

Working Paper 4

CONSTRUCTION OF SOCIAL CLASS VARIABLES

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This paper describes the methods used by the EYT Project to derive measures of social class origin from the information on parental occupation in the youth cohort surveys. Our aim was to derive a consistent set of social class variables based on parents' occupations that would be comparable over time and between national systems.

In the Scottish School Leavers Surveys (SSLS) and Youth Cohort Study (YCS), the coding of occupations has followed (to some extent) the methodology developed by the former Office of Population Censuses and Surveys (OPCS): in the 1980s occupations were coded using the detailed Classification of Occupations (CO80) (OPCS 1980) and in the 1990s using the Standard Occupational Classification (SOC90) (OPCS 1990). These detailed occupation codes were used to derive measures of social class based on the new socio-economic classification (NS-SEC) developed by the ESRC review (Rose and O'Reilly 1998). Detailed methodology for constructing NS-SEC was obtained from the National Statistics website (Office of National Statistics 2004a).

However, we must make it clear that the derived social class variables are not as robust or reliable as we would wish because of severe limitations with the survey data. We encountered a number of problems – some common to all surveys, and others specific to YCS. A common problem is that in the cohort surveys information about parents' occupation was provided by their children, so it may be inaccurate, and is missing for a large proportion of cases.

A further common problem is that information about parents' employment status in the youth cohort surveys is very limited. The full methodology for deriving NS-SEC from occupations includes a classification of employment status that distinguishes employers, self-employed with no employees, managers, supervisors and other employees. This classification of employment status is not available in SSLS and YCS; both include a question about self-employment, with answer categories "yes" or "no", but do not include any information about employers or size of establishment. The SSLS includes further information on employments status, but it is evident that coding of foremen and supervisors is not consistent between surveys, and these categories may be under-represented in the data.

There are additional problems with the YCS surveys:

- Information on employment status (other than self-employment) is entirely missing from YCS9 and YCS10.

- YCS1-YCS4 did not include detailed occupational codes.
- Socio-economic group (SEG) is included in YCS cohorts 1-8, but different cohorts include different SEG categories and there is no information as to how SEG was derived.
- In YCS3, parental occupation was asked at sweep 2 rather than sweep 1, and may be affected by non-response to a greater extent than other surveys.

METHOD USED TO ACHIEVE CONSISTENCY ACROSS SURVEYS

Since employment status is absent from the most recent England and Wales cohorts (YCS9&10), the time series would be inconsistent if we included employment status in the derivation of NS-SEC for other cohorts and systems. In the interests of comparability over time, and between national systems, we decided to derive NS-SEC without employment status, other than the distinction between self-employed and employee status. Therefore the 8-class NS_SEC was derived using the “Reduced Method” provided by the National Statistics website.¹

Method used to achieve consistency across change in occupational classification 1980-1990

Change between the 1980 and 1990 occupational classification is an issue because the Standard Occupational Classification (SOC) was not used until 1990, and consequently the pre-1990 cohort surveys used the 1980 classification of occupations. In order to include the pre-1990 parental occupations we adopted a system of mapping the detailed 1980 occupation codes to the 1990 SOC that was developed at CES by the Comparative Analysis of Transitions from Education to Work in Europe (CATEWE) project.²

In the Scottish cohort surveys between 1985 and 1989 coding of occupations followed the method set out in OPCS 1980. Occupations were initially coded with an "operational code" (Co80op), which was subsequently re-coded into occupation groups (Co80) and "key occupations for statistical purposes" (KOS). Co80 does not map directly to the 1990 SOC, but the Occupational Information Unit of the Office for National Statistics has produced a user guide which clarifies the relationships (Occupational Information Unit 1998). For some occupations there is a one-to-one correspondence between Co80 and SOC90. Other occupations are grouped by the User Guide to show how Co80 relates to SOC90 for these occupations. As part of the CATEWE project, researchers worked with the User Guide to map Co80 codes to SOC, using a systematic approach. We were able to build on this work to derive SOC for occupations in the pre-1990 Scottish cohort surveys. (However this was not possible for pre-1990 England and Wales cohorts, because the detailed occupational codes were not used for YCS1- 4.)

Limited social class variables for YCS1 - YCS4

In the first YCS cohort, parental occupations were coded to the reduce KOS classification, which is not as detailed as the Co80 or Co80op classifications. We attempted to map KOS to

¹ http://www.statistics.gov.uk/methods_quality/ns-sec/steps_reduced_method.asp

² <http://www.mzes.uni-mannheim.de/projekte/catewe/>

the SOC codes on the basis of “the most common SOC code per KOS code” found in the first Scottish cohort (SYPS85). But this is only an approximate mapping.

We still face the problem that there is no detailed occupational coding of parents occupation for the 1986 and 1988 cohorts in England and Wales, and this means that we cannot derive 8-class NS-SEC for these cohorts.

For some analyses, the three class version of NS-SEC is sufficient. Its categories are: Managerial & Professional; Intermediate; Working. We have included the three-class variable in the time series for all cohorts. For YCS3 and YCS4 an approximation to the three-class variable was derived from SEG which was one of the few occupation codes included in the YCS prior to 1990. However, we must emphasise that the coding of SEG to the 3-class version of NS-SEC is very approximate and we should not put too much trust in the social class variables for England and Wales prior to 1990.

Trends in parental occupation

Trends in the occupational class of the parents of survey respondents are summarised in Table 1 and 2. Table 1 shows the NS-SEC of fathers’ occupation separately for England, Wales and Scotland. There is no information about fathers’ occupation for around a quarter of young people, although the proportion of each cohort providing no information about father’s occupation varied between 27% and 16%. Reasons for missing information vary. In some cases survey respondents do not have a resident father, or are unaware of their father’s occupation. In other cases respondents may not have given sufficient information for coders to allocate an occupation code.

Occupation codes for Scottish surveys have been fairly consistently coded over the years. They show a slight rise in the proportion of fathers in Managerial and Professional occupations (from 18 to 26 percent), and intermediate occupations (from 17 to 20 percent), and consequent decline in working class occupations (from 44 to 32 percent). These trends are broadly consistent with the decline in manual labour force identified elsewhere (eg Halsey 2000, and comparison of survey data with census data below). However, trends for England and Wales from 1990 onwards do not show comparable changes. Unfortunately, it is difficult to judge whether the absence of an upward trend in father’s occupation status in England and Wales, compared with the clear upward trend in Scotland, represent real social differences or whether they are an artefact of different survey methods, such as sampling, weighting and coding.

Table 2 shows trends in mother’s occupational status consistent with increasing participation by women in the labour force. For England and Wales, the proportion of cases with no information for mother’s occupation varies from 39 percent in 1984 to 26 percent in 1999, but there is insufficient information in the YCS to ascertain whether the decline in missing information is a result of increased participation in the labour force by mothers. However, it is possible to make this distinction for Scotland because the Scottish surveys include more detailed questions about economic activity. Table 2 shows that the overall proportion of cases in Scotland for whom mother’s occupation was missing declined from 34 percent in 1984 to 27 percent in 1998 – a trend that is broadly comparable to England and Wales. However, for Scotland the proportion of mothers for whom the only status was “housewife” halved from 18 percent of respondents in 1984 to 9 percent by 1998.

Table 1: NS-SEC of father's occupation (weighted percentages)

England	1984	1986	1988	1990	1993	1995	1997	1999
Managerial & Professional	(21)	(29)	(28)	25	27	27	26	26
1.1 Large employers & high managerial	(4)			5	5	4	5	5
1.2 Higher professional	(4)			7	8	8	8	10
2.0 Lower managerial and professional	(14)			13	14	15	14	11
Intermediate	(17)	(19)	(19)	23	24	22	23	23
3.0 Intermediate	(6)			7	8	8	7	8
4.0 Small employers and own account	(11)			16	16	14	16	15
Working	(36)	(34)	(33)	29	29	29	29	30
5.0 Lower supervisory and technical	(14)			9	8	8	8	7
6.0 Semi-routine	(7)			8	9	10	10	8
7.0 Routine	(16)			12	12	12	12	15
No info	(26)	(18)	(20)	23	21	21	21	21
<i>Un-weighted N (=100%)</i>	<i>7495</i>	<i>11574</i>	<i>13209</i>	<i>13284</i>	<i>17093</i>	<i>14946</i>	<i>13762</i>	<i>12906</i>
Wales	1984	1986	1988	1990	1993	1995	1997	1999
Managerial & Professional	(22)	(20)	(23)	19	22	23	22	20
1.1 Large employers & high managerial	(3)			3	3	3	3	2
1.2 Higher professional	(4)			5	7	6	6	6
2.0 Lower managerial and professional	(16)			11	11	13	13	12
Intermediate	(17)	(17)	(14)	24	25	24	20	22
3.0 Intermediate	(4)			6	8	9	7	8
4.0 Small employers and own account	(13)			18	17	15	13	15
Working	(34)	(39)	(41)	32	35	32	35	34
5.0 Lower supervisory and technical	(12)			9	7	8	9	9
6.0 Semi-routine	(4)			9	11	10	13	9
7.0 Routine	(18)			14	17	15	14	16
No info	(27)	(24)	(22)	25	19	21	22	23
<i>Un-weighted N (=100%)</i>	<i>569</i>	<i>745</i>	<i>907</i>	<i>1227</i>	<i>928</i>	<i>953</i>	<i>900</i>	<i>792</i>
Scotland	1984	1986	1988	1990	1992	1996	1998	
Managerial & Professional	18	20	23	25	24	24	26	
1.1 Large employers & high managerial	3	4	5	5	4	4	5	
1.2 Higher professional	4	5	5	6	8	8	8	
2.0 Lower managerial and professional	11	11	13	14	12	12	13	
Intermediate	17	18	19	18	22	21	20	
3.0 Intermediate	7	7	7	6	7	7	7	
4.0 Small employers and own account	10	11	11	12	14	14	13	
Working	44	42	38	40	31	33	32	
5.0 Lower supervisory and technical	10	10	9	11	10	9	9	
6.0 Semi-routine	13	12	11	12	9	10	9	
7.0 Routine	21	20	18	16	13	13	14	
No info	21	20	20	16	23	22	21	
<i>Un-weighted N (=100%)</i>	<i>6501</i>	<i>6360</i>	<i>5579</i>	<i>4450</i>	<i>3433</i>	<i>4302</i>	<i>7567</i>	

Note: Parental occupation for cohorts prior to 1990 in England and Wales has been derived from KOS (1984) or SEG (1986-8).

The 1984 cohort in England and Wales did not include independent schools.

Table 2: NS-SEC of mother's occupation (weighted percentages)

England	1984	1986	1988	1990	1993	1995	1997	1999
Managerial & Professional	(11)	(16)	(16)	15	17	19	19	18
1.1 Large employers & high managerial	(0)			1	1	1	1	1
1.2 Higher professional	(0)			1	1	1	2	2
2.0 Lower managerial and professional	(10)			14	15	16	17	15
Intermediate	(13)	(27)	(29)	23	22	23	23	22
3.0 Intermediate	(9)			17	16	17	17	16
4.0 Small employers and own account	(3)			6	6	5	6	6
Working	(41)	(24)	(25)	28	28	31	32	38
5.0 Lower supervisory and technical	(1)			1	1	1	1	1
6.0 Semi-routine	(21)			15	16	19	20	25
7.0 Routine	(19)			12	11	11	12	12
No info	(39)	(36)	(33)	34	35	27	23	26
<i>Un-weighted N (=100%)</i>	<i>7495</i>	<i>11574</i>	<i>13209</i>	<i>13284</i>	<i>17093</i>	<i>14946</i>	<i>13762</i>	<i>12906</i>
Wales	1984	1986	1988	1990	1993	1995	1997	1999
Managerial & Professional	(11)	(16)	(16)	15	16	20	17	16
1.1 Large employers & high managerial	(0)			0	0	1	1	1
1.2 Higher professional	(1)			1	1	1	1	1
2.0 Lower managerial and professional	(10)			14	14	18	15	14
Intermediate	(13)	(24)	(24)	16	20	21	23	19
3.0 Intermediate	(8)			11	14	16	17	13
4.0 Small employers and own account	(6)			5	6	5	6	6
Working	(37)	(25)	(27)	35	29	31	37	39
5.0 Lower supervisory and technical	(0)			1	1	1	1	0
6.0 Semi-routine	(18)			20	15	18	23	24
7.0 Routine	(18)			13	13	12	13	14
No info	(39)	(36)	(33)	34	35	27	23	26
<i>Un-weighted N (=100%)</i>	<i>569</i>	<i>745</i>	<i>907</i>	<i>1227</i>	<i>928</i>	<i>953</i>	<i>900</i>	<i>792</i>
Scotland	1984	1986	1988	1990	1992	1996	1998	
Managerial & Professional	8	11	12	15	18	20	21	
1.1 Large employers & high managerial	0	0	1	1	1	1	1	
1.2 Higher professional	0	1	1	1	1	2	2	
2.0 Lower managerial and professional	8	10	11	14	16	18	18	
Intermediate	18	19	21	20	21	19	21	
3.0 Intermediate	16	15	17	16	15	14	16	
4.0 Small employers and own account	3	4	4	5	6	5	5	
Working	39	38	38	38	31	32	32	
5.0 Lower supervisory and technical	1	1	1	1	1	1	1	
6.0 Semi-routine	16	16	16	20	18	18	19	
7.0 Routine	21	21	21	17	13	13	12	
No info	34	32	29	26	30	28	27	
(No info - Full-time unpaid at home)	(18)	(20)	(17)	(15)	(12)	(10)	(9)	
<i>Un-weighted N (=100%)</i>	<i>6501</i>	<i>6360</i>	<i>5579</i>	<i>4450</i>	<i>3433</i>	<i>4302</i>	<i>7567</i>	

Note: Parental occupation for cohorts prior to 1990 in England and Wales has been derived from KOS (1984) or SEG (1986-8).

The 1984 cohort in England and Wales did not include independent schools.

In all three countries, an increasing proportion of mothers were in Managerial and Professional occupations. In Scotland the proportion increased steadily from 8 percent in 1984 to 21 percent in 1998.

Comparison of parental social class with census data

We compared the social class distributions of parents occupations from the cohort surveys with published data from the census. This comparison was made after omitting cases for whom there was insufficient information, because this category has different meanings in the census compared with the surveys. However, we cannot expect the social class distributions to be the same in the cohort surveys as in the census because the likelihood of being the parent of a respondent to the cohort surveys is weighted towards particular age-groups and lower socio-economic groups.

For Scotland, published data from the census compares the NS-SEC categories of the occupations of all people aged 16-74 in 1991 and 2001 (GROS 2003, Table 16). These data are summarised in Table 3, columns 1991a and 2001a. However, the parents of the young people who responded to the Scottish youth cohort surveys are more likely to be in the age-group 30-59, so social class data for this age group were extracted from the detailed 2001 census tables, and are summarised in Table 3 columns 2001b. Social class of occupation of mothers and fathers of the Scottish cohorts 1990 and 1998 are summarised in Table 3 columns 1990c and 1998c.

Table 3: Scotland only: Comparison of social class distributions from Census 1991 and 2001 with Scottish School Leavers Surveys

Census data	Males			Females		
	1991a	2001a	2001b	1991a	2001a	2001b
Managerial & Professional	30	38	39	25	37	36
Intermediate	20	19	19	32	27	25
Working	50	44	42	43	37	39
SSLS	Father		Mother			
	1990c	1998c	1990c	1998c		
Managerial & Professional	30	33	21	28		
Intermediate	22	25	28	29		
Working	47	41	52	43		

Notes

- a) All aged 16+ in employment
- b) All aged 30-59
- c) Parents of all ages

The social class distribution of fathers in the 1990 cohort is very similar to the census distribution for 1991. The subsequent increase in the percentage of fathers in managerial and professional occupations by the 1998 cohort is in the same direction, but a little lower, than that shown by the 2001 census. The downward trend in the proportion of fathers in working class occupations between the 1990 and 1998 cohorts is perhaps a little steeper than the corresponding trends shown by the census.

Mothers in both 1990 and 1998 cohorts were less likely to be in managerial and professional occupations than is the case for women in the census. However, these differences can probably be explained by the fact that women from managerial and professional backgrounds

are less likely to have children than women from other social classes, and therefore less likely to have children included in a survey of school leavers. There is, however, some similarity in the trends between the 1990 and 1998 cohorts and the 1991 and 2001 census: the average increase of one percent in mothers who were in managerial and professional occupations shown by the cohort surveys is in line with the average increase of 1.2 percent in managerial and professional women shown by the census.

For England and Wales, census data on NS-SEC are available for 2001 only (Office of National Statistics 2004, Table S042). Table 4 shows the census distribution for the 30-59 age group and comparison with parents' occupations from YCS10 (1999 cohort). The table suggests that, as in the case of the Scottish data, the England and Wales cohort had fewer parents who were in managerial and professional occupations than was the case for the population as a whole.

Table 4: England and Wales combined: Comparison of social class distributions from 2001 Census and Youth Cohort Study

	Census 2001 Males 30-59	YCS 10 Fathers	Census 2001 Females 30-59	YCS 10 Mothers
Managerial & Professional	43	33	37	24
Intermediate	21	29	26	28
Working	36	38	37	48

Highest level of parents' occupational status

For many analyses it is useful to have a single measure of parents' occupational social class, and we have derived this measure by taking the highest status of the NS-SEC codes for mother and father. These are shown by Table 5. In Scotland, the proportion of young people with a parent in a professional or managerial occupation rose from 23 percent in 1984 to 36 percent in 1998, while the proportion of working class households declined from 42 percent to 27 percent.

Table 5: Highest status of parents' occupations

England	1984	1986	1988	1990	1993	1995	1997	1999
Managerial & professional	(27)	(36)	(35)	33	35	35	36	37
Intermediate	(21)	(27)	(28)	28	27	27	28	26
Working	(38)	(26)	(25)	26	24	25	25	26
no info	(14)	(10)	(11)	13	14	13	12	11
<i>Un-weighted N (=100%)</i>	<i>7495</i>	<i>11574</i>	<i>13209</i>	<i>13284</i>	<i>17093</i>	<i>14946</i>	<i>13762</i>	<i>12906</i>
Wales	1984	1986	1988	1990	1993	1995	1997	1999
Managerial & professional	(27)	(30)	(32)	28	31	33	31	30
Intermediate	(22)	(27)	(23)	26	27	28	26	25
Working	(36)	(30)	(32)	32	28	26	32	32
no info	(15)	(13)	(13)	14	14	13	11	13
<i>Un-weighted N (=100%)</i>	<i>569</i>	<i>745</i>	<i>907</i>	<i>1227</i>	<i>928</i>	<i>953</i>	<i>900</i>	<i>792</i>
Scotland	1984	1986	1988	1990	1992	1996	1998	
Managerial & professional	23	28	31	33	33	34	36	
Intermediate	23	23	24	24	26	24	24	
Working	42	39	35	35	28	28	27	
no info	12	11	10	8	13	14	13	
<i>Un-weighted N (=100%)</i>	<i>6501</i>	<i>6360</i>	<i>5579</i>	<i>4450</i>	<i>3433</i>	<i>4302</i>	<i>7567</i>	

Data for England and Wales from 1990 onwards suggest that Wales had a lower proportion of parents in managerial and professional occupations than England, and corresponding higher proportion in working class occupations. There was very little change in the distribution of parents occupation from 1990 to 1999.

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