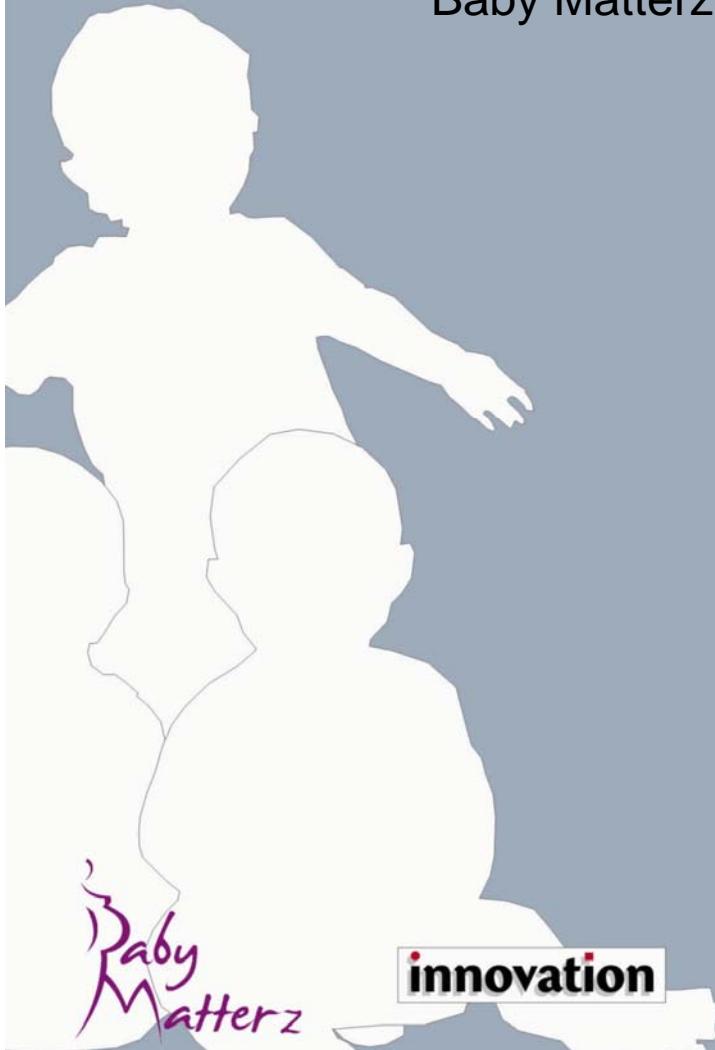




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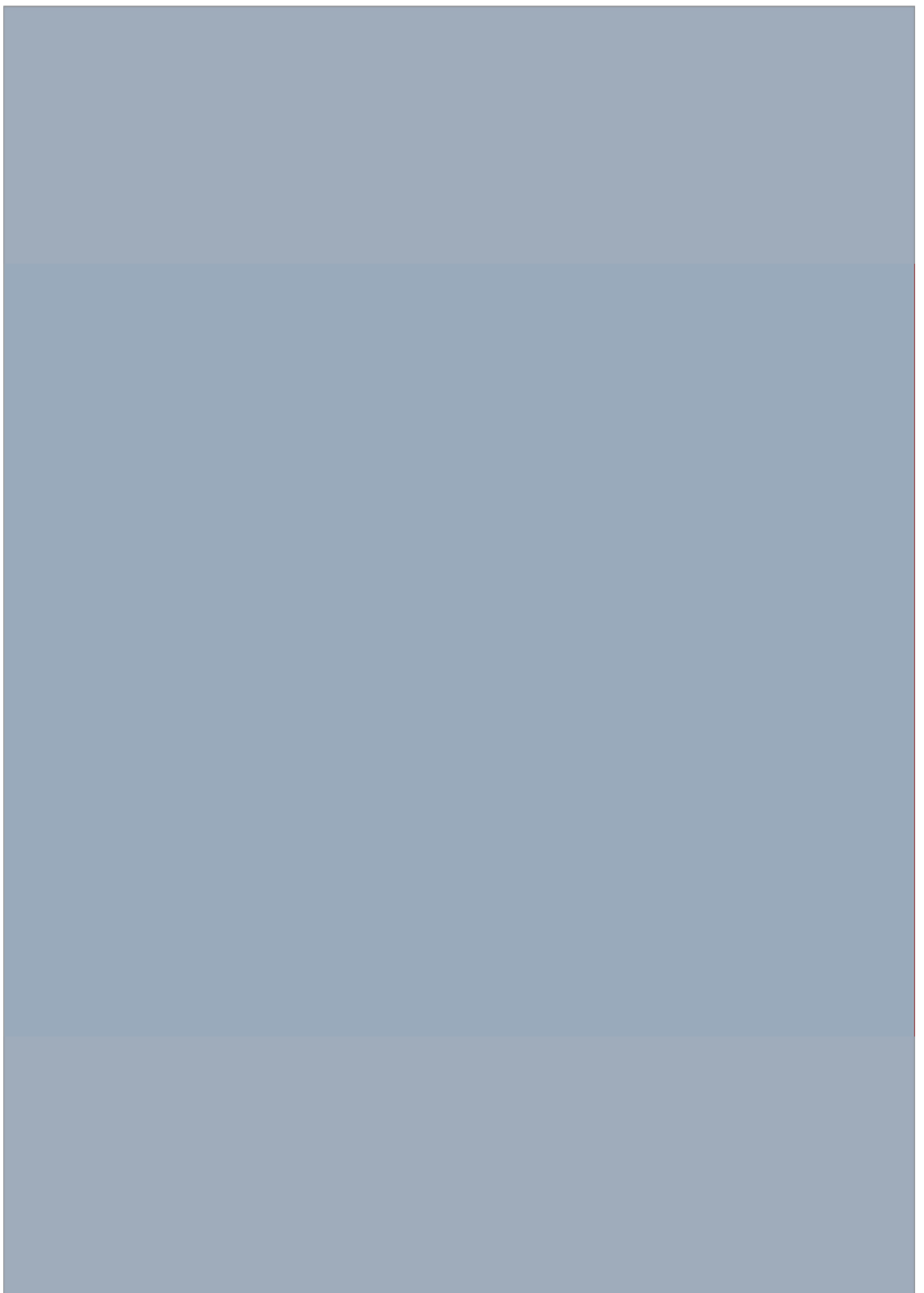
Parents, babies, schools
and national statistics:
the Millennium Cohort
Study and the Liverpool
Baby Matterz initiative

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innovation

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* Formerly a part of the Department for Education and Skills that has now largely been absorbed into the Department for Children, Schools and Families.

Parents, babies, schools and national statistics: the Millennium Cohort Study and the Liverpool Baby Matterz* initiative

Introduction

Baby Matterz is an initiative that has been run in eight primary schools and one secondary school in the Alt Valley area of Liverpool, during the 2007/8 school year. The project has involved parents bringing their babies (all aged under one year) into class-rooms to talk to pupils about aspects of babies and their care. The aims of the initiative are cross-curricular and are intended to promote pupils' social and emotional development. The project also includes an input from health professionals. Baby Matterz is set to be introduced into more schools in the city in 2008/9.

The purpose of this paper is to consider the extent to which the Millennium Cohort Study (MCS) might be applicable to the Baby Matterz initiative either in its current form, or in some other remodelled form that might be implemented in future years. The paper does not interrogate the information contained within the MCS database directly. Its broad method is to survey the MCS for its degree of potential affinity with areas of life and social experience that are relevant to Baby Matterz. Crucially the categories used to structure MCS interviews will be discussed for their relevance to Baby Matterz. The paper first puts the MCS in its historical perspective alongside of other cohort studies in the UK. The uses to which the data from the MCS is being put is then described with a survey of some of the recent academic literature that draws upon the MCS data-set. The limitations of the usefulness of the MCS are scrutinised through a consideration of 'ethical appropriateness' and 'feasible benefits'. Having ruled out parts of the MCS database for use in connection with Baby Matterz, those parts that may indeed be useful are then considered through a scrutiny of the interview schedule used for the 2003 sweep when the cohort of babies was nearest in age to the current cohort of babies involved in Baby Matterz. Finally the published research reports

* Trademarked as *Baby Matterz* for the not-for-profit partnership between The Innovation Unit and The Learning Partnership.

that have been generated from the MCS will be considered for the ways in which the findings of the MCS might be put to use by the developers of the Baby Matterz programme.

The Millennium Cohort Study in historical perspective: cohort studies in the UK

The study of sampled cohorts of the British population for the purposes of social demographic analysis has been used to inform social modelling and policy development for more than sixty years. Large scale studies have been conducted tracking the life-course of such cohorts by a wide range of indicators. In the twentieth century three major studies of babies born in 1946, 1958 and 1970, were undertaken. The fourth such study, the MCS, commenced in the year 2000.

The ongoing National Survey of Health Development, now housed at the Medical Research Council, began as a maternity survey that selected all births in England, Wales and Scotland (around 16,500) during one week of March 1946. The chief motivations behind the study were the need for more accurate estimates of the costs of care in pregnancy and child birth, and a concern with falling fertility rates nationally. Reflecting also policy concerns connected to class and social stratification, the survey collected data that profiled the social and economic circumstances of the family and correlated these to birth weight and infant survival. Twenty-one follow up surveys have taken place since 1946, the last being at age 53 years in 2000. These later surveys have reflected changing policy interests on the part of successive government administrations and have covered such areas as: body measurement during childhood; various health measures; teacher assessments of behaviour; parental attitudes to education; cognitive development; occupation when entering the workforce; earnings, morbidity; disease, child rearing; use of services *etc.* As the age profile of the original cohort increases the study is increasingly concerned with the ageing process with respect to physical health and vigour as well as to cognitive faculties and social activity.

The second of the major British cohort studies, the National Child Development Study, began in 1958 as the Perinatal Mortality Survey. This was based upon a sample of all babies born over one week in March of that year – a little below 17,500 babies. Data has been collected from this cohort in the years: 1958 (birth); 1965 (age 7); 1969 (age 11); 1974 (age 16); 1978 (age 19); 1981 (age 23); and 1991 (age 33). Data at birth was collected from parents and medical records. From ages 7-16 data came

from parents, teachers, GPs and cohort participants. For age 19, school examination records were surveyed. For age 23, cohort participants were surveyed. For age 33, data was collected from cohort participants, partners, spouses and children. As with the 1946 cohort study, a wide range of social indicators and measures have been surveyed for in the areas of education, health, housing, family structure and, for adults, values and beliefs. More specifically, and again reflecting the concerns of a fast changing society, this has meant gathering data on: obstetrics; mothers' smoking; social experience before the school years; levels of parental involvement with the child; motor development; school educational attainment and later qualifications status; marriage and cohabitation choices; partner profiles; family size; housing; lifestyle choices; and attitudes towards women's roles, the environment, ethnic minorities and immigration.

The National Birthday Trust, working with the Royal College of Obstetricians and Gynaecologists, conducted the British Births Survey in 1970. This sampled all children born during one week of April that year and was the beginning of what became the 1970 British Cohort Study (BCS70). Established to generate comparative data with respect to the 1958 British Cohort Study, it covered just under 17,200 births. Since 1970 it has been surveyed five times. These follow-up studies have been conducted in the years: 1975 (age 5) and 1980 (age 10) both as the Child Education and Health Study; 1986 (age 16) as the Youthscan sweep; 1996 (age 26); and 1999/2000. The study began with an exclusive focus on postnatal medical data but, as the age profiles have increased, the scope of each survey has expanded to cover aspects of educational, health and social development. No further sweeps for children born in Northern Ireland were included after 1970. For the 1986 survey (age 16), participants kept four-day diaries. One recorded data about their diet and the other about their general activity. In 1975 and 1980 data pertaining to immigrant children born within the sample week were added to the original data-set. Four supplementary studies, based upon sub-samples of the original cohort, have also been conducted. These have involved surveys of head-teachers for the 1986 (age 16) study and twin studies, 'under-size' and 'late-birth' studies and random sub-sample studies focusing on adult literacy and numeracy and school-to-work transition.

What is the Millennium Cohort Study?

The MCS was launched in 2000 with a target sample of 20,646 births. Also known as the Child of the New Century, this study follows the basic pattern of the three previous British Cohort Studies. The babies were initially profiled when they were aged 9 months by one and three-quarter hour interviews with parent-carers over the course of 2000-2001. In some of its details of design it does differ, however. It is the most geographically comprehensive study, in that all four national regions of the United Kingdom are covered. Furthermore, rather than sampling over one week, it samples births over the course of the whole of 2000 by selected electoral wards. Wards that contain high levels of socio-economic deprivation have been over-sampled, as have wards with high densities of ethnic minority residents. The study features a stronger focus on fathers than the previous studies. Finally, whereas previous studies focused almost exclusively on physical and medical data in the first sweep, the MCS places far greater emphasis on economic factors and the social environment of the baby at birth.

The study has four principle objectives. These are:

To chart the initial conditions of social, economic and health advantages and disadvantages facing new children in the new century, capturing information that the research community of the future will require.

To provide a basis for comparing patterns of development with the preceding cohorts.

To collect information on previously neglected topics, such as fathers' involvement in children's care and development, and the effects of season of birth within a year.

To investigate the wider social ecology of the family, including, social networks, civic engagement and community facilities and services.

(ONS 2002)

The MCS then, is the cohort study that, out of the four, is the most concerned with the impact of social factors in early life on the later life-course of the individual and is clearly connected to government social

policy. One of its key rationales, for instance, is to provide an evidence base for the national evaluation of the Sure Start programme. It is theoretically informed by the policy concepts of social exclusion, social capital and community cohesion, which have been at the heart of social policy formation and implementation since 1997. To this end, its inquiry covers the areas of: poverty and wealth; quality of life; community relationships; changing family structure; labour market change; the impact of technology; gender roles; and the influence of individualism in British culture.

The MCS data has now been compiled from sweeps in 2000-1 (for 18,818 babies at age 9 months), 2003-5 (age 3) and 2006-7 (age 5). The 2008 sweep (age 7) is currently underway. Three sub-studies have been conducted. Two of these sub-studies have been reported upon: the Health Visitor Survey Report; and the Fertility Survey Report.

Uses of the Millennium Cohort Study

The MCS is already being used to inform policy and practice within services. Health agencies in particular have been using the database to improve and refine systems and processes and to generate policy recommendations. In one study a link between income level and the postnatal health of the mother was established using MCS data. The researchers found that women in the top income quintile were significantly less likely to report 'fair' or 'poor' health after the birth of their child than women in lower quintiles. On the basis of the postnatal income gradient suggested by the data, macroeconomic as well as microeconomic initiatives were recommended to address this health inequality (Petrou *et al.* 2007).

One study that resonates strongly with current government advice to mothers, as well as with health practitioners' remits and guidelines, looks at what the data suggest about maternal employment patterns and the initiation of breast-feeding. These researchers found the following correlations: mothers in full-time employment were less likely to initiate breast-feeding than those who were unemployed; no significant differences were evidenced from the data between those working part-time, self-employed mothers or students; mothers returning to work four months post-partum were less likely to initiate breast-feeding than those returning after five to six months; mothers returning to work for reasons of financial necessity were less likely to start breast-feeding than those doing so for other reasons. This research led to the recommendation that

policies needed to address the ways in which the timing of and reasons for the mother returning to work, related to the initiation of breast-feeding (Hawkins *et al.* 2007). A separate study on this topic found that the likelihood of starting to breast-feed was also related to ethnicity. White mothers for instance, were the least likely to breast-feed. Interesting qualifications to this finding were that the likelihood of a white mother initiating breast-feeding rose where a partner was of a different ethnic group, or if alone, where the mother lived in an ethnically mixed community (Griffiths *et al.* 2005). One of the sub-studies of the MCS, designed to augment the major data-set itself, looked at the levels of knowledge of local services that mothers might access for their babies, on the part of health visitors. The study identified a 'good' level of knowledge of local services, and with little variance between countries in the UK (Brassett-Harknett *et al.* 2006). Work has also been done to enhance the MCS by linking birth registration and hospital episodes data to it (Hockley *et al.* 2008).

Research that looked at how the mother remembered the birth found that maternal recall of the mode of delivery was highly reliable with 94% of mothers reporting accurately. Knowledge of modes of delivery is important for clinicians involved in the care of women and for epidemiological studies, and so these findings are crucial for practitioners who need to know how much credence to attach to the mother's own recall of the circumstances of the birth of their child (Quigley *et al.* 2007). Another study that considered maternal recall again revealed that health practitioners are justified in placing high confidence in what mothers say about their babies' birth weight. Although this was true at the aggregate level however, there was variance according to ethnicity and socio-economic indicators for long-term unemployment and ward type (Tate *et al.* 2005).

Along with the breast-feeding study referred to above, a number of other studies based upon the MCS have produced findings relevant to health policy that have been connected to ethnicity. Attitudes to giving consent for access to birth records for instance have been shown to be less positive amongst minority ethnic group mothers (as well as amongst lone mothers and those with higher degrees or with no qualifications) (Tate *et al.* 2006). Finally, a study of birth outcomes in relation to ethnicity has revealed that significant differentials do indeed exist for birth weight and for gestation periods. Given the increasing knowledge surrounding the correlations between these kinds of birth statistics and later cognitive development, these findings may be highly consequential for policy formation aiming to reduce inequalities between ethnic groups.

Specifically, the researchers point to the importance of building awareness of such inequalities into strategies designed to improve ante-natal class attendance rates amongst ethnic minority women (Dearden *et al.* 2006).

Baby Matterz and the Millennium Cohort Study: issues and limitations

Before considering how data from the MCS might be applied to Baby Matterz, either in its current pilot form or in any future, more mainstreamed form, it is important to recognise some obvious limitations.

The first issue that needs to be addressed is that of scale. The MCS is a large scale, national study and database that contains detailed demographic profiling of nearly 19,000 children from 9 months onwards. The current model of Baby Matterz samples just nine individual babies as part of a small and localised initiative. This raises the further issue of representativity. Whereas the MCS, by virtue of the number of participants and geographical coverage, can be considered as representative of all babies born within its time-frame, Baby Matterz, involves only a handful of babies. Whilst there is no suggestion that these babies might be representative of national trends, with such a small sample chance factors and random variance, mean that the cohort cannot be considered as representative even of a much more localised population. Baby Matterz, in its present form is not, and cannot be, considered as representative in any precise or statistical sense.

The danger here is that of promoting Baby Matterz and its achievements based on claims that do not withstand statistical scrutiny. Whilst positive outcomes for individual babies, and even across the group, that are apparent and pleasing to the parents and professionals involved, claims that such tendencies are in fact trends that have resulted from involvement in Baby Matterz, or that bear comparison with the MCS, will not be sustainable. This suggests that, with respect to the promotion of Baby Matterz, other, more qualitative (though no less rigorous) approaches, be adopted instead.

It may be that in some future, 'rolled-out' version of Baby Matterz, the MCS would be directly applicable and useful in providing a baseline against which to measure performance or effectiveness. The sample size would need to be far larger, however (perhaps of the order of hundreds of babies) and the sampling itself would need to be designed with care to

achieve local and/or national representativity.

The second issue is related to methodology. There are two aspects to this. The first is that of selection. The MCS database draws upon a targeted sampling strategy. Babies were surveyed across wards that had been selected according to cross-national spread within the UK. As we have seen some wards were then over-sampled according to social-economic profile and ethnicity. No such sampling technique has been employed for the purposes of Baby Matterz. Indeed the parents currently involved in Baby Matterz do not conform to the ideal target group of 'vulnerable', 'at-risk' or 'marginalised' people. All the parents currently involved were previously known to the school through an older child also attending. Essentially then, the 'selection' of parents who are involved in Baby Matterz has operated through head-teacher or teacher contact, followed by the parent's agreement to be involved. The chance factor of which parents happened to have given birth in 2007, and which of them, upon being asked, responded favourably, were the two principal selection criteria. The process then, by which parents became involved in Baby Matterz was a pragmatic one that combined chance and self-selection. This key difference again raises difficulties for any use of the MCS that suggests that meaningful comparisons can be made.

The second sense in which methodology is an issue for the use of the MCS for Baby Matterz is that of depth. The MCS is based upon in-depth interviewing of the parents of the babies making up the cohort. The interviews are very wide ranging and touch upon areas such as family structure, quality of life and social attitudes. No such profiling has been conducted, or even designed for Baby Matterz at this stage. For the MCS to be applicable in any direct sense to Baby Matterz the demographic and social profiling of babies by in-depth parent interview would be a necessary pre-condition. Again this is something that could be built in to the design of Baby Matterz for later stages in its evolution, assuming that it continues to subsequent stages of development.

A third area of difficulty also relates to methodology, though more in the sense of ethical considerations. Large parts of the MCS survey interview schema cannot at present be considered as appropriate areas of enquiry for a small and very localised initiative. Areas such as the mother's precise relationship with the father, the regularity of the father's contact with the child, the quality of relationship with the partner, the mother's own family history, attitudes to mixed religion schools and opinions about mixed-ethnicity marriage, to name but a few, are simply out of bounds for Baby Matterz in its present form. Even areas that might be considered as

less potentially intrusive, such as those of immunisation completion rates or parental alcohol consumption and smoking habits, would require levels of participant protection and confidentiality assurance that are beyond the current capacity and design of Baby Matterz. It may well be that were the Baby Matterz programme to be constituted differently, with a far higher level of professional input and service integration, that the kinds of ethical capacity required for Baby Matterz to become more compatible with the MCS database, could be achieved.

Finally, there is the issue of feasible benefits. There are many areas of inquiry within the MCS interview schema that cover aspects of life for which Baby Matterz could not be expected to have any impact for the child or for the parent. Considering the 2003 MCS interview schema, questions covering parent-carer marriage status, long-standing parental illness, disability or infirmity, domestic work-load and father's employment profile, do not touch upon aspects of life that participating in the initiative could even potentially change. Careful consideration then, of the kinds of actual and potential outcome for the parent and child, which might result from participating in Baby Matterz, provides one criteria by which to exclude areas of the MCS database for its purposes.

Adapting the Millennium Cohort Study for Baby Matterz

Whilst the section above outlines issues and limitations in using the MCS for Baby Matterz, it also provides a basis for identifying certain applications that would in fact be both possible and useful. MCS data may be used to provide important background and contextual information that aids the interpretation of outcomes for the individuals – parents and babies – involved in the initiative. This use of the data is not premised upon notions of representativity but rather of 'affinity' or 'resemblance'. In other words, by profiling the Baby Matterz parents and their babies, perhaps according to post-code, it will then be possible to use this ward-based data in a more limited, but nonetheless meaningful sense. This approach also relates to the methodological issues connected to participant selection and qualitative depth mentioned above. The kind of profiling suggested here would enable researchers and Baby Matterz practitioners to make the MCS data intelligible for the purposes of interpreting outcomes, as well as refining the design of the programme. Finally, by ruling out both ethically inappropriate or unsafe areas of inquiry, as well as those that do not relate to feasible benefits of Baby Matterz involvement, we are left with areas of MCS data that may indeed be of great use for its development and roll-out, assuming they are used

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with these caveats in mind. This approach also provides a guide as to how any future model of Baby Matterz should be designed if MCS data is to be used for its purposes in a more systematic fashion.

Taking all of the above into consideration then, there are two senses in which the MCS could be of value for Baby Matterz. The first is that some of the areas of inquiry of the MCS are indeed directly relevant to Baby Matterz. The data generated from the questions pertaining to these areas can be used for the purposes of matching against profiles of Baby Matterz parents, and for contextual background for the interpretation of outcomes in particular areas. This would be particularly the case for a future Baby Matterz programme involving a much larger cohort of babies than for the pilot initiative. The second sense in which the MCS might be of direct use for Baby Matterz is that the findings of the MCS, as they have been reported and analysed in the reports produced by the Centre for Longitudinal Studies from which the MCS is run, may indeed relate to the experience of the parents and babies involved in the programme. Each will be discussed in turn.

Using the MCS data for Baby Matterz

Considering the areas of inquiry across the 2003 MCS interview schema then, a number of question 'modules' can be seen as relevant. Some questions regarding the structure and patterns of family life, largely factual in nature, could be integrated into Baby Matterz. Where caution and sensitivity are nonetheless still advisable, these areas of inquiry have been indicated (*). The following groups of question-areas, then, could be considered as amenable for use within Baby Matterz:

(From 'Introduction')

questions about the numbers of people living in the family home;
language spoken at home;

(From 'Module A: Non-residential parents')

ethnic identity of the parent-carer and child; early parental feeding behaviour covering choices regarding, and experience of, breast-feeding and weaning;

(From 'Module D: Baby's health and development')

early medical records regarding weighings, immunisations and hearing checks;
 general health care and (some) medical matters relating to the pregnancy;
 time of birth;
 place of birth;
 duration of stay in hospital after birth;
 nature of assisted delivery (if relevant);
 nature of pain relief (if relevant);
 baby's birth weight;
 health problems leading to baby being taken to a health agency;
 accidents leading to baby being taken to hospital*;
 hospital admissions for the baby*;
 questions regarding social development*;
 questions regarding motor development*;
 baby's sleeping patterns; parent-carer responses to baby crying;

(From 'Module E: Childcare')

current employment status;
 child-care arrangements for baby and any siblings whilst at work;
 number of hours of child-care paid for;
 number of hours in child-care;
 age of baby when child-care began;

(From 'Module F: Grandparents and friends')

grandparents alive?
 do grandparents help with baby?
 other sources of support e.g. GP, health visitor *etc.*;
 ease of access to a health visitor;
 awareness of Sure Start or Early Steps;

(From 'Module H: Self completion – main and partner respondents')

baby's behaviour when being changed/ dressed (laughing, cooing *etc.*)*;
 questions regarding parent-carer's health*;
 parent-carer views on responses to babies' crying, babies' feeding and sleeping patterns, stimulation for babies, talking to babies, cuddling for babies*;
 baby's behaviour in new places (fretful, content, laughing, cooing *etc.*)*;

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baby's behaviour when being bathed in a new place or by a new person (wary, content, laughing, cooing *etc.*)*;
baby's confidence with strangers*;
baby's confidence with other child;
baby's feeding patterns;
baby's sleeping patterns;
baby's behaviour before going to sleep (fuss, crying *etc.*);
questions about baby's crying or screaming for things it wants;
attitudes to computers;
attitudes to children's learning;
questions about mother's employment history with respect to pregnancy and birth (time period off work before birth; job ended or leave; duration of leave; source of financial support whilst away from work; returned to same or different job; reason's for return to work; part-time or full-time work since having baby; intentions for returning to work related to age of baby; number of hours worked per week; paid overtime number of days worked per week; shift patterns; journey to/from work;)*
father's employment history with respect to mother's pregnancy and birth of baby (similar range of questions to above)*;
questions relating to income structure (work related income, tax credits, child care vouchers)*;
questions relating to educational status (qualifications; age upon leaving full-time education)*;
questions relating to father's educational status (similar range of questions to above)*;
questions relating to access to IT (computer, internet *etc.*);

(From 'Module K: Housing and local area'):

how long at current address;
type of accommodation;
number of rooms;
nature of ownership or tenancy;
home circumstances at time of baby's birth;
reason's for moving from previous address;
questions relating to periods of homelessness;
access to garden;
nature of heating in home;
heating in room where baby sleeps;
condensation in home;
telephone connection in home;

safety features in home;
 car use/access;
 questions relating to quality of neighbour relations (litter/rubbish;
 vandalism; insults; public transport; access to shops; pollution; play
 areas for children;

(From 'Module L: Interests and time with baby'):

newspaper reading;
 parent-carer's assessment about amount of time they have for the
 baby;
 questions about difficulties in first months of the baby's life;
 question about the 'best thing' in the early months;
 questions relating to help from father (and father's side of the
 family).

For the areas of questioning requiring an extra level of care (*) sensitivities would need to be taken properly into account. Examples in the case of the baby might be connected to disability or delayed development. In the case of the parent and/or partner, examples might be connected to family history, negative life experience or personal self-worth. For these areas confidentiality and participant protection would need to be provided. The profiling of parents involved in Baby Matterz would need then, to be both sensitive in terms of researcher and practitioner awareness of potentially difficult areas for the participant, as well as being strategic in terms, perhaps of trust-building through staggered profiling over the duration of the participant's involvement.

Using findings from the MCS for Baby Matterz

The key findings of the MCS have been analysed and reported in a series of research briefings and publications that draw upon *Millennium Cohort Study: A User's Guide to Initial Findings* (Hansen and Joshi 2007). The most comprehensive thematic report of findings for the age range 0-9 months has been published as *Children of the 21st Century* (Dex and Joshi 2005). The main themes within the overall findings to date will be assessed in turn for their usefulness to the Baby Matterz initiative.

Cognitive development (George *et al.* 2007a). This is an area in which Baby Matterz may be of benefit. Insofar as improved parent-baby verbal and social interaction is likely to improve cognitive development for the infant, the kinds of outcomes that may be achieved through involvement in

Baby Matterz can be seen as relevant to the MCS data-set. One key use of the MCS data on this theme might be that of evaluation of the effects of Baby Matterz, were it to be up-scaled to involve far greater numbers. The two tests used to assess cognitive ability – the Naming Vocabulary Subtest of the British Ability Scales (BAS) and the School Readiness Composite (SRC) of the Revised Bracken Basic Concept Scale – could, with proper professional application, be incorporated into a large scale evaluation of future Baby Matterz programmes. The MCS data on this theme could then be used to provide a base-line against which to compare and evaluate the development of Baby Matterz babies. This kind of application could be used to consider the interactions between involvement in the programme and potential improvements in the early recognition of fine and gross motor function delay, communicative gesturing, and what Schoon *et al.* (2005) have called the ‘socio-emotional home environment’.

Housing, neighbourhood and community (Hughes *et al.* 2007). MCS data on this theme could, again be related to the work of the Baby Matterz initiative. Involvement in Baby Matterz does bring with it the potential to become more recognised in the community, for both the parent and the infant, as pupils from the school in which the programme is being run will see ‘their’ baby around their local area. The MCS inquiry on this theme has focussed on mobility, which is less applicable, but has also considered the importance of supportive networks of neighbours. On this, latter sub-theme the MCS may provide a rich source of data to aid interpretations of the experience of parents where their local profile is indeed raised by their involvement. The sub-theme of ‘home atmosphere’ is also important here and has already been commented upon for its relevance to child development above. This can also be seen as a feasible benefit of Baby Matterz in that an improved awareness of the importance of a calm home atmosphere for the infant, on the part of the parent, may indeed flow from the kinds of reflection that result from discussions with pupils and teachers in the classroom.

Family demographics (Calderwood 2007). The data from the MCS on this theme is not relevant to any of the feasible benefits of Baby Matterz in that the infant’s family structure is a given, and something that the initiative does not seek to affect in any way. There are other senses however, in which the data pertaining to family demographics is of relevance. Were the initiative to become more ambitious in its scope, and start to involve perhaps hundreds of babies in different local authority areas, the rigour of the programme might become a more central concern. In this situation, issues and considerations around parent profiling, perhaps for the

purposes of selection and targeting, would become more important. This would be especially the case where the social intervention aspect of Baby Matterz was the key feature within a locally adapted model, and in which babies living within certain types of family structure were seen as the priority. As for other themes, data in this area would also be valuable for the purposes of interpretation of Baby Matterz outcomes. Closely related to this theme is that of the involvement and role of grandparents (Hawkes and Joshi 2007). The MCS data covers such aspects of grandparent involvement for childcare and financial support, and influence on verbal ability and readiness for school. This data may be valuable where adaptations and refinements to the Baby Matterz model mean that grandparents come to be involved along with parents.

Child health (Dezateux *et al.* 2007). This is a theme on which several areas of the MCS data could be of value to the Baby Matterz initiative as it develops and comes to involve mainstream health agencies. Again this would be especially the case in local applications of Baby Matterz in which the health and social intervention aspects have been fore-grounded in design and intended outcomes. The feasible benefits of Baby Matterz do include a number of health and health related potential outcomes. Improved parental knowledge and awareness of childhood illness and developmental milestones, better parental knowledge of local services, improved parental awareness of the influence of diet on health in both early and later life, greater confidence in reporting health and developmental concerns to professionals working within agencies and so on, are all things to which participation in Baby Matterz, could conceivably make a difference. Health issues specifically covered by the MCS include baby's first steps, vision and hearing, ability to play, asthma, infection, injury and immunisation. These are all areas in which an improved readiness and ability to report to health agencies on the part of the parent are known to make a real difference to the longer term health prospects of the child. This match between the MCS data and the feasible benefits of Baby Matterz does mean that the existing and emerging data could be used as baseline data for the purposes of large scale evaluation, as well as for the purposes of interpretation of outcomes and for future design and participant selection. This data would also be important for reasons of local relevance where Baby Matterz is taken up within different local authority areas. Health issues do vary according to area as well as parental and family type. As Dezateux *et al.* (2005: 157) report:

Area of residence, socioeconomic status, social support and maternal education were all associated with wide variation in health status in infancy

Such variation across localities and regions does mean that any future 'roll-out' of Baby Matterz would need to be informed by health and social data related to specific areas. This would be important for the effectiveness of Baby Matterz considered as a social intervention, and for reasons of local agency engagement. It is just such data, sensitised to localities by its ward-by-ward character, which the MCS can provide.

One note of caution needs to be made with respect to any incorporation of MCS health data, or any re-focusing of Baby Matterz connected with it. Many areas of the MCS inquiry do come within the category of needing either ethical protection for participants or at least practitioner sensitivity. Areas such as personal decisions with respect to the initiation and continuance of breast-feeding, parental smoking and alcohol use and infant admissions to hospital, all covered by the MCS, would need to be approached with care and, where appropriate, professional guidance, or even avoided altogether, to ensure both ethically safe practice, as well as in the interests of successful parent engagement.

Child behaviour (George *et al.* 2007b). The behavioural aspects of the infant's development is a theme that does relate to Baby Matterz. If the quality of the parent-baby relations can be feasibly improved through participation in the programme, and if this in turn can have a positive affect on behaviour, then Baby Matterz can be seen to have something valuable to contribute. This is also connected to potential health outcomes commented upon earlier. One correlation identified by the MCS, for instance, is that where developmental delays were present at 9 months, then behavioural problems at age 3 years were more likely (George *et al.* 2007b). If, as a result of participation in Baby Matterz the parent is more likely to recognise and report early developmental problems then, by inference, there might plausibly also be a benefit in terms of later behavioural development. Again, the tests used in the MCS, the Strengths and Difficulties Questionnaire (SDQ) used for psychiatric assessments of emotional adjustment, could, with proper professional application and ethical consideration, be used in evaluations of large scale Baby Matterz programmes. This would enable direct comparisons of the outcomes for Baby Matterz babies and the MCS data-set used as a baseline on an area-by-area basis.

Parenting (Smith 2007). This theme is important for Baby Matterz considered as a social intervention. The MCS data for this theme covers the areas of time spent with the child, family activities, rule making for the child, self-assessments of parenting styles and parent competence, daily

routine and beliefs and values. These areas, in different ways, also connect with themes and sub-themes from the MCS related to motor function development, emotional adjustment and the 'socio-emotional' aspect of the home. The value of the MCS data here lies in its potential for guiding any refinements to Baby Matterz in its more educative aspects for the parent and in terms of how it might impact positively on the quality of the relationship between the parent and child.

Some areas of inquiry covered by the MCS data for this theme would need to be approached sensitively within any future Baby Matterz programme. It is worth noting for instance, that not all parents feel positive about their new arrival. As Calderwood *et al.* (2007: 202) point out, the MCS revealed that a small percentage of parents feel that their relationship has suffered as a result of the baby and 3-4% of mothers admitted to feeling 'frequently' annoyed at their baby. It may be that if a core rationale of future versions of Baby Matterz is that of reaching 'hard-to-reach' parents living in stressful circumstances, then these sorts of parental experiences will need to be contended with. Where this is the case the MCS may provide a valuable source of social insight for the professionals involved.

Parental health and wellbeing (Calderwood *et al.* 2007). Where a key purpose of Baby Matterz is seen as being that of positive outcomes for the parent, the MCS is of direct relevance. Self-assessments of general health, the incidence of chronic illness, smoking, alcohol consumption, the use of recreational drugs, mental health and postnatal depression, life-satisfaction and Body Mass Index data, have all been collected by the MCS. Involvement in Baby Matterz, with the likely positive outcomes associated with feeling validated through having been asked to take part, becoming more familiar, and perhaps less intimidated by key professionals in the school, and more aware of the support available from services *etc.*, can be seen as having the potential to offer benefits that relate to these aspects of MCS data. As for other themes, this data could then be used for the purposes of evaluation, interpretation of outcomes and redesign for better parent profiling and selection.

The same note of caution regarding sensitivity, ethics and participant protection applies here as was made with respect to the theme of child health.

Employment and education (Ward and Dex 2007). In its current phase Baby Matterz does not aim to contribute to in any significant way to the employment prospects of the parent. However, this is something that

might conceivably be included as an aim in a future, more elaborated version of Baby Matterz. The role of 'community parents' or 'parenting mentors', growing out of previous Baby Matterz programmes, who are able to engage with parents regarded as 'hard to reach' by services, is one possible form that this might take. Involvement in the life of the school may also potentially open doors to employment within the local school service as class-room assistants, learning mentors, class-room teachers as well as to other professional routes. This theme obviously overlaps with another covered by the MCS: that of poverty (Ward *et al.* 2007). If Baby Matterz does indeed prove to be a means by which doors to employment open for some of the parents involved, then this may represent an area of outcomes for the parent for which the localised data provided by the MCS could again prove valuable for the purposes of evaluation, interpretation and programme design.

Conclusion

The MCS, as was explained in the introduction to this paper, is the latest of four major population cohort studies undertaken, and currently running in the UK. The value of such cohort studies has been their usability for, and adaptability to the public policy developments, initiatives and interventions of any given governmental era. The powerful and comprehensive research intelligence represented by these population data-sets provides a means by which trends within the British population can be tracked with a high degree of reliability and accuracy.

This paper has pointed out the limitations, however, of using the MCS for a very small scale pilot project such as Baby Matterz in its current – that is to say 2007/8 school year – form. These limitations have been connected to considerations of the feasible benefits of Baby Matterz, ethical concerns and issues of methodology. It has generally advised against too literal a use of the MCS data without the caveats described in this paper, given the obvious scalar discrepancy between the MCS data-set (involving an original sample of nearly 19,000 infants) and the current form of the Baby Matterz initiative (involving just nine babies).

Having cautioned against a simplistic use of the MCS, this paper has nonetheless argued that there are some applications of this population data that ought to be considered for use within the Baby Matterz initiative. One obvious way in which the MCS data is useful to those responsible for the running and development of Baby Matterz, lies in its generic relevance. An awareness of the trends identified within the MCS data and

the findings produced and periodically published, will naturally be of benefit for the interpretation of experiences and findings, as well as for informed professional practice, within the programme. The publication *Children of the 21st Century* edited by Shirley Dex and Heather Joshi (2007), covering data for the first nine months of life of babies in the cohort, is especially recommended for these purposes.

Moreover, the MCS data will become increasingly useful to the Baby Matterz initiative if and when it is up-scaled into a form that involves far larger numbers of babies and parents, and is rolled-out to other local authority areas. If Baby Matterz does indeed become a more mainstream and large scale intervention, then the need for greater rigour in design, rationale and evaluation will assert itself. In this circumstance, and particularly if the numbers of infants involved means that claims can be made for representativity, the MCS will become an important and invaluable source of base-line data. This is likely to become crucial if other agencies are to become involved. For the proper engagement of health and social care agencies, as well as of the education service at the national government level, the kinds of rigour that were arguably unnecessary within the small scale pilot run in 2007/8, but that would become necessary, would be greatly enhanced through use of the MCS. This is true both in terms of the potential of the MCS as a source of base-line evaluation data, and in terms of the methodological models it provides for the targeted selection and profiling of parent participants.

As a final comment, it is worth highlighting the long-term nature of the vision behind, and the impressive ambition for, Baby Matterz, that consideration of the MCS represents. The potential that the Baby Matterz initiative has for learning, whether that be of a direct educational form for pupils, for the professionals who are involved, or for the parents who so generously give up their valuable time to the project, is clear to those who have had contact with it. Indeed it is exciting to witness the growing confidence in the approaches represented by the initiative, amongst professionals in the City of Liverpool. If Baby Matterz reaches the scales of implementation that mean that the MCS can be used with more systematic purpose, or indeed even become incorporated more methodologically into future MCS sweeps, then much will have been achieved. The beneficiaries of such an achievement, along with the supporting agencies involved, will be the children of Liverpool and their parents, as well as those of other areas in which local authorities are persuaded by what Baby Matterz has to offer.

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The Baby Matterz* initiative in Liverpool brings parents and their babies into schools for short sessions with class-groups of pupils and their teachers. The sessions focus on a wide range of interests including the growth of the baby, their social and emotional development, their physical abilities *etc.* The aims of the project raise the question of whether existing data that covers health, educational and social aspects of child development can be used for the purposes of interpretation of outcomes and findings from the current project, as well as for its future design. The Millennium Cohort Study (MCS) funded by the Economic and Social Research Council and run by the Centre for Longitudinal Studies, that has been surveying the early life-course of infants born in 2000, may provide one such data-set that could be used in these ways. This paper explores the potential of the MCS for enhancing the qualitative depth and analytical rigour of the Baby Matterz programme, both in the City of Liverpool and for any further development and 'roll-out' across the UK.

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