

Continuity and Change in Pathways to Young Adult Disadvantage: Results from a British Birth Cohort

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Contents

1. Introduction.....	1
2. Elements of the Life-Course Considered	3
2.1 Childhood antecedents	3
2.2 Experiences from 16 to 23 and from 23 to 33.....	7
2.3 Outcomes at age 23 and 33	9
3. Regression modelling.....	11
4. Results	13
4.1 Childhood antecedents for outcomes at ages 23 and 33	13
4.2 Childhood and intermediate antecedents for outcomes at ages 23 and 33.....	21
4.3 Continuity and change to age 33	29
5. Discussion.....	38
References.....	42

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Abstract

This paper focuses on pathways to adult disadvantage (or social exclusion) up to age 33 for a cohort of children born in Great Britain in March 1958. A sequence of interrelated analyses that build up a life-course account of the pathways involved in the origins of adult social exclusion are explored.

The first set of results concern the associations of childhood disadvantage to subsequent adult disadvantage and pay particular attention to whether the pathways involved or the responsiveness to childhood circumstances differ by gender. We also provide a consistent account of the *pervasive* childhood factors, that are associated with a wide range of adult disadvantage for both men and women, and the *specific* antecedents, that show fewer but related links across similar domains of life-course experience. A sub-theme is an exploration of the sensitivity of the results to selection through missing information on the same adult outcome at the other adult age. We find fairly compelling evidence that the effects of childhood disadvantage are more powerful for women than for men: *pathways to social exclusion are gendered*.

The second cluster of results concerns the influence of experiences of disadvantage between ages 16 and 23 for outcomes at ages 23 and 33. These intermediate experiences are shown to mediate the legacies of childhood disadvantage considerably, although considerable additional legacies from pervasive and specific childhood disadvantages remain. Experiences from ages 16 to 23 do not relate more closely to outcomes at age 23 than at age 33, though this would perhaps be expected, given proximity. The association is found to be more lasting. The pathways to adult social exclusion through these intermediate experiences are also gendered and much of the excess legacy of childhood disadvantage for women appears to be mediated through lone motherhood.

Our third focus is on the continuities of disadvantage between ages 23 and 33. In particular, we show that the childhood and intermediate antecedents of outcomes at age 33 are rarely different for those who were or were not disadvantaged at age 23 on the same outcome. We also show the interconnectedness with the legacies of other disadvantages at age 23, which illustrates the need for a dynamic life-course approach to social exclusion and the fact that cross-sectional, isolated measures fail to capture the varying manifestations of earlier disadvantage that constitute the nature of social exclusion. There are clear associations of disadvantage at age 33 with experience of unemployment or divorce between ages 23 and 33, and the legacies of divorce are shown to be more powerful for women than for men.

The implications of these findings for our understanding of the processes involved in the emergence of social exclusion are discussed and the need for policy responses, that differentially protect those who have recently exited an adverse state according to their lifetime patterns of disadvantage and take account of the interconnectedness of disadvantage as incorporated in the concept of social exclusion, is outlined.

Keywords: intergenerational transmission, disadvantage, gender
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1. Introduction

This paper focuses on pathways to adult disadvantage (or social exclusion) up to age 33 for a cohort of children born in Great Britain in March 1958. The goal is to explore a sequence of interrelated analyses that build up a life-course account of the pathways involved in the origins of adult social exclusion.

The first set of questions concerns the associations of childhood disadvantage to subsequent adult disadvantage and pays particular attention to whether the pathways involved or the responsiveness to childhood circumstances differ by gender. We also provide a consistent account of the *pervasive* childhood factors, that are associated with a wide range of adult disadvantage for both men and women, and the *specific* antecedents, that show fewer but related links across similar domains of life-course experience. A sub-theme is an exploration of the sensitivity of the results to selection through missing information on the same adult outcome at the other adult age. We find fairly compelling evidence that the effects of childhood disadvantage are more powerful for women than for men: pathways to social exclusion are gendered.

The second cluster of questions concerns the influence of experiences of disadvantage between ages 16 and 23 for outcomes at ages 23 and 33. How far do these mediate the legacies of childhood disadvantage? Are experiences from ages 16 to 23 more closely related to outcomes at age 23 than at age 33 (plausible, given the proximity), or is the association more lasting (as we find)? Are the pathways to adult social exclusion through these intermediate experiences also gendered?

Our third focus is on the continuities of disadvantage between ages 23 and 33. In particular, we ask whether the childhood and intermediate antecedents of outcomes at age 33 are different for those who were or were not disadvantaged at age 23 on the same outcome. We also explore, to a limited extent, the interconnectedness with the legacies of other disadvantages at age 23 and the associations with experience of unemployment or divorce between ages 23 and 33. Further, the role of gendered pathways is considered again.

In earlier work we have explored the parental, familial and childhood precursors of adult disadvantages at ages 23 and 33 (Hobcraft 1998) and the particular pathways through early motherhood (Hobcraft and Kiernan 2001) and through lack of educational qualifications (Hobcraft 2000).

Here we extend the antecedents of adult social exclusion to include a much wider range of measures of late adolescent/early adult experiences between ages

16 and 23 and some key measures of experience between ages 23 and 33. Moreover, the same set of exclusionary indicators are considered at ages 23 and 33, enabling the exploration of the extent to which continuity of disadvantage (or its converse, escape from disadvantage) is related to different childhood and early antecedents compared with those who become newly disadvantaged between ages 23 and 33. In addition, the measures of experiences between ages 23 and 33 are linked to this continuity and change in relation to adult disadvantages.

Fundamental to the approach used here is a belief that it is essential to look at the genesis of social exclusion in a broad multidisciplinary and life-course framework. Social exclusion or multiple disadvantage are seen as encompassing a combination of pathways through: nature-nurture interplays; the childhood environment, including the home or parental context; emerging individual development characteristics, including personality, health, and educational performance; the roles of prior experiences, including schooling, employment, housing, welfare, partnership and childbearing; and the interplays among different elements of disadvantage at any stage in the life-course, including whatever point is taken as the 'outcome'. A key feature is thus to pay attention to processes over the whole life-course and to as full a range of economic, social, behavioural, demographic, genetic, and contextual features as possible. Moreover, there are always many deep and interesting issues about the importance of timing, sequencing, and cumulation of experiences over the life-course and even more challenging questions about the interplays or interactions involved.

Inevitably, no single study enables all of life's rich tapestry to be addressed in full and certainly not in a single paper. The chosen source of information is the British National Child Development Study (NCDS), a longitudinal study of all children born in the first week of March 1958. The NCDS has collected information at birth, at ages 7, 11, and 16 during childhood, and at ages 23 and 33 (and now 42) during adulthood. Each of the three childhood waves contained a number of common and fairly comparable measures and included substantial survey reports from the parents, teachers and schools, a medical examination, and a series of test scores on reading, mathematics, or 'general ability' of the cohort member. In addition, at age 16 there was an extensive individual questionnaire for the cohort members. In adulthood, the contacts have been with the cohort members and with their partners. In each wave, except the more limited first contact at birth, there has been a serious (though with imperfections) attempt to obtain information concerning a wide range of domains, covering: social, economic, demographic, housing, welfare, behaviour and attitudes, and physical and mental health circumstances; educational, schooling and labour market experiences as relevant; and retrospective event

histories in adulthood regarding employment status spells, housing, partnership formation and dissolution, and pregnancy/ births. The design of the NCDS limits some of the ambitious principles outlined above, most particularly through the lack of an explicit genetically sensitive design, since the only siblings included are twins (too few to permit serious analysis) and there is not yet the possibility of linking findings to individual molecular biological indicators.

Others have used the NCDS (and more recently the British Cohort Study of 1970) to explore pathways to individual adult outcomes (see, for example, Bynner *et al* 2000, Feinstein 2000, Gregg and Machin 1998, Kiernan 1992, 1995 and 1996, and Schoon *et al* 2002). Outside the UK the only long-running birth cohort study that has been used to study pathways to adult disadvantage is probably the Dunedin study (Moffitt *et al* 2001). The broad issue of consequences of childhood poverty and escape pathways has received much attention in the US, although harder to address without birth cohort information (see, for example, Chase-Lansdale and Brooks-Gunn 1995, Duncan and Brooks-Gunn 1997, and Mayer 1997). A fascinating and rich study that examines both genetic and social influences on adolescent development using longitudinal information is provided by Reiss *et al* (2000).

2. Elements of the Life-Course Considered

In order to explore the processes involved in the emergence of adult social exclusion, we have gradually included in our analyses a wide range of measures drawn from the NCDS. Here, we explore the build-up to disadvantage at age 33, dealing with childhood antecedents, the impact of experiences from ages 16 to 23, disadvantage status at age 23, and experiences between ages 23 and 33. The sequencing of the life-course means that early outcomes become pathways to later experience and this duality is explored. Before presenting the results, it is necessary to outline the measures used for analysis.

2.1 *Childhood antecedents*

In order to reduce the potential impact of differential sample selection, we have constructed a series of childhood measures that summarise information collected in a similar form at each of the three main childhood waves. This enables capture of any information on disadvantage and also permits some measure of repeated incidence of disadvantage, such as depth of childhood poverty. A great deal of effort went into constructing these summary measures of childhood experience, which are properly documented and more fully described by Hobcraft (1998 and 2000). Typically, we took information from the waves at ages 7, 11, and 16, in each case classified into advantaged,

intermediate, disadvantaged, and missing categories and summarised this across the three waves into four categories plus an additional one with all information missing. These usual categories were: a group with clear evidence of disadvantage at two or three waves; a group with one piece of evidence of disadvantage, but possibly some information missing at one or two waves; those with no evidence of disadvantage, but with fewer than two indications of advantage; those with two or three indications of advantage; and all information missing. There were some minor variations in detail.

The summary parental and childhood measures that have been used in this work take comparable inputs at ages 7, 11, and 16 unless otherwise indicated and cover:

- childhood poverty, as measured by ‘experience of financial difficulties’ at ages 7, 11, and 16 and by ‘receipt of free school meals’ at ages 11 and 16;
- social class of origin, concentrating on three broad groupings of non-manual, skilled manual, and semi- and unskilled manual for the father at the birth of the survey member and the two paternal grandfathers;
- social class of father (or father figure), similarly grouped, but for ages 7, 11, and 16;
- housing tenure, distinguishing local authority, owner-occupier, and other;
- parent’s school leaving age – combination of whether mother and father left school at the minimum age ;
- experience of family disruption, including having been born outside marriage, experience of care, loss of a parent through death, experience of parental divorce, and remarriage;
- behavioural measures based on several scale items, taken to represent
 - ◆ aggression,
 - ◆ anxiety, and
 - ◆ restlessness;
- teacher’s reports of mother’s and of father’s interest in the survey member’s schooling, distinguishing very interested and low interest from intermediate groups;
- frequent absences from school;
- three reports of contact with the police by age 16, two from teachers and one from parents;
- and educational test scores, distinguishing lower and upper quartile scores from intermediate ones.

We have also explored a similar indicator for father’s (or father figure’s) unemployment experience and for employment status of the mother, but have had little or no indication that these measures add explanatory power. There are a further series of measures that were collected at one or two of the childhood

waves of NCDS, but not all three, that we have yet to explore; neither have we exploited the very elaborate reports on health status during childhood.

In the analyses presented here, we have further reduced the categories of childhood indicators considered to those that frequently have strong significant associations with adult outcomes. Table 1 shows the percentages in the various categories distinguished for the sub-samples where the respondents were included at age 23 or at age 33.

Table 1: Proportions with childhood characteristics by sex, for samples with age 23 and 33 outcomes (per cent)

Characteristic	Age 23		Age 33	
	Men	Women	Men	Women
PARENTAL BACKGROUND				
Some Childhood Poverty	21.9	22.9	21.2	22.7
Fairly Poor in Childhood	10.9	11.5	10.7	11.4
Any Social Class 4 or 5	30.2	30.2	29.6	29.8
Fewer than 2 Non-manual	69.6	70.8	69.1	70.3
Any Local Authority Tenure	45.1	45.8	43.5	44.9
Fewer than 2 Owner-Occupier	59.5	60.3	58.7	60.2
One or both parents left school at MLA, neither stayed	63.5	63.0	62.4	62.1
Born out of Wedlock	2.8	3.3	2.7	3.3
Ever in Care	2.1	2.0	2.2	1.9
Family disruption (care, out-of-wedlock, divorced parents)	10.3	10.9	10.3	11.1
INDIVIDUAL BEHAVIOUR				
Any high aggression score	24.4	16.0	23.5	15.9
Fewer than 2 low aggression scores	64.2	51.9	63.5	52.3
Any high anxiety score	29.9	30.1	29.8	30.0
Any high restlessness score	24.0	18.0	23.5	18.0
All behavioural measures missing	1.9	1.8	2.0	1.7
PARENTAL INTEREST IN EDUCATION				
Father's interest in schooling low 2/3 occasions	8.6	7.2	8.1	6.9
Father's interest in schooling ever low	30.3	27.6	28.8	27.1
Mother's interest in schooling ever low	27.7	24.6	26.3	24.1
Mother's interest in schooling high once or less	69.2	65.9	67.7	65.3
Mother's interest in schooling missing on all	2.8	2.7	3.1	2.6
TEST SCORES, POLICE, and SCHOOL ABSENCE				
Any contact with police	13.5	4.5	12.8	4.5
Any frequent absences from school	22.5	19.7	21.0	19.6
2/3 Test scores in lowest quartile	18.1	16.4	16.9	15.7
Any Test score in lowest quartile	35.2	33.0	33.4	31.7
Fewer than 2 test scores in highest quartile	77.3	81.0	76.8	80.5
All test scores missing	1.5	1.3	1.6	1.5

2.2 Experiences from 16 to 23 and from 23 to 33

Experiences during late adolescence and into early adulthood can be of critical importance in shaping the subsequent life-course. We capture some of these key elements with the following indicators, several of which have been explored on a piecemeal basis in a variety of earlier work, but have not been brought together in an integrated analysis before:

- lack of qualifications;
- unemployment for 12 months or more from ages 16 to 23 (other durations are available, but 12 months gives sharpest contrasts);
- not in education, employment, or training (NEET) for 24 months or more from 16-23 (other durations are available, but 24 months gives sharpest contrasts);
- early parenthood, with teenage first births and those by age 22 identified;
- any experience of lone motherhood by age 23 for women only;
- whether the survey member left home for reasons of ‘friction’ by age 23;
- any experience of homelessness by age 23.

In addition, we consider two indicators of experience between ages 23 and 33, which capture important ‘triggers’ of later disadvantage:

- unemployment for 12 months or more from 23 to 33;
- getting a divorce between ages 23 and 33.

Since much of our analysis will be restricted to those survey members for whom information was available at both age 23 and age 33 (though with missing information in childhood handled differently, as described above), Table 2 shows the percentages of women and men experiencing the various disadvantages for the respondent who gave some information at ages 23 and 33.

However, as documented elsewhere for the childhood waves (Hobcraft 1998), there are real concerns that the most disadvantaged are likely to be selectively omitted from any wave of the study. Table 2 thus also shows the proportions experiencing potentially exclusionary disadvantages among those for whom information was available at only one of the two adult waves of the survey. Without exception, those who were not included at age 23 but were at age 33 and those who were included at age 33 but not at age 23 were on average more disadvantaged than those cohort members for whom information was available at ages 23 and 33. One great advantage of a prospective study is that we can look at selective omissions in this way. It is also possible to look at measures of childhood disadvantage for those who were not included in either of the adult waves, in order to assess the plausible hypothesis that this group were even more disadvantaged. There is not space to pursue such an analysis in any detail here, but the evidence is quite mixed: for example, those missing in both adult waves were more likely to have been in contact with the police or experienced

family disruption, but were often no more disadvantaged on other childhood measures than those in only one of the adult waves.

Table 2: Proportions experiencing selected disadvantages from ages 16 to 23 and from ages 23 to 33 by sex (per cent) for those included among respondents at ages 23 and 33

Disadvantage	Included at both ages 23 and 33		Not in age 33	
	Women	Men	Women	Men
AGES 16 TO 23				
No Qualification by age 23	13.2	11.4	19.8	16.4
Unemployed 12+Months	7.6	8.8	12.8	17.3
Not in Employment, Education or Training (NEET) 24+ Months	20.9	4.9	30.7	10.7
Early Parent (before age 23)	28.0	14.0	34.0	17.6
Ever Lone Mother	7.2	---	11.3	---
Ever Homeless	5.7	5.6	7.0	7.4
Left Parental Home because of 'Friction'	5.9	4.3	8.3	6.6
OUTCOMES AT AGE 23				
Social Class IV or V ('Unskilled')	20.3	20.2	26.1	29.3
Social Housing	16.6	10.2	22.1	15.2
Any Benefits (non-universal)	14.5	13.4	22.9	23.1
Low Household Income	25.8	20.7	34.8	29.6
High Malaise Score	14.8	5.6	19.7	7.7
Cigarette Smoker	39.6	39.6	43.5	45.7
AGES 23 TO 33			NOT IN AGE 23	
Unemployed 12+ Months	6.6	10.9	7.3	15.8
Became Divorced	16.9	13.2	17.9	17.1
NUMBER OF CASES	5035	4728	764	878

Note: see text for full description of adult outcomes

2.3 Outcomes at age 23 and 33

The six outcome measures that we shall focus on here are measured at both ages 23 and 33 in a fairly consistent way and represent several aspects of social exclusion, though lacking enough indication of support networks and engagement with civil society. They are:

- Occupational class, measured by the Registrar-General's social class indicator. We take semi-skilled and unskilled occupations as being low status, though it is doubtful whether class on its own captures social exclusion;
- Living in social housing in own right (not parents' social housing at 23). This appears to be the most comprehensive summary indicator of social exclusion, as explored in Hobcraft (2002);
- Receipt of non-universal benefits;
- Household income, with the lowest quartile being used as the measure of exclusion;
- A score of seven or higher on the Malaise inventory, indicating incipient depression and taken as an indicator of mental health;
- Cigarette smoking, which is taken as an indicator of both current and future physical health and correlates much better with disadvantage than available alternative indicators of general ill-health at these younger adult ages.

The percentages experiencing these outcomes at age 23 are shown in Table 2, which provides percentages for both men and women among those included in both adult waves and also for those for whom no information was available at age 33. Once again, we see clear evidence of selection for disadvantage among those who were included at age 23, but not at age 33.

In considering the outcomes measured at age 33, we present the information on a different basis. In the subsequent analyses we shall pay considerable attention to examining possible different antecedents for disadvantages at age 33 among groups distinguished by their status on the same outcome at age 23. Table 3 shows the numbers and proportions of women and men for whom the various outcomes at age 33 were available. Household income at age 33 is available for the fewest cohort members (less than four thousand men or women), resulting both from higher refusal rates on income questions and from the complexity of combining multiple income components; we note that the household was effectively defined as the survey member plus any partner for purposes of income measurement at age 33. The proportion with social class missing at age 23 (over 30 per cent) is much higher than for the other outcome measures, partly because the measure used is the survey member's current or most recent occupation.

Table 3: Proportions of men and women for each outcome measure at age 33 by sex and status of same outcome at age 23 and numbers of cases (Low status is disadvantaged)

Outcome at age 33	Status on same outcome at age 23							
	Women				Men			
	Not Low at age 23	Low at age 23	Missing at age 23	Number of cases	Not Low at age 23	Low at age 23	Missing at age 23	Number of cases
Social Class	.563	.135	.302	5305	.535	.130	.335	5275
Social Housing	.700	.146	.154	5430	.732	.090	.179	4984
Benefit Receipt	.741	.127	.132	5730	.731	.112	.157	5529
Household Income	.648	.197	.155	3959	.649	.148	.203	3970
Malaise Score	.741	.128	.131	5768	.797	.047	.156	5573
Cigarette Smoking	.524	.344	.131	5776	.509	.334	.157	5575

Table 4 shows some of the striking, if unsurprising, continuities in disadvantage at ages 23 and 33. Among those who were not low status on the same measure at age 23 (half to three-quarters of all those included for the same outcome at age 33, as shown in Table 3), the proportions experiencing disadvantage at age 33 are generally well below average, compared with all who were included at age 23. For example, fewer than ten per cent of those who were not in social housing in their own right at age 23 (though possibly living with parents in social housing), of those with a low malaise score at age 23 or of non-smokers at age 33 became low status on these indicators at age 33. There was more ‘churning’ into receipt of non-universal benefits, being in a low social class, and especially low household income among the groups not having low status on these indicators at age 23.

In contrast, Table 4 also shows that over 40 per cent of those who were of low status at age 23 remained in the low status group at age 33 for every one of the six outcomes considered here; over 70 per cent of smokers at age 23 still smoked at age 33. Of course, the converse is that up to 60 per cent of those who were disadvantaged at age 23 are no longer so at age 33.

It is also generally the case that those for whom information was not available on the same outcome at age 23 are selected for disadvantage at age 33, although low social class is an exception.

Table 4: Proportions with low status outcomes at age 33 by sex and status on same outcome at age 23

Outcome at age 33	Status on same outcome at age 23							
	Women				Men			
	Not Low at age 23	Low at age 23	All in age 23	Missing at age 23	Not Low at age 23	Low at age 23	All in age 23	Missing at age 23
Social Class IV or V	.169	.534	.239	.228	.104	.418	.165	.158
Social Housing	.089	.501	.160	.228	.085	.433	.123	.191
Benefit Receipt	.157	.424	.196	.283	.107	.307	.133	.186
Low Income	.202	.417	.252	.331	.185	.368	.219	.303
High Malaise	.067	.401	.117	.161	.042	.408	.062	.103
Cigarette Smoking	.066	.709	.321	.378	.076	.702	.324	.386

3. Regression modelling

In order to establish the relative importance of a large number of potential antecedents for a range of outcomes, separately by sex of the cohort member, we have made extensive use of regression analysis. We have evolved a series of strategies to make this process manageable and efficient, although the multiplicity of inputs and outcomes makes presentation of even parsimonious models challenging.

Although some of the measures we use are intrinsically continuous variables (e.g. income), most are by their very nature categorical (e.g. housing tenure). In order to maintain a consistent set of models, we have only considered dichotomous measures of social exclusion outcomes and have taken logistic regression models to be the appropriate analytic tool. A major analytic headache arises from the multiplicity of outcomes considered: these are clearly inter-related (as explored in Hobcraft, 2002) and yet adequate analytic approaches to modelling inter-connections among dichotomous outcomes are generally not satisfactory or widely available.

The measures of antecedents are also handled exclusively as categorical variables. Even where a measure is intrinsically continuous, our preference for retaining a separate identifier for missing information means that only categorisation can work. Of course, there is no need or desire to restrict categorical indicators for antecedents to dichotomies: our preference is to work with up to five categories plus a missing value, where each category contains sufficient observations to be a plausible candidate for having a statistically significant impact at the population level. This carries some limitations in that rare, but high-risk groups, are not captured in the analysis.

A further feature of the treatment of most categorised precursor measures is that we prefer to code the dummy variables used in a way that takes notice of any potential hierarchy or ordering of the categories. Thus, if a measure were grouped into four categories, plus a further missing value group, we would take the least disadvantaged group as a reference group and identify indicators of: being most disadvantaged; being in the two more disadvantaged groups; not being in the most advantaged group; and having missing information. There are two main reasons for adopting this ‘hierarchical’ dummy variable approach: it permits the identification of thresholds; and it avoids a few chance uninterpretable associations appearing.

A serious issue is the need to achieve some parsimony in the regression models. We often consider fifty or more categories as possible precursors of adult social exclusion and presentation of models including all of these for many outcomes would prove impossible. There is rarely any advantage in retaining many statistically insignificant terms in a regression model, since they introduce ‘clutter’ and marginally attenuate the more important associations. Throughout our analysis, we have used stepwise selection procedures to obtain more parsimonious models. Most of our results come from a forward stepwise procedure, which adds dummy variables one at a time on the basis of explanatory power and removes any that become insignificant. We have experimented extensively with backwards selection, where the initial model includes all terms and these are removed one at a time beginning with the least significant and adding back any that become significant after others have been removed. There are concerns about whether such automated stepwise procedures result in the ‘best’ parsimonious model, but we have been reassured by the consistency of results from forwards and backwards selection procedures.

Because we are considering a large number of potential covariates and of outcomes, we have here used a criterion of statistical significance that corresponds to one in a thousand (not the more conventional one or five per cent significance test) for inclusion or exclusion in our models. This is further

loosely justified by the size of the samples used in a Bayesian approach (Raftery 1996).

4. Results

4.1 *Childhood antecedents for outcomes at ages 23 and 33*

Although we have explored the relationship of childhood antecedents to adult outcomes at ages 23 and 33 fairly extensively elsewhere (Hobcraft 1998 and 2000), there are several reasons for including a further examination here: completeness, consistency, and a different model structure. In Table 5 results are given for models for each of the six adult outcomes considered here for ages 23 and 33. Two key features of these models that differ from our earlier treatments deserve attention. Firstly, in order to explore commonalities and differences by gender and to minimise differences between models by gender arising from near multicollinearity, we have pooled the information for both women and men and tested for the inclusion of all possible interactions of the childhood antecedent dummy variables with sex. Secondly, in order to find out more about selectivity as a background to our later analysis, we have also considered for inclusion in the models all possible interactions of each childhood antecedent dummy with an indicator of whether the respondent at 23 was lacking a response on the same outcome at age 33 or vice versa.

PERVASIVE ANTECEDENTS

Since there is a great deal of information in Table 5, we begin by drawing out pervasive antecedents, the term used for those that prove consistently strongly correlated with the range of disadvantaged outcomes at ages 23 and 33 considered here.

One or other of the two measures of childhood poverty is retained in the models for every outcome at both ages 23 and 33 and for both men and women, with the single exception of cigarette smoking at age 23; being fairly poor in childhood is most clearly related to being in social housing at both ages 23 and 33.

Frequent school absences during childhood are also pervasively related to disadvantaged outcomes in young adulthood, appearing in all our models for both sexes at both ages, but being significant only for women in relation to receipt of benefits at age 33.

Table 5: Odds ratios for childhood antecedents in forwards stepwise logistic models for six outcomes at ages 23 and 33, including interactions by gender and for missing information on same outcome in other adult wave (p<0.001)

Characteristic	Interaction Characteristic	Unskilled		Social Housing	
		Age 23	Age 33	Age 23	Age 33
Cohort member is FEMALE					
Missing at other adult wave				2.21	
PARENTAL BACKGROUND					
Some Childhood Poverty		1.42			
Fairly Poor in Childhood			1.39	1.55	1.77
Any Social Class 4 or 5		1.33	1.32	1.27	1.29
Fewer than 2 Non-manual				1.49	1.46
Fewer than 2 Non-manual	Missing other				
Any Local Authority Tenure				2.27	1.65
Any Local Authority Tenure	Female		1.31		
Fewer than 2 Owner-Occupier		1.49			1.45
One or both parents left school at MLA, neither stayed			1.35		
One or both parents left school at MLA, neither stayed	Missing other	1.39			1.49
Born out of Wedlock					
Ever in Care					
Family disruption (Care, Out-of-wedlock, divorced)				1.36	
INDIVIDUAL BEHAVIOUR					
Any high aggression score					
Any high aggression score	Female	1.47		1.40	1.54
Any high aggression score	Missing other			0.46	
< 2 low aggression scores					
Any high anxiety score					
Any high anxiety score	Female				
Any high restlessness score			1.27		
Any high restlessness score	Female				1.55
Any high restlessness score	Missing other				
All behaviour missing		1.94		2.61	2.27

Benefits		Low Income		Malaise		Cigarette Smoker	
Age 23	Age 33	Age 23	Age 33	Age 23	Age 33	Age 23	Age 33
				1.88	1.72		
1.60							
	1.37	1.24	1.35		1.48		1.24
1.63				1.46			
1.31							
	1.47						
	1.27			1.32			
			1.39			1.26	1.33
1.26							
					1.98		
						1.47	1.48
1.23				1.40		1.33	1.28
				1.31		1.19	1.24
					1.52	0.80	0.82
				1.34			
	1.24	1.23					
				1.48			
				2.73			

Table 5 (continued)

Characteristic	Interaction Characteristic	Unskilled		Social Housing	
		Age 23	Age 33	Age 23	Age 33
PARENTAL INTEREST IN EDUCATION					
Father's interest 2/3 low					
Father's interest ever low			1.39		
Father's interest ever low	Female				
Mother's interest ever low		1.44		1.30	
Mother's interest ever low	Female				
Mother's interest high 0/1				1.63	1.47
Mother's interest high 0/1	Female		1.55		
Mother's interest missing				2.16	
Mother's interest missing	Female				
TEST SCORES, POLICE, and SCHOOL ABSENCE					
Any contact with police		1.33		1.62	1.63
Any frequent school absences		1.43	1.30	1.56	1.52
Any frequent school absences	Female				
2/3 Tests in lowest quartile		1.58	1.39		
Any Test in lowest quartile		1.63	1.74	1.53	1.86
Any Test in lowest quartile	Missing other				
<2 Tests in highest quartile		1.84	2.24		1.76
<2 Tests in highest quartile	Female			1.85	
<2 Tests in highest quartile	Missing other				
All Test scores missing		5.77	5.81		6.00
All Test scores missing	Female			4.96	

Benefits		Low Income		Malaise		Cigarette Smoker	
Age 23	Age 33	Age 23	Age 33	Age 23	Age 33	Age 23	Age 33
			1.33				1.30
					1.55		
				1.33		1.25	
1.49							
						1.21	
	1.56						
1.91							
	2.25						
1.56	1.48				1.48	2.00	1.85
1.55		1.41	1.34	1.37	1.47	1.75	1.73
	1.56						
	1.31	1.26		1.37			
1.47	1.52	1.47	1.71	1.38	1.42	1.17	1.25
		1.61					
	1.44	0.59	1.55		1.54		1.29
		1.52		1.69			
			1.49		1.37		
	3.14	1.95	3.27		3.32	1.79	2.29
				3.45			

Educational test scores prove to have the most pervasive and powerful influence of all the childhood antecedents, with any test score in the lowest quartile remaining in every one of the models presented in Table 5 for both sexes. This is further reinforced by having two or three test scores in the lowest quartile for five of the twelve age-outcome combinations regardless of sex and by having fewer than two tests in the highest quartile for a further seven age-outcome combinations for both sexes and three more for women.

In addition, there are pervasive relationships of adult outcomes with: childhood contact with the police (8 of 12 age-outcome combinations for both sexes combined); one or more of the measures of parental interest in education (8 of 12 age-outcome combinations for both sexes combined and 3 further for women only, plus a further reinforcement for women on one of the both sex measures); one or more of the behavioural measures (8 of 12 age-outcome combinations for both sexes combined and three further for women only, plus a further reinforcement for women on one of the both sex measures); and parental housing tenure, especially for women (five for both sexes combined and an additional four for women). Moreover, the small group of cohort members for whom no educational test scores were available from childhood, including those deemed incapable of meaningful answers, are persistently disadvantaged in adulthood, with this indicator appearing with high odds ratios in nine of twelve age-outcome combinations for both sexes combined and two further models for women.

In summary, test scores and frequent school absences appear in all 12 models; childhood poverty and parental interest in schooling indicators appear in all but one age-outcome model (smoking at age 23 and low household income at age 23 respectively), as does lack of any childhood test scores (the exception being receipt of benefits at age 23); one or other of the childhood behaviour measures appears in all but two models (benefits at age 23 and low income at age 33); and parental housing tenure appears in nine and contact with the police in eight.

SPECIFIC ANTECEDENTS

Among the less pervasive (and even the occasional pervasive) childhood antecedents of adult disadvantage we see particular associations of similar disadvantages across the generations or life-course. A clear example of this 'inheritance' appears for parental housing tenure: by far the highest odds ratios for this antecedent appear in the models for the cohort member being in social housing as adults, with odds ratio of 2.26:1 at age 23 and a combined odds ratio of 2.39:1 at age 33 (1.65 times 1.45). The legacy of the father (or father figure) being in social classes IV or V is apparent for the cohort member being in the same group at both ages 23 and 33 (although the link of father's social class indicators to being in social housing at ages 23 and 33 is stronger).

The indicators of childhood behaviour are most frequently linked to mental health, as measured by malaise, and to cigarette smoking. For cigarette smoking, the associations are remarkably consistent at ages 23 and 33, with childhood aggression indicators having a combined odds ratio of 1.58:1 ($=1.33*1.19$) at age 23 and 1.59:1 ($1.28*1.24$) at age 33 and childhood anxiety being associated with a reduced propensity to smoke cigarettes at both ages 23 and 33 (odds ratios of 0.80:1 and 0.82:1 respectively). The links of childhood behaviour to mental health in adulthood are more variable, with aggression appearing at age 23 (odds ratio of 1.83:1 for both sexes) and childhood anxiety emerging as more salient at age 33 (1.52:1 for both sexes combined), though childhood anxiety is also associated with a higher incidence of malaise for women at age 23 (odds ratio 1.34:1). In contrast, none of the significant associations of childhood restlessness (or hyperactivity) are for these adult behavioural measures, but relate to the other adult outcomes, especially receipt of non-universal benefits.

CONSISTENCY BY OUTCOME AT AGES 23 AND 33

Unskilled occupations in adulthood are consistently related at ages 23 and 33 to the father (or father figure) being in the same occupational category during the cohort member's childhood. Unskilled adult occupations are also consistently and repeatedly linked to the hierarchies of test scores during childhood: significant relationships of similar magnitude are retained for each of the hierarchical divisions. In summary, a cohort member with two or three of the childhood test scores in the lowest quartile has an odds ratio for being in an unskilled occupation as an adult of 4.74:1 ($1.43*1.58*1.63$) at age 23 and of 5.42:1 ($1.30*1.39*1.74$) at age 33, when compared with the reference group who achieved two or three test scores in the highest quartile; moreover those for whom no childhood test scores were available have slightly higher odds ratios of 5.77:1 at age 23 and 5.81:1 at age 33. In addition, for adult unskilled occupations, a consistent legacy of frequent school absences emerges and slightly less consistent associations with childhood poverty and with low parental interest in schooling also appear.

Living in social housing in their own right for cohort members shows consistent and quite similar associations for both sexes at ages 23 and 33 with a wide range of childhood antecedents, including having been fairly poor during childhood, low social class of origin, housing tenure, mother's interest in schooling, contact with the police, frequent school absences, and any low quartile test score for both sexes combined. Women who were deemed aggressive by their teachers are also consistently more likely to live in social housing at ages 23 and 33. Lack of high test scores and having all test scores missing emerge as related to living in social housing for women at age 23, but for both sexes at age 33. Lack of childhood information on the behavioural

reports of teachers (at ages 7, 11, and 16) is also consistently related to living in social housing at ages 23 and 33 for both sexes combined.

Receipt of non-universal benefits in adulthood is consistently related for both sexes at ages 23 and 33 to contact with the police before age 16 and to having any test score in the lowest quartile. Childhood poverty is also related to this outcome at ages 23 and 33, although with a different indicator. Frequent school absences are linked to benefit receipt for both sexes at age 23, but only for women by age 33. Mother's interest in schooling is linked to receipt of benefits for women at ages 23 and 33 and lack of information on this measure is also linked to benefit receipt for both sexes at age 23 but only for women at age 33.

Low household income at ages 23 and 33 is consistently related to childhood poverty and to frequent school absences for both women and men. Although low household income is linked to childhood educational test scores at both ages 23 and 33, the pattern of associations is a little chaotic at the higher end, although those with any test score in the lowest quartile have a combined odds ratio of 1.85:1 (1.26*1.47) at age 23 and an odds ratio of 1.71:1 at age 33.

Malaise at ages 23 and 33 has a significantly higher incidence for women than for men, net of all of the controls examined here. A consistent association of adult malaise at ages 23 and 33 for both sexes appears for frequent school absences (odds ratios of 1.37:1 and 1.47:1 respectively). There is also some consistency in the legacy of childhood poverty and in the links with having any test score in the lowest quartile for both sexes. Perhaps unsurprisingly in view of the higher incidence of malaise for women, several of the repeated childhood antecedents are only for women at one of the two adult ages: childhood anxiety, low parental interest in schooling, fewer than two test scores in the highest quartile, and lack of any childhood test scores at all.

Cigarette smoking is consistently related at ages 23 and 33 for both sexes to childhood aggression and (protectively) anxiety, to experience of family disruption, to anti-social behaviour as indicated both by contact with the police and by frequent school absences, to having had any childhood test score in the lowest quartile, and to having all test scores missing. In addition, women who lived in local authority tenure at any of the childhood waves are consistently more likely to smoke cigarettes at ages 23 and 33.

GENDER DIFFERENCES IN CHILDHOOD ANTECEDENTS

In none of our models can we find any evidence that women are significantly less vulnerable than men to the legacy of childhood disadvantages: being a woman has no protective influence on the links of childhood disadvantage to any of the six adult disadvantages at ages 23 or 33 considered here.

In contrast there are many instances of women showing a clear relatively worse legacy of childhood disadvantage. Women who spent some of their childhood in local authority housing are differentially more likely to be in unskilled occupations and to have low household income at age 33, and to be cigarette smokers at both ages 23 and 33. Childhood aggression among women, as judged by teachers, is associated with a greater propensity to be in unskilled occupations at age 23, and a higher chance of living in social housing at both ages 23 and 33. Childhood anxiety is associated with malaise at age 23 among women and childhood hyperactivity to social housing at age 33. Low parental interest in education, especially the mother's interest, seems more damaging for women than men, particularly by age 33: excess disadvantage for women appears for unskilled occupations, benefit receipt, and malaise at age 33 and also for benefit receipt at age 23.

Frequent school absences are nearly universally related to adult disadvantage for both sexes (11 of 12 age-sex outcomes). However, for receipt of benefits at age 33 this legacy only proves significant for women. Moreover, at age 23 women with no information on test scores at all or with fewer than two high quartile test scores are disadvantaged with respect to living in social housing and malaise scores, and the latter group are also at differential risk of low household income.

SELECTIVE OMISSIONS AT ONE BUT NOT BOTH ADULT WAVES

The final group of indicators considered for inclusion in these childhood models was the series of interactions for each childhood antecedent with whether the measure for the same outcome was missing at the other adult wave. For social housing and benefit receipt at age 23 there is evidence of an overall significant selection effect for having missing information on the same measure at age 33. Few childhood antecedents emerge as selective for omissions on the other adult wave, with no more than one emerging for any age-outcome combination. Moreover, the only partially consistent selectivity emerges for low income, where omission of those with low income at either of the adult waves is selectively related to test scores.

4.2 Childhood and intermediate antecedents for outcomes at ages 23 and 33

Our next group of models are concerned with examining a consistent set of correlates for the six adult outcomes at ages 23 and 33 among the groups for whom the parallel measures are available at both adult waves. We can no longer maintain interactions for missing information at the other adult wave, since the new set of antecedents are drawn from retrospective information collected during the wave at age 23. However, we again test for all possible interactions

of gender with the childhood and intermediate antecedents of disadvantage at ages 23 and 33. The results of this analysis are shown in Table 6.

CHILDHOOD ANTECEDENTS

Since the childhood antecedents are significantly related to most of the intermediate measures considered here (lack of qualifications, unemployment experience, periods not in education, employment or training, early parenthood, lone parenthood, leaving home for reasons of friction, and experience of homelessness), it is hardly surprising that the frequency of associations with the childhood antecedents that are retained in the models is substantially reduced, nor that many remaining odds ratios for these childhood factors are attenuated. Nevertheless, some of the patterns and relationships discussed in the previous section are still retained.

The most prevalent remaining childhood antecedent, as shown in Table 6, is educational test scores, particularly at the divide between those with any test score in the lowest quartile and the rest, which is included in 10 of the 12 models (as many as any other antecedent). Moreover, significant relationships with all three of the hierarchical classifications on test scores and with lack of any information on test scores remain for the cohort member being in an unskilled occupation at ages 23 and 33. The only remaining associations with childhood aggression and anxiety measures are for the two adult behavioural indicators, malaise and cigarette smoking. Father's (or father figure's) social class still begets social class at ages 23 and 33 and the housing tenure of parents is still clearly linked to the cohort member living in social housing at ages 23 and 33. Frequent school absences are consistently linked to benefit receipt and to cigarette smoking at ages 23 and 33. Cigarette smoking remains consistently associated with family disruption, mother's interest in schooling, and contact with the police at ages 23 and 33. Thus there are many carry-overs from the earlier analysis. In many ways, the interesting feature of these continuing associations is not that they have weakened, but rather that they persist in spite of the controls for a wide range of powerful and more proximate intermediate measures of disadvantage between ages 16 and 23.

INTERMEDIATE ANTECEDENTS

Since the intermediate antecedents are newly introduced we shall look at the associations for these in more detail. The first point to note from Table 6 is that many of these antecedents are pervasive in their links to adult disadvantage on the six outcomes at both age 23 and age 33 and for both men and women. Having spent two years or more out of education, employment or training is significantly linked to all adult disadvantages at ages 23 and 33, except cigarette smoking. A year or more of unemployment before age 23 is also related to 10 of the 12 age-outcomes, with the exceptions being social housing at age 23 and

malaise at age 33; in addition, unemployment experience is less critical in determining low income at age 23 or benefit receipt at age 33 for women (odds ratios of 1.66:1 and 1.21:1 respectively for women and of 6.00:1 and 2.67:1 respectively for men). Experience of lone motherhood by age 23 is associated with disadvantage not only at age 23, but also at age 33, for all outcomes except unskilled occupations. Lack of qualifications appears in nine of the twelve models for both sexes and in one further for women (the exceptions being social housing and low income at age 23). Associations of adult disadvantage with early parenthood (nine times), ever having been homeless (eight times) and having left home because of friction (six times) are also fairly prevalent.

The most striking feature of these pervasive associations of experiences between ages 16 and 23 is that there is nothing to suggest that the associations generally weaken when we consider outcomes at age 33 (some odds ratios for the same antecedent get larger and some smaller, but there is no systematic pattern). This suggests very considerable continuity in disadvantage and that late adolescent and very early adult experiences have a profound and lasting legacy (in addition to the remaining persistent associations with childhood antecedents). It would have been reasonable to expect that experiences between ages 16 and 23 would be more closely related to the outcomes at age 23 than at age 33, simply because of the greater proximity.

Perhaps the most remarkable antecedent in this respect is having no qualifications, where the association with outcomes at age 33 is significant for all six outcomes, but only for three of the six at age 23 and is at least as large at age 33 for these three outcomes. However, some caution is required in interpreting this pattern¹.

¹ Firstly, the measure of lack of qualifications used was from the survey at age 33, since the coding of the responses in the survey at age 23 in the archived file included the missing values in the unqualified group (see Hobcraft 2000). This might have subtle implications for the patterning of responses, although the greatest likely difference would arise from the group who were unqualified at age 23 getting qualifications by age 33: this would surely attenuate relationships at age 33. Secondly, it may be that the proximity to age 23 of the other antecedents considered here subtly reduced the apparent influence of lack of qualifications for outcomes at this age: we cannot discern sufficient pattern, especially attenuation, in the shifts of the other odds ratios from age 23 outcomes to age 33 to be convinced that this is a problem.

Table 6: Odds ratios for childhood and intermediate antecedents in forwards stepwise logistic models for six outcomes at ages 23 and 33, including interactions by gender (p<0.001)

Characteristic	Interaction Characteristic	Unskilled		Social Housing	
		Age 23	Age 33	Age 23	Age 33
Cohort member is FEMALE					
1.49					
PARENTAL BACKGROUND					
Some Childhood Poverty					
1.28					
Fairly Poor in Childhood					
1.48 1.72					
Any Social Class 4 or 5					
1.25 1.25					
Fewer than 2 Non-manual					
1.34 1.54 1.45					
Any Local Authority Tenure					
2.38 1.90					
Fewer than 2 Owner-Occupier					
1.37					
One or both parents left school at MLA, neither stayed					
1.44					
Family disruption (Care, Out-of-wedlock, divorced)					
INDIVIDUAL BEHAVIOUR					
Any high aggression score					
< 2 low aggression scores					
Any high anxiety score					
Any high restlessness score					
Any high restlessness score Female					
1.43					
All behaviour missing					
2.49					
PARENTAL INTEREST IN EDUCATION					
Father's interest 2/3 low					
Father's interest ever low					
1.27					
Mother's interest ever low					
1.33					
Mother's interest high 0/1					
Mother's interest high 0/1 Female					
1.35					
Mother's interest missing					

Benefits		Low Income		Malaise		Cigarette Smoker	
Age 23	Age 33	Age 23	Age 33	Age 23	Age 33	Age 23	Age 33
1.26				2.73	1.65		
				1.27			
1.35					1.51		
1.28							
				1.30			
						1.35	1.49
						1.29	
				1.41		1.17	1.28
				1.43	1.54	0.82	
		1.22					
				2.58			
				1.32		1.20	
	1.27					1.18	1.23

Table 6 (continued)

Characteristic	Interaction Characteristic	Unskilled		Social Housing	
		Age 23	Age 33	Age 23	Age 33
TEST SCORES, POLICE, and SCHOOL ABSENCE					
Any contact with police				1.38	
Any frequent school absences				1.28	
Any frequent school absences	Female	1.37			
2/3 Tests in lowest quartile		1.49	1.35		
Any Test in lowest quartile		1.46	1.55	1.40	2.14
Any Test in lowest quartile	Female				.608
<2 Tests in highest quartile		1.75	2.25		
<2 Tests in highest quartile	Female				
All Test scores missing		3.88	3.90		
All Test scores missing	Female				
EXPERIENCE 16-23					
No qualification		1.87	2.43		2.45
No qualification	Female				
Unemployed 1yr+		2.20	1.50		2.31
Unemployed 1 yr+	Female				
NEET 2yr+		1.85	1.46	1.69	1.76
NEET 2 yr+	Female				
Teenage birth				1.38	
Teenage birth	Female	1.77			
Early birth		1.37		6.30	2.12
Early birth	Female		1.82		
Ever lone mum	Female			1.48	2.90
Left home friction				1.47	
Ever homeless				1.72	1.59

Benefits		Low Income		Malaise		Cigarette Smoker	
Age 23	Age 33	Age 23	Age 33	Age 23	Age 33	Age 23	Age 33
						1.82	1.73
1.33	1.27				1.35	1.62	1.60
1.31	1.57		1.60	1.53	1.42		1.22
		1.74					
			1.55				
	1.36				1.72		
	2.47						
					3.59		
	1.58		2.06	1.63	1.63	1.34	1.55
1.57							
3.70	2.67	6.00	2.35	1.43		1.61	1.51
	.454	.276					
4.02	1.78	2.20	1.60	1.41	1.58		
0.31							
1.54	1.58	0.78				1.41	1.58
6.19	2.04	3.08	1.74	1.87	1.73	1.64	1.65
	1.46			2.29	1.89	1.67	1.52
1.52		1.41		1.84	1.62	1.72	1.63

With the one clear exception of living in social housing at age 33, the odds ratios for experience of a year or more of unemployment between ages 16 and 23 do attenuate somewhat (or disappear) for the age 33 outcomes as compared with the age 23 outcomes (see also Gregg 2001). This cohort experienced sharp rises in the underlying unemployment rate during the period 1974 to 1981 (from age 16 to age 23) and a disproportionate fraction of those with a year or more of unemployment were unemployed at age 23, which would contribute to the more powerful associations at that age. Nevertheless, the associations remaining at age 33 are often very considerable (for example odds ratios above two to one for benefit receipt and low household income at age 33).

Conceptually there is some potential overlap between the measure of unemployment experience and the measure of not being in employment, education or training (NEET). However, the incidence of these two measures differs noticeably by gender, since early motherhood is much more frequently associated with withdrawal from these activities. What is perhaps surprising, then, is that we find so few interactions for the NEET indicator or for the early birth indicators with sex. Undoubtedly some of the possible gender differentials are captured by the indicator for lone motherhood (there are so few lone fathers that we did not consider a lone parenthood indicator in the stepwise regressions). Thus we find few indications that experience of two or more years out of employment, education or training (or of a year or more of unemployment), or of early parenthood has substantially different consequences for men and women, with the clear and sharp exception of experience of lone motherhood for all outcomes other than unskilled occupations. Since clear gender differences in the impact of an early (or teenage) birth do appear for the unskilled occupation outcome at ages 23 and 33, the differentiation for early parenthood is universally greater for women than for men, though it is generally experience of lone motherhood that is the stronger correlate of later female disadvantage, rather than early parenthood per se, which is associated with later disadvantage for both women and men for social housing, benefit receipt and cigarette smoking at both ages 23 and 33, but not with low income or malaise scores.

The strongest associations of having left home for reasons of friction (a clear behavioural measure) or having experienced homelessness before age 23 are with the two behavioural outcomes, malaise and cigarette smoking. Once again, the legacy at age 33 is almost as strong as the association at age 23. Unsurprisingly, those who had been homeless were consistently more likely to live in social housing at ages 23 and 33. In addition, early experience of homelessness was associated with a greater propensity to be in receipt of benefits and to have low household income at age 23, though these associations do not persist at age 33.

4.3 Continuity and change to age 33

Our final analysis explores the overall continuities through the life-course to age 33. The particular concern here is to examine the extent to which outcomes at age 23 are linked to those at age 33 (continuity) and whether the relationships with the other antecedents differ according to the status on the same outcome at age 23. In earlier exploratory analysis we performed four separate regression analyses, for women and men and for those who were and were not disadvantaged on the same outcome at age 23. But completely separate models make it difficult to address key questions. Are different antecedents related to becoming newly disadvantaged at age 33, not having been so at age 23, than to staying disadvantaged at age 33 among those who were already disadvantaged on the same outcome at age 23? If and when such differences appear, do they indicate protective factors or risk factors (since the inverse of the odds ratios for remaining disadvantaged are the odds ratios for exiting disadvantage)? To what extent are there differences in the antecedents of disadvantage and its continuity by gender?

In order to address such questions we have explored stepwise regressions that consider all of the antecedents (childhood, experiences between ages 16 and 23, outcomes at age 23, and experiences between ages 23 and 33), all possible interactions of the antecedents with gender, and all possible interactions of the antecedents with the status on the same outcome at age 23. Because there are always concerns about variables that are highly intercorrelated in the context of stepwise regression procedures, we compared the covariates that ‘stuck’ with those from the separate exploratory models and were reassured by the very considerable consistency. Equally, several of our models explicitly include an odds ratio for the self-referent (or ‘endogenous’) status on the same outcome at age 23: omission of this term leads to some other interactions with this status at age 23 appearing in the models (to the detriment of clarity), but hardly alters either the antecedents and interactions retained or the magnitude of the odds ratios for these indicators. Thus, we conclude that our findings are reasonably robust to these variations in model specification. In other work (Hobcraft 1998), we explored comparisons between forwards and backwards stepwise regression procedures very extensively and again found remarkable consistency between the two approaches.

CONTINUITIES FROM 23 TO 33

The results of these regression models are presented in Table 7, which shows the few childhood antecedents that still persist in relation to the outcomes at age 33 despite the wide range of controls for subsequent disadvantage, and in Table 8, which provides the odds ratios for the remaining antecedents of disadvantage at age 33.

Table 7: Odds ratios for childhood antecedents in full forward stepwise logistic models for six outcomes at age 33, including interactions for gender and for being disadvantaged on same status at age 23 (p<0.001)

CHARACTERISTIC	Unskilled	Social Housing	Benefits	Low Income	Malaise	Cigarette Smoker
PARENTAL BACKGROUND						
Fairly Poor in Childhood					1.66	
Any Social Class 4 or 5				1.29		
Any Local Authority Tenure		1.75				
One or both parents left school at MLA, neither stayed		1.42				
INDIVIDUAL BEHAVIOUR						
Any high aggression score						1.26
Any high anxiety score					1.35	
PARENTAL INTEREST IN EDUCATION						
Father's interest in schooling low 2/3 occasions	1.51					
Mother's interest in schooling ever low and social housing at age 23		0.57				
Mother's interest in schooling high once or less	1.41	1.49	1.35			
TEST SCORES, POLICE, and SCHOOL ABSENCE						
2/3 Test scores in lowest quartile				1.40		
Any Test score in lowest quartile		1.45			1.38	
Any Test score in lowest quartile and female	1.70					
Any Test score in lowest quartile and benefits at age 23			2.11			
Any Test score in lowest quartile and smoking at age 23						1.57
Fewer than 2 test scores in highest quartile	2.02					
<2 test scores in highest quartile and low income at 23				2.13		
All test scores missing	3.85					

As might have been anticipated from the simple summary measures on continuity and change between ages 23 and 33 shown in Table 4, we see some very high odds ratios corresponding to the risks of experiencing a disadvantaged outcome at age 33 according to the status on the same outcome at age 23. These are highlighted in bold type in Table 8. Those who smoked cigarettes at age 23 have an odds ratio of 25:1 of smoking cigarettes at age 33, compared with those who did not smoke at age 23; since smoking is addictive, a persistence in behaviour is hardly surprising, although the magnitude of the odds ratio is still noteworthy. The malaise inventory is supposed to capture an underlying trait or disposition towards depression and thus a high continuity (odds ratio 8:1) is again to be anticipated. Although the period from 1981 to 1991 (as the cohort moved from age 23 to age 33) was one with a considerable emphasis on the right of local authority tenants to buy their property, we nevertheless see evidence for a considerable persistence in living in social housing (odds ratio of 6:1). The strong continuity in unskilled employment (odds ratio 4.3:1) is again an expected result.

Less expected, however, is the lack of strong continuity for either receipt of benefits or low income from age 23 to age 33. Even if we force the indicator at age 23 into the models, we do not find a significant continuity for receipt of benefits (the odds ratio is 1.2:1 and is not even statistically significant at the five per cent level). However, forcing the low income at age 23 indicator into the model for low income at age 33 would give a significant continuity (odds ratio 2:1); the other odds ratios hardly change when this is done. There is a growing literature on income ‘churning’ that suggests that the poor often experience short-term income fluctuations that move them across an arbitrary income threshold. The lower continuity for household income would be compatible with such findings. A further area of discontinuity arises from the use of household income, since changes in partnership can affect household income (the only household identified for measurement of income is the nuclear household comprising the cohort member and any partner) and some of the impact of partnership dissolution is captured by the measure of experience of divorce between ages 23 and 33. The almost complete lack of continuity in receipt of benefits may be partly the result of controlling for experiences of divorce and unemployment between ages 23 and 33, but may also arise because a range of different non-universal benefits are included under a single umbrella and means-tested benefits are subject to withdrawal when circumstances change.

Table 8: Odds ratios for adolescent and early adult antecedents in full forward stepwise models for six outcomes at age 33, including interaction terms for gender and for being disadvantaged on same status at age 23 (p<0.001)

Antecedent	Status	Outcomes at age 33					
		Unskilled	Social Housing	Benefits	Low Income	Malaise	Cigarette Smoker
EXPERIENCES 16 TO 23							
No qualification	Main	2.13	2.18	1.51	1.73		1.73
	Woman						
	Same at 23						
Unemployed 1yr+	Main	1.55	1.76		1.82		
	Woman						
	Same at 23						
NEET 2yr+	Main			1.58			1.56
	Woman						
	Same at 23						
Early birth	Main			1.51			
	Woman	2.22				1.78	
	Same at 23	0.56					
Ever lone mum	Main						
	Woman		2.54				
	Same at 23						
Left friction	Main						
	Woman					1.81	
	Same at 23						
Ever homeless	Main						
	Woman						
	Same at 23						

Antecedent	Status	Outcomes at age 33					
		Unskilled	Social Housing	Benefits	Low Income	Malaise	Cigarette Smoker
STATUS AT AGE 23							
Unskilled	Main	4.31	1.53		1.46		
	Woman						
	Same at 23						
Social housing	Main		6.01	1.41	1.44		
	Woman						
	Same at 23						
Benefits	Main			---			1.43
	Woman						
	Same at 23						
Low income	Main		2.09	1.68	---		
	Woman						
	Same at 23						
Malaise	Main					7.96	
	Woman						
	Same at 23						
Cig. smoke	Main		1.52	1.35	1.30		25.14
	Woman						
	Same at 23						
EXPERIENCES 23 TO 33							
Unemployed 1yr+	Main		2.69	2.79	2.23	1.58	
	Woman						
	Same at 23						
Divorced	Main		2.02		1.81	1.55	2.06
	Woman			4.16	1.93		
	Same at 23						

Blanks correspond to an implicit odds ratio of 1.0.

DIFFERENTIALS BY STATUS AT AGE 23

A further aspect of continuity is captured by the interactions between status on the same outcome at age 23 and the other antecedents: such interactions indicate a differential response for those who were already disadvantaged on the outcome at age 23 as compared with those who were not. Few such interactions appear in our models, which is an important finding since this suggests that the legacy of the other antecedents generally has similar impact regardless of whether the cohort member was disadvantaged at age 23 or not.

For example, among all of the post-childhood antecedents we find only one such interaction, pertaining to early parenthood and being in unskilled occupations. Women who became mothers before age 23 and were not in an unskilled occupation at age 23 are more likely to be new entrants to unskilled occupations (odds ratio 2.22:1), but early mothers who were already in unskilled occupations at age 23 show very little additional propensity to stay in unskilled occupations (odds ratio of $1.24 = 2.22 * 0.56$), compared with other women who were already in unskilled occupations.

Three of the four interactions of childhood antecedents with status on the same outcome at age 23 involve educational test scores. Cohort members with any test score in the lowest quartile in the three childhood waves are differentially at risk of remaining in receipt of benefits (odds ratio 2.11:1) and continuing to smoke cigarettes (odds ratio 1.57:1) compared with the risk of their peers who were not disadvantaged on these outcomes at age 23 becoming newly disadvantaged by age 33. Similarly, those with fewer than two high test scores during childhood who already had a low income at age 23 were differentially more likely to remain in the low income group at age 33 than were their peers not having a low income at age 23 to newly enter low-income status at age 33 (odds ratio 2.13:1). The final interaction of this type is between mother's interest in schooling and social housing at age 23 and is more complicated to interpret. Cohort members whose mothers were not reported as being very interested in their schooling on more than one occasion but were also never reported as showing low interest in their schooling were more likely to live in social housing at age 33, regardless of their status on housing tenure at age 23 (odds ratio 1.49:1). However this excess risk is modified downwards for those whose mothers were ever reported as showing low interest in their schooling and who were already in social housing in their own right at age 23 (odds ratio $0.85:1 = 1.49 * 0.57$) than their peers who were not in social housing at age 23 were to newly enter this tenure status at age 33 (though of course relative to the underlying continuity odds of 6:1).

CHILDHOOD ANTECEDENTS

Since the childhood and intermediate antecedents were earlier shown to be strongly related to the outcomes at age 23, it is hardly surprising that their net associations with outcomes at age 33 are attenuated substantially or frequently disappear entirely. However, a few significant net associations do persist and have equal impact regardless of the status at age 23, with the exceptions of those already discussed above. Parental interest in schooling and educational test scores prove to be the most common persistent childhood antecedents of additional risk of disadvantage at age 33.

Cohort members whose mothers were not reported as being very interested in their schooling at two or three childhood waves are more likely to be in unskilled occupations, live in social housing and receive non-universal benefits at age 33, regardless of their status on the same outcomes at age 23 (odds ratios 1.41:1, 1.49:1, and 1.35:1 respectively), though modified as discussed above for social housing. The association with parental interest in schooling for unskilled occupations is further reinforced when the father's (or father figure's) interest was reported as being low more than once (combined odds ratio 2.13:1 = 1.41*1.51).

Educational test scores remain fairly strongly related to social class at age 33, as they were in our earlier analyses: the odds ratio for being in an unskilled occupation for those with fewer than two test scores in the highest quartile remain at two to one and are further reinforced for women with any test score in the lowest quartile (to a combined odds ratio of 3.43:1 = 1.70*2.02). Any educational test score in the lowest quartile is also associated with a net increase in the propensity to live in social housing at age 33 and to experience malaise at age 33; two or three childhood test scores in the lowest quartile are associated with an increased risk of low income at age 33.

Several of the other remaining significant childhood antecedents of disadvantage at age 33, net of other antecedents and especially status on the same measure at age 23, are comprehensible. For example, those whose parents were ever reported as living in local authority housing still show a persistently higher propensity to live in social housing at age 33. Childhood behavioural indicators persist in their associations with behaviour at age 33, with links between anxiety and malaise at age 33 and aggression and smoking at age 33; childhood poverty also remains linked to malaise at age 33.

EXPERIENCES BETWEEN AGES 16 AND 23

Having no qualifications remains quite pervasively associated with disadvantage at age 33, being included in our final models for all outcomes except malaise. It is again worth emphasising that these often quite substantial

associations are for the chances of being disadvantaged at age 33 regardless of the status at age 23, though of course with the underlying strong continuities between ages 23 and 33.

There are also persistent legacies of a year or more of unemployment for being in unskilled occupations, living in social housing and having a low income at age 33. There are also legacies of the overlapping measure of two or more years spent not in employment, education or training and receipt of benefits and cigarette smoking at age 33. Between them, these two indicators of lack of engagement in employment or education and training are persistently related to all outcomes at age 33 except malaise.

For the remaining intermediate experiences we see associations emerging more frequently for women only. Both men and women who had a birth before age 23 are still more likely to be in receipt of non-universal benefits at age 33 (odds ratio 1.51:1). Women who had an early birth are more likely to have entered or remained in the high malaise group and to have newly entered unskilled occupations between ages 23 and 33. The remarkably pervasive associations of lone motherhood to disadvantage at age 33 for women that appeared in the earlier analysis seem to have been largely captured by the inclusion of their disadvantaged status at age 23, with the only remaining persistent additional risk for lone mothers by age 23 being associated with a much higher propensity to newly enter or remain in social housing at age 33 (odds ratio 2.54:1). Women who left home because of friction are considerably more likely to retain or newly acquire high malaise scores by age 33 (odds ratio 1.81:1).

ASSOCIATIONS WITH OTHER AGE 23 OUTCOMES

Social exclusion is concerned with combinations of disadvantage that exclude individuals from 'normal' life. It is therefore of some interest to examine the extent to which outcomes at age 33 are associated with those other outcomes at age 23 which are not self-referent, even after controlling for the strong self-referent continuities. For unskilled occupations at age 33 we see no such additional associations; nor do we for malaise at age 33.

New entry to and continued residence in social housing is related to several other age 23 outcomes: being in a low social class, having a low income, and cigarette smoking. In an earlier exploration of the cross-sectional interconnections between disadvantages at age 33 we found that social housing was the outcome most interconnected with other disadvantages and discussed some of the potential explanations for this (Hobcraft 2002). Interestingly, this finding seems to hold across time too.

More intriguing are the observed associations of other outcomes at age 23 to low income and benefit receipt at age 33. We recall that the associations with the self-referent outcomes at age 23 are not included in our models for these two outcomes at age 33. Thus, it seems that there is more information about benefit receipt at age 33 contained in knowing at age 23 that the cohort member was living in social housing, was in a low income household, or smoked cigarettes than that they were in receipt of benefits at age 23; even if benefit receipt at age 23 was forced into the model the association remained statistically insignificant. Equally, it seems that the cohort member at age 23 being in an unskilled occupation, living in social housing, or smoking cigarettes is more closely related to being in a low income household at age 33 than to being in such a household at age 23. However, we note that the odds ratio for low income at age 23 in a model where its entry is forced is statistically significant and has a value of about 2:1, whilst leaving the odds ratios for the other three age 23 outcomes virtually unchanged.

EXPERIENCES BETWEEN AGES 23 AND 33

It was anticipated that both unemployment experience and getting divorced between ages 23 and 33 would be closely related to disadvantage at age 33 and this indeed proves to be the case, except for low occupational class status at age 33.

For both men and women and both new entrants and those who stay disadvantaged, having been unemployed for 12 months or more between ages 23 and 33 is associated with substantial excess risks of living in social housing, receipt of benefits, and having a low household income at age 33 and also with an increased incidence of malaise.

The odds ratios for those who experienced divorce between ages 23 and 33 are also often quite large, but an important additional feature is the differences by gender. Both women and men who had experienced divorce are at greater risk of remaining in or newly entering social housing, the high malaise category, or cigarette smoking at age 33. Men who experienced divorce are more likely to have a low household income at age 33 (odds ratio 1.81:1), but women are considerably more likely still to have a low household income at age 33 (combined odds ratio of 3.49:1 = 1.81*1.93). Again, there are a number of interpretational issues involved in using household income (not equivalized) as the indicator since partnership breakdown changes the number of potential sources of income from two to one, though some repartnering will have occurred by age 33. Women, but not men, who experience divorce between ages 23 and 33 are also disproportionately likely to be in receipt of benefits at age 33, with an extremely high odds ratio (4.16:1).

5. Discussion

In many respects the results of this study are profoundly depressing. The extensive evidence presented here, showing the persistent legacies of childhood disadvantage and the lasting associations of early disadvantages with those later in life, suggests that 'escape' from disadvantage is difficult. We could dramatise such a story further by considering the odds ratios for likely combinations of early disadvantage.

An arbitrary illustration is to look at combined odds ratios for living in social housing at ages 23 and 33 for women who were fairly poor during childhood, spent some time in local authority housing as children, had at least one test score in the lowest quartile, achieved no qualification, had a birth before age 23, became a lone mother, and spent two or more years not in education, employment or training (combined odds ratios of 107:1 at age 23 and 113:1 at age 33), when compared with a woman who was not poor, did not live in local authority housing, had no low test scores, obtained any qualification, did not become a mother before age 23 and did not spend two or more years out of employment, education or training by age 23). The similar odds ratios for men, without lone motherhood, are also very high, at 72:1 and 64:1 respectively.

But there is a sucker punch here: this seemingly plausible combination of disadvantages is actually very rare in our sample, with only 26 women and a mere four men falling into such a grouping. The chances of these few women being in social housing are high, with simple odds ratios of 13:1 and 42:1 respectively, though with huge uncertainty. Thus we have to be very cautious about arbitrary combinations of disadvantage, however plausible they seem.

Although continuity of disadvantage is strong and well documented here, it is salutary to reflect back on the turnover in disadvantage between ages 23 and 33 that was shown in Table 4. With the exception of cigarette smoking, only around 40 to 50 per cent of those who are disadvantaged on an outcome at age 23 remain so at age 33; for benefit receipt, occupational class and low income, around 15 to 20 per cent of those who were not disadvantaged at age 23 became so on the same outcome at age 33. Moreover, again with the exception of cigarette smoking, roughly half to two-thirds of those who are disadvantaged at age 33 are newly disadvantaged in the sense of not being so at age 23. Thus there is considerable turnover in disadvantage and little to suggest that there is an inevitable determination of disadvantage at age 33 as a result of earlier experiences of disadvantage during the life-course. Nevertheless, our finding of persistent legacies of disadvantage as risk factors strongly suggest that policies and programmes have to operate not only to promote people from

disadvantaged backgrounds, but to protect their fragile gains when they do escape low status (see Hills 2002).

Despite the caveats above, it is worth re-emphasising some of our important findings on the antecedents of adult disadvantage. Among the childhood antecedents we have seen that several show a pervasive association with adult disadvantages at ages 23 and 33: childhood poverty, frequent school absences, educational test scores, contact with the police, parental interest in education, parental housing tenure, and one or other of the behavioural measures. In addition, we observe several fairly specific 'inheritance' or continuity links: social housing of parents and cohort members, social class of father and cohort member; and aggression and anxiety are mainly associated with behavioural outcomes of malaise and cigarette smoking.

Moreover, we have observed that the same childhood antecedents are often quite consistently related to the same outcomes at ages 23 and 33, demonstrating important continuities through adulthood in the legacies of childhood disadvantages.

Remarkably, we found no instance of any childhood antecedent proving differentially protective against adult disadvantage for women as compared with men, but there were several instances that showed women to be more vulnerable to lasting associations of childhood antecedents than men. This provides fairly compelling evidence that pathways to adult social exclusion are gendered.

We were also able to show that there was little evidence of extensive selectivity for those included in one but not both adult waves in terms of the observed interrelationships between childhood antecedents and outcomes at ages 23 or 33.

When experiences between ages 16 and 23 were added to the models, we found strong, pervasive, and lasting associations with adult disadvantage, with little indication that these associations attenuated by age 33 when compared with age 23. The associations with adult outcomes at age 23 were pervasive for both women and men on several indicators: lack of qualifications, unemployment for a year or more, two or more years out of employment, education or training, and ever being homeless. Having left home because of friction is especially associated with adult malaise and cigarette smoking, the two behavioural outcomes.

The cluster of factors associated with early parenthood prove interesting, with early parenthood per se being associated with disadvantaged adult outcomes regardless of gender, but very clear gender differentiation appearing from

experience of lone motherhood, which is pervasively associated with all the adult outcomes other than social class at ages 23 and 33. Thus it seems to be lone motherhood, rather than early parenthood that is most sharply linked to subsequent adult disadvantage for women, although early motherhood is more prevalent than early fatherhood and thus plays a further part in women being more vulnerable to adult disadvantage than men.

Once we turned attention to looking at pathways through disadvantage at age 23 and experiences from age 23 to 33 we found further compelling evidence for strong continuities in disadvantage on specific outcomes during young adulthood, particularly cigarette smoking, high malaise scores, living in social housing, and being in a low-skill occupation. In contrast these specific continuities were less clear for low household income and virtually non-existent for receipt of non-universal benefits.

Moreover, there are indications that being disadvantaged on the other measures of disadvantage at age 23 that are not self-referent to the same outcome at age 33 are linked to disadvantage at age 33, especially living in social housing, receiving benefits, and having a low household income. These less specific continuities in disadvantage reflect the notion that social exclusion encompasses a series of interconnected disadvantages that interplay with each other through the life-course. The consequences of earlier disadvantage can thus manifest themselves in different adverse outcomes at different points in time, showing the importance of a dynamic, life-course perspective on social exclusion and the dangers of examining single outcomes in isolation.

The final pair of antecedents of disadvantage at age 33 captured experiences between ages 23 and 33. Experience of a year or more of unemployment was strongly associated with disadvantage at age 33, especially living in social housing, receipt of benefits, and low income; and to a lesser extent malaise. The odds ratio was the same for men and women, but unemployment has more influence for men because more experience it.

In contrast, the associations of experience of divorce between ages 23 and 33 with disadvantaged outcomes at age 33 are more gendered. Divorced women show much sharper incidence of low income at age 33 and the very strong association of divorce experience with benefit receipt at age 33 only emerges for women. On the other hand, experience of divorce is equally related for women and men to living in social housing, experiencing high malaise, and cigarette smoking at age 33.

One of the most remarkable series of findings to emerge from this last set of analyses is that there are hardly any instances where the association of an

outcome at age 33 with the antecedents differs according to whether the cohort member was already disadvantaged on the relevant outcome at age 23. This makes it very hard to make a case for ‘protective’ factors that differentially keep people consistently out of disadvantage or ‘lock-in’ factors that are relevant to accounting for staying disadvantaged but not for new disadvantage. On the contrary, almost all of the antecedents retained in our final set models seem to act as risk factors equally for those who were and were not disadvantaged on the same outcome at age 23.

However, there is also clear evidence for continuities of disadvantage in the high odds ratios for the self-referent outcomes at age 23. The antecedents do not explain this ‘stickiness’ of disadvantage, except insofar as the pathways to disadvantage at age 23 are clearly related to the antecedents. But the ‘stickiness’ remains persistently in the models and almost certainly captures features of lasting disadvantage: smoking is addictive; high malaise is not a transient state; social housing is hard to escape from; and low-skill occupations often show low mobility and do not provide career pathways to higher-status occupations. Movement in and out of receipt of various benefits is clearly and expectedly more frequent, showing less stickiness. Low household income is also less lasting as a state, though with limited evidence for some continuity across time.

We have shown very strong evidence for wide-ranging and far-reaching continuities of disadvantage through the life-course, ranging across parental background and childhood experiences, experiences during late adolescence and very early adulthood, status at age 23, and experiences from age 23 to 33. But we have also provided some evidence that strongly suggests that such disadvantage is not deterministic or rigid through the life-course. Rather, it seems that the previously disadvantaged are always at greater risk of subsequent disadvantage, but that there is considerable turnover in who is experiencing disadvantage at any one time. This seems to indicate that policies to deal with disadvantage should not only attempt to shift people out of disadvantage at any time, but also place greater emphasis on maintaining the escape from social exclusion. This point has been argued in a general policy context by John Hills (2002). The findings here show that maintaining such escape will generally be harder to sustain for the previously disadvantaged and that really sound policies not only have to focus on all escapees, but rather ways have to be found of providing greater support for those who had experienced earlier disadvantage and not just the most recent isolated experience of disadvantage.

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