Growing Up in Ireland
National Longitudinal Study of Children

INFANT COHORT

Design, Instrumentation and Procedures
for the Infant Cohort at Wave Two (3 years)

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INTRODUCTION

CHAPTER 1: INTRODUCTION

1.1   INTRODUCTION

Growing Up in Ireland, the National Longitudinal Study of Children, is a study of the factors which contribute to or undermine the wellbeing of children in 21st century Ireland. The project involves studying two main cohorts of children with a view to improving understanding of child development across a range of domains over time. The first cohort is based on a nationally representative sample of 8,568 nine-year-olds, the second on a national sample of 11,134 nine-month-old infants and their families. The survey is longitudinal in nature, with both cohorts being interviewed at least twice over the course of the project. Interviews for the older cohort and their parents/guardians are carried out at nine and 13 years of age. The first phase of interviews for this group took place between August 2007 and May 2008. The first phase of data collection for the Infant Cohort ran from December 2008 to June 2009 and the second phase took place between December 2010 and June 2011.

This report focuses specifically on the Infant Cohort at Wave 2. It describes in detail the design, instruments and procedures used with this cohort when the children were three years of age. The focus is on the nature and content of the questionnaires and other instrumentation used, along with a general consideration of operational procedures.

The current chapter provides the context for the rest of the report, beginning with a description of the background and objectives of the study, and an interpretation of its requirements and how these have been met by the Study Team. This is followed by a brief summary of the conceptual framework underlying *Growing Up in Ireland* and how this is reflected in the instrumentation.

1.2   BACKGROUND AND OBJECTIVES

Growing Up in Ireland provides an important input to the implementation of the *National Children's Strategy,* a major national plan for children, published in 2000 by the Department of Health and Children. The principal objective of the study is to provide evidence-based research into the wellbeing of children and childhood. This increased understanding of the determinants and drivers of wellbeing and its change and transformation over time will be used to assist in policy formation and the design and delivery of services for children and their families as set out in the *National Children's Strategy* (2000). *Growing Up in Ireland* is a key element in the strategy – especially in regard to its second goal, which notes that:

> *"Children will be better understood; their lives will benefit from evaluation, research and information on their needs, rights and the effectiveness of services."*

Growing Up in Ireland was commissioned by the Irish Government and funded by the Department of Children and Youth Affairs in association with the Department of Social Protection and the Central Statistics Office. Detailed recommendations for the design of a National Longitudinal Children's Study were first presented in a paper entitled 'Design of the National Children's Strategy – Longitudinal Study of Children' (Collins, 2001). The current study stems from a Request for Tender which was issued by the Department of Health and Children in December 2004. After an assessment and evaluation process throughout 2005 and early 2006, work on the project by a research consortium led by the Economic and Social Research Institute (ESRI) and Trinity College, Dublin (TCD) began in April 2006.

Growing Up in Ireland is designed to describe and analyse what it means to be a child in Ireland today and to understand the factors associated with children's wellbeing, including those affecting their physical health and development; social, emotional and behavioural wellbeing, and educational achievement and intellectual capacity. While

children's current wellbeing is of immense importance, researchers are also cognisant of their future outcomes as they develop into young adults. The longitudinal nature of the project allows one to record current data with a view to using them to assist in understanding future outcomes; in the case of the Infant Cohort, it means being able to track from infancy to age three, with a second wave of data. By gathering comprehensive data on childhood development, the study will provide a statistical basis for policy formation and applied research across all aspects of a child's development – currently and into the future.

The study has nine over-arching objectives.[1] Each of these, with the Study Team's interpretation, is set out below.

1. **To describe the lives of Irish children, to establish what is typical and normal as well as what is atypical and problematic**

At each data wave we attempt to identify the developmental status of the children sampled in relation to all the key indicators of wellbeing, both quantitative and qualitative. The variability in key indicators and determinants of variability is critical to this, with a view to defining, for example, normality, borderline problematic status and problematic status. In doing this, we intend to compare children in Ireland to international norms and, where available, their indicators of developmental status to those of their international peer-group.

2. **To chart the development of Irish children over time, to examine the progress and wellbeing of children at critical periods from birth to adulthood**

Within the confines of the initial seven-year period set out for the project, the Study Team will attempt to identify those changes which occur between data waves in key indicators and to identify the developmental trajectories of markers of child development and wellbeing. A key consideration is the variability in the rate of progression of children in the cohort. Aside from critical normative events and transitions (e.g. starting primary school), issues addressed include what occurs to children in relation to non-normative life events (such as parental death and separation).

3. **To identify the key factors that, independently of others, most help or hinder children's development**

This involves the identification of the factors most strongly correlated with child wellbeing and to investigate whether these factors are child- and/or environmentally oriented. A key aspect of the conceptual framework underlying *Growing Up in Ireland* is the interaction between individuals and their environments that results in variations in outcome: the environment not only acts on the child but the child also effects change in his or her environment. This framework also acknowledges the importance of identifying moderating and mediating variables, as well as the influence of the timing of particular events.

4. **To establish the effects of early child experiences on later life**

The primary focus with regard to the nine-month cohort is based on both current and retrospective data, principally recorded from the child's parents or guardians. The issues involved here relate to those factors and circumstances in the early years of life which predict to good or poor outcomes in the later stages of development – middle childhood and beyond.

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[1] *Request for Tenders (RFT) for Proposals to Undertake a National Longitudinal Study of Children in the Republic of Ireland*, issued by the National Children's Office of the Department of Health and Children and the Department of Social and Family Affairs, December 2005, p.20.

5. To map dimensions of variation in children's lives

To fully map out the dimensions of variation in children's lives, we will describe the nature, range and patterns of distribution of all variables. This will include a consideration of the variability within the cohort in developmental status, progression and outcomes and, in particular, how variables such as gender, class, level of educational attainment of parent(s), ethnicity, family structure, family relationships, parenting styles and childcare arrangements predict differences in developmental progress and outcomes.

6. To identify the persistent adverse effects that lead to social disadvantage and exclusion, educational difficulties, ill-health and deprivation

The work of Rutter and Bergman (1988) and others on using longitudinal data to understand psychosocial risk is particularly useful in framing specific questions in this field. In particular, we aim to provide an appropriate range of variables to allow one to identify which factors, operating singly or in combination, are associated with negative outcomes for children. This should allow us to identify whether or not there are factors or combinations of factors which predict to specific types of negative outcomes, social disadvantage and exclusion, educational difficulties, ill-health and deprivation. This in turn will permit us to address whether or not there are different pathways to similar negative outcomes, and to isolate those categories of children and their characteristics that are most at risk for adverse development.

7. To obtain children's views and opinions on their lives

To capture the richness of children's experience of their worlds, a most important aspect of the study is the inclusion of children themselves in the interview/data-collection process. This means that children in the Infant Cohort were involved in the interviews from three years of age (as feasible and appropriate). Children in the Child Cohort will be centrally involved in the interviews from nine years of age.

8. To provide a bank of data on the whole child

Growing Up in Ireland has been designed so that it provides information on the developing child across a range of different domains. This will allow researchers and others to take a holistic view of the child's development and will, among other things, permit a consideration of how outcomes relate across different domains of the child's life. This will be particularly important in analysing developmental trajectories as longitudinal data become available.

9. To provide evidence for the creation of effective and responsive policies and services for children and families

The focus of the project throughout will be to generate evidence through research, with a view to making the information available to policymakers, hence assisting them in the formation of child-oriented policies that may either take a universal approach or be targeted at children and families who are most in need, whichever is the most appropriate.

1.3   CONCEPTUAL FRAMEWORK

1.3.1   SUMMARY OF CONCEPTUAL FRAMEWORK[2]

The *Growing Up in Ireland* study adopts a dynamic systems perspective founded on five insights from different disciplines: (i) ecology, (ii) dynamic connectedness, (iii) probabilism, (iv) period effects and (v) the active role or agency of the child in the developmental process. The bioecological model of Urie Bronfenbrenner (Bronfenbrenner 1979; Bronfenbrenner & Morris, 2006) is a key tool in operationalising this perspective.

Bronfenbrenner's bioecological model indicates multiple layers of influence in the development of an individual child. The child develops through interactions with people and other elements in this bioecological context; these interactions are referred to as *proximal processes*. The operation of the proximal processes can be affected by the characteristics of the child, by the context in which the processes are taking place, and by time, both in terms of the timing of interactions and the historical time in which they occur.

The layers of influence in Bronfenbrenner's conceptualisation of the bioecological context extend outward from the individual to other close relationships in the home and the school (*microsystem*); the relationship between the elements of the microsystem, such as between parents and school (*mesosystem*); the institutions and settings that influence the microsystem, such as health services (*exosystem*), and finally all the actions and interactions take place under the influence of more global forces such as cultural beliefs, national policies and general economic prosperity (*macrosystem*). Table 1.1 gives examples of variables used in *Growing Up in Ireland* that are relevant to each layer of the bioecological model, along with relevant section headings indicating where each variable is discussed within this report.

Table 1.1: Examples of variables relevant to the bioecological model

Layer	Illustrative characteristics include:
Child	Gender; temperament; physical development; social & psychological development; cognitive development; health; ethnicity
Microsystem	Parental health; parent-child attachment; parenting style; parental lifestyle; parental education; parental stress; size of household; family structure; parent marital relationship; childcare
Mesosystem	Work-life balance; maternity leave policies; parental involvement with community; parental/child involvement with child's grandparents
Exosystem	Access to healthcare; church and religion; social welfare support; parental occupation; availability of and access to public services
Macrosystem	Citizenship/nationality; socio-historical setting of current study; current economic climate

1.3.2   FROM CONCEPTUAL FRAMEWORK TO INSTRUMENTATION

The project has been designed to record details on the array of factors which have been previously identified or hypothesised as having an influence on a child's developmental outcomes. As noted in the literature review for the nine-month cohort, *child outcomes* are interpreted as changes in a child's wellbeing which are a result of some input. There are many forms of input, a few of the more important of which include parenting, education and the health services. Furthermore, children's own attributes, behaviour and attitudes will also act as influences on later outcomes. The child's behaviour, temperament and health (including the presence of disability) may elicit a very different parenting style than those with more negative ones. This, in turn, will affect subsequent

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[2] For a detailed discussion of the conceptual framework used in the study, see Greene et al, Background and Conceptual Framework (2010)

outcomes. As outlined in *Growing Up in Ireland* Research Paper No. 1 (*Growing Up in Ireland* – Background and Conceptual Framework) the child outcomes being focused on in the study are:

- Physical health and development
- Social/emotional/behavioural well-being
- Educational achievement and intellectual capacity/learning

The results of research into the Infant Cohort will clearly enable the study of perinatal and early childhood influences on developmental growth paths. It will be possible to record the relevant information on the physical, social and learning elements of developmental status as well as ecological changes on an ongoing and more generally contemporaneous basis with successive longitudinal waves of the project.

Figure 1.1 schematically summarises the complex multidirectional and recursive relationships between the child and the actors in the various environments within which he/she operates. As described in detail in Chapters 6 to 8, the questionnaires were structured in such a way as to reasonably record the relevant information from the various layers of the Study Child's world, including the child's personal attributes, family attributes and functioning, neighbourhood, etc, taking account of formal and informal supports in each of these environments and offering the researcher the potential to consider the interactions of all variables and characteristics in each.

In discussing outcomes, one must be aware that the distinction between input and outcome variable is far from simple or clear-cut; this becomes abundantly clear when dealing with longitudinal data. While some outcomes will be linked between waves to form a trajectory, such as cognitive ability or socio-emotional behaviour, outcomes can also influence other outcomes and may well be an antecedent variable in a particular analytical context. For example, badly behaved children can elicit negative reactions from parents. Another example is that of obesity, where weight issues may be an outcome of parental feeding practices, but in later life may also be a precursor to opting out of physical activities, leading to subsequent health problems. It is only with longitudinal data that a picture can be drawn of the whole child. Only by looking at such trajectories will researchers begin to understand the role of each variable and how it works in different contexts, which is particularly important when looking at the role of mediating or moderating variables. A simple classification of variables is given in Chapter 9.

Figure 1.1: Hypothesised relationships between child characteristics, outcomes and contextual variables in *Growing Up in Ireland*
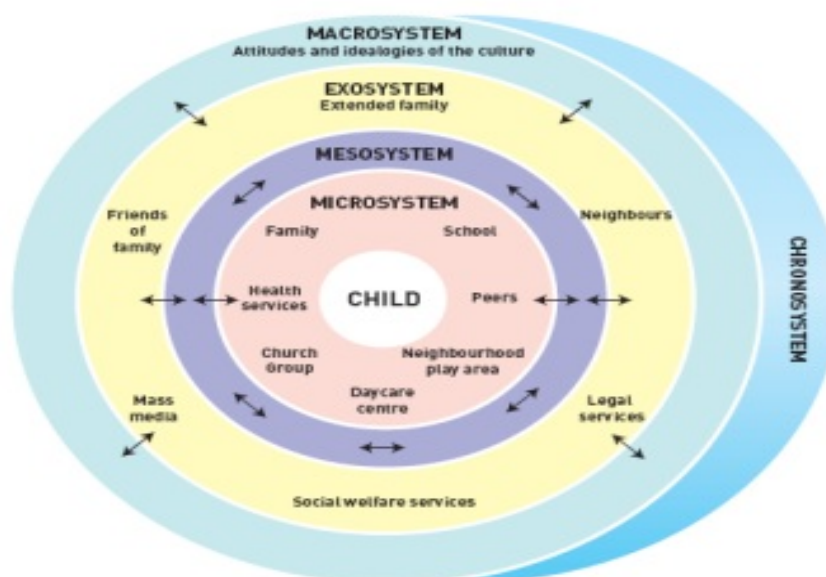
Source: Adapted from Garbarino (1982)

This perspective of dynamic interdependence of variables and inputs and of their systemic inter-relatedness was central to the development of the project and to the information being captured in the various instruments used.

In adopting the 'whole child' perspective and a rounded view of child wellbeing, it was clearly impossible to achieve data completeness in the sense of recording everything that was desirable. Choices had to be made as to what measures and variables were included and excluded from the very wide range of potential items for inclusion. A number of criteria were used for selecting variables for inclusion in the instrumentation. These were as follows:

- *Importance:* The existence of scientific evidence for believing that the variable exerts a substantial influence on one or more outcomes or dimensions of child development

- *Measurability:* Could the variable be validly, reliably and ethically measured, using the methods of large-scale survey research?

- *Policy relevance:* Is the variable actionable through public policy?

- *Policy urgency:* Is the variable relevant to an area of emerging public policy where the need for evidence-based reform is widely acknowledged?

- *Prevalence and variance:* Is the variable sufficiently prevalent in the population at each wave as to yield an analysable level of variance in the available sample?

- *Added value:* Does the variable relate to influences on child wellbeing that have not been adequately covered by other research?

- *Relevance for longitudinal analysis:* Is there potential for measuring stability and change in the variable across time?

Selection of outcome and input variables had to be followed by the selection of indicators that would operationalise and measure the information in question, since most variables can be operationalised in a range of different ways. The criteria used to select indicators were as follows:

- *Robustness:* Does the indicator provide a measure of the construct/variable of interest that has been proven to be valid and reliable? With this in mind, an attempt was made to harmonise some measures with those used by other studies, particularly longitudinal cohort studies.

- *Ethical acceptability:* Does it meet relevant ethical standards as set by the review process?

- *Acceptability to respondent:* Would it be likely to deter participation or increase attrition among the study respondents by increasing response burden, or by being overly intrusive?

- *Age appropriateness:* Are age-appropriate variants of the indicator available or can they be designed, taking account of the need to maintain consistency in measurement across cohorts and across time?

- *Time efficiency:* Does the indicator take as little interview time as possible, taking account of the importance of the variable and requirement for robust measurement?

- *International use:* Has the indicator been successfully used in research in other countries, particularly in comparable studies such as the UK Millennium Cohort Study and Growing Up in Australia?

- *Use in Ireland:* Has the indicator been successfully used in previous research in Ireland?

- *Value for target setting and impact assessment: C*ould the indicator be used to set targets for policy and/or to measure the impact of policy interventions?

The individual child is clearly the key participant in **Growing Up in Ireland**. Not only were parents/guardians interviewed about the child, but information was also obtained from other relevant informants in the various environments in which the child operates. This included information from non-resident parents and regular carers (where appropriate).

The broad range of information gathered in the study reflects the importance of proximal and distal factors in the child's life, as illustrated in Table 1.1. Variations in child outcomes need to be examined in relation to distal social contexts and proximal environmental conditions, as well as individual characteristics. Proximal processes, such as parenting style, can often mediate the relationship between distal contexts, such as the characteristics of the local neighbourhood, and child outcomes, while individual characteristics may enhance or inhibit the relationship between distal conditions and child outcomes. Information collected in the study, as well as its longitudinal aspect, will allow for investigation of these relationships, hence contributing to research on individual developmental trajectories. It should be noted, however, that the longitudinal approach is particularly valuable where there are three or more data-collection points.

1.4   STRUCTURE OF REPORT

The main objectives of this report are to:

- Outline the sample design, with particular focus on sample retention and attrition

- Describe the broad outline of how the instruments were developed, including a discussion of the main inputs to instrumentation from the Scientific and Policy

Advisory Committee, the consultative process, the Children's Advisory Forum and the Panels of Experts coordinated by the Study Team

- Discuss the ethical review procedures for the study

- Describe fieldwork procedures

- Provide a detailed breakdown of the main instruments used at all levels of the study, including the broad domains of interest, specific variables of interest, and information on scales used in the study, along with a rationale for the use of each

- Present (in the appendices) the various instruments and related documents used in the study (NB: the appendices are available in a separate document)

To this end the report has nine subsequent chapters:

- Chapter Two discusses sample design, retention and attrition at Wave 2.

- Chapter Three outlines the inputs to the instrumentation from various advisory groups and stakeholder groups.

- Chapter Four looks at ethical considerations, in particular the ethical review procedure.

- Chapter Five provides a broad overview of the various survey instruments and questionnaires used with the Infant Cohort at Wave 2.

- Chapter Six gives detailed consideration to the main questionnaires used in the home – the Primary Caregiver and Secondary Caregiver questionnaires.

- Chapter Seven describes the instruments and procedures used to directly assess the child's cognitive and motor competencies.

- Chapter Eight summarises the other instruments, including those sent to the non-resident parents and non-cohort caregivers, as well as a discussion of the direct measurements taken by the interviewer. These include the height and weight of the child's parent(s) and the height and weight of the child.

- Finally, conclusions are presented in Chapter Nine.

Chapter 2

SAMPLE DESIGN

CHAPTER 2: SAMPLE DESIGN

In this chapter we outline the methodology and sample design for Wave 2 of the Infant Cohort (at three years). We begin by considering the composition of the longitudinal sample before moving on to discuss levels of interwave attrition and methods used to mitigate it. We then describe the reweighting procedures implemented prior to analysis.

2.1 COMPOSITION OF THE LONGITUDINAL SAMPLE

Growing Up in Ireland is a longitudinal study based on the same set of children and their families over time. Children (and their families) were selected from the Child Benefit Register for inclusion in the Wave 1 sample. The Wave 2 target sample included all 11,134 Study Children who participated in the first round of interviewing. The Study Child is the longitudinal focus of the study. We are interested throughout the study in tracking, interviewing, measuring and testing the child, regardless of changes in his/her family composition, structure, location, etc. In this respect, the study is based on a pure, fixed panel of children who were nine months of age at the time of first interview. After the initial sample selection, no additions[3] were made to it in Wave 2 to reflect new arrivals into the country of children in the relevant age group. The only exits were through interwave non-response or attrition (including families moving outside the jurisdiction) or situations in which the Study Child had deceased betweens Waves 1 and 2.

2.2 RESPONSE RATES IN WAVE TWO

As noted above, the Wave 1 sample was selected from the Child Benefit Register. The population was made up of children born between 1st December 2007 and 30th June 2008. The Wave 1 sample was selected and issued to field interviewers in seven tranches between 1st September 2008 and 1st March 2009. All children were interviewed in Wave 1 in their 10th month (having turned nine months of age). The overall response rate in the Wave 1 sample was 65 per cent.

Table 2.1 summarises response outcomes, at the second wave of interviews, when the children were three years of age. From this, one can see that the overall response rate in Wave 2 to date was just over 91per cent.

Table 2.1: Summary response rates in the Infant Cohort (at 3 years)

Outcome	(n)	Per cent
(i) Interviewed	9,793	91.4
(ii) Refused	494	4.6
(iii) Appointment continuously broken	189	1.8
(iv) Unavailable throughout fieldwork	41	0.4
(v) No contact despite repeated callbacks	93	0.9
(vi) Moved, no forwarding address	55	0.5
(vii) Address vacant / demolished / derelict	5	0.0
(viii) Other	39	0.4
Total valid	**10,709**	**100.0**
(ix) Moved outside RoI or child deceased	425	-
Grand total	**11,134**	-

In Table 2.1 outcomes (iii) and (iv) ('appointment continuously broken' and 'unavailable throughout fieldwork') may in some cases be interpreted as a 'soft refusal'. These are families who did not definitively refuse to participate in the survey but who failed to participate because they were 'too busy' and continuously broke appointments with the interviewer or who

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[3] Additions to membership of the Study Child's household between Wave 1 and 2 interviews (in the form of new members residing in the household or being born into the household) are, of course, recorded on the household register in Wave 2.

continually put the interviewer off, saying they would participate but never actually did so. The 230 families were repeatedly followed up by interviewers throughout the fieldwork.

One can also see from the table that 55 families had moved address since their first interview and a new address could not be found for them. A further 425 families were identified as having moved out of the Republic of Ireland or the child had deceased since first interview[4] (outcome ix in Table 2.1). Movers in this group are no longer part of the Wave 2 target sample. Many of the 55 families identified as being no longer resident at their Wave 1 address but for whom a forwarding address was not available may, equally, have moved outside the jurisdiction and so would no longer be considered a valid member of the target Wave 2 sample. Neither the interviewer assigned to the families nor field support staff in Head Office was able to confirm whether or not the families in question had moved outside the country and so they are included above the line as part of the valid sample.

Finally, in 10 cases the contact address of Wave 1 was found either to be vacant/demolished/derelict or could not be located.

Notwithstanding procedures aimed at minimising longitudinal attrition, interwave non-response is unavoidable in panel surveys. One can identify a range of characteristics and variables related to attrition. As noted by Watson and Wooden (2009), these fall into two broad categories. First, there are characteristics related to the interview in prior waves. These include whether or not the same interviewer visited the family in both rounds of the survey (interviewer continuity from one round to the next) as well as the respondents' experience of the interview in prior rounds. The latter may be measured directly in terms of follow-up quality assurance checks in which the respondent is asked to record his/her satisfaction with the survey process. As there are obvious difficulties in securing comprehensive information across all respondents using quality assurance back-checks, indirect measures of respondent commitment to and experience of prior round(s) of the survey are often used. These include measures of item non-response as well as time taken to complete the interview in previous waves. Watson and Wooden (2009) note that the beneficial influence of interviewer continuity on interwave response rates is often highlighted (Waterton & Lievesley, 1987; Laurie et al, 1999; Hill & Willis, 2001; Behr et al, 2005; Nicoletti & Peracchi, 2005). The size (and indeed the direction) of the effect is not universally agreed, however. Using data from the European Community Household Panel, Behr et al (2005) find large and significant effects of interviewer continuity while Nicoletti and Peracchi (2005) find small and insignificant effects (Watson & Wooden, 2009). Negative effects of the length of interview in previous rounds of the survey have also been identified (e.g. by Hill & Willis, 2001).

The second set of variables found to be associated with interwave attrition are the personal characteristics and attributes of respondents. Given the nature of longitudinal studies, one has a substantial range of characteristics from earlier waves of subsequent attriters. A number of respondent characteristics have been identified as having varying degrees of association with subsequent attrition. These have been summarised by Watson and Wooden (2009) as follows:

- Gender – females generally have a higher level of response and lower attrition rate.

- Age – attrition is higher among younger respondents.

- Race / ethnicity – minority status is usually related to higher rates of attrition, perhaps at least in part related to language issues.

- Marital status – attrition is usually lower among (more settled) married respondents and higher among singles.

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[4] The number of children who had deceased between waves was small.

- Household composition and size –the effects identified in the literature are somewhat mixed. Household composition may operate principally through contact probability. For example, single persons may be less likely than couples to be at home when an interviewer calls. The association between number of children and attrition equally appears to be somewhat mixed, though a negative relationship with number of children in the household probably reflects a greater chance of interviewers finding at home respondents for larger families.

- Education – although attrition in longitudinal surveys is usually lower among better-educated respondents, some studies have found the size of the relationship to be relatively small.

- Labour-force status – attrition is generally lower among respondents who are economically inactive, again probably because they have a higher chance of being found at home by the interviewer.

- Income – the relationship identified in the literature between income and response / attrition is also mixed. Using Irish data over five rounds of the European Community Household Panel (ECHP) study, Watson (2003) found no significant association with family income.

To assess the extent and correlates of differential attrition in Wave 2 of the Infant Cohort (at 3 years) Tables 2.2 – 2.4 outline response rates in Wave 2 classified according to family characteristics in Wave 1.

Table 2.2: Response outcomes in Wave 2 classified by mother's educational attainment in Wave 1

Educational attainment, Wave 1	Outcome in Wave 2					
	Completed	Refusal	Cannot contact	Moved abroad / Child deceased	Other	Total %
Junior Certificate	81.9	7.1	6.4	3.5	1.0	100
Leaving Certificate	85.6	5.6	4.5	3.5	0.7	100
Certificate/Diploma	89.4	4.3	2.3	3.5	0.5	100
Degree	89.8	3.1	2.1	4.3	0.7	100
Total	*88.0*	*4.4*	*3.1*	*3.8*	*0.7*	*100*

From this table, one can see that attrition is negatively related to maternal education (the higher the level of mother's education in Wave 1, the lower attrition is likely to be in Wave 2). One can see from Table 2.2, for example, that almost 90 per cent of Study Children whose mother had a degree participated in the second wave of the study. This compares with just 82 per cent of children whose mother had left school with a Junior Certificate or less.

Table 2.3: Response outcomes in Wave 2 classified by family type in Wave 1

Family type, Wave 1	Outcome in Wave 2					
	Completed	Refusal	Cannot contact	Moved abroad/ Child deceased	Other	Total %
One-parent, one child	80.8	7.8	7.1	3.7	0.5	100
One-parent, two or more children	78.7	7.8	8.5	4.2	0.9	100
Two-parent, one child	87.5	3.6	2.7	5.4	0.9	100
Two-parent, two or more children	90.1	4.2	2.4	2.8	0.5	100
Total	*88.0*	*4.4*	*3.1*	*3.8*	*0.7*	*100*

Table 2.3 indicates that higher attrition levels are associated with one-parent families – 79–81 per cent of one-parent families participated in the second round of interviews compared with 88–90 per cent of two-parent families.

Table 2.4: Response outcomes in Wave 2 classified by family social class in Wave 1

Family social class, Wave 1	Outcome in Wave 2					
	Completed	Refusal	Cannot contact	Moved abroad / Child deceased	Other	Total %
Professional / managerial	91.3	2.9	1.9	3.3	0.5	100
Other non-manual / skilled manual	86.6	5.5	3.3	3.9	0.7	100
Semi-skilled / unskilled manual	85.5	5.2	3.2	5.0	1.1	100
Total	*88.0*	*4.4*	*3.1*	*3.8*	*0.7*	*100*

Finally, Table 2.4 shows a strong relationship in participation at the second wave with family social class: 91 per cent among professional / managerial families, compared with 86 per cent among those in the semi-skilled / unskilled manual group.

Overall, the three tables in question indicate that attrition is higher among more socially disadvantaged groups and one-parent families, driven by a combination of lower achieved contact levels and higher interwave residential mobility ('cannot contact') as well as higher direct refusal rates.

Table 2.5 summarises the association between attrition at Wave 2 and background demographics as they were recorded in Wave 1, in the form of odds ratios. It presents the odds of completing the survey at Wave 2 compared to not completing it for the valid sample (those who moved abroad or who had deceased between waves are excluded from the analysis). Columns A and B focus on bivariate associations. The percentage of each group who participated in the survey in Wave 2 is outlined in column A. For example, 87 per cent of families who were in the lowest equivalised income quintile in Wave 1 participated. This increased for each quintile, to stand at just under 95 per cent among families in the highest income quintile. Comparable figures are outlined in respect of mother's educational attainment, whether or not there was a change of interviewer between waves, length of time taken at the wave / interview and so on.

Column B presents the bivariate odds ratio of participating in Wave 2. One can see, for example, that families in the highest income quintile of Wave 1 were 2.6 times more likely to participate than families in the lowest quintile. In broad terms, the figures in columns A and B of the table indicate that families who were socially disadvantaged in any way – in terms of income, educational attainment, social class, depression status, etc – were significantly less likely to participate in Wave 2. Higher attrition was also significantly associated with a change in interviewer between Waves 1 and 2, one-parent as compared to two-parent family status, age of Primary Caregiver (younger ones more likely to be attriters) and urban/rural location (respondents in rural areas were 1.22 times more likely to participate in Wave 2 than those in urban areas).

In column C we present the adjusted odds ratios, controlling for Wave 1 characteristics. The important point to note is that in a multivariate framework not all variables maintain their significant association with participation. Primary Caregiver's education, age and depression status as well as family social class and consistency of interviewer between Waves 1 and 2 continue to have a significant effect. For example, relative to families in the professional / managerial group, those in the other three categories have an odds ratio of 0.65 to 0.73 of participating in Wave 2 (all three being significant). Families who had the same interviewer in both waves were 1.64 times more likely to participate at Wave 2 than those for whom there

had been a change of interviewer. This latter may reflect either greater survey experience on the part of the interviewer by Wave 2, the rapport built up between the interviewer and respondent / family at Wave 1 – or a combination of the two.

Table 2.5: Association between completing the survey at Wave 2 and background demographics in Wave 1

(A) Percentage of families participating in Wave 2; (B) Predicted Odds Ratio – bivariate association; (C) Predicted Odds Ratio – multivariate association (n of cases = 10,709)

Demographic, Wave 1 Total	Category	(A) Percentage participating in Wave 2	(B) Predicted Odds Ratio – bivariate association		(C) Predicted Odds Ratio – multivariate association	
Family income quintile (equivalised)	Quintile 1 (Low)		1 (Ref)		1 (Ref)	
	Quintile 2	**91.4**	1.43	**	1.11	*
	Quintile 3	92	1.69	**	1.05	
	Quintile 4	94.1	2.36	**	1.25	
	Quintile 5 (High)	94.6	2.60	**	1.23	
Mother's educational attainment	Junior Certificate or less	84.9	1 (Ref)		1 (Ref)	
	Leaving Certificate	88.7	1.40	**	1.17	
	Certificate/Diploma	92.7	2.26	**	1.50	**
	Degree	93.9	2.73	**	1.38	*
Change of interviewer in Wave 2?	Different	89.2	1 (Ref)		1 (Ref)	
	Same	93.2	1.65	**	1.64	**
Length of time of interview with Primary Caregiver at Wave 1	Quintile 1 (short)	91.9	1 (Ref)		1 (Ref)	
	Quintile 2	91	0.89		0.86	
	Quintile 3	91.6	0.96		0.93	
	Quintile 4	92.1	1.03		0.98	
	Quintile 5 (long)	90.7	0.87		0.83	
Primary Caregiver's age	<22 years	81.6	1 (Ref)		1 (Ref)	
	22 – 25	86.4	1.44	*	1.12	
	26 – 29	90.5	2.15	**	1.26	
	30 – 32	92.8	2.90	**	1.50	**
	33 – 35	94.1	3.57	**	1.75	**
	36 – 38	92.6	2.84	**	1.40	*
	39+	92.2	2.67	**	1.42	*
Family social class	Professional / managerial	94.5	1 (Ref)		1 (Ref)	
	Other non-manual / skilled manual	90.1	0.53	**	0.64	**
	Semi-skilled / unskilled manual	90	0.53	**	0.71	*
	Class not assigned	83.2	0.29	**	0.64	**
Family type	One-parent	82.9	1 (Ref)		1 (Ref)	

	Two-parent	92.6	2.59	**	1.42	**
Number of children under 14 in household				1.00		1.00
Location	Urban	90.5	1 (Ref)		1 (Ref)	
	Rural	92.1	1.22	**	1.14	
Primary Caregiver depressed (CES-D)	Not depressed	92.1	1.73	**	1.33	*
	Depressed	87.1	1 (Ref)		1 (Ref)	
Primary Caregiver born in Ireland?	Born in Ireland	91.4	1 (Ref)		1 (Ref)	
	Moved to Ireland, last 5 years	91.6	1.03		1.27	
	Moved to Ireland, 6-10 years ago	91.3	0.99		1.11	
	Moved to Ireland, 11+ years ago	91.8	1.05		0.99	
Primary Caregiver health	Excellent	91.8	2.34	**	1.28	
	Very good	92.2	2.46	**	1.46	
	Good	90.8	2.07	*	1.40	
	Fair	88.1	1.55		1.16	
	Poor	83.7	1 (Ref)		1 (Ref)	

* *significant at p<0.05*
** *significant at p<0.01*

2.3   REWEIGHTING THE DATA

To account for the differential attrition, the data from Wave 2 of the survey were statistically reweighted to ensure that they were fully representative of the population of children who were resident in Ireland at nine months and who were still living here at three years.

The weighting is based on a standard iterative procedure for adjusting the completed sample to known population totals. The weighting system used is called GROSS. This is based on a minimum information-loss algorithm which fits population marginals in a regression framework, and adjusts the sample to ensure that it produces estimates which match known population parameters. It has been used extensively by the ESRI since 1996.[5]

The sample weights for Wave 2 of the Infant Cohort (at three years) were constructed by first adjusting the structure or composition of the Wave 2 sample to the Wave 1 sample (thus accounting for Wave 2 response and attrition) and, secondly, by incorporating the weight that was calculated at Wave 1. This latter had been generated at Wave 1 to adjust the distribution of the completed Wave 1 sample to known population figures.[6] The first step in generating the Wave 2 weight takes account of differential attrition between Wave 1 and Wave 2; the second step takes account of differential response and design effects in the original sample at Wave 1.

The main variables used to adjust for differential interwave attrition were:

- Family structure

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[5] See, for example, Gomulka, J. (1992), 'Grossing-Up Revisited', in R. Hancock and H. Sutherland (Eds.), *Microsimulation Models for Public Policy Analysis*: New Frontiers, STICERD, Occasional Paper 17, LSE.
Gomulka, J. (1994), 'Grossing Up: A Note on Calculating Household Weights from Family Composition Totals.' University of Cambridge, Department of Economics, Microsimulation Unit Research Note MU/RN/4, March 1994.
[6] See *Sample Design and Response in Wave 1 of the Infant Cohort (at 9 months) of Growing Up in Ireland* (http://www.ucd.ie/t4cms/GUI-SampleDesignResponseInfants.pdf) for details on how the Wave 1 weight was generated.

- Mother's age
- Mother's principal economic status (PES)
- Father's principal economic status (PES)
- Family's social class
- Mother's educational attainment
- Household tenure
- Regional distribution of children by gender
- Mother's marital status
- Mother's nationality
- Mother's residency status

The above variables were all also used to calculate the Wave 1 weights. In addition to these variables, some respondent characteristics recorded at Wave 1 were found to be associated with attrition at Wave 2 and so were also included in generating the first step of the Wave 2 weights. These variables were:

- Whether or not child was breastfed at Wave 1
- Whether or not Primary Caregiver smoked at Wave 1
- Hours worked by Primary Caregiver at Wave 1
- Primary Caregiver's ethnic background at Wave 1
- Length of time family had lived in the local area at Wave 1
- Location of household at Wave 1
- Primary Caregiver depression status at Wave 1
- Primary Caregiver body mass index (BMI) at Wave 1
- Household income quintile at Wave 1

In summary, the completed sample at Wave 2 was adjusted so that its distribution according to the above variables was in line with that of the Wave 1 completed sample.

Chapter 3

CONSULTATION ON INSTRUMENTS

CHAPTER 3: CONSULTATION ON INSTRUMENTS

In this chapter we describe the various groups of experts and others who have contributed to the development of the instruments and procedures used for the Infant Cohort of *Growing Up in Ireland*, and the processes by which that input has been received. The groups involved include the Scientific and Policy Advisory Committee (SPAC), the Delphi Process, the Expert Panels and Stakeholder Groups. We also consider the other longitudinal studies from which various items have been drawn. This input, and particularly that obtained from SPAC, was important to ensure that relevant policy-oriented issues would be adequately covered in the instrumentation for the study.

3.1 SCIENTIFIC AND POLICY ADVISORY COMMITTEE

The Scientific and Policy Advisory Committee (SPAC) is a non-executive group that provided scientific and policy advice on the content and best practice of the design, implementation and roll-out of the study. Its 10 members were selected from a broad range of backgrounds in areas related to children and large-scale longitudinal national surveys – both substantive and technical. Members were selected on the basis of their expertise in:

- Policy and policy formulation as it affects children and families in Ireland
- The substantive area of childhood and research into issues relating to childhood and children
- Technical and statistical areas of particular relevance to the operation of a complex longitudinal study comparable to *Growing Up in Ireland*

The SPAC has the following terms of reference:

- Review and advise on protocols and procedures in the context of best international practice for large-scale longitudinal projects similar to *Growing Up in Ireland*
- Advise on relevant policy and research issues as they relate to children and their families in the changing Ireland of the 21st century
- Review and advise on draft questionnaires and other instruments to ensure that these reflect the policy and substantive issues identified as being of importance to *Growing Up in Ireland*
- Review summary results and their interpretation (in policy and substantive terms) as they emerge from the study

The committee is chaired by the co-directors of the Study Team, with other members of the Study Team Management Group in attendance. The composition of the SPAC reflects its primary objective of providing independent policy, methodological and substantive input to the development and implementation of the project. Committee members were drawn from a number of specialist areas, as follows:

- Policy specialist, Department of Social and Family Affairs
- Policy specialist, Department of Education and Science
- Policy specialist, Department of Health and Children
- Senior policy analyst, National Economic and Social Forum
- Senior methodologist, quantitative surveys
- Senior legal expert, child and family issues, and academic
- Senior epidemiologist and public health specialist, and academic
- Senior health promotion researcher and academic
- Senior social policy analyst and academic
- Senior educational researcher and academic
- Senior researcher, child and family support, and academic

3.2 CONSULTATIVE PROCESS

The consultative process consisted of two parts: a random sample of 75 families who had taken part in the nine-month phase of the infant study, as well as 95 experts in the field of child-related service provision and policy development. The panel of experts had been previously involved in a Delphi consultation process for both the infant and middle childhood cohorts at Wave 1. Both families and those identified as having particular expertise in the area of child development were sent a summary document detailing possible topic areas for inclusion at Wave 2 of the infant study when the children would be three years of age. This list of topic areas was developed after a review of the literature pertaining to children of this age group, and a review of the instrumentation used in comparable international longitudinal studies of children.

The main recommendations arising from the consultative process are listed below under their relevant heading. The topic areas identified by those who responded were considered in the overall content of the instrument development process.

3.3 EXPERT PANELS

Four expert panels assembled by the Study Team contributed to the design and instrumentation used in *Growing Up in Ireland* in the following areas:

- Health & Health Policy
- Child Development and Education
- Social Context & Social Institutions
- Methodology & Design

The panels of experts were made up of specialists drawn from a wide range of backgrounds, such as youth and research policy; early childhood development; educational development; paediatrics; child psychiatry; family, gender, the labour market, and health psychology, among many others.

The expert panels were consulted throughout the development phase of the project. They were initially requested to suggest domains, topics and questions of particular relevance to their specific area of expertise. They were also asked to provide references to other studies that had previously explored these topics or domains, and to provide methodological or review papers that justified the inclusion of particular measures. Draft versions of the questionnaires were sent to the panel members for comment. Based on the experience and results of the pilot and dress rehearsal studies, the panels of experts were asked for feedback in terms of streamlining the excessively long draft instruments used in the pilot phase.

3.4 STAKEHOLDER GROUPS

Members of the Study Team also met with stakeholder groups, and feedback from these meetings was also incorporated in the development of the instrumentation and the design of the project in general. The Study Team worked closely with the funding bodies and associated government departments, which include:

- Office of the Minister for Children
- Central Statistics Office
- Department of Education and Science
- Department of Social and Family Affairs

Representatives from these government departments and agencies sit on the Project Team which oversees *Growing Up in Ireland*. An important part of that group is two international advisors who were previously instrumental in the design, development and implementation of the Longitudinal Study of Australian Children (LSAC) and the National Longitudinal Study of Children and Youth (NLSCY) in Canada.

The overall Steering Group for the project involves a further inter-departmental group of senior officials from the Department of Health and Children, the Office of the Minister for Children and Youth Affairs, the Departments of Social & Family Affairs and Education & Science, and the Central Statistics Office. The Steering Group is chaired by the Director of the Office of the Minister for Children and Youth Affairs.

The input from the funding stakeholders and Project Team was in addition to consultations with other stakeholder groups who gave advice on their own particular areas of interest and expertise. The main objective in meeting with these groups was to secure their overall support for the study and to leverage this support through outreach to their membership bases. These groups included:

- The Health Service Executive (HSE)
- Childminding Ireland
- Irish Preschool and Playgroups Association (IPPA)
- National Children's Nurseries Association (NCNA)
- Institute of Community Health Nursing (ICHN)

3.5 OTHER LONGITUDINAL STUDIES

In developing the instrumentation, the Study Team tried to synchronise with contemporary longitudinal child cohort studies, both to enable later comparison and to draw on the benefits of including items used in other studies. Where items for *Growing Up in Ireland* were based on questions used in other studies, sources have been indicated in the text.[7] Some background information on a selection of the main studies is now presented.

3.5.1   MILLENNIUM COHORT STUDY (MCS)

The Millennium Cohort Study (MCS) is a longitudinal study of 18,819 children born in the UK over 12 months from 1st September 2000 in England and Wales and 1st December 2000 in Scotland and Northern Ireland. The first sweep took place when the children were nine months old, the second at age three years, and the third at age five, while the fourth sweep is currently under way. The study looks at a broad range of issues such as poverty and wealth, and quality of family life. Much of the questionnaire material in *Growing Up in Ireland* was modelled on the MCS to allow all-island comparisons; several outputs from the current study are based on all-Ireland comparisons. Hence the importance of harmonising around these concepts and questions. The MCS is implemented by a consortium headed by the Centre for Longitudinal Studies at the University of London. The main MCS site is at http://www.cls.ioe.ac.uk.

3.5.2   GROWING UP IN AUSTRALIA (LSAC)

Growing Up in Australia: Longitudinal Study of Australian Children (LSAC) is a longitudinal study of children with two nationally representative cohorts of 5,000 children each, one aged under 12 months in 2003/4 and the other aged four years in the same year. Funding has been secured for eight waves, taking the younger cohort to 14-15 years and the older cohort to 18-19 years. The study has a wide multidisciplinary brief with a heavy emphasis on policy relevance. Personal visits to households are interspersed with mailings of self-complete questionnaires (0.5 waves). Wave 5 of the study has been completed. LSAC is co-ordinated by the Australian Institute of Family Studies in Melbourne (website at http://www.aifs.gov.au/growingup/).

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[7] Many items and questions have been adapted by numerous child cohort studies. Throughout Chapters 6 and 7, we generally cite the main source of each item. The Study Team is aware that in many instances the cohort study quoted may not have been the original developer of the item. Contact was established with all of the main sources to discuss our use of items from the relevant questionnaires.

3.5.3   NATIONAL LONGITUDINAL SURVEY OF CHILDREN AND YOUTH (NLSCY)

The National Longitudinal Survey of Children and Youth (NLSCY) is a longitudinal study of Canadian children from birth to early adulthood. The study's brief is to collect information on factors affecting a child's social, emotional and behavioural development and to monitor the impact of these factors over time. Data are collected every two years, starting in 1994, with a national sample of children aged between 0 and 11 years. There have been two further cohorts added: those who were under 12 months at Cycle 4 in 2000, and those who were under 12 months at Cycle 5 in 2002. At Cycle 6 (2004/5), there were 26,000 children in the sample, while the initial sample for Cycle 7 (2006/7) was comprised of 37,655 children and youths aged from 0 to 9 and 12 to 23. The work on the NLSCY is carried out by Statistics Canada and funded by Human Resources and Skills Development Canada. The NLSCY site is

http://www.statcan.ca/cgibin/imdb/p2SV.pl?Function=getSurvey&SDDS=4450&lang=en&db= IMDB&dbg=f&adm=8&dis=2

3.5.4   EARLY CHILDHOOD LONGITUDINAL STUDY (ECLS)

The Early Childhood Longitudinal Study is an American study of the early years of child development, with two cohorts. The birth cohort has a nationally representative birth sample of 14,000 born in 2001; these children were followed until they entered kindergarten. The study was "designed to provide decision-makers, researchers, child care providers, teachers, and parents with detailed information about children's early life experiences". Data were collected from these children at nine months, two years (2003), pre-school (2005), and 2006 when most children were eligible for kindergarten entry. The kindergarten cohort focused on the kindergarten class of 1998/9 and data were collected at intervals of kindergarten (age 5), 1st, 3rd, 5th and 8th grade. The ECLS is run by the National Centre of Education Statistics, Institute of Education Sciences at the US Department of Education. The website is at http://nces.ed.gov/ecls/index.asp.

3.5.5   AVON LONGITUDINAL STUDY OF PARENTS AND CHILDREN (ALSPAC)

The focus of the Avon Longitudinal Study of Parents and Children (ALSPAC) is primarily on health and development. The stated main goal is "to understand the ways in which the physical and social environments interact over time with the genetic inheritance to affect the child's health, behaviour and development". Data collection from questionnaires is supplemented with biological samples (hair, etc), DNA samples, access to medical records and direct assessments. From an initial sample of 14,541 pregnancies, there were 13,971 infants at age 12 months. All pregnant mothers were resident in the Avon area of south-west England, with an expected delivery date between 1st April 1991 and 31st December 1992. Self-complete questionnaires were sent to mothers every few months in the early years, and additional questionnaires to the child him/herself starting in the 65th month. In later childhood, questionnaires were sent quarterly and children were asked to present for assessment every year. The study plans to continue with the children into adulthood. ALSPAC is run by a dedicated team based at the University of Bristol. The ALSPAC website is at http://www.alspac.bris.ac.uk.

Chapter 4

ETHICAL CONSIDERATIONS

CHAPTER 4: ETHICAL CONSIDERATIONS

The importance of ethics in research is receiving wider acknowledgement than ever before. In a study of children and families, it is even more of a priority. The Study Team identified a number of ethical issues and put procedures in place to deal with them. The Study Team also had to be mindful of its obligations under the relevant Acts in Irish legislation. The current chapter summarises the pertinent parts of legislation and describes the way in which our ethical guidelines were put into practice. We finish with a short description of the role of the Research Ethics Committee.

The primary concern at all times was the protection of child participants in the study. Procedures relating to child protection were informed by the *Children First Guidelines* (Department of Health and Children, 1999). All interviewers, as well as other staff working on *Growing Up in Ireland*, were security-vetted by An Garda Síochána (the Irish police service). A full module on ethics included in the interviewers' training course covered topics such as the informed consent of the respondent, professionalism and respect, reporting incidents, and child protection, including awareness and reporting of potential cases of abuse.

4.1 RELEVANT ACTS

Three acts are of particular relevance for this study: the Data Protection Acts 1988 and 2003, and the Statistics Act 1993.

4.1.1   DATA PROTECTION ACTS 1988, 2003

Data protection concerns the integrity, protection, storage and use of information collected from and about individuals. Under the Data Protection Acts 1988 and 2003, the Study Team undertook the following obligations:

1. *Fair obtaining and processing:* Respondents must be fully aware of the identity of the persons who are collecting the information, the use to which it will be put and the purpose or bodies to whom it will be disclosed. For further discussion, see below Section 4.2.1 on informed consent.
2. *Specifying the purpose:* One may not keep information about people unless it is held for a specific, lawful and clearly stated purpose.
3. *Further processing of personal information:* If one obtains personal information for a particular purpose, one may not use the data for any other purpose and one may not divulge the data to a third party, except in ways that are compatible with the specified purpose.
4. *Security of personal data:* Stringent procedures are implemented in both the ESRI and TCD to ensure that security of data is preserved at all times.
5. *Accurate and up-to-date*: One must ensure that the personal information which one keeps is accurate and up-to-date.
6. *Adequate, relevant and not excessive*: The data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they were collected or are processed.
7. *Protection of personal data*: The data shall not be kept for longer than is necessary for the particular purpose or purposes. For further discussion, see below Section 4.2.4 on confidentiality.
8. *Right of access to personal data*: Any individual about whom one keeps information has a right to see a copy of the data, a description of the purposes for which the data are being held and a description of those to whom the data may be disclosed. For further discussion, see below Section 4.2.4 on confidentiality.

4.1.2   STATISTICS ACT (1993)

Growing Up in Ireland is being conducted within the framework of the Statistics Act 1993. This is the legislation underpinning the work of the Central Statistics Office (CSO). The study

has been brought under the scope of the Act in accordance with Section 11, whereby the CSO is permitted to make arrangements with other public authorities for the conduct of statistical inquiries. While the Act facilitates access to certain data sources for the purposes of the study, the most important implication is that it provides a strong legal basis for the protection of **all** information collected against unlawful disclosure. Under the Act, all information collected must be treated as strictly confidential and used for statistical purposes only. All persons working on the study are appointed Officers of Statistics. As such they are legally obliged not to disclose, except for the purposes of the study, any matter which comes to their knowledge relating to any person, family, household or undertaking in the course of their statistical work.

Results of the study are published in aggregate form and all necessary steps are taken to ensure that details relating to an identifiable person are not inadvertently divulged.

4.2 PRACTICAL APPLICATION OF ETHICAL CONSIDERATIONS

4.2.1 INFORMED CONSENT

Detailed information sheets were prepared for all potential participants in the study, including parents, non-resident parents and regular carers. These sheets describe the type of information to be gathered, what is involved for participants, the longitudinal nature of the study, and details on the researchers and funding bodies. All participants are informed of the voluntary nature of the study and of their right of refusal to answer any questions that they do not wish to answer, and their right to withdraw from the study. Signed consent is obtained from a parent/guardian at the beginning of the household interview.

4.2.2 REPORTING CONCERNS

Interviewers were instructed to report all events or observations which caused them concern during the course of their work to the Study Team using an Incident Report Form, especially in regard to the protection of children or other vulnerable persons. All reported incidents were then considered, and acted upon as necessary, by the Project Directors. Interviewers were provided with an out-of-hours emergency phone-number to contact a Project Director if they had serious concerns.

4.2.3 INTERVIEWERS BEING ALONE WITH CHILDREN

It was stressed to interviewers during training that they must not be left alone with the Study Child or any other child while conducting the fieldwork, even for a few minutes. This guideline was also clearly stated in the information sheet provided to parents in advance of their giving of study consent. Interviewers were encouraged to suspend an interview and return at a later date or time if a parent/guardian or other adult found it necessary to leave an interviewer with a child – even for a short period. Interviewers were allowed limited physical contact with the child, for example to facilitate the main caregiver when carrying out the height and weight measurements.

4.2.4 CONFIDENTIALITY

All interviewers and other staff working on the project were appointed as Officers of Statistics by the Central Statistics Office. This imposed a legal obligation to maintain the confidentiality of all information they received in the course of the study. Under the Statistics Act (1993) (see Section 4.1.2 above), a breach of confidentiality is a criminal offence. At interviewer training it was emphasised that not all breaches of confidentiality are malicious in nature. Many can arise through thoughtless or careless comments made to third parties after the interview has been completed. Access to the non-anonymised datasets is severely restricted and great care is taken to remove any identifying information from the anonymised dataset. No government department or agency will have access to identifiable information, and the Central Statistics Office will be the only body other than the ESRI to hold a copy of the non-anonymised dataset. In addition, the following steps have been taken to ensure the confidentiality of information given as part of *Growing Up in Ireland*:

- Use of numerical codes on all electronic and paper questionnaires
- Use of passwords and usernames on laptops
- 'Strip-down' of laptops to prevent inadvertent connection to a wireless network
- Sending forward feed information to interviewers on a monthly basis and automatic deletion of this information from the interviewer's laptop upon transfer to the ESRI
- Encryption of all electronic information transferred by interviewers to a dedicated secure server in the ESRI
- Separate mailings of paper questionnaires and Work Assignment Sheets – the latter containing contact information
- The Statistics Act (1993) ensures that the information obtained can only be used for purposes of statistical compilation and analysis.
- Respondents will only be able to access the information that they themselves have provided – no individual will be able to see another person's answers, even if that person has recorded details in respect of the individual in question; for example, one parent will not be able to access what the other parent has recorded in their interview, and neither will be able to access what a carer has recorded, even about the child. This particularly important point was explicitly included in the consent form signed by all families prior to their participation in the study.

4.2.5   AVOIDANCE OF EMBARRASSMENT OR DISTRESS

Pro-actively avoiding the possibility of causing embarrassment or distress is intrinsically linked to the maintenance of confidentiality both within and outside the home. Within the home, sensitive questions concerning issues such as the marital or parental relationship, alcohol use and feelings of depression were answered on a self-completion basis by the respondents on computer rather than being asked aloud by an interviewer (unless requested). Interviewers were prohibited from getting involved in any family issues or giving advice, regardless of any qualifications or experience they had in such matters. Interviewers were, however, provided with a list of helpline numbers for a variety of agencies, which they could pass on to respondents if asked.

4.3 ETHICS COMMITTEE

The quantitative phase of the Infant Cohort at Wave 2 was carried out under ethical approval granted by a dedicated Research Ethics Committee set up by the Department of Health and Children. The pilot, dress rehearsal and main studies underwent separate review procedures. Reports on the pilot and dress rehearsal study were submitted to the Research Ethics Committee for consideration. The Ethics Committee was very active in its consideration of all the materials and procedures used in *Growing Up in Ireland*. For example, they made substantial contributions to the content and layout of information sheets, as well as recommendations for the instruments themselves. The Study Team met with the Ethics Committee to discuss the project on several occasions, and all recommendations were acted upon before a final version of all materials and procedures was agreed and implemented.

Chapter 5

OVERVIEW OF INSTRUMENTS AND PROCEDURES

CHAPTER 5: OVERVIEW OF INSTRUMENTS AND PROCEDURES

This chapter provides an overview of general procedures, instruments and respondents. Fieldwork in the home is summarised in Section 5.1. Procedures for the use of the laptop are described in Sections 5.2 and 5.3, while special procedures – for example, for dealing with adult literacy issues – are described in Sections 5.4 and 5.5. Minimal details on instruments are provided in this chapter as its purpose is to provide a broad overview of the various levels of instrumentation and their administration before details of substantive content are given in subsequent chapters; cross-references are provided to more detailed descriptions elsewhere in this document, where relevant.

5.1 HOUSEHOLD-BASED FIELDWORK AND FAMILY PARTICIPATION

The initial contact with the family at Wave 2 was via a letter from the Study Team (see Appendix A). The interviewer subsequently made a personal visit to each household to arrange an interview. At that initial visit, interviewers asked to speak to the person listed as the Primary Caregiver of the Study Child at Wave 1. If the person was still resident in the household, they were asked to confirm that they were still the Primary Caregiver. Having reminded the parent/guardian of the letter and information sheet which had already been posted to them, and answering any queries the parent had, the interviewer asked the Primary Caregiver to sign two copies of the consent form (see Appendix A). The interviewer returned their signed copy to the field office and the Primary Caregiver retained the other. Only after securing a signed consent form did the interviewer arrange to conduct the interview. Interviewers were instructed at training not to undertake any work with the household (interviews, tests or measurements) without first having secured the signed consent form.

If the interviewer was unable to make contact with a parent/guardian on the first visit, he/she left a 'called while you were out' card with his/her contact number. Where phone numbers had been collected at Wave 1, interviewers were permitted to attempt further contact by phone. Interviewers made repeat personal visits to the household until a definitive consent or refusal was obtained, or if it could be confirmed that the family had moved address. A minimum of four personal visits at different times of the day and days of the week was made to each household before it was designated a non-response outcome. In situations in which the interviewer identified that a family had moved from the address at which they were interviewed at Wave 1, the field office checked to see if the family had granted permission at the time of the first interview to use the Child Benefit Register (CBR) for tracking purposes. If parental permission to use the CBR had been obtained at the time of the first interview then the details of the family were passed to the Department of Social Protection. The new address was then passed to the interviewer (or an alternative interviewer in cases where the family had changed location to another part of the country).

In the household

Identifying the Primary Caregiver at Wave Two

Having contacted the family, the interviewer sought to interview the Primary Caregiver of the child (usually the mother) and his/her spouse partner (usually, but not necessarily, the father of the child). The Primary Caregiver was self-defined by the family as the person who provided most care to the child and was most knowledgeable about his/her development. The Secondary Caregiver was defined as the resident spouse/partner of the Primary Caregiver. Transitions between the Primary Caregiver and Secondary Caregiver from Wave 1 to Wave 2 were anticipated and this had implications for the use of forward feed data. The detailed CAPI protocol for dealing with these issues is discussed in Section 6.1.1.

Conducting the interview

The interviewer training emphasised the need to establish a good rapport with the respondents as a priority for the interview. Interviewers were instructed to try to gain the confidence of the Study Child's main caregiver in the first instance, and develop a rapport

with them before commencing the formal interview process. The interviewers were also instructed to be honest about the estimated length of time of the interview.

The main interviews with each adult were administered by the interviewer using a laptop (Computer-Assisted Personal Interviewing; CAPI). As each interview questionnaire was completed, it was 'locked down' so that the questionnaire could not be reopened in the field by the interviewer. The more sensitive questions were included in a self-completion module on the laptop (CASI mode). Respondents could, however, request that the sensitive questions be administered to them by the interviewer as with the main questionnaire (if there was no-one else present) or to self-complete on paper if they did not want to use the laptop. The CASI was set up in a very respondent-friendly way. Before the interview began, the interviewer worked through a number of practice questions with the respondent to ensure understanding of the CASI format before handing the laptop over to the respondent.

The following is a complete list of instruments used in the household:

1*   **Primary Caregiver questionnaire** (main and supplementary sections)
2   **Secondary Caregiver questionnaire (**main and supplementary sections)
3   **Questionnaire modules for Twins and Triplets**
4*   **Height and weight of Primary Caregiver and Secondary Caregiver** (where relevant)
5*   **Height and weight of the child**
6*   **Assessment of gross motor and fine motor skills**
7*   **Naming Vocabulary subtest of the BAS**
8*   **Picture Similarities subtest of the BAS**
9   **GPS co-ordinates** (where new address or co-ordinates missing from Wave One)
10[a]   **Non-resident parent questionnaire**
11.1 [a]   **Carer (home-based) questionnaire**
11.2 [a]   **Carer (centre-based) questionnaire**

* These core items were expected to be completed for all households.

a. These items were issued by the Study Team on a postal basis and self-completed by the non-resident parent/regular carer, where relevant.

Detailed descriptions of all instruments are provided in the following chapters:

- Chapter 6 – Primary and Secondary Caregiver Questionnaires (including the self-completion module)
- Chapter 7 – Direct Assessment of the Child
- Chapter 8 – Non-resident parent and carer questionnaires

5.2 CAPI PROCEDURE

Interviewers administered the main questionnaires using a laptop. The questionnaires were programmed using BLAISE 4.8 software. This program facilitated the routing of questions (skipping non-applicable questions, etc) and the inclusion of hard and soft cross-variable and range checks to alert interviewers to improbable or impossible answers or conflicts between answers.

Over the course of the interview, respondents were shown an extensive range of prompt cards with the available answer options for specific questions. These were particularly important for longer lists of options or items in a scale. Interviews could be suspended and returned to at a later time according to the requirements of the respondent; for example, if an unexpected visitor called to the house during an interview. Completed interviews were outputted as ASCII files from BLAISE, and were encrypted and uploaded to a dedicated server in the ESRI by the interviewers via the phone line. They were then decrypted and rebuilt to produce an SPSS file for preliminary analysis of the data. As well as encryption of the data in transfer, all the laptops were protected with 256-bit encryption.

5.3 CASI PROCEDURE

The sensitive questionnaires were completed on a CASI (computer-assisted self-interview) basis.[8] Self-administered questionnaires (or sections of questionnaires) can be particularly helpful in collecting data about sensitive subjects, and CASI interview techniques afford a number of potential benefits over traditional paper-and-pencil ones. For complex surveys, computerised assessment can improve the accuracy and efficiency of data collection as automatic routing ensures that the respondent traverses the questionnaire in the intended manner, while internal consistency and range checks reduce the potential for rogue values. In addition to the huge efficiency savings afforded by using direct capture as opposed to paper-based data entry, the use of CASI questionnaires can enhance the perception that information remains confidential, because individual responses are not easily viewed by interviewers (see Brown, Vanable & Eriksen, 2008 for a review). As a result, CASI may also reduce participants' embarrassment and increase their willingness to disclose sensitive information. Electronic surveying also decreases the number of hours needed for data entry and verification.

During the course of the household interview, the interviewer gave the laptop to the respondent and assisted them in completing a number of sample questions which were designed to familiarise the respondent with various types of response format (discrete, Likert, open-ended, date format). Once the respondent was satisfied with the demands of the CASI procedure, they proceeded with the interview on a confidential self-completion basis. Upon completion of the interview the questionnaire was closed down and locked so that neither the respondent nor the interviewer would have access to it. Respondents were alerted to this via a prompt on screen. The interviewer remained available at all times throughout the survey to provide assistance if required.

5.4 SPECIAL PROCEDURES

Growing Up in Ireland aims to be as inclusive as possible. Putting special procedures in place to achieve a high level of inclusion was important to achieve the main objectives of the study, such as those relating to the description of the lives of Irish children (objective #1), mapping variation in children's lives (objective #5) and providing an evidence base for the creation of policies and services (objective #9).

5.4.1   DISABILITY

Adults with vision problems were interviewed using CAPI (computer-assisted personal interview) for the main interview and for the sensitive supplement, subject to their agreement. Deaf adults self-completed all questionnaires on a pen-and-paper basis. Every effort was made to maximise the participation of families with learning-disabled or special-needs children.

5.4.2   ADULT LITERACY

Adults with literacy problems were given the option to have the self-complete questionnaire administered by the interviewer. There were two questions on literacy in the main interview for both the Primary Caregiver and Secondary Caregiver. These questions were only asked of those respondents who had indicated that literacy was a problem at Wave 1. Interviewers were advised that this might serve as an indicator to the interviewer of the need to administer the sensitive questionnaire, but that the final decision rested with the respondent.

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[8] A detailed discussion of the pilot work involved in developing the sensitive questionnaires on a CASI basis is the subject of the Pre-piloting, Piloting and Dress Rehearsal Report on the Infant Cohort (at three years).

5.4.3   OTHER LANGUAGES

Information sheets and questionnaires were translated into Irish, Romanian, Latvian, Lithuanian, Chinese, French and Polish, and then self-completed by respondents on a pen-and-paper basis during a home visit. A translator was provided to households on request.

In relation to the cognitive tests, interviewers were instructed to allow the respondent to decide whether their child would have sufficient competency in the English language to comprehend the demands of the task and to respond in English (in the case of the Naming Vocabulary test). If the respondent indicated that the child did not have sufficient English competency, the test was not administered and the interviewer noted this on the CAPI interview form.

5.4.4   TWINS AND TRIPLETS

In households where there were twins or triplets in the sample, the adult respondents completed the Primary and Secondary Caregiver interview on a CAPI basis in respect of the first child, and on paper in respect of the second and third child. The latter modules repeated only the child-related questions, this time to be answered in relation to the second twin or triplet, etc. The modules also contained some specific questions on parenting twins, such as identical or fraternal status, age at which differences were noticed, and so on. (The twin questionnaires are contained in Appendices F and G.)

Because the cognitive tests entailed complex decision rules concerning the point at which the child had reached their ability threshold based on their previous pattern of responding (see Section 7.1.6 below) all cognitive tests (twins and triplets inclusive) were administered on a CAPI basis.

5.5 GIFTS TO RESPONDENTS

Small gifts were given as tokens of appreciation for participation in *Growing Up in Ireland*. In addition to a wall chart for documenting their height, the Study Child received a colouring book with pencils. Interviewers were also provided with a supply of other gifts such as crayons, bibs and a soft ball to give to other siblings in the household. Parents/guardians were asked for permission to offer the gifts before they were presented to children. Gifts were offered only after the interviews had been completed.

Chapter 6

PRIMARY AND SECONDARY CAREGIVER INSTRUMENTS

CHAPTER 6: PRIMARY AND SECONDARY CAREGIVER INSTRUMENTS

6.1 PRIMARY CAREGIVER QUESTIONNAIRE

The home component of the study involved personally administered interviews with the parent(s)/guardian(s) of the Study Child. A detailed discussion of the rationale for inclusion of each of the items comprising the various modules of the Primary Caregiver interview is provided below. As the Secondary Caregiver Questionnaire was a subset of the questions used with the Primary Caregiver, we have provided a simple referencing system which uses the Primary Caregiver Questionnaire as the base. As noted previously, the main questionnaire was administered on a CAPI basis for both respondents, with the sensitive questionnaires being completed on a CASI basis. The Primary Caregiver questionnaire comprised 10 modules. Each section covered a broad domain of interest. (The questionnaire is provided in Appendix B.)

6.1.1 SECTION A – HOUSEHOLD COMPOSITION

A1a – A2, A7a – A8c: Household Relationship Grid

This section captured demographic details such as the name, gender, date of birth, economic status and relationship to the Primary Caregiver and Study Child of each person resident in the household. These variables are essential for examining structural family and relationship issues that affect the child (e.g. lone versus dual parent status).

To save time, some of the information which had been collected at Wave 1 was fed forward. This meant that information relating to, say, the composition of the household could be fed into the next wave of questionnaires so that the information did not have to be asked of the respondent again. However, they were asked to review the information collected at Wave 1 to ensure that any inaccuracies could be corrected. Furthermore, to ensure the confidentiality of information collected at Wave 1, it was asked that this section be reviewed by the person who identified themselves as the Primary Caregiver at Wave 1. If the Primary Caregiver from Wave 1 was not resident in the household at Wave 2, the person who identified themselves as the child's legal parent/guardian at this time was asked to complete a new household grid (A7a – A8c).

A3a – A3b: New Entrants to the Household

Any new entrants to the household (e.g. births) or any person inadvertently omitted from the household grid at Wave 1 could be added at A3b. Again, this section captured the name, gender, date of birth, economic status and relationship of each new entrant to the household of the Primary Caregiver and the Study Child, and the date when they joined the household.

A4: Number of People Living in the Household at Wave 2

This derived variable was simply the number of persons resident in the household at Wave 1, (minus departures from the household plus any new entrants) to the household. Respondents were asked to verify that the number of persons now identified as resident was correct.

A5 – A6b: Identity of the Primary Caregiver at Wave 2

Question A5 asked whether the person who identified themselves as the Primary Caregiver at Wave 1 was still the Primary Caregiver at Wave 2. The Primary Caregiver was self-defined by the family as the person who provided most care to the child and was most knowledgeable about his/her development. The Secondary Caregiver was defined as the resident spouse/partner of the Primary Caregiver.

If the Primary Caregiver at Wave 1 was no longer the Primary Caregiver at Wave 2, question A6a asked why they were no longer the Primary Caregiver, and question A6b established that their resident spouse/partner would complete the questionnaire as the Primary

Caregiver on this occasion. This transition meant that the Primary Caregiver at Wave 1 would complete the Secondary Caregiver at Wave 2. However, if there was a new Primary Caregiver at Wave 2 – for example a step parent – they were asked to confirm that they were the legal parent/guardian and in a position to complete the interview at this time. If they said *yes* the interview could go ahead; if *no*, the interview was postponed until contact could be made with a legal parent/guardian, e.g. the Secondary Caregiver at Wave 1.

A9a – A9c: Other Biological Children Living outside the Household

Question A9a sought to establish whether the Study Child had any other full, half or step brothers or sisters living outside the household. If so, the respondent was asked to provide the gender, age and relationship to the Study Child of these siblings. These questions were designed to establish the birth order of the child and to ascertain a more accurate picture of family size (including blended families) in Ireland.

6.1.2 SECTION B – CHILD'S HABITS AND ROUTINES

B1 – B4: Child Sleeping Patterns

Rationale

Sleep is essential for children's growth and optimal functioning. Indeed, a number of longitudinal studies have documented an association between poor sleep quality in pre-school children and behavioural and emotional problems later in life. For example, one prospective study reported that sleep problems at the age of four years predicted anxiety/depression, attention problems and aggression in mid-adolescence (Gregory & O'Connor, 2002). Koulouglioti and colleagues (2008) in a moderately sized longitudinal study (n = 278) found that inadequate sleep was related to the number of medically attended injuries that children sustained between the ages of 18 months and four years of age, after controlling for socio-economic status and child temperament. A cross-sectional study of 422 Canadian children aged 5-10 found that, compared with children sleeping 12-13 hours, those who slept 8-10 hours were at increased risk for obesity (OR = 3.45), with sleep-mediated curtailment of leptin proposed as a potential biological mechanism (Chaput, Brunet & Tremblay, 2006).

Measure

Questions B1 – B2 were standard questions designed to collect information relating to what time the child goes to bed and wakes, while B3 asked about the number of hours the child sleeps during the day. Question B4, which was adapted from LSAC at Wave 2, asks whether the child's sleeping pattern or habits present a problem for the parents.

B5a – B5b: Dry by Day and Night

Rationale

By the age of three years most children have sufficient competency to start performing some self-care tasks independently (dressing, washing, etc) and most will have begun the process of toilet-training. One large-scale longitudinal study observed that most children (if not still in nappies) ceased wetting the bed between the ages of 29 and 41 months (Touchette et al, 2005). Nevertheless, approximately 15-25 per cent of children aged 4-5 years continue to wet the bed during the night (Touchette et al, 2005) and this tends to be more common in boys than girls (Kawauchi, Tanaka & Yamao, 2001). This is an important issue from a developmental perspective because studies have reported associations between bedwetting and developmental delays in language, physical growth and skeletal maturation, and behavioural problems (c.f. Touchette et al, 2005).

Measure

Two questions were adapted from the ALSPAC study about the frequency with which the child wears nappies or training pants (a) during the day and (b) at night; these were

designed to gauge how far along the child is in achieving this important developmental milestone.

B6: Pacifier Use

Rationale

Research is inconclusive but pacifier use has been linked with higher incidence of ear infections and other types of infection (e.g. Hanafin & Griffiths, 2002), early childhood caries, dental malocclusion, and delayed speech and language development (McNally, 1997).

Measure

Two questions (B6a – B6b) assess the frequency with which the child uses a soother or sucks his/her thumb or fingers.

B7: Quality of the Parent-Child Relationship (Child-Parent Relationship Scale – Short Form, Pianta, 1992)

Rationale

The parent-child relationship has been highlighted by researchers as one of the most salient factors mediating the association between family structure and child outcomes. Positive and supportive interactions between parents and children encourage appropriate social behaviour, and have been shown to raise school grades and decrease externalising behaviours (O'Connor, Hetherington & Climgempeel, 1997; Mosely & Thompson, 1995).

Measure

The Pianta Child-Parent Relationship Scale taps into both positive and negative aspects of the parent-child relationship. It is easy to administer. The 15-item short form was used in the MCS at Wave 2. Respondents indicated the current applicability of each statement to their relationship with the Study Child on a five-point scale: *Definitely does not apply, Not really, Neutral, not sure, Applies somewhat*, and *Definitely applies*. An answer option of 'Not applicable' was allowed for one of the statements relating to being at work for those who were not employed outside the home. The 'Conflicts*'* sub-scale includes items on the parent's perception of difficulties in their relationship with the Study Child. The 'Positive Aspects' sub-scale includes items relating to getting on with the Study Child and feelings of effectiveness as a parent. There has been little psychometric work undertaken with the Pianta short form, but analysis of the Dress Rehearsal data yielded alpha coefficients of 0.52 and 0.71 for the Conflicts and Positive Aspects of the scale respectively.

B8: Parental Discipline Practices

Rationale

Discipline methods are seen as an important aspect of parenting and have an important influence on child behaviour and development (Grusec & Goodnow, 1994). Distinctions have been drawn between inductive techniques (such as explaining why a particular act was wrong) and punishment (e.g. smacking or shouting), with the former more effective at helping the child to internalise moral rules (Kerr, Lopez, Olson et al, 2004). There has been increasing debate in the media and in the academic literature about the effects of smacking; most, but not all, studies report negative effects of using smacking as a discipline strategy (e.g. Gershoff, 2002).

Measure

This question collected information on the frequency with which the respondent used particular discipline strategies on a five-point Likert type scale ranging from *never* to *always*. These items were adapted from the MCS. Item B8e, sending the child out of the room, was amended to include using the 'naughty step'. This was used as an example of a time-out

method which would be recognised by Irish parents, while item B8f was amended to remove any reference to pocket money due to its lack of age appropriateness.

6.1.3 SECTION C – CHILD'S HEALTH AND DEVELOPMENT

General Health Status (C1)

Rationale

Many national health surveys use a general health-related quality of life measure because they are quick to administer and have been found to be valid and reliable indicators of other objectively obtained measures of health status (Bowling, 2005). Haas (2007) demonstrated the predictive validity of this type of question as a longitudinal indicator of adult health outcomes.

Measures

The same measure as that used at Wave 1 was used again at Wave 2, and asked the respondent 'In general, how would you describe the child's health?' Response options ranged from *very healthy* to *almost always unwell* (C1).

C2 – C6: Chronic Illness, Disability and Functional Limitations

Rationale

Although prevalence estimates vary substantially depending on the operational definition used (Van der Lee , Mokkink, Grootenhuis et al, 2007), epidemiological studies typically indicate that chronic illness affects between 10 and 20 per cent of the childhood population (Northam, 1997; Geist, Grdisa & Otley, 2003). The experience of childhood chronic illness can impose burdens on both the family unit and the child (Eiser, 1997). Indeed, numerous studies have found that children with a chronic illness or disability are at increased risk for poor psychosocial outcomes (Cadman, Boyle, Szatmari et al, 1987; Gortmaker; Walker, Weitzman et al, 1990).

Measures

Questions C2-C6 asked whether the child had any longstanding illness, condition or disability, the nature of this condition, illness or disability, whether it had been diagnosed by a medical professional, the timing of onset and the extent to which the child was hampered in daily activities by this condition.

(C6z_1 – C6z_3) Respiratory Illness and Atopic Manifestations

Rationale

Respiratory illness is the most common illness of early childhood, and Ireland consistently ranks among the highest in the world in terms of asthma prevalence (Masoli, Fabian, Holt et al, 2004; World Health Organisation, 2007). Furthermore, the available evidence seems to indicate that rates of asthma have increased over time, particularly in children (Braman, 2006). Data from the nine-year wave of *Growing Up in Ireland* showed that 50 per cent of all those with a chronic illness (or about 6 per cent of the overall cohort) had a respiratory-related illness. Early childhood therefore seems like an apposite time to ask these questions so as to examine the antecedents of asthma and atopic conditions that may develop in time, and be picked up in future waves of the study.

Measure

Findings from *Growing Up in Ireland* showed high prevalence rates for respiratory conditions at nine years of age. As a result the expert panel recommended investigating this matter further within the Infant Cohort at Wave 2. Parents were asked a set of three

questions adapted from the Avon Longitudinal Study of Children and Parents (ALSPAC) which asked whether the child had any periods of wheezing/whistling on his/her chest in the past 12 months, the number of episodes/bouts, and whether they had received medication for this condition.

C7: Vaccinations

Rationale

Wave 1 captured information in respect of vaccinations administered at two, four and six months. To ensure a complete vaccination record, respondents were asked whether the child had received the MMR vaccine at 12-15 months. Ireland has been highlighted by the WHO as having one of the poorer vaccination uptake rates in the European Union. Although the MMR vaccination is administered free of charge to children, recent figures from the Health Protection Surveillance Centre (HPSC) indicated that the uptake of MMR was 87 per cent nationally in 2007 (http://archives.tcm.ie/irishexaminer/2009/01/07/story81331.asp), which is some way below the WHO's target coverage rate of 95 per cent. This is an important area of investigation in the context of ongoing parental concerns about the possible side-effects of the MMR vaccination (e.g. widely reported links to autism).

Measures

A short one-item question was designed by the Study Team to determine whether the child had received the vaccine or not.

C9a – C9b: Child's Exposure to Antibiotics

Rationale

Preschool children consume more antibiotic medicines than any other age group (Wrigley, 2002); ALSPAC found that 62 per cent of children had received one or more antibiotics between the ages of three and 4.5 years (Wye et al, 2008). Moreover, recent research indicates that medical-card holders (30 per cent of the population in Ireland) account for over 50 per cent of antibiotic use (McGowan, Bergin, Bennett et al, 2008) though at present it is unclear whether this relationship extends to children or not.

A meta-analysis of eight studies (four prospective and four retrospective), which involved a total sample size of 27,167 children, found that antibiotic exposure during the first 12 months of life was associated with increased risk of developing asthma in early childhood, and that the effect was dose-related, and remained after applying controls for a range of covariates. Given that Ireland is one of only three countries in the EU where outpatient antibiotic prescribing is increasing (Report of the RCPI Policy Group on Healthcare-Associated Infection, 2009), this represents a plausible and testable causal pathway for higher asthma prevalence among the Irish childhood population.

Measure

Question C9a asked whether the Study Child had received a course of antibiotics in the past 12 months, while question C9b asked how many courses of antibiotics in total the child had received in the past 12 months.

C10: Number of Inpatient Nights

Rationale

The rationale for this was to measure the number of nights spent in hospital serves as an objective indicator of children's health as opposed to question C1, which is a more subjective parent-report measure. Higher use of secondary healthcare, particularly the number of nights spent in hospital, is a marker for ill-health.

Measure

This simple one-item question measured the number of nights the Study Child had spent in hospital since the time of the last interview.

C11 – C13: Child's History of Accidents

Rationale

Injuries in childhood represent a major public health concern. Epidemiological studies of childhood injuries typically show that children from lower socio-economic backgrounds are at increased risk of death or injury (e.g. Roberts & Powers, 1996; Silversides, Gibson, Glasgow et al, 2005), and that they present at emergency rooms with a greater severity of injuries (Hippisley-Cox, Groom, Kendrick et al, 2002). A number of social correlates of income poverty are associated with increased risk for injury. Children of lone mothers seem particularly at risk as they have the highest death rate of all social groups (Judge & Benzeval, 1993) and accident rates twice those of children in two-parent families (13 per cent vs. 7 per cent) (Roberts & Pless, 1995). However, other factors have been linked to childhood accidents; among others, area-level effects (Haynes, Reading & Gale, 2003), family size (Schwartz et al, 2005), and the child's temperament (e.g., Plumert & Schwebel, 1997).

Measure

Question C11, derived from the Millennium Cohort Study, measured whether the Study Child had ever had an accident that required hospital treatment or admission, and the total number of accidents that required hospital treatment or admission (C12). C13 asked about the number of *these* accidents that were bone fractures or breaks, and was designed to explore the putative link between calcium deficiencies and increased risk of fractures in childhood (Greer & Krebs, 2006).

C14 – C15: Visual and Auditory Problems (C14 – C15)

Rationale

Early-manifesting sight or hearing problems which are left untreated are associated with impaired reading progress (Williams, Latif, Hannington & Watkins, 2005), and may disrupt the development of speech and language skills (Healthy Children, 1992).

Measure

Two questions adapted from the Millennium Cohort Study asked whether the child had currently or at any time in the past any sight or hearing problem requiring correction, with three response categories: *yes currently, yes, in the past* and *no*.

C16: Access to Healthcare

Rationale

This is important from a public policy and planning perspective, particularly where socio-economic or geographic factors limit access, as a delay in seeking or receiving healthcare is associated with more complications and sequelae from illness (Starfield & Budetti, 1985). This can be explored further at Wave 2 in terms of identifying increasing or worsening health conditions where there have been delays in seeking or obtaining healthcare for the child.

Measure

Question C16, adapted from the National Survey of Children's Health 2003, asked whether the child had needed medical care in the preceding 12-month period, and also about perceived barriers to access.

C17 – C19: Speech and Language Development

Rationale

Learning to talk is a major developmental milestone of early childhood. The most intensive period of speech and language development is during the first three years of life, and the preschool period is the time when developmental delays in this area are likely to manifest (Cohen, 2005). It has been estimated that speech and language problems affect 5-8 per cent of preschool children (Nelson, Nygren, Walker et al, 2006). These are important from a developmental perspective because they are associated with considerable morbidity. Speech and language difficulties often persist into the school years. Prospective studies have shown that speech and language impairments (SLIs) are associated with poorer behavioural, socio-emotional and academic outcomes (Beitchman, Brownlie, Inglis et al, 1996; Silva, Williams & McGee, 1987).

Measure

The presence of speech and language problems was indexed using item C17, which was adapted from the Parents Evaluation of Developmental Status (PEDS, Glascoe, 2006). It asks whether the respondent has any concerns about how the child talks and makes speech sounds. As two of the original response categories, *Yes*, and *A little*, are not mutually exclusive, these were amended to read *Yes, a lot* and *Yes, a little.* Question C16, adapted from LSAC, explored the nature of speech or communication difficulty. On the advice of the expert panels, for analytical purposes the two response categories dealing with 'understanding' speech were removed, and *stutters, stammers or lisps* was disaggregated into two response categories: *stutters, stammers* and *lisp or difficulty pronouncing certain letter combinations.*

C21 – C22: Dental Health

Rationale

By the time a child is three years old, all 20 baby teeth will normally have arrived, and tooth brushing habits should have become firmly established by preschool age (Rayner, Holt, Blinkhorn et al, 2003). Dental caries is the single most prevalent chronic disease condition of childhood (c.f. Edelstein, 2002). There is evidence from the UK and Ireland that decay experience is on the increase in children under five years of age, and that it is more heavily concentrated in socially disadvantaged children (Nunn, 2006). Data from a number of countries have shown that starting to brush before one year old, twice a day, and with parental involvement, doubles the odds of being decay-free, irrespective of the level of disadvantage (Nunn, 2006).

Measure

Parents were asked how often a toothbrush is used to clean the child's teeth, with response categories ranging from *not at all* to *more than twice a day (C21)*. This was supplemented by a further question which asked whether the child had ever been to the dentist because of a problem with his/her teeth. This was designed to tap chronicity of dental problems (C22).

C23 – C25: Current Dietary Intake (Amherst Questionnaire – Sallis, Taylor, Dowda et al, 2001)

Rationale

Diet during the early childhood years is important for growth and development. The quality and composition of diet during early childhood years has attracted increasing interest in recent years, especially in the context of rising obesity among childhood populations (Livingstone & Robson, 2000). To date there is very limited data on the food intake patterns of preschoolers in Ireland. Numerous studies in Ireland indicate that social status is a strong determinant of diet quality (Kelleher, Lotya, O'Hara et al, 2008). Differences in diet quality

may partially explain the higher obesity risk among lower social class groups. Other studies have reported that dietary intake at age three has implications for academic attainment in later years, independent of other covariates (Feinstein, Sabates, Sorhaindo et al, 2008).

Measure

Wave 1 captured information in respect of initiation, duration and exclusivity of breastfeeding, and the timing of exposure to other types of milks and solid foods. As approximately 10 per cent of the sample was still breastfeeding at the time of the first interview, two additional questions were added to obtain a complete breastfeeding history for these respondents. Question C23-C24 asked whether the child was still being breastfed and the age in months at which they had ceased if they were not currently breastfeeding. Common methods of dietary assessment in children include dietary recalls, food diaries or food frequency questionnaires (FFQs). However, there is a notable lack of short and age-appropriate methods for assessing dietary quality in children (Magarey, Golley, Spurrier et al, 2009). Given these caveats, *Growing Up in Ireland* used an adapted version of the Sallis Amherst Questionnaire (Sallis, Taylor, Dowda et al, 2001) which was used by LSAC and the *Growing Up in Ireland* middle childhood cohort at Wave 1. It enables classification of children's diet as more or less healthy along the dimensions of: fruit, vegetables, high-sugar drinks, energy-dense foods and full/low fat milks.

C26a – C26f: Parental Feeding Style

Rationale

Children under three to four years of age eat primarily in response to appetite or hunger cues whereas older children's eating is influenced also by a range of environmental and social factors (Ramsay, 2004). Early childhood is a period when children's dietary behaviour is likely to be heavily influenced by parental preferences and attitudes, and when eating habits are developed and reinforced. A recent review article by Ventura and Birch (2008), which synthesises much of the research on the relationship between parental feeding style, children's eating behaviours and children's weight status, found strong support for the premise that high levels of parental control and restriction are associated with increased adiposity in children (Ogden, Reynolds & Smith, 2006; Fisher & Birch, 1999, 2000), possibly because parental control reduces the capacity of children to regulate their own energy intake.

Although a number of studies have examined the role of parental restriction on food intake, fewer studies have examined the role of other feeding practices such as parental monitoring of children's food consumption and use of food as a reward (Musher-Eizenman & Holub, 2007).

Measure

Parental feeding style was indexed using six items adapted from the Parental Feeding Style Questionnaire (Wardle et al, 2002). These items measured two abbreviated constructs representing *Parental Control* (4 items), such as 'I decide when the child should have a snack' and *Emotional Feeding* (2 items), such as 'I give my child something to eat to make him/her feel better'. Response categories are indicated on a five-item Likert-type scale ranging from 'never' through 'always', with some items being reverse-scored. Scale scores are obtained by calculating the means of the items comprising each scale after reverse-scoring the negatively worded items. Full scoring information can be obtained at: http://www.ucl.ac.uk/hbrc/diet/ParentalFeedingStyle.doc [accessed 04/01/11]. These items are represented on the questionnaire as questions C26a – C26f.

C27: Parental Perception of Study Child's Weight Status

Rationale

It has been argued that one of the reasons for the increase in rates of overweight is because parents fail to recognise that their child's weight status is problematic (e.g. Huang et al, 2007). Previous research provides support for this position; studies typically indicate poor correspondence between measured and parental perceptions of child weight status for those at the higher end of the BMI distribution (e.g. Maynard, Maluska, Blanck et al, 2003). Etelson and colleagues (2003) noted that parents surveyed who had overweight children did not differ from other parents in their level of concern about excess weight as a health risk and tended to underestimate their children's weight.

Measure

A single question asked the respondent how they would describe the Study Child's weight on a four-point rating scale ranging from *underweight* to *very overweight*. Investigators such as Huang et al (2008) and Maynard et al (2008) have demonstrated the utility of this type of question for indexing the extent of agreement between parental perception of child weight status and objectively measured child BMI status.

6.1.4 SECTION D – PARENTAL HEALTH

D1: General Health Status of Respondent

Rationale

Parental ill-health has implications for the health and wellbeing of children, particularly if it compromises the ability of the parent to care for the child (see questions D2 – D5 below).

Measure

Item D1 was derived from the Short Form 12 Health Survey, measuring generic health concepts and health-related quality of life. The item tapped the general health status of the *parent* on a five-point rating scale, ranging from '*excellent'* through '*poor'.* There is good evidence, summarised in Blaxter (1989), that such measures are close analogues of clinically assessed health status.

D2 – D5: Chronic Physical or Mental Health Problem, Illness or Disability

Rationale

Armistead et al (1995) have proposed a number of pathways by which the experience of parental chronic illness can affect child functioning. Thus parental illness may disrupt aspects of parenting (e.g. support, reinforcement, discipline) by reducing capacity to provide care, or indirectly through the emotional distress of parents (e.g. depression). However, the extent to which the experience of parental illness affects child outcomes remains an under-researched phenomenon relative to the extensive literature that addresses families' adjustment to child illness (Pedersen & Revenson, 2005).

Measure

Questions D2 – D5 were derived from the European Community Household Panel survey (ECHP – the Irish component of this was the Living in Ireland survey 1994-2001). They explored the nature, duration and impact of the illness/disability on the respondent. These questions were also asked of the Secondary Caregiver, where appropriate.

D6 – D9: Healthcare Insurance

Rationale

Children are some of the heaviest users of both primary and hospital healthcare services. UK data have shown that more than 25 per cent of a GP's workload arises from consultations with children (Saxena, Majeed & Jones, 1999). A parsimonious explanation for variations in children's healthcare usage would be that a child's health status and level of need determine their use of medical care services (Janicke & Finney, 2000). However, the extent of fee-paying in the Irish system means that many children who require medical attention may not receive this, or may do so much later than they would have done had their parents not had to pay directly. Those on low incomes without medical card cover may be particularly vulnerable as GP visitation is likely to consume a large proportion of discretionary income. Determining variations in childhood access to medical care is clearly a major policy issue, especially since there is reason to suspect that a delay in seeking medical care is associated with more complications from and sequelae to illness (Starfield & Budetti, 1985).

Measure

Questions D6 – D8 recorded information in respect of the family's medical insurance cover, including the provision of private healthcare insurance, as well as asking specifically whether the child was covered by health insurance. Adapted from the Living in Ireland survey, they will provide explanatory power in the analysis of variation in access to and use of health services, as well as variation in health status.

6.1.5 SECTION E – CHILD'S PLAY AND ACTIVITIES

E1 – E2: Child's Temperament (abbreviated version of the Short Temperament Scale

for Toddlers; Prior, Sanson, Smart et al, 2001)

Rationale

The last decade has witnessed increasing interest in the relationship between individual differences in early emerging temperament characteristics and children's later socio-emotional and behavioural development (Henderson & Wachs, 2007). Temperament has been defined as "constitutionally based individual differences in reactivity and self-regulation in the domains of affect, activity and attention" (Rothbart & Bates, 2006; p.100). Most researchers in the field would subscribe to the idea that temperament is a predisposing set of characteristics that is moderately stable over time and across settings (Zentner & Bates, 2008), but may manifest in different ways depending on the nature of the context in which the individual is operating (Henderson & Wachs, 2007). Although early temperament research was characterised by disputes regarding the exact number and composition of temperament dimensions, there is now some consensus among leading experts on the existence of three broad temperament traits: '*reactivity*', '*approach or inhibition*', and '*self-regulation*'. Reactivity refers to the onset, intensity and duration of emotional motor and orienting reactions; approach/inhibition to reactions towards different stimuli, and self-regulation to processes that serve to modulate reactivity (Rothbart & Bates, 2006; Sanson et al, 2009). Moreover, it has been argued convincingly by Rothbart (2007) among others that these dimensions of temperament are related to the 'big five' personality factors whihc emerge later in life.

It is becoming increasingly clear that children's temperaments shape their outcomes, in part by influencing the manner in which they engage and evoke responses from their environments (Shiner, 2005). The goodness of fit between temperament characteristics and the social environment is being increasingly recognized in interactive models of child vulnerability and resistance. Research has shown, for example, that more emotionally negative children evoke more negative parental responses than less emotionally negative children in the same family (Jenkins, Rasbash & O'Connor, 2003).

Measure

Infant temperament was measured at Wave 1 using the Infant Characteristics Questionnaire, which produces scores for four sub-scales: '*fussy/difficult'*, '*unadaptable',* '*unpredictable'*, and '*dull'*. Child temperament at three years of age was measured using an abbreviated version of the Short Temperament Scale for Toddlers (STST; Prior, Sanson, Smart et al, 2000) and used in LSAC. This parent-report instrument comprises 13 items and yields scores for each of three sub-scales; *Sociability* – tapping in to approach/withdrawal tendencies, *Persistence* – tapping in to attentional self-regulation, and *Reactivity* – tapping intensity and duration of motor, emotional and orienting reactions. Items are scored on a six-point response format ranging from *almost never* through *almost alway*s. Psychometric information provided by the LSAC Study Team[9] indicates that the items comprising the various scales have acceptable internal-consistency reliability and excellent model fit when subjected to confirmatory factor analyses. This inventory appears on the PCG questionnaire as items E1a – E1m.

E3a – E3g: Parent's Role in Fostering Home Learning

Rationale

Individual differences in children's language skills are already apparent by the time children enter school and often affect subsequent language growth, literacy and academic achievement. An excellent review of the factors that promote children's learning in the home environment, by Tamis-LeMonde & Rodriguez (2009), includes the frequency of parent-child interactions in routine learning activities (e.g. shared reading), the quality of parent-child interactions (e.g. parent's cognitive stimulation and responsiveness), and the provision of age-appropriate learning materials, such as books and toys, which facilitate communicative exchanges. Shared tasks such as reading from storybooks and playing board games where mathematical concepts are explored through numbers and size ratio may provide an important source of knowledge and practical learning for the young child. Furthermore, playing active games such as football has been shown to benefit other aspects of children's behavioural and social development (e.g. turn-taking in games, motor development through physical play).

Measures

Items E3a – E3d, derived from the Millennium Cohort Study, asked about the frequency with which anyone at home (a) reads to the Study Child, (b) teaches him/her the ABC or alphabet, (c) teaches him/her numbers or counting and (d) helps him/her learn songs or nursery rhymes. Items E3e – E3g were added by the Study Team to get an indication of the other types of activities parents engage in with children such as (e) playing board games and jigsaws, (f) painting, drawing or colouring, and (g) playing active games such as football.

E4: Number of Children's Books in the Home

Rationale

Environmental supports for reading are considered a strong predictor of children's educational outcomes, and the number of children's books in the home is positively associated with children's reading and maths scores independent of other socio-economic variables (Fryer & Levitt, 2004; Smyth, Whelan, McCoy et al, 2010). For example, the number of books in the home has been found to vary by parental education level. Analysis of the *Growing Up in Ireland* middle childhood cohort revealed that 76 per cent of children whose mothers had a degree had access to 30+ books in the home compared with 41 per cent of children whose mothers had a lower secondary education (Williams, Greene, Doyle et al, 2009).

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[9] Personal communication from Professor Ann Sanson.

Measure

Question E4 was taken from LSAC, but this type of question has been used by other surveys, including the Early Childhood Longitudinal Study in the US. It asked how many children's books the child had access to in the home, with five response categories ranging from '*none*' through to '*more than 30'.*

E5 – E7: Children's Screen-time

Rationale

It has been reported that children less than three years of age spend an average of 2.2 hours per day watching television and other related media, increasing to 3.3 hours for children aged 3-5 years (Zimmerman & Christakis, 2005). This is important from a developmental perspective because a number of studies have reported deleterious effects of children's early television exposure on outcomes such as obesity (Dennison, Erb & Jenkins, 2002), attentional problems (Christakis, Zimmerman, DiGiuseppe et al, 2004), aggression (Anderson & Bushman, 2001) and sleep patterns (Thompson & Christakis, 2005).

Measure

Question E5 asked how many hours and minutes the child spends watching television or videos/DVDs each day. Parental report, although tending to over-estimate children's viewing hours, is strongly correlated with direct observation and time diary methods (Anderson, Field, Collins et al, 1985). Questions E6 and E7 asked whether there are rules about what the child may watch on television and whether the child has a television or computer in their bedroom.

E9 – E10: Child's Motor Development (E9/E10)

See Chapter 7, Section 7.2 below.

6.1.6 SECTION F – CHILD'S FUNCTIONING AND RELATIONSHIPS

F1: Child's Psychological Adjustment (Strengths & Difficulties Questionnaire, Goodman, 1997)

Rationale

Children's development in their first three years has a huge impact on their later development, but recent research highlights that significant numbers of toddlers and preschoolers exhibit behaviours severe enough to cause concern to parents, teachers and other caregivers. A failure to develop appropriately in these domains has been shown to disrupt preschool, school and family functioning, and also affect growth in other developmental domains (Powell, Dunlap & Fox, 2006). In the US, recent research on the critical role of emotional and social well-being in school readiness, and the negative trajectories of early problem behaviour has led to a national focus on the importance of providing prevention and intervention services to young children with challenging behaviour and their families (New Freedom Commission on Mental Health, 2003; Shonkoff & Phillips, 2000). Research from New Zealand has shown a significant connection between difficulties in children's behavioural development at the age of three and problems in adulthood such as depression, anti-social behaviour and criminal activity (Caspi, Moffitt & Newman, 1996).

Social competence, another important aspect of psychosocial development, is linked to positive peer relationships (Booth-LaForce et al, 2005); the parent-child relationship is often seen as an important antecedent. Social competence has also been linked to emotional and mental health, self-esteem, school readiness and academic outcomes.

The Strengths and Difficulties Questionnaire (SDQ – Goodman, 1997) will provide an outcome measure of psychological adjustment across behavioural and psychosocial

domains. The five-factor structure of the SDQ has been affirmed in a number of independent studies in Europe (Muris, Meesters & van den Berg, 2003; Smedje, Broman, Hetta et al, 2004), Australia (Hawes & Dadds, 2004) and the UK (Goodman, 2001). Further evidence for the construct validity of the SDQ has been adduced by Hawes and Dadds (2004). In addition to showing significant cross-scale concordance, they reported that the strength and directions of these associations were conceptually meaningful. Thus, they found that the conduct problems and hyperactivity sub-scales were most heavily related to each other (r = 0.52); while the prosocial scale showed the expected inverse association with conduct problems (r = -0.46). As a screening tool for assessing emotional health and problem behaviour in children, the SDQ has been found to differentiate well between clinical and community-based samples (Goodman 1997, Goodman & Scott, 1999; Klasen et al, 2000) and to be sensitive to changes in behaviour following intervention (Mathai, Anderson & Bourne, 2003). Goodman and colleagues (2000) showed that a Total Difficulties score at or above the 90th percentile predicted a 15-fold increase in the likelihood of any independently diagnosed psychiatric disorder.

Measure

The SDQ is a brief (25-item) behavioural screening questionnaire designed to assess emotional health and problem behaviours. It can be completed by the parents or teachers of children aged 3-16 years. The instrument produces scores for each of five sub-scales:

- *Emotional symptoms* (e.g. often unhappy, downhearted or tearful)

- *Conduct problems (*e.g. often fights with other children or bullies them)

- *Hyperactivity/inattention* (e.g. is restless, overactive, cannot sit still for long)

- *Peer relationship problems* (e.g. is picked on or bullied by other children)

- *Prosocial behaviour* (e.g. is kind to younger children)

Each sub-scale comprises five items with answer categories and a Total Difficulties score is obtained by summing scores across the four deficit-focused scales (i.e. all except the prosocial behaviour scale). Respondents are required to indicate their level of agreement to each item on a three-point scale of *Not true*, *Somewhat true* or *Certainly true*. Item scores vary from 0-2 depending on the type of endorsement, and the Total Difficulties score ranges from 0-40. Administration time is approximately five minutes. In addition to having good psychometric properties (see below), this instrument has the obvious advantage of being substantially shorter than comparable instruments such as the Child Behaviour Checklist and the Rutter Scales, with which it correlates highly (Goodman & Scott, 1999; Klasen, Woerner, Wolke et al, 2000; Koskelainen, Sourander & Kaljionen, 2001; Becker, Woerner, Hasselhorn et al, 2004). The SDQ has previously been used with the ***Growing Up in Ireland*** nine-year cohort, the MCS and Growing Up in Scotland (GUS) cohorts at wave 2 (when the children were three years of age), so it will facilitate cross-cohort and cross-national comparisons.

Goodman (2001), who evaluated the internal scale reliability of the SDQ in a sample of 10,438 British children aged 5-15 years, reported coefficient alphas ranging from moderate (peer problems – 0.59) to strong (total difficulties – 0.82) for the parental informant version of the instrument. The mean alpha across all scales and all informants (parent, teacher and self-report) was good at 0.73. Hawes and Dadds (2004), who examined the stability of SDQ scores over a 12-month period, found that the correlations between scores at time one and time two were remarkably strong. Test-retest reliabilities for the various scales were as follows: hyperactivity, r = 0.77; conduct problems, r = 0.65; emotional symptoms r = 0.71; peer problems, r = 0.61; prosocial, r = 0.64; total difficulties, r = 0.77.

6.1.7 – SECTION G – CHILDCARE ARRANGEMENTS

G1 – G6b: Information on Childcare Arrangements

Rationale

Increases in female participation in the labour market have meant that an increasing number of children are being placed in non-parental care during the day. This has provoked debate about the likely short- and longer-term implications of different types of childcare for children's outcomes (e.g. Howes, 2003). Research suggests that the type, timing and duration of early childcare can have a significant impact on aspects of the child's development. While a number of longitudinal studies indicate a modest long-term effect of quality early childcare on cognitive development in young school-aged children (Loeb, Bridges, Bassok et al, 2007), particularly for children from at-risk backgrounds (Peisner-Feinberg, Burchinal, Clifford et al, 2001; Hart & Risley, 1995), other studies have reported an association between early entrance to group-care (before age two years) and increased problems with behaviour at ages three and five (Sylva, Melhuish, Sammons et al, 2004) Recent data from the ECLS indicate that centre-based care has a negative effect on socio-behavioural outcomes relative to parental care (Loeb et al, 2007). The negative effect was greater for children entering care at a younger age, and for those who spent more than 30 hours per week there. Again, however, there were variations according to family background; children from low-income families showed no negative effect of longer hours on behaviour, whereas the behaviour of children of higher-income families got worse the longer they spent in centre-based care each week. Nevertheless, the ecological validity of these findings for Irish children is questionable given our high dependence on relative, (particularly grandparental) care, and the concerns which have been raised about the quality of centre-based care in Ireland (OECD, 2004). Having data from nine months and three years will give some insight into the impact (positive or negative) of different types of childcare on *Growing Up in Ireland* children.

Measure

Question G1 was a routed question which asked whether the child spent more than eight hours per week in non-parental childcare. If *yes*, the respondent was asked to indicate the type, duration and cost of each type of childcare used, and whether non-parental childcare was the main form of childcare used. Question G5 asked what age the child was when they first entered into the main childcare arrangement.

Because we also have childcare data from when the child was nine months old, it may be possible to look at the possible impact of early childcare on outcomes at three years, while accounting for other salient factors such as maternity leave.

G6a – G7f: Quality of the Childcare Environment (G6a - G7f)

Rationale

The quality of childcare experience moderates the link between childcare experience and good cognitive outcomes, with higher-quality childcare typically associated with better outcomes (c.f. McCartney, 2004).

Measure

G6a and G6b were asked only in respect of children who were in non-parental care outside the home, and were designed to ascertain the staff-to-child ratio in that type of care. Items G7a – G7c, taken from the Oregon Child Care Research Instrument, were supplemented by three items (G7d – G7f) developed by the Study Team. Included were items such as '*Care place has plenty of toys*', '*Child is happy in care arrangement*' and '*Child learns letters and numbers in care place*'.

Respondents indicated their level of agreement on a five-item Likert scale ranging from '*strongly agree*' to '*strongly disagree*'. Information collected from the respondent is being enhanced with data collected from the child's childcare provider. There were two different questionnaires: one for carers employed at a formal childcare setting such as a crèche, and one for home-based carers. These are discussed in detail in Section 8.2.

G8a – G9: The Free Preschool Year Scheme and Primary School Registration

Rationale

The Government introduced a free Pre-School Year in Early Childhood Care and Education (ECCE) with effect from January 2010 (which replaced the Early Childcare Supplement). All children aged between three years three months and four years six months on 1 September each year are eligible to receive free preschool provision of between two and three hours per day.

Measure

Question G8a asked whether the respondent was availing of this scheme, and if not, why they had decided not to (G8b). Question G9 asked whether the respondent had enrolled their child with a primary school; this was a new question developed by the Study Team to explore whether socio-economic factors were determining school selection even at this early age.

6.1.8 SECTION H – PARENTING AND FAMILY CONTEXT

H1: Family Eating a Meal Together

Rationale

The importance of family socialisation practices, including routines such as the family sitting down to eat a meal together, is underscored by research which shows that children (Skinner, Carruth, Moran et al, 1998) and adolescents (Neumark-Sztainer, Hannan, Story et al, 2003) who eat meals with other family members tend to have superior nutritional profiles to those who do not. It has also been suggested that eating together at family mealtimes, and the ensuing intra-familial interactions, can contribute to the psychosocial development of children (Neumark-Sztainer et al., 2003).

Measure

A simple one-item measure, developed by the Study Team, asked the number of times in the past week that the family had sat down to eat an evening meal together.

H2 – H3: Parenting Style (LSAC Parenting Measure)

Rationale

Parenting style refers to the overall emotional climate in which particular parent-child interactions occur. Although several conceptualisations exist, most operational definitions of parenting style encompass aspects of warmth, responsiveness and control (Reitman, Rhode, Hupp et al, 2002). Baumrind (1971) identified three main parenting typologies: '*authoritative*', '*authoritarian*' and '*permissive*', which differ along these important parenting dimensions. Parenting *styles* differ from parenting *practices* in that parenting styles set the tone for interactions, rather than being goal-directed attempts at socialising a child. Although parenting styles are to some extent culture-bound, research in westernised societies indicates that an authoritative parenting style is associated with optimal outcomes for the child. Parenting styles characterised by high warmth and high control have been widely associated with positive child outcomes in emotional, social and behavioural development (e.g. Avenevoli, Sessa & Steinberg, 1999; Steinberg, Elmen & Mounts, 1989). More recent research indicates that parenting style may be a mediator in the relationship between poverty and children's wellbeing. For example, it has been posited that the psychological stress associated with poverty increases parents' use of harsh and inconsistent parenting, which can lead to adverse mental health outcomes in children and adolescents (Grant, Compas, Stuhlmacher et al, 2003). Scott (2008) also points to harsh and inconsistent parenting as a major risk factor for child behaviour problems, while it is believed that some of the factors that feed into this directly and indirectly include domestic violence, parental drug

abuse, maternal depression, family poverty, parents with low education, stressed families and single-parent status (Webster-Stratton & Reid, 2008; Bloomquist & Schnell, 2005). Many of these can be explored in the current study.

Parenting behaviours are often assessed at one time point, with the assumption that there are enduring, consistent qualities of parenting (e.g. Baumrind, 1989; Darling & Steinberg, 1993). Although there is considerable continuity in parents' child-rearing orientations, they modify their behaviours in response to their children's developing abilities and needs. For example, mothers of toddlers tend to be more concerned with their child's safety, and therefore may restrict certain activities to keep their children safe from harm (Gralinski & Kopp, 1993). In their study of children's home environments, Bradley and his colleagues (2001) found that the frequency with which children were exposed to particular actions, objects, events and conditions in their homes changed markedly from infancy to adolescence (Bradley, Corwyn, McAdoo & Coll, 2001) and many of these changes were developmentally appropriate. With future waves of data it will also be possible to look at changes in parenting style as the child gets older.

Measure

Questions H2 and H3 (on parenting style) were taken from LSAC. They yield scores for each of three important parenting dimensions: *warmth* (6 items), *hostility* (6 items) and *consistency* (5 items) that have been shown to mediate child outcomes. In the Dress-Rehearsal phase, internal consistency reliability for the warmth (α = 0.73) and consistency (α = 0.68) constructs met or exceeded the standard criterion, while that for hostility was somewhat lower (α= 0.62). Since the measure performed well in both the Australian study and in the **Growing Up in Ireland** Dress Rehearsal, it was felt that it would be an appropriate one for the main study at three years as well as future waves of the study.

H4: Parental Work- Life Balance

Rationale

The issue of work-life balance is of increasing interest to researchers given the greater work demands placed on individuals and a larger number of women participating in the labour market. More recent focus has turned to the actual quality of the work experience for parents, and the bidirectional influence between this and family life, including the division of household and caregiving duties. Rather than focus on the fact that parents work, researchers have begun to focus instead on *how* they work (Galinsky, 1999). As an issue of interest, this has been spurred by research indicating that, even when job characteristics and other factors were controlled for, work-family tension was higher among those with young children and among women (O'Connell & Russell, 2005). Considering other factors such as family context and work patterns, for example, researchers will be able to compare the findings from the Irish study with those from Australia. It is also likely that any discernible impact on child outcomes will have potentially important implications for employment policies.

Measure

Parental satisfaction with their current work-life balance was assessed using four questions adapted from LSAC, which had previously been used with the infant and middle childhood cohort at Wave 1. These questions tap not only the impact of work on family life, but also the impact of family on working life, and will offer an opportunity to explore work-life balance in the context of the child's age. For example, working mothers may have had to do nightly feeds when the child was nine months old, but not at three years; parents may have experienced more stress leaving a very young child in childcare, etc.

H5: Parental Social Support

Rationale

A sizeable body of literature indicates that social support has powerful mediational influences on personal and familial wellbeing (Dunst, Trivette & Cross, 1986). Studies have shown that both the quality and quantity of social supports are positively associated with physical and psychological wellbeing (Dolbier & Steinhardt, 2000). Social support has been highlighted in a number of studies as affecting mother-child interactions. For example, Cochran (1993) summarised a number of studies that reported more positive mother-child interactions for those mothers enjoying strong social support. Hashima and Amato (1994) also found that perceived social support was negatively related to parents' reports of punitive behaviour, particularly when income was low. Good social support from friends and family has also been associated with good social and educational outcomes among children and adolescents living with adversity (Wyman et al, 1999; Masten et al, 1999). Mathiesen and Prior also found a link between children's social competence and parental social support (2006).

Measure

A brief one-item question derived from LSAC asks the respondent the extent to which they feel they get enough help or support from family or friends, with responses rated on a four-point scale ranging from *I get enough help* through *I don't need any help*. Questions were also asked about grandparental involvement and support (discussed in the next section).

H6 – H9e: Grandparental Involvement

Rationale

Research has shown that a grandparent is a key source of informal support for many parents (Glaser et al, 2010; Gray et al, 2005; Koslowski, 2009; Nandy & Selwyn, 2011; Smith, 2005; Statham, 2011) and can be an important ally and influence in a child's life (Fergusson et al, 2008). However, the extent of care and other resources that grandparents give their grandchildren is sometimes invisible to local health and social care planners and providers (Hughes & Emmel, 2009).

Some studies find a minority of withdrawn or reluctant grandparents. For example, 3 per cent of those answering the grandparenting component of the 1998 British Social Attitude survey (Dench & Ogg, 2002) disagreed that *grandchildren are very rewarding* and 37 per cent agreed that they *Would like life free from family*. It can't be assumed that all children and their parents have grandparent support. The Growing Up in Scotland study has not only documented how grandparents loom large in informal support but also identifies a proportion of families with low levels of any form of informal support; about one in three at any time (34 per cent at age 1 and age 5), and about one in five (19 per cent) consistently across the years in which the child is aged one to five (Mabelis & Marryat, 2011).

Kanaiaupuni and collaborators (2005) found that extended family networks are associated with better child health outcomes. Additionally, perceptions of available support have positive relationships with economic wellbeing (Henly, Danziger & Shira, 2005). An integrated social systems framework put forward by Dunst and Trivette (1988) and drawing on social network theory, human ecology, help-seeking theory and adaptational theory, emphasises the importance of informal support systems such as parents, relatives and friends for promoting positive functioning and buffering negative reactions.

Measure

Questions H6 – H9, a series of questions derived from Growing Up in Scotland, were designed to ascertain the degree and extent of grandparental involvement in the Study Child's life. Respondents were asked whether the child was in regular contact with his/her grandparents (H6), how many grandparents were still alive (H7), and the number of grandparents the child had a close or very close relationship with (H8). H9a – H9e was a series of questions designed to tap the different types of support offered by grandparents, including instrumental and financial. To these, the *Growing Up in Ireland* Study Team added an additional item (H9e) which asked whether the grandparents ever helped the child learn the ABC/Alphabet or Numbers/Counting.

6.1.9 SECTION J – SOCIO-DEMOGRAPHICS

J1 – J4b: Dwelling Type and Housing Conditions

Rationale

Good housing quality that is suitable to the needs of the child and the family is important for children's wellbeing. Poor or inadequate housing is known to increase children's risks for illness and injury (Canadian Institute of Child Health, 2000).

Measure

Questions J1 – J3 captured basic descriptive information concerning the type of dwelling, tenure status, and whether the accommodation had access to a garden or common space where the child could play. These questions have been routinely used in other ESRI surveys. Question J4, a new question devised by the Study Team, was designed to tap the respondent's satisfaction with their accommodation and whether it was sufficient to meet their family's needs. If not, the respondent was presented with a multi-response list allowing them to indicate how the accommodation was insufficient for their needs.

J5 – J23: Occupational Status of the Primary Caregiver

Rationale

This information was required to derive a social class classification for each household participating in the study, using the International Standard Classification of Occupations (ISCO) coding system. Socio-economic indicators such as household social class, household income and parental education level are frequently used for quantifying and exploring socio-economic variations in child outcomes.

Measure

Question J5 – J13 asked about current employment status, the number of hours worked per week, occupational status, and whether the respondents supervised any personnel in their job. Questions J14 – J18, a set of routed questions asked only of those who indicated they were not in full-time employment at J5, were designed to obtain historic occupational status. Questions J19 – J22 were asked only of those respondents who indicated that they had never had a full-time job or were currently unemployed. Finally, question J23 asked the Primary Caregiver for the occupation of the Secondary Caregiver in the event that the latter did not complete the SCG questionnaire.

J24 – J28: Household Income

Measure

Questions J24 – J25 recorded information in respect of the main sources of income received by the household (e.g. salaries, welfare benefits, income from farming, etc), while questions J26 – J28 were designed to ascertain net household income net of statutory deductions for income tax, social insurance contributions and other non-discretionary deductions (e.g. public sector pension levy). This set of questions was taken from the Living in Ireland survey, which is the Irish component of the European Household Panel Survey (ECHP). There have been numerous publications based on the income data from this survey, particularly in the area of poverty and anti-poverty strategies (see for example Whelan et al, 2003).

J29 – J30: Receipt of Social Welfare Payments in the Household

Rationale

A high level of welfare dependency is usually considered a marker of socio-economic disadvantage, and is important for intergenerational transfer of attitudes and behaviours. Longitudinal data will also enable researchers to explore those groups who move in and out

of the welfare system as opposed to those who are in stable receipt of benefits, or those who never receive benefits.

Measure

Question J29 was a routed question asking whether the household was currently in receipt of any social welfare payments, while J30 provided a complete listing of social welfare benefits currently available in Ireland which could be endorsed on a multiple response basis. Questions J31a – J31b asked whether the household was currently in receipt of rent or mortgage supplement and, if *yes*, how much the household received per week in either.

J32 – J35b: Basic Deprivation Scale (Whelan, Maitre & Nolan, 2007)

Rationale

A substantial amount of research into poverty and deprivation, as well as their influence on outcomes across a very wide range of substantive research areas, has been undertaken in Ireland in recent years (for an overview see, for example, Maitre et al, 2006). Fundamental to much of this work has been the development and implementation of the Basic Deprivation Scale. This measure, developed by the ESRI, has been used to assess the incidence, correlates and drivers of poverty and deprivation both in Ireland and, increasingly, internationally. The Basic Deprivation Scale has been extremely important in framing Ireland's National Anti-Poverty Strategy as well as in monitoring progress towards achieving national targets. Having longitudinal data on deprivation will also afford researchers the opportunity to explore patterns of poverty in terms of how it changes, or remains stable, as well as the characteristics of those who are most likely to remain in poverty over time, or come out of poverty and enter it again at a later stage.

Measure

The Basic Deprivation scale is one of four identified in analysis of the data from the European Union Survey on Income and Living Conditions (EU-SILC). The other three sub-scales relate to Secondary Deprivation, Housing Deprivation, and Neighbourhood/Environmental deprivation. Given the focus of the **Growing Up in Ireland** project and space constraints in the relevant instruments, only the items associated with Basic Deprivation were included. The Basic Deprivation scale is made up of 11 items relating to poverty in areas such as food, clothing, furniture, debt and minimal participation in social life. The index can be used on its own as a measure of non-monetary deprivation. It has also been very widely combined with thresholds of relative income poverty to provide a measure of 'consistent' poverty status, and changes therein over time. Using it in this way allows one to obtain a comprehensive picture of the household's command over resources – financial and otherwise.

The scale has been developed through work stretching back to 1987 (see Callan, Nolan & Whelan 1993; Layte, Nolan & Whelan, 2001; Nolan, Gannon, Layte et al, 2002; Maitre, Nolan & Whelan, 2006). It has most recently been revised using data collected by the Central Statistics Office in 2003 as part of the EU-harmonised EU-SILC survey. Item loadings on the Basic Deprivation dimension ranged from 0.55 for going without heating to 0.71 for being able to afford new clothes and eating a roast joint or equivalent (Whelan, Maitre & Nolan, 2007). Convergent validity is also excellent; the scale exhibits high correlations with others in this area including the ECHP eight-item Basic Deprivation index. Experience in administering the items included in the Basic Deprivation scale has shown that they are relatively non-threatening for the respondent, are relatively short and are easily measured, making them appropriate for use in the current research setting.

J37 – J38: Impact of the Recession on the Household

Rationale

The period between the initial phase of the infant study in September 2008 and its second phase in December 2010 bookended the peak of the Celtic Tiger boom followed by an unprecedented bust. During this period unemployment increased from 6.6 per cent in

September 2008 to 13.4 per cent in January 2011, a large proportion of workers have suffered pay-related deductions and cuts, and Government initiatives to address the structural deficit have resulted in reductions in social welfare payments and Child Benefit. No study has yet addressed the effects of the recession on children's outcomes, though one survey found that 80 per cent of parents believed that the recession would affect their children in an adverse way and 60 per cent of parents stated that they would not be able to afford important things for them (http://www.ebs.ie/site/all/Press Release 11 - 05 - 09).

Measure

These questions were developed by the Study Team to gauge the impact of the recession on households. Question J37 was a routed question which asked the extent to which the recession was affecting the household, with four response categories ranging from *A very significant effect on your family*, to *No effect at all on your family*. Those who indicated that the recession was having an impact on their family were routed into J38, a 10-item multi-response listing to ascertain how the recession had affected the family, including items such as the respondent or their partner being *made redundant*, or *being behind with rent/mortgage* or *being behind with the utility bills.*

6.1.10 SECTION K – ABOUT YOU

K1 – K2: Parental Education Level

Rationale

Parental education level is an important explanatory variable in the analysis of socio-economic variation in children's outcomes (Davis-Kean, 2005). For example, higher levels of parental education are positively associated with school readiness (Seefeldt et al, 1999), with an enriched home learning environment (Christian, Morrison & Bryant, 1998), with parental expectations of how far the child will go in school (Williams, Greene, Doyle et al, 2009), and with academic attainment (Haveman & Wolf, 1995; Sirin, 2005). In addition to these direct effects on child achievement, parental education may also influence child outcomes through indirect pathways such as its effects on parenting beliefs and behaviours (c.f. Davis-Kean, 2005).

Measure

Question K1 was taken from the Irish Census of Population, with parental education disaggregated into a 13-level discrete variable representing gradations within primary, secondary and third-level education. This question was supplemented with item K2 which asked what age the respondent was when they left full-time education for the first time. This will allow researchers to examine whether increases in maternal education that occur after the birth of the child will affect their academic outcomes (e.g. Magnuson, 2007).

K3: Study Child's First Language

Rationale

This question, designed to ascertain the first language of the Study Child, was asked because of its potential relevance to the child's ability to interact with others, e.g. peers. For example, Grunigen et al (2010) found that local language competency was positively associated with peer acceptance for children of an immigrant background.

This item was also used to help contextualise the child's performance on the cognitive tests, specifically the naming vocabulary component of the BAS, a measure of expressive English vocabulary.

K4 – K7: Parental Literacy and Numeracy

Rationale

Parental literacy is a proximal variable that can affect child outcomes directly through its influence on the home literacy environment (Burgess, Hecht & Lonigan, 2002). Studies on

the relationship between storybook exposure and children's language skills indicate that parent-child reading interactions are positively associated with children's language skills, including the acquisition of word knowledge, vocabulary and the rules of written syntax (c.f. Senechal, LeFevre, Thomas et al, 1998).

Measure

This set of questions, adapted from the Millennium Cohort Study, was asked only of new respondents or those who had indicated at Wave 1 that literacy or numeracy was a problem. K4 asked whether the respondent could read aloud to a child from a children's book written in their native language, while K5 asked whether they could read aloud from a storybook written in English. K6 asked whether the respondent could comprehend and complete forms in English. K7 asked whether respondents could usually tell if they had the correct change in shops from a five or 10-euro note.

K10 – K15: Basic Demographic Details

Rationale

Basic demographic information in respect of the Primary Caregiver, including citizenship, nationality and ethnicity, was obtained from respondents as it has been found to have a bearing on many aspects of child outcomes. For example, data from the NLSCY were used to examine the relationship between ethnicity, children's aggression and emotional problems. Relationships were found between ethnicity and child behaviour. Parental harshness and child aggression differed between ethnic groups where (parental harshness) was found to be positively related to child aggression in European Canadian families but negatively related in South Asian Canadian families. For all ethnic groups, parental harshness was positively related to children's aggression (Ho, Bluestein & Jenkins, 2008).

The question on ethnicity was also important in deriving the sample weights.

Measure

Questions K10 – K14 were asked only of new respondents as this information had been captured at Wave 1, while the question relating to ethnicity (K15) was taken from the Irish Census of Population and was asked of all respondents. It is one of the parameters used in weighting the data.

6.1.11 SECTION L – NEIGHBOURHOOD/COMMUNITY

L1 – L3: Satisfaction with and Perception of the Local Area/Neighbourhood

Rationale

There is increasing recognition that the social ecology and structure of neighbourhood environs matter for children's health and wellbeing (Roux, 2007). Neighbourhoods have a range of social and physical characteristics that are likely to be important for child outcomes, such as the perceived safety of the neighbourhood. Sellstrom and Bremberg (2006) for example, report the results of a systematic review of 13 multilevel studies which examined the relationship between neighbourhood context and a variety of child outcomes, including birth-weight, behavioural problems, risk for injury and child maltreatment. Both neighbourhood socio-economic status and neighbourhood social climate were found to have small to moderate effects on child outcomes.

Measure

Question L2a – L2c, adapted from the NLSCY, were asked about the extent to which the respondents agreed with a series of statements about their local area. These included items such as '*The area is safe to walk alone in the dark*' and '*It is safe for kids to play outside during the day',* and were supplemented by two questions (L2d – L2e) framed by the Study Team. The latter were designed as a barometer of the respondent's satisfaction with the

local area. Answers were given on a four-point Likert scale, ranging from *strongly agree* to *strongly disagree*. With the potential to link to other sources of administrative data about the neighbourhood environs such as the Small Area of Population Statistics (SAPS), the empirical value of the data may be enhanced. Finally, question L3 asked whether the respondent intended to continue living in Ireland; this will be used for sample retention and tracing purposes, especially in the context of rising emigration as a result of the recession.

6.2. SECONDARY CAREGIVER QUESTIONNAIRE

The Secondary Caregiver questionnaire was administered to the resident spouse/partner of the Primary Caregiver. This was usually the male parental figure in the household (generally the father of the Study Child). If, for example, the father of the Study Child clearly stated that he was the child's Primary Caregiver, then he completed the longer, more detailed, Primary Caregiver questionnaire (discussed in Section 6.1 above).

The Secondary Caregiver questionnaire comprised a subset of items from the Primary Caregiver questionnaire so cross-referencing is used to refer the reader to the relevant sections of the Primary Caregiver questionnaire. (The Secondary Caregiver questionnaire is shown in Appendix D.)

6.2.1 SECTION A – INTRODUCTION

X1 – Respondent's Date of Birth

A1: Relationship of Respondent to the Study Child

This question was asked only of new respondents or those who did not complete the Secondary Caregiver interview at Wave 1.

6.2.2 SECTION B – PARENTAL HEALTH

B1: Current Health Status of Respondent

See Section 6.1.4, Question D1

B2 – B5: Chronic Physical or Mental Health Problems, Illness or Disability – including nature, duration and constraints of current problem(s)

See Section 6.1.4, Questions D2 – D5

6.2.3 SECTION C – PARENTING AND FAMILY CONTEXT

C1: Quality of the Parent-Child Relationship (Child Parent Relationship Scale – Short Form, Pianta, 1992)

See Section 6.1.2, Question B7

C2 – C3: Parenting Style (GUIA Parenting Measure)

See Section 6.1.8, Questions H2 – H3

C4: Parental Work-Life Balance

See Section 6.1.8, Question H4

6.2.4 SECTION D – SOCIO-DEMOGRAPHICS

D1 – D18: Principal Economic Status and Related Variables

See Section 6.1.9, Questions J5 – J22

6.2.5 SECTION E – ABOUT YOU

E1 – E2: Parental Education Level

See Section 6.1.10, Questions K1 – K2

E3 – E6: Parental Literacy and Numeracy

See Section 6.1.10, Questions K4 – K7

E9 – E14: Basic Demographic Details

See Section 6.1.10, Questions K10 – K15

6.3 PRIMARY/SECONDARY CAREGIVER SENSITIVE QUESTIONNAIRE

A common supplementary 'sensitive' questionnaire was completed by both the Primary and Secondary Caregivers in the home as part of the household interview. The questions in the supplementary section were considered more sensitive than those in the main questionnaire and were included in a separate module for the respondent to self-complete on a computer-assisted self-interviewing (CASI) basis. With the exception of items AS1 – AS3, which asked the person completing as the primary carer reasons for departures from the household since the time of the last visit, the questionnaires were identical for both the Primary and Secondary Caregivers. The content of the questionnaires, the rationale and the measures used are detailed below. (The Primary Caregiver Sensitive Questionnaire and Secondary Caregiver Sensitive Questionnaire are shown in Appendices C and E respectively.)

AS1 – AS3: Household Transitions

This question was designed to capture information relating to transitions into and out of the household since Wave 1. If the respondent indicated on the household grid that a member of the household at Wave 1 was no longer resident in the household at Wave 2, questions AS1 – AS3 queried the reason for and timing of the departure from the household. These questions were asked only of the Primary Caregiver.

S1 – S11: Respondent's Relationship to the Study Child

S1 – S11 was a series of questions which enquired about the respondent's relationship to the Study Child and whether he/she was a biological, adoptive or foster parent of the child.

S12 – S16: Current and Previous Marital Status

Rationale

Research has repeatedly highlighted the link between family structure, changes in structure, and child outcomes. However, relatively little work to date has investigated the home life of divorced families. Children from divorced families often face a variety of personal and familial challenges (Amato, 2004), added to which, divorce has been linked with many negative outcomes such as poor self-concept and poor academic achievement (Amato, 2001). Other work has found a link between parental separation and a significant increase in emotional/behavioural problems for the child even when demographic and other variables, such as marital quality, maternal depression, and socioeconomic circumstances were accounted for (Cheng, Dunn & Golding, 2006).

Furthermore, where a parent has repartnered, research shows that educational outcomes for both types of children in blended families, i.e. stepchildren and half-siblings, are similar to each other and substantially worse than outcomes for children reared in traditional nuclear

families (Ginther & Pollak, 2004). The number of family transitions experienced by a child over time has been posited as a reason for poor outcomes. Ginther and Pollak (2004) refute this, highlighting that biological children in stable blended families grew up with both biological parents and experienced no family structure transitions, yet their educational outcomes are similar to those experienced by stepchildren and by children in one-parent families, and much worse than those experienced by children in traditional nuclear families.

Data from the current study will enable us to explore factors related to family structure, as well as links with others, such as family resources and parenting stress, as possible mediators of adjustment (Bernardini & Jenkins, 2002).

Measure

Questions S12 – S16 recorded details on the current or previous marital status of parent(s).

S19 – S20: Quality of the Parent/Couple Relationship (Dyadic Adjustment Scale)

Rationale

Marital satisfaction is an important factor in family functioning and the manner in which parents interact is crucial for child outcomes. Marital satisfaction has been highlighted as not only important in affecting the child's wellbeing, but also that of the parents, as it is seen as a component of adult life satisfaction (Bradbury, Fincham & Beach, 2000). Research has also shown the spousal relationship to be the most important source of support for competent parenting (Belsky, 1984).

Measure

The quality of the couple relationship was indexed using the short four-item form of the Dyadic Adjustment Scale (DAS-4) (c.f. Sabourin, Valois & Lussier, 2005). It provides an assessment of dyadic satisfaction based on participants' self-report, such as how well they think things are going between themselves and their partner. It is used as a means of categorising marriages as either distressed or adjusted. It has also been shown to discriminate between couples in the community and those seeking marital therapy services. Findings from several studies provide strong evidence that the short form of the DAS used in the current study has maintained the content coverage of the original 32-item DAS (Spanier, 1976) while maintaining good psychometric properties (Sabourin et al, 2005).

S21: Parenting Stress (Parental Stress Scale, Berry & Jones, 1995)

Rationale

Parenting stress is associated with negative parenting attitudes, negative parenting behaviours, and parental wellbeing (Crnic, Gaze & Hoffman, 2005). Although much research has focused on the determinants of parenting stress, which include poverty, social disadvantage, lack of education and poor child health (Warfield & Erikson, 2005), it is the consequences of parenting stress for children's developmental outcomes that is of interest in the present context. For example, studies have shown that parenting stress is associated with a range of adverse child outcomes, including insecure attachment and behavioural problems (Crnic & Low, 2002).

Measure

The Parental Stress Scale (Berry & Jones, 1995) is an 18-item self-report scale designed to assess both positive and negative aspects of parenthood. It comprises four sub-scales: '*Parental Rewards*' (6 items); '*Parental Stressors*' (6 items); '*Lack of control*' (3 items), and '*Parental Satisfaction*' (3 items). Items are rated on a five-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. Due to time pressures, only the six-item parental stressors sub-scale was used for the Dress Rehearsal study at Wave 2 (S21a – S21f). The scale performed well in both the Pilot and the Dress Rehearsal. Analysis of the Dress Rehearsal data showed that the internal consistency reliability of the parental stressors sub-scale was acceptable at (α = 0.70).

The convergent validity of the parental stress score was established in the Dress Rehearsal by cross-referencing against other items on the questionnaire which tapped into parenting difficulties. Correlational analyses revealed that the total stress score was significantly positively correlated with the SDQ total difficulties score ($r = .39$; $p<.001$) and the Pianta parent-child conflict score ($r = .42$; $n = 211$; $p<.001$). Moreover, it appears that parental stress scores are moderately stable over time, with a correlation of $r = .58$ ($p<.001$) from Wave 1 to Wave 2 in the Dress Rehearsal. Stress levels are very likely associated with the family type – young with one or more young children – that forms the majority of this cohort. Future waves of data can examine whether this stress lessens as the child gets older.

S22: Parental Self-Efficacy

Rationale

Parenting self-efficacy can be broadly defined as an individual's self-referent estimation of competence in the parenting role. It encompasses both level of knowledge about child-rearing tasks and the degree of confidence in one's ability to perform these tasks (Coleman & Karraker, 2003). Recent research suggests that parenting efficacy may mediate the effects of a number of parent and child variables on the quality of parenting (Jones & Prinz, 2005). For example, high parenting efficacy has been associated with more responsive and nurturant caregiving practices, while low levels of efficacy are associated with more dysfunctional types of parenting (Morawska, Winter & Sanders, 2009). However, longitudinal studies are required to determine whether parenting efficacy is causally related to outcome measures, and whether child characteristics attenuate parenting efficacy (Jones & Prinz, 2005).

Measure

Parenting self-efficacy was indexed using an item adapted from the Growing Up in Australia study which asked parents to rate how good they felt they were as a parent on a five-point scale ranging from *not very good at being a parent* to *a very good parent*. Analysis of the Dress Rehearsal data revealed that this item was associated in a conceptually meaningful way with measures of parenting stress and various indices of parental discipline practices. It features on the questionnaire as item S22.

S24 – S25c: Respondent's Weekly Alcohol Consumption

Rationale

Consumption of alcohol is common in Ireland and is integrated into the culture through and acceptance from an early age. The legality of alcohol makes it readily available, and there is now recognition that a relatively high proportion of the population consumes quantities considered harmful to their health. Heavy drinking does not necessarily mean that alcohol abuse or alcoholism is present, but those who binge-drink have a higher risk of alcohol-related disorders than those who do not binge-drink (National Center for Health Statistics, 2001). Furthermore, heavy drinking usually results in intoxication, which can lead to an array of problematic outcomes, including traffic injuries, domestic violence and self-injury. When the heavy drinker is a parent, these problems become more pertinent because children are unable to protect themselves from the direct or indirect consequences of parental drinking (Klingemann, 2001).

Measure

Questions S24 – S25c, adapted from the Millennium Cohort Study (MCS), were designed to measure the frequency and quantity of consumption of wine, beer and spirits in "an average week". An additional category was developed to capture consumption of alcopops and similar pre-mixed drinks (S24d). There is evidence, summarised in Gruenewald and Johnson (2006), that self-reports of drinking quantity and frequency show good concordance with other methods (e.g. timeline follow-back procedures) while test-retest reliabilities for wine, beer and spirit consumption ranged from 0.59 to 0.99 one year after initial assessment.

S26: Hazardous Drinking

Rationale

A considerable amount of research has examined the relationship between parental alcohol misuse and children's development, much of which is summarised in a review of the literature (Burke, Schmied & Montrose, 2006). While studies tend to document adverse impacts of excessive alcohol consumption on a whole range of child outcomes, mediational models now recognise that the effects on child outcomes result from the disruption that alcohol misuse brings to family cohesion, parenting dynamics, psychosocial processes and inter-personal relationships. In addition, risk factors for adverse child outcomes tend to aggregate in families where there is alcohol dependency, and this may lead to multiplier effects in terms of their impact on the child. This issue is of particular interest in the Irish context because, in the early 2000's Ireland had the highest per capita consumption of alcohol in the EU (Eurostat, 2003).

Measure (FAST Alcohol Screening Test)

The FAST alcohol screening test (Hodgson, Alwyn, Hodgson et al, 2002) was developed in the UK as a short screening tool for alcohol misuse. It follows in the path of work done in a WHO study that resulted in a 10-item questionnaire called the AUDIT (Allen, Litten, Fertig et al, 1997); average administration time on the FAST was reported to be 20 seconds by the test authors. The scale comprises four items, but the test authors assert that 50 per cent of people may be classified as 'hazardous' or 'not hazardous' drinkers using the answer to the first item "How often do you have EIGHT or more drinks on one occasion?" (six drinks for women). Five answer categories range from *never* to *daily*. The remaining questions ask whether the respondent was *not able to remember the night before* (26c), *failed to do what was normally expected of them* (26d), and *whether someone had advised them to cut down (26e).*

When these items are scored as 0 – 4, a person is classified as a 'hazardous' drinker if their total score is three or more. As anyone who answers S29a/b (having six or eight drinks on one occasion *weekly* or *more often*) is automatically classified as a hazardous drinker, not everyone will have a continuous score from 0 to 4.

The FAST scale was developed using 3,000 administrations in over 100 medical settings. Cronbach's alpha for the intercorrelation between items is reported to be 0.77, with one-week test-retest reliability given as 0.81. A check on specificity and sensitivity compared to the original AUDIT using 2,185 patients admitted to an A&E setting found the sensitivity of the FAST to be 93 per cent with 88 per cent specificity.

S27 – S29: Parental Smoking Habits and Study Child's Exposure to Environmental Tobacco Smoke (ETS)

Rationale

There is strong evidence, summarised in Jaakkola and Jaakkola (2002) and Hofhuis, Jongste and Merkus (2003), that environmental tobacco smoke (ETS) is deleterious to child health and development and increases risk for asthma and other related respiratory conditions, and there are also implications for modelling effects as the child gets older.

Measure

Questions S27 to S28, derived from the Living in Ireland survey, asked about current smoking and daily habits. Although the validity of self-reported smoking has been challenged on the grounds that smokers are inclined to underestimate the amount that they smoke or deny their smoking status, studies have found that misclassification rates tend to be small in the general population (Studts, Ghate, Gill et al, 2006). Moreover, Patrick, Cheadle, Thompson et al's (1994) meta-analysis of 51 studies comparing self-reported smoking with direct biochemical measures found high levels of sensitivity (87 per cent) and specificity (89 per cent) for self-report averaged across studies. This reinforces the validity of self-reports,

given that alternative techniques (e.g. analysis of urinary cotinine) are not operationally feasible. These questions were supplemented with an additional question (S29) which asked how many people smoke in the house, designed as a crude measure to gauge the child's exposure to ETS.

S31 – S33 Parental Depression

Rationale

Maternal and paternal depression have both been linked to various child outcomes, including children's socio-emotional and cognitive development (Beardslee et al, 1996). Although evidence for the link between parental mental health and child outcomes is unequivocal, many writers note that it often interacts with, or is associated with, other variables that can either generate resilience, such as a well-functioning family (Dickstein, 2006), or increase risk, such as poverty (Eamon & Zuehl, 2001). Even when a parent shows signs of clinical depression, the family may display healthy functioning to the extent that family members compensate for the diminished capacities of the ill individual, for example by shifting roles and responsibilities as developmentally and pragmatically feasible; by facilitating the individual's access to appropriate mental health services; and/or by infusing the family with additional support (e.g. have a grandmother come for a visit) in order to provide affective and pragmatic assistance. This may serve to interrupt the negative consequences of maternal depression for early childhood outcomes (Dickstein, 2006).

Measure (Centre for Epidemiological Studies Depression Scale, CESD-8)

In addition to questions S31 – S32 which concern whether the respondent has received a formal diagnosis of depression, anxiety, nerves or phobias and whether they are currently being treated for this condition, ***Growing Up in Ireland*** included the Centre for Epidemiological Studies Depression Scale (8-item) (CESD-8), a short self-report screening instrument for depression in the general population. Answers are given on a four-point rating scale, ranging from *rarely or none of the time (0 days)* to *most or all of the time (5-7 days)*, with a reference period of the previous seven days. A composite score is calculated by summing item responses across the eight items (range: 0-24). Respondents are categorized according to the recommended criterion for depression, with composite scores of seven or more classified as depressed and scores less than seven as not depressed. However, while a score above or equal to seven suggests a clinically significant level of psychological distress, it does not necessarily mean that the participant has a clinical diagnosis of depression. In a general population, about 20 per cent would be expected to score in this range.

The CES-D has good internal reliability consistency (alpha = 0.86) and the scale correlates 0.93 with the original 20-item version of the instrument (Melchior, Huba, Brown & Reback, 1993). Test-retest reliability is 0.83 and 0.87 for assessment at six and 12 months respectively (DiClemente et al, 2005); the concurrent validity of the scale has been established through its association with other depression measures such as the Beck Depression Inventory (Melchior et al, 1993). Furthermore, it has been shown to discriminate depressive disorders from other forms of psychopathology (e.g. Roberts, Andrews, Lewinsohn & Hops, 1990).

S33: Parental Drug Use

Rationale

Research on the effects of parental drug use on children typically highlights such problem behaviours as antisocial behaviour, and conduct or oppositional disorders (e.g. Smith, 1993; Willens et al, 1995), as well as negative impacts on the quality of parenting provided for the child (Dawe et al, 2007),

Measure

S30 is a brief one-item question which asked whether the respondent had taken any illicit drugs such as cannabis, marijuana, ecstasy, speed, heroin, methadone, crack or cocaine. Response categories ranged from *yes, regularly* through *yes, occasionally* to *no, not at all*.

S34 – S35: Parental Contact with the Criminal Justice System

Rationale

Findings from the Head Start programme in the US have found that children whose family members had contact with the criminal justice system were more likely to be described as having problem behaviour by parents and teachers, and also likely to score lower on assessed vocabulary. Findings also show that substance abuse, domestic violence, parental mental illness and poverty are more prevalent in households where parents have been arrested. However, it is important to remember that children of parents involved with the criminal justice system are not a homogenous group. While the overriding problem in some households may be extreme poverty, for others there may be a multitude of problems (Phillips & Gleeson, 2007), all of which need to be considered within the boundaries of the current study.

Measure

Questions S34 to S35 asked whether parents had been in trouble with the Garda Síochána (the Irish police service) and if they had ever been to prison.

S36 – S47: Non-Resident Parent Information

Rationale

Research has shown that the interpersonal climate between the Primary Caregiver and the non-resident parent after separation has important implications for children's health and wellbeing (Amato & Gilbreth, 1999; Dunn, 2004; Wilson, 2006). Much of this research is summarised in Section 8.1 below, which provides the rationale for the questions used in respect of the Non-Resident Parent questionnaire. Justification for asking the Primary Caregiver these questions is to enable comparisons in the information provided by both parents and to ensure that the information is obtained from at least one source in those instances where contact details are not available for, or it is not possible to contact, a non-resident parent.

Measure

This series of questions was asked only of those respondents who indicated that the child's biological father/mother was not resident in the household. Questions S36 – S38 asked about their relationship status and when they separated/divorced. Questions S39 – S44 asked about parenting arrangements, frequency of contact with the Study Child and financial contributions towards the maintenance of the child. Finally, questions S45 – S47 asked about the quality of the parental relationship with the non-resident parent, i.e. in terms of being positive or negative. Questions S37 – S38 and S44 were derived from LSAC, and question S46 from the MCS.
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Chapter 7

DIRECT ASSESSMENT OF THE CHILD

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CHAPTER 7: DIRECT ASSESSMENT OF THE CHILD

7.1   COGNITIVE ABILITY MEASURE

7.1.1 INTRODUCTION

Children's cognitive abilities in early life have been shown to be a good indicator of later educational development (Feinstein, 2003). Although research suggests that cognitive ability is one of the most heritable of behavioural traits (Plomin, DeFries, McClearn & Rutter, 1997), longitudinal studies like *Growing Up in Ireland* facilitate an exploration of how cognitive abilities develop over time and how they affect, and are affected by, other factors that influence children's opportunities and outcomes.

7.1.2 CONSIDERATIONS IN SELECTING A MEASURE OF COGNITIVE ABILITY

There are a number of instruments for measuring cognitive ability in children (see Lichtenberg, 2005 for a review. The challenge faced by the Study Team was to find an instrument with strong measurement properties that could be adapted for use in a large-scale social research survey such as *Growing Up in Ireland*. The British Ability Scales (BAS) was selected for the following reasons:

1. The BAS involves direct assessment of the child's abilities. This was deemed preferable to trying to obtain information via parental report.
2. The BAS has a strong theoretical grounding, having been developed to acknowledge contemporary thinking on the taxonomic structure of human abilities espoused by theorists such as Carroll (1993).
3. The individual sub-tests were designed to be age-appropriate and are informed by contemporary developmental psychology (Hill, 2005).
4. Both the Growing Up in Scotland study and the Millennium Cohort Study have used sub-tests from the BAS to measure cognitive development among preschool-age children, so its application in *Growing Up in Ireland* will facilitate cross-national comparisons.
5. The BAS yields sub-test scores that are individually interpretable. This is important because time constraints mean it is not feasible to administer the entire instrument in the field.
6. The BAS can be used with children up to 17:11 years of age. This will allow for examination of cognitive growth/stability over time.

7.1.3 DEVELOPMENT OF THE BRITISH ABILITY SCALES

Hill (2005) provides an excellent description of the historical context leading to the development of the British Ability Scales. Its forerunner, the British Intelligence Scales (BIS), was commissioned by the British Psychological Society in response to concerns about the cultural acceptability of imported US intelligence tests such as the WISC and the Stanford-Binet for UK populations. Educational psychologists were also dissatisfied with the time taken to administer the scales, and the limited diagnostic utility of a summative IQ score for identifying children's educational needs and placements. The BIS, developed under the stewardship of Warburton and Elliot, was designed to provide a meaningful profile of specific cognitive abilities based on freestanding sub-test scores rather than a global IQ score. The first version of the scale, published in 1979, was called the British Ability Scales. This spurred the development of an American version of the test known as the Differential Ability Scales. Some of the innovations in the American test were subsequently introduced to the British revision of the BAS.

7.1.4 STRUCTURE OF THE BRITISH ABILITY SCALES

The BAS is organised into two batteries: an **Early Years Battery** which can be used with children aged 2:6 years to 5:11 years of age, and a **School-Aged Battery** covering the ages 6:0 to 17:11 years of age. There are two levels in the Early Years Battery: the lower level covers ages 2.6 to 3.5 years and the upper level ages 3:6 to 5:11 years. The battery consists of a number of tests that ultimately contribute to a score that reflects general ability (General Conceptual Ability, GCA). The Naming Vocabulary and Picture Similarities are two of the tests contributing to this higher-order General Conceptual Ability score.

Given the strict time constraints for the home visit, it was not feasible to administer the full Early Years Battery, so the Study Team decided to use two of the core scales (Naming Vocabulary and Picture Similarities) to derive a measure of children's verbal and non-verbal ability. These two tests are among those most heavily saturated with General Crystallised (Gc) and General Fluid (Gf) ability identified in Horn and Cattell's taxonomy of human abilities. While use of only two of the core scales precludes calculation of the GCA, as discussed above, the BAS scales yield scores that are individually interpretable. The Naming Vocabulary test serves as a measure of children's expressive English language vocabulary. The Picture Similarities test measures children's reasoning capacity and problem-solving skills.

For children aged less than 3:6 years of age, the BAS yields raw scores that can be converted to ability scores, percentile ranks, T-scores or age equivalents.

7.1.5 PSYCHOMETRIC INFORMATION

Elliot et al (1997) report co-efficient alphas of .78 and .86 for the Naming Vocabulary test for children aged 2:6 – 2:11 and 3:0 – 3:5 years respectively. The corresponding alphas for the Picture Similarities test were 0.87 and 0.82 for the respective age bands. The test constructors do not report test-retest reliability estimates for the BAS Early Year scales. However, test-retest correlations for the American version of the BAS (the DAS) are estimated at .80 and .56 for the Picture Similarities test for the age band 3:6 – 3:11 and 4:0 – 4:5 years of age respectively. Similarly, inter-rater reliability for the BAS has not been assessed, though data drawn from the DAS standardisation sample showed that inter-rater reliability for the picture similarities scale ranged from .98 to .91 for the age bands 6:0 to 16 years of age. Elliot and colleagues (1997) report that the Naming Vocabulary and Picture Similarities sub-tests of the BAS correlated .68 and .47 with the verbal and performance IQ components of the WPPSI-R respectively.

7.1.6 ADAPTATIONS TO THE BAS

The pilot and dress-rehearsal studies established the feasibility of general-purpose interviewers administering the cognitive tests, largely with the assistance of a CAPI program developed to determine the questions which would be presented to the child based on their earlier responses. This method reduced the burden of monitoring the complex decision rules determining which items should be presented to the child based on their pattern of correct or incorrect responding. The CAPI program also helped to standardise the administration of tests through prompting the interviewer when instruction is required and when s/he should query an answer.

7.2. MOTOR DEVELOPMENT

7.2.1 RATIONALE

The early childhood years (2-6) are considered the 'golden years' for motor development as it is during this time that children acquire a basic repertoire of manipulative and locomotor skills, which become the basis for the emergence of more sophisticated motor skills in later years (Williams & Monsma, 2007). Motor skill development tends to proceed in a fairly orderly sequence, so any delays or problems in the appearance of these skills may signal a potential difficulty in development. For example, Cantell, Smyth and Ahonen (1994)

highlighted that development problems early in the school years seemed to have a disproportionate effect on educational and socio-emotional development in adolescence, although they also noted that this may only be the case for the most severely affected children. More recently, a report from the American Academy of Pediatrics (AAP) highlighted that, although delays in motor skills are common among children, early recognition of delays can help optimise outcomes. Their report highlights that having poor motor skills in general "sets you on a trajectory for low levels of physical activity, which of course is related to obesity. The prevention of these delays or the promotion of motor ability can actually impact your health for your lifespan" (Garey, Noritz, Murphy et al, 2013). Those children identified with motor delay had lower academic achievement scores and higher educational service use at eight years of age (Sullivan & McGrath, 2003).

7.2.2 MEASURES

These six items were used to assess children's competencies in the areas of gross and fine motor development, and the items chosen were informed by other neuro-developmental batteries. For example, item E9 asked whether the child could ride a tricycle or similar vehicle with pedals, and item E10 whether the child could manipulate jigsaws, lego or duplo bricks. These were completed via parental report as interviewers did not have this equipment available to them.

Children were required to complete a number of activities to demonstrate that they had attained certain developmental milestones in the area of gross motor and fine motor development. The two items designed to assess gross motor competency concerned whether the child could stand on one leg for two seconds or more, and whether the child could throw a ball in an overhand fashion. Fine motor competencies were assessed by asking the child to draw a straight line after the parent had demonstrated this activity, and whether the child held a pencil in a pincer grip between thumb and forefinger. Interviewers coded these responses using a simple 'yes/no' answer format.

7.3.   ANTHROPOMETRIC MEASUREMENT

7.3.1 RATIONALE

Height and weight have long served as leading indicators of children's physical health and development. It is becoming increasingly apparent that the period from infancy through early childhood is a critical one for growth and development (Cameron, 2007). An emerging body of research suggests that early growth patterns may have implications for health and development over the life-course (Singhal, Fewtrell, Cole et al, 2003).

Data captured at three years of age will connect with data collected at Wave 1 and allow for modelling of growth trajectories and how these are affected by a range of other variables including breastfeeding, child health status, parental height and weight, diet and social characteristics.

7.3.2 EQUIPMENT

Children's height was measured by trained interviewers using a Leicester portable height stick. It gives readings in imperial and metric units; the interviewer was instructed to use the metric system and record to the nearest millimetre. It has a range of 0 – 2.07m. Weight was measured using SECA 835 portable electronic scales, which have a capacity of 50 kilograms and graduate in increments of 20 grams when weight is less than 20kgs and in 50 gram increments above 20 kilograms. They are Class IIII medically approved. Parental height was also measured, using the Leicester portable height stick. SECA 761 flat mechanical scales were used for measuring adult weight. The scale graduates in increments of one kilogram and has an upper capacity of 150 kilograms. They are Class IIII medically approved scales.

Chapter 8

OTHER INSTRUMENTS

Chapter 8: OTHER INSTRUMENTS

This chapter details the other instruments used to collect data. They contribute to objective No. 8: to provide a data bank on the whole child. In the first two sections we describe the three types of postal self-completion questionnaires that were used: the non-resident parent questionnaire and the two versions of the regular carer questionnaire. Where no question sources are specified, these questions were developed by *Growing Up in Ireland*, typically in conjunction with the expert panels (see Section 3.3).

8.1   NON-RESIDENT PARENT QUESTIONNAIRE

8.1.1 INTRODUCTION

If applicable and if the Primary Caregiver gave permission, the interviewer recorded the contact details of the biological non-resident parent for the purpose of sending out a self-completion questionnaire to that parent. A detailed description of the questions contained in this questionnaire can be found below, the rationale for which borrows heavily from reviews of the topic by Dunn (2004), Wilson (2006) and Waldfogel et al (2010), and which synthesises much of the work on non-resident parents' influence on children's wellbeing. An almost identical questionnaire was sent to both non-resident fathers and mothers, but with questions relating to naming on the birth certificate and guardianship removed from the latter. The Non-Resident Parent Questionnaire (father's version) is included in Appendix H.

Q1 – Q8: Contact Visits with the Study Child

Rationale

Prior research has examined the extent to which the frequency, type, nature and quality of time spent with the non-resident parent affects a variety of indicators of child wellbeing (e.g. Amato & Gilbreth, 1999; Jenkins & Lyons, 2006). Some studies indicate that the frequency of contact matters less than the quality of the contact (e.g. Amato & Gilbreth, 1999; Dunn, 2004). Interestingly, Amata and Gilbreth's meta-analysis of the literature reported that the effect sizes for the beneficial effects of non-resident contact time on children's outcomes were stronger in studies published between 1989 and 1998 compared with those published earlier. There is also evidence to indicate that contact time varies by socio-economic circumstance, with those who are unemployed or on lower incomes reporting lower levels of contact on average (Bradshaw, Stimson, Skinner et al, 1999). Nevertheless, detailed examination of non-resident parents' time with their children is notably absent in the literature (Jenkins & Lyons, 2006).

Measure

This set of questions collected information about the non-resident parent's contact time with the Study Child (Q1 – Q4), their level of satisfaction with these arrangements (Q5 – Q6), the location where these visits tended to take place (Q7) and how this arrangement was arrived at (e.g. court-imposed settlement). Question 1 was previously used by the Early Childhood Longitudinal Study and Questions 2, 3 and 5 by Living in Australia (HILDA).

Q9: Perception of Parental Role

An understanding of the non-resident parent's perception of their parenting role is important as it is likely to define the way in which they interact with their children (Parke, 2002). Prior research suggests that perception of the parenting role is likely to be influenced by a host of factors, including the parent's gender, marital status, socio-economic position, age and ethnic background (Bronte-Tinkew, Carrano & Guzman, 2006); and there may be reason to suspect that non-resident fathers' perception of their parenting role may differ in important ways compared with that of resident fathers (Pryor & Rodgers, 2001).

Measure

This question, adapted from an item used by the Early Childhood Longitudinal Study (ECLS), asked the respondent to rank in order of importance the three things that best defined their

parental role. A list of six closed-response options, including *showing my child love and affection* and *taking care of my child financially*, was provided, and there was also an *other* option to specify an open-ended text response. Analysis of the ECLS data indicated that 64 per cent of fathers rated *showing my child love and affection* as the most important thing for a father to do (Avenilla, Rosenthal & Tice, 2006) while McBride and colleagues (2004) found that men who viewed their role as more than simply a breadwinner were much more likely to be involved with their children in terms of household and child-centred tasks.

Q10: Rating of Quality of Time Spent with the Study Child

Rationale

Amato and Gilbreth's (1999) meta-analysis of 63 studies demonstrated that the quality of the parent-child relationship is more important than the frequency of contact in terms of its impact on children's cognitive outcomes and externalising/internalising behaviours. This finding has since been affirmed by other investigators based on children's reports of their relationship with their non-resident father (e.g. Dunn, Cheng, O'Connor et al, 2003).

Measure

Parents were asked to rate the perceived quality of time they spent with the Study Child on a five-point rating scale ranging from *excellen*' to *poor*.

Q11: Non-Resident Parent's Performance of Routine Caring Tasks

Rationale

This item asked how often the parent performed routine care tasks for the Study Child such as preparing food and taking the child to childcare. Some evidence suggests that children benefit when non-resident fathers are actively involved in their children's daily activities (Dunn, Cheng, O'Connor & Bridges 2004; Whiteside & Becker 2000; see also Lamb & Kelly 2001). Although evidence shows that there is no single optimal amount of time that benefits children, as families are different, and much depends on pre-existing patterns before any divorce or separation, there is some evidence that fathers, including non-resident fathers, spend more time interacting with their infant sons than their infant daughters, in terms of both play and more routine caregiving activities (Lundberg et al, 2007).

Measure

This question, adapted from a similar item in the Early Childhood Longitudinal Study, asked about the frequency with which the non-resident parent performed a number of routine tasks for the Study Child such as putting the child to bed, preparing food for the child, etc.

Q12 – 16: Amount of Financial and Other Support Provided to the Study Child

Rationale

There is evidence summarised in Wilson (2006) that maintenance payments are linked with the frequency of contact between the non-resident parent and their children and with involvement in childrearing decisions. Other reviews of the literature on non-resident fathers' payment of child support have shown that it is associated with children's wellbeing, educational attainment and health (c.f. Dunn, 2004).

Measure

Questions 12 – 16 asked whether the non-resident parent made a financial contribution towards the Study Child's welfare, how this arrangement had been arrived at, and whether they provided other types of non-financial assistance. Questions 12, 15 and 16 were based on questions used by the Early Childhood Longitudinal Study while question 14 was adapted from Growing Up in Australia.

Q17: Status of Relationship with Study Child's Mother / Father at Pregnancy

Rationale

Many studies suggest that a father will be more likely to maintain contact if he has been married to, or at least previously co-habited with, the mother (e.g. Argys, Peters, Cook et al, 2003; Clarke, Cooksey & Verropoulou, 1998; Skevik, 2006), although some variation as to the relative effect of marriage versus cohabitation has been observed between cultures.

Measure

This question, adapted from the Millennium Cohort Study, asked the parent to describe the status of his/her relationship with the other parent at the time of conceiving the Study Child.

Q18: Age of Study Child at Time of Parental Separation

Rationale

The timing of the parental separation has been found to affect the frequency with which the non-resident parent remains involved with the Study Child. Blackwell and Dawe (2003), for example, found that 32 per cent of children whose parents separated three or more years previously saw their non-resident parent at least once a week compared with more than 50 per cent of those who broke up less than three years previously. Although there is a general consensus among researchers that separation effects are most pronounced at the time of the initial separation, research is inconclusive with regard to whether marital dissolution has stronger adverse effects on younger children as opposed to adolescents and on boys compared with girls (c.f. Woodward, Fergusson & Belsky, 2000).

Measure

This question, based on an item from the Growing Up in Australia study, asked what age the Study Child was when the parents separated. Using data from the Christchurch Health and Development Study, Woodward et al (2000) demonstrated the utility of this type of question within a longitudinal framework by demonstrating that there is a direct linear relationship between the timing of parental separation and children's parental attachment. Specifically, earlier separation was associated with lower levels of parental attachment when assessed at 15 years of age.

Q19: Father's Name on Birth Certificate (not asked of non-resident mothers as not applicable)

Rationale

Being named on the birth certificate suggests some degree of closeness or involvement around the time of birth (Kiernan, 2006) and studies have shown that fathers are more likely to maintain contact with their children and make maintenance payments if they were named on the birth certificate (Lundberg et al, 2007; Kiernan, 2006).

Measure

This question, adapted from the Millennium Cohort Study, asked fathers only if they were named on the Study Child's birth certificate, with a view to considering how this status might affect subsequent contact.

Q20 – 21: Application for Guardianship Status (not asked of non-resident mothers as not applicable)

This question asked fathers who were not married to the Study Child's mother if they had applied for guardianship status, if this application was through the mother or the courts, and if the application was successful. It will provide useful information indicating the number of

fathers who take up this option and whether the status affects their involvement with their children (see previous discussion on potential impact of being named on the birth certificate).

Q22 – 24: Quality of the Relationship with the Primary Caregiver

Rationale

Research on separated families indicates that the interparental relationship quality after separation is an important mediating variable explaining links between parental separation and children's outcomes (Waldfogel, Craigie & Brooks-Gunn, 2010). Interparental conflict is associated with adverse outcomes for children (Amato & Rezac, 1994; Pryor & Rodgers, 2001; Sarrazin & Cyr, 2007) while better relationship quality is associated with higher levels of contact and greater involvement of the non-resident parent (Ahrons & Miller, 1993). Amato and Rezac (1994) reported that contact with non-resident fathers is related to positive outcomes for the child when the parents have a co-operative relationship but not when they are in conflict. Whiteside and Becker's (2000) meta-analysis of 17 studies found both direct and indirect effects of post-separation interparental relationship quality on children's social and cognitive skills. They found that positive father-child relationships and parental co-operation was associated with beneficial direct effects on children's cognitive skills and psychological adjustment, while interparental conflict was associated with indirect effects on visitation, father-child relationship quality and child outcomes.

Measure

These questions asked about the frequency of contact with the child's other biological parent, the quality of the interparental relationship and the extent of the non-resident parent's involvement in major decisions concerning the Study Child. Questions 22 and 24 were based on questions used in the Early Childhood Longitudinal Study, and Question 23 came from the Millennium Cohort Study.

Q25: Desire for Future Involvement

Rationale
Vogel and colleagues (2006) reported that young children with involved, rather than transient, non-resident fathers had better self-regulation and lower levels of aggression.

Measure
This question, taken from the Early Childhood Longitudinal Study, asked if the non-resident parent wished to be involved in raising the Study Child in the coming years.

Q26: Indicators of Taking Delight in Child

Rationale
Taken together with question 10 above, this item can be used as a measure of the non-resident parent's closeness with the Study Child, which is associated with frequency of contact with the non-resident parent and with positive outcomes for the child (e.g. Amato & Gilbreth, 1999).

Measure
Non-resident parents were asked a series of questions relating to positive feelings about parenthood, such as whether they talked a lot about their child to friends and family, on a four-point scale ranging from *all of the time* to *never*. The ECLS item was itself an extract from a longer scale called the Parental Investment in the Child Questionnaire (Bradley, Whiteside-Mansell, Brisby et al, 1997).

Q27 – 28: Parent's Date of Birth and Age at which He/She First Became a Parent
(Questions 24 – 25 on Non-Resident Mother's Questionnaire)

Rationale

These questions were asked with a view to examining if a particular age-group of fathers/mothers is more or less likely to maintain contact as the child grows up. Research from the Fragile Families and Child Wellbeing Study indicates that first-time fathers may be more likely to maintain contact and to have paternity formally established (Lundberg et al, 2007). This question was also asked in the Early Childhood Longitudinal Study. In *Growing Up in Ireland* it will be possible to ascertain whether or not this is the first child from the information given in these two questions.

Q29 – 31: Socio-Economic Status *(Questions 26 – 28 on Non-Resident Mother's Questionnaire)*

Rationale
Socio-economic status is likely to affect the resources and/or time the parent has available to give to the Study Child. There is evidence, summarised in Wilson (2006), that non-resident fathers who are employed and have higher levels of education are more likely to have contact with their children.

Measure
These items provide a means of estimating the non-resident parent's socio-economic status, including employment and occupation. Similar questions have been asked in many surveys undertaken by the ESRI.

Q32 – 35 Current Family / Relationship Status *(Questions 29 – 32 on Non-Resident Mother's Questionnaire)*

Rationale
The findings on the impact of a 'new' family on contact with the 'old' are conflicting. Some suggest that contact remains steady (Skevik, 2006), some that it decreases (e.g. Parkinson & Smyth, 2003), and others that it depends on the composition of the new family, with a higher number of new biological children reducing the odds of fathers' contact with their non-resident children (Manning & Smock, 1999).

Measure
These questions asked about the non-resident parent's current marital status, whether they were currently in a relationship with a new partner, how long this relationship had been established, and whether they had other biological children (excluding the Study Child). This will allow one to ascertain the extent to which commitments to other families affects contact with and resources available to the Study Child.

Q36 – 37: Parent's Nationality and Residence in Ireland *(Questions 33 – 34 on Non-Resident Mother's Questionnaire)*

These questions captured basic demographic information relating to the non-resident parent's nationality and the length of time they had been living in Ireland.

See section 6.1.10 above.

Q38: Parent's Health Status *(Question 35 on Non-Resident Mother's Questionnaire)*

The same item as that used to index the Primary Caregiver's Health Status.

See section 6.1.4 above.

8.2   CENTRE-BASED AND HOME-BASED CARER QUESTIONNAIRES

8.2.1 INTRODUCTION

Studies in the US estimate that almost two-thirds of the preschool-age population attend some form of regular childcare. This has led to increasing research interest in the extent to which

childcare environs affect multiple aspects of children's health and wellbeing (Peisner-Feinberg, 2004). In the context of *Growing Up in Ireland*, if someone other than the Primary or Secondary Caregiver (as outlined in the previous chapters) provided care to the Study Child for eight or more hours a week on a regular basis, then the interviewer asked the Primary Carergiver for permission to send out a postal self-completion questionnaire to the carer. There were two different questionnaires, one for carers employed at a formal childcare setting such as a crèche, and one for home-based carers. However, the degree of overlap between the two questionnaires was substantive and will allow for comparison of how different childcare environments affect children's outcomes.

The description of the instruments which follows uses the longer Centre-Based Carer Questionnaire as the base, and references those questions that are common to both questionnaires. The carer questionnaires are included in Appendices J and K.

8.2.2 CENTRE-BASED CARER QUESTIONNAIRE

Q1 – Q3: Details of Care Provision

Rationale

While the evidence is far from conclusive, some studies have found that a greater number of hours spent in childcare is associated with increased risk for behavioural problems. The National Institute for Child Health and Development (NICHD) Study of Early Childcare and Youth Development found that the amount of time the child spent in childcare across the first 4.5 years of life was positively associated with externalising behaviours independent of the quality of childcare (see McCartney, 2004).

Measure

These questions collected basic descriptive information concerning how long the child had been attending this form of care and the number of days and hours per week that they were in attendance.

(These questions are represented as questions 4 – 6 on the home-based carer questionnaire.)

Q5a – Q9: Composition and Age Profile of Children being Cared For

Rationale

Structural aspects of the childcare setting, such as the ratio of children to staff, group size, crowding and measures of carer training and qualifications (see questions 25 – 28 below), are frequently used as indices of childcare quality (Lamb & Ahnert, 2006). Various aspects of them have been associated with better outcomes for children across cognitive and behavioural domains (McCartney, 2004). However, it has been argued that structural characteristics potentiate the high-quality care and interaction but do not necessarily guarantee it (Lamb & Ahnert, 2006).

Measure

Question Q5a asked the carer how many children were looked after in the place where the child was cared for, while question Q5b was designed to ascertain the age profile of these children. Questions 6a, 6b, 7, 8 and 9 featured only on the centre-based carer questionnaire and captured important information relating to whether care provision in the centre was structured according to age, the number of children from non-English-speaking backgrounds, and the number of children with mental or physical disabilities.

(These questions are represented as questions 7 – 8 on the home-based carer questionnaire.)

Q10a – Q16: The Quality of the Learning Environment

Rationale

Childcare quality has been defined as those aspects of the environment that promote children's physical, social, emotional and intellectual development (Layzer, Goodson & Moss 1993). As summarised in Layzer and Goodson (2006), childcare quality has been variously operationalised using structural characteristics (e.g. staff-child ratios), programme characteristics (e.g. learning objectives or curriculum), and environmental characteristics (e.g. availability of age-appropriate learning materials and outdoor spaces) of the care environment. Despite the varying definitions used, the available literature indicates that higher-quality childcare is associated with more positive outcomes for children (e.g. Helburn et al, 1995) even after adjustment for confounders and taking account of family selection effects in terms of childcare provider (McCartney, 2004; Owen, 2011)

Measure

There are many instruments to measure the quality of the childcare environment, such as the Early Childhood Environment Rating Scale – Revised (ECERS-R, Harms, Clifford & Cryer, 1998) and the Observational Record of the Caregiving Environment (NICHD). However, these measures require direct observation by an independent observer, so their application in *Growing Up in Ireland* was not feasible. Therefore the Study Team developed a series of questions that were analogous to those used in batteries such as the ECERS-R and tapped into aspects of caregiving quality and the richness of the learning environment, but could be completed on a self-report basis. Q10a asked the carer how frequently – on a five-point scale ranging from *All of the time* to *Never* – the Study Child engaged in a variety of activities such as learning activities (e.g. reading, learning letters, numbers, nursery rhymes, etc), play activities (e.g. water-based, toy-based, physical recreation), and socialisation activities (e.g. playing with other children).

This was supplemented by an additional question (Q10b) which asked how much time the child spent in group activity which was led by an adult and how much time in activities which the Study Child choose him/herself as opposed to child-led activities, while Question 16 asked about the range of material resources available to the child, such as construction toys, musical equipment, arts materials, etc. Questions 11 and 12 asked about the number of children's books available to the child in the place where he or she was cared for, and the amount of time the carer read to the child each day. Both of these are associated with children's literacy levels (see section 6.1.5 above). Finally, questions Q13 – Q15 asked about the number of hours the child spent watching television each day, how many hours they spent sleeping, and how often the caregiver engaged the child in one-to-one conversation.

(These questions are represented as questions 9a – 15 on the home-based carer Questionnaire.)

Q17: Child's Psychological Adjustment (Strengths and Difficulties Questionnaire, Goodman, 1997)

The carer was also asked to complete a Strengths and Difficulties Questionnaire (SDQ) in respect of the Study Child. This will facilitate comparison of the level of correspondence between the Primary Caregiver and carer's perception of the child's psychological adjustment. The importance of triangulation was highlighted by Goodman et al (2000) who showed that multi-informant SDQs (as opposed to single-informant SDQs) could potentially increase the detection of child psychiatric disorders, thereby improving access to effective treatments.

See section 6.1.6 for detailed reliability and validity information on the SDQ.

(This question is represented as question 18 on the home-based carer questionnaire.)

Q19 – Q20: Quality of Care Provided to the Study Child

Rationale

Findings from the NICHD (2006) showed that children who experienced higher-quality childcare consistently showed better cognitive function and language development across the first three years of life (NICHD, 1999, 2000), and also predicted greater school readiness at 4½ years of age, as reflected in standardized tests of literacy and number skills (NICHD, 2002). These differences were relatively small, however. compared to those associated with family characteristics.

Measure

Q19 was a global rating question which asked the carer to rate, on a five-point scale ranging from *very good* to *very bad*, how they would rate the quality of care provided to the Study Child. This question came from Growing Up in Australia. It was supplemented by an additional question (not asked of the home-based carer) developed by the Study Team, which asked whether the carer felt that the centre met the child's needs in a number of domains such as personal care routines (e.g. toileting), eating routines and cultural identity.

(This question is represented as question 18 on the home-based carer questionnaire.)

Q21 – Q23: Developmental Concerns about the Study Child

Rationale

Developmental delay has been defined as the failure of a child to attain developmental milestones at the expected age, even after allowing for the broad definition of normality (Rydz, Shevell, Majnemer et al, 2005). Given that neuro-development tends to proceed in a fairly orderly sequence, any chronological delay in attaining age-appropriate development milestones might therefore signify a child at risk for impaired development.

Measure

The carer was asked an open-ended question to ascertain whether they had any concerns about any aspect of the Study Child's development. A similar question, which comprises part of standard developmental assessments such as the Parents Evaluation of Developmental Status, was used in the **Growing Up in Ireland** survey. It was supplemented by an additional question which asked whether the carer had any concerns about the Study Child's language development. This will complement the information provided by parents (see 6.1.3 above).

(These questions are represented as questions 20 – 22 on the home-based carer questionnaire.)

Q29: Looking after Study Child when Sick

Rationale

Studies have reported an increased incidence of communicable diseases such as respiratory and gastrointestinal illnesses among children who attend centre-based or preschool care as opposed to other types of care (e.g. Louhiala, Jaakkola, Ruotsalainen et al, 1997; Nafstad, Hagen, Oie et al, 1999), and that centre-based care is associated with heavier healthcare utilisation, including physician and emergency department visitation, and use of medical prescriptions (e.g. Silverstein, Sales & Koepsell, 2003).

Measure

This question asked about caring for the Study Child when sick, looking at the potential for exposure to infections in childcare situations, and the extent to which carers facilitated parents by minding their children when they were sick and, at three years of age, could not attend childcare, pre-school etc. A similar question was asked by the Early Childhood Longitudinal Study.

(This question is represented as question 23 on the home-based carer questionnaire.)

Q25 – Q28: Childcare-related Qualifications of Centre-based Staff

Rationale

These questions captured important contextual and demographic information concerning the qualifications of people who care for children, with a view to considering how training affects the type, nature and quality of the childcare provided and the extent to which this affects children's outcomes. In conjunction with items 6 – 8 above, these questions can be used to derive structural indices of childcare quality such as the ratio of children to staff, and the number of staff with expertise and qualifications relevant to caring for children. These are frequently used as proxies for childcare quality (see Q6 – Q8 above).

Measure

These were a set of basic descriptive questions that asked the total number of full-time childcare staff employed by the centre and how many had a certificate in childcare education that was equivalent to level 5 on the National Qualifications Framework.

Q30 – Q33, Q35 – Q42: Demographic Characteristics of the Carer Completing the Questionnaire

Using an ecological model, previous work has demonstrated that childcare quality in both the family home and childcare centres is affected by provider characteristics such as the amount of training and education of person(s) delivering the care,, as well as the regulations and policies that govern childcare in the State in which the childcare takes place. While both sets of factors are important, research on childcare quality in care centres has found it to be more influenced by proximal factors such as the training and level of education of the care provider than the distal influences, such as the policy context (Blau, 2001). The NICHD (2006) also found higher caregiver education predicted higher quality of observed care and better developmental outcomes for children.

Measure

These questions captured basic demographic information in respect of the individual completing the questionnaire, including their position or role within the centre (not asked of non-centre-based carers), age, gender, nationality, highest level of educational attainment, and whether they had obtained any specific qualifications in childcare, whether they had undertaken any other training relevant to children, and how long they had been providing care to children. This information will be used to build up a basic picture of the types of care that the children were using, but also to ascertain whether any of the factors, such as level of education or government policy around care, was associated with the quality of the care and hence outcomes for the child.

(These questions were represented as questions 31 – 37 on the home-based carer questionnaire.)

Q43: Participation in the Free Preschool Year Scheme

Rationale

As summarised in section 6.1.7 above, the Free Preschool Year Scheme is a Government initiative (which began in 2010) that covers all children aged between three years three months and four years six months at 1st September each year. More than 5,000 preschool services notified to the Health Service Executive or registered with the Irish Montessori Educational Board are eligible to participate in the scheme. However, to date, there has been no formal evaluation of the outcomes of children who are availing of the scheme. *Growing Up in Ireland* represents an opportunity to measure the progress of the children participating in

this scheme relative to their peers who are availing of parental or other types of non-parental
care.

Measure

The measure consisted of a simple dichotomous (*yes/no*) question which asked whether the
centre participated in the Free Preschool Year Scheme.

8.2.3   GPS CO-ORDINATES

GPS. co-ordinates were recorded in respect of each participating household at Wave 1, so
GPS. readings were only taken at Wave 2 if the household had moved or an invalid or
incorrect reading had been taken at the previous wave. GPS co-ordinates were recorded
using a Garmin eTrex handheld GPS receiver. The receiver has 12 differential-ready parallel
channels with a GPS accuracy of <15 metres RMS. Latitude and longitude co-ordinates were
recorded from the device by the interviewer and then converted by the Study Team to Irish
Transverse Mercator/IRENET95 (ITM) co-ordinates to facilitate mapping using Grid In Quest
software available from Ordnance Survey Ireland.

8.2.4   WORK ASSIGNMENT SHEET

A Work Assignment Sheet was issued to the interviewer for each household. It provided the
interviewer with contact details for the family and was used to record response outcomes for
each household, GPS, and contact details for non-resident parents and regular carers, where
relevant (see Appendix M for a sample).

Chapter 9

CONCLUSIONS AND SUMMARY OF CROSS-WAVE MEASURES

CHAPTER 9: CONCLUSIONS AND SUMMARY OF CROSS-WAVE MEASURES

9.1   SUMMARY

Growing Up in Ireland has a key role in the implementation of The National Children's Strategy. The project has nine key objectives relating to the development of a comprehensive data bank on the whole child, and all the variations encompassed by that concept, which can be used to inform Government policies and services (Chapter 1). The study is multidisciplinary, with information collected on a broad range of variables that can both affect and describe the lives of young children from birth to three years and the impacts on their cognitive, physical and socio-emotional and behavioural outcome trajectories. These are set within the complex multidirectional and recursive relationships between the child and the actors in the various environments within which he/she operates, as conceptualised by Bronfenbrenner, and described earlier in this report. The Study Team is very aware of its responsibilities in conducting an ethical study; the entire project is overseen by a Research Ethics Committee (Chapter 4). Instruments were developed in consultation with national and international experts, the Scientific and Policy Advisory Committee, stakeholders, and other contributors (Chapter 3). All stages of the project have been subject to international peer review.

9.2   SUMMARY OF CROSS-WAVE MEASURES

The completion of fieldwork in July 2011 with the families of the three-year-old children represents an important milestone in the development of the *Growing Up in Ireland* project as it means that for the first time in Ireland longitudinal data spanning the first three years of life for a large representative cohort of Irish infants will be available. In designing the instrumentation, the Study Team was aware of the need to adequately capture the multifaceted nature of the influences on children's development over the life-course, while being sensitive to emerging abilities and development milestones, and attempting to maintain cross-wave consistency in terms of measures. This exercise was informed by the nine-month and three-year literature reviews, which identified a number of research questions, and also by discussions with the expert panels.

The main domains of data collected when the children were three years of age are subdivided into a number of themes and sub-themes, which in turn are broken down into individual questions (not included here). Table 9.1 summarises the main themes included with each of the domains in the first two waves of the Infant Cohort. A total of 20 main themes are included across all domains. These are broken down into 130 subthemes in Tables 9.2a-d.[10]

Table 9.2a-d summarises the information collected from the Infant Cohort at both nine months and three years of age. The focus of the concept measures has clearly shifted between waves, taking account of appropriate developmental milestones and trajectories. The three main outcome domains which are central to the project (see Greene et al., 2010) are summarised in the table: socio-emotional/behavioural (including family relationships); educational/cognitive, and health. In addition a fourth 'classificatory' domain is included.

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[10] The most disaggregated form of the cross-wave information recorded in the Infant Cohort is available in the Wave 1 – Wave 2 longitudinal data dictionary at
http://www.ucd.ie/t4cms/VARIABLE%20NAMING%20AND%20LONGITUDINAL%20DATA%20DICTIONARY%20-%20INFANTS%20-.pdf

Table 9.1: Main themes in each of the three outcome domains covered by *Growing Up in Ireland*

Main outcome domain			
Socio-emotional, behavioural	**Education / cognitive development**	**Health**	**Classificatory**
1. Child's relationships	1. Childcare arrangements	1. Pregnancy / prenatal care	1. Household composition
2. Child's lifestyle (habits & routines) / play and activities	2. Child's education / home learning environment	2. Child's birth	2. Parental health and lifestyle
3. Child's socio-emotional development	3. Child's cognitive development	3. Child's health / healthcare utilisation	3. Socio-demographics
4. Family context / parenting		4. Child's nutrition /diet/ breastfeeding	4. Neighbourhood and community
5. Marital / partner relationship		5. Child's physical activity levels/exercise	
6. Non-resident parent		6. Child's physical development	
		7. Physical measures	

9.2.1 SOCIO-EMOTIONAL AND BEHAVIOURAL

In considering the broad themes in Table 9.2a to 9.2c below, the reader is again reminded of the changing emphasis of the nature of the information recorded. Details on the pregnancy and birth occupied a large part of the parent-report questionnaire at Wave 1, given the importance of this type of information in investigating children's health and development (e.g. Golding 210). The focus shifted by Wave 2 to encompass the important aspects of children's development at age three, such as their socio-emotional, behavioural and cognitive development and the factors affecting these.

The socio-emotional / behavioural domain contains six main themes, which, in turn, contain 30 sub-themes. The main themes are:

1. Child's relationships (CR)
2. Child's lifestyle (habits and routines) / play and activities (CL)
3. Child's socio-emotional development (ED)
4. Family context/parenting (FC)
5. Marital/partner relationship (MR)
6. Non-resident parent (NR)

These are broken down into the 30 sub-themes, as outlined in Table 9.2a. One can see an increasing emphasis by three years of age on parenting, perceptions of parental self-efficacy and discipline styles. Measures of child's temperament and emotional and behavioural outcomes (the latter in the form of the Strengths and Difficulties Questionnaire) have assumed greater relative importance by the second wave of interviewing.

Table 9.2a: Socio-emotional, behavioural and family outcomes

Child's Relationships	9mth	3yr
Sibling relationships	√	√
Quality of attachment	√	
Pianta parent-child relationship		√
Child's Lifestyle (Habits and Routines) / Play and Activities		
Sleeping patterns	√	√
Toilet training		√
Comforting behaviours	√	√
TV, video, computer games, Internet usage and supervision		√
Child's Socio-Emotional Development / Well-being		
ASQ communication sub-scale	√	
ASQ personal social sub-scale	√	
Strength and Difficulties Questionnaire		√
Temperament		√
Family Context / Parenting		
Parental stress	√	√
Family members with chronic illness	√	
Social support	√	√
Contact with grandparents	√	√
Work-life balance	√	√
Role of fathers	√	
Division of childcare chores between parents	√	
Maternal/paternal leave	√	
In trouble with gardaí / prison	√	√
Parenting style		√
Child discipline		√
Parental self-efficacy	√	√
Marital / Partner Relationship		
Marital status/history	√	√
Quality of couple relationship	√	√
Non-Resident Parent (NRP)		
Nature of previous relationship with NRP	√	√
Formal/informal custody/parenting arrangements	√	√
Contact child has with NRP	√	√
Maintenance payments	√	√
Quality of resident parent relationship with NRP	√	√

9.2.2 EDUCATIONAL / COGNITIVE

The educational / cognitive domain contains three main themes, which contain 14 sub-themes. The main themes are:

1. Childcare arrangements
2. Child's education / home learning environment
3. Child's cognitive development

These are broken down into 14 sub-themes, as outlined in Table 9.2b. While childcare was a focus at nine months, for many families by the second wave of interviewing this will had

changed from parental to non-parental childcare, while attendance at preschool and enrolment in primary school also began to come into play.

Cognitive development was also assessed directly with the three-year-old child, using scales from the British Ability Scales (BAS). The BAS Naming Vocabulary and Picture Similarities scales were used to derive a measure of children's verbal and non-verbal ability. Clearly it had not been appropriate to do these at nine months, but communication and problem-solving skills at that time were measured by asking questions of the parent, highlighting one of the many ways in which the study has evolved to explore the developmental pathways of the growing child.

Table 9.2b: Educational / cognitive domain

Childcare Arrangements	9mth	3yr
Use of non-parental childcare	√	√
Details of childcare used	√	√
Assessment of quality of childcare		√
Future intentions in relation to childcare	√	
Impact of problems arranging childcare	√	
Child's Education / Home Learning Environment		
Learning activities with the child	√	√
Books in the home		√
School registration		√
Attendance (intention) – free preschool year		√
Parental assessment of quality of preschool		√
Child's Cognitive Development		
ASQ problem-solving sub-scale	√	
BAS picture similarities		√
BAS naming vocabulary		√
Child's specific learning difficulties		√

9.2.3 HEALTH

The health domain contains eight main themes which in turn contain 73 sub-themes. The main themes are:

1. Pregnancy / prenatal care (PP)
2. Child's birth (CB)
3. Child's health / healthcare utilisation (CH)
4. Nutrition / diet / breastfeeding (CN)
5. Child's physical activity levels / exercise (CP)
6. Child's physical development (PD)
7. Physical measures (PM)
8. Parental health and lifestyles (PH)

These are broken down into the 73 sub-themes as outlined in Table 9.2c. There was an obvious shift in emphasis from issues around pregnancy, prenatal care and labour in the nine-month interview to a greater focus on the child's health and healthcare use by three years of age.

The section on diet and nutrition has also changed from an initial interest in early feeding behaviours such as breastfeeding and timing of exposure to solid foods (Wave 1), to encompass other aspects of children's nutritional status such as dietary intake, parental feeding style and parental awareness of the Study Child's weight status (Wave 2). Details on major developmental milestones also assumed greater importance by Wave 2, including details on when the child took his/her first steps, as well as other details on gross motor skills.

Table 9.2c: Health domain

Pregnancy / Prenatal Care	9mth	3yr
Antenatal care	√	
Weight gain during pregnancy	√	
Pregnancy complications	√	
Folic acid / iron use before and during pregnancy	√	
Medical fertility treatments	√	
Age at first pregnancy	√	
Currently pregnant	√	√
Pregnancy intention	√	
Stress during pregnancy	√	
Smoking and drinking during pregnancy	√	
Drug use during pregnancy	√	
Child's Birth		
Place of birth	√	
Pain relief in labour	√	
Mode of delivery	√	
Gestation	√	
Weight and length at birth	√	
Birth complications	√	
Special care after birth	√	
Duration of hospital stay after birth	√	
Child's Health / Healthcare Utilisation		
General health status	√	√
Vaccination and early health checks	√	√
Chronic illness	√	√
Acute illness	√	
Respiratory illness	√	√
Child's exposure to environmental tobacco smoke	√	√
Health care utilisation and hospital admission	√	√
Barriers to medical care	√	√
Health insurance / medical card coverage	√	√
Accidents	√	√
Speech	√	√
Developmental concerns	√	
Antibiotic use		√
Teeth cleaning / dental care		√
Sight and hearing problems	√	√
Parent's perception of child's weight		√
Child's Nutrition / Diet / Breastfeeding		
Breastfeeding initiation	√	
Duration of breastfeeding	√	

	9mth	3yr
Reasons for stopping breastfeeding	√	
Use of formula, cow's milk, other milk	√	
Transition to solids	√	
Dietary inventory		√
Parental feeding style		√
Child's Physical Activity Levels / Exercise		
Participation in physical activities	√	√
Child's Physical Development		
ASQ gross motor sub-scale	√	
ASQ fine motor sub-scale	√	
Age when child took first steps	√	√
Observation of fine motor development		√
Observation of gross motor development		√
Physical Measures		
Parental height	√	√
Parental weight	√	√
Child length and height	√	√
Child weight	√	√
Child head circumference	√	

9.2.4 CLASSIFICATORY AND BACKGROUND CHARACTERISTICS

There is a clear need to record details on the child's family and other background characteristics to assist in analysis and understanding of child outcomes. In broad terms a similar set of background characteristics was recorded at both nine months and three years of age.

The Study Team was aware of the need to be sensitive to emerging social, political and economic events. The 27-month period between the first and second waves of the infant study essentially took place during an unprecedented boom and bust in the Irish economy, the latter of which began in 2008 In response to this, the Wave Two instrument included questions designed to assess the impact of the recession on households participating in the study, both generally and specifically. These can be investigated within the context of household 'ability to make ends meet' at Wave 1 compared to Wave 2.

Table 9.2d: Classificatory information

Household Composition	9mth	3yr
Number of people in household	√	√
Parental relationship to child	√	√
Gender, age, relationship to PCG, relationship to Study Child and primary economic status of all members of the household	√	√
Gender and age of any children living outside the household	√	√
Parental Health and Lifestyle		
Hours of sleep / bedtime / rising	√	√
Current general health status	√	√
Chronic illness	√	√
Current smoking and drinking	√	√
Current drug use	√	√
Age of first period	√	
Depression, anxiety, nerves	√	√

Socio-Demographics		
Current parental employment status	√	√
Type of accommodation	√	√
Housing tenure	√	√
Social welfare benefits	√	√
Highest level of education	√	√
Language spoken in the home	√	√
Parental literacy and numeracy	√	√
Country of birth	√	√
Citizenship	√	√
Ethnicity	√	√
Religion	√	√
Household income	√	√
Condition of accommodation		√
Impact of recession		√
Household deprivation	√	√
Car ownership		√
Neighbourhood and Community		
Length of time living in neighbourhood	√	√
Physical condition of the neighbourhood	√	
Safety of the neighbourhood	√	√
Service availability	√	
Community integration	√	
Population size of the local area	√	

It is envisaged that the *Growing Up in Ireland* study will continue to grow in line with the children themselves and enrich our understanding of the factors influencing their development. Such data form the foundations for effective decision-making and the implementation of policies designed to optimise children's wellbeing.

9.3 CONCLUSIONS

The objectives laid out for the *Growing Up in Ireland* study are being met through the collection of both age-specific and policy-relevant data. Examples of the ways in which data such as those provided can inform researchers and policymakers alike are given below.

First, the Study Team identified appropriate, age-specific milestones for the infants and children. These changes in specific abilities (such as eye-hand coordination at nine months, or toilet training and language development at three years) mark the end of one developmental period and the beginning of another. Studies have established typical chronological ages associated with developmental milestones. However, there is considerable variation in the achievement of milestones, even between children with developmental trajectories within the normal range. Some milestones are clearly more variable than others; for example, there is wide variation in when children reach the milestone of using expressive language. This variation supports the need for measures at more than one point in time.

A more general concern in child development research is delay in any developmental milestone. From a policy aspect, prevention of and early intervention in developmental delay are significant topics in the study of child development, and hence in the current study. However, developmental delays should be diagnosed by comparison with the characteristic *variability* of a milestone, and not with respect to *average age* at achievement. As mentioned, language development is quite variable so an average age of development is not appropriate for use as a marker in this case. The nature of the data in *Growing Up in Ireland* also allows

us to map out variations between different groups in terms of developmental status and the ways in which other – both proximal and distal – factors feed into these outcomes.

The prediction of developmental outcomes in children from early infancy to performance at school age, and particularly in infants at high risk for developmental deficits, is of major interest to policymakers. For example, gestational age is a strong predictor of later motor and cognitive development (Goyen & Lui, 2002; Larroque, Ancel & Marret, 2008). In high-risk infants, such as those with extremely low birthweight, early neurological test scores have strong predictive value for function later in life. In other words, children with early developmental delays, such as motor impairments, have relatively stable developmental trajectories until school age. However, Roze, Meijer and Koenraad et al (2010) found that the motor-developmental trajectories of *healthy* children varied considerably and that the added value of early assessments of motor development for later cognitive function was limited in that a single abnormal test result at a certain age in an individual child at risk of developmental delay should be interpreted cautiously. They point to the fact that, if a certain risk factor has only a moderate impact on development, it may be cancelled out by factors that are already known to have an important impact on development, such as socio-economic status and verbal intelligence and possibly other factors that are as yet unknown, an important advantage of the current data.

While the importance of psychosocial development has been discussed earlier in this report, the pace at which it proceeds can be highly individual and episodic; it is influenced by both the child's own characteristics, such as temperament, and the physical and social environments surrounding the child. Many children pass through stages during which they exhibit fussiness, withdrawal, anxiety, overactivity, disobedience, tantrums and even aggression, but for most children these difficulties are situation-specific and transitory. It is the persistence, intensity, and pervasiveness of such behaviours that determine their seriousness and the need for intervention.

Since one of the main foci of **Growing Up in Ireland** is to generate evidence through research, having both current and retrospective data means that we can explore the child's development from pre-birth (to a certain extent) through infancy and early childhood and into the school transition period (at five years). Furthermore, identifying the factors most strongly correlated with important aspects of child wellbeing and whether these are child and/or environmentally oriented, was a priority for the Study Team. This study therefore offers researchers a unique opportunity to look at the 'whole child'.

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