

USE OF LONGITUDINAL DATA IN THE STUDY OF SOCIAL EXCLUSION

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Introduction

1. This report assesses the value of longitudinal data in the study of social exclusion. It starts with an examination of what is meant by social exclusion, together with some of the factors that are believed to lead to it and to arise from it. The report then goes on to consider the value of longitudinal data in the study of social exclusion, and identifies criteria for the selection of studies which would be of value in this respect. It then examines in more detail studies which meet these criteria. The next section reviews some findings from longitudinal research relevant to the study of social exclusion and uses them to help identify the key components for the required research design. The final section brings together the conclusions from the previous sections, setting out a number of ways in which either existing results from longitudinal data, the longitudinal data themselves or new longitudinal data could be used in the study of social exclusion.

Social Exclusion

2. Although the idea of social exclusion has been around for some time, the term itself is of relatively recent origin, and represents something of an evolution in the way individuals' and groups' difficulties in functioning in modern society are conceived. Nineteenth century conceptions of mankind, from Charles Darwin and Francis Galton onwards placed genetic inheritance at the forefront of individual failings. Yet at the same time the contrary view was developing, reinforced by the great 19th Century poverty surveys of British philanthropists such as Charles Booth and Joseph Rowntree, that these difficulties were a product of the circumstances in which children grew up and in which poor people lived. Since then the debate between the hereditarians and the environmentalists has swung backwards and forwards, with hereditarianism re-emerging, as biological determinism, most recently through the views of psychologists such as Richard Herrnstein and Charles Murray¹. But the dominant ethos guiding social

1. Herrnstein, R.J. and Murray, C. *The Bell Curve: Intelligence and Class Structure*, Free Press, 1994.

policy has been environmentalist. The modern welfare state is founded on the principles of compensation, support and equity. Adults, and through them their children, need to be compensated for material disadvantages, and buttressed against temporary situations of hardship, such as those brought about by unemployment, family breakdown and ill health. Through state provision access to basic standards in health, housing and material well-being is provided, and children's educational opportunities are, at least in theory, assured.

3. With social exclusion we go a step further. We stop seeing disadvantaged circumstances passed through families exclusively as impeding individual development and restricting life chances in adulthood. In the terms of social exclusion, responsibility shifts more to society, which is seen as erecting obstacles in the way of the progress of particular individuals and groups, and even to citizenship itself. The consequence is fragmentation and loss of social cohesion: dependency on state support grows and dysfunctionality in the form of family breakdown, homelessness, criminality, and drug abuse may follow. As stated in the European Commission's *Fourth Framework Programme* specification for 'targeted socio-economic research', social exclusion is characterised by:

".... disintegration and a fragmentation of social relations and hence a loss of social cohesion. For individuals in particular groups, social exclusion represents a progressive process of marginalisation leading to economic deprivation and various forms of social and cultural disadvantage."²

4. The document goes on to say that the major dimensions of social exclusion are likely to be "economic, social, cultural, special and political". Although processes of marginalisation may not be explicitly stated as part of policy, or even be in the consciousness of policy makers, the institutions of the state from education to employment, and the community at large, operate in such a way that full access to rights and opportunities for some individuals is effectively barred. At the same time individuals may themselves opt out of meeting the requirements of education and civic responsibility that society places upon them, apparently preferring to take their chances with alternative lifestyles and other (often illicit) opportunity structures than those that the state provides. Young people faced with the option of school achievement, or success in the youth and delinquent cultures outside the school gates, may opt for the latter, because they - and often their parents - perceive the job opportunities too limited or too unfulfilling to make the effort school work entails worthwhile. Some teenage pregnancy, resulting in parenthood outside marriage, is thought to be motivated by the desire to seek other means of fulfilment than unsatisfying jobs interspersed with unemployment.³

5. In the broadest sense, therefore, social exclusion can be seen to be present in almost any of the domains of modern living, including education, employment, community life and citizenship to which individuals or groups fail to gain access or exclude themselves from. This idea implies standards of access and participation which the modern state should uphold; it also implies dynamic processes through life of interaction between individuals and the state, whereby marginalisation occurs and access is effectively denied. Such disadvantage - now seen more as a product rather than a cause of inability to function effectively in the community - spreads through groups defined by combinations of such structural characteristics as - again to quote the EC document - "unemployment, underemployment, homelessness, poverty, value systems, citizenship, gender, life-cycle, household structures, education and training, religion, migration, urban/rural etc. "One disadvantage reinforces another producing a downward spiral of disadvantage to the periphery of the modern state. Exclusion is repeated from one generation to another, providing the foundations of what has been described, more controversially, as a new

2. European Commission, *Targeted Socio-Economic Research*, Workprogramme, Edition, 1995.

3. Wallace, C. *For Richer for Poorer: Growing up in and out of Work*, Tavistock Publications, 1987.

'underclass', with a culture based on anti-achievement and dependency, and biological determinism re-emerging as the explanation of how some individuals end up in it.⁴

6. At the same time, we need to acknowledge that such exclusion processes are not frozen in time; nor are they always operating in one direction. Against prediction, many individuals overcome the weight of adverse circumstances, to lead successful, balanced and socially integrated lives. This gives sustenance to policy initiatives designed to combat social exclusion. There are virtuous as well as vicious circles: policy can play a major part in both. The right mix of welfare and educational provision can assist in pulling down the barriers to integration and citizenship. The wrong mix can re-enforce them, weakening personal autonomy and fostering alienation and despair.

7. The reasons for the shift in emphasis from the individual to society and its institutions as the basis of social exclusion are not difficult to see. The massive transformation of the economy and the production process, brought about by new technology, has diminished demand for old skills and created a demand for new ones.⁵ As traditional manufacturing industry, with its need for unskilled work, has disappeared and service industry has grown, so those without the new skills find increasing difficulty in getting work. At the same time, those acquiring skills in traditional occupations, such as through the German apprenticeship, for example, may find that the industries they are in are re-structuring and "downsizing": hence the skills such workers have acquired are considered redundant and they lose their jobs. Increasingly there is a requirement for people to develop an 'occupational portfolio' of horizontal (adaptable and transferable) skills to protect them against such changes.⁶

8. The German sociologist, Ulrich Beck's term 'risk society' aptly sums up the uncertainty of lasting employment in particular occupations that characterised especially the male life-course in the past.⁷ 'Career trajectories', in which family position in the social structure had fairly predictable consequences for ultimate destination of children in it, give way to more 'individualised' career paths, whereby individuals have to 'navigate' their way through education and the labour market to find a niche or series of niches where security is assured. However not all the old certainties have disappeared. Individual negotiation and choice is still bounded to a high degree by the distinctions of class, gender, ethnicity and local labour market opportunities: individualisation is a structured process in which early circumstances and subsequent opportunities still have a major role to play.⁸

9. The large growth in service industry and part-time working, often home-based, has in certain respects advantaged women in relation to modern employment, enabling them to combine work and family responsibilities more effectively. This in itself has produced another dramatic change in relations with the labour market, where men, traditionally the main breadwinners, may become more excluded from employment than women. At the same time the kinds of early employment available to both sexes, but especially for women, provide less opportunity for young people's socialisation into traditional norms and

4. Murray, C. *The Emerging British Underclass*, Institute of Economic Affairs, London, 1990.

5. Jallade, J-P. 'Recent Trends in Vocational Education and Training', *European Journal of Education*, 24, pp. 103-125, 1989.

6. Heinz, W.R. 'The Transition from School to Work in Crisis', *Journal of Adolescent Research*, 2, 127-141, 1990; Jallade, Op cit.

7. Beck, U. *Risk Society*, Sage, London, 1992.

8. Roberts, K., Clark, S.C. and Wallace, C. 'Flexibility and Individualisation: a Comparison of Transitions into Employment in England and Germany', *Sociology*, pp. 31-54, 1994.

values through the workplace: individualisation extends to the work itself, with less importance attached to it and more emphasis given to cultural forms expressed through the media and consumerism as the basis for adult identity.⁹

10. Economic and political transformation also has a role in social exclusion. The establishment of the European Union has opened up the possibility of mobility of labour across much wider areas and across national boundaries. And the radical re-structuring of Central and Eastern Europe and economic hardship for large numbers of people, following the collapse of Communism, has opened up further pressures towards mobility. In such times of social and political upheaval, tensions arise and certain groups experience hostility and marginalisation from the host communities. Finally, social changes, most notably in the area of the family, have weakened this past bastion of support, protection and solidarity across the generations. New and reconstituted family structures place another strain on consistent parenting and may, in certain circumstances, create new conditions of poverty and disadvantage.¹⁰

11. As social exclusion may be realised in disadvantage and malfunctioning across most domains of life, we may expect to find its manifestations in educational failure, homelessness, joblessness, teenage pregnancy criminality, drugs and alcohol abuse; even health especially mental health, is not immune from it. Our concern here though will principally be with the forms of social exclusion associated with success and failure during pre-school education, through education itself and the transition from school to work over the age period, birth to 25. We shall also be considering social exclusion in terms of long-term processes motivated by, and motivating, accumulating problems over this period. These force individuals, who in theory in the welfare state, start life with equal chances, increasingly to its margins. The emphasis on groups also makes the point that we are less concerned with the pathology of individuals in a medical and psychological sense (though this may have a part to play), than in the sets of social relations operating within social structures which shape development. In other words we need to know how particular ethnic groups, women as opposed to men, one community as opposed to another, and certain classes and other socially defined groups within them, tend towards social exclusion more than others. At the same time we need to discover how these processes are reversed for many individuals in these groups - for whom predicted failure becomes success and exclusion transforms into inclusion. In other words the focus of our interest is how these social defining characteristics of individuals interact with the proactive components of identity - 'agency' - within particular societal contexts to shape individual and group biographies across the life course.¹¹

12. Our discussion also sign posts some of the key requirements of the research design to study social exclusion, which we shall be returning to for more detailed consideration in subsequent sections. In summary we need: longitudinal data to study the transition processes involved; multiple cohorts to study the effects of societal change and policy impact; and cross-national comparative study to embrace the effects of culture and history. A comprehensive research strategy will include all three.

9. Baethge, M. 'Individualization as Hope or Disaster', in Hurrelmann, K. and Engel, U. *The Social World of Adolescents*, de Gruyter, Berlin, 1989.

10. Jones, G. and Wallace, C. *Youth Family and Citizenship*, Open University Press, Buckingham, 1992; Coles, B. *Youth and Social Policy*, UCL Press, London, 1995.

11. Giddens, A. *Modernity and Self-Identity: Self and Society in the Modern World*, Polity Press, Cambridge, 1991.

Longitudinal Research Resources

13. As we have seen, research on social exclusion places certain requirements on the resources it is to use. The most important is that the data are longitudinal, i.e. to understand the processes involved in life histories, we need to collect data at key transition points from the same individuals across time and over an extended period of time. Cross sectional data collected on repeated occasions enables us to monitor the effects of societal change on the prevalence of population characteristics - 'net effects'. Longitudinal data is essential to investigate changes in individuals within the population as well - 'gross effects'. These incorporate the information essential to gain any purchase on causal processes: we need to know about sequences of life experiences and events, and which individuals are affected by environmental changes, while other remain impervious to them.¹²

14. Thus poor educational attainment in children can be attributed in part to low parental aspirations if changes in the former precede changes in the latter. A cross sectional survey could establish only a correlation between parents' aspirations and children's educational attainment, with no basis on which to establish cause and effect. Longitudinal studies come into the category of what are called 'quasi experimental designs'.¹³ We cannot allocate individuals randomly to different circumstances in life which the 'true experiment' demands. Hence we can never be certain that a variable identified with a hypothesised cause is not confounded with another variable that we have not measured. Is it aspiration or social class that we are really measuring? On the other hand, we can unravel how particular life histories develop, and draw strong inferences through the experiences that some individuals rather than others have had, as to what has shaped them. Who moves up through the social structure; who moves downwards and who stays immobile?¹⁴

15. Longitudinal data pursues developmental changes in individuals at particular points in historical time. Such data confound three external sources of the individual variation that the data contain, which need ideally to be accommodated in the research design: age, period and cohort effects.¹⁵ Data collected at a particular point in time in a longitudinal study may be a product of the age of the individual concerned (age effect), the time when the individual was born (cohort effect) and the period at which data were collected (period or secular effect). These effects are confounded, so unless we can assume constancy of one or two of them we can never be certain which one we are observing in the longitudinal data. We need to assess their significance and to exercise a degree of control over them through the research design. To

12. Alwin, D.F. 'Taking Time Seriously: Studying Social Change, Social Structure and Human Lives', in Moen, P. Elder, G.M. and Lüscher, K. (eds) *Linking Lives and Contexts: Perspectives on the Human Ecology of Development* American Psychological Association, in press.

13. Campbell, D.T. and Stanley, J.C. *Experimental and Quasi-experimental Designs for Research on Teaching*, Rand McNally, Chicago, 1966.

14. eg. Mayer, K.U. 'A Note on Societal Differentiation and Social Inequality' *Current Sociological Perspectives* 5, 1-12, 1986. Bynner, J. (ed.) *The Use of Longitudinal Studies in the Policy Process*, Anglo German Foundation, London, 1993.

15. Some of the classic statements of this issue and its implications for longitudinal research design and analysis are: Baltes, P. 'Longitudinal and Cross-Sectional Sequences in the study of Age and Generation Effects'. *Human Development* 11, 145-171, 1968; Nesselroade, J.R. and Baltes, P. B 'Sequential Strategies and the Role of Cohort Effects in Behavioural Development: Adolescent Personality (1970-72) as a sample case' in Mednick, S.A. Harway, M. and Finells, K.M. (eds) *Handbook of Longitudinal Research*, Vol. 1 55-87, Praeger, New York, 1984. Baltes, P.B., Cornelius, S.W. Nesselroade, J.R. Cohort Effects in Developmental Psychology, in Nesselroade, J.R. and Baltes, P.B. (eds.) *Longitudinal Research in the Study of Behaviour and Development*, Academic Press, New York, 1979

assess the size of the cohort effect and control it, we need to collect data from individuals of the same age but born at different points in time (cohorts). To assess and control the age effect, we need to collect data from individuals of different ages in the same period. To assess and control the period effect, we need to collect data from individuals of the same age at different periods.

16. The subsidiary requirements of our longitudinal data follow more precisely from the conceptualisation of social exclusion which was discussed earlier. First, social exclusion is a long-term process; to understand it properly therefore, we need to collect data over a substantial period of people's lives. Secondly, to analyse differentiation within society between individuals and between socially defined groups, we need large representative samples, or alternatively, specialised samples of particular groups, with the facility of a baseline longitudinal study for comparison. Next, to incorporate societal change itself, we need ideally more than one cohort studied across time (sequential cohorts) or follow-up of broad cross-sections embracing multiple age groups (quasi-sequential cohorts). To embrace the historical and cultural context of such change, we need studies that involve more than one country. Finally, we need studies that incorporate the relevant variables of interest. Much longitudinal study with a medical orientation restricts the data to a limited number of variables hypothesised to be implicated in the pathology of the medical condition of interest. For studies of social exclusion we need to ensure that the data not only embrace experience in education and the labour market, but also the wide range of family background factors, external circumstances and other life experiences that precede and accompany them.

17. From the above, we can conclude that large scale and long term studies within what can be described as a broad life-course or holistic perspective are going to have the best pay off.¹⁶ Such studies encompass circumstances and experience across the different domains of life, with a view to uncovering connections between them across time. They also offer opportunities for identifying, for more specialised follow-up, sub-samples representing particular subpopulation groups with particular social or individual characteristics: children with disabilities; young adults who have experienced continuous unemployment since leaving school, for example.

18. The value of longitudinal study has to be judged against the problems of collecting longitudinal data.¹⁷ The most serious of these data quality issues is 'attrition', the loss of sample members over time. Subjects may disappear from the study because they have moved, changed their names (through marriage) or are simply no longer interested in taking part; others move in and out of the study depending on their availability at the time a particular survey is to be carried out. This can seriously weaken the research. Sample loss reduces the numbers available for data analysis - a particular problem in longitudinal analysis, which demands complete records across the time span of the research. Attrition can also bias the data. If those who leave the study are not typical of those who started it, the longitudinal data will become biased to this extent. On the other hand, unlike the cross-sectional survey, with the longitudinal data set there is full information about the characteristics of the sample when the study began. Accordingly, if loss to the sample through attrition occurs differentially across groups, e.g. groups defined by social class of parents, then the sample can be re-weighted at any point in time to re-construct the key distributions of

16. Examples of papers showing the scope of this perspective are: Mayer, K.H. & Schoeflin, U. 'The State and the Life Course' *Annual Review of Sociology* 15, 187-209, 1989; Mayer, K.U. *Changes in European Life Courses and their Social, Economic and Political Determinants*, Paper presented to the conference of the American Council of Learned Societies, on the "New Europe: Rethinking the Collective Response to Change", Harvard University, December, 1992; Alwin, D.F. 'Aging, Personality and Social Change: The Stability of Individual Differences over the Adult Life Span', in Featherman, D., Lerner, R. and Perlmutter, M. (eds.) *Life-Span Development and Behaviour*, Erlbaum, New Jersey, 1994.

17. Magnusson, D. and Bergmann, L. *Data Quality in Longitudinal Research*, Cambridge University Press, 1990.

such variables as they were earlier. This is only a partial solution, however, the key variables, on which the missing cohort members differ from those still participating, may not have been measured at the start of the study. The most effective longitudinal studies, therefore, place a large amount of investment in minimising attrition by maintaining contact with the sample in between surveys, and tracing the present whereabouts of sample members through administrative records, and even national and local media publicity campaigns, when leading up to a new one.

19. Other data quality issues arise in relation to measurement. We have already specified broadly the data requirements for a longitudinal study of social exclusion, but meeting them may not be as straightforward as it seems. All measurement contains error, which reduces its reliability. This effect will be multiplied for repeated measures across time. Questions of validity and usability also arise. As theory shifts about the origins of behaviour, i.e. the balance changes between biological, individual, situational and environmental perspectives, so the variables entered into the design of the longitudinal study will change as well. Often theories in which longitudinal data are employed specify variables for which data have not been collected, and those that have been are no longer of interest: the relevance of the data 'fades' with time.¹⁸ Moreover in designing a new sweep, measures taken earlier in a study may no longer be considered theoretically adequate for those using the data later on, but to change them would rule out repeated measurement on which causal inference strictly depends.

20. The most effective multi purpose longitudinal studies get over these measurement difficulties, by using well developed and trusted measurement procedures, including standardised tests and structured interviews conducted by well trained interviewers. They also consult as widely as possible in their client research communities about the critical variables to include. Much effort is invested in documenting the data in considerable detail, and keeping the data alongside the computerised dataset in a raw form, so future researchers are able to re-code answers in terms of more appropriate variables and new classifications. For example, the classification of occupations by the UK Registrar General, has changed repeatedly from one census to the next. Only by storing the raw data on cohort members' occupations can researchers be sure that the most up-to-date classification is consistently applied across all data points.

21. The need to optimise measurement value also demands retention of full information about data sources, so that if necessary they can be returned to for more information. Medical records have often been used in this way, especially in Scandinavia. Of course it will not be always possible to trace back individuals through to the original data sources; often the data sources themselves, e.g. schools, teachers, doctors and their records, will no longer exist. In such cases, either the past data has to be reconstructed from present information, or from what can be recalled by subjects, or treated as 'missing'.

22. These formidable data quality issues in utilising data collected in *prospective* longitudinal study, need to be set against the main alternative: the collection of longitudinal data entirely retrospectively. All longitudinal studies contain elements of retrospection to complete the record in between waves, but nevertheless are committed to collection of as much data as possible contemporaneously. The complete retrospective approach has been effectively used for certain research purposes in a programme of research under the direction of Karl Ulrich Mayer of the Max Planck Institute for Human Development. Individuals were selected from the German Micro Census in three birth Cohorts spanning a period of fifty years to see to what extent cohort effects had brought about changes in employment and other aspects of life patterns. The Norwegian life history project is another example which covers the same period and has

18. Janson, C. 'Some Problems of Longitudinal Research in the Social Sciences', in Schulsinger, F. et al. (eds.) *Longitudinal Research*, Martinus Nijhoff, 1981.

been used in comparative research with Germany.¹⁹ The advantage of the method is that the problem of attrition is solved, because there are complete samples of the contemporary population. Also the questions asked can be targeted precisely on the variables of interest. The disadvantage of the approach is that problems of memory decay make recall for many life events, such as job change and spells of unemployment, over anything more than a few years, of dubious accuracy. Even more seriously, although objective information can in principle be collected retrospectively, certain kinds of data like that to do with moods, feelings, states, attitudes, values, knowledge and skills, can only be assessed at the time individuals are manifesting them. Such variables are crucial mediators of social relations in transition processes. In studies of social exclusion, we might therefore conclude - in company with many others - that the best kind of longitudinal data are those collected *prospectively*.²⁰

23. Finally another important feature of longitudinal studies needs to be mentioned. Large scale studies can be expensive to carry out, and if they last a long time, require considerable commitment from a dedicated team to keep the study going. Almost by definition those who start the study off are unlikely to be the ones to finish it ; and as retirement or other interests beckon there is always a danger that the study will die. Continuing funding in between waves is always a problem. This is why, rather in the nature of a small business, effective longitudinal studies need a well-funded infrastructure to ensure their continuation. It is where this has happened that the greatest potential for research on a given topic like social exclusion is likely to lie. As we shall see there are only a limited number of studies that meet this requirement.

Longitudinal Datasets Relevant to the Study of Social Exclusion

24. In recent years a number of major initiatives and reviews have been carried out in relation to longitudinal studies. Each serves a different research purpose, but nevertheless all have a bearing on our interest in their use in the study of social exclusion.

25. The European Science Foundation has supported three networks concerned with longitudinal study, one of which has now terminated and the other two are still running: *Longitudinal Studies concerned with Individual Development* (1985-1991); *Youth Transitions in Youth* (1993 - present) and *Household Panel Studies* (1990- present). The first of these carried out much work of relevance to this review, organising a series of 8 workshops, and producing a series of edited volumes of papers, the titles of which indicate the scope of the work: *Studies of Psychosocial Risk* (1988); *Transition Mechanisms in Child Development: The Longitudinal Perspective* (1989); *Data Quality in Longitudinal Research* (1990); *Successful Aging: Perspectives from the Behavioural Sciences* (1990); *Problems and Methods in Longitudinal Research: Stability and Change* (1991) *Biological Risk Factors for Psychosocial Disorders* (1991); *Motor Development in Early and Later Childhood: Longitudinal Approaches* (1993); *Longitudinal*

19. Mayer, K.U. 'German Survivors of World War II : The Impact on the Life Course of the Collective Experience of Birth Cohorts', in Riley, M.W. (ed.) *Social Change and the Life Course. Vol 1 Social Structure and Human Lives*, Sage, Newbury Park, 1987; Featherman, D.L., Elbee, L.K. and Mayer, K.U. Social Class and the Structuring of the Life Course in Norway and West Germany. in Kertzner, D.I., Schaie, D.I. and Warner, K. (eds.) *Age Structuring in Comparative Perspective*, Erlbaum, Hillsdale New Jersey, 1989.

20. Bergman, L.R., Eklund, G. and Magnusson, D. 'Studying Individual Development: Problems and Methods', in Magnusson, D., Bergman, L.R., Rudinger, . and Törestad, B. (eds.) *Problems and Methods in longitudinal Research: Stability and Change*, Cambridge University Press, 1991.

Research on Individual Development (1993).²¹ These books represent the state-of-the-art in longitudinal study, and especially the texts on Data Quality, Problems and Methods and Individual Development, are essential reading for anyone with a serious interest in the subject. The ESF also commissioned the production of an *Inventory of European Longitudinal Studies in the Behavioural and Medical Sciences* (1990), and an *Update 1990-1994* (1995).²² The original inventory listed over 500 studies involving longitudinal data, which met their criteria of a dataset of 30 subjects or more, more than three time points and a minimum of three years duration (two years for infant studies). In the 1990-94 update which was undertaken by different people, the number reduced to 150, but that was partly because of poor response to the questionnaire sent out.

26. In Britain two major reviews have been carried out by the Medical Research Council (MRC) and the Economic and Social Research Council (ESRC) respectively.²³ Both research councils formed review committees whose task was to evaluate the usefulness of longitudinal research for the fields of study with which they were concerned. The MRC review committee's focused particularly on the longitudinal studies in which MRC had a major investment, including the *National Survey of Health and Development* (1946 birth cohort), but ranged more widely, in considering the merit of extending their support to other longitudinal research in Britain. The ESRC review focused specifically on the value of the British longitudinal birth cohort studies to social science, with a view to considering the future of the two for which they had provided substantial support in the past - the *1970 British Cohort Study* (1970 birth cohort) and especially, the *National Child Development Study* (1958 birth cohort). Co-funders had usually been Government Departments. Four options were considered: (1) terminate funding; (2) continue to fund on an ad hoc basis; (3) fund within a comprehensive forward plan; (4) start a new birth cohort study corresponding with the millennium. Options 3 and 4 were supported in principle.

27. Two other specialised reviews are also worth mentioning. One commissioned by the World Health Organisation, and carried out by Kaye Middleton Fillmore, examined 70 years of international longitudinal research on the origins of alcohol abuse. *Alcohol Use Across the Life Course* (1988) encompassed 97 studies ranging back to the 1920s.²⁴ The other review by Lea Pulkinen (1993) covered longitudinal research relating psychological characteristics in childhood to adult life styles. Including

21. Rutter, M. (ed.) *Studies of Psycho-social Risk: The Power of Longitudinal Data*, Cambridge University Press, 1988; Ribaupierre, A. *Transition Mechanisms in Child Development: the Longitudinal Perspective*, Cambridge University Press, 1989; Magnusson, D. and Bergman, L. *Data Quality in Longitudinal Research*, Cambridge University Press, 1990; Baltes, P.B. and Baltes, M. M. *Successful Aging: perspectives from the behavioural Sciences*, Cambridge University Press, 1991; Magnusson, D. Bergmann, L. Rüdinger, G. and Törestad, B. *Problems and Methods in Longitudinal Research*, Cambridge University Press; Kalverboer, A., Hopkins, B. and Geuze, R. (eds.) *Motor Development in Early and late Childhood*, Cambridge University Press, 1993; Magnusson, D. and Casaer, P. *Longitudinal Research on Individual Development* Cambridge: Cambridge University Press, 1995.

22. Schneider, W. and Edelstein, W. (ESF) *Inventory of European Longitudinal Studies in the Behavioural and Medical Science*, Max Planck Institute for Education and Human Development, Berlin, 1990; Zentralstelle für Psychologische Information and Dokumentation (ZIPD) *Inventory of European Longitudinal Studies in the Behavioural and Medical Sciences Update 1990-1994*, University of Trier.

23. Medical Research Council (1992) *Review of Longitudinal Studies*, 1992; Falkingham, J. *Report on the Family of the Consultative Exercise to the Working Group ESRC Strategic Review of British Birth Cohort Studies* Economic and Social Research Council, Swindon, 1995.

24. Fillmore, K. *Alcohol Use across the Life Course. A Critical Review of 70 Years of Longitudinal Research*. Addiction Research Centre, Toronto, 1988.

only those studies that had lasted 15 years or more, she discovered 48, some of which again had begun as early as the 1920s.²⁵

28. The great majority of the longitudinal studies listed in these reviews are specialist medical or psychological investigations with small numbers of subjects. Only a few of them match all our requirements for data appropriate to the study of social exclusion. Nor are all of the potential candidates still continuing, or available for secondary analysis or further follow-up. Accordingly in reviewing the major ones, their strengths and weaknesses in all these respects are considered. Particularly we examine their longitudinal datasets against the following criteria:

- Large sample size, 1000 subjects or more.
- Nationally representative or representative of a well-defined local population.
- Spanning a large part of the period, 0-25, ideally all of it.
- Relevant measures on economic, social and psychological variables.
- Data collected at a number of time points.
- Contemporary, in the sense that subjects were last contacted within the last five years, and that they reached their 25th birthday within the last 20 years.
- Potential for (comparative) secondary analysis.
- Potential for the follow-up of whole sample or selected sub-samples.

29. Taking a lead from the type of classification used by Fillmore in her review of longitudinal research on alcohol abuse, the studies are grouped into two types: currently active multi-purpose birth cohort studies, i.e., those involving a single cohort followed up from birth (Chart 1); currently active multi-purpose studies starting later than birth - including multiple cohorts (Chart 2). We exclude what Fillmore describes as 'Special Population Studies', on the grounds that they are too specialised and limited in scope for our purposes. On the other hand, 'Household Panel Studies', are included as a separate category. Although, with one major exception, these are of fairly limited duration, in combination with other longitudinal data sources, potentially they have great value for the study of social exclusion (Chart 3). We also briefly examine census-based longitudinal datasets and the pros and cons of linking administrative records to longitudinal datasets.

(a) Longitudinal Birth Cohort Studies

30. These span the period from birth to adulthood and are the only studies to meet fully the first criterion of age period 0-25.

25. Pulkkinen, L. 'Longitudinal Approaches to Adult Life Styles'. *European Views in Psychology, Acta Psychologica Fennica* 13, 13-38, 1993.

Nationally representative studies

Great Britain: National Survey of Health and Development (1946 cohort)

31. This began with a prenatal mortality study of 16,000 births in one week in March 1946. A stratified sub-sample of 5,382 cohort members (single legitimate births) was followed up subsequently. Data have been collected at intervals ever since, with main sponsorship coming from the UK Medical Research Council, and data collection undertaken by nurses trained to conduct survey interviews. The main orientation is medical, but much socio-economic data has been and is still being collected. In fact in the early years of the study, one of its main impacts was on education. Over 3,000 cohort members are still participating with the last data collection at age 43. Although the cohort members passed their 25 birthday in 1981, 15 years ago, especially in combination with other birth cohorts studies, the NSHD has much of value to contribute to the study of social exclusion. The data are not publicly available through the UK Data Archive at the University of Essex, but in collaboration with the research team can be used for secondary analysis. Further follow-up would appear less appropriate for our purposes, because of the age of cohort members.²⁶

Great Britain: National Child Development Study (1958 cohort)

32. This similarly began with a prenatal mortality study of 17,000 births in a single week in March 1958. The cohort was subsequently followed up at ages 7,11,16,23 & 33. A number of specialised follow-up studies have also been carried out, e.g. of people revealing respiratory illness symptoms in the 23 and 1991 surveys, and people identified as suffering particular disadvantages in early childhood followed up qualitatively in adulthood. In the 1991 survey, a one third sample of cohort members' children was selected for special study, and completed a battery of tests adapted for use in Britain from tests used in the US *National Longitudinal Survey of Youth* (discussed later). Detailed information was collected from their mothers about the children's development. The most recent contact with cohort members was a 10 per cent representative sample survey sponsored by the Basic Skills Agency (a UK Government agency) of 1,700 cohort members when the cohort members were 37. Sponsorship for the most recent complete surveys in 1981 and 1991 have come from Government departments (1981) and ESRC, Government departments and the US National Institute for Child Health and Development (1991). The coverage spans all the main domains of life: education, employment, housing, family formation and health; in the 33 year survey, a substantial battery of social attitude and other self assessment measures was also included. The data are publicly available through the ESRC Data Archive at the University of Essex and are well documented for secondary analysis. Because of the large sample size - in the order of 12000 cohort members are currently participating - there is also scope for follow-up of special population sub-groups, e.g. adults, who as children, grew up in care.²⁷

26. Wadsworth, M. *The Imprint of Time*, Clarendon presss, Oxford, 1991; ZIPD Op cit, p71

27. Ekinsmyth, C. Bynner, J. Montgomery, S. and Shepherd, P. 'An integrated approach to the design and analysis of the 1970 British Cohort Study (BCS70) and the National Child Development Study (NCDS)'. *Inter Cohort Analysis Working Papers*, 1 Social Statistics Research Unit, City University, London, 1992; ZIPD Op cit. p62.

Great Britain: 1970 British Cohort Study (BCS70)

33. BCS70 similarly began with a birth survey - 17,000 babies born in a week in April 1970. Data have been collected subsequently at ages 5, 10, and 16. A 10 per cent sample survey of 1,640 cohort members on transition to employment and basic skills, sponsored by the Basic Skills Agency was carried out at age 21. A postal survey of the cohort is being carried out at age 25. Up to the age of 10, coverage was similar to that of NCDS, with a mixture of medical, social and educational data collected from teachers, parents, health visitors and doctors. and the children themselves. At age 16 a postal survey of the whole cohort was carried out with coverage of a very wide range of behavioural and psychological self-assessment variables. Support for BCS70 has come from a variety of sources, including ESRC, Government departments and private businesses. The birth, five year and 16 year data are publicly available through the ESRC Data Archive and the 10 year and 16 year data will follow. The closeness of the age period covered to that of the criterion 0-25, plus the very rich data collected, makes the study an ideal candidate for secondary analysis and follow-up.²⁸

34. Arising from the ESRC review, both NCDS and BCS70 are now subject to a forward plan in which data collection is envisaged every 8 years by interview, and every four years, by postal questionnaire. It is also planned to follow-up the one third sample of children every two years and to start a similar follow-up study of 1970 cohort members' children.

Area-based studies

35. A limited number of these are also in existence. They comprise following up complete samples of births in a particular town or locality.

New Zealand: Dunedin Study of Education, Psychology & Health

36. This started in 1972 and comprises follow-up of 1,037 cohort members into adulthood, with data collected at birth, 3, and subsequently at 2 year intervals. With main funding coming from medical sources and location in a medical school, the emphasis has been on health. But a wide range of socio-economic variables have also been included in the surveys. The data are well documented and available for secondary analysis in collaboration with the research team. The age of the cohort currently 24 and the scope of data collection make this study highly appropriate for the study of social exclusion.²⁹

New Zealand: Children's Survey on the Development of Anti Social Behaviour and Substance Abuse

37. This started with 1,265 individuals born in a Christchurch urban area in New Zealand. They were followed up at 4 months and then subsequently at annual intervals. As its name implies, the main emphasis is on health related behaviours, in this case, particularly substance abuse. The potential for

28. Ekinsmyth et al. Op cit.; ZIPD p62.

29. Silva, P. The Dunedin Multidisciplinary Health and Development Study: a fifteen year follow-up. *Perinatal and Paediatric Epidemiology*, 4, pp. 76-107, 1990.

secondary analysis and the availability of the data is difficult to establish, as the study has not been widely reported in the international social scientific literature.³⁰

Denmark: Project Metropolitan

38. This was based on a cohort of all boys born in the metropolitan area of Copenhagen in 1953 - 12,270 - who have been followed up nine times since to 1983. Although the study is presented in the ESF Inventory as a birth cohort study, the study did not actually start until the boys were 13 years old; all the data about their earlier lives came from administrative records. The main goals of the study were to identify predictors of school behaviour, success of marriage, criminal behaviour, psychiatric disorder, occupation and social factors. Although the ESF Inventory reported a planned survey of the cohort in 1995, there was no news of the study in the 1990- 1994 Update. This uncertainty about the study's status, its restriction to boys and the current age of cohort members, 46, limit its use to secondary analysis. Comparisons with the 1946 and 1958 British birth cohort studies, for example, would appear to be potentially valuable.³¹

Europe: European Longitudinal Study of Pregnancy and Childhood ELSPAC

39. This was inspired by a meeting of the World Health Organisation and grew out of a British Study in the county of Avon on the same theme, *Avon Longitudinal Study of Pregnancy and Childhood* (ALSPAC). Starting at the time of pregnancy the ELSPAC studies involve follow-up of large samples of mothers and children through the early years of life in a number of European countries: Russia, Ukraine, Spain, Greece, Norway and Britain. In principle, the ELSPAC studies would appear to be ideally suited to the study of social exclusion. The difficulty with them is that the focus is heavily on pregnancy, maternity and child health, with no intention currently to follow-up the samples of children beyond the age of seven. However, as with so many longitudinal studies, this policy may change when the age of seven approaches. The studies have also only recently been established, so the potential of the data for secondary analysis is currently very limited. The main value of the studies for our purposes lies in the future. Up to the age of seven and beyond (if the studies continue) they would appear to be excellent vehicles for cross national comparative studies, with data collected specifically to address the study of social exclusion.³²

(b) Multi-Purpose Longitudinal Studies Starting Later than Birth (Chart 2)

40. These studies are of two kinds: those that follow-up a single cohort from a particular age in childhood and those similarly, which do not start at birth, but embrace a number of cohorts. A few are nationally representative, but most are area based. Some are long term and some, like the school leaver follow-up surveys, which take place in a number of countries, tend to be very short term, following up the samples for only one or two or years if at all. For example, the ESF Network Transition in Youth Network *Newsletter* lists five countries where some kind of follow-up data are collected on school leavers: France,

30. Falkingham, J. Op cit. p

31. Schneider, W. and Edelstein, W. Op cit. p.61.

32. Falkingham, J. Op cit. p9.

Spain, Italy, Netherlands, Ireland, Scotland, England Although their possible use should not be ruled out, especially for follow-up studies, they will not be considered further in this review.

Sweden: Malmo Study

41. The main countries where the more long term-studies have been carried out are Sweden and the USA. The most famous is the Malmo study which started in 1938 with a sample of 1,500 children in the third grade of school (average age 10). The sample has been followed up through six surveys into adulthood with over 1000 still participating. The scope of data collection is much the same as in the British birth cohort studies, but with more psychological emphasis: psychological well-being, health and social network were covered in childhood and family formation, occupation income and health were covered through adulthood.³³

Sweden: Evaluation Through Follow-up.

42. A major study, now based in Gothenberg, and called *Evaluation through Follow-up* brought together in 1991, two separate longitudinal studies; the *Individual Statistics Project* conducted by the Department of Educational Research at the University of Gothenberg (ISP) and *Evaluation through Follow-up* conducted by the Department of Education in Stockholm University (UGU). The ISP project began in 1961 with a nationally representative sample of 12000 children aged 13 selected from in school lists, and was followed by another similar sample of 1000 children aged 13 in 1966. The UGU study adopted a different sampling design to select samples of over 9000 13 year-olds in 1980 and over 9,000 10 year olds in 1982. The most recent sample followed up is 10 year olds who were first studied in 1987. The total sample involved in what are five birth cohorts - 1948, 1953, 1967, 1972, 1977 - include over 50,000 individuals. The main focus has been on ability changes across time, educational opportunity and long term effects of education on occupation and identity. Data have been collected at irregular intervals from parents as well as children, using postal questionnaires and interviews. Data have also been linked extensively to the cohorts from other sources, such as the *University Enrolment Register* and the *Student Financial Aid Register*. Despite the limitation of the age range and the fairly narrow focus on education and occupation, the data offer the opportunity of both cross-cohort comparisons and longitudinal study to elicit the origins of individual outcomes within each cohort.³⁴

43. In Scandinavian countries other longitudinal studies with a similar focus have been carried out, but are generally smaller scale or target a different age group. The closest to UGU in focus is the *Trondheim Longitudinal Study of Cognitive Abilities and Societal Achievements* in Norway, where 950 children have been followed up with three surveys since 1984 when they were 10-11 years old. Over 600 are still participating.³⁵ Based in the Psychology department of Stockholm University, another longitudinal study, *Individual Development and Adaptation*, has been carried out, based on 1393 children who were aged 10 in 1965. There have been 8 waves, the last of which was in 1992. The main focus is on

33. Furu, M. and Fägerlind, I. *The Malmo Study Male Population 40 years On*, Stockholm Institute of Education, mimeo. ZIPD Op cit. p130.

34. Härnquist, K. Emanuelson, I. Reuterberg, S-E, Rosén, M and Svensson, A. *Evaluation through Follow-up - A Longitudinal Swedish Project*, Department of Education and Educational Research, Gothenburg University, mimeo. ZIPD Op cit. p129.

35. ZIPD Op cit. p112.

social development and its consequences for adult maladjustment.³⁶ An older age group, comprising a nationally representative 'panel' selected from the total Swedish population has been surveyed in the *Swedish Level of Living Survey*, based in the Swedish Institute for Social Research in Stockholm University. This started in 1968 and has involved following up 9,741 cohort members, in the age band 15-75 over 4 sweeps. Over 7,500 are still participating. The main topics covered are health status, working conditions, economic resources, housing standards, family, social integration, education and employment. Despite their failure to match many of our criteria, all three of these studies have potential for secondary analysis, especially in a comparative cross-national framework. Thus the *Level of Living surveys* permit comparison with all three British birth cohort studies, and the *Individual Development Study's* cohort is close in age to that of the *1970 British Birth Cohort Study*.³⁷

Germany: East-West Study of Berlin

44. Surprisingly, although Germany has had large scale longitudinal studies in the past (generally Government funded), most are no longer continuing or fail to meet the criteria for inclusion in the review on other grounds - particularly sample size. An exception is this relatively new study, comparing the effects on children of German re-unification. It comprises 1,145 cohort members in East and West Germany, who have been followed up annually since 1990, when they were 12 to 16. The focus is on a school and family situation and attitudes to Berlin and what effect the unification of Germany has had on them. This study is being replicated in other East European countries.³⁸

United Kingdom: West of Scotland Twenty-07 Study: Health in the Community

45. This began with three age cohorts 15,35, and 55 years in the region of Strathclyde in Scotland ; 600 people in each cohort form 'locality samples' for area-based study. There have been 8 surveys of the cohorts since 1986 when the study began. The main focus is on health differentials and especially the factor of crucial transitions such as into and out of employment. The youngest cohort has potential for comparative study.³⁹

United Kingdom: Cambridge Study of Delinquent Development

46. Although the numbers involved make this study fail to meet the criteria for inclusion in the review, its long time scale and similarity to Swedish studies in the use of record linkage make it worth a mention. It started with 411 boys at age 8 in 1961. These have been followed up since in 9 waves, with data collected in the past from parents, teachers, and currently exclusively from criminal records (concerning the cohort members themselves and their immediate relatives) 408 are still in the study. The focus is on the familial transmission of criminality.⁴⁰

36. ZIPD Op cit. p134.

37. ZIPD, Op cit. p130.

38. ZIPD, Op cit. p34.

39. ZPID, Op cit. p65.

40. ZIPD, Op cit. p64.

United States: National Longitudinal Survey of Youth

47. This is one of a series of US follow-up studies, which in this case began with multiple cohorts, aged 14,15,16,17,18,19,20 and 21. These have been followed up annually since 1979. Since 1986, children of mothers who were cohort members have been tested on a number of behavioural and cognitive measures every two years, and the mothers interviewed. The measurements involved are the original American version of the tests used in the British *National Child Development Study* (the NCDS cohort also shares the same age as that of one NLSY cohort). The main funding for the adult surveys comes from the US Department of Labour, and for the mother and child surveys, the National Institute for Child Health and Development. Rather like the *Swedish Level of Living* survey, the data provide detailed information on post-15 transitions in the different domains of adult life. They therefore have potential for cross-national secondary analysis.⁴¹

USA :Monitoring the Future

48. *Youth in Transition (YIT)*, was the first of two surveys concerned broadly with young people's adjustments in late adolescence. The study began in 1965 with 2,213 boys in grade 10 (age 15) in American High Schools. The boys were followed up subsequently on 6 occasions, using interviews initially and later postal questionnaires, with the last data collection in 1974, i.e. over the age period 15-23. *YIT* focused on the causes of, and consequences of, drop-out from High School. The study which grew out of it, and is ongoing, *Monitoring the Future (MTF)*, has a special focus on drugs. The study began in 1975 with 16,000 high school seniors at 125 public and private schools. These were followed-up annually for ten years. Each year since then, new representative samples of 16,000 - 19,000 have been brought into the study and followed up for 10 years. Data are available for secondary analysis, and despite the age limitation, both *YIT* and *MTF*, have potential value for the study of social exclusion.⁴²

(c) Other Longitudinal Datasets

Census-based datasets

49. All the studies listed so far, have been on single or multiple cohorts followed up over a number of years. With the exception of the British NHSD, NCDS, BCS70 studies and the New Zealand (Dunedin, and Christchurch) studies, none span more than a portion of the period 0-25. Another set of studies, however, do embrace this age period, but employ a different design. They involve taking a representative sample of the whole population and following up this cross section over a period of time. The largest of these are typified by the French *Enchantillon Demographique Permanent* (1968) study, the *Finnish Longitudinal Study*(1970) and the UK Office of Population Censuses and Surveys *OPCS Longitudinal study (LS)* (1971). In the case of the French and British studies, these embrace 1 per cent samples from a particular census (start date shown in brackets after the name), who have been followed up on the basis of name and birth date through subsequent censuses. Up to 700,000 people in each country are involved (the

41. Falkingham, J. Op cit. p10.

42. Bachman, J. G. *From "Youth in Transition" to "Monitoring the Future": A Tale of Two Longitudinal Studies of Youth in the United States*. Paper presented to the Symposium on National Longitudinal Surveys of Youth in Industrialised Countries: Perceptions of Funding Agencies, Researchers and Administrators, Annual meeting of American Educational research Association, San Francisco, 1986.

whole population use in the Finnish study). Data for certain vital registrations of births and deaths and causes of death (varying by country), are also included in the data sets. In the Finnish study all the data are collected from administrative records of this kind. Other countries that have longitudinal datasets based on linked census and administrative data are Denmark, Norway, Italy (Torino) and the USA. The value of such data sets is that they provide very fine grained demographic information on population movements over long time intervals. Their major limitation is that coverage is restricted to the variables for which data are collected in the census and vital registrations. This severely limits their explanatory power. However, as baselines for the study of social exclusion, they do have potential. Most obviously they enable cohort effects around the cohort studied in a particular longitudinal study to be assessed for key demographic variables. Another limitation is that because they are Government datasets with confidentiality constraints direct research access to the data is generally not available. However aggregate data in the form of specified cross tabulations for particular variables can be supplied.⁴³

Household Panel Studies

50. Another range of longitudinal studies follow a similar design to the Census-based surveys, but have much broader coverage. These start from a sub-sample of the total population of households, with data collected on all the individuals in them. As Chart 3 shows, the typical sample sizes range from 2,000 households to 6,000, with often up to 10,000 individuals involved. The most long standing Household Panel Study, is the *Population Study of Income Dynamics* (PSID) at the University of Michigan, which began in 1965. The German, Swedish and Dutch studies started in 1984. All Household Panel Studies start with the full sample of households. Data are then collected, usually by interview, annually or every two years from all household members over the age of 16. As household members reach the age of 16 they enter the survey and others leave it through death. In effect the Household Panel comprises, multiple cohorts, each of which in principle is comparable to a birth cohort, though because of the restrictions of sample size these have to be based on age ranges, e.g. 16-20, 21 to 25, rather than single years. Although the foci of these panel studies tend to emphasise economic characteristics of households, and especially income dynamics over time, they generally collect data on a very wide range of variables of relevance to the study of social exclusion. The frequent intervals with which the data are collected, and the multiple cohort aspects of the design, mean that cohort effects, period effects and developmental age effects, can all be monitored within the time span of the study. Co-ordinated designs across countries through the ESF network also improves the potential for comparative analysis. Their main limitation is that they begin at the age of 16 at which time 'quasi sequential cohorts' are set up, i.e. cohorts beginning at all ages from 16 upwards, and only go back to birth for children born to panel members subsequently. These will not enter the study in their own right for 16 years. However one-off surveys of panel members' children of all ages have been carried out, and information is collected about them from the panel members in the course of regular data collection. Although many of these studies have not been going long enough to offer longitudinal data over the period ideally needed, their potential for use in the study of social exclusion grows with every year.⁴⁴

43. *OPCS Longitudinal Study User Manual*, p6, Social Statistics Research Unit, 1990; Roualt, D. The Enchantillon Demographique Permanent: A French Equivalent to the Longitudinal Study, *The OPCS Longitudinal Study Update*, 7, pp.5-12, 1994; Creeser, R. The Finnish Longitudinal Study and its Uses, *The OPCS Longitudinal Study Update*, 6, pp. 11-14.

44. Rose, D. *Household Panel Studies*, Paper presented to the ESRC East-West Initiative Hungarian- Britain workshop, Budapest, 1993.

Record Linkage

51. The final type of longitudinal data to consider is that relying on administrative record linkage. This is widely employed in Scandinavia and in the USA, where data protection legislation has not inhibited its use as much as it has in some other countries. In its simplest form, record linkage may involve no more than taking data from a single cross-sectional survey of school children and then linking in adulthood administrative data to the dataset via the individual identifiers, when the sample has reached adulthood. In Scandinavia this is straightforward because everyone has a single unique identification number, and much information is stored and continually updated about them, in central registers. More typically the method is used in conjunction with longitudinal data collection from the individuals directly through surveys.

52. A good example of this kind of study - very similar to Denmark's *Project Metropolitan* - is Sweden's *Project Metropolitan* (currently not operating), which started with a sample of over 15,000 13 year olds in Stockholm in 1964. Government administrative data, including criminal convictions, were linked to the respondents' records up to the age of 30 (Chart 2). The main foci were social stratification, deviant behaviour and family of procreation.⁴⁵

53. However the resistance of some longitudinal researchers to record linkage of some kinds (regardless of Government restriction) needs to be taken seriously. Administrative records are often inaccurate through clerical error or incomplete; for example, large numbers of criminal acts go undetected. So within a cohort study to which criminal convictions have been linked there are likely to be large numbers of 'false negatives', i.e. people who have committed crimes but are not recorded as having committed them. Similarly, some people convicted may not have actually been guilty or should never have been brought before the courts. Another problem arises principally in relation to research ethics, but may also have practical consequences. Longitudinal data are collected from individuals on the basis of trust within an implicit, or, in some cases, explicit contract between them and the researcher. They, or before them their parents, are assured of confidentiality and told that the data will only be used for specified purposes. Other people such as doctors and teachers supply data about them on this understanding. During adulthood permission to use other sources, such as medical records, can be sought directly from the cohort member at the time of a survey. For records of a highly confidential nature, such as those to do with crime, drug problems and abortion, the researcher is unlikely to seek permission, and if permission was sought, it is unlikely that it would be given. Using such data sources secretly, not only raises the ethical problem of researcher probity, but may damage the survey directly. If the news that such records have been used, gets back to the cohort members there is a strong likelihood that many will withdraw from the study.

54. Perhaps the best compromise is the programmatic one of judging each question of data linkage on its merits. If the data from administrative sources are linked within a framework of what survey practitioners call 'informed consent', i.e. it is very unlikely that the respondent, knowing the subject of the study, would object to their use, then it seems legitimate to use them. If there is any doubt about this, their use should be avoided.

45. Schneider, W. and Edelstein, W. Op cit. p440.

5.0 Use of Longitudinal Data in Studies Relating to Social Exclusion

55. We have identified some studies which, in principle, meet our requirements for studies of social exclusion. But what kind of use has been made of the sort of data they contain in research in relevant research areas. Before going on to consider a possible strategy for use of existing and new longitudinal data sources in the study of social exclusion, it is useful to examine briefly some illustrative studies. We shall use these to identify the key components of a research strategy for studying social exclusion. Some of these research projects utilise data collected in the studies listed previously; others use data collected in the longitudinal studies that preceded them, or in much more specialised and small scale enquiries focusing on a particular sub-population. Because of the basic biological (disease) model that prevails in most medical research, we shall exclude the huge number of studies done in the area of health, especially those concerned with epidemiology and the aetiology of particular illnesses. Health, however, will feature as one of the precursors and consequences of social exclusion. The two areas we shall consider, are *education and entry to the labour market* and *deviance and adjustment problems*, embracing delinquency criminality, alcohol, drug abuse, and mental illness.

(a) *Education and Entry to the Labour Market*

56. Longitudinal data has been one of the main sources of evidence on the effects of family circumstances on school performance, demonstrating through follow-up, that children from disadvantaged circumstances consistently perform worse at school than their contemporaries without disadvantage, even when ability, as measure by an IQ test, is taken into account. The first Director of the British *National Survey of Health and Development*, James Douglas, wrote two influential books on this theme, *The Home and the School*(1964) and *All our Future*(1968)⁴⁶ and the findings have been repeated in many longitudinal surveys throughout the world. Such writers as William Sewell and James Coleman in the USA and Thorsten Husen in Sweden, established their reputations in longitudinal research on this theme, moving attention from the individual characteristics of children, especially their 'native ability' as measured by IQ Tests, to the circumstances in which they grew up. IQ scores were themselves shown to be strongly influenced by family circumstances. This raised the question of whether the tests were measuring an inherited characteristic passed to children through their parents' genes or whether the scores they generated were no more than surrogates for educational attainment itself.

57. The work reached its peak with Christopher Jencks' massive tome, *Inequality*, in which a number of American and one British longitudinal data set were re-analysed to determine the main factors accounting for income inequality.⁴⁷ Jencks concluded that the crucial factor was educational achievement coupled with what he famously described as 'luck'. Luck in his terms was what made up the network of social relationships in which the individual was embedded and which provided opportunities leading to achievement or the closing of doors and failure: basically who you know and when you know them. Education was itself almost entirely determined by family background and what could not be attributed to it had to be attributed to genetic inheritance interacting with family environment. The effect of schools, independent of the characteristics of the parents of the children who attended them, was virtually nil - a conclusion that spawned a research industry operating ever since to establish 'school effects'. The earlier work had pointed to the same broad picture of disadvantaged circumstances (income, poor and overcrowded housing, family instability) leading to poor achievement. Books such as *Born to Fail* and

46. Douglas, J.W.B. *The Home and the School*, MacGibbon Kee, London, 1964; Douglas, J.W.B. Ross, J.M. and Simpson, H.R. *All Our Future*, Peter Davies, London, 1968.

47. Jencks, C. *Inequality*, Allen Lane, London, 1972.

Continuities in Childhood Disadvantage, based on analysis of British NCDS data in childhood, summed up the environmentalist view that prevailed.⁴⁸

48. Wedge, P. and Prosser, H. *Born to Fail*, Arrow Books, London, 1973; Essen, J. and Wedge, P. *Continuities in Childhood Disadvantage*, Heinemann, London, 1978

58. In policy terms such studies played an important role in the founding of such programmes as *Headstart* in the USA and the *Educational Priority Area* programme in the UK. These operated on the principle of 'compensatory education', i.e. compensate the child educationally for the inadequacy of the home background.

59. The whole research thrust in social exclusion terms was to see the child's poor start in life as leading inevitably to problems later on. The other side of the picture, tended to be ignored: that in situations of imperfect prediction, often based on quite modest correlations between circumstances and ultimate educational and employment outcomes, large numbers of children, override their family circumstances and subsequently succeed. Doria Pilling conducted a study targeted at this group, *Escape from Disadvantage*.⁴⁹ She selected a sample of adults in the NCDS Survey at age 23, who as children met all the criteria of disadvantage, yet subsequently had reached the top bands of educational achievement at 16, or who, as adults, had achieved high incomes and high status jobs, and owned their own homes. These were matched with another sample of adults who as children had similarly met all the criteria of disadvantage and had failed to succeed. Both samples were interviewed at age 27, using a mixture of quantitative and qualitative techniques. The main discovery was that the achievers had experienced family cohesion, high parental aspirations and interest in their children's progress, and that their schools had showed 'strong commitment' to them. The earlier the disadvantage occurred, and the longer it had persisted, the lower the likelihood that these factors would counter it. Pilling interpreted her findings in terms of theory of adaptation and against the idea of a 'culture of poverty' with permanent disabling effects: "those who achieved well are those who maintain their aspirations so that they are able to take advantage of improved circumstances when they arrive".

60. What makes for employability and the value placed on education by employers? Human capital theory points to a return on investment in the skills that educated individuals are presumed to possess. A number of studies have been carried out recently using British birth cohort studies data on the acquisition of the basic skills of literacy and numeracy and the more work-related skills ranging from computing to supervising others and using tools correctly.⁵⁰ There are a number of foci to these studies which bring out further features of longitudinal research. To what extent is lack of skills implicated in unemployment? What are the origins of basic skills difficulties? To what extent are basic skills difficulties passed from one generation to the next? The first two questions have been addressed through 10 per cent follow-up sample surveys of the 1958 and 1970 birth cohorts in which special tests of literacy and numeracy were used to assess 'functional' literacy and numeracy in adulthood; i.e. whether respondents could handle language and numbers in every day situations like reading instructions and paying for goods in a shop. First it was found that low scores on these tests were associated with a range of disadvantages in the labour market: for men much more extensive experience of unemployment, low level and part-time jobs; for women frequently, early exit from the labour market, often to have children. Women in the low literacy scores group were five times as likely at age 21 to have had two or more children than those whose scores were average. There were also signs of an impoverished life style - low income, overcrowding at home and rented rather than privately owned housing. Longitudinal analysis of the data across the whole life course back to birth showed high predictability of the later skills problems, even by the age of five, with signs of poor vocabulary, weak visual-motor co-ordination and limited family educational support, all implicated in the later difficulties. The prediction strengthened through the

49. Pilling, D. *Escape from Disadvantage*, The Falmer Press, London

50. eg. Ekinsmyth, C. and Bynner, J. *The Basic Skills of Young Adults*, Adult Literacy and Basic Skills Unit., London, 1994; Bynner, J. and Steedman, J. *Difficulties with Basic Skills*, Basic Skills Agency, London, 1995; Bynner, J. *Skills and Disadvantage in Labour Market Entry*, In Haubrich, K. and Reubel, F. *Berufsstart Benachteiligter Jugendlicher in Europa - Konzepte zur Beruflichen Integration in Regionalen Kontext*, DJI- Arbeitspapier Nr 2-095, pp. 45-64, 1995.

primary school years and levelled off by the time secondary school was reached. It looked as if the family and the school became increasingly out of step with each other through the period of early schooling. Although enthusiasm for the child's education was high, especially at the time of entry to primary school, the parents became increasingly unable to work with the school in providing the kind of educational reinforcement at home that the child needed. Intergenerational transmission of basic skills difficulties was studied by investigation of the relationship between parents' skills difficulties and the performance of their children on cognitive tests. A strong relationship was found, which increased even further in strength when family income was taken into account. Parents with poor basic skills, and income in the bottom quartile range of the income distribution, were three times more likely to have children with poor cognitive test scores than those without these characteristics.

61. Finally we turn to the origins of unemployment. A review undertaken by Peder Pedersen and Niels Westgard-Nielsen for OECD, summarised research drawing on a range of longitudinal data and administrative records.⁵¹ The individual factors associated with resistance to unemployment included being married (for men but not women), having children and having good health and education. Training as a precursor to employment, or within employment, appeared to have mixed benefits, especially if it was short term and if it was offered as an alternative to work, as on youth training schemes. In fact in some studies there were indications of an actual disbenefit in going onto a training rather than staying on at school or even staying unemployed. This depends of course on how institutionalised vocational training is in the society in which it is offered. If it is an essential step to acceptance into employment as in the German apprenticeship system, then without it, progress into full-time employment is difficult. But if it is seen as a substitute for employment, then those doing it can be stigmatised, which works against employability.

62. The Pedersen and Westgard-Nielsen review brings in other important elements of design in longitudinal studies: the value of administrative records, and the importance of 'demand side' as well as 'supply side' data, i.e. employer characteristics and policies and small area unemployment statistics, as well as individual labour force data. The work on training also underlines the importance of comparative study, as processes that appear to produce positive outcomes in some countries may not in others. Their specification for the 'ideal' data set is: information on individuals at crucial transition points; immobile groups within the study who serve as controls; measurements over as long a period as possible; individual data and local and national labour market data alongside individual data. Added to the data we have already identified as important on family circumstances and cohesion, relationships and motivations, we can begin to see the require elements of our social exclusion study.

(b) Deviance and Adjustment Problems

63. The second set of studies to consider are based on the use of longitudinal data to try to identify the origins and consequences of what psychologists call 'adjustment problems' and what sociologists call 'deviance'. The category embraces delinquency in adolescents and criminality in adults; it also extends to various kind of dysfunction in adulthood, including teenage pregnancy outside marriage, alcohol and drug abuse, and may be accompanied by mental illness and even suicide. To a psychologist social exclusion might just be seen as falling into this category of problems, as many of the attributes of the most socially excluded are to be found there. An excellent collection of reports on studies in this area using longitudinal data was presented at a meeting of the Life History Research Society in 1987 and published as a book:

51. Pedersen, P. and Westgård-Nielsen, N. Unemployment: A review of evidence from panel data *OECD Economic Studies* 20, 65-113, 1993.

Straight and Devious Pathways from Childhood to Adulthood, under the editorship of Lee Robins and Michael Rutter.⁵² They include general studies of the relative effects of personality variables and family situation variables on adult adjustment and studies of special populations such as adopted children, illegitimate children, children growing up in institutions, children with absent parents and children with mentally ill parents. Studies of teenage and adult offenders, drug abusers, teenage suicides and those developing different kinds of psychiatric disorder are also reported.

64. Most of the studies draw on data collected in late childhood and early adolescence with follow-up into adulthood when the adjustment problems are manifested. There are three kinds of research design: the first identifies children in a 'high risk' category, such as children in care, and follows them up into adulthood to find out who among them manifests problems, such as criminal convictions. The second identifies people with various problems in adulthood such as drug abuse, sometimes through administrative records, and traces their life histories back through the longitudinal data, to try to identify the origins of the problems. The third operates rather in the nature of a case control study in clinical medicine: a group of individuals in a problem or 'high risk' group, such as delinquents is matched with another 'low risk' group such as non-delinquents, on as many characteristics as possible, and followed up into adulthood to see whether more of the delinquent group, and who among them, become convicted criminals..

65. A simple summary of the conclusions drawn from all these studies fails to do justice to the rich and wide ranging theoretical and empirical material that they contain, but a common process emerges. In Robins' and Rutter's words:

" a syndrome of adverse outcomes, including crime, substance abuse and marital instability is clearly predicted by a child's anti-social, non-co-operative or confrontational behaviour combined with pathology in the families of rearing, as indicated by parents psychiatric illness, crime and violent and erratic child rearing practice ."

66. From this arises the most common theme of all from these studies: the critical role of the family, both as creator of the conditions for later maladjustment, and the means by which it can be resisted. The great majority of families, whatever the nature of the parents' own problems, provide the protection and the stimulus to positive development that children need. The problem arises when a set of external circumstances combine with a set of adverse family interactions, and particular child characteristics, to reinforce negative developmental processes rather than to inhibit them. In most cases the continuing risk appeared to derive less from any irreversible effect in early life than from continuing disadvantaged circumstances reinforcing and re-cycling the social relations identified with the risk. The possibility of reversing such processes through intervention or change of family circumstances is well demonstrated and provides a further focus for social exclusion research.

67. A good example of research in this area, which also demonstrates the potential value of secondary analysis, is based on data collected on delinquents and non-delinquents in the 1930s. In 1939, Sheldon and Eleanor Glueck, matched 500 male delinquents (i.e. young men who had come before the courts) with 500 male non-delinquents aged 14 living in the same working class area of Boston and followed them up at ages 25 and 32. Data were collected from interviews and official criminal records. Sampson and Laub (1993) re-analysed the data on outcomes, including adult criminality, using much more rigorous multivariate and qualitative life history methods than were available to the Gluecks at the

52. Robins, L. and Rutter, M. *Straight and Devious Pathways from Childhood to Adulthood* Cambridge: Cambridge University Press, 1990.

time they did their research.⁵³ They concluded that highly stable and consistent antisocial behaviour occurs in only a small proportion of males whose behaviour problems are quite extreme. A combination of personal and circumstance factors is essential both for the continuation and the termination of a criminal career. Family cohesiveness and school commitment to the individual override structural factors such as class, ethnicity and poverty to inhibit delinquency. Sampson and Laub reinforce the point made earlier in relation to educational disadvantage that although prediction of future criminal behaviour may be statistically significant, a large amount of adult criminality occurs without any precursors in childhood delinquency and a high proportion of delinquency does not continue into adult crime. The inhibitors of criminality appear to be strong social relations, such as marriage to a non-delinquent spouse; those factors that encourage crime are alcohol abuse and job instability.

68. In the review referred to earlier by Fillmore⁵⁴ on the origins of alcohol and drug abuse very similar conclusions were drawn and pick up a common thread of the studies reported in *Straight and Devious Pathways*. She set out to examine evidence in favour of three competing theories to account for abuse: biological, sociological and psychological, focusing on incidence, chronicity and remission. She was highly critical of many of the studies used to advance one position or another: most ignored cohort effects and cross national differences and the majority excluded women. Not surprisingly she concluded, in line with *Straight and Devious Pathways*, that the best explanations of alcohol abuse (and drug abuse) combined all three perspectives. Behaviour at any stage in life is the product of a complex interaction of social structures, social relations, personal biology and situations. Over and above these interactions, changes are occurring in the external environment, such as those to do with policy or political and economic transformation. The existence of such external phenomena underlines the importance of embracing cohort effects in the design. In addition, the way policy change and societal transformation impinges on the interactions between the predisposing factors will vary from one country to another, underpinned by history and culture and the political climate prevailing there. This again makes the case for comparative research.

69. Summing up all the studies reviewed here, we reach another conclusion in favour of prospective longitudinal studies. Although there is some merit in the idea of 'life trajectories', whereby individuals' futures are predictable from their past, at the same time, as relationships, situations and the external environment changes, so may the course the individual's life takes. In the words of David Magnusson, the founder of the Stockholm-based *Individual Development and Adaptation* project, writing in the last of the eight ESF longitudinal network books:

" The causal processes in the development of an individual are characterised by complex chains of events over time. Thus only by studying the same individuals across time is it possible to understand and explain the lawful dynamic processes of many aspects of human ontogeny and to identify causal relations in the multi-determined processes of individual development."⁵⁵

70. Magnusson's commitment to the 'person' perspective in longitudinal study is reflected in the analytic strategy he favours - a topic which has not received attention in this review until now. The great majority of the studies reviewed here employ the standard techniques of multivariate statistical analysis,

53. Sampson, R.J. and Laub, J. H. *Crime in the Making: Pathways and Turning Points Through Life*, Harvard University Press, Cambridge(Mass), 1993.

54. Fillmore, K. Op cit.

55. Magnusson, D. 'Human Ontogeny a Longitudinal Perspective' in Magnusson, D. and Casaer, Op cit.; Bergman, L.R. and Magnusson, D. 'Stability and Change in Patterns of Extrinsic Adjustment Problems', in Magnusson, D et al. Op cit.

most recently in the form of *Structural Equation Modelling* through such software packages as LISREL and EQS.⁵⁶ These set out to account for the variance in a dependent outcome variable in terms of a linear model of the relationships between the outcome variable and a set of precursors. Where event history data is available with time and duration e.g., for spells of unemployment, the variety of methods under the label *Event History Analysis* is also widely used.⁵⁷ These estimate models reflecting changes in state, e.g., the likelihood of becoming unemployed. Magnusson argues for the more life-history oriented approach - central to the idea of longitudinal study - of seeking communalities between individuals based on the profile of characteristics which the data have revealed about them. Using the techniques of cluster analysis, different *types* of individuals are identified. The next step is to investigate by simple cross-classification analysis how membership of these types changes across time. This is not the place to go into the relative merits of different analytic strategies. Their main implication for this review is that to use the kinds of methods Magnusson advocates, rich and wide ranging data need to be collected. The variability to explain is in the sample of variables for which data are collected, rather than in the sample of individuals, as in the variable oriented approaches. The latter need large samples to give stability to the parameter estimates for the models employed.

6.0 Strategy for the Study of Social Exclusion

71. The forgoing has made the case for longitudinal research strategies in the study of social exclusion and illustrated some ways in which they have been used. We can hypothesise that the same kinds of process involved in employment difficulties and adjustment problems also operate more generally in relation to social exclusion. Starting with the individual's biology, and their location in the social structure, there is a sequence of events and experiences, leading through the institutions of the family, the education system, the peer group, employment to the formation of adult identity (as worker, parent, citizen). Social relations in these institutions mediate the transition processes involved in interaction with external circumstances. On the social exclusion path the sequence can be social and material disadvantage in childhood, family breakdown, educational failure, poor employment, unemployment - criminality, mental illness, drugs and alcohol, homelessness, alienation. The process is of course less linear and sequential than cyclical and dynamic; it can stop at any point and be reversed. On the (reverse) inclusion path the sequence can be alleviation of hardship, cohesive social relations, motivation, partnership and children, job opportunities and stability, participation. Effective research will utilise longitudinal data to trace both the form and direction of these dynamic processes through infancy, early and later childhood, adolescence, and early and mature adulthood. This identifies the over-arching goal of the research design. Its parameters are set by our ability to answer the kind of questions Fillmore poses at the end of her review:

- Does social exclusion vary according to age and sex independently of cohorts, the historical period and culture?
- Do environmental factors (social, economic and political) influence patterns of social exclusion differentially by age and sex?
- Do changing social and biological factors within age strata initiate and alter behaviour?

56. eg., Rudinger, G., Andres, J. and Rietz, C. 'Structural Equation Models for Studying Intellectual Development' in Magnusson, D. et al, Op cit.

57. eg., Blossfeld, H-P, Hammerle, A. and Mayer, K.U.' Event History Models in Social Mobility Research', in Magnusson, D. et al. Op cit.

- To what extent can social exclusion be predicted on the basis of socio-behavioural models (when measurement was first done in childhood)?
- Independently of material circumstances, is the propensity to social exclusion repeated from one generation to the next?

72. The research we need to answer these questions takes a number of forms. We need to start, however, by making explicit one assumption of central importance to the time scale for activity that might follow this review. Research that will produce immediate results will need to rely on existing long standing data sets rather than new ones, because of the time elapsing between collection of initial data at birth, or in childhood, and the realisation of its full value in adulthood. The longer these datasets have been established the more useful they are likely to be.

(a) Meta Analysis of Research Findings

73. As we have seen, a wealth of material culled from longitudinal studies of relevance to social exclusion already exists. One starting point for research would be to review this work systematically, with a view to testing hypotheses about social exclusion through formal 'meta analysis' of the research findings.⁵⁸ It is unlikely though that this would be considered sufficient. As the first section of this review tried to indicate, the way the concept of social exclusion is being framed in policy circles, and the changing political and economic circumstances which provoked its emergence in the first place, set a new agenda for its study, which will not be addressed in the literature for some time. This means new research, even if utilising old data, is needed, so that all the nuances of the concept of social exclusion will inform the study from the start.

(b) Secondary Analysis

Existing data

74. As the review has indicated, the scope for secondary analysis of existing longitudinal data sets is considerable. The studies identified in Charts 1 and 2 are all potential candidates for work on social exclusion, though the terms of access to them will differ, and all have their disadvantages. In addition, the Household Panel studies (Chart 3) are a potentially rich source of data, because of the control they offer for cohort effects. One way forward would be to agree a common set of research questions, which analysts of the different datasets - from within the research teams responsible for them or from outside - could address comparatively. A co-ordinated approach would both reveal discontinuities, e.g. of age groups and measurements, and appraise the scope for exploiting complementarily. Although, as we have seen, the number of datasets meeting all requirements is limited, in combination within a single research programme the value of all of them is enhanced.

Administrative record linkage.

75. A critical issue, in this respect, will be to decide what, if any, linkage of administrative records to the existing data sets should be done. As discussed earlier, this is the quickest and in theory, easiest way

58. Hunter J. E. and Schmidt, F.L. *Methods of Meta-Analysis*, Sage, London, 1990.

of enhancing existing data. The problems arise in relation to questions of validity and ethics. It would seem inappropriate to prescribe the use of records as desirable at this stage, but to see it as an issue that needs to be resolved through agreement between the researchers themselves. However, as a preliminary to such agreement, it might be useful to establish through official channels what policies are in relation to the use of records for longitudinal research purposes among OECD governments. Knowing what is, and is not possible, in comparative terms would make the researcher's task much easier.

Supplementary data

76. Another approach to enhancing the data for particular research purposes is more time consuming and expensive than record linkage, but for certain research purposes would be essential. This involves the collection of supplementary data for linkage to the longitudinal dataset. Pedersen and Westgard-Nielsen argue for the inclusion of 'demand side' data in studies of unemployment - employer attributes and policies, labour market characteristics and so on. The distinctive feature of social exclusion is that it brings to the forefront the policies and practices governing the institutions of the state. Collection of relevant data from local officials, schools and employers would appear to have a valuable role to play in social exclusion research.

(c) New Longitudinal Data Collection

77. Although most large-scale multi-purpose longitudinal data sets include many variables of relevance to the study of social exclusion, inevitably the pursuit of particular issues that are linked to hypotheses concerning societal change are unlikely to be operationalised sufficiently well in any one data set. Thus if we take, for example, the economic and political transformations that have been taking place across Europe, but especially in Eastern and central Europe, the need for fine tuning of survey questions becomes virtually mandatory to gain a proper purchase on the salient issues. This makes the case for various kinds of add-on studies within agreed frameworks. There are three kinds of these: targeted sub-sample follow-ups, case control studies and intergenerational studies.

Targeted follow-ups.

78. These have much to recommend them, either based on representative sub-samples of whole cohorts, or of groups of special interest, e.g. people identified as having certain pre-disposing conditions to social exclusion earlier in life. These might include such characteristics as family poverty, growing up in care, disability, having criminal parents and so on.

Case control studies

79. These might be based on people with characteristics in later life such as the long-term unemployed, or people with criminal records, who are subsequently followed up. In studies still at the stage of collecting data from children, high risk and control groups could be identified and followed up. In principle such groups could also be picked up in studies in which the participants have reached adulthood, through their identification in the longitudinal data collected at earlier ages. The criterion group could be matched from within the longitudinal data set with a control group not in the exclusion category; follow-up would then be through adulthood.

Intergenerational studies

80. These are relatively rare in the existing longitudinal research programmes, but have great value for finding out the extent to which, not only a given behaviour or characteristics is replicated in the next generation, but more importantly, whether the same process of exclusion is operating. The best sources for such projects at present would appear to be the *US Longitudinal Survey of Youth*, the *British Birth Cohort Studies* and, potentially, the *Household Panel Studies*. Investment in the collection of data on the next generation through these studies could arise from a co-ordinated policy towards longitudinal study development.

(d) New Longitudinal Studied

81. Finally there is a case for setting up new birth cohort studies and quasi sequential studies, with the youngest cohort starting at birth. Even the largest of the birth cohort studies of the British kind, will miss certain rare groups, who nevertheless may have considerable significance in the socially excluded population. These groups include immigrants, who tend to be clustered in particular localities, and are unlikely to appear in sufficient numbers in a representative random sample. In addition they may have arrived in the country after existing studies began and it may not be possible to link them into the studies subsequently. Other examples are people whose situation is likely to detach them from the longitudinal study, such as the homeless, the highly mobile, the institutionalised and the mentally ill. Disabled young people, and those who come from unstable family situations, may similarly be difficult to retain in the study.

82. There is a need, therefore, for a combination of large scale multi-purpose programmes of the American, Swedish kind and British kind, and much more precisely targeted studies of special groups. The example of census-based longitudinal studies appearing in a number of countries suggests that international agreement to launch the kind of longitudinal studies of primary interest here on a much wider scale might also be feasible. The difficulty of course, as pointed out earlier, is the time elapsing between initiating such studies and the production of relevant results. The kind of long-term investment implied is rare in social science. However, taking it on is the price governments may have to pay, if social policy is to be based on proper understanding of the developmental and social processes underlying social exclusion.

Conclusion

83. This report has established the case for the use of longitudinal data in the study of social exclusion. It has also revealed considerable imbalance across countries in the resources for doing it. The great majority of OECD countries have not developed datasets of the kind which are needed to gain a proper understanding of the processes involved. Sweden, the United States, Britain and New Zealand are the prominent exceptions. It is possible that more datasets are available than have emerged through this review and a further enquiry through official channels might be worth undertaking to complement this one, which relied on scientific sources. All countries of course collect administrative data of relevance to the study of social exclusion, so as suggested earlier in this report, establishing what exists and the rules under which it could be used for research is also worth doing.

84. However, the strong suspicion remains that even when more information is available, the picture will not change much. The datasets, which have been identified as suitable for the study of social exclusion, offer valuable research resources in this area and could form the basis of an international

research programme involving researchers inside and outside the host countries. This conclusion is premised on the assumption that the processes of social exclusion are likely to be common to most countries, which we know to be only partly true. The policy context is an essential element of a comprehensive study, and embracing it requires comparative data across countries, where interest in the results lies. This leads to the final conclusion from this review. An essential element of any research strategy to study social exclusion is to encourage more countries to provide the means of doing it. Wider commitment of resources to longitudinal study is the essential base on which truly effective research on social exclusion will be done.

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Chart 1: Currently Active Multi-Purpose Birth Cohort Studies

Title	Organisers	Sample size (start-current)	Start Date	Cohorts	Sweeps	Access	Coverage
UK National Survey of Health & Development	Dept. Epidemiology and Public Health University College London (Michael Wadsworth)	5 362 - 3 271	1946 (single week's births)	1	2,4,6,7,8,9,10, 11,13,15,19, 20, 22,23,25,26, 31,36,43,47	In collaboration with team	Main funding Medical, which gives medical emphasis to data which are currently collected by nurses, but wide range of socio-economic variables also included.
UK National Child Development Study (NCDS)	Social Statistics Research Unit, City University (John Bynner)	17 000 - 12 000	1958 (single week's births)	1	0,7,11,16,23, 33,37 (10% sample)	ESRC Data Archive	Main foci, education, employment, family formation housing, income health; at 33 social attitudes and self assessments and one sample of mothers and children.
UK 197 British Cohort Study (Formerly CHES)	Social Statistics Research Unit, City University (John Bynner)	17 000 - 12 000	1970 (single week's births)	1	0,5,10,16,21 (10% sample)	Sweeps, 0,5,16 available via ESRC Data Archive. Sweeps 10 & 21 by arrangement with SSRU	Foci similar to NCDS up to 16, when wide range of behaviour, including leisure and delinquency data and self-assessments collected.
New Zealand Multi-Disciplinary Health & Development	Dept. Paediatrics & Child Health University of Otago (Phil Silva)	1 037 - 993	1972 (all births over one year in Dunedin)	1	0,3 two year intervals	In collaboration with team	Funding mainly medical focus but much education psychology and health data aslo collected.
New Zealand, Christchurch Child Development Study	Dept. Paediatrics Christchurch (D. M. Fergusson)	1 265 - ?	1977		0,4 months, annually	In collaboaration with team	Main focus is on anti-social behaviour and substance abuse.
UK Avon Longitudinal Study of Pregnancy and Childhood (ALSPAC) Also part of ELSPAC (European Longitudinal Study of Pregnancy and Childhood)Russia, (Yaroslav) Ukraine, Spain (Mallorca) Greece (Athens) All are area based	Dept. Child Health University of Bristol (Jean Golding)	13 995	1991 (all births in one year)		0, annually to age 7	In collaboration with team	Initiated at a meeting of WHO. Main foci are pregnancy and child health.
Project metropolitan Terminated?	Erik Hogh Institute for Longitudinal Studies (Erik Maniche et a.)	12 270 - 11 532	1953 (all births in one year)		12,13,15,22,23,2 5,26,30	?	Initial data all came from records. Focus on adjustment and anti social behaviour.

Chart 2: Currently Active Multi-purpose Longitudinal Studies Starting Later Than Birth

Title	Organisers	Sample size (start current)	Cohorts	Start Date	Waves	Coverage
Malmo Study	Dept. of Psychology Gothenberg University (Ingemar Flägerland et al.)	1 542 - 1 114	age 10	1937 - 1988	6	Individual development maladjustment and anti social behaviour.
Evaluation Through Follow-up	Dept. Educational Research (I. Emanuelsson et al.)	10 000 - 8 500	age 13,10	1961 5 cohorts	3	Main focus, educational achievement.
Trondheim Longitudinal Studies of cognitive abilities and societal achievements	Dept. of Psychology University of Trondheim (Johan Olav Undheim)	950 - 650	age 10-11	10-11	3	Main focus, educational achievement.
Individual Development and adaptation	Dept. Psychology Stockholm University (David Magnusson)	1 393 - 1 278	age 10	1965	8	Main focus, development and maladjustment.
Swedish level of living survey	Swedish Institute for social research Stockholm University (Robert Erikson)	9 741 - 7638	15-75	1968	4	Main focus, living conditions.
East-West Study of Berlin	University of Technology Chemnitz-Zwickau (Klaus Boehnke& Hans Merkens)	1,223	12 -16	1990	Annually	Focus is on effects of German Unification now being replicated in other East European studies.
West of Scotland Twenty-07 Study: Health in the Community	MRC Medical Sociology University of Glasgow (Sally Macintyre)	4487 - 3831	151 355	1986	8	Main focus origins of health differentials.
US National Longitudinal Surveys of Youth	Centre for Human Resource Research Ohio State University of National Opinion Research Centre (NORC)University of Chicago(Randy Olsen)	12 700	14,15,16,17, 18,19,20,21	1979	Annually. In 1986,1988,1990,1992 & 1994 children of mothers who were cohort members studied with tests and the mothers interviewed	Main funding comes from Dept of Labour so focus is on unemployed. Foci for children is on cognitive & behavioural development, for mothers, parenting. Data are available on CD Rom.
Youth in Transition and Monitoring the Future	Survey Research Centre Institute for Social Research, University of Lichigan (Jerald Bachman)	2 213 - 1 628; 15 000	age 15 age 16	1966 1975	15,17,18,21,23 annual for 10 years	Drop out from high school. Adult adjustments, lifestyle and drug use.
Cambridge Study in Delinquent Development	Institute of Criminology University of Cambridge (David Farrington)	411- 408	8-9	1961	9	Development of delinquent and adult criminal behaviour.

Chart 3: Household Panel Studies

Country	Sponsor	Organisers	Size	Start date	Frequency of sweeps
European Union	European commission	Eurostat	58 750 households	1994	1 wave to 1995
Belgium	Government	Universities of Antwerp & Liege Bernadette Bawin(Wallonia); Therese Jacobs (Flanders)	5 000 households	1992	3 waves to 1995, annual
Germany	Government	DIW, Berlin (Gert Wagner)	5 921 households and (rom 1990) 2 179 households from former GDR	1984	11 waves to 1995, annual
Great Britain	Economic & Social Research Council	ESRC Centre on Micro-social change at University of Essex (Jay Gershuny)	5 600 households	1991	4 waves to 1995, annual
Greece	DGV, EC	National Centre Social Research (John Yfantopoulos)	2 952 households	1988	Every two years to 1991
Hungary	Central Statistics office	TAK/1 Dept of Sociology, university of Economic Sciences (Endre Sik; R. Andorka)	2 000 households	1992	3 waves to 1995, annual
Ireland	DGV, EC & ESRI	Economic & Social Research Institue, Dublin (Brendan Whelan)	3 321 households 4 000 households	1987 1994	every two years 2 waves to 1995
Lorraine	INSEE, SNRS, EC & Central & Local Government	ADEPS, University of Nancey (Jean-claude Ray)	2 092 households	1985	6 waves (finished), annual
Luxembourg	Government	Letzeburg CEPS/INSTEAD (Pierre Hausman)	2 012 households	1985	11 waves to 1995, annual
Netherlands	CBS	Central Bureau of Statistics	3 984 households	1984	18 waves to 1995 2 per year
Sweden	Government	Dept. of Economics Gothenburg Univeristy (Anders Klevmarken)	1 531 households	1984	5 waves to 1995, every two years
USA	NSF & Government	Survey Research Centre, Unversity of Michigan (Greg Duncan)	5 000 households	1968	28 years to 1995, annual
Canada	Government	Statistics Canada, Ottawa	4 000 households	1993	1 wave to 1995, annual