mother and baby at 28 days. It included data on the following:</p> <ul style="list-style-type: none"> - breast feeding - mother's satisfaction with the baby's feeding - baby' weight gain - maternal age - parity - gestation period - previous psychological history ad smoking - state of housing - no of visits by health visitor - any discussion of termination <p>In addition:</p> <ul style="list-style-type: none"> - The EPDS (Edinburgh Postnatal Depression Scale) <p>The Infant Index:</p> <ul style="list-style-type: none"> - literacy skills - maths skills - social behaviour - independent learning 	<p>The Infant Index was coded as either poor or good.</p> <p>20 was the cut-off score (45 is the max score possible).</p> <p>The statistical associations between the health factors and the Infant Index were calculated as odds ratios (Ors) with 95% confidence levels. They were calculated by logistic regressions.</p> <p>Factors predicting poor Infant Index score:</p> <ul style="list-style-type: none"> - male gender - low birth weight - lack of breast feeding at one month - postnatal depression - no of pregnancies - ethnicity - pre-school education experiences - poor housing <p>They also varied the cut-off score between 15 and 25 – the same risk factors were apparent.</p>