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Health and Social Mobility During the Early Years of Life

by

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Comments on this working paper are invited

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HEALTH AND SOCIAL MOBILITY DURING THE EARLY YEARS OF LIFE

1. Introduction

This paper describes a project, funded by the DHSS, which is concerned with relationships between social class, social mobility and health during the early years of life. The project draws on data from the National Child Development Study (NCDS), a study of education, health and development among a national cohort of births in 1958. This data set is available to the academic community through the ESRC Data Archive in Essex. Our purpose here is to illustrate how such longitudinal data contribute to the debate about the causes of inequalities in health (Carr-Hill, 1985; Illsley, 1986; Wilkinson, 1986).

In an attempt to guage their relative importance the Black Report (DHSS, 1980) grouped competing explanations for inequalities in health under three headings, namely: selection, material circumstances and health behaviour. A more systematic review of the range of relationships that exist was presented in the DHSS/ESRC programme on the cycles of disadvantage (Rutter and Madge, 1977; Blaxter, 1981; and Brown and Madge, 1982). These publications point to the influences of inheritance, socio-economic circumstances, education, health behaviour and experiences of the individual on their own health status as well as to the influences of parents' inheritances, socio-economic circumstances, education, health

behaviour and health.

Roy Carr-Hill (1985) indicates the types of inter- and intra-generational relationships he intends to pursue in his follow-up of the Rowntree Children. Even his more elaborated approach does not recognise explicitly the full range of relationships which have been observed.

Much recent discussion has focussed on the role of selective social mobility, an explanation which is closely related to the broader issue of the role of genetics in determining social position (DHSS, 1980). According to the theory of selective social mobility, social class differences in health occur as a result of the healthy moving up and the unhealthy moving down the social scale. Stern (1983) described the arguments mathematically, illustrating how important the effect could be. Illsley (1986) also argues in favour of the selection hypothesis on the basis of data from the Aberdeen Maternity and Neonatal Data Bank. Evidence from the latter does indeed demonstrate a more favourable health status amongst mothers in Aberdeen who were upwardly mobile from any given class, compared with those who were downwardly mobile from the same class. Others, however, have put a different interpretation on the degree to which this effect accounts for class differentials in mortality. Wilkinson (1986) has argued that the contribution of selective social mobility is small and needs to be considered alongside other factors which may affect the accuracy with which class differentials in mortality can be assessed. The Registrar General's occupational classification does not, he argues, provide a clear rank ordering of the population

in terms of socio-economic circumstances and leads to an underestimate of mortality differentials. Wilkinson offers this as an explanation for smaller social class differences in mortality when the Registrar General's data are compared with differentials in the Whitehall study of civil servants (Marmot et al, 1984). Thus, the 1971 mortality in Class V was almost 80 per cent higher than it was in Class I (DHSS, 1980) whereas the lowest grade of civil servants had a mortality rate over three times as high as the administrators.

This suggests that selective social mobility during adult life may not be a major factor underlying health inequalities at older ages. However, evidence about experiences during childhood and early adulthood is much less clear. Wadsworth (1986) has shown that childhood illness affects subsequent social mobility amongst the cohort of British births born in one week in 1946. However, the analysis is limited to those children with a serious illness and other measures of health or health potential were not explored. Moreover, the extent to which social mobility contributed to overall class differentials was not assessed and may, as Wilkinson has suggested, prove to have a small effect.

The present paper describes the theoretical framework which will be adopted in our research on inequalities in health and illustrates the analytic approach by using a limited selection of measures from the NCDS. In our first analysis we have used adult height as a measure of health potential since it has been shown to be independently related to deaths from coronary heart disease (Marmot et al, 1984). The other measures examined are intended to characterise health

during early adulthood. In each case we will present their relationship with mobility between social class at birth, 16 (for height only) and at 23. As the project develops we will draw on the wide range of information in NCDS on other socio-economic and health measures at birth, 7, 11, 16 and 23.

2. Explanations of health inequalities

In Figure 1 we have brought together the wide range of explanations suggested in our introduction. Lines connecting different boxes (dotted for parents and continuous for the individual) indicate suggested causal paths. The boxes in Figure 1 group examples of characteristics under five main headings. Family and household structures and domestic organisation, housing, economic activity, income, wealth and local environment are all characteristics described by (and influencing) socio-economic circumstances. The 'inheritance at birth' box ties most closely to the underlying selection argument and the 'health behaviour' box corresponds to the third explanation considered in the Black Report. Education has been allocated a separate box because of its central role in determining the extent and direction of ties between the material circumstances, experiences and behaviour of the parents and children (see for example, Halsey, Heath and Ridge, 1980).

Causal paths have generally been shown to operate in both directions. For example, individuals' socio-economic circumstances, such as whether or not they are unemployed, can be shown to influence their

health which itself can be shown to influence their likelihood of being unemployed at some future date (see for example, Moser et al, 1984 and Fox, 1986). Similarly, individuals' socio-economic circumstances have been found to influence their training, which in turn has been found to influence subsequent socio-economic circumstances (Halsey, Heath and Ridge, 1980).

Parental characteristics may also influence those of the individual. In the box labelled 'inheritance at birth' we have tried to separate out those characteristics which reflect the genetic inheritance, the effects of socio-economic circumstances at, or shortly prior to, birth and the effects of parental health behaviour, such as smoking during pregnancy. In a broader use of the term Rutter and Madge (1977 p. 322) refer to the 'hereditary element' of some mental illnesses or disorders and include effects of marital discord and inter-familial relationships after birth. In Figure 1 these would not be included in our 'inheritance at birth' box but depicted by the dotted lines from the box labelled 'socio-economic circumstances' to the box labelled 'health of the individual'.

Even though Figure 1 may appear complex, it is itself a gross over-simplification. Firstly, it does not adequately represent the extent of within-box relationships, in particular the relationships which exist between different aspects of an individual's socio-economic circumstances. Secondly, the specific characteristics listed within each box are not exhaustive. Thirdly, the suggested relationships are between the areas represented by the boxes and do not necessarily imply relationships between all specific

characteristics. Fourthly, it only provides a static representation; most of these characteristics change over time, as the individual ages and passes through various stages of domestic/family and economic life cycles and as the macro environment or socio-economic climate (which we have labelled 'period') changes. Finally, the figure only hints at the range of health outcomes in which we might be interested.

Figure 2 suggests what might be found if we were able to impose a time dimension on Figure 1 and could then integrate over the effects of individual characteristics in each of the boxes. The result would be a relative weighting of explanations at each age. One way of addressing the questions of relative importance overall, as attempted in the Black Report, would be to summate such weightings over ages.

A first step towards this is shown in Figure 2. Against each of the headings from Figure 1 lines or dots represent possible contributions to the individual's health at a particular age. The presence or absence of a dot or line indicates that particular characteristics of the parent or individual are important at a particular age, whereas gaps indicate that they are not.

For example, the line for individual's 'inheritance at birth' is continuous during the early period of childhood and then becomes broken. This is to suggest that individual's 'inheritance at birth' influences health at the earliest stages of life, but that the influence diminishes with increasing age of the individual.

Similarly, the line for the influence of parents' education is shown to be continuous during childhood, up to early adulthood, and then to be broken. Again, this is a factor which might be important with respect to the health of children, but is likely to be less important with respect to the health of adults.

It is important to stress that, while Figure 2 attempts to take account of a wide range of research findings, it is a subjective assessment and has no scientific or empirical foundation and the detailed patterns shown should carry no weight. However, it is meant to convey three important points. Firstly, the weighting to be attached to different explanations probably varies with age. (The weightings will also vary with health measures, but this is not shown by the figure.) Secondly, most explanations are thought to contribute to health inequalities during childhood and early adulthood. This probably accounts for much of the interest in explanations at this end of the age spectrum. Thirdly, the combination of these two points suggests that extrapolation from the relative balances in childhood and early adulthood may be misleading as to explanations of inequalities at older ages.

As indicated in the preceding section, the present project comprises a study of the various relationships suggested by Figures 1 and 2 and their relative weighting during childhood and up to age 23 for one cohort of children, namely those born in March 1958.

3. National Child Development Study

The data on which we are currently working are drawn from the National Child Development Study, a longitudinal study of all people in Great Britain who were born in the week 3-9 March, 1958. Following the original perinatal study, carried out by the National Birthday Trust Fund (Butler and Bonham, 1963), follow-ups were conducted by the National Children's Bureau at the ages of seven, eleven and sixteen, for each of which a wide range of information was collected through parental interviews, medical examinations, school questionnaires, attainment tests and (at eleven and sixteen only) personal questionnaires.

In 1978, when the cohort members were aged twenty, schools and other educational institutions were approached in order to obtain details of entries and results in public examinations (CSE, GCE and the Scottish equivalent). More recently, at the age of twenty-three, a total of 12,537 (78% of those known to be alive and in this country) were traced and interviewed. For a selection of past findings from the study and a fuller methodological account, see Davie et al (1972), Fogelman (1983) and Shepherd (1985).

3.1 **The data**

Variables used in the analyses reported below are as follows:

(i) Social class at birth: based on the father's occupation as reported by the mother in the course of an interview by the midwife shortly after the subject's birth, and coded according to the Registrar General's 1950 classification. Subjects with no male head of household are excluded from these analyses.

(ii) Social class at sixteen: as above, with the occupational

details having been obtained in the course of an interview of the parents (most commonly the mother alone) carried out by health visitors, and coded according to the Registrar General's 1970 classification.

(iii) Social class at twenty-three: details of individual's current occupation were obtained in the course of interviews carried out by the field forces of two commercial research companies, and coded according to the Registrar General's 1980 classification. Where the individual was not in employment at the time of interview, this variable is based on the most recent occupation. Only those individuals who had never worked by the age of twenty-three are not assigned to a social class.

(iv) Height: self-reported in the course of the 23-year interview, and subsequently edited to correct or exclude implausible values (Power and Moynihan, 1986).

(v) 'Malaise' score: from a 26-item self-completion questionnaire, administered at the end of the 23-year interview, developed by Rutter et al (1970) from the Cornell Medical Index. It is essentially a screening instrument, and scores of seven or more are suggested to be indicative of depression (Rutter et al, 1976; Richman, 1978).

(vi) Self-rated health: the 23-year-olds were asked 'How would you describe your health generally? Would you say it is: excellent; good; fair; or poor?'.

(vii) Number of hospital admissions since age of sixteen and involving at least an overnight stay: as reported by the subjects in interview.

(viii) Psychiatric symptoms: the 23-year interview generated information on specific health problems which had required regular medical supervision, hospital admission, or specialist consultation. Conditions were subsequently coded according to the 1977 ninth revision of the International Classification of Diseases and individuals who reported any psychiatric morbidity between the ages of 16 and 23 were identified. For present purposes, those with mental handicap only have been excluded.

3.2 **Response patterns**

The analyses presented below are necessarily restricted to those with data on the relevant variables. It will be apparent that where data are drawn from more than one stage of the study, this results in a

sample available for analysis which is significantly reduced from the 12,537 who were interviewed at 23. The reduction is, of course, even more marked as against all those who were still alive and in this country and therefore might have been interviewed at that age (a total of 16,457).

One advantage of longitudinal studies is their ability to monitor the characteristics of respondents and non-respondents at any stage by reference to data from earlier stages. Response analyses specific to the samples used in this study remain to be carried out, but more general analyses reported elsewhere (Goldstein, 1983; Shepherd op cit) show that to age sixteen, differences between respondents and non-respondents are small in relation to indices such as social class, attainment test scores and measures of physical development. On the other hand, there is evidence of slight under-representation of some disadvantaged groups (e.g. the illegitimately born, those who have been in care and those receiving special education).

Response to the 23-year interview shows a continuation of the same trend, with respondents being slightly more often from middle-class backgrounds, and having grown up in smaller families and better housing circumstances. However, all such biases are small. A more serious bias at this age is a substantial under-representation of those from ethnic minority backgrounds.

Response biases do not necessarily influence the relationships one is studying. For example, Goldstein (1983) examined the effect of omitting 16-year non-respondents from analyses of relationships

between 7 and 11 of social class and attainment, and found that the contrasts were unaffected.

4. Social Mobility From Birth to 23

Before studying relationships between upward and downward mobility and health one must consider the pattern and extent of mobility experienced by the cohort under study. It is, after all, only the combination of high levels of mobility and marked differences in health according to mobility patterns which will exert an influence on health patterns.

We are fortunate in the UK for the high state of knowledge about recent patterns of socio-economic mobility. Classic studies by Glass and colleagues in the late 1940s (Glass, 1954) and the Oxford Mobility Project (Goldthorpe, 1980; Halsey, Heath and Ridge, 1980) provide the background for a clear picture of the evolving patterns of inter- and intra-generational movement for men (Heath, 1981). The patterns for women are less well documented.

Table 1 summarises the mobility experiences of the NCDS cohort. Only those individuals who could be assigned to a social class at each of birth, 16, and 23, and whose height was recorded at 23, are included. For males and females separately it gives the numbers in each social class at birth, at 16 and at 23; the first two of these are based on social class of father, the last on own social class. The patterns expected from the earlier literature are relatively clear from this

table. If, for example, we compare the numbers in different social classes at birth and at 16 we can see the upward mobility of fathers as the children aged. At birth 647 (17.5%) of the sons' fathers and 671 (17.7%) of the daughters' fathers were in Social Classes I and II; by age 16 these had risen to 947 (25.5%) and 973 (25.7%) respectively. This upward mobility was associated with movement across the manual/non-manual divide and was not confined to movement within the manual and non-manual classes.

At the same time the table shows the change in employment patterns between the generations and the differences in employment patterns between young men and young women. More sons were in Classes I and II at age 23 and fewer were in manual occupations than were fathers at the time sons were born. Just over half the daughters were in Social Class IIIN at age 23 whereas the highest concentration of sons (over 40%) was in Social Class IIIM.

The feature of the table which is of particular interest from the point of view of social mobility and health is the surprisingly high stabilities which are observed in this group from birth to 16 and even to age 23. Of the 647 sons and 671 daughters of men in Social Classes I and II at the time of the child's birth, 336 (51.9%) and 441 (65.7%) were in Social Classes I and II at 16 and were in non-manual occupations at 23. Nearly one-third (589) of the 1,902 sons of fathers in Social Class IIIM at birth were in Social Class IIIM at 16 and at 23. Nearly one-third of the daughters of men in this class at their birth remained in the class till 16 and were subsequently found in Social Class IIIN. Only for Class IIIN at

birth is there a very marked dispersion of the group during the first 23 years of life.

This pattern of stability has two implications for the study of mobility and health. Firstly, it means that despite the large population studied we end up with small numbers in cells which represent the least common pathways through life. Secondly, the relationships between health and mobility will need to be systematic and strong if they are to provide the major explanation of health inequalities. This second issue will now be addressed in the next section.

5. Social Mobility and Health

5.1 Height

One way of looking at the relationship between height and social mobility would be to look at the proportion 'short' in each of the cells in Table 1. We have defined 'short' in terms of individuals falling below the lowest decile of the height distribution for the sample as a whole. The cut-off values were 1.676 metres and 1.524 metres for men and women respectively.

It is clear from Table 2 that the proportion short was related to social class and social mobility. Overall, 9.5% of men and 9.1% of women with complete records were short. The proportion of men and women who were short was considerably lower among those who had remained in Social Classes I and II at birth, 16 and 23 (2.7% of men

and 5.3% of women) and higher among those who had remained in Social Classes IV and V at birth, 16 and 23 (13.0% of men and 19.2% of women).

The proportion men and women who were short tended to be lower those who had been upwardly mobile than among those who had been downwardly mobile. For example, among those in Social Class IIIM at birth and 16, 5.2% of men who had moved up to Social Classes I and II were short compared with 12.3% of men who had moved down to Social Classes IV and V.

From the marginal proportions, irrespective of whether we classify by class at birth, at 16 or at 23, we see clear social class gradients in the same direction and of similar magnitude. Figure 3 shows the mean height at 23 for men and women by class at birth, at 16 and at 23. This confirms that these patterns do not just reflect the proportion of men and women who were short but are a result of a number of general shifts in the height distribution.

Given the close intercorrelation between class at birth, class at 16 and class at 23 it is of interest to see how much of the gradient observed at 23 is 'explained' in terms of class of parents. This issue is addressed in Table 3, which gives ratios of observed and expected short men and women at age 23 by social class currently and at earlier ages. A ratio was calculated firstly on the basis of there being the same distribution of short men and women within each social class as there was overall. There was a clear social class gradient in this ratio with fewer shorter men and women than expected

in Social Classes I and II, and more than expected in IV and V. This trend was maintained even controlling for social class at birth and 16. There were still lower ratios in Social Classes I and II (the ratio was 0.82 for men and 0.98 for women) than in Classes IV and V (1.17 for men and 1.45 for women).

Thus, social mobility between birth and 23 was selective with respect to height, but mobility did not account for the social class gradients in height; indeed there was some suggestion that the differences in the proportions short might be wider by social class at birth than by social class at 23.

5.2 Other Health Measures

Our analysis of four other health-related measures at age 23 has been taken less far at this stage than those of height. Table 4 presents the distributions of these measures by social class of origin and social class at 23 only.

In general, the table shows a similar pattern to that found for height, with a clear, but not totally consistent, gradient across the social classes at both ages and for both sexes. For three of the four measures - high 'malaise' scores, evidence of psychiatric problems, and general health rated by the subject as 'poor' or 'fair' - the gradient appears more marked and consistent for women than for men, and to be slightly stronger in relation to current social class than to social class at birth.

Although not presented here, calculations have been carried out to standardise for the social class distribution at birth, which confirms that the social class gradients at 23 in relation to these three measures are maintained. For women there remains a steady and reasonably consistent increment on each measure with descending social class, but for men the pattern is more diverse, although in each case the proportions affected in Social Classes I and II remain considerably lower than those in Classes IV and V.

The exception is the case of those with two or more hospital admissions since the age of 16. For men the differences between the social classes at 23 are extremely small, and virtually disappear once these are standardised for social class at birth. For women, the relationship with current social class is notably less clear than with social class at birth. Standardisation of the former for the latter in fact almost reverses the usual pattern, with the highest standardised rates of those with more than one admission in Social Classes I and II and the lowest in the skilled manual groups. It would seem likely that this measure conflates social inequalities in morbidity with inequalities in the ability to take advantage of available services.

6. Discussion

This paper does not provide definitive answers to the questions we have started to address. It illustrates our initial thoughts about

the framework we are using and how our analyses will proceed. The analyses are subject to a number of obvious limitations. For example, we have restricted ourselves to the Registrar General's Social Classes and have not discussed the effects of successive changes to the classification (Leete and Fox, 1977) or its inappropriateness for the study of women (Roberts, 1986). For simplicity we have presented data for cohort members who were allocated to a social class at each of birth, 16 and 23. This disproportionately excludes some of the most deprived members of the cohort. Additionally, we have focussed on a simple range of health measures. We have also used very simple statistical techniques to illustrate the types of issues we will be addressing and we recognise the need for more sophisticated multivariate approaches.

These weaknesses will be overcome to some extent as the analyses are extended to include other factors such as those highlighted in Figure 1. In our analyses of height, for example, we will incorporate information about parental height, birthweight, age at puberty, height at intermediary ages and other factors which have been shown to be related to height (Rona and Chinn, 1982). These are relevant characteristics contained in the data set but not yet used in the analysis.

Our interest is in a variety of relationships between health and social mobility during childhood. The range of measures of both health and social mobility, to which we have access, is quite wide. In addition to social classes as considered here, NCDS contains housing, household and geographic characteristics at different stages

of the cohort's lives as well as more detailed descriptions of the cohort's early labour market experiences. We propose to use these to study the socio-economic consequences of childhood ill-health, particularly those related to educational failure - as well as examining further the health consequences of childhood social mobility.

Despite the preliminary nature of the analyses presented here, they do suggest clear gradients in health and health potential between social classes, irrespective of whether class is measured at birth, 16 or 23 years of age. Some gradients appear wider by class at birth (e.g. height), others by class at 23 (malaise). Only for hospitalisation did standardisation for social class at birth account for the gradient observed at age 23. The analyses of height suggest that social mobility is health-related but that this does not explain the gradients observed.

Access to NCDS

The full NCDS data set is deposited in the ESRC Data Archive and as announced in the ESRC Newsletter (Autumn 1985), ESRC are funding a User Support Group (USG) at City University to improve documentation and access to the study. DHSS recently invited Mildred Blaxter (1986) to consider potential health-related research using this data set and her report is available from the USG. Anybody interested in the data set is encouraged to contact Peter Shepherd or Bob Wellburn in the USG (telephone 01 253-4399 extension 4135) or Eric Roughley at

the ESRC Data Archive (telephone 0206 860570) for further information.

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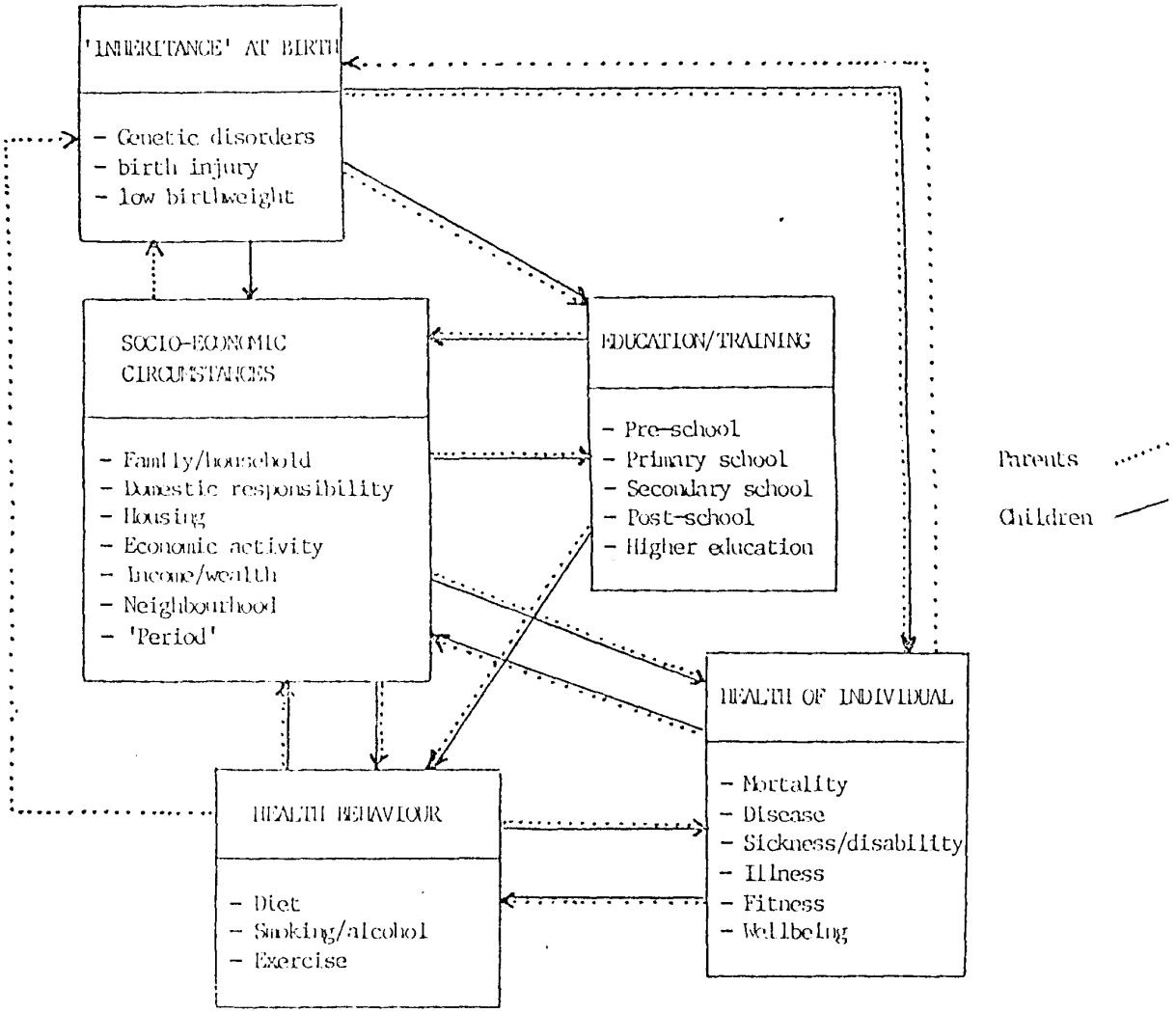

Figure 1 : Inter- and intra-generational relationships between health and circumstances

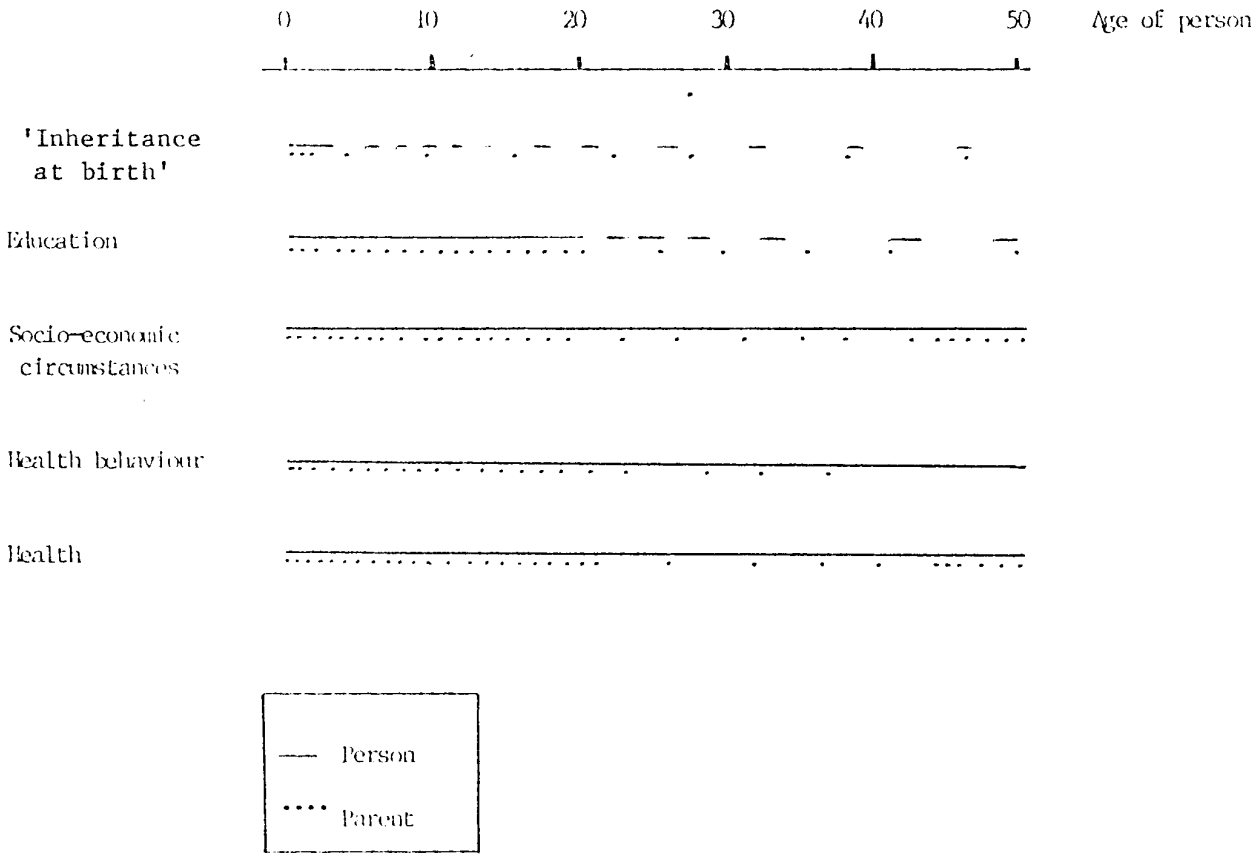

Figure 2 : Hypothetical weighting of inter- and intra-generational influences on health at different ages (spacing widens as influences decrease).

Figure 3. Mean heights at age 23 according to social class at birth, age 16 and age 23.

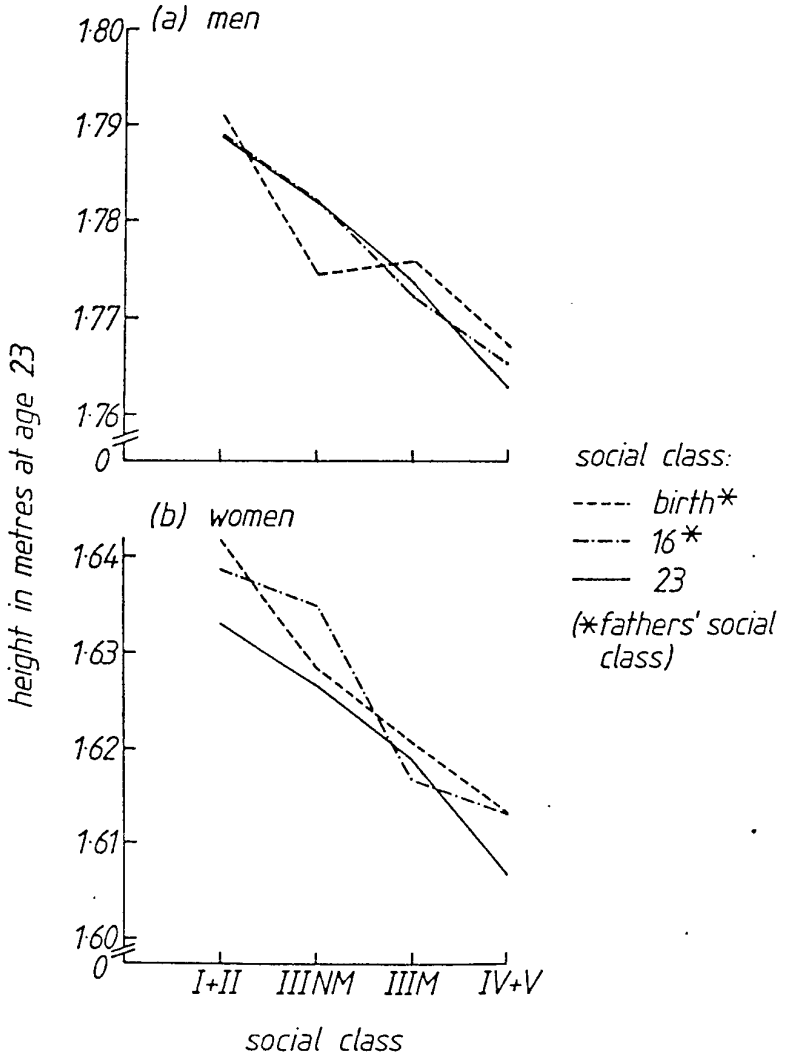

TABLE 1: SOCIAL CLASS AT 23 BY FATHER'S SOCIAL CLASS AT THE BIRTH OF NCDS MEMBER AND AT AGE 16, BY SEX (NUMBERS WITH COMPLETE DATA).

Father's Class at birth	Class at 16	Men's own class at 23 I & II	IIIN	IIIM	IV & V	TOTAL	Women's own class at 23 I & II	IIIN	IIIM	IV & V	TOTAL
I & II	I & II	225	111	95	53	484	209	232	20	36	497
	IIIN	38	25	19	7	89	22	45	7	7	81
	IIIM	20	7	23	8	58	19	35	5	10	69
	IV & V	1	3	9	3	16	5	13	2	4	24
	Total	284	146	146	71	647	255	325	34	57	671
IIIN	I & II	52	45	29	12	138	40	76	6	11	133
	IIIN	41	36	49	15	141	28	79	8	12	127
	IIIN	11	13	35	13	72	23	47	5	20	95
	IV & V	2	4	19	9	34	4	11	2	3	20
	Total	106	98	132	49	385	95	213	21	46	375
IIIM	I & II	88	60	101	32	281	86	156	19	26	287
	IIIN	28	27	70	20	145	47	74	14	24	159
	IIIM	194	181	589	227	1191	210	630	111	263	1214
	IV & V	43	25	147	70	285	32	133	40	71	276
	Total	353	293	907	349	1902	375	993	184	384	1936
IV & V	I & II	11	8	16	9	44	11	23	7	15	56
	IIIN	7	11	20	14	52	8	32	5	5	50
	IIIM	42	44	177	89	352	47	174	47	85	353
	IV & V	26	83	146	115	325	34	143	41	125	343
	Total	86	101	359	227	773	100	372	100	230	802
TOTAL	I & II	376	224	241	106	947	346	487	52	88	973
	IIIN	114	99	158	56	427	105	230	34	48	417
	IIIM	267	245	824	337	1673	299	886	168	378	1731
	IV & V	72	70	321	197	660	75	300	85	203	663
	TOTAL	829	638	1544	696	3707	825	1903	339	717	3784

TABLE 2: PERCENTAGES OF MEN AND WOMEN WHO WERE SHORT* BY SOCIAL CLASS AT BIRTH AND AGES 16 AND 25

Father's Class at birth	Class at 16	Men's own class at 23 I & II	IIIN	IIIM	IV & V	TOTAL	Women's own class at 23 I & II	IIIN	IIIM	IV & V	TOTAL
I & II	I & II	2.7	2.7	9.5	7.6	(4.6)	5.3	1.7	10.0	5.6	(3.8)
	IIIN	5.3	8.0	-	-	(4.5)	-	6.7	-	-	(3.7)
	IIIM	5.0	-	13.0	-	(6.9)	-	-	20.0	10.0	(2.9)
	IV & V	-	-	-	-	(-)	-	15.4	-	-	(8.3)
	Total	3.2	3.4	8.4	5.6	(4.6)	4.3	2.8	8.8	5.3	(3.9)
IIIN	I & II	9.6	4.4	13.8	8.3	(8.7)	7.5	5.3	-	9.1	(6.0)
	IIIN	4.9	11.1	8.2	20.0	(9.2)	3.6	1.3	-	33.3	(4.7)
	IIIN	18.2	15.4	14.3	30.8	(18.1)	13.0	12.8	20.0	10.0	(12.6)
	IV & V	-	-	15.8	33.8	(17.7)	-	9.1	-	-	(5.0)
	Total	8.5	8.2	14.4	22.5	(11.4)	7.4	5.6	4.8	15.2	(7.2)
IIIM	I & II	8.0	3.3	3.0	6.3	(5.0)	4.7	6.4	15.8	15.4	(7.3)
	IIIN	14.3	-	8.6	10.0	(8.3)	2.1	5.4	14.3	8.3	(5.7)
	IIIM	5.2	5.0	11.9	12.3	(9.8)	10.0	9.4	7.2	14.8	(10.5)
	IV & V	20.9	12.0	13.6	11.4	(14.0)	9.4	7.5	12.5	16.9	(10.9)
	Total	8.5	4.8	10.9	11.5	(9.6)	7.7	8.4	9.8	14.8	(9.7)
IV & V	I & II	-	12.5	6.3	11.1	(6.8)	9.1	8.7	14.3	6.7	(8.9)
	IIIN	14.3	18.2	10.0	28.6	(17.3)	12.5	3.1	20.0	20.0	(8.0)
	IIIM	7.1	6.8	10.7	13.5	(10.5)	14.9	5.8	17.0	20.0	(11.9)
	IV & V	7.7	26.3	14.4	13.0	(14.8)	17.7	12.6	12.2	19.2	(15.5)
	Total	6.8	15.8	12.0	14.1	(12.5)	15.0	8.3	15.0	18.7	(13.0)
TOTAL	I & II	4.8	3.6	7.1	7.6	(5.4)	5.5	4.1	11.5	9.1	(5.5)
	IIIN	7.9	8.1	7.6	16.1	(8.9)	2.9	3.9	8.8	14.6	(5.3)
	IIIM	6.0	5.7	11.8	13.1	(10.2)	10.4	8.5	10.7	15.6	(10.6)
	IV & V	15.3	21.7	13.7	13.2	(14.2)	12.0	10.3	11.7	17.7	(13.0)
	TOTAL	6.5	6.7	11.0	12.5	(9.5)	7.5	7.1	10.9	15.3	(9.1)

* below the bottom decile of the height distribution

TABLE 3: RATIOS OF OBSERVED AND EXPECTED SHORT* MEN AND WOMEN AT AGE 23, BY SOCIAL CLASS AT 23, INDICATING THE EFFECT OF CONTROLLING FOR CLASS AT 16 AND FOR CLASS AT BIRTH

Ratios of Observed/ Expected With Short Stature	Men's own class at 23				Women's own class at 23			
	I & II	IIIN	IIIM	IV & V	I & II	IIIN	IIIM	IV & V
At age 23	0.68	0.71	1.15	1.31	0.83	0.78	1.20	1.69
Standardised for father's social class at 16	0.79	0.79	1.08	1.19	0.94	0.79	1.11	1.49
Standardised for father's social class at birth	0.77	0.73	1.10	1.23	0.94	0.78	1.10	1.52
Standardised for father's social class at both birth and sixteen	0.82	0.77	1.08	1.17	0.98	0.79	1.09	1.45

*below the bottom decile of the height distribution

TABLE 4: HEALTH MEASURES AT AGE 23, BY SOCIAL CLASS AT BIRTH AND AT AGE 23, BY SEX

		I & II	IIIN	IIIM	IV & V
(a) Malaise Score (% 'depressed')					
Men	SC at birth	2.4	3.6	4.1	6.2
	SC at 23	2.2	2.6	4.6	6.9
Women	SC at birth	6.0	7.7	11.6	14.6
	SC at 23	4.2	9.7	15.8	18.9
(b) Psychiatric Problems (% present)					
Men	SC at birth	2.1	2.3	2.2	2.6
	SC at 23	2.7	4.0	3.1	5.1
Women	SC at birth	4.6	5.4	4.8	5.3
	SC at 23	4.6	6.3	8.6	10.3
(c) Self-rated Health (% poor or fair)					
Men	SC at birth	6.3	8.0	8.0	10.4
	SC at 23	5.4	7.3	8.6	11.8
Women	SC at birth	6.9	9.4	10.7	14.7
	SC at 23	6.1	9.9	13.6	16.0
(d) Number of Hospital admissions (% ≥ 1)					
Men	SC at birth	4.5	3.8	4.5	5.4
	SC at 23	4.1	4.2	4.6	5.6
Women	SC at birth	7.7	9.8	10.6	11.8
	SC at 23	9.0	9.8	9.3	13.2

NCDS Working papers prepared by the User Support Group at SSRU

No.	Title	Author(s)	Date
1.	The National Child Development Study: an introduction to the origins of the Study and the methods of data collection	P. Shepherd	October 1985
2.	Publications arising from the National Child Development Study	NCDS User Support Group and Librarian, National Children's Bureau	October 1985
3.	After School: the education and training experience of the 1958 cohort	K. Fogelman	October 1985
4.	A longitudinal study of alcohol consumption amongst young adults in Britain: I: Alcohol consumption and associated factors in young adults in Britain	C. Power	December 1985
5.	A longitudinal study of alcohol consumption amongst young adults in Britain: II: A national longitudinal study of alcohol consumption between the ages of 16 and 23	M. Ghodsian and C. Power	December 1985
6.	A longitudinal study of alcohol consumption amongst young adults in Britain: III: Childhood and adolescent characteristics associated with drinking behaviour in early adulthood	M. Ghodsian	December 1985
7.	Report on the longitudinal exploitation of the National Child Development Study in areas of interest to DHSS	Mildred Blaxter	April 1986
8.	Health and social mobility during the early years of life	C. Power K. Fogelman AJ Fox	May 1986

N A T I O N A L C H I L D D E V E L O P M E N T S T U D Y

The National Child Development Study (NCDS) is a continuing longitudinal study which is seeking to follow the lives of all those living in Great Britain who were born between 3 and 9 March, 1958.

It has its origins in the Perinatal Mortality Surveys (PMS). This was sponsored by the National Birthday Trust Fund and designed to examine the social and obstetric factors associated with the early death or abnormality among the 17,000 children born in England, Scotland and Wales in that one week.

To date there have been four attempts to trace all members of the birth cohort in order to monitor their physical, educational and social development. There were carried out by the National Children's Bureau in 1965 (when they were aged 7), in 1969 (when they were aged 11), in 1974 (when they were aged 16) and in 1981 (when they were aged 23). In addition, in 1978, details of public examination entry and performance were obtained from the schools, sixth-form colleges and FE colleges.

For the birth survey information was obtained from the mother and from medical records by the midwife. For the purposes of the first three NCDS surveys, information was obtained from parents (who were interviewed by health visitors), head teachers and class teachers (who completed questionnaires), the schools' health service (who carried out medical examinations) and the subjects themselves (who completed tests of ability and, latterly, questionnaires). In addition the birth cohort was augmented by including immigrants born in the relevant week in the target sample for NCDS1-3.

The 1981 survey differs in that information was obtained from the subject (who was interviewed by a professional survey research interviewer) and from 1971 and 1981 Census (from which variables describing area of residence were taken). Similarly, during the collection of exam data in 1978 information was obtained (by post) only from the schools attended at the time of the third follow-up in 1974 (and from sixth-form and FE colleges, when these were identified by schools). On these last two occasions no attempt was made to include new immigrants in the survey.

All NCDS data from the surveys identified above are held by the ESRC Data Archive at the University of Essex and are available for secondary analysis by researchers in universities and elsewhere. The Archive also holds a number of NCDS-related files (for example, of data collected in the course of a special study of handicapped school-leavers, at age 18; and the data from the 5% feasibility study, conducted at age 20, which preceded the 1981 follow-up), which are similarly available for secondary analysis.

Further details about the national Child Development Study can be obtained from the NCDS User Support Group.