

* * * * *
*
* THE FOURTH FOLLOW-UP OF THE NATIONAL CHILD DEVELOPMENT STUDY: *
*
* An account of the methodology and summary of the early findings *
*
* * * * *

by

NCDS4 Research Team

National Children's Bureau

This is a draft paper and comments are welcome.
The views expressed are those of the author only.
Please do not quote or reproduce this paper without
the permission of the author.

Social Statistics Research Unit
City University
Northampton Square
LONDON EC1V 0HB
MARCH 1987

NCDSUSGWP20:JP;120387

National Child Development Study User Support Group Working Paper Series

This Working Paper is one of a number, available from the National Child Development Study User Support Group, which report on the background to the Study and the research that has been based on the information collected over the years. Other Working Papers in the series are listed below.

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	Peter Shepherd (SSRU)	October 1985
2.	Publications arising from the National Child Development Study	NCDS User Support Group (SSRU) & Librarian, National Children's Bureau	October 1985
3.	After School: the education and training experiences of the 1958 cohort	Ken Fogelman (SSRU)	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	Chris Power (SSRU)	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	Mayer Ghodsian & Christine Power (SSRU)	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	Mayer Ghodsian (SSRU)	December 1985
7.	Report on the longitudinal exploitation of the National Child Development Study in areas of interest to DHSS	Mildred Blaxter (Univ of Cambridge)	April 1986

National Child Development Study*User Support Group*Working Paper No 20

THE FOURTH FOLLOW-UP OF THE NATIONAL CHILD DEVELOPMENT STUDY:
An account of the methodology and summary of the early findings

by

NCDS4 Research Team
National Children's Bureau

* Social Statistics Research Unit * The City University
* Northampton Square * LONDON * EC1V 0HB * March 1987

LIST OF CONTENTS

	Page
1. INTRODUCTION	1
Earlier stages of the study	1
The fourth follow-up feasibility study	3
2. PREPARATION AND PILOTING	4
Selection of interviewing companies	4
Construction of the questionnaire	5
3. TRACING AND ARRANGEMENTS FOR INTERVIEWING	8
Postal tracing	8
Local authority housing departments	9
Family Practitioner Committees	10
Media appeals	10
Interviewer detective work	10
Earlier addresses	10
Armed forces	10
National Insurance records	10
National Health Service Central Register	11
Arrangements for interviewing	12
4. INTERVIEWING AND TRACING BY INTERVIEWERS	13
Contacting and interviewing procedures	13
Tracing by interviewers	14
Field work quality control	15
Final outcome	15
5. CODING, DATA CHECKING AND EDITING	17
NOP/SCPR edit of pre-coded data	17
NOP/SCPR open-ended coding	17
Delivery to the Bureau	18
Data management	18
Open-ended coding at NCB	19
Data editing at NCB	19
The longitudinal merge	20
1971 Census data	21
1981 Census data	21
Derived variables	22
Documentation	22
A note on the timetable	22

	Page
6. RESPONSE PATTERNS AND THEIR IMPLICATIONS	25
Census comparisons	25
Comparisons with data from previous follow-ups	26
Conclusion	30
7. SUMMARY AND OVERVIEW OF FINDINGS	31
8. FAMILY FORMATION	32
Marriage, cohabitation, breakdown and reconstitution	32
Comparison of marriage and cohabitation	34
Partners of cohort members	36
Early partnership and parenthood	37
9. PARTNERSHIP BREAKDOWN	41
Reconstituted families	43
10. LONE PARENTHOOD	44
11. EMPLOYMENT	47
Handling career history data	47
Computation of summary measures of employment history	48
Establishing the sequence of events	49
Destinations	50
The self-employed	51
Unemployment	53
Work histories	55
12. EDUCATION AND TRAINING	59
General experience	59
Qualifications	60
Routes	60
Unsuccessful courses	62
Characteristics of those with unsuccessful courses	64
Literary and numeracy	64
Careers advice	65
Unexpected educational success and failure	67

	Page
13. APPRENTICESHIPS	68
Completed apprenticeships	68
Uncompleted apprenticeships	69
Current labour market experience	71
14. FINANCIAL CIRCUMSTANCES	74
Respondents' weekly earnings from employment	74
Earnings of spouse or partner	75
Income from state benefits	75
Other regular income	77
Total family income	77
Savings and investments	77
Inheritance and gifts	78
Other work	79
15. HOUSING	80
General housing circumstances	80
Owner-occupation	84
The desire to buy	85
Homelessness	86
16. HEALTH	87
Longstanding illness and disability	87
Medically supervised conditions	88
Hospital admissions	88
General health	88
Social class and morbidity	90
Regional variations	90
Morbidity and other factors	90
Accidents	91
Health and weight	92
Weight and demographic factors	94
The Malaise Inventory	95
17. SMOKING AND DRINKING	96
Smoking	96
Smoking and health	97
Demographic factors and smoking	98
Drinking	98
Drinking and health	99

	Page
18. VOLUNTARY ACTIVITIES	100
Who volunteers?	101
19. METHODOLOGICAL, ORGANISATIONAL AND ADMINISTRATIVE LESSONS	103
20. BEYOND THE FOURTH FOLLOW-UP	106
Availability of NCDS data for research	106
NCDS User Support Group	107
Further surveys - NCDS5 and beyond?	107
REFERENCES	112
Appendix 1 - Staff employed on NCDS fourth follow-up.	
Appendix 2 - List of NCDS4 working papers.	

1 INTRODUCTION

This working paper is based on the final report to the sponsors of the fourth follow-up of the National Child Development Study (NCDS). The five-year grant which enabled the preparation, conduct and analysis of the latest follow-up of the subjects of NCDS at the age of twenty-three came to an end in December 1984.

The main findings from this stage of the study were produced in the form of a series of working papers submitted to the sponsors (see below and Appendix 2). The purpose of this paper is to provide a methodological account of the fourth follow-up and a brief summary and overview of the findings reported in the working papers.

The work associated with the fourth follow-up was supported by a consortium of five Government Departments - the Department of Health and Social Security (DHSS), the Department of Education and Science (DES), the Department of Employment (DE), The Manpower Services Commission (MSC) and the Department of the Environment (DoE). At the outset the following general objectives were established:

- * to establish the current economic, social and health circumstances of a representative group of young adults;
- * to relate this current picture to information obtained during the earlier surveys of birth and at 7, 11 and 16;
- * to provide the basis for a series of surveys designed to follow the cohort through adult life; and
- * to collect information which would enable the selection of sub-groups for smaller scale surveys.

The extent to which these objectives have been fulfilled can be reviewed in the light of the information provided in this paper. Firstly, however, a brief account of the earlier stages of the study, including the fourth follow-up feasibility study, will be helpful in placing the more recent work in context.

Earlier stages of the study

The National Child Development Study (NCDS) is a longitudinal study which takes as its subjects all those people who were born in the week 3rd-9th March, 1958, and who are resident in England, Scotland or Wales. Its origins were in the 1958 Perinatal Mortality Survey, sponsored by the National Birthday Trust Fund, and designed to investigate the social and obstetric factors associated with

stillbirth, death in early infancy and abnormalities among the 17,000 or so babies born in Great Britain in that one week (e.g. Butler and Bonham, 1963). It was the second in a series of three such perinatal studies, the others being based on one week's births in 1946 (Douglas, 1948) and 1970 (Chamberlain et al., 1975).

Since 1964, the National Children's Bureau has been responsible for monitoring the physical, educational and social development of the surviving subjects of the original 1958 study. Prior to the 23-year follow-up, retracing and the collection of information had taken place at the ages of seven, eleven and sixteen (see, e.g. Davie et al, 1972; Fogelman, 1983).

At each of the follow-ups during the school years, information on the children and their circumstances was obtained from a number of sources:

- * parents, usually the mother, were interviewed, providing information on the home environment, family circumstances and the child's development and behaviour;
- * each child received a full medical examination, undertaken by the school health service;
- * questionnaires were completed by the schools, giving information on the school and on the child's progress and behaviour;
- * schools administered tests of attainment and ability;
- * a short personal questionnaire was completed by the children themselves at age eleven, and a more substantial one at sixteen covered such topics as attitudes to school, family relationships, educational and occupational aspirations.

In addition to the above, schools and other educational institutions were contacted once again in 1977/78, and details obtained of entries and results in public examinations (CSE, GCE O-level and A-level, and their Scottish equivalents).

The co-operation received from the subjects themselves, parents, teachers, health visitors, medical officers and local authority staff enabled approximately 90% of the cohort to be retraced and information obtained, at each of the above stages of the study.

The resulting work has led, to date, to the publication of twenty books and approaching 200 chapters, journal articles etc., describing the findings from these earlier phases of the study. A further historical account of the study, and a list of publications are available as NCDS User Support Group Working Papers Nos 1 and 2.

The fourth follow-up feasibility study

In 1977, towards the end of work on the NCDS third follow-up, the Bureau was approached by the Department of the Environment to discuss the possibility of the study continuing into adulthood. The primary focus would be on early adult housing experiences although it was envisaged that the study would retain its multidisciplinary breadth and that other government departments would contribute to the funding.

However, both parties agreed that the essential next step was a feasibility study, with three main purposes: to talk to other potential sponsors and ascertain their interest in an adult follow-up; to consider, cost and prepare proposals for a number of methodological options; and to assess the practical problems associated with an adult follow-up and the likely level of response. DoE agreed to fund such a study.

Thus, in the late Spring of 1978, an attempt was made to trace, contact and interview a random 5% sample (i.e. 800 individuals) of those people who had been included in NCDS when aged 7, 11 or 16.

Following efforts to contact members of the sample by post, interviewers were able to contact and interview some 70 per cent of the target sample. Furthermore, additional methods of tracing were in hand but did not lead to interviews because of shortage of time, so that an even more satisfactory response rate could have been attained. The interviewers' experiences indicated that the commitment to and interest in the study by its subjects was high. It was therefore possible to conclude that the technical difficulties of an adult follow-up could be solved and interviews were likely to be achieved in adequate numbers. (For further details and some substantive findings from the feasibility study interviews, see Shepherd (1980)).

At the same time as this work was taking place discussions about the possible content of an early adult follow-up were taking place with the DoE, DES, DE, MSC and, towards the end of this period, DHSS. All five agreed to contribute to the funding of a fourth follow-up. Although proposals had been requested and prepared for two follow-ups with a four-year interval, and for various options entailing interviews with sub-samples of the total cohort, by May 1979 a contract had been drawn up which would fund one interview follow-up of the entire cohort.

At this point, because of cuts in its research budget, the Department of the Environment found itself unable to be the lead funder. The Department of Health and Social Security provided interim funding while the five departments reached agreement on the following proportional contributions, which were in turn to be reflected in the balance of the content of the questionnaire and the work to be done: DHSS, 35%; DES, DE and MSC, each 17%; DoE, 14%.

2 PREPARATION AND PILOTING

As has been mentioned, the follow-up was to take the form of an interview with as many of the cohort members as was possible and practicable. The interviews were to be carried out by the field force of one or more market research companies.

To this end the Bureau's research team were, in the period to March 1981, engaged in four concurrent activities: preparing for the processing of the interview data and their integration with data from the earlier follow-ups; initial tracing of the study's subjects; selection of the interviewing sub-contractors; and discussion with sponsors on the content of the questionnaire and drafting. The first two activities are described in later sections of this report, but the sub-contractors should be introduced at this point, as they were an integral part of the detailed construction of the questionnaire.

Selection of interviewing companies

As the first stage, a number of companies took part in informal discussions with members of the research team, in order to inform them of the general nature of the exercise, to assess their likely interest in tendering and to develop ideas on both sides about major issues which would need to be addressed both in the specification and tenders. The companies approached were selected on the grounds of their size - only a limited number of companies would be able to manage an operation on this scale, spread throughout the country - and their known, relevant experience. Not surprisingly, a number of other companies came to hear of this potentially attractive contract and approached the Bureau in order to be included in the discussions.

A detailed specification of the requirements for the interview was then prepared and put out to those companies which had expressed interest. Four tenders were received, two of them from pairs of companies acting in consortium. Interviews were held with all four tendering groups, and the consortium of National Opinion Polls Ltd and Social and Community Planning Research was selected to undertake the sub-contract. This is not the place for a detailed account of the selection criteria, but it is perhaps worth noting that the tender from the successful companies showed the benefit of their previous experience with the National Child Development Study, NOP having conducted the field-work for the feasibility study and SCPR having carried out interviews in earlier special follow-ups of one-parent families and of handicapped young people soon after leaving school.

Construction of the Questionnaire

The budget for the fourth follow-up was based on the assumptions that interviews would last an average of 90 minutes, and that the quantity of data collected would be equivalent to what could be contained on 15 punched cards. In addition, as has been mentioned, the content of the questionnaire was broadly to reflect the proportions of financial contribution from each of the sponsors, as described previously.

In the event, the time constraint did not prove to be a major factor, but attempting to keep the amount of information to be collected to a reasonable level while maintaining the appropriate balance of content did create some difficulties.

As the first stage in the creation of the questionnaire, sponsors indicated the areas which they would wish to see covered, and researchers produced a first draft. It was immediately apparent that this resulted in a questionnaire of approximately twice the length which had been allowed for in the original budget. Cutting down to a more acceptable length was not a painless process, and some Departments had to identify entire areas of interest which had to be dropped. In other areas it became necessary for less detail to be obtained than had originally been hoped. From March 1981 the interviewing companies were also closely involved in detailed drafting, and piloting began. As each successive revision was produced, overall length and balance had to be reassessed and, usually, further decisions taken about sacrifices to be made.

This inevitably was a lengthy process and involved considerable consultation with the sponsoring departments and other outside bodies. As a result questionnaire development continued until August 1981, several months later than had been anticipated and with inevitable implications for when field-work could begin.

During this period, there were four rounds of pilot testing. The first round was held in April 1981. All topic areas were tested with the exception of housing (a decision on which areas within that topic should be covered had still to be made). Twelve interviewers were briefed, one half of the questionnaire each being piloted by six interviewers. Each interviewer was asked to select five interviewees: they were to be aged 22 or 23, but not members of the cohort. Additional quota constraints were set by working status and socio-economic group, and some respondents were to have had some education or training since leaving school. All interviewers attended two separate debriefings at which they reported to the two companies and to Bureau researchers.

Following modifications, a second pilot among 24 respondents was carried out at the end of April. Six interviewers each conducted four interviews, based on an almost complete questionnaire. Selection of respondents was made on similar criteria to the first pilot, except that quotas were set by working status and housing tenure, and some interviewees were to be parents.

Following debriefing, changes were made to question wording and lay-out and a further version of the questionnaire prepared for what was intended to be the final test. During May, 30 interviews were undertaken and at the subsequent debriefing researchers were able to consider remaining areas of difficulty, not only on individual questions but also the layout, flow and length of the entire questionnaire.

It was evident that many fundamental decisions had yet to be made on what should be covered and how. Additionally some topics (notably training and education) continued to pose design problems and required more attention. Thus it was decided that fieldwork should be postponed in order to devote further time to questionnaire development.

After extensive modifications to some sections of the questionnaire, the fourth and final pilot was held at the end of July. Eighteen interviews were carried out, on actual members of the cohort.

Minor modifications were made following debriefing and a final version of the questionnaire agreed in August, 1981. A summary of the content of the questionnaire is given in Table 2.1 below.

It is worth noting some of the major changes in coverage between the first draft and final version of the questionnaire. Among those topics which were excised completely were: diet and physical exercise; child-care arrangements; and housing history, other than details of current accommodation and some information on accommodation on first leaving the parental home. In other areas, such as employment and training, detailed information was obtained on only a limited number of jobs or courses, so that it would not be possible, for a proportion of the cohort, to construct a full history in these areas from leaving school to the age of twenty-three. Another area in which significant reductions took place was housing costs; in the final version detail was obtained from owner occupiers and private renters only.

Despite these reductions the final questionnaire still obtained approximately 50% more data than had been allowed for in the original contract. Although this was containable within the sub-contract, largely because the actual average duration of the interviews was within the anticipated limit, it had inevitable implications for the quantity of data management and editing to be undertaken at the Bureau once the interviews were completed.

Furthermore, with hindsight, some of the solutions adopted to limit and condense the content of the questionnaire only postponed more time-consuming problems. Relatively simple questions - examples are age of leaving education, and current economic status - were omitted on the grounds that their answers would be derived from answers to other questions. Doing so rarely proved as simple as had been envisaged, and added disproportionately to the data preparation which had to be done before analysis proper could begin.

Table 2.1 Summary of the content of the questionnaire used for the NCDS fourth follow-up

-
- * Employment, unemployment and periods of out of the labour force (including details of economic status for each month since March 1974; dates and durations; occupation; industry; earnings; training; promotion, hours; job satisfaction; job choice; job behaviour; participation in government special schemes etc).
 - * Apprenticeship and training (including details of dates and durations; trades and skills; courses and qualifications; and reasons for non-completion etc).
 - * Post-school education (including details of dates and duration; courses; subjects; qualifications; failed courses; courses not leading to qualifications; planned courses; finance; literacy and numeracy problems etc).
 - * Marriage, cohabitation and children (including details of dates of marriage(s) and cohabitation(s); age and prior status of partner(s); abortion and miscarriage; dates of birth and birthweight of children and experience of lone parenthood, etc).
 - * Housing and household (including details of household composition; type and tenure of housing; amenities; housing costs; home ownership aspiration; leaving home; homelessness, etc).
 - * Family income, savings and investment (including details of state benefits; other payments from outside the household; savings investments and inheritances).
 - * Respondent reported health state and health related behaviour (including details of smoking, drinking, handicap, migraine, epilepsy, asthma and wheezy bronchitis, other conditions requiring regular medical supervision, accidents, hospital admittances and emotional problems).
 - * Voluntary activity and leisure, etc (including details of the nature and frequency of activities; religion; voting behaviour; trade union membership; and newspaper readership).
 - * Malaise Inventory (a 24 item inventory completed by the respondents at the completion of the interview. This is a measure indicating a tendency towards non-clinical depression developed by the Institute of Psychiatry from the Cornell Medical Index (Rutter and others, 1970)).
-

3 TRACING AND ARRANGEMENTS FOR INTERVIEWING

The target sample for the fourth follow-up comprised all those people who had taken part in at least one earlier stage of the study and who were not known to have died or emigrated - a total of 16,457 individuals.

For the earlier stages of the study (in 1965, 1969 and 1974) the main method of tracing had been through schools - obviously no longer appropriate. The variety of other methods used for the 1981 survey are outlined below. The first of these (postal tracing) was set in hand well before field-work began - indeed, it was essentially completed by January 1981. The next six were carried out continuously from soon after that date or from the beginning of the field-work period, in order to trace those who had not responded to postal contact or could not be found by the interviewers.

National Insurance records and the National Health Service Central Register - the last two methods described - were contacted once other methods had been exhausted and therefore relatively late in the field-work period.

Postal tracing

The starting point for our tracing efforts was the last address we had on our files for each individual. There was considerable variation in the dates to which this address related. For the majority it was the address, usually of their parents's home, at the time of the third follow-up in 1974. More recent addresses were available for those who had taken part in a follow-up of handicapped school-leaves in 1976 or the feasibility study in 1978. Additionally, contacting schools for exam results in 1978 had generated some more up-to-date addresses, and a number of individuals, or their families, had spontaneously kept us informed of their whereabouts over the years.

On the other hand, there were a few individuals who had not been traced for the 1974 follow-up, although they had been included in earlier stages, and whose latest known addresses therefore related to 1969 or even 1965.

Whatever the date of the information, letters were sent seeking confirmation of the address or advice as to the whereabouts of the individual or someone who might know his/her whereabouts. When no response was forthcoming reminders were sent and any forwarding addresses followed up.

The results of postal tracing by January 1981, are summarised in table 3.1.

Table 3.1 Postal Tracing

	N	%
<u>Target</u>	16,457	100
<u>Letters posted</u>	26,000	
<u>Traced</u>	10,937	66.5
address confirmed	10,515	63.9
refused	292	1.8
emigration	95	0.6
death	35	0.2
<u>Untraced</u>	5,143	31.3
forwarding address	277	1.7
gone away/not known	1,889	11.5
property empty/ demolished	210	1.3
no such/wrong address	98	0.6
no response	2,669	16.2

Local authority housing departments

When letters were returned indicating that the whereabouts of the individual were unknown, and when the last address was known to have been a council property or reported as 'demolished' or 'redeveloped', the local authority housing department was contacted to try to establish a new address. The first contact was usually by telephone, and sometimes produced an address there and then, although it was more usual for the authority to agree to forward a tracing letter on our behalf.

Family Practitioner Committees

We normally appealed to FPCs for help when other avenues had failed to produce a current address. As NHS numbers are known for most of the cohort, it was usually relatively easy to establish whether the individual was still registered with a GP in the area. Here again it was usual for the FPC to forward a letter on our behalf.

Media appeals

In order to let members of the cohort know that we were trying to find them, we actively sought coverage in local and national newspapers, TV and radio and through weekly and monthly magazines.

Interviewer detective work

When an address proved not to contain the respondent, interviewers were encouraged to enquire with neighbours, at local shops, pubs etc.

Earlier addresses

Occasionally where the latest address on our files proved unproductive we were able to trace individuals through an earlier address.

Armed forces

As the cohort is defined according to birth dates, we were able to obtain from the Ministry of Defence a list of members of the sample who were in the armed forces, to establish their current whereabouts (which often changed rapidly!) and obtain permission to approach them for interview.

National Insurance records

When all the efforts described above had failed, details of full name, date of birth and last known address were passed to DHSS for tracing through National Insurance records held in Newcastle. Once a new address was established DHSS wrote to each individual asking if they would be prepared to take part in the survey.

Table 3.2. summarises the result of this exercise, by the end of field-work. As can be seen not all the records passed to NI were processed in time to provide an address which could be followed-up.

Table 3.2 Tracing via National Insurance Records

Status	N
Passed to National Insurance	1592
<u>Returned:</u>	1410
New address given	807
NCB address on NI records	174
emigrants	6
deaths	7
no trace	416
<u>Not returned</u> (by end of fieldwork)	182

National Health Service Central Register

When an individual could not be traced through NI records (most commonly married women who had never worked), or when the NI record indicated that the individual was dead or living outside England, Scotland or Wales, details were passed to the NHS Central Register. They were able to tell us if an individual was registered with a GP and, if so, which FPC should be contacted. Additionally, in the case of deaths they provided details of the cause. Table 3.3. summarises the outcome of NHSCR tracing.

Table 3.3 Tracing via the National Health Service Central Register

Status	N
<u>Passed to NHSCR</u>	353
<u>Returned</u>	353
registered with GP	308
not registered	18
emigrants	7
deaths	5
no trace	15

Arrangements for interviewing

A detailed account of interviewer briefing procedures is provided in the NOP/SCPR methodological report. Therefore only a brief summary will be given here.

The main method of instructing interviewers was through personal briefing. In the main, NOP and SCPR organised the briefing of its own interviewers by its own research team. It was therefore essential to minimise the risk that each company would develop its own rules; or fail to learn from each other's experience.

To maximise a common approach, there were; a joint briefing of briefers prior to the briefing of interviewers; a tape recording of dummy interviews, used at all briefing sessions; a detailed 'briefing plan' to be followed by all briefers; attendance by Bureau researchers at every briefing.

In addition to the personal briefing, all interviewers were supplied with a 'pre-briefing pack', containing a copy of the questionnaire and background information about the study. They were expected to have read this and to raise any queries at their briefing session.

The third main teaching instrument was a set of detailed interviewers' instructions. A copy of these can be found in the methodological report.

The teaching process continued during the early stages of field work through reports made to interviewers on the results of checks on their work, supplemented where necessary by supervisory visits and additional field accompaniment.

4 INTERVIEWING AND TRACING BY INTERVIEWERS

Again, this section summarises aspects of the fourth follow-up which are described more fully in the NOP/SCPR methodological report.

In writing it is necessary to impose some ordering on the activities described, but the reader should not be misled into thinking that this reflects a real chronological sequence. Some of the tracing carried out by the Bureau, described in the previous section, tracing by the interviewers, and the actual interviewing were concurrent activities during the field-work period - which extended from August 25th, 1981 to February 20th, 1982.

At the beginning of this period a total of 16,028 names and addresses were issued to the interviewing companies. This represents the original target sample less those who, in response to the initial postal tracing, had indicated their unwillingness to be interviewed, or had been found to have emigrated or died. As has been described, these addresses were of varying provenance, many having been recently confirmed, or supplied, by post or other means, but a substantial proportion dating back to 1974 or earlier. This then was the starting point for the interviewers.

Contacting and interviewing procedures

Where possible, interviewers made their first contact with the respondent by telephone and made an appointment to conduct the interview. If this failed, a personal visit was made. Interviewers were instructed to make at least five visits at different days and at different times in attempts to find the respondent at home. Only if this failed was there an attempt to make contact by letter.

Once contact had been made, the overwhelming majority of cohort members were willing to be interviewed. Interviewers found that they were helped in this respect by the respondent's past relationship with the study and the Bureau, the explanatory letter from the Bureau which they carried, and the booklet 'Your Story', which described the purpose of the Study, stressed the confidentiality of any information supplied and outlined some findings from previous stages.

68% of interviews were conducted with no one else (apart from children aged under four) present. As a further means of encouraging frankness and ensuring confidentiality, no interviewer was allowed to interview anyone they knew personally, or the son or daughter of anyone known to them, however slightly.

Some difficulties were encountered with relatives or other household members refusing on the cohort members' behalf. In many cases where the interviewer subsequently succeeded in making personal contact with the individual concerned, this was found not to reflect their own wishes. Nevertheless, in 222 cases interviews were not conducted because it proved impossible to get beyond a proxy refusal.

In a few instances, interviewers needed to obtain permission from, for example, wardens of hostels to approach the respondent. For other institutions (prisons, hospitals and Armed Services establishments), the Bureau made the initial approach and sought permission for the interview.

Where a member of the cohort was discovered to be too severely handicapped to be able to answer or understand some or all of the questions, the interviewer sought the Bureau's advice on how to proceed. In the event, 324 questionnaires were completed with help from a third person, and 45 by someone other than the cohort member.

Tracing by interviewers

Interviewers found that cohort members were no longer resident at 46% of the addresses supplied to them by the Bureau. For many of these, the parents were still at this address or the new resident could provide a new address for the cohort member. In such cases, depending on its location, the interviewer would either visit the new address or pass it to her supervisor for reallocation to another interviewer.

For those where no clues were available from the current residents as to the whereabouts of the cohort member, interviewers had been provided with a check-list of other possible sources of information which they should explore. These included neighbours, friends or relatives, local shops, post offices or police stations, telephone directories, street guides, and so on.

If all such efforts - which might have been made in relation to several addresses - failed, then records were passed back to the Bureau for other avenues of tracing, described in the previous section, to be pursued.

In all, a total of 50,646 calls were made at 23,716 addresses. This represents an average of 1.5 addresses per issued cohort member, 2.1 calls per address, and 3.2 calls per cohort member.

Fieldwork quality control

The interviewing companies adopted five methods of quality control to provide help to interviewers and to ensure that standards were maintained:

- * Field accompaniment - 270 interviews (2.2% of the total) were conducted with a supervisor present. In addition, many calls were observed which did not result in an interview.
- * Early work checking - the completed questionnaires resulting from the first two interviews by every interviewer were visually checked. They were immediately informed of any mistakes and, if necessary, required to re-visit or telephone the respondent to obtain missing data. For some difficulties which were being commonly encountered, supplementary interviewer instructions were issued.
- * Continuous monitoring - all completed questionnaires were subjected to a selective visual edit designed to pick up any major errors at an early stage. Errors were reported back to interviewers and corrected - again, where necessary by recontacting the respondent.
- * Postal check - throughout the field-work period, postal forms were sent to a total of 615 cohort members in order to check that they had been interviewed and requesting some information which could be checked against interview data. Sixty per-cent of these were returned, of which 76% corresponded exactly and all but one of the remainder produced only minor, explicable discrepancies. In the one case of serious discrepancy an investigation was carried out by the company concerned.
- * Personal recall check - 311 previously-visited but unproductive addresses were selected for reissue, and at 84 of these the recall interviewer was successful in obtaining an interview. A high proportion of these had previously been unavailable (e.g. on holiday or working away from home). In a few instances, the greater experience of the recall interviewer brought about the success. In almost all cases it was apparent that the original interviewer had taken all steps possible to obtain an interview.

Final outcome

Although over 90% of successful interviews were completed by the end of 1981, non-trivial numbers were still being achieved in the first two months of 1982. However the original project time-table produced by the Bureau had envisaged field-work being completed in September 1981, so the project was some 5 months behind schedule (this was entirely due to the late start of field-work, which was in fact

completed in one month less than had been timetabled). It was therefore decided to call a halt to interviewing in order not to put the overall timetable in further jeopardy.

The attained position at the end of February 1982 is shown in table 4.1.

Table 4.1 Interview Response

	N	%
Field Sample	16,028	100
<u>Traced</u>	13,638	85.4
interviewed - full	12,504	78.3
- partial	33	
refusals	618	3.9
proxy refusals	222	1.4
deaths	22	0.1
other	289	1.8
<u>Not traced</u>	2,340	14.6
moved	1,951	12.2
no evidence of respondent	227	1.4
no information obtained	162	1.0

As can be seen, a total of 12,537 (*) interviews (78.3% of the issued field sample) was achieved - an extremely satisfactory outcome and some 500 more than had been assumed in the NOP/SCPR tender.

This figure can be represented in a number of ways. It is: 76.2% of the original target sample; 78.8% of the target sample less those known by the end of field-work to have died or emigrated; 91.6% of those traced; and 93.9% of those contacted.

* Some early cross-sectional analyses summarised below are based on a sample of 12,538. Later efforts to match 1981 survey data with that from earlier follow-ups reduced this sample size by one.

5 CODING, DATA CHECKING AND EDITING

The essential visual edit carried out on each completed questionnaire on its return to the interviewing companies has already been mentioned. In addition, prior to the delivery of the questionnaire and data on magnetic tape to the Bureau, the following tasks were undertaken by the interviewing companies: pre-coded data were punched and loaded onto the NOP Prime 400 computer; pre-coded data were subjected to a preliminary computer edit and, where necessary, corrected; a proportion of open ended questions were coded; the open-ended data were punched, loaded and edited.

NOP/SCPR edit of pre-coded data

Pre-coded data occupied 20 punched cards. After loading on to the computer, and checks for valid serial numbers, they were edited using the Quantum editing and tabulation package.

As mentioned earlier, the quantity of data collected was considerably larger than had been assumed, both in the Bureau's contract and therefore in the sub-contract. The amount of data was such that it could only be processed by NOP as two separate files. Naturally enough, therefore, the latter's financial allowance for editing did not permit adequate checks for logical consistency. Therefore many essential aspects of even the preliminary edit had to be added to what would be done subsequently by the Bureau.

The main checks covered by the NOP edit were: that data were single coded in every column; that all relevant filter questions contained a data punch; that within, but not across, sections of the questionnaire, data sequences were consistent; a number of major logical consistency checks specified by the Bureau; that values were within the permitted range, on some variables.

NOP/SCPR open-ended coding

This is described in some detail in the methodological report, and comprised five types of coding: occupation and industry; training and educational course subject and level; time durations; 'other answers' to pre-coded questions; fully open-ended questions.

These data were punched on to a further three cards, and the occupation coding checked for valid combinations. These three cards were loaded and edited in a further file with basic range checking but no checks against the pre-coded files.

Delivery to the Bureau

Pre-coded and open ended data were passed to the Bureau in a series of 14 magnetic tapes. When all coding and editing was complete, the questionnaires were passed to the Bureau. Final delivery took place in May 1982, five months later than envisaged on the original timetable.

Data management

Data from the previous stages of NCDS were held on tape in a densely and somewhat unusually packed format. Manipulation of the data was carried out with purpose-built FORTRAN programs, derived from a suite originally developed at the Central Office for Information. Although reasonable for its vintage, this system was seen as increasingly antiquated and inefficient. In particular any work on the data, whether for editing or analysis, required either reading and manipulating the entire data set, which was expensive (increasingly so as new data were added), or the creation of an extract file, which was a lengthy process and frustrating for researchers. Furthermore, because of the complexity of the data set and the necessity to use FORTRAN or the obscurely coded COI program language, even relatively straightforward analysis required a high level of programming skill, whereas the Bureau wished to move to a system whereby researchers could carry out some of their own analysis, using standard packages such as SPSS.

For all these reasons it was decided from the outset that a new data management system should be sought to handle all NCDS data, both from the fourth follow-up and earlier stages.

Therefore, in the first few months of the project, data processing staff spent a substantial proportion of their time identifying, investigating, evaluating and testing possible options. At the end of this work, the decision was taken to adopt the data base management package SIR (Scientific Information Retrieval). Although designed particularly for use with hierarchical data sets - which is not a feature of the NCDS data - this package offered all the essential data management facilities needed to overcome the problems outlined above, and was being made available on the University of London Computer Centre hardware used by the Bureau. More recently SIR's newer relational data base type facilities have proved useful for Census data.

The use of SIR required considerable preparatory work on schema definition in order to set up the NCDS data within the system before further editing could be carried out. The main tasks were:

- * The design of a structure suitable for the form of the data and expected pattern of retrievals.

- * The coding of instructions as to the input layout and format of all variables, and of checks to be performed on input - such as verifying serial numbers - and determining how and where variables were to be stored in the data base structure, and certain transformations such as character data to numeric.
- * Labelling of variables and their values.

Work on these stages for conversion of earlier NCDS data was begun soon after the decision to adopt SIR and included generating much of the SIR Schema by FORTRAN programming . Equally, it was possible to begin some of this work for NCDS 4 once the questionnaire was finalised. Other aspects, such as the value labelling of those open-ended variables which were to be coded by the Bureau, could not be tackled until the completed questionnaires were with the Bureau and the appropriate coding frame developed in the light of the data.

Open-ended coding at NCB

As previously described, a substantial proportion of open-ended questions had been coded by NOP/SCPR. However, there remained a number of questions, particularly on literacy and numeracy and within the health section of the questionnaire, which were coded either by members of the NCB research team or by temporary staff under their supervision.

Both because of this exercise on open-coded variables to be done at the Bureau, but also because NOP/SCPR delivered pre-coded and open-coded data on separate tapes, the two types of data had to be merged before they could be edited together. Thus a complete file of pre-coded and open-coded data was not available until the third stage of the six stages of editing described below.

Data editing at NCB

The data passed through six rounds of editing at the Bureau. The first was essentially a repeat of the computer-editing of the pre-coded data which had been done by NOP/SCPR. The second to the fifth stages were carried out on the fourth follow-up data, including open-ended data from the third stage onwards. The sixth and final stages took place when these data were merged in a single SIR data-base with those from the previous NCDS follow-ups.

Stage 1 - checked that all items contained valid codes and values and that major filters within the questionnaire had been followed. Although this had already been done by NOP/SCPR, it was necessary to repeat it - both as a check on their work and so that the checking routines were incorporated within SIR.

Stage 2 - comprised a substantial number of consistency checks, specified by the research team. These fell into two sets. The first, though large in number, were relatively straightforward checks of the consistency of answers to different questions. The second checked the consistency of all dates and time sequences within the questionnaire, and was much more complex, exploiting the capabilities of the SIR retrieval language to the full.

At each stage, details of any inconsistencies found were passed to the research team, who determined any changes necessary to the data and/or the edit specification.

Stage 3 - repeated the checks carried out in stages one and two in order to establish that changes had been implemented correctly and that further errors had not been introduced by the changes made. In addition it was at this stage that open-ended data were included for the first time, so further checks were made for consistency between them and pre-coded data.

Stages 4 and 5 - were the final edit runs to ensure that all changes had been correctly implemented and no new inconsistencies introduced. The fifth round was necessary for open-coded data only.

At this point the cross-sectional editing was complete, and the fourth follow-up data ready for extract files to be created and analysis to begin. The original timetable had not identified this particular target-date (only that for the completion of the longitudinal merge was estimated), but an interim timetable produced in January 1982 foresaw this point being reached by no later than December that year. In the event, analysis of the 23-year data was able to begin on clean data at the start of June 1983 (of course preparatory analysis of unedited, or partially edited, data had started well before then).

The longitudinal merge

Before a full longitudinal data-set, incorporating the information from all stages could be ready for analysis, it was necessary to: incorporate additional Census-based data (see below); transform and label in SIR format the data from earlier NCDS follow-ups; merge all data sets; and carry out some longitudinal editing.

These activities required a further 8 months work, and were completed in February 1984, some eight months later than estimated originally. Below, the main reasons for the timing difficulties are identified and discussed but, firstly it is important to complete the picture of the data now available at the Bureau and on the ESRC Data Archive. In addition to the coded data from all stages of the study up to the age of twenty-three, these comprise 1971 and 1981 Census-based data, and derived variables.

1971 Census data

All the data collected in the course of the fourth follow-up, and indeed in the earlier stages, relate to the circumstances of characteristics of the individual or his or her family or household. The need for information which provided some insight into the characteristics of the neighbourhood in which the individual was living had been felt for some time.

During the fourth follow-up, the opportunity came to rectify this, through the availability - via CACI International - of variables derived from the Small Area Statistics of the 1971 Census and linked with individual postcodes. In the course of the 23-year interview details were obtained of each respondent's current address and their address at the time of the 16-year follow-up in 1974.

Post-codes were requested and, after considerable effort was invested in checking and completing these, they could be used to link with three types of variables:

- * other area identifiers, such as enumeration district, constituency, local authority and region;
- * ACORN type - a classification of enumeration districts into 36 residential neighbourhood types, derived from a cluster analysis of 40 Census variables. ACORN neighbourhood types can in turn be classified into just 11 ACORN groups;
- * A number of ratios (e.g. immigrants as a proportion of all residents, owner-occupied households as a proportion of all households) for each enumeration district and local authority.

All the above have been added to the NCDS data-base and supplied to the Data Archive. Further details of the 1971 Census data may be obtained from the NCDS User Support Group.

1981 Census data

Although data related to the 1971 Census are the most relevant to respondents' addresses in 1974, clearly place of residence in 1981 is more appropriately described by 1981 data. However data from the 1981 Census were not available until near the end of the period covered by the fourth follow-up grant and certainly could not be added to the data-base in time to be used in analysis by the end of 1984. Nevertheless it was decided to acquire data from the 1981 Census, to be linked to 1981 addresses and available as a future resource within the Bureau's data-set and on the Data Archive.

The variables obtained from the 1981 Census differ from those from the 1971 Census. Further details may be obtained from the NCDS User Support Group.

Derived variables

Even the most cursory examination of the 23-year interview questionnaire would make it apparent that much of the data generated would not be useful in their raw form. For analysis, new variables would frequently need to be created. Most were extremely complex, being computed from twenty or more of the original questionnaire items.

A small number of these, such as 'age of completing full-time education', 'economic status at interview' and 'highest education qualification obtained', were predictable, even before the detailed planning of analysis began, as likely to be needed for common use. The majority could be identified only as analysis was planned and proceeded.

All such major derived variables, created in the course of analyses which have been reported to sponsors in working papers have been documented, added to the data-base, and supplied to the Data Archive. Further details may be obtained from the NCDS User Support Group.

Documentation

Apart from the questionnaire itself and associated coding frames, the main descriptor of the data generated under this grant takes the form of a 'data dictionary'. This substantial document contains each question from the questionnaire, and other variables collected or generated, identifies its item number in the data-base and provides, separately for each sex, a frequency distribution of responses.

The data dictionary includes all aspects of the data which have been described above, i.e. pre-coded and open-coded variables, derived variables, and 1971 and 1981 Census-based data.

A note on the timetable

This historical account of the work carried out from questionnaire design through to the preparation of a merged data-base containing all NCDS data has identified a number of points at which the actual progress of the project was significantly delayed in comparison with the timetable drawn up by the Bureau when the grant was first awarded.

The major delay occurred at the very beginning, in that final agreement on the questionnaire was reached only in August 1981 rather than January and thus fieldwork began some seven months late. The interviewing sub-contractors succeeded in recouping some of this time (partly because the original timetable had allowed for a one month suspension of field-work during the Census period) and fieldwork was completed and all data delivered to the Bureau only five months later than foreseen.

The Bureau's timetable had allowed a total of eighteen months from this event to the point where a merged longitudinal data-base would be available. In the event this required twenty-one months altogether which, in conjunction with the earlier delays, resulted in this point being reached in February 1984, instead of June 1983, as had been anticipated.

Although it was possible to begin analysis, on the twenty-three year data alone, well before that date, this had inevitable consequences for the quantity and nature of the analysis which could be undertaken and reported in the period remaining to the end of the grant in December 1984.

It is possible to identify the three main reasons why the data preparation took some three months longer than had been anticipated at the beginning:

- * As has been mentioned, the final version of the questionnaire generated some 50% more data than had been budgeted for. With the addition of the 1971 Census data, close to twice as much data as foreseen had to be handled, edited and set up in the SIR data-base.

Early in the period of intensive data preparation the Bureau submitted a request to the study's steering committee to transfer, within the overall budget, some resources to enable an additional member of data processing staff to be appointed. This was not agreed.

- * Although the SIR package had been thoroughly investigated and, to the extent possible, tested, the Bureau were the first users of the system for a data set of this scale, certainly at the University of London Computer Centre and possibly in this country. A number of difficulties were encountered which could not have been predicted either from the documentation or from testing with small data-sets. On several occasions, problems had to be referred back to the SIR agents in this country. More recent versions of the package contain suitable amendments and improvements. It is some compensation that future users of SIR may have benefited from the Bureau's experience.

- * It was also during this period that the University of London Computer Centre phased out its CDC machines and introduced the new IBM Compatible AMDAHL. This was of course known in advance, though not at the onset on the study, and the Bureau was able to prepare to transfer its work in good time. However, CDC and IBM machines are so totally different that the amount of work involved was considerable. There was inevitably some time needed for familiarisation both by Bureau staff and those at the

Computer Centre, and some teething problems. Furthermore, not all users planned as well ahead as did the Bureau and there were significant periods when access to the machine was difficult and turn-around slow, because of the number of users attempting to transfer their work at the last minute.

6 RESPONSE PATTERNS AND THEIR IMPLICATIONS

Although a generally satisfactory response rate of 78 percent was achieved for the 23-year interview, any less than perfect response rate introduces the possibility of bias in the responding sample. Thus the question arises of whether those who were interviewed at 23 were representative of the original cohort and, thereby, more generally of young people of about that age in this country.

This issue has been explored in two ways. For most surveys, particularly those which set out to provide information on a sample which is in some sense nationally representative, it is possible to compare distributions on key variables with those available from other sources. In the case of the NCDS fourth follow-up such comparisons have been carried out with information derived from the 1981 Census.

The second method exploits a possibility which is available only to longitudinal studies, that is to compare respondents and non-respondents to the most recent stage of the study in terms of the data obtained for them at earlier stages.

Of course this latter method does in turn depend on the extent to which response to those earlier stages was representative of the original weeks births. Extensive analyses on this question have been reported previously (Goldstein, 1976), and show that those with data up to the age of 16 differed little from non-respondents in terms of major variables such as parents' occupation and education and physical measures of the subject. There was, however, some indication of a slight under-representation of some disadvantaged groups. Discrepancies, although statistically significant, were small. For example, 3.4 percent of the original cohort were born illegitimate, but 3.2 percent of those with data at 16; 3.2 percent had, at the age of eleven been ascertained as in need of special education, but of those with data at 16, 3.1 percent had been so ascertained at eleven.

Census comparisons

Comparisons with Census data for this purpose are less than straightforward. It was not possible, because of timing and cost, for OPCS to produce tables for the people born in the NCDS week. A 10 percent sample would have been cheaper, but still too late for use within the current grant period, and in any case lacking the statistical power to detect even quite large discrepancies.

Comparisons were therefore made with information published for one-year age-groups. There are then further problems to be considered:

Firstly, although NCDS had attempted to include new immigrants, born in the same week, up to the 16-year follow-up, no attempt was made to include in the 23-year survey those who had entered the country since 1974. Such people would of course be included in the Census.

Secondly, definitions of key variables were not always the same for the Census and the NCDS.

Thirdly, all Census information was obtained in April, 1981 so that Cohort members were between four and nine months younger at that time than they were at interview. Comparisons therefore had to be with a national extrapolated population who were the same age at Census as cohort members were at interview.

Fourthly, some of the major variables considered, for example student status or unemployment, vary significantly with the time of year, so that even the notional population would not be directly comparable with the real cohort interviewed later in the year.

Taking these problems into account as far as possible, NCDS figures tally very closely with what would have been expected from the Census in terms of the sex ratio and the proportion married. The proportion of cohort members who were students also appears to be representative, once allowance is made for the number of foreign students who would be included in the Census.

Findings for the other two variables - proportions economically active and unemployed - are slightly less reassuring. For men the proportion economically active matched closely, but about 3 1/2 percent more NCDS women were economically active than in the Census. However, this contrast between NCDS and the Census is very similar to that between the Census and the General Household Survey.

In fact the proportion unemployed in NCDS at the time of interview was close to the figure for the Census figure for the same age group. However seasonal variation in unemployment rates would have led to the prediction that the NCDS proportion should have been higher, perhaps by a factor of 10 percent. However, definitional issues would be particularly influential here.

Comparisons with data from previous follow-ups

In the absence of a very severe overall bias, the technical and definitional problems in Census comparisons make firm conclusions on any more subtle contrasts difficult. Therefore the comparison of respondents with non-respondents in terms of their earlier characteristics provides a more powerful and direct check on representativeness.

A total of 56 variables was selected from earlier stages of NCDS, in order to compare respondents and non-respondents at twenty-three. Chi-square tests were calculated to indicate the statistical significance of any difference between two groups, and percentage biases were calculated as follows:

$$\frac{(\text{achieved proportion} - \text{possible total proportion})}{\text{possible total proportion}} \times 100$$

Because of the numbers involved in the comparisons, even very small contrasts can reach statistical significance at the 5 percent level. Therefore, when differences between respondents and non-respondents failed to reach 0.1 percent significance level they can be reasonably regarded as trivial. Differences between the two groups were not significant at the 0.1 percent level for the following variables:

- * whether father stayed at school beyond the minimum age
- * height at age seven
- * whether ascertained as handicapped at age seven*
- * height at age 16
- * number of 0-grades obtained by age sixteen (Scottish only)
- * whether school attended at sixteen was maintained or independent

The majority of variables examined produced differences between respondents and non-respondents which were statistically significant at the 0.1 percent level, but nevertheless relatively small, with a percentage bias of less than 10 percent. Full details and tables can be found in the relevant working paper (No. 25), but to give an indication of the level of differences being found, table 6.1 shows the obtained distribution for those interviewed at twenty-three and the expected distributions (i.e. for all the target sample with information on the variable concerned) for a selection of these variables.

The pattern revealed in table 6.1 is quite clear and consistent. Those who were successfully interviewed at twenty-three tended to be slightly more often from middle-class backgrounds and to differ in other characteristics which could be predicted from that alone: their school attainment is higher; they come from smaller families; and they grew up in slightly better housing circumstances. However, all these biases, though certainly present, are small.

* Although not significant at even the 5 percent level, the numbers in this comparison were small, and the percentage bias large.

Although this pattern is generally reassuring about overall characteristics of those interviewed, the remaining variables not yet considered, i.e. those showing percentage biases greater than 10 percent, demonstrate a continuation of the pattern found at sixteen: that certain small 'disadvantaged' sub-groups within the cohort are more severely under-represented.

Table 6.1 Response patterns - selected variables with less than 10 percent bias

Variable		Interviewed	Target
<u>Sex:</u>	% male	50.1	51.5
<u>Social Class at 11:</u>	% non-manual	36.0	35.1
<u>Social Class at 16:</u>	% non-manual	34.8	33.7
<u>Height at 11:</u>	% < 140 cm	42.4	45.7
	% > 150 cm	15.8	14.6
<u>Reading score at 11:</u>	% 0 - 10	18.1	20.0
	% 22 - 35	20.8	19.7
<u>Maths score at 16:</u>	% 0 - 6	21.2	19.9
<u>School type at 16:</u>	% comprehensive	58.2	58.6
	% grammar	11.2	10.5
	% sec.mod	21.6	21.6
	% independent or DG	6.1	5.8
<u>Family size at 16:</u>	% one child	7.1	6.9
	% 4+ children	37.9	39.2
<u>Tenure at 16:</u>	% owner-occupied	51.3	49.7
	% public rented	40.0	41.0
<u>Overcrowded at 16:</u>	% > 1.5 persons per room	(30.7	31.9) check !
<u>Lone parent at 16:</u>	% lone parents	13.1	14.3

Table 6.2 contains figures for four such groups which were found to be under-represented at twenty-three: those for whom at least one child in the family had been in receipt of free school meals; those whose mothers had reported feelings of financial hardship; those who had been ascertained as in need of special education because of a

handicap; and those who had, at some time by the age of sixteen, been in public care. Table 6.3 shows in more detail the findings on a fifth group, found to be the most severely under-represented at twenty-three - young people from immigrant and ethnic minority backgrounds.

Table 6.2 Response patterns - variables with more than 10 percent bias

Variable		Interviewed	Target
Any child receiving free school meals (at 11)	% yes	9.2	10.4
Feelings of financial hardship (at 11):	% yes	9.8	11.0
Ascertained handicapped (at 11):	% yes	2.6	3.2
Whether in care (at 16)	% yes currently	0.8	1.1
	% yes, in past	2.5	2.8

As can be seen, although the proportional differences in table 6.2 are relatively large, this is to some extent a function of the small size of the group under consideration. Although, similarly, young people from ethnic minority backgrounds form only a very small proportion of the total cohort, they are missing from those interviewed at twenty-three to a quite troublesome extent.

Three measures of immigrant status and ethnicity have been examined: mother's place of birth; father's place of birth; and a more subjective assessment of ethnic group made by the doctor in the course of the 16-year medical examination. Distributions for the main, very broadly categorised, minority groups on each of these measures are given in table 6.3.

Although the absolute contrasts in table 6.3 may not appear large, they do show that young people of Caribbean origin are under-represented at twenty-three by a factor of about one third, those from the Indian sub-continent by about one quarter, and those from Ireland by about one tenth.

An alternative formulation is that, whereas the overall response rate was 78 percent, for immigrant groups (based on father's place of birth) it was: Caribbean - 56 percent; India/Pakistan - 67 percent; Ireland - 74 percent.

Table 6.3 Response patterns - parents' place of birth and ethnic group

Variable	Interviewed	Target
Mother's place of birth:		
% Ireland	3.1	3.4
% India/Pakistan	0.6	0.8
% Carribean	0.6	0.9
Father's place of birth:		
% Ireland	3.4	3.8
% India/Pakistan	0.7	0.9
% Caribbean	0.7	1.1
Ethnic Group (doctor's assessment)		
% Afro-Carribean	0.7	1.1
% Indian/Pakistani	0.5	0.7

Conclusion

In general, the responding members of this cohort are somewhat more middle-class and more educationally successful than the original population. As one would therefore predict, and the Census comparisons tentatively confirm, they appear somewhat less likely to be unemployed than the general population.

However, the extent of these biases is not such as to be likely to invalidate general analyses of the total cohort.

Certain, relatively small, disadvantaged sub-groups are increasingly under-represented, and this is particularly severe in the case of young people from ethnic minority backgrounds.

This last under-representation will certainly need to be born in mind in all general statements about the cohort. Furthermore, the low response rate from ethnic minority groups means that, firstly, those who did respond are unlikely to be representative of young immigrant adults in general and, secondly, that the numbers of such people within NCDS, and with data, are small. Therefore specific analysis of NCDS data intended to produce findings on these groups are unlikely to be of value.

7 SUMMARY AND OVERVIEW OF FINDINGS

The next few sections of this paper comprise brief summaries of the findings contained in the working papers which have been submitted to the sponsors. They are necessarily considerably abbreviated in comparison with these papers and cannot capture the full detail of the work carried out. Anyone with a special interest in a particular topic is likely to wish to consult the original papers. A limited number of copies of these papers are available from the NCDS User Support Group at the address given on the cover.

The preparation of working papers has continued until the very end of the grant period. There are, therefore several completed papers whose titles are included in Appendix 2, but the contents of which could not be incorporated into this paper.

8 FAMILY FORMATION

Marriage, cohabitation, breakdown and reconstitution

At the time of the 23-year interview a total of 46% of the cohort were married, and a further 6% were currently cohabitating (i.e. were living as husband and wife).

Table 8.1 compares the distribution of current partnership status for NCDS women with the figures obtained in the General Household Survey for the same year (OPCS, 1983) for women aged 20-24. NCDS figures are broadly in line with expectation, in that women in NCDS fall within the latter half of the age-group covered by the GHS figures, and one would therefore expect more to have married.

Table 8.1 Partnership Status - GHS and NCDS

	GHS (women aged 20-24) in private households %	NCDS (all women) %
Cohabiting	6	7
Married	46	54
Single	44	34
Divorced, separated, widowed	3	3

Some flavour of the variety of experience of the NCDS Cohort members can be seen in Figure 1. In addition to the 46% currently married a further 4% had been married, but the marriage did not survive to the time of the interview. A similar proportion had lived with someone for at least 6 months but were no longer doing so.

In addition, some 18% of those who were, or had been, married had lived together first (not necessarily for as long as 6 months).

Figure 1 The nature of first partnerships and their status at interview

Total cohort n=100% 12538	Ever partnered n % 7012 56	First partnership started with cohabitation n % 2182 31	Did not marry cohabitee n % 1104 51	Cohabitation broke down
				n % 464 42
				Cohabitation survived to interview n % 640 58
				Marriage broke down n % 113 10
			Married cohabitee n % 1078 49	Marriage survived to interview n % 965 90
		First partnership started with marriage n % 4830 69		Marriage broke down n % 388 8
	Never partnered n % 5526 44			Marriage survived to interview n % 4442 92

Three working papers (Nos. 9, 20 and 23) have been particularly concerned with the comparative characteristics and circumstances of those who married and cohabited, and of those who married or lived with someone at a relatively early age.

Comparison of marriage and cohabitation

By the time of interview, 59% of women and 36% of men had been married, and approximately 9% of each sex had cohabited. Thus, over half the men, but less than a third of the women had never had a partner, as defined.

The General Household Survey found that almost half of women aged 18-44 who were cohabiting had previously been married. As would be expected for the younger age-group represented by NCDS, a considerably lower proportion, one fifth of those cohabiting at twenty-three, were divorced or separated.

Current cohabitations tended to have begun more recently than current marriages. Thus, sixty per-cent of the cohabitees started living together when the cohort member was 22 or older. Correspondingly, marriages were two and a half times more likely than current cohabitations to have begun before the age of twenty. It is not surprising, therefore, that twenty-six percent of cohabitees had at least one child in their care, compared with 47% of those who were married.

The distinction within the cohabitees between those who had and had not been married previously is already becoming apparent, even at age 23. Of those who had been married, half had children in their care, compared with less than a quarter of the never married. Furthermore, of those cohabitees who already had children, 10% were expecting another child at the time of the interview - only marginally lower than the comparable figure for the married. Only 3% of those cohabitees without children were expecting a child when interviewed.

As table 8.2 shows, cohabitation is more likely for those in professional and intermediate occupations, particularly for women. However, yet again there is evidence of two distinct sub groups within the cohabitees, with a very different occupational background found among those cohabiting who had previously been married.

As might be expected, there was little difference between men who were cohabiting and married men in the proportion economically active (i.e. working or seeking work), whereas cohabiting women were more likely than married women to be economically active. Married women were, however, more likely to be in part-time work, and less likely to be unemployed.

Table 8.2 Partnership status and occupational group

	Prof. & Intermed.	Other Non man.	Skilled Manual	Other Manual	N= 100%
<u>Women:</u>					
Married	14	53	10	22	3331
Cohabiting - never married	28	42	10	20	363
Cohabiting - separated, divorced, widowed	10	41	17	31	86
<u>Men:</u>					
Married	15	15	49	21	2080
Cohabiting - never married	23	17	40	19	294
Cohabiting - separated, divorced, widowed	-	7	63	30	27

In the now familiar pattern, cohabiting women who had not been married previously contained the highest proportion economically active and in full-time employment.

In summary, the most striking findings in relation to marriage and cohabitation were two-fold.

Firstly, it was possible to identify significant contrasts between those who were cohabiting and those who were married. The former tended to be older at the start of their current partnership; to be childless or have fewer children; to have professional or intermediate occupations; to be more economically active and more often in full-time paid employment; and were less likely to be expecting their first child at the time of interview.

However, this overall comparison masks the identity of two distinct groups of cohabitees. Those who had never been married had the smallest families, the highest overall social position and the highest proportion in full-time employment. On the other hand the separated, divorce or widowed now cohabiting had the largest families, the lowest overall social position, and the least likelihood of full-time work. These contrasts were specially marked among women.

Partners of Cohort Members

As the NCDS cohort contains approximately equal numbers of men and women, it might be thought that the characteristics of their partners would simply replicate what has been found for the cohort members. However, the cohort is by definition extremely restricted in age range, and partners will have a far wider spread of ages. In particular of course, women tend to take partners who are older than themselves, and the reverse is true for men. Table 8.3. provides a broad indication of the age distribution of partners.

Table 8.3 Partnership by age and sex of partner

	19 or under	20-29	30-39	40+	Average age
<u>Male partners of:</u>					
Married women	(0.2)	88	11	1	26
Cohabiting women	1	72	24	3	27
<u>Female partners of:</u>					
Married women	3	96	1	-	22
Cohabiting men	14	79	7	1	23

The greater difference between the age of NCDS women and the average age of their partners as compared with that between NCDS men and the average age of their female partners reflects again how, at least with respect to partnership, 23-year old women have progressed further in the life cycle than men.

Given these difference in the ages of cohort members and their partners, questions therefore arise as to the extent to which they differ in other characteristics, and whether the partners exhibit the same pattern of differences as was described above for the cohort members themselves i.e. between the married and cohabiting, and within the cohabiting.

As we have seen, in Table 8.3, married partners tend to be more alike in age than cohabiting partners. Male cohabitees are on average older than husbands, and female cohabitees include more younger women than are found among the wives of cohort members.

Eight per cent of current partners had been married previously and six per cent had children (although one fifth of partners with children had not been previously married). Previous marital status of the partner and whether he/she had had children was related to the

sex of the cohort member and the status of the current partnership in ways that can be broadly predicted, given what we have seen previously about age differences and contrasts between those cohabiting and the married.

The proportion of cohabitees who had been married before was over four times as great as the proportion of spouses who had been married before, and five times as many cohabitees had children from a previous relationship. In all, 19 per cent of cohabiting partners had been married and had had children, compared with just three per cent of spouses.

In general, the patterns of association between the characteristics of partners and the nature of the current partnership (i.e. marriage or cohabitation) are similar to those for the cohort members own characteristics reported above. Thus, cohabitees were more likely than spouses to have been in professional or intermediate occupations. Female cohabitees were more likely than wives to be economically active and employed; male cohabitees were more likely than husbands to be unemployed and seeking work.

As with the cohort members, these overall characteristics conceal two distinct groups within the cohabitees, particularly according to previous marital status and whether or not there were children. Cohabitees of those who had not been married - who in turn were the couples most likely to be childless - had the highest overall social position, in addition to being more likely to live with a cohort member with a professional or intermediate occupation. Cohabitees of previously married cohort members had the largest number of children and the lowest social position.

Early Partnership and Parenthood

Specific analyses have investigated the characteristics and circumstances of those who entered their partnership at an early age. The vulnerability of early marriages is well known: the General Household Survey, for example, reports that of all marriages in the years 1970-1974, seven per cent were divorced six years later, but nine per cent of those who had married when aged less than 20. Separations showed a similar pattern.

A direct comparison with NCDS is not possible, but the relative fragility of early relationships is shown by the fact that, of first partnerships (i.e. marriages and cohabitations lasting at least six months) which began when the cohort member was aged less than twenty, 26 per cent did not survive to the time of the interview. A more informative analysis of the relationship between age and partnership breakdown is described in a later section.

Some three-fifths of the total cohort had experienced either marriage or long-term cohabitation by the time of interview (48 per cent had been married, 10 per cent had cohabited only). Of these, 40 per cent

of the women, and 20 per cent of the men had entered into their first such partnership before 1978, i.e. when they were aged nineteen or younger.

Table 8.4 provides a more detailed breakdown of such early partnerships and identifies their nature and relationship with current partnership status.

Table 8.4 Nature of first partnership by year started by sex

Nature of first partnership	Women		Men	
	Percentage of all first partnerships	Percentage starting before 1978	Percentage of all first partnerships	Percentage starting before 1978
Current marriage	63	35	62	15
Cohabitation with current spouse	14	48	14	26
Current cohabitation	8	14	10	6
Former marriage	7	77	4	45
Cohabitation with former spouse	2	79	1	76
Former cohabitation	7	53	9	38

As can be calculated from this table, 86 per cent of women and 81 per cent of men married their first partners, and of these 42 per cent of the women and 20 per cent of the men started living with their partners whilst still in their teens. Those who did not marry their first partner were less likely to have entered that partnership before they were 20. Only a small proportion of cohabitations which were still continuing at the time of interview had started before that age.

As might be expected, there is an association between social position and early partnerships, in that those whose current or most recent job was manual were more likely to have started their partnership before the age of twenty than those in non-manual occupations. This relationship was more marked for women than men, and for those married than those cohabiting.

Among men who married before they were twenty, about twice as many as the later-married men were unemployed at the time of interview. Relatively few married women were unemployed and seeking work but those who married younger were less likely to be in full-time work and more likely to be in house-work full-time.

Cohabitees showed a similar pattern, although female cohabitees were more likely to be economically active, and unemployment was more common among those whose cohabitation started before the age of twenty.

Since partnerships and parenthood are not unrelated, it is not surprising that early parenthood exhibits similar patterns to those found for early partnerships. One quarter of the cohort were parents by the time of the interview, and, of these, 30 per cent had had a child while still in their teens.

Table 8.5 relates early parenthood to family situation at the time of interview.

Table 8.5 Current family situation by year of birth of first child by sex

Situation at 23	Women		Men	
	Percentage of all parents	Percentage first child before 1978	Percentage of all parents	Percentage first child before 1978
Single without partner	7	44	5	36
Separated, Divorced Widowed, without partner	6	69	6	33
Married	80	32	84	15
Single & Cohabiting	4	30	4	22
Separated, Divorced or Widowed & Cohabiting	2	5	2	21

Of course, the overwhelming majority of babies were born to members of the cohort who were married at the time of interview. nevertheless, even within this group, 24 per cent of first children born before 1978 were born in the year before the current marriage took place, or earlier.

Those whose first stable partnership had ended by the time of interview were more likely to have had their first child before the age of twenty. Indeed, among women, the majority of those whose first partnership had ended had become mothers before that age - 70 per cent of those whose marriage had ended, and 55 per cent of those whose cohabitation had ended.

Almost two-fifths of those who became parents without ever having had a stable partnership had their first child before 1978.

The association between early parenthood and economic acitivity and status at the time of interview, was similar to that described above for early partnership. That is: both sexes were more likely to be in manual occupations; men who had become fathers at an early age were consistently more likely to be unemployed; and young mothers were, at 23, more likely to be working, particularly part-time.

9 PARTNERSHIP BREAKDOWN

As was seen in Figure 1, 56% of the cohort had lived with a spouse or cohabitee, and 14% of first partnerships had broken down by the time respondents were interviewed.

The questions which have been addressed (in Working Paper no. 28) concern the relationship between partnership breakdown and such factors as the nature of the partnership, the respondent's characteristics and the partner's characteristics.

Answering such questions is not so straightforward as it might first appear, because of the effect of time. If, for example, it were the case that cohabitation and marriage each lasted an identical average of five years, but the average starting age for cohabitation were eighteen and that for marriage twenty, we would therefore find that at the time of the twenty-three year interview many more cohabitations than marriages had broken down. To conclude that cohabitations broke down faster than marriages would obviously be quite wrong!

To overcome problems, of this type, 'survival' analysis, based on actuarial techniques, is used (Anderson et al. 1980). This provides month-by-month estimates of the proportions (of partnerships, in this case) 'surviving' for a given duration. Allowance is made for 'censored' observations, that is in this case partnerships which did not break down in the month in question, but are known to have survived to the end of it because the interview date fell during that month. Survival 'curves' are produced for each of the characteristics under consideration, and differences between them can be tested with a chi-square statistic.

Full tables, grouped to give year-by-year survival rates, in relation to the eleven variables examined are provided in Working Paper no. 28, and only a brief summary is given here:

- * Cohabitations broke down faster than marriages.
- * Fifteen per cent of those who married had lived together first. It appears that the 'optimum period' for pre-marital cohabitation is between one and two years.
- * Partnerships lasted a shorter time, particularly for male respondents, if the cohort member's partner had been married before.
- * Partnerships which started whilst the respondent was still in his or her teens broke down more rapidly than those which started later.

- * For men in particular, an age difference between partners of more than five years was associated with more rapid breakdown. Of course, such a difference will mean that the female partner was either extremely young when the partnership started, or considerably older than the male respondent.
- * The shorter the period for which the couple had known each other before they started living together, the more rapid the breakdown of their partnership.
- * Forty-two per cent of partnerships involved children. The failure rate for childless couples was faster than for couples who were bringing up children.
- * Being already pregnant at the start of the partnership was not associated with breakdown among female members of the cohort. However, the rate at which the partnership broke down was faster for men whose partners were not pregnant before the couple started living together than for men whose partners were pregnant at the time.
- * Rate of breakdown was associated with the age at which the respondents had completed their full-time education. For men, the longer their education had been, the faster their rate of partnership breakdown. Among women, those who had stayed in education until they were nineteen or older showed the fastest rate of breakdown, but the slowest failure rate was among those who had finished their education at eighteen, rather than sixteen as was the case for men.
- * For both sexes, those whose current or most recent occupation at the time of interview fell in the highest (i.e. professional or intermediate) or lowest (i.e. semi or unskilled manual) social class groups showed the fastest rate of breakdown.
- * Respondents who owned, or were buying, their accommodation at the time of interview showed a relatively slow rate of breakdown, whereas the fastest rates were among those who were privately renting and in the miscellaneous tenure group such as those living with parents, flat-sharing or lodging. Of course, as this refers to current tenure it must be borne in mind that the tenure may be a function of the breakdown, rather than the other way round.

Interpretation of the above patterns is not altogether straightforward. The most powerful factor, of those examined, related to partnership breakdown appears to be its nature, i.e. whether marriage or cohabitation.

Many of the other relationships described above may simply reflect the characteristics of those who choose the relative impermanency of cohabitation. Certainly those characteristics found to be related to breakdown mirror many of the differences between cohabiting and married couples described in the previous section.

Reconstituted families

Of those cohort members who had experienced partnership breakdown, two thirds were living without a partner at the time of interview. Five per cent had returned to their original partner, and 28% had entered into a new partnership. As can be seen from table 9.1, a new partnership was more likely for those who had been previously married, but this is to be expected as marriages tended to start at an earlier age with, consequently, more time for a new partnership to have established.

Table 9.1 Nature of first partnership by current partnership for those whose first partnership had broken down

First partnership	Current partnership (at interview)			
	Returned to same partner	New marriage	New cohabitation	No partner
	%	%	%	%
Women:				
Marriage	11	14	21	53
Cohabitation	2	16	10	71
Men:				
Marriage	2	4	22	71
Cohabitation	-	7	10	83

In all, ten per cent of partnerships current at the time of interview consisted of a couple, one or other of whom had experienced the breakdown of a previous partnership. Of these, some two fifths were caring for children. However, the number of 'blended' families (containing children of each of the couple and a previous partner) is small - 57 altogether, which is 21% of the reconstituted families and 2% of all child-rearing families. Nevertheless, we see the beginnings, at a relatively early age, of an increasingly common situation.

10 LONE PARENTHOOD

The increasing prevalence of lone parenthood is well established. The General Household Survey (OPCS 1981) has shown that the proportion of families which consisted of a lone parent and at least one child rose from 8% in 1971 to 12% in 1981. Furthermore, earlier NCDS work has shown that such cross-sectional surveys severely underestimate the extent of lone parenthood. At least half as many children again experience being brought up by only one parent at some time up to the age of sixteen. On the other hand very few children are in this situation continuously from birth to sixteen (Essen and Lambert, 1977). The material disadvantages of such families have been described in NCDS and elsewhere (e.g. Ferri, 1976; DHSS, 1974).

For the purpose of the twenty-three year interview, lone parenthood was defined as a situation in which a member of the cohort had had to bring up a child in the absence of the partner (spouse or cohabitee) for a continuous period of one month or more. Specifically excluded were periods where a partner's absence was due to work demands, ill-health, holiday or an educational course.

By this definition, just ten men were lone parents at the time of the interview, and a further eight had had a previous period of lone parenthood. Therefore the analyses carried out (reported in Working Paper no. 8), and summarised here, are for lone mothers only. (It is worth noting, however, that, at twenty-three, men represent only 3% of the lone parents, compared with the GHS figure of 12 1/2% for all age-groups).

Just over four percent of all women in the cohort were lone parents at the time of the interview: this represents 13% of all women with children. A similar proportion (3.7% of all women) had experienced a previous period of lone parenthood, but were not in that situation currently.

For the majority of lone mothers at the time of interview, the current period of lone parenthood was the only one they had experienced. However one in five had experienced at least one earlier period, and this was more likely for those women who had previously been married than for those who had never married.

Although based on a more restricted age range NCDS findings correspond with those from the General Household Survey, in that lone mothers were likely to have fewer children than two-parent families. However, the numbers of children varied with the mother's marital status as is shown in table 10.1.

Table 10.1 Number of children of lone and partnered mothers by marital status

Marital & Family Status	Number of children		
	One	Two	Three or more
	%	%	%
Lone mothers:			
never married	88	11	1
separated, divorced or widowed	57	32	11
Partnered mothers:			
never married	73	20	7
separated, divorced or widowed	52	36	11
married, living with husband	58	35	7

On the other hand, whereas GHS reports lone mothers as slightly less likely to be in paid employment than those with a partner, this was not the case for the 23 year-olds in NCDS. Twenty-five per cent of lone mothers were working, and a further 12% were unemployed and seeking work, compared with 18% and 8% of partnered mothers. As found in the GHS, lone mothers were more likely to be working full-time, but in NCDS we find that this varied according to marital status. Lone mothers who were separated, divorced or widowed were, like partnered mothers, more likely to be working part-time than full-time.

The occupational group of the current or most recent job differed little overall between lone and partnered mothers. Again, however, among the lone mothers, those who had never married differed from the previously married, as shown in table 10.2.

Table 10.2 Occupational group of lone and partnered mothers

	Prof.& Intermed.	Other Non-manual	Skilled & Semi-skilled Manual	Un- skilled Manual
	%	%	%	%
Lone mothers:				
never married	12	41	44	2
sep., div. or wid.	4	36	54	6
All partnered mothers	8	44	44	4

Half the lone mothers had given birth to their first child while still in their teens. This was particularly likely among those who were divorced, separated or widowed, of whom 11% had had a child when aged seventeen or less, and a further 58% when eighteen or nineteen.

Two-thirds of all mothers said that they wanted to have more children, and the figure for lone mothers (64%) was little different. The proportion of those who were separated, divorced or widowed who wanted more children was a little lower (59%), but the difference was largely explained by those saying they were 'uncertain', rather than being clear that they did not want more children.

The separated, divorced or widowed lone mothers were also less likely to say that they wished to marry (again). Those who had never been married and were caring for a child alone were as likely to say that they wished to marry (70% did so) as those mothers who were living with partners, though not married.

The exploration of the circumstances of lone mothers carried out so far is extremely preliminary, and there is scope for substantial further analysis, particularly of the length of the period of lone parenthood and factors associated with that, and of the relationship between lone parenthood and the cohort member's family experiences as a child.

11 EMPLOYMENT

Handling career history data

An important part of the information collected in NCDS IV about employment are the records of careers between the ages of 16 and 23. These include the start and end dates of part and full time jobs, apprenticeships, training courses, government special schemes, post school education courses both full and part time, spells of unemployment and spells out of the labour force. Techniques for the processing and analysis of career histories like these are generally not well developed. The NCDS IV data are particularly difficult to use, and much effort has been devoted to establishing a viable data base for their analysis. The variables resulting from this work have been deposited in the ESRC Data Archive.

Problems with NCDS IV data arise from several sources.

- * The coded data contain no single record in which the start and end dates of all phases in a career are entered consecutively. Although a "diary" of this nature was used as an aid to interviewing, it was not itself coded. Instead, the dates of events of different type are recorded in different sections of the questionnaire, and sometimes in different formats. This has two consequences. Firstly, there is no simple way of establishing whether any particular phase preceded, followed or overlapped with any other phase in a different sequence of events. Secondly, there is no simple way of checking that the dates as recorded are consistent with each other.

- * Competition for space in the questionnaire dictated that details should be recorded of a maximum of four jobs, training courses, post-school education courses, spells of unemployment and spells out of the labour force. This restriction was particularly limiting for jobs, where as a consequence 15.5% of the cohort have gaps in their history. Furthermore, the concept of "fill-in time" was used in the uncoded diary to record spells of working in which no one job lasted as long as one month, or jobs done by former students while waiting to take up another already offered them, but no record of fill-in time was made in the coded data. It follows from both these restrictions on what was coded that for a significant proportion of the cohort there is no simple way of computing such basic measures as total time in employment or total time economically active, and that incomplete information and inaccurate dates often cannot be distinguished from each other.

- * Because of pressure of space in the questionnaire, certain key variables, instead of being the subject of simple direct questions, have required elaborate and error-prone derivations. For example, to establish age at first leaving continuous full time education no less than 29 variables had to be used, while computation of current economic status required the use of 44 variables. One of the lessons of NCDS IV has been that the time and computing resources needed to program and check derivations like these far outweigh any saving made by shortening the questionnaire.

The MSC has now funded the Institute for Employment Research at Warwick University to code the previously uncoded diaries of those respondents who exceed the limit of no more than four events of any one type, and thus establish a more complete data base. This exercise is undoubtedly of value but problems will still remain, not least of which will be reorganising the data for the approximately 85% of the cohort whose diaries are not being coded so that they have the same format as the data from the coded diaries.

Work undertaken at the NCB to establish a viable data base for the analysis of event histories has fallen into two parts: creating a number of summary measures of employment history; and establishing the sequence of events in employment, education and training history of each respondent.

Computation of summary measures of employment history

In response to a request from the DE, a number of summary measures of employment history have been computed, e.g. the proportion of time between first leaving full time education and age 23 which was spent in employment; the duration of the longest single spell of unemployment. These are fully described in Working Paper 16. Because of the problems outlined above, some of these measures were computed in several versions incorporating assumptions of varying strength about the nature of missing information and leading to differing degrees of missing information on the computed variables. By dint of intricate computing missing information on a number of variables was reduced to manageable proportions, but even so, some variables have a disproportionate amount of missing information for minimum age school leavers, frequent job changers and women.

Working Paper 16 also reports means and standard deviations on the computed measures, graphs the distributions on several of them by sex, and describes some of their statistical properties.

The summary variables for employment history data have been used in a number of working papers, both on employment topics and as background variables in other studies.

Establishing the sequence of events

A new data set has been created which establishes the sequence and overlap of phases in the employment, education and training history of each respondent. The data set is described in a short paper circulated to the steering committee outside the working paper series, entitled "Economic activity variables for each month from May 1974 to interview" (March 6th 1984).

The data set consists of 93 variables recording the particular combination of events encountered in each of the 93 months between May 1974 and the end of NCDS IV interviewing in January 1982. Each value of these variables represents a particular combination of up to three events selected from the following list: full time job, part time job, apprenticeship, day or block release training course, other part-time training course, TOPS, other full time training course, full time education, part time education, unemployment, government special scheme, out of the labour force.

This data set is valuable not only for retrieving the career histories of individual respondents, but much more importantly because it simplifies enormously the computation of variables which involve the sequence or overlap of phases in the career. Without the data set it would require complex and lengthy programming to compute variables such as economic status at marriage, employment status six months after leaving a TOPS course, total time in full time education after age 16, total months out of the labour force after the birth of the first child, and so on. The data set is thus crucial if the longitudinal nature of NCDS is to be fully exploited.

The computation of the new data set built on the extensive work already undertaken for checking dates in the data editing phase of NCDS IV; additional and fairly complex programming was nevertheless required. A number of rules were adopted to fill in information for months where no activity was encountered, which reduced missing information to small dimensions. The application of these rules introduced some errors of sequence into the data, but it is estimated that these errors affect less than 1% of the sample, and that among the cases involved distortions of sequence occur only within a narrow range of months.

The end product of the diary coding currently being done at the Institute for Employment Research will also be a data set from which it is easy to establish the sequence of events. This data set will however contain no information about training, apprenticeships or part time education courses.

The short paper circulated to the steering committee which was referred to above uses the new data set to plot the proportion of the cohort in full time education, in full time employment, in part time employment, unemployed and out of the labour force in each month from

May 1974 to August 1981. These plots show the combined effects of the cohort's increasing age and of national economic trends. The data set is also used in Working Papers 24 and 31.

Destinations

Working Paper no. 24 explored the economic activities of men and women at yearly intervals from first leaving full-time education until age 23. Comparisons were made between those who first left full-time education at different ages.

The numbers who left in the academic years of their sixteenth, seventeenth and eighteenth birthdays were large enough for stable trends to be established. Numbers for subsequent years were smaller and findings correspondingly more tentative.

Two in five men who left school at sixteen and one in five who finished full time education at seventeen were in apprenticeships one year later. Many fewer women went into apprenticeships. About 4% of each sex were following non-apprenticeship training courses, but from the age of eighteen women were more likely to be on full time courses and men more likely to be on day or block release. Among both seventeen and eighteen-year old leavers, about one in ten of each sex were on a training course one year after leaving.

Apart from a growing number unemployed, male sixteen-year old leavers showed a very stable pattern of full-time employment up to the age of twenty-three. Some seventeen year old leavers and a rather larger proportion of eighteen year old leavers returned to full-time education, a tendency which was more common among men than women.

In June, 1976 at the age of eighteen, those who had left education at seventeen had unemployment rates very close to those who had left at sixteen, but in all subsequent years the additional year of education appeared to give a degree of protection against unemployment. At the age of nineteen, the unemployment rates for male eighteen-year old leavers and sixteen-year old leavers were very similar, and the rate for females who had left at eighteen was close to that for seventeen year old leavers. In subsequent years the unemployment rate for eighteen-year-old leavers fell relative to the rate for sixteen-year-old leavers. However for both sexes, leaving education at eighteen as against seventeen gave no advantage in terms of their chances of avoiding unemployment, until 1981 at age twenty-three when the unemployment rates in the two groups did diverge.

For women who left school at sixteen, the proportion out of the labour force increased at a constant rate each year until twenty-three. In contrast, very few eighteen-year-old leavers left the labour force before the age of twenty-two. In both groups there was a small but increasing proportion in part-time employment. Seventeen year old leavers showed a pattern intermediate to those who left at sixteen and eighteen.

Among those who left education at nineteen, sex differences were similar to those observed in earlier-leaving groups. There was little difference between eighteen and nineteen-year leavers in the proportion receiving non-apprenticeship training in their job, but the latter were less likely to follow part-time education courses. There was some evidence that, among those who left education at twenty-one, men were more prepared than women to face a period of unemployment in order to obtain the type of work they wanted, in particular a job with training. Unemployment was even higher one year after leaving for those who left education at twenty-two (though not as high as among sixteen year leavers at the same age). However, men were no more likely than women in this group to be following a training course.

The Self-employed

The number of self-employed workers in this country has increased rapidly since 1979. By June 1983 self-employed persons formed nearly 10% of the employed labour force, and according to the Labour Force Survey, in 1981 nearly 30% were under thirty-five. However, little is known at a national level about the kind of people who enter self-employment or the benefits which they get from their work. Working Paper no. 10 attempted to fill in some of this missing information, in relation to the young self-employed as found in NCDS.

In all, 521 people (4.2% of all respondents) reported that they were self-employed at the time of the twenty-three year interview. A further 71 (0.6%) who were not currently in employment had been self-employed in their most recent job.

In order to approximate the distinction between entrepreneurs and labour-only sub-contractors, for analysis the self-employed men were further categorised into those with and those without employees. The total number of self-employed women was too small to divide in this way - self-employed men outnumbered women by seven to two.

Young self-employed workers were concentrated in just a few industrial divisions, compared to employees of the same age. Two fifths of self employed men without employees were working in SIC Division 5 (construction) and a fifth in Division 6 (distribution, hotels and catering and repairs). Divisions 9 (other services) and 0 (agriculture, forestry and fishing) were also important. The major employment of self-employed men without employees was in SIC Division 6 (two-thirds); with a further fifth in each of Divisions 5 and 0. Self-employed women were even more concentrated than men, with half employed in Division 9 and over a quarter in Division 6. Within industrial divisions self-employed people were very much concentrated within particular occupations.

The self-employed, particularly those with employees, were more likely to be working in a family firm, and to have fathers who themselves had been employers or own account workers. They were also more likely to have received an inheritance of 500 pounds or more, and the mean value of any inheritance was larger for the self-employed than for employees.

Ninety per cent of those with employees said they had business assets, compared with 60% of those without employees. Although one third of both groups could not, or would not, estimate the value of their assets, two-fifths of men with employees said they had assets of 10,000 pounds or more. Those in family firms were most likely to have assets.

The self-employed generally worked longer and more variable hours than employees. Again, this was most marked for those who employed others. Although self-employed women included a number who worked particularly long hours, the general trend was for them to work shorter and more variable hours than female employees: 37% of self-employed women considered that they worked part-time, compared with 16% of female employees. Long and variable hours for the self-employed often entailed regularly working unsocial hours. Nevertheless they were as likely as employees to say that their hours suited them.

Among men only, the self-employed tended to have left education earlier than employees. Ten per cent of self-employed men with employees and 8% of those without employees held qualifications above A-level standard, compared with 19% of employees.

Whereas there was little difference in the proportion having completed apprenticeships among the men, more than twice as many self-employed women as employees had completed apprenticeships. Nearly all such apprenticeships were in hairdressing.

As a group, the self-employed were much more likely to have had several jobs, and job changing was greater for men without employees than for men with employees. To a certain extent this was a function of their being concentrated in industries particularly prone to high turn-over, but even within industrial divisions the self-employed were significantly more likely than employees to have had several jobs. In addition to the most obvious explanation, that the self-employed work in sectors where casual labour patterns are most common, it is also possible that frequent job changing was a symptom of dissatisfaction with working as an employee, to which self-employment was the attempted solution.

There was little evidence in the NCDS data of unemployment being a spur to self-employment - perhaps not surprisingly as any redundancy compensation received by this age is hardly likely to be substantial.

In fact, self-employed women and self-employed men with employees had less experience of unemployment than employees. Self-employed men without employees had had significantly more unemployment, probably reflecting once again their location in the more casualised sectors of industry.

On a number of dimensions the self-employed were more satisfied with their jobs than employees, and the self-employed with employees were the most satisfied. Differences were most marked with respect to how they saw their prospects, the way abilities were used, and the interest and skill involved; and smallest with regard to pay and physical conditions. Self-employed women and men without employees were, however, less likely than employees to feel 'very secure' in their job.

In assessing the most important factor in choosing a job, self-employed men rated 'the chance to be your own boss' most highly, followed by 'good pay' and 'job security'. Employees selected the same three factors, but in reverse order. Self-employed women, on the other hand gave priority to 'convenient hours and conditions', followed by 'the chance to be your own boss', with 'good pay' and 'a friendly place to work' joint third. Female employees, like men, chose security first, followed by hours and conditions, pay, and 'the need to use your head'.

Apart from those in family firms, only 13% of the self-employed were employing others, and might therefore have set up new businesses which created new jobs. The picture may change as they become older, but on present evidence any hopes for a growth in jobs due to the efforts of young entrepreneurs are extremely limited and lie in service rather than manufacturing industries.

Unemployment

The purpose of working paper no. 21 was to assess whether different summary measures of unemployment tapped different dimensions of unemployment, experienced by different types of young people and leading to different employment outcomes at 23. As the first stage, five measures of unemployment experience were taken (number of spells of unemployment; total months unemployed; months unemployed as a percentage of total months economically active; length of current spell of unemployment; length of first unemployment spell before first job), and the overlap in membership of the top decile on each variable examined. Further analysis investigated other characteristics of those in the top decile on each of the five measures, and compared them with respondents who had never been unemployed. This analysis controlled for sex and for the length of time which women had spent out of the labour force.

In general, the overlap among the first four measures, particularly, and not surprisingly, the three which summarise unemployment history over the full seven year period from 1974 to 1981, was high. By contrast the association between unemployment before the first job and the remaining four measures tended to be low. A spell of unemployment of more than one month before the first job was of little value as a predictor of the length of the current unemployment spell (for men) or of whether the respondent was currently out of work (for women).

Risk of unemployment bore a complex relationship with length of education because, on the one hand, the longer a young person had been in the labour market the greater the period for which he or she was at risk of accumulating spells of unemployment; on the other hand, the deepening recession since 1979 increased the vulnerability of those first entering the labour market in that year or later.

In a number of respects, those experiencing a month or more of unemployment before their first job were more like the never unemployed than those with high scores on the other unemployment measures. This applied to the kind of jobs they were in at twenty-three, their likelihood of having completed an apprenticeship or other training, experience of downward mobility, qualifications, health problems and patterns of marriage and fertility. Those who left school at 16 and then experienced unemployment stayed in their first job on average for considerably longer than other young people with a history of unemployment. They were also considerably less likely to continue to change jobs. These findings, however refer to a time when economic conditions were very different from those of today, when many young people could afford to look around and choose their jobs. It is unlikely that a study of current school leavers would produce similar results.

An important finding was that those who had changed jobs frequently were also likely to have experienced the most unemployment. This is contrary to what was found in a study of this relationship, mounted ten years earlier when unemployment was at a considerably lower level (Cherry, 1976).

In the economic circumstances of 1981 skilled workers in engineering trades were particularly vulnerable to unemployment. It was found that, compared with those who scored highly on other measures of employment, those with the longest period of current unemployment at twenty-three were of a slightly higher social class, had better qualifications, were more likely to have completed an apprenticeship and were less likely to have changed jobs several times.

Among women who had left school at the minimum age, those with children were considerably more likely to have experienced high levels of unemployment and long periods of current unemployment.

Further analysis would be necessary to establish the sequence of child-birth and unemployment and the nature of the relationship between unemployment, marital breakdown and lone parenthood.

Work histories

Working Paper 31 examines several aspects of the work histories of members of the cohort. The first section uses the criterion of at least two years continuous full time employment in one job to assess the proportion of the cohort who had fully entered the labour market by age 23. Eighty-three per cent of men and 72 per cent of women met this criterion. The proportion varied with age of first leaving full

time education, from 95 per cent of men and 79 per cent of women who left in the academic year of their sixteenth birthday, to 43 per cent of men and 44 per cent of women who left at age 21. Among women, 17 year old leavers were more likely to have fully entered the labour market than those who left a year earlier. It was only in the 16 and 17 year old leaving groups that men were significantly more likely than women to have fully entered the labour market: in older leaving groups women were as likely as men to have spent at least two years in one full time job by the age of 23.

The second part of the working paper classifies members of the cohort according to the major features of their work history, including the number of jobs held, whether there had been any unemployment, and whether any time was spent out of the labour force. Sex differences were in the expected direction, but were much more substantial among 16 and 17 year old leavers than among later leaving groups. The majority of all except those in the oldest leaving groups who had been continuously employed had changed employers, but unemployment was also much more common among those with more than one job than among respondents with one job only. The majority of women who had spent some time out of the labour force had also held at least two jobs. Returning to full time education after a break was most common among the 18 year old leavers, particularly men.

In the third part of the paper the variables whose derivation is explained on page 45 above are used to construct career profiles which take account of the sequence of spells of employment, unemployment and time out of the labour force. Twenty-two profiles are identified; for the purposes of analysis these are condensed to 13. Table 11.1 shows the distribution among these profiles of men and women in the three largest leaving groups.

The distinction of spells of unemployment and time out of the labour force according to the stage in the respondent's career at which the spells occur reveals some important differences between groups. Among men only 3% of 16-year-old leavers had a profile of initial unemployment followed by continuous employment, compared to 8% of 18-year-old leavers and 14 per cent of those who left at age 21.

Table 11.1 Summary career profile by date of first leaving continuous full-time education and sex

Summary career profile	Men			Women		
	Left full time education			Left full time education		
	Before Sept '74	Sept '74 - Aug '75	Sept '75 - Aug '76	Before Sept '74	Sept '74 - Aug '75	Sept '75 - Aug '76
	(16) %	(17) %	(18) %	(16) %	(17) %	(18) %
Continuous employment	42	40	29	25	31	29
Employment followed by unemployment	3	1	1	1	1	-
Employment interrupted by one spell of unemployment	12	8	5	6	4	3
Employment followed by a spell out of the labour force	-	-	0	14	9	4
Unemployment followed by employment	3	6	8	2	7	10
One spell out of the labour force followed by employment	6	9	6	4	4	8
Other mixtures of employment and unemployment	9	7	5	4	2	3
Other mixtures of employment & time out of the labour force	2	2	2	10	6	5
Mixture of employment, unemployment and time out of the labour force	4	4	4	16	11	9
No job ever	-	-	-	1	1	1
Continuous full time education, return to full time education, or government scheme	7	14	26	5	10	15
Two or more consecutive months with missing information	4	7	13	6	8	11
More than five state changes	7	2	2	6	4	1
TOTAL (BASE N)	100 (4001)	100 (627)	100 (636)	100 (3561)	100 (858)	100 (882)

- Less than or equal to 0.5% but greater than zero.

This undoubtedly reflects the prevailing economic circumstances at the time they entered the labour market. However, significantly more of the 16-year-old leavers than of later leaving groups experienced unemployment at a later point in their career. Spells of unemployment immediately on entering the labour market tended to be shorter than spells occurring later in the career, and their mean length increased with age of first leaving full time education. In contrast, unemployment spells occurring later in the career were longer on average for 16 and 17-year-old leavers than for older leaving groups.

Any time that men spent out of the labour force tended to follow immediately their departure from full-time education. This was also a common pattern for women who left full-time education relatively late, but for women who left at 16 or 17 spells out of the labour force more usually followed a period of employment.

Finally the qualifications and family formation characteristics of men and women with different work histories were compared, and the nature of the first job and of the current or last job examined.

Men who had been continuously employed were more likely to have GCE qualifications and also to have gained a qualification on an apprenticeship or training course than were men whose work history had been interrupted by unemployment. Men who left education at 16 were more likely to have gained such a qualification if they had had only one job. Women, in contrast, were more likely to have gained a qualification on an apprenticeship or training course if they had changed employers. Female 16-year-old leavers who had spent some time out of the labour force were worse qualified than those who had been unemployed but continuously economically active, though they were not as badly qualified as women who had both been unemployed and spent time out of the labour force.

Though there were substantial differences between groups of women with different work histories in the proportion who were married, the differences in the proportion with a child were much greater. The large majority of those who had spent time out of the labour force had a child, compared with only a handful of women who had been continuously employed. However women who had had some unemployment but had not spent time out of the labour force were also a little more likely to have a child than women who had been continuously employed.

Between their first job and their current or last job, male 16-year-old leavers who had been unemployed and had two or more jobs showed a net movement from skilled manual to semi-skilled jobs.

The largest net upward movement among male sixteen-year-old leavers into professional, semi-professional and managerial jobs was among those who had been continuously employed but had changed employers:

this was also true of older leaving groups and women. Women 16-year-old leavers who had had more than one employer and had spent time out of the labour force showed marked net downward mobility into semi-skilled jobs; this was especially so if they had also experienced unemployment. Comparing men and women who had been continuously employed in one job, it was found that men were significantly more likely to have been promoted; this was true of sixteen, seventeen and eighteen-year-old leavers. Women were much more concentrated both within particular industrial divisions and within certain types of occupation than were men. Among female 16-year-old leavers who had been continuously employed in one job the largest single concentration in the first job was in SIC Division 8 (banking etc.). For those who had two or more jobs, the largest

single concentration in the first job was in SIC Division 6 (distribution, hotels and catering, repairs) - this was true whether or not they had spent time out of the labour force or been unemployed. By the time they were 23 a number of the women who changed employers had moved out of SIC Divisions 6 and 8 and into SIC Division 9 (other services). Although the largest single first employer for all women 18 year old leavers was SIC Division 9, those who were continuously employed in one job were also commonly found in Division 8 while a number of those with more interrupted work histories had started their career in Division 6. The latter also showed a marked net movement between their first job and their current or last job at age 23 away from Division 6 and into Division 9, while more of the women who had had two or more employers but no unemployment also moved into Division 8. Analysis of OPCS Occupation Order showed that all groups of women tended to move out of selling jobs as they got older. Women who had spent time out of the labour force showed a net movement out of clerical and related occupations and into personal service and semi-skilled manual occupational. The women who were most likely to move into managerial and professional and related jobs were those who had been continuously employed but had changed employers at least once.

Because the men were spread much more evenly among industrial divisions and occupation orders, the relationship of these with work history is not easily summarised. The data suggest a net movement for 16 year old leavers who had changed employers out of manufacturing jobs and into jobs related to construction and mining, transport and management. This held true regardless of whether there had been any unemployment. For 18 year old leavers the single largest concentration of first occupations was in the clerical and related fields, but there was a large movement by age 23 into professional, semi-professional and managerial occupations - much larger than the corresponding movement for women. This was especially true of the group who had changed employers but experienced no unemployment.

Analysis to date of the work histories of the cohort is no more than exploratory: there is much more to be done.

12 EDUCATION AND TRAINING

In common usage the distinction between education and training is often unclear. Within the NCDS interview, and therefore in this report, the following definitions were adopted:

Training was carried out within a job either on or off the employer's premises, and did not have to be for any qualification. To be counted, a training course had to entail at least 100 hours or 14 days attendance at a college, training centre or skill centre. TOPS schemes were included even though they would be in conjunction with employment.

Education was not carried out within a job, and had to be for a qualification.

General experience

The cohort's general experiences of education and training have been described in two papers - Working Paper No. 7, and a paper specially prepared for the 1984 British Educational Research Association Conference ("Routes to qualifications: evidence from the National Child Development Study" by Richard Ives and Lois Cook).

Only 30% of all respondents had undertaken no training or education courses since leaving school. Thirteen per cent had taken both education and training courses, one third had taken a training course only and one quarter an education course only. Men were more likely than women to have been on a training course only. Men were more likely than women to have been on a training course, and the reverse was true for educational courses. As would be expected, those who left school at the minimum age were most likely to have taken no subsequent courses. Younger leavers were more likely to have experienced training than further education, but continued education was the more common experience for those who did not leave school until the age of eighteen.

Similarly, the likelihood of any training or post-school education was related to qualifications obtained at school. Over two-thirds of women and over one third of men with no O-levels did no further study, compared with one fifth of women and one tenth of men with O-levels. Among those with O-levels, the numbers of women and men taking educational courses after school were very similar, but men were much more likely to have received some training (presumably mainly apprenticeships).

Qualifications

Table 12.1 presents the distribution of the highest post-school qualifications obtained by members of the cohort.

Table 12.1 Highest post-school qualification

Highest post-school qualification	%
None	49
GCE/CSE/SCE	5
RSA	4
City and Guilds	13
ONC/HNC/TEC/BEC	6
Professional/Diploma	7
First degree or above	10
Other	7

The subject of study for the highest qualification varied substantially by sex. Over two-fifths of women were studying subjects in the 'social administration or business' category. Although this was also the most common category for men, the figure was lower, at 29%. The next two most common subject groups for men's highest qualifications were 'engineering' (16%) and 'science' (15%), but for women they were 'education' (11%) and 'health' (10%).

Of course most of the courses considered above had been completed by the time of interview. Six per cent of the cohort were still on an educational course at the time of interview. In terms of the qualifications being aimed for and subjects of study, current courses were similar in nature to the highest qualification courses, except that a significantly higher proportion was in preparation for a professional qualification.

Routes

One of the most striking findings from this stage of NCDS has concerned the variety of pathways by which people obtained their qualifications. Even among those who obtained relatively high qualifications, surprisingly many did not follow the

conventionally-expected route of staying on at school to eighteen and then proceeding to further or higher education.

To explore this further, a typology of routes has been developed, defined as below, and distributed as indicated.

1. Those who did follow the more conventional route, and have at least five years of full-time, post-sixteen education (8% of the cohort).
2. Those who went into employment, but subsequently left their jobs to go back into full-time education (2%).
3. A residual group of those who left school at the age of seventeen (3%).
4. Those who took secretarial and office study courses (5%).
5. Those who did not undertake further full-time study after leaving school, but embarked on non-apprenticeship training or an employer-sponsored education course (19%).
6. Those who went straight from school into an apprenticeship (19%).
7. Those who left school to work, but took some part-time education (2%).
8. Those who left school at the earliest opportunity and had no subsequent education or training (26%).
9. The small number who had never been employed and had undertaken no post-school courses (0.6%).
10. Those with degree-level qualifications who do not fit into any of the other categories (4%).

Of course the above description is not exhaustive, and 11% of the cohort do not fit into any of these categories.

As might be expected, the first group, with at least five years of post-school education, came disproportionately from higher non-manual backgrounds (based on the father's occupation when the cohort member was sixteen), those who left school early and had no further education or training were much more likely to come from the semi- and unskilled groups, and the 'apprentices' were a little more likely to have a father in skilled manual work.

The routes followed were closely related to the aspirations which these same people had expressed at the age of sixteen. For example, almost half of those who, at sixteen, had said they wished to continue with full-time education had obtained a degree or teaching qualification by the age of twenty-three compared with just 2% of

those who, at sixteen, had said that they did not wish to study further.

Previous attainment, whether measured by the NCDS tests administered at sixteen or public examinations performance at that age was a strong predictor of subsequent routes. Just over a third of 'apprentices' had at least one O-level (or O-grade in Scotland) at grade C or better or a CSE grade 1. This applied to less than one in five of those 16-year leavers with no post-school education or training, and, as would be expected, virtually all those who did continue their education for at least five years.

Turning to the end of the route, that is their position at twenty-three, although those without any education or training post-sixteen were more likely to be unemployed at twenty-three than those who had undertaken training and/or education, the variation among groups was relatively small. The lowest proportion unemployed was found for those who had taken secretarial courses, perhaps partly explained by the higher proportion of this group doing housework.

Over the total period since leaving school to the time of interview, the group most likely to have experienced unemployment were those who had left employment to return to education. It is not yet possible to tell whether their unemployment preceded and was therefore perhaps the impetus to, their decision to return to education.

In general, the relationship between the route followed and the social class of the current or most recent job at twenty-three was as would be predicted. On the other hand, 7% of those who continued their education for at least five years were in manual occupations, and 18% of the 'apprentices' and 39% of those who finished their education and training at sixteen were in non-manual occupations. This last figure is rather misleading as it will include many young women working in shops or in unskilled office jobs.

Unsuccessful Courses

A substantial part of the twenty-three year interview was designed to elicit information on educational courses which have been attempted by cohort members, but not successfully completed. Working Paper no. 27 examined the characteristics of those people with this experience, and of the courses which they had failed to complete.

In all, 17% of respondents had undertaken or were currently undertaking at least one education course. Of these, 5% were still on their first course, 69% had obtained a qualification and had not been unsuccessful in any of their courses, 10% had obtained a qualification but had also experienced an unsuccessful course, and 17% had only experienced an unsuccessful course. In other words, 10% of the entire cohort had failed to complete successfully at least one course (one in ten of these had done so more than once).

More than a third of unsuccessful courses were for school-type qualifications (but attempted since leaving school): 18% were for O-levels and 16% for A-levels. Sixteen per cent of unsuccessful courses were for first degree. The subjects studied on unsuccessful courses differed little from those on courses which were completed successfully, although slightly fewer unsuccessful courses were in education or health and slightly more in science. However, compared with what they said about their highest qualification courses, respondents were less likely to have taken unsuccessful courses with a job in mind. Understandably, unsuccessful courses were less likely to be thought to have improved the respondent's job prospects.

Given the nature of unsuccessful courses, it is not surprising that a smaller proportion were full-time. They were also more likely to be located in a further education or technical college and less likely to be at university. Such courses were less likely to attract a grant, but relatively few respondents gave financial problems as the main cause of their failure to complete a course.

Forty-four percent of relevant respondents had continued their unsuccessful course to the point where they took examinations, but then failed all or some of those. Among those who did leave a course before its end, the most commonly offered reasons for this referred to aspects of the organisation or content of the course. Table 12.2 summarises the reasons given, and reveals some interesting sex differences.

Table 12.2 Reasons given for leaving a course before it's end

Reason given for leaving course	<u>Men</u>	<u>Women</u>
	%	%
Finance	5	6
Personal and family	11	22
Job-related	18	11
Exams failure	16	5
Course-related	26	30
Other reasons	23	35

Although the majority of those who experienced an unsuccessful course attempted no subsequent courses, a significant proportion (one in five) did go on to attempt a further course and were successful in

it. Most (82%) of these went on to obtain a qualification at broadly the same level as the one which they had previously failed to complete, but for only a small number (13%) was this the same qualification and in the same subject.

Characteristics of those with unsuccessful courses

People whose fathers had been in manual occupations when the respondent was sixteen were slightly more likely to have experienced an unsuccessful course than those from non-manual backgrounds (30% as against 26% of those who had undertaken any educational course).

There is some indication of the role of motivation in that failure to complete was more likely among those who, at sixteen, had said that they did not wish to undertake any further study after leaving school.

As might be expected, the unsuccessful tended to have lower reading test scores at the age of sixteen. However, this was largely a function of failure being more likely on lower-level qualifications. Those failing to complete were not of lower ability, as measured by the reading test, than those who had been successful in courses at the same level.

People who had failed to complete were more likely to be unemployed at the time of the 23 year interview. Although, in general, women were less likely to have experienced an unsuccessful course than men, women who were, at age 23, currently out of the labour force were particularly likely to have failed to complete a course. For both sexes, the extent of all unemployment experienced since leaving school was also positively related to having had an unsuccessful course.

Of course, those in non-manual occupations at twenty-three were much more likely than those in manual occupations to have undertaken an educational course, but the latter were also more likely to experience failure, particularly among the semi- and unskilled groups.

Literacy and Numeracy

A relatively simple analysis of literacy and numeracy problems reported by the twenty-three-year-olds has produced some quite dramatic findings (Working Paper no. 1 - published by the Adult Literacy and Basic Skills Unit).

One in ten of those interviewed reported some problems with reading, writing or spelling since leaving school. This is considerably higher than would be expected from the often-quoted claim that there are two million functionally illiterate adults in this country. This would correspond to about 6% of the adult population.

Reading problems are likely to be the most severe in their impact, and these were reported by 4%, most of whom said they also had problems with writing or spelling.

Literacy problems were reported more often by men (12%) than women (7%).

Twenty-nine per cent of those with literacy problems said that these caused difficulties in their everyday lives.

Problems with number work were reported by a smaller proportion (5%) and equally by both sexes.

The overlap in those reporting literacy or numeracy problems was smaller than might be expected, and 14% of the cohort said that they had problems with one or other of these basic skills. Of these, one in five said that their lack of such skills prevented them from doing something they would like to do - usually referring to work-related activities such as finding work, getting a better job, getting promotion, or being able to do work-related training or education courses.

Very few of those with difficulties had been to classes or courses for help with these: one in ten men and one in twenty women with literacy problems; one in ten men and one in forty women with numeracy problems. Those who said that their everyday life was made difficult were more likely to have received such help, but the proportion was still low - one in five in the case of reading problems.

Careers advice

The role of the careers service in guiding young people into the labour market has often been seen as controversial. Some (e.g. Roberts, 1977) have argued that people do not 'choose' occupations, but rather take what is available: that 'opportunity structure' is a more useful concept than 'occupational choice'. On the other hand others (e.g. Watts et al.) have emphasised the important functions of the careers service in a developmental model of career choice.

Before turning to the NCDS findings on this issue (reported in Working Paper no. 17), their context, in terms of the timing of the cohort's experience, should be emphasised. Firstly, they left school in the mid-seventies when youth unemployment, though rising, was still relatively low, with a consequently greater range of employment opportunities than are now available. Secondly, although 98% of members of NCDS were in schools where there was a member of staff who had particular responsibility for careers work, this area of the curriculum was not so developed as it is today, and many such teachers had had little or no training in careers work (Lambert, 1978).

Because of problems of recall and definition, the temptation should probably be resisted of reaching too firm a conclusion about the impact or memorability of the careers service from the fact that less than half of the cohort remembered having received any careers advice at all (at school or subsequently) by the age of twenty-three. It is

known from the NCDS 16-year data that a larger proportion than this were said by their parents and teachers to have received careers advice by that age, and more could be expected to have done so subsequently.

Certainly, among those who did say that they had received careers advice, the careers officer was considered the most influential by many (26%). Advice from school teachers was also considered influential by many, being the source mentioned second-most frequently as the most influential (by 20%).

Those who had left school at the minimum age and the less-well qualified were less likely to report having had any advice, but the careers office or the careers service in school was the most important source of advice for a higher proportion of those who were less qualified. Ratings of the influence of teachers, however, were reasonably constant, irrespective of the level of people's qualifications.

People living in Scotland, particularly women, were less likely to say that they had received careers advice than those living in England or Wales. Those who, at 23, were in jobs of relatively high status were more likely than others to report having had careers advice.

The careers service is perhaps most likely to be influential in relation to an individual's first job. Indeed, 23% of cohort members had heard of their first job through one of the careers agencies. This was not, however, the most frequently mentioned avenue: 29% said they had heard about their first job from a friend or relative.

People hearing of jobs through the careers office seemed to stay in those jobs longer than others. This may be explained by the greater proportion of apprentices in this category; as may be the finding that although jobs obtained through the careers office lasted longer, they were more likely to end in redundancy.

Not surprisingly, early school leavers were more likely to hear of their first job through the careers service than those who left later.

Unexpected educational success and failure

A further working paper (no 30) was in preparation at the same time as the final report was being written, and therefore could not be summarised properly. It is concerned with that small but significant number of people whose educational qualifications were very different to what would have been predicted from their attainment up to the age of sixteen (as measured by NCDS tests).

Interestingly, those whose qualifications were unexpectedly good had not done particularly well in their school-based 'sixteen plus' examinations.

Rather, they had then gone on to obtain qualifications of an equivalent level, or higher, through other, largely work-related routes.

It does not appear that those who had obtained better or more qualifications than would be expected from their tested attainment could be predicted by measures of the characteristics of the secondary schools which they had attended.

13 APPRENTICESHIPS

Working Papers nos. 15, 18 and 26 describe the characteristics of apprenticeships, uncompleted apprenticeships and the current labour market experience of the apprentice-trained. Unlike other sources of data on apprenticeships, NCDS has information on men and women, covers the whole range of trades in which young people enter apprenticeships, covers all Great Britain, and includes those who drop out of an apprenticeship or change their trade.

Completed apprenticeships

There is no consensus as to exactly what constitutes an apprenticeship, and therefore no precise definition which could be applied to the NCDS data. By self-report, a total of 15% of the cohort had completed an apprenticeship or were still on one at the age of twenty-three. Three-quarters of these had entered their apprenticeship when aged eighteen or less and in their first job. Not all these apprenticeships entailed signing formal articles. About four in five in fact did so, and this showed little variation by trade.

Those whose apprenticeship had started later differed little from the young school-leaver apprentices in terms of trade or the qualification obtained through the apprenticeship. However, the former's apprenticeships were shorter in duration, and less likely to be based on formal signed articles. Only one in ten of all apprentices were women, but this proportion doubled for those starting later.

A more detailed examination was undertaken of the majority group whose apprenticeship had started before eighteen and in the first job. Not only did men outnumber women in this group, as would be anticipated, by ten to one, but the range of trades in which young women completed their apprenticeships was much more narrow: 82% were in hairdressing. Only 5% (i.e. 7 women in the entire cohort) were in what might be considered non-traditional female trades.

The commonest trade for men was motor mechanics but this accounted for only 11% of young, first-job apprenticeships.

Most apprenticeships were with private companies (78% of men; 80% of women). Predictably, for most women these were small, one branch firms; no doubt mostly hairdressing salons. Men varied more in their experience: 15% were in small single-branch firms and a third were in firms with over 500 employees.

Of all NCDS cohort members who first entered employment under the age of eighteen, those going into apprenticeships comprised only 3% of females, but over a quarter of males. The apprenticeship route was particularly likely for those young men whose first jobs were in the metal goods industry, energy or construction.

The importance of informal methods of recruitment was suggested by the fact that more than one third had first heard about their apprenticeship through a relative or friend. Indeed, in about half these instances, the person concerned had made the first approach to try to get the job for them.

Although only a preliminary analysis of prior qualifications has been carried out so far, it does appear that about half of these young apprentices did not have at least one O-level or CSE grade 1. Possession of O-levels was not related to the likelihood of the apprenticeship having formal articles.

Almost all apprenticeships (but somewhat fewer of the women's) entailed some off-the-job training at a college through day or block release. This was slightly less likely for those who had not signed articles, whose training was also more frequently through day release only. Block release was more frequent for those in the public sector and in large companies.

As would be expected from this, women and those men who did not sign articles were less likely to gain qualifications from their apprenticeships. Of those who did sign articles, 95% obtained a qualification (80% of which were City and Guilds). In general, obtaining qualifications did not appear to depend on already having O-levels, except for the minority obtaining higher qualifications such as OND and HND.

By the age of twenty-three, few of the apprentices will have been established in their subsequent careers for long enough for the effects of their training to be assessed. However two-thirds considered that their apprenticeship had improved their job prospects a lot, and only 3% felt that they would have been better off without their apprenticeship.

Uncompleted apprenticeships

The above referred to those who had successfully completed an apprenticeship (and a small number still in one at twenty-three). In fact, 21% of the cohort had embarked on an apprenticeship, but one in three had given up before it was completed. A small proportion of those who gave up an apprenticeship (about one in five) went on to take and complete another apprenticeship, but the great majority abandoned this form of training.

Women (that is, in this context, hairdressing apprentices) were more likely to give up an apprenticeship and having done so, to abandon apprenticeship training completely.

As with completed apprenticeships, the majority of abortive apprenticeships started when the respondent was under eighteen and in their first job. Further analysis was restricted to this group.

Only a quarter of abortive apprenticeships were terminated by the employer; these terminations were made up approximately equally of sackings and cases of redundancy or closure. As would be hoped, those experiencing redundancy or the closure of their firm were more likely to complete their apprenticeship elsewhere, but 60% of the redundant apprentices still abandoned completely at this point.

Over half of uncompleted apprenticeships lasted less than a year. The duration was unrelated to whether it was abandoned altogether at this point or subsequently completed.

A few people did remain in the same job for a significant period after stopping an apprenticeship, but for most, leaving their first job and their apprenticeship coincided.

One in five of those whose apprenticeship was stopped (for any reason) transferred to either another trade or another employer, and of these three-quarters subsequently completed their apprenticeships. Ten per cent of those who abandoned an apprenticeship when it came to an end, subsequently completed a quite separate apprenticeship. About a quarter of those who abandoned their apprenticeship completely, subsequently went on to other training courses.

There was little variation by trade in the likelihood of an uninterrupted apprenticeship, one that was totally abandoned, or subsequently completed. However, among the most common trades, electricians and carpenters were slightly more likely to have uninterrupted apprenticeships. On the other hand, bricklayers were more likely to encounter difficulties, but half of those who did so nevertheless subsequently completed their apprenticeship.

Those who entered a formal apprenticeship, with signed articles, were more likely to complete it. Uninterrupted apprenticeships were slightly more likely in the public sector, and in small companies.

It might have been expected that giving up an apprenticeship was associated with low pay. However, at the start at least, the net pay of those who abandoned their apprenticeships was slightly higher than those whose apprenticeships were interrupted.

Prior qualifications (i.e. O-levels) were associated with both a decreased chance of an apprenticeship being abortive, and an increased chance of subsequent completion.

In general, whether or not an apprenticeship was completed was not related to how the job was obtained, although those who abandoned were slightly more likely to have been 'spoken up for' by a relative or friend and also slightly more likely to have taken the first job which they were offered.

Those who did complete an interrupted apprenticeship tended to stay in the same trades, but were less likely than those whose apprenticeship was interrupted to have had off-the-job training or to have gained a qualification.

Interrupted apprenticeships were rated no differently as to whether the respondent felt his long term job prospects had been improved.

Current labour market experience

The third working paper on apprentices focussed on their work at the time of the interview, with particular reference to whether they were still working in the trade in which they had trained.

'Working in trade' was broadly defined. For example, if the apprenticeship was completed in an engineering trade and the individual was currently employed in an engineering trade, then this was considered to be working in trade even though the specific trade and occupation may have differed. It should also be borne in mind that, although managers would be counted as not having changed trade, others who had moved on to higher level jobs, for example craft apprentices who became draughtsman, were considered as moving out of trade.

Those who had completed an apprenticeship had typically done so some 3-4 years before the interview at twenty-three. At the latter time, one quarter were working in a trade which was not that of their apprenticeship (this figure includes the most recent job of those not currently working). Numbers were generally small in relation to particular trades, but sufficiently large in the two most popular groups of trade - 'making and repairing (not metal and electrical)' and 'making and repairing (metal and electrical)' - to enable some generalisations. The first comprises such trades as printers and carpenters. Former apprentices in these trades had moved most often into construction and mining. The second group consists mainly of engineering apprentices, and their higher skill levels are reflected in the fact that a third of those working out of trade were employed in professional or scientific occupations. More than half were in non-manual occupations and only 23% in semi or unskilled manual occupations. For those in the 'making and repairing (not metal and electrical)' trades who were working out of trade, the comparable proportions were 24% in non-manual occupations and 37% in semi or unskilled.

The NCDS questionnaire did not ask for reasons for leaving in relation to all jobs, but for those where they are available, most had left their trade job of their own accord and less than one in five had been made redundant.

Working out of trade varied quite widely according to the industry in which the apprenticeship was undertaken - with the highest proportions for public and general services (39%) and the lowest for 'energy and water' (15%).

Working out of trade was slightly less likely for those who did their apprenticeships in small firms.

Those with prior 0-level qualifications and those who signed articles were slightly more likely to be working out of trade. We may again be seeing the engineering apprentices who have taken higher level jobs.

Although in general an apprenticeship which entails off-the-job training is more likely to lead to a qualification, those people who had not had off-the-job training and those whose apprenticeships had led to a qualification were both more likely to be working out of trade.

It is apparent that those working out of trade are a disparate group. They include both those who have built on their apprenticeships and have been promoted, often staying with the same employer, and those who for whatever reason have abandoned the trade for which they were originally trained, sometimes taking on work at a lower skill level.

This is reflected in pay levels at twenty-three. Those working in trade earned slightly more on average than those working out of trade, but among those with more than one job, those who had been promoted out of trade while working with the same employer had the highest average weekly earnings.

Similarly, more of those working out of trade considered their job to be very secure, but more than three-quarters of both groups thought they would be working for the same employer in a year's time. There was little difference in how they viewed their promotion prospects, except for the notably more positive views of those who were working out of trade but had always worked for the same employer (and who therefore had in most cases experienced promotion already). There was little or no difference in overall job satisfaction between those working in or out of trade.

As table 13.1 shows, there was little difference in current economic activity, although those whose most recent job had been out of trade were slightly more often unemployed.

Table 13.1 Current economic status by whether most recent job was in trade

Current economic status	In trade	Out of trade
	%	%
Full-time job	89	87
Part-time job	1	1
Unemployed	8	10
Full-time education	1	2

Of the unemployed whose last job had been in trade, two-thirds had been made redundant. Many more of those working out of trade had been in temporary jobs, which may mean they had been made redundant in a previous job.

Although there was little difference in the average duration of their current unemployment, those whose last job had been out of trade included more who had been unemployed for less than 3 months and more who had been unemployed for over a year.

Those working out of trade were more likely to have been unemployed at some time and twice as likely to have been unemployed more than once. For many, changing trade will have been an understandable part of attempting to find work.

14 FINANCIAL CIRCUMSTANCES

This section is based on working paper no 19, which examined earnings of respondents and their spouse or partner, income from state benefits, regular income from other sources, estimates of total income, income from housing benefits, savings, investments, inheritances and substantial gifts of money.

Respondent's weekly earnings from employment

Some 69% of the cohort were in employment at the time of the NCDS interview, and provided details of net and gross earnings from their main job. Nine per cent of the cohort had a second job, but less than one third of these reported a regular income from their job and were therefore asked about their net earnings from the second job.

A further 4% were self-employed, but such people were much less likely to be able, or willing, to provide details of their usual earnings. Just over half gave information on their net earnings and just under half on their gross earnings. One in five of the self-employed had a second job, but only one quarter of these received regular income from it.

The weekly earnings of employees in their main job averaged £99 gross and £72 net. Those with regular income from a subsidiary job earned £26 per week gross (£19 net) from this source, but, due to the small numbers concerned, this made little difference to the overall average weekly earnings from all jobs (£100 per week gross, £73 net). Despite some differences in definitions, these figures are very close to those produced by the 1981 New Earnings Survey (Dept of Employment, 1981) for full-time employees aged 21-24.

Not surprisingly, those employed full-time earned more than those working part-time, and women earned less than men. Women with children were particularly likely to be working part-time and their average earnings were substantially less than those without children. For men such differences were small and tended to favour those with children.

The weekly earnings of the self-employed were higher on average than those of employees (£121 gross; £93 net). Differences between those working full-time and part-time, between the sexes, and whether or not there were children followed a similar pattern to that for employees.

Because of the variations in the tendency to work part-time, differences between employees and the self-employed and between men and women may be more informative when expressed in terms of hourly earnings.

Average hourly earnings of the self-employed (£2.77 gross; £2.16 net) were higher than those of employees (£2.5 gross; £1.83 net). They also showed a greater variation, as can be seen in table 14.1.

Table 14.1 Gross hourly earnings in main job

Gross earnings in main job	Employees	Self-Employed
	%	%
£4 or more per hour	5	19
£2-3.99 per hour	67	46
£2 per hour	28	36

Among employees, women's earnings continued to be considerably lower than men's when expressed as hourly rates. Average gross earnings were £2.29 per hour for women and £2.69 for men, net hourly earnings being £1.68 and £1.94. Once again, these figures are very close to those from the New Earnings Survey.

For those not currently in work, similar comparisons were carried out in relation to earnings from their most recent job. These need to be treated with some caution as they can refer to any time in the period from 1974 to 1981, but contrasts were very similar to those found for current earnings.

Earnings of spouse or partner

Forty per cent of the cohort had a partner who was in employment at the time of the interview. Details of their net income were provided, but by the cohort member, and so are likely to be less accurate than their reporting of their own income. In addition, some 10% did not know, or refused to give, details of their partners' earnings.

For those who did give details, the average weekly net earnings of the partner were £82. As for the respondent's own earnings, the figure was highest for partners working full-time, for the self-employed, and for men.

Income from state benefits

A third of those interviewed reported that they (or their spouse or partner) received at least one state benefit. Women (40%) were more likely to report receiving benefits than men (29%).

It was possible to calculate the weekly income from benefits of each family unit, consisting of the respondent and any spouse or partner. Table 14.2 gives the proportion of the cohort who, either personally or through a partner, were receiving each benefit, and the average amount reported.

Table 14.2 Proportion receiving, and average income from, specific benefits

Type of State Benefit	Receiving	Average amount
	%	£
Unemployment benefit	6.3	26.33
Supplementary benefit	5.5	30.03
Unemployment and Supp. benefit combined	1.8	44.21
Sickness benefit	0.8	26.71
Invalidity and disablement benefits	1.0	25.37
Family Income Supplement	0.6	10.36
Child benefit	22.4	9.04
One parents benefit	1.0	8.00
Maternity allowance	1.7	22.85
Other benefits	0.6	20.94
Any benefit	34.0	20.70

Women were more likely to be receiving benefits but, among those who were receiving benefits, there was no difference between the sexes in the average amount received. As would be expected, receipt of benefits was related to marital status. The highest benefit incomes were received by the divorced, separated or widowed: an average of £30 for those currently cohabiting and £36 where there was no current partner. Single people were less likely to be receiving benefit than the married, but their average income from this source was higher (£26 when cohabiting and £24 without a partner, compared with £18 for the married).

Similarly, people with children were more likely to be in receipt of benefit, but their average income from this source of £19 was £5 less than those without children. Total benefit income was, however, highest for the lone parents.

Other regular income

Just 7% of the cohort reported income from other regular payments, most commonly educational grants, maintenance allowances or regular cash help from parents.

The average income from such sources was just under £25 per week, with women receiving slightly less than men. It was highest for the single (£28 per week) and lowest for the divorced, separated or widowed (£13), and higher for families with children than without.

Total family income

The foregoing has described income from specific sources. As varying proportions of the cohort had partners and received state benefits or other income, further calculations were necessary to derive an estimate of the total income of the family. This will be a conservative estimate as it does not include investment income or income in kind, and details of any subsidiary job of the partner are not known.

For those respondents who were in work, the total family income of the respondent and any partner averaged £125 per week gross (£100 net). The gross income of families where the respondent was an employee was higher than the self-employed, but there was no difference in the net income.

Among employees, the family income of male respondents was only slightly higher than for females. As would be expected the family income of married and cohabiting couples was higher than for the single and the divorced, separated or widowed. Overall, there was little difference between those with and without children, but within any marital status group income was greater for those families without children. The self-employed showed a similar pattern.

Savings and investments

Four out of five reported that they had savings or investments, with little difference between the sexes. The average value of all such holdings was £1,468 with the average for men over £200 higher than for women.

Among men, the greatest average amounts were held by the separated, divorced or widowed who were not cohabiting and the cohabiting single: the lowest by the separated, divorced or widowed who were cohabiting and the married. Among women, the highest amounts were held by the cohabiting single and the separated, divorced or widowed who were cohabiting; the lowest by the married.

Table 14.3 summarises the proportions of the cohort with savings and investments of particular kinds and the average amounts concerned.

Table 14.3 Type of savings and investment and amounts held

Saving or Investment	Proportion of cohort	Average amount
	%	£
<u>Savings</u>		
Building Society	55	761
National Savings Certs.	3	454
Post Office Savings Bank	10	127
Bank Deposit or Savings	28	480
Trustee Savings Bank/ Savings Account	8	304
SAYE	0.7	466
Premium Bonds	19	39
Other Savings	2	905
<u>Investment</u>		
Company Shares or Securities	2	2693
Unit Trusts or Investment Trusts	1	986
Government Stocks and Securities	0.2	1632
LA Bonds and Securities	0.1	1291
Property other than main residence	2	17605
Other investments	2	4433

Three fifths of all savings and investments were held by the respondent alone, 22% jointly with a spouse or partner, and 14 by the spouse or partner alone. Although only 3% were held jointly by the respondent and someone other than their spouse, such holdings were of considerably higher value.

Inheritance and gifts

During the twenty-three year interview, respondents were asked whether they (or their spouse or partner) had ever received an inheritance or a gift of money, property or other goods with a value of £500 or more. Twelve per cent responded positively, women (13%) somewhat more often than men (11%).

Three-quarters of such gifts or inheritances were to the respondent only, one in five jointly with a spouse or partner, and only 3% to the spouse or partner alone. It seems likely that this last figure

is a substantial underestimate, and that cohort members have not reported gifts or inheritances which were to their partner alone - particularly if they pre-dated the relationship. The average value of the largest inheritance or gift received by the respondent or spouse or partner was £2699. The average for men (£2909) was higher than for women (£2464). The highest average amount had been received by the husbands of married women. Among male respondents, the greatest amounts had been received by those who were single and cohabiting.

Other work

Further work, undertaken in the final weeks of the contract and therefore too late to be in the final report on which this paper is based, examined the financial circumstances of cohort members in different family and partnership situations.

15 HOUSING

Unlike the results reported in the remainder of this report, which relate to the entire cohort, the housing analyses reported in this section were, at the Department of the Environment's request, undertaken for those living in private households in England only. The base is therefore 9,282 individuals rather than the 12,538 potentially available for analysis on other topics.

A number of separate tables exploring the housing experience of cohort members resident in Scotland have been provided to the Department.

General housing circumstances

Although the majority had, by the age of twenty-three, established their own households, a substantial minority (36%) was still living, or had returned to live, with their parents. A further 2% were living with in-laws or other relatives. Table 15.1 presents the full distribution of tenure at the age of twenty-three, both for all those resident in England and for those who had established independent households. As can be seen, among those who had established independent households, the predominant tenure was owner-occupation.

Table 15.1 Tenure at 23

Tenure of accommodation at 23	Percentage of all resident in England	Percentage of those in independent households
Owner-occupiers	30	51
Council tenants	14	23
Housing Association/charity tenants	2	3
Private tenants	9	15
Sharing with parents/other relatives	38	-
Flat share	3)
Tied and rent free	2) 7
Other	2)

The above proportions varied somewhat by region of the country. Greater London contained a substantially smaller proportion of owner-occupiers (19%) and greater numbers of private tenants and flat sharers. The Northern region had more council tenants than other regions and slightly fewer private tenants and flat sharers.

Overall, there was relatively little overcrowding. Only 3% were living at a density of greater than one person per room, and 11% were in accommodation which fell below the conventionally-calculated bedroom standard. Overcrowding was more common for those living with relatives and for flat-sharers.

Amenities within the accommodation varied little between tenure groups, with the notable exception of the private tenants. 24% of the latter did not have sole use of a bath or shower, compared with 3% overall; and 27% lacked sole use of an indoor lavatory, compared with 6% overall.

An individual's tenure at twenty-three was closely related to their employment status and family formation position. Tables 15.2 and 15.3 summarise, respectively, the current economic activity and marital status of each tenure group. The general pattern is for those who were married to be more likely to be owner-occupiers or council tenants and the married women, particularly if they have children, to be less likely to be working. Those people living with relatives, sharing flats or in private tenancies were more likely to be single and economically active or, in the case of the last two tenures, full-time students.

Table 15.2 Tenure by economic activity

Economic activity	Owner Occ.	Council tenants	Housing Assoc.	Private Tenants	Sharing with relatives	Flat Share	Tied
	%	%	%	%	%	%	%
Working	77	47	57	77	81	20	71
Unemployed	4	14	9	8	12	9	6
Housework	16	37	27	6	2	2	22
Other inactive	1	1	2	1	3	3	-
Student	1	-	4	7	2	7	-

Table 15.3 Tenure by marital and partnership status

Marital status	Owner Occ.	Council tenants	Housing Assoc.	Private Tenants	Sharing with relatives	Flat Share	Tied
	%	%	%	%	%	%	%
Single - not cohabiting	5	9	16	50	90	81	11
Previously married - not cohabiting	1	6	4	3	3	3	-
Married	87	73	65	28	6	3	85
Single - cohabiting	6	9	10	18	1	11	4
Previously married - cohabiting	1	4	4	1	-	1	-

No doubt for similar reasons related to their age and stage in the life cycle, NCDS respondents had not yet settled into the expected dichotomy of middle class households in owner-occupation and working class households in council accommodation. Indeed, among men it is those in skilled manual occupations who were dominant among owner-occupiers. By contrast, young men in professional and intermediate occupations formed the largest proportion of the private tenants and flat sharers.

The developing relationships among tenure, social class and marital status are perhaps shown more clearly by women. 63% of married women were owner occupiers, and their current or most recent occupation was non-manual for 78%. About one-third as many married women were council tenants, but more than half of them had manual occupations.

On the other hand, two thirds of single women were living with parents or other relatives, but this included a disproportionately low number of those in professional or intermediate non-manual occupations, this group being much more predominant among private tenants and flat sharers.

A further interesting sex difference was among those who had been previously married. The largest group of previously married men, irrespective of social class, had returned to live with parents or other relatives. Previously married women, and particularly those in manual occupations, were more likely to be council tenants.

The professional status of private tenants and flat-sharers is further reflected in their educational background. Many more than other tenure groups had stayed at school beyond the minimum leaving-age; 41% of private tenants and 50% of flat-sharers had a degree or equivalent qualification, compared with 18% overall. They were less likely than other tenure groups to have undertaken an apprenticeship or other work-based training. Given what we have seen above, it is not surprising that owner-occupiers included the greatest proportion of former apprentices, although barely more so than among council tenants.

Table 15.4 summarises some further aspects of the labour market experience since leaving education of the main tenure groups. Most notable is, firstly, the relatively steady employment experience of the owner-occupiers. They were less likely to have had several jobs and to have experienced unemployment. Nevertheless, one third had been unemployed at some time and a small number had been unemployed for 80% or more of their economically active lives.

Table 15.4 Labour market experience and tenure

Labour market experience	Owner Occ.	Council Tenants	Private Tenants	Sharing with relatives	Flat Share
	%	%	%	%	%
<u>Men</u>					
5 or more jobs	13	32	16	16	18
Ever unemployed	32	62	51	48	55
80% or more of econ-active time unemployed	1	18	6	8	8
<u>Women</u>					
5 or more jobs	11	15	20	16	14
Ever unemployed	35	48	46	43	39
80% or more of econ-active time unemployed	4	12	7	9	3

Unemployment, and particularly long-term unemployment, were, however, much more common experiences for the council tenants.

Owner occupation

Thirty percent of respondents resident in England were owner-occupiers at twenty-three. Most (84%) were buying their first home, and almost all (96%) had taken out a mortgage or loan.

Many of the characteristics of the owner-occupiers could be predicted from what we have already seen. They had higher average family incomes than other tenure groups, were likely to have been working longer and to have had only one job since leaving full-time education.

Two-thirds of the married couples and just over half of the cohabiting couples were owner-occupiers. Relatively few single people were buying their home, but this was slightly more common for single men (4%) than single women (3%).

For most, buying their home coincided with their marriage or partnership, as would be expected. However, 13% had bought prior to the start of their partnership, and 2% at the close of a previous marriage or partnership. More men than women had bought their first home before being joined by a spouse or cohabitee, and more women had moved in to live with a home-owning partner.

Most homes had been bought relatively recently, 74% since 1979 and 23% in 1981, the year of the interview. As we are examining a group of young, predominantly first-time buyers, it is not surprising that the amounts paid were relatively low. Few properties had cost #25,000 or more, and the majority had been bought for under #15,000. Adjusted to 1981 values, the average purchase price was #16,908.

The average mortgage borrowing was #11,688. As would be expected, first-time buyers tended to borrow less, but a greater proportion of the purchase price. Table 15.5 shows the sources of the main loan towards property purchase by first-time buyers, the average amount borrowed, and the proportion for which this was 90% or more of the purchase price.

Details were not obtained on all other sources of money towards house purchases, but it was established that 66% of owner-occupiers made use of their savings towards the transaction. Those with savings bought properties which were slightly more expensive and with smaller mortgages.

Help in the form of a private gift or loan also contributed to keeping mortgage costs down for a significant number. Single first-time buyers were particularly likely to cover the major share of their costs in this way - 16% as compared with 11% of couples.

Table 15.5 Mortgage sources

Source	Proportion of first-time buyers for which main source	Average amount	Proportion 90% or more of purchase price
	%	#	%
Building Society	80	11,556	37
Bank	4	14,582	44
Council	6	7,319	64
Insurance Company	2	15,046	57
Finance Company	(N=2)	14,000	0

The desire to buy

Among those who were not yet buying their homes, the desire to own their own home was almost universal. Three percent were currently either in the process of buying or actively looking for a place to purchase; 42% said that in their current circumstances they would prefer to own rather than rent their home; and 90% of non-owners wished eventually to become home-owners.

Despite this overwhelming majority, there were some identifiable differences in opinion between groups in different circumstances. Among men, the desire to own did not vary significantly with marital status, but married women were slightly less likely to want to own, and the previously married were the least likely to want to buy a house. Single people showed a high level of aspiration to buy, and those with current marriage plans were particularly likely to prefer to buy now. Only the rather small group saying that they never wanted to marry also showed a low level of desire to own a house of their own.

Although variations were not dramatic, those wishing to buy were more likely to be working rather than doing housework, to be in non-manual occupations, to have higher incomes, not to have children, and to be currently living as private tenants or flat-sharers.

In other words, respondents already established as council tenants, on a limited and less secure income, and caring for children, were the most likely not to want to buy.

Interestingly, the Scots, who were less likely than the English to be owner-occupiers at twenty-three, also showed less desire to buy a house of their own eventually.

Homelessness

Six percent of the cohort said that they had at some time been homeless (the exact wording in the questionnaire was, 'Have you ever had to move out of a place and had nowhere permanent to go?'). Only a quarter of these had approached the local authority for help. Most had coped by staying with friends (44%) or relatives (32%). Four percent had stayed in a hostel for the homeless, and a further 8% in a hostel or bed and breakfast accommodation. As many as 68 people in the cohort (9% of the 'homeless') had experienced sleeping rough. However, examination of the characteristics of the ever-homeless suggests that as many as one quarter of them had probably left home in order to go through the higher education system. Given the well known vagaries of student housing, it may be that their experience of homelessness was in some respects untypical.

16 HEALTH

It might be expected that young adults of the age of the NCDS cohort would be at the most healthy stage of their lives. In fact, as many as 86% of the cohort reported that they had had some health problem in the period since they were sixteen. Of course, this overall figure includes conditions of varying severity, including some which might be considered almost trivial. Furthermore, this information is based entirely on self report and, so far, has not been checked against diagnoses from medical sources.

Working Paper no. 22 described the types of health problems which were reported, and some of the social and economic characteristics of those who reported a health problem.

Before describing the overall situation on which the figure quoted above is based, it is essential to examine the more specific questions from which, in combination, the overall figure was derived. These questions concerned: a longstanding illness or disability; other medically supervised conditions; hospital admissions.

Longstanding illness and disability

4% of women and 5% of men said that they had a longstanding illness or disability. One in four of these were referring to disabilities which they had had since birth, one third reported onset between birth and sixteen, and the remainder since the age of sixteen. Just over half said that they received regular medical supervision for their condition.

The conditions concerned varied from severe physical or mental disability to relatively minor problems such as hayfever. When considered by ICD categories the most frequently reported conditions were diseases of the nervous system and sense organs, namely poor visual acuity and disorders of the eye, deafness, epilepsy or migraine. The next most common group comprised respiratory diseases (most commonly asthma).

The most marked sex differences were for musculoskeletal problems, experienced more often by men, and mental disorders, reported more frequently by women.

No specific question on the severity of the illness or disability was asked, but respondents were asked to indicate the degree to which their condition limited certain domestic, work and social activities. Relatively few (c. 15%) said that they had difficulty washing and dressing or getting about the home. Greatest difficulties were reported in relation to leading a normal social life. 45% of women with a longstanding illness or disability said

they had at least some difficulty with this and 8% said that their condition prevented them from having any social life at all. Men were less affected, the comparable figures being 35% and 6%.

Those who reported a longstanding illness or disability were more likely than other cohort members not to be in full-time employment at twenty-three, to be unemployed, or to be out of the labour force through sickness. As might be anticipated, these contrasts are even more marked for those who were severely restricted in their daily activities.

Medically supervised conditions

Specific questions were put in the course of the interview as to whether respondents suffered from epilepsy or asthma/wheezy bronchitis and whether they were receiving treatment for these conditions. About 10% of the cohort were being prescribed medicines for epilepsy and 4% for asthma/wheezy bronchitis.

In response to a more general question, 7% reported having other conditions requiring regular medical supervision. The most common such conditions were skin disorders and digestive problems and, for women, genitourinary conditions and mental disorders.

Hospital Admissions

Almost one quarter of the cohort had been admitted to hospital at some time since the age of sixteen, for reasons other than accidents or routine childbirths. Women were more likely to have been in hospital than men, and were also more likely to have been admitted more than once. However, almost one third of women admitted to hospital had had a complication of pregnancy or birth (i.e. 9% of all women in the cohort).

General health

It will be apparent that there will be overlap in the responses to the questions considered so far. In order to provide a more general account of the health of the cohort, these responses have been amalgamated, together with those from a further question on any health problem not covered by the earlier questions. Table 16.1 shows the proportion of the cohort reporting, by means of any of these questions, conditions in the ten most commonly reported ICD categories. It must be borne in mind that, because of the nature of the questions put, these figures are in effect prevalence rates for the seven-year period from sixteen to twenty-three.

Just 6% of the women, and 23% of the men reported no health problems in response to all the questions described.

Table 16.1 Prevalence rates for ten ICD categories

ICD Category	Rate per 10000	
	Men	Women
Complications of pregnancy and birth	-	87
Operation and investigations	48	81
Digestive	54	63
Respiratory	33	43
Genitourinary	8	62
Nervous and sense organs	34	23
Skin and subcutaneous tissue	29	27
Musculoskeletal	28	25
'Symptoms'	20	26
Mental disorders	16	28

When asked to assess their own general health, 45% of the cohort rated it as 'excellent', 46% 'good', 9% 'fair' and 1% 'poor'. The relationship between these self-ratings and specific conditions indicates how some of the latter are more transitory in their affects than others. For example, 84% of those who had had an operation or investigation, such as a tooth extraction or cartilage operation, said that their general health was 'excellent' or 'good'. Similarly, of women who had had complications during pregnancy or birth, 83% said that their health was 'excellent' or 'good'. However, these ratings also reflect perceptions of 'healthiness'. It is, therefore, not surprising that a smaller proportion of those reporting a mental disorder assessed their health as 'excellent' or 'good' (56% did so).

Social class and morbidity

Social class differences in morbidity have been documented in the Black Report (1980). Among young adults in NCDS, social class contrasts are also apparent.

Prevalence rates for any medically supervised condition were consistently higher for those in semi and un-skilled occupations than for the professional and managerial groups. As studies of GP consultation rates have not usually revealed such social class differences, this suggests that those in non-manual occupations are more likely to consult their GPs when they do have a health problem than are those in manual occupations.

Hospital admissions show a similar pattern, although social differences were not very great: 23% of those in professional or managerial occupations had been admitted to hospital since 16, compared with 26% of those in semi or unskilled occupations.

On the combined index of morbidity, taking into account longstanding disabilities, medically supervised conditions, hospital admissions and other reported health problems, the social gradient for women was similar to that described above. Almost twice the proportion of women in social classes I and II reported no conditions at all, compared with social classes IV and V. The latter had the highest prevalence rates in most ICD categories, although those in non-manual occupations had higher rates for musculoskeletal, respiratory, skin and infectious diseases.

By contrast, the greatest proportion of 'healthy' men was found in the skilled manual group. Other studies (e.g. McMichael, 1976) have suggested that good health is one important criterion for selection to occupation at this level. If true, then their greater health at twenty-three would be a selection effect, rather than a result of the nature of their work.

Regional variations

Overall, variations in general morbidity between different parts of the country were not large, but differences were substantial for some specific conditions. To take some of the extreme examples, the results indicated disproportionately few people with skin disorders in East Anglia, with the highest prevalence rate in the North-West. Mental disorders were reported almost twice as often in Wales, at the one extreme, than the South-West, at the other.

Morbidity and other factors

Both overall and in relation to specific conditions, those reporting a condition were more likely to be rated as 'depressed' according to their scores on the Malaise Inventory (this short, self-completed

questionnaire is described in more detail below). As would be expected the contrast was most dramatic for the ICD category of mental disorders (approximately ten times as many of the 'depressed' reported such a condition). There was also a disproportionate number of 'depressed' men and women in the ICD poisoning category, which included cohort members who had taken an overdose. The differences within remaining categories were not as large, but there were few categories in which the 'depressed' were not disproportionately represented.

Among men there was little association between current drinking habits and morbidity, although by a small margin the most health problems were reported by non-drinkers. Among women the most health problems were reported by the heaviest drinkers, and the least by the light to medium drinkers. As the health data refer to a seven-year period, but drinking patterns are based on consumption in the week before interview, care should be taken in drawing conclusions about the direction of the relationship between drinking and health.

Accidents

The disabilities and conditions described in the previous paragraphs of this section did not include any long-term disabilities resulting from accidental injury. Accidents experienced by the NCDS cohort members were the subject of some preliminary analysis reported in a separate working paper (no. 3).

Forty-four per cent of the respondents said that, since the age of sixteen, they had been admitted to hospital or attended a hospital out-patient or casualty department as a result of an accident to themselves. The marked sex difference (62% of men and 26% of women) may in part reflect a greater tendency for women to seek treatment from their GP following an accident (Cartwright and Anderson 1981).

About half of those reporting an accident resulting in hospital treatment had had only one such accident, but as many as 13% had had four or more. Men were also likely to have had more accidents.

The relationships with sex and marital status were intriguing. Thus, married women were less likely to have had an accident than single women, but the reverse was true for men. For both sexes the separated, divorced and widowed were most likely to have had an accident. Unsurprisingly, women were more likely to have had accidents in the home, and men at work or when playing sports.

In general those who had had accidents showed some evidence of a more out-going lifestyle. They went out to parties and discos more frequently and played more sport; on the other hand they read and watched TV less often. They also drank more and were more likely to be current smokers at twenty-three.

The only health conditions examined for their association with accidents were epilepsy, asthma and migraine. The latter two were not found to be related to accidents. However, those reporting that they had had a fit or convulsion since the age of sixteen were also more likely to have experienced an accident, particularly if they were not under medical supervision for their attacks.

It seems possible and plausible that poor mental health or negative life events are related to accident proneness. For example, among men, but not women, those who had had accidents showed a greater tendency towards depression, as indicated by their scores on the Malaise Inventory. The relationship with marital breakdown has already been mentioned. In addition, accidents were more likely for people who had been in care as a child, and for those who said they had left the parental home for negative reasons.

Health and weight

The potential health consequences of being overweight are a matter of considerable current interest (e.g. Royal College of Physicians, 1983), and concern has been growing that the proportion of the population defined as overweight is increasing. However much of the evidence for this has been based on data from insurance companies, and has been suggested to be highly selected and atypical. NCDS offers the opportunity to examine weight distributions and associated factors on a representative population of young adults. The work carried out is described in Working Paper no. 29.

The measure of weight used for these analyses was the body mass index (BMI) or Quetelet index, commonly used as a crude indicator of the body's fat content in adults. The index is derived by dividing weight in kilograms by the square of the height in metres. It is then divided into standard categories of underweight, acceptable weight, overweight and obese. Table 16.2 shows the distribution of NCDS men and women across these categories and comparative data from the cohort of 1946 births and OPCS figures (men only).

As can be seen, the NCDS figures correspond well with those from the OPCS study, although the former are based on self-report and the latter on measurements. There is no evidence of a substantial change in the proportions underweight, overweight or obese in their early twenties between people born in 1958 as against those born in 1946.

In addition to reporting their actual heights and weights, NCDS cohort members also indicated whether they felt they were 'underweight', 'right weight', 'slightly overweight' or 'very overweight'. Although the subjective and objective measures were closely related there was a general tendency, particularly among women, to consider themselves overweight.

Returning to the more objective BMI measure, this appeared to be associated with self-assessed general health. 18% of 'obese' men and 23% of 'obese' women rated their health as only 'fair' or 'poor' compared with 7% of men and 9% of women of 'acceptable' weight. To a lesser extent, the underweight also gave lower ratings of their health.

Table 16.2 Weight categories in three national surveys

Weight category	NCDS	1946 births	1946 births	OPCS
	(age 23)	(age 20)	(age 26)	(age 20-24)
	%	%	%	%
<u>Men</u>				
Underweight	10	12	8)
Acceptable weight	70	74	67) 78
Overweight	18	13	22	19
Obese	2	1	3	3
<u>Women</u>				
Underweight	10	10	8	-
Acceptable weight	68	71	18	-
Overweight	18	16	20	-
Obese	4	3	4	-

For men there was a higher rate of medically supervised illness among the obese, and they also experienced, as did those who were overweight but not obese, more hospital admissions. The same was true for the obese and overweight women, but, in addition, underweight women were similar to the overweight in both respects. However, it is important to point out that social class and other related variables have not yet been taken into account in these comparisons and those that follow.

Compared with those of acceptable weight, overweight and, particularly, obese women were more likely to experience endocrine and nutritional disorders, mental disorders and complications of pregnancy and birth. Differences between weight categories were less

marked for men, but they were also particularly likely to have endocrinological problems if severely overweight. In addition, underweight men were more likely to have nervous and sensory disorders.

Some of the groups of conditions which had been shown to be related to over or underweight have been examined in more detail. For example, obese women, as well as being almost four times more likely than those of acceptable weight to have experienced complications during pregnancy, were also twice as likely to have had a miscarriage or abortion and to say that they were not able to have (more) children. To a lesser extent, underweight women were also more at risk in these respects. It remains to be seen whether these risks would still be apparent once such factors as social class and the number of children are taken into account.

When specific psychological and emotional problems were examined, those cohort members who were either underweight or obese were more likely to have had neurotic and personality disorders for which they had received medical care. Furthermore the relationship between weight and emotional health was also reflected in Malaise Inventory scores, such that 24% of obese women obtained scores indicating a tendency towards depression, compared with 14% of those of acceptable weight. The comparable figures for men were 7% and 5%.

Weight and demographic factors

For both sexes, there was a greater prevalence of overweight and obesity and a lower prevalence of underweight among those whose current or more recent occupation was manual. As would be expected, this was reflected in relation to educational qualifications, with a trend of increasing proportions overweight or obese with decreasing levels of education achievement.

For women, the relationship with family income was consistent with the social class differences, that is those rated as obese had the lowest mean family incomes, followed by the overweight and then little difference between the underweight and those of acceptable weight. For men, on the other hand, those who were obese and those who were underweight had the lowest average family incomes.

Regional variation in overweight and obesity may in part reflect the geographical distribution of social class, but may also be related to regional differences in, for example, dietary habits, physical activity or body image. In fact overweight and obesity were more common in Northern and Western regions (particularly Wales), and less common in the South and East. Underweight showed the inverse pattern, but differences were less marked.

The Malaise Inventory

The Malaise Inventory has been mentioned on several occasions already in the context of other topics. It is a 24-item inventory developed by the Institute of Psychiatry from the Cornell Medical Index (Rutter et al, 1970). It is generally accepted as a measure indicating a tendency towards non-clinical depression. Within NCDS it was administered as a self-completed questionnaire, at the conclusion of the twenty-three year interview.

Working Paper no. 2 presented some preliminary analyses of scores on the inventory. Taking the conventional cut-off of those responding positively to seven or more of the 24 items, 16% of female respondents and 6% of males obtained scores indicating 'depression'.

28% of the separated, divorced and widowed were rated as depressed, compared with 12% of the married and 9% of the single. The sex differential was consistent across marital status groups which, with regard to the single, is contrary to other studies, which have reported more depression among single men than single women.

There was some indication of a relationship with educational status, in that people whose education had reached O-level standard obtained lower scores (i.e. less depression) on the inventory, than those who had no O-levels. However, there was no difference between those having O-levels only and those with A-levels.

Individual items on the inventory revealed some interesting sex differences. Women were particularly likely to indicate items referring to tiredness, headaches, worry and irritability, and fear of being alone. This last item was mentioned particularly frequently by women whose overall scores indicated depression, whereas among men with high overall scores, individual items referring to, for example, indigestion and upset stomach were more frequently endorsed. It appears possible that men were more likely to suffer, or admit to suffering, the physical consequences of stress whereas women are more likely to refer to emotional and psychological consequences.

17 SMOKING AND DRINKING

Working Papers nos. 4 and 5 reported preliminary analysis of the responses to questions in the 23-year interview on smoking and drinking habits.

Smoking

Overall two in five of the cohort reported that they currently smoked. Table 17.1 shows the number of cigarettes smoked by sex.

Table 17.1 Cigarette consumption and sex

No. of cigarettes daily	Men	Women
	%	%
None	60	62
1 - 9	5	7
10 - 19	14	16
20 - 29	15	12
30 - 39	3	2
40+	1	1

The proportion smoking at all (39%) is almost identical to that based on a one in twenty sub-sample during the feasibility study three years earlier. Of particular interest is the fact that the proportion is little greater than the 36% who said that they smoked at the time of the 16-year follow-up.

Further variation was found in relation to marital status in that, although there was little difference between the single and the married, the divorced, separated and widowed were more likely to smoke at all, and more heavily.

A further third of the cohort had smoked at some time in the past, but only a minority of these ex-smokers had been regular smokers, smoking at least one cigarette a day for a year or more. More men had given up smoking and more women had never smoked at all.

These findings are consistent with General Household Survey figures which show a consistent decline (which may now have halted) in the numbers of men smoking, particularly among those aged 20 - 24, where by 1980 young men were no more likely to smoke than young women.

There was little relationship between household composition and current smoking. However, those who had never smoked were more likely to be living with their parents, and current smokers were slightly more likely to be cohabiting.

However, smokers were more likely to say that they lived with someone who smoked cigarettes at home and, compared with non-smokers who lived with a smoker, this was more likely to be their spouse or partner than a parent or friend.

Those who did live with a spouse or partner who smoked were asked about that person's smoking. Male partners were reported as smoking more heavily, no doubt reflecting the tendency for women's partners to be older and older men to smoke more.

Just under two thirds of women who had smoked immediately prior to their most recent pregnancy said that they had changed their smoking habits during that pregnancy, the great majority during the first four months. One quarter said they had given up completely, one third had cut down, and the remainder had increased their consumption!

Smoking and health

Current smokers were less likely to rate their own health as 'excellent', and the proportion rating their health highly fell further the greater the number of cigarettes smoked. There was little difference between ex-smokers and those who had never smoked.

In response to specific questions, smokers were five times more likely to say that they coughed first thing in the morning in winter, three times more likely to cough during the day or night, and to bring up phlegm first thing in the morning, and twice as likely to bring up phlegm during the day or night.

Smokers were more likely to obtain high scores (indicating a tendency towards depression) on the Malaise Inventory. Heavy smokers were particularly likely to say that they felt tired most of the time, they often felt miserable or depressed, and that they had sleeping difficulties. The cause/effect relationship here is particularly difficult to disentangle, of course.

It has been suggested (e.g. Williams, 1973) that smoking is an aspect of risk-taking. It might therefore be hypothesised that smokers were more likely to have accidents. Interestingly, this is confirmed within the NCDS data: 49% of current smokers had had at least one accident resulting in hospital treatment, compared with 44% of

ex-smokers and 38% of those who had never smoked. Those who had most accidents were also more likely to be heavy smokers. The risk-taking hypothesis is, of course, not the only one which might explain these relationships.

Demographic factors and smoking

NCDS findings accord with those from the General Household Survey in showing more smoking by people in manual occupations. Those in social class I were particularly likely never to have smoked at all.

Smoking habits appeared to be related to educational achievement independently of what could be explained by social class.

More current smokers were currently unemployed or in housework, and were more likely to have experienced unemployment in the past. The small number still in full-time education smoked least of all.

Unexpectedly perhaps, although smokers did tend to work longer hours, they were no more likely than non-smokers to work unsocial hours.

Drinking

Table 17.2 summarises replies to a question on how often respondents had an alcoholic drink.

Table 17.2 How often alcohol drunk

Frequency alcohol drunk	<u>Female</u>	<u>Male</u>
	%	%
Most days	10	31
Once or twice a week	45	50
Less often	17	9
Special occasions only	22	7
Never	6	4

While men generally drank alcohol more often than women, within both groups the single drank more frequently and the married less frequently, with the separated, divorced and widowed in an intermediate position.

Using conventional categorisations of the number of 'alcohol units' drunk in the preceding seven days, which take account of the smaller body size of women, 2% of NCDS women and 12% of men were 'heavy' drinkers. Particularly among men, the proportion of heavy drinkers varied dramatically by marital status: 6% of married men, 15% of the single and 24% of the separated, divorced or widowed fell into this category.

Drinking and health

Men's ratings of their own health varied little according to their alcohol consumption in the previous seven days, but female heavy drinkers were far less likely to describe their health as excellent than other respondents.

The more frequent drinkers were more likely to have had at least one accident involving hospital treatment.

Women who were heavy drinkers were far more likely than others (male or female) to have seen a specialist for a psychological problem (since the age of 15). They also obtained higher scores on the Malaise Inventory, being particularly likely to say that they often felt miserable or depressed, had sleeping difficulties, often got into a violent rage, suffered from an upset stomach and felt their heart often raced like mad. The main problem reported by men who were heavy drinkers was an upset stomach.

Although the Royal College of Physicians (1979) has suggested that excessive drinking can lead to repeated sackings and a drift into less responsible work or virtual unemployability, this did not appear to be supported by NCDS data in that the more frequent drinkers were no more likely to be currently unemployed, nor to have a previous history of unemployment. Of course, many of the social and health problems of the heavy drinker may reveal themselves at a later age.

18 VOLUNTARY ACTIVITIES

Although only limited information on voluntary activity was collected in the course of the NCDS 23-year interview, Working Paper no. 14 was able to report findings on the extent of voluntary activity and the types of voluntary activity undertaken, and to compare some of the characteristics of volunteers and non-volunteers.

Definition of voluntary activity is not unambiguous. However, NCDS used the same definition as in the 1981 General Household Survey, i.e. work for which people were not paid, which was of service to others apart from their immediate family. A show card was used with examples of the kind of work meant.

In all, nearly a quarter of NCDS respondents had taken part in one or more such voluntary activities in the twelve months prior to the interview. However, only 6% had volunteered at least once a week in the four weeks prior to the interview. Men were a little more likely than women to report taking part in voluntary activities, but among those who did, women's voluntary activities were more frequent.

Table 18.1 shows the nature of the activities, broadly categorised, reported by those engaging in some voluntary activity in the year prior to the interview.

Table 18.1 Voluntary activities in past 12 months by sex

Voluntary activity	Men	Women
	%	%
Fund raising	38	43
Committee work	10	8
Teaching/advising	14	13
Holidays/entertainment	6	8
Practical or direct help	32	33
Work with young people	13	14

Women were more likely than men to be involved in fundraising, but otherwise there was little difference between the sexes in the nature of their volunteering. When individual activities were examined in more detail, sex differences were more striking. Women were more likely to be involved in organising raffles etc., while men were more likely to take part in sponsored events. Women were much more involved in playgroups and in helping teachers, while more men were involved in running sporting activities, in giving direct advice to people, in building work, and slightly, in political and social action.

Those who had been active in their volunteering in the few weeks prior to interview were much less likely than the less frequent volunteers to have been involved in fundraising and much more likely to do committee work, work with young people and to give help to individuals or groups.

Who volunteers?

It is a common stereotype that those involved in many kinds of voluntary work are motivated by their religious beliefs. It was indeed the case that the 10% of the cohort actively involved in a religion (attending a meeting or service at least once a month) were twice as likely as the less active and those without religious beliefs to report having done voluntary work. People belonging to religions other than Roman Catholic or Church of England had the highest participation rates, although the rates for those two groups were still higher than for the cohort as a whole.

Volunteers were no more likely to say that they regularly read a daily newspaper, but readers of 'quality' newspapers reported considerably more voluntary activity than readers of the Sun and Daily Star. This may reflect a relationship with social class, as may the slightly greater participation in voluntary activities of Conservative and Liberal voters.

Volunteers had a higher level of participation in a range of leisure activities, including involvement with youth organisations. Even those who had previously been involved in a youth organisation, but no longer were, reported more voluntary activity than those who had never been involved.

The relationship with social class adumbrated above was found to hold. Those in professional or intermediate non-manual occupations were twice as likely as those in semi or unskilled manual occupations to have done voluntary work in the past year. Skilled manual workers were particularly likely to be involved in practical or direct help.

Educational level also was related to voluntary activity. In general the higher the educational level, the greater the likelihood of participation in voluntary work. Current full-time students were particularly likely to have taken part in voluntary work, and those in full-time housework (mainly women) were particularly unlikely to have done so.

Surprisingly perhaps, among those who were working, hours of work made little difference to the propensity to do voluntary work, and neither did their satisfaction with their job. Volunteers were more likely than others to rate 'the opportunity of helping others' as an important attribute of a job, but still very few rated it very highly.

Some of the most surprising findings related to the disabled, who might have been thought of as potential beneficiaries, rather than providers, of voluntary help. In fact those who said that they had a longstanding illness or disability were no less likely to have participated in voluntary work than the rest of the cohort, the only exception being the small group who said that their disability limited their social life 'completely'. The voluntary activities of the disabled were much the same as anyone else's, except that they were somewhat less likely to have taken part in fundraising, and more likely to have given practical or direct help to individuals.

19 METHODOLOGICAL, ORGANISATIONAL AND ADMINISTRATIVE LESSONS

In many respects the fourth follow-up of the National Child Development Study has been a unique undertaking. In particular, we are not aware of any other research project (apart, perhaps, from government surveys) which has been funded by a consortium of as many as five government departments, and has had its programme and analyses in large measure determined by so many different 'customers'.

There would be no value in dwelling upon the particular problems which that has caused, as it is a situation which few, if any, other studies are likely to encounter. However, there are some issues which are of relevance to any study of this scale and nature, irrespective of its funding arrangements, although those arrangements may have led to their being experienced in an exaggerated form on the current study.

Most of the important lessons have been foreshadowed in previous chapters of this report, but are nevertheless worth emphasising once more.

- * Reference has been made to the amount of data generated by the fourth follow-up and that it exceeded, indeed eventually almost doubled, what had been allowed for in the original budget. It is inevitable that everyone involved, both researchers and sponsors, will wish to see their interests covered, and will be reluctant to see them eliminated or considerably reduced. However, not to do so is only to add to the quantity of data preparation and editing to be done subsequently, extend the period which this will require, and reduce the time available for analysis and reporting. Of course, it is possible to adopt a strategy where the priority is to collect as much information as possible, which is then available for analysis at a later date and under separate contracts, but the implications of this strategy for what can be done under the initial contract must be recognised.

- * An issue closely related to the above is that, in attempting to keep the questionnaire length to something nearer the budgeted assumptions, the temptation must be resisted to omit relatively simple summary questions on the grounds that their answers can be derived from a number of other questions. In the case of the NCDS 23-year interview, this strategy was adopted on a number of occasions. Subsequent computation of the necessary derived variables prove extremely time-consuming, complex and potentially error-prone. With hindsight, the cost of doing this, in terms of the consumption of the time available for data preparation and analysis, was clearly greater than what was saved on the questionnaire. Unfortunately, but inevitably, pruning a questionnaire should be based on a reduction in the substantive

areas to be covered, rather than clinging to a broader coverage with each area covered less satisfactorily or in a manner which creates overwhelming problems for subsequent analysis. Indeed, the twenty-three year questionnaire does cover topics which departments decided subsequently were not of interest to them.

- * The importance of adhering to timetables should hardly need to be stressed. Certainly the Bureau must acknowledge that in the middle stages of the project, in the period between the completion of field-work and the commencement of analysis, it experienced great difficulty in meeting self-imposed deadlines for interim stages in the readiness of the data. The main reasons for this, relating to the quantity of data, the adoption of SIR and specific difficulties with computing facilities have been described in earlier chapters of this report. However the difficulties encountered at this time undoubtedly also reflected the pressures created by the project being already significantly behind timetable at the beginning of this period. This, in turn, was the result of time taken to discuss and agree the final content of the questionnaire. The potential implications of a project being some seven months behind timetable after only eighteen months do not need spelling out.

Furthermore, the delays in agreeing the content of the questionnaire detracted from the adequacy of the piloting of some parts of it. Coverage of some topics was introduced, or substantially amended, at a late stage, and therefore underwent less, and more pressured, piloting than was desirable. This resulted in some unsolved ambiguities in the final questionnaire.

- * With hindsight, it was perhaps unfortunate that all the coding of open ended questions was not done at the Bureau or under our immediate control. It would be wrong to overstate any uncertainties about the adequacy of such coding undertaken by the sub-contractor, but its remoteness from the Bureau has made it difficult to obtain definitive insights into any problems that were encountered.
- * From the researchers' experience, one of the notable successes of the data processing associated with the fourth follow-up has been the decision to adopt the SIR data-management package. Although there were problems with its implementation, the end result has been considerable gains in the accessibility of the data for researchers and in the speed with which working extract files can be created.
- * It is understandable that each of the study's sponsors would wish to see their own particular interests protected and pursued within the overall contract. In putting this into practice,

members of the study's steering committee felt it was important that they should be able to identify a specific member of the research team who was working on the analyses of particular interest to their department and essentially only on those analyses. This had two effects. Firstly, it resulted in some compartmentalisation of the research team, with each member of it working in a degree of isolation and with substantially reduced opportunities and contexts to benefit from mutual discussion and cross-fertilisation. Secondly, it meant that not only the responsibility for, but also the knowledge of, analysis on a particular topic fell solely on one individual. It was therefore extremely difficult for any other member of the team to be able to pick up on that work if the researcher left the project, fell ill or experienced difficulties for any other reason.

- * It is equally understandable that sponsors' highest priority for reporting results should be for a form and style which meet their needs. However, this generally resulted in a product very different from something which could, even after some amendment, be submitted for publication as, for example, a journal article. Consequently, very little from the fourth follow-up has been published or is likely to be published in the near future. It is unfortunate both that few of the findings from the fourth follow-up are available outside the funding departments and that the satisfaction of publication has not been experienced by researchers for whom this is an important element in their motivation and for the continuation of their insecure careers.

Consideration should now be given to the question of wider availability of the working papers.

- * The decision of the sponsoring departments that working papers, largely specified and agreed independently by each department, would be the form of their feedback meant that the total output had no kind of planned coherence or unity. The content of the final report and, therefore, the content of this working paper, reflects that early decision.

20 BEYOND THE FOURTH FOLLOW-UP

It has always been intended that NCDS should follow the 1958 birth cohort through childhood and adolescence, into adulthood, and through adult life - a survey 'from the cradle to the grave'. It is arguable that the benefits, in terms of increased knowledge, multiply with successive follow-ups. Development does not end at some arbitrary point in childhood, adolescence or adulthood but continues through life. It follows that it is important to have some purchase on answers to questions such as what kind of children become what kind of citizens, workers, or parents? How do adults themselves develop over time and is this related to aspects of childhood? In what ways does one birth cohort of adults differ in these respects from cohorts born earlier or later? (Fogelman and Wedge, 1981).

The fourth NCDS follow-up and the earlier NCDS surveys have indeed tracked the NCDS subjects through childhood and adolescence and into adulthood, and they have done so without the benefit of long-term funding. At the time of writing there are no assured funds for further surveys of the cohort in adult life. There is, however, commitment to seek such funding in order that the National Child Development Study may continue as a resource for the research community as is indicated below.

Availability of NCDS data for research

The data from the fourth NCDS follow-up, together with data from the birth survey and the earlier follow-ups, are held by the ESRC Data Archive and are available to researchers who wish to specify their own data sets. Access to the data is open to anyone interested, although intending users are asked to commit themselves to ensuring that confidentiality is observed and to inform the NCDS User Support Group about their proposed use of the data and any resulting publications, etc. Additionally of course it is important that they have access to computing facilities which can handle a data set of this size.

The Data Archive also hold data from a number of special studies which involved special surveys of samples of cohort members, namely: the study of handicapped school leavers (1976); the feasibility study (1978); and the smoking survey (1978). These are also available for secondary analysis.

NCDS User Support Group

Following the completion of work under the contract for the fourth follow-up, the NCDS User Support Group was set up in the Social Statistics Research Unit at City University. With funding for two years from the ESRC, the main role of the Group is, in co-operation with the ESRC Data Archive, to promote and facilitate the use of NCDS data by researchers.

Among other things, the Group is responsible for the general enhancement of the NCDS database and the improvement of documentation. It is also involved in preparing data sets based on a sample of variables for general research use, and is working with a small group of university and polytechnic teachers to construct data sets on a subsample of cases and containing a small number of variables, for use in teaching. It is hoped that the latter will ultimately be available for wider distribution.

Further surveys - NCDS5 and beyond?

For some time the USG has held extensive discussions about the future of NCDS with the National Children's Bureau, with the NCDS Steering Committee (set up by the National Children's Bureau to assist and advise on the future of the study), and with leading researchers and potential funders on both sides of the Atlantic.

Four main objectives underlie the current approach to planning for the future of the study:

- (1) to enhance it as a national longitudinal data set for studying changes in health, socio-economic and demographic circumstances, and their inter-relationships, within and between generations;
- (2) to increase the use of the data set, including the collection of new ad hoc specialised data, in the detailed study of particular sub-groups of the cohort;
- (3) to further develop the accessibility of these data to the research community, and also to administrators and policy makers; and
- (4) to facilitate and encourage more wide ranging and systematic comparisons between the three British birth cohort studies.

For the future there would continue to be an NCDS core team, responsible for the final decisions on the nature and content of another follow-up, the data collection, preliminary editing and maintenance of the data base, and some analysis. However, the breadth of the study is such that no one group of researchers could

contain expertise in all relevant areas. Therefore we have established a group of collaborators, to work closely with the core team in determining the content of the next stages, and who in due course will be directly involved in the first analysis of the data in their particular area.

A number of themes have been identified as being of the highest priority for the future, each of which is represented by several experienced researchers. The themes are: family and social networks; occupation and income dynamics; housing and environment; health continuities; mental health; health behaviour, beliefs and education; reproductive performance; child rearing, health and education; and ageing.

The last two themes relate to our intention to extend the study to collect information on the children and the parents of the cohort members, thus providing a unique body of information spanning three generations. Of course this would require additional data collection. Indeed supplementary data collection is likely to be necessary in relation to other themes. Many decisions on methods still have to be taken, but we foresee a main survey on the entire cohort with a number of supplementary surveys to obtain more detailed information on particular themes or subgroups. In particular, the latter are likely to include interviews with the partners of cohort members and educational and health assessments of their children.

The above summarises current aspirations, which still need to be turned into reality. The study has never had the security of long-term funding, and the grant for the User Support Group runs only until spring 1987. We have recently applied to ESRC for an 18 month development programme, during which the NCDS team and the collaborators will arrive at final recommendations on the content of the next stage, and, with assistance from the SCPR/City University Survey Methods Centre, the many methodological issues will be assessed and, where appropriate, field experiments undertaken.

Meanwhile, with encouragement from the ESRC Research Resources and Methods Committee, discussions have been taking place in the USA with the National Science Foundation, the National Institutes of Health and a number of research foundations to explore the possibility of further funding for the study.

The potential for comparative analysis and for British and American researchers to exploit the unique aspects of NCDS together are currently being explored. It is planned to submit applications to the National Institutes of Health and a number of research foundations during 1987, seeking funding to cover a research programme designed to explore transitions to adulthood in the cohort and inter-generational continuities and discontinuities in health and development in childhood. More specifically, the programme would focus upon the following problems:

- * The antecedents and consequences of teenage pregnancy, illegitimacy, and divorce. (This will include comparisons between NCDS and the National Longitudinal Survey of Youth (NLSY) which is the responsibility of the National Opinion Research Center (NORC) and which has been collecting similar data on an American sample of similar age).
- * Adult sequelae of serious educational difficulties in childhood.
- * Inter-generational continuities and discontinuities in child health and development.
- * Influences of characteristics and experiences of the cohort member in childhood on the mental health of their children.
- * Continuities and discontinuities between child and adult psychopathology.

Each of these issues has substantial research interest and immediate policy relevance.

A number of other areas where funding may be sought have been identified during discussions with potential collaborators and funders. These include, for example:

- * Labour market experience as a determinant of occupational rank.
- * The alternative route of part-time further education.
- * Returns to education.
- * Determinants and consequences of periods of unemployment.
- * Household membership and income dynamics.
- * The economics of the family.
- * The careers of those with scientific or technical skills. (This is another area which might include comparison with NLS).
- * The longer term influence of life cycle changes and employment careers on housing aspirations.
- * Housing careers which necessitate geographic mobility and hence influence relations between generations.
- * The influence of 'type of community' on housing careers.

At this stage contact with UK funding sources other than ESRC has been limited. But in the end we would hope to see them redress the balance between UK and US funding and also the balance in terms of substantive areas covered by the NCDS5 programme of research.

In summary, we currently see NCDS5 comprising data collection involving the cohort, their partners and their children, as follows:

* Cohort member (Expected sample c14K)

Family and household formation
Labour market histories
Housing and migration histories
Physical and mental health
Use of health and social services
Health beliefs and attitudes
Parents' health, well-being and whereabouts
(Possibly tests of reading and mathematical skills)

* Partners

Social and family background
Health

* Children (Expected sample c14K)

Intellectual and language development
Mathematical and reading ability
Health and physical development

* Mothers (Expected sample c10K - c6K female cohort members & c4K female partners)

Reproductive histories
Health and development of their children
Attitudes and child care behaviour (including use of services)

Over the next few months we will be working with the collaborators to prepare applications seeking funding for different aspects of the programme. These applications will cover the costs of the NCDS core team, the costs of data collection and the costs of a substantial amount of analysis. As noted above, we have already submitted an application to ESRC to cover the costs of the development programme. Although we are starting to develop fairly clear ideas about the shape of the next round we are keen that it should serve as many interests as possible. We would therefore encourage potential users of the data to contact us to make their interests known. At the end of the day it is likely that difficult decisions will be made about the inclusion or exclusion of particular questions or sets of

questions. We hope that these decisions can be based on a reasonable estimate as to the uses which would be made of the information if it were collected.

If this search for funding is successful, we hope that the main survey would take place early in 1989. After that it will be time to think about the next round!

REFERENCES

- Anderson, S. et al. (1980) Statistical Methods for Comparative Studies. John Wiley and Sons.
- Black Report (1980) Inequalities in Health HMSO.
- Butler, N.R. and Bonham, D.G. (1963) Perinatal Mortality. Livingstone.
- Chamberlain, R. et al. (1975) British Births 1970 Heinemann Medical Books.
- Cherry, N (1976) Persistent job changing - is it a problem? Journal of Occupational Psychology, 49, 203-221.
- Davie, R., Butler, N.R. and Goldstein, H (1972) From Birth to Seven Longman.
- Department of Employment (1981) New Earnings Survey. HMSO.
- DHSS (1974) Report of the Committee on one-parent Families (The Finer Report). HMSO.
- Douglas, J.W.P (1948) Maternity in Great Britain. OUP.
- Essen, J and Lambert, L (1977) Living in one-parent families: relationships and attitudes of sixteen-year olds. Child: Care, Health and Development, 3, 5.
- Essen J. and Wedge, P. (1982) Continuities in Childhood Disadvantage. Heinemann Education Books.
- Ferri, E. (1976) Growing Up in a One-Parent Family NFER Publishing Company.
- Fogelman, K. (ed.) (1983) Growing Up in Great Britain Macmillan
- Goldstein, H. (1976) A study of the response rates of sixteen-year olds in the National Child Development Study in Fogelman, K., Britain's Sixteen-Year-olds. National Children's Bureau
- McMichael, A.J. (1976) Standardised mortality ratios and the 'healthy worker effect': scratching beneath the surface. Journal of Occupational Medicine, 18, 3.
- OPCS (1983) General Household Survey 1981. HMSO.

- Roberts, K. (1977) The social conditions, consequences and limitations of careers guidance. British Journal of Guidance and Counselling, 5, 1.
- Royal College of Physicians (1979) Alcohol and Alcoholism. Tavistock.
- Royal College of Physicians (1983) Obesity. Journal of the Royal College of Physicians, 17, 1.
- Rutter, M. et al. (1970) Education, Health and Behaviour. Longman.
- Shepherd, P. (1980) The NCDS (1958) Cohort at 20. Concern, 37.
- Wadsworth, M.E.J. (1981) Social class and generation differences in pre-school education. British Journal of Sociology, 32, 4.
- Watts, A.G. et al. (eds.) (1981) Career Development in Britain Hobsons Press for CRAC.
- Wedge, P. and Prosser, H. (1973) Born to Fail? Arrow Books.
- Williams, A. (1973) Personality and other characteristics associated with cigarette smoking among young teenagers. Journal of Health and Social Behaviour, 14.

APPENDIX 1

Staff Employed on the NCDS Fourth Follow-up

Research Staff

Ken Fogelman	
Peter Shepherd	
Dorothy Henderson	
Christine Such	
Joan Payne	(from May 1983)
Christine Power	(from August 1983)
Mayer Ghodsian	(from September 1984)
Richard Ives	(to August 1984)
Lois Cook	(June 1983 to July 1984)
Irene Bruegel	(October 1980 to January 1983)
Ann Bowling	(June 1982 to March 1983)
Christine Callum	(May 1981 to September 1982)

Statisticians

Dougal Hutchison	(funded by DHSS Programme Grant)
Tony Ades	(from February 1983)
Raja Iyer	(from April 1983)
Vanessa Simonite	(to December 1982)

Data Processing Staff

Bob Wellburn	
Sheila Williams	
Warren Hilder	(from May 1983)
Michael Morawski	(September 1983 to September 1984)
Christopher Burge	(October 1980 to September 1983)
Puck de Raadt	(to July 1983)

Secretarial Staff

Dianne Haggis	
Rose Fowler	(from August 1983)
Ilse Sheerin	(October 1981 to June 1983)
Jean Gittos	(August 1980 to July 1981)
Millie Stanley	(to July 1980)

APPENDIX 2

List of Working Papers: prepared by the NCDS4 Research Team

The working papers listed below were prepared for the sponsors as part of the fourth NCDS follow up. They report on the analysis of data relating to some 12,500 individuals obtained by interview in 1981 and early 1982.

No.	Title	Author(s)	Date
***1.	Literacy and numeracy: evidence from the National Child Development Study Now published as: SIMONITE V (1984) <u>Literacy and numeracy: evidence from the National Child Development Study.</u> Adult Literacy and Basic Skills Unit.	V. Simonite	February 1983
*2.	Initial analyses with the malaise inventory	A. Bowling	May 1983
*3.	Accidents	A. Bowling	May 1983
*4.	Drinking	A. Bowling (Revised by K. Fogelman)	April 1984
*5.	Smoking patterns	A. Bowling (Revised by K. Fogelman)	April 1984
*6.	People reporting a long-term sickness, disability or infirmity	A. Bowling	May 1983
*7.	Some preliminary educational findings	R. Ives	May 1983
*8.	Lone parenthood in NCDS IV	D. Henderson	November 1983
*9.	Early parenthood, marriage and cohabitation	D. Henderson	December 1983
***10.	Self-employment in NCDS IV Now published as: PAYNE J (1984) 'Young self employed workers.' <u>Employment Gazette</u> , 92 11 pp 497-503	J. Payne	July 1984

* Limited circulation copies available ** No longer available *** Published

List of Working Papers: prepared by the NCDS4 Research Team

No.	Title	Author(s)	Date
*11.	Comparing NCDS IV to the 1981 UK Census	A. Ades	September 1983
**12.	Current household and housing circumstances	C. Such	September 1983
**13.	Home ownership	C. Such	October 1983
*14.	Voluntary activities	R. Ives	November 1983
*15.	Completed apprenticeships	L. Cook	November 1983
*16.	Summary variables for employment history data	J. Payne	November 1983
*17.	Careers advice and obtaining a job	R. Ives	January 1984
*18.	Giving up before time: apprentices who do not complete their apprenticeship	L. Cook	February 1984
*19.	Earnings, income and other aspects of the financial circumstances of the NCDS Cohort at 23.	P. Shepherd	March 1984
*20.	A comparison of marriage and cohabitation in NCDS IV	D. Henderson	April 1984
*21.	A comparison of various measures of unemployment and their correlates	J. Payne	March 1984
*22.	Health and health-related behaviour in NCDS IV	C. Power	April 1984
*23.	The partners of cohort members: a comparison of the characteristics of married and cohabiting partners	D. Henderson	May 1984
*24.	Destinations of young people who left full-time education at different ages	J. Payne	June 1984
*25.	Analysis of response	R. Iyer	June 1984
*26.	Current labour-market experience of the apprentice-trained	L. Cook	June 1984
*27.	Unsuccessful education courses	R. Ives	July 1984

* Limited circulation copies available ** No longer available *** Published

List of Working Papers: prepared by the NCDS4 Research Team

No.	Title	Author(s)	Date
*28.	Partnership breakdown and the formation of new families	D. Henderson	September 1984
*29.	Relationship of body mass index to morbidity in young adults	C. Power	October 1984
*30.	Unexpected success and failure in obtaining qualifications	M. Ghodsian	December 1984
*31.	Work histories and employment outcomes at age 23	J. Payne	January 1985
*32.	Attitudes to work	J. Payne	February 1985
*33.	Material circumstances of NCDS families	D. Henderson	August 1986
*34.	Women and children at risk	D. Henderson	August 1986
**35.	Size and composition of family income	P. Shepherd	May 1986
**36.	School examinations failure	R. Ives	Under revision
*37.	Education from sixteen to twenty-three	R. Ives	December 1984
*38.	TOPS trainees	J. Payne	February 1985
*39.	Characteristics of training courses	J. Payne	March 1985

* Limited circulation copies available ** No longer available *** Published

National Child Development Study User Support Group Working Paper Series

No.	Title	Author(s)	Date
8.	Health and social mobility during the early years of life	Chris Power Ken Fogelman & John Fox (SSRU)	May 1986
9.	Effects of ability grouping in secondary schools in Great Britain	Alan Kerckhoff (Duke University, N. Carolina)	June 1986
10.	Leaving the parental home: an analysis of early housing careers	Gill Jones (Thomas Coram Research Unit)	July 1986
11.	Stratification in youth	Gill Jones (Thomas Coram Research Unit)	July 1986
12.	Social class changes in weight-for-height between childhood and early adulthood	Chris Power (SSRU) & Clare Moynihan (Royal Marsden Hospital)	July 1986
13.	Response to a national longitudinal study: policy and academic implications for the study of change	Dougal Hutchison (NFER)	August 1986
14.	Drop out from apprenticeship: an application of survival methods to grouped data	Dougal Hutchison (NFER)	August 1986
15.	Event history and survival analysis in the social sciences: review paper and introduction	Dougal Hutchison (NFER)	August 1986
16.	Transitions in young adulthood	Kath Kiernan (SSRU)	October 1986
17.	The NCDS5 Development Programme	Peter Shepherd (SSRU)	October 1986
18.	A note on household income data in NCDS3	John Micklewright (Inst of Economics and Statistics, Univ of Oxford)	December 1986
19.	Unemployment, apprenticeships and training - does it pay to stay on at school?	Joan Payne (Dept of Social & Admin Studies, Univ of Oxford)	December 1986

National Child Development Study User Support Group Working Paper Series

No.	Title	Author(s)	Date
20.	The Fourth Follow-up of the National Child Development Study: an account of the methodology and summary of the early findings	NCDS4 Research Team (National Children's Bureau)	March 1987
21.	Class and tenure mobility, do they explain social inequalities in health among young adults in Great Britain	Ken Fogelman, Chris Power & John Fox (SSRU)	April 1987
22.	Handedness in Twins: the right shift theory	Marian Annett (Dept of Applied Social Studies, Coventry Poly)	March 1987
23	Trade union membership and activism among young people in Great Britain	Joan Payne (Dept of Social & Admin Studies, Univ of Oxford)	December 1987
24.	Early adult outcomes of truancy	Angelika Hibbett (SSRU)	July 1987
25.	Family breakdown, social mobility and health inequalities	Ken Fogelman Chris Power & John Fox (SSRU)	July 1987
26.	New possibilities for longitudinal studies of intergenerational factors in child health and development	John Fox & Ken Fogelman (SSRU)	December 1987
27.	Smoking in pregnancy and development into early adulthood	Ken Fogelman (SSRU)	February 1988
28.	Health selection: an explanation of social inequalities in young adults?	Chris Power Orly Manor John Fox & Ken Fogelman (SSRU)	February 1988
29.	A longitudinal study of housing and social circumstances in childhood and early adulthood	Mayer Ghodsian & Ken Fogelman (SSRU)	March 1988
30.	Early adult outcomes of truancy, II: The effects of truancy after allowing for other factors	Angelika Hibbett & Ken Fogelman (SSRU)	March 1988

National Child Development Study User Support Group Working Paper Series

No.	Title	Author(s)	Date
31.	Occupational expectations and outcomes: Some implications for vocational guidance & manpower planning	Judith Glover (Dept of Sociology Univ of Surrey)	April 1988
32.	Childhood morbidity and adult ill-health	Chris Power (SSRU) & Catherine Peckham (Institute of Child Health, London)	August 1988
33.	Family disruption in early life and drinking in young adulthood	Valerie Estaugh (Family Policy Studies Centre) & Chris Power (SSRU)	December 1989

NATIONAL CHILD DEVELOPMENT STUDY

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 Survey (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. These 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 the 1971 and 1981 Censuses (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 case 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.