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A Picture of Male Unemployment in Britain

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Introduction. In 1972 an average of some 686,200 men (excluding school leavers and students) were registered as unemployed in Britain and the majority of these would have been actively seeking work.<sup>1/</sup> Every month some 232,000 entrants appeared on the register and roughly the same number left. This has two apparent implications, one correct and one false. First, since over one third of the stock of unemployed leave in each month, this indicates that the unemployed are a rapidly shifting population with the average stay at that time being about 12 weeks. Second, it appears that unemployment must be a pervasive phenomenon for, given the inflow and the size of the male labour force, if unemployment were equally distributed each individual would become unemployed about once in every six years and would, therefore, have six or seven spells during his working life. This is not the case, however, since a large proportion of the population never experience unemployment<sup>2/</sup> which is heavily concentrated among particular groups. This paper is concerned with identifying these groups and determining the extent to which their over-representation among the unemployed is due to the excessive duration of their unemployment spells or to their higher than average chances of entering unemployment. We shall also look at some of the possible causal factors underlying the results and towards the end of the paper, we shall discuss some of the policies which have been put forward to counter the large disparities in unemployment incidence between different groups in the populaion.

1. The Incidence of Unemployment among Certain Groups

Why should some well defined groups of men suffer vastly greater incidence of unemployment than the average? It is theoretically convenient to consider this question by separating unemployment incidence into two components, the chances of entering unemployment and the length of time for which individuals remain in this situation. This is essential because these two components are determined in different ways and may be affected by different factors. Taking first those factors which affect the chances of becoming unemployed we should consider separately voluntary and involuntary entry into unemployment and in this context it is worth briefly looking at the relative sizes of these two groups. In Table 1 we present figures from the 1972 General Household Survey, which indicate that, at most, only 20.7% of the male unemployed stock left employment "voluntarily" with most of the remainder leaving via redundancy, dismissal or for health reasons.<sup>3/</sup> Daniel (1974) has some data for a larger sample of men and women which he breaks down by age and this indicates that the proportion of healthy voluntary quitters in the unemployed stock falls from 53% of the under 25 age group to a mere 17% for the over 55 age group.<sup>4/</sup>

The costs and benefits of voluntary quitting into unemployment are clearly a function of the costs of being unemployed and the level of alternative wage and job opportunities. The former will depend on the relationship between incomes in and out of work and the level of fixed financial commitments. Thus, for example, the young are likely to have few financial commitments and to the extent that they are supported by

Table 1

Reasons for Entering Unemployment (GHS 1972)

Reasons for leaving last job	Percentage of unemployed men
Made redundant/sacked	58.6
Ill-health	24
Dissatisfied with the job	13.9
Last job temporary	4.5
Retired	2
Domestic reasons	6.8

The total is 109.8 because some men gave reasons in more than one category. Source: GHS(1972), table 3.22, HMSO (1975)

their families while unemployed, they will suffer less in terms of real income loss than heads of household. Alternative wage opportunities will be better, the lower the level of human capital which the individual possesses which is specific to his current firm. Thus relatively unskilled workers and those who have only been working in their current jobs for a short period are likely to find that there are many other firms which pay starting wages commensurate with their current earnings. The level of alternative job opportunities at such wages will then depend on the local demand for labour in their particular skill and age category although, of course, local restrictions can be overcome if the individual is prepared to move further afield.

Men who are dismissed or made redundant are essentially going to be those whose productivity is low relative to their current or prospective earnings and these will be individuals with low specific human capital, again the young or the unskilled,<sup>5/</sup> or simply those whose productivity is on the wane but, for one reason or another, whose wages have not been commensurately reduced. This may apply to the old or the chronically sick, for example, who are also, of course, more likely to become unemployed because of ill health.

An individual having entered unemployment, the question then becomes one of how long he remains there. This depends both on the rate at which individuals receive job offers given the prevailing structure of wages and on the extent to which these offers are accepted. Most identifiable variables have an impact on both sides of the market, for example older

workers typically find it harder to obtain job offers than their younger counterparts and may be more loth to accept them because, being less adaptable, they may have more stringent definitions of what is suitable employment.

In the light of this very brief theoretical overview we may now proceed to look at the incidence of unemployment among certain groups in the population, the information having been extracted from the data tapes of the General Household Survey of 1972. Because of the rather small size of this survey, this information is somewhat fuzzy, having a high degree of sample variation. Nevertheless, it seems worthwhile to try and build up some picture of unemployment from this source since comparable alternative sources of information are unavailable. The definition of unemployment and the sample we use are discussed in the Appendix although it is worth noting here that individuals who left employment and became unemployed within the seven days prior to interview are not counted as unemployed and that the aggregate male unemployment rate in the sample is 4.5%. We turn now to our analysis of unemployment.

Age      The first variable we look at is age and in Table 2 we present estimates of unemployment rates, durations and inflow probabilities in each age group. The rates in the first row indicate a u-shaped relationship between age and unemployment incidence and we see from the third and fourth rows how the rates break down into mean duration and entry probabilities. The youngest age groups have a high incidence of unemployment solely because they are very much more likely than the remainder to enter

Table 2  
Analyses of Unemployment by Age

	18-20	21-24	25-29	40-49	50-54	55-59	60-65
Unemployment rate (Standard error)	7.2 (1.3)	5.9 (0.86)	4.4 (0.45)	2.7 (0.45)	3.9 (0.79)	5.1 (0.92)	6.5 (1.2)
Ceteris paribus unemployment rate (Standard error) (t ratio)	5.41 (1.65)(1.77)	3.96 (1.15)(-)	2.26 (0.57)(2.88)	2.72 (0.79)(1.82)	2.72 (0.79)(1.82)	4.13 (1.16)(0.19)	4.13 (1.16)(0.19)
Mean duration in weeks of completed unemployment spells	12.6	13.7	15.9	18.6	20.4	21.6	22.9
Weekly percentage probability of entry into unemployment	0.57	0.43	0.28	0.16	0.19	0.24	0.28
Annual percent probability of entry into unemployment	25.6	20.1	13.4	8.1	9.3	11.6	13.5

- Notes: i) The standard errors in the first row are computed by taking the standard error as if the GHS sample was drawn on a simple random sampling basis and multiplying this by 1.1. This correction factor appears to be of the appropriate order of magnitude for subsamples of this size in the light of the discussion in GHS (1972), chapter 7, HMSO (1975).
- ii) The ceteris paribus unemployment rate is based on the notion of the standard man who is aged 25-39, healthy, has no qualifications, has 10 years of schooling, is married with no children, has a non-working wife, is semi-skilled, lives in the Yorkshire and Humberside region not in public rented accommodation. The age specific rates refer to men who are standard in every respect except age and the t ratio refers to the difference between the unemployment rates referred to and the rate of the standard man. The ceteris paribus rates themselves are computed from the results of a logit analysis of the probability of being unemployed as are the standard errors and t statistics. The model and these results are presented in the Appendix, particularly table 1A model 3.
- iii) The results for the mean duration of completed spells are computed from maximum likelihood estimates of the probability of leaving unemployment. The model and the results are presented briefly in the Appendix particularly table 2A model 1 and a full analysis of the technique is given in Nickell (1979).
- iv) The weekly percentage probability of entry in row 4 is simply the ratio of row 1 to row 3. The annual percentage probability of entry is 
$$= \left( 1 - \frac{(1-p)^{52}}{100} \right) 100$$
 where p is the weekly percentage probability of entry.
- v) The unemployment rates given in the first row are similar to those for July 1972 given in the D.E. Gazette, March 1973, p. 253, table 4 except that the rate for 55-60 year olds is rather higher and that for the 60+ year olds is very much lower. The rate given in the Gazette for this group is 9.8% which seems dramatically high particularly as the corresponding rate for July 1975 (D.E. Gazette, July '77, p. 719) is only 7.8% in spite of the somewhat higher general level of unemployment at that date. Estimates of completed spell duration by age for the period 1967-70 appears in the D.E. Gazette, Feb. '73, p. 114, table 5. These reveal a steady increase with age but one which is much more dramatic than those above rising from 3.7 weeks for the under 20's to 30.3 weeks for the over 60's. The method of computation is, of course, entirely different and is based on aggregate rather than individual data. The same is true of the work by Cripps and Tarling (1974) whose duration estimates for July 1966 range from 2 weeks for the 18-24 year olds to 9.9 weeks for those older than 60. Their inflow estimates are, however, very close to those in table 4. The male unemployment rate at this time was a mere 1.4 percent.

unemployment. Indeed, the under 20's are more than twice as likely to enter unemployment than any of the over 25 age groups and have a 25 per cent chance of entering in any given year.<sup>6/</sup> This, of course, reflects their high degree of job mobility which results from low levels of specific human capital and the relatively low current costs of unemployment allied to the ease of finding another job which their relatively low duration figure indicates. The probability of entering unemployment drops sharply with age reaching its lowest level in the 40 to 54 age group before rising again in old age. Expected durations, on the other hand, rise steadily with age reflecting the increasing difficulty of finding suitable alternative employment as individuals age. The fact that older workers are more likely to find themselves entering unemployment and are more likely to remain there longer relative to prime age males is the result of a number of factors. First, approximately 38 per cent of the unemployed over 55 have occupational pensions although only about 60 per cent of these received more than £10 per week from this source. (These figures refer to 1973 and are taken from the D.E. survey of the characteristics of the unemployed for that year.) Nevertheless, even when this is accounted for in the analysis, older workers still have higher durations (see Nickell (1979), table 2) and since their entry into unemployment is mainly involuntary, there must clearly be other factors at work here. One possibility is that as individual productivity wanes with old age, the structure of jobs and wages within the firm is such that it becomes difficult for the firm to take account of such waning productivity by



paying lower wages. Consequently, as soon as the firm has the opportunity to make some of its employees redundant, the workers it will select are going to be those whose productivity is low relative to their wage. Furthermore, when firms are hiring they will look for the most productive workers who will accept the wage to fill their vacant job slots and they appear only to have a limited number of low wage slots suitable for low productivity older workers. This partly, of course, reflects the difficulties involved in paying different wages to different people for doing the "same job" more or less well.

The general preference which firms have for hiring younger workers is reflected in the prevalence of specific upper age limits in the description of vacancies. For example, Jolly, Mingay and Creigh (1978), tables 3,4, reveals that some 32 per cent of labouring vacancies specify an explicit upper age limit of 50 and about 24 per cent of all registered vacancies have this same restriction. Furthermore, the 1973 Survey of the Characteristics of the Unemployed (D.E. Gazette, 1974, p. 218, table 3) reveals that of the over 55's who are either keen to work or for whom there is no reason why they should not accept a suitable job, some 80 per cent have poor prospects of obtaining long term work in the view of the unemployment service. This contrasts with a mere 26 per cent of the under 55's in the same category.

The ceteris paribus unemployment rates follow the same pattern as the absolute rates and up to the 40-49 age group the elasticity of the former with respect to the latter is approximately unity indicating the same relativities among lower age groups even when the other observed variables are accounted for. After age 50, however, the elasticity falls

to about 0.7 indicating that some 30 per cent of the age effect reflects other factors of which ill health is probably one of the most important with its obvious association with age and extremely high association with unemployment (the unemployment rate (S.E.) for those men suffering from a long standing illness is 12.4% (1.4)).

Socio-economic Group. To a greater extent than with age, the analysis of unemployment by socio-economic group reveals enormous disparities. The details of the analysis are set out in table 3. To clarify the categories, senior and intermediate non-manual workers include managers, professionals and most other non-manual workers except clerical staff and personal service workers refer to individuals such as barmen, waiters, hairdressers and the like. The other categories are more or less self-explanatory. As table 3 indicates, the incidence of unemployment increases dramatically as we move down the skill ladder with unskilled workers, who form some 8 per cent of the employed population, having an unemployment rate of 14.2 per cent. Personal service workers have an even higher rate of unemployment at 19.3 per cent but this is based on a very small sample which is reflected in the very large standard error. As can be seen from the third, fourth and fifth rows of table 3, these very high unemployment rates are due in the main to the fact that unskilled and personal service workers have a very high probability of entering unemployment, their expected durations being only slightly above average. Thus, on the average, an unskilled worker has a probability of about one third of entering unemployment in any given year and the corresponding figure for a personal service worker is about a half although this has a very high sampling error.

Table 3  
Analyses of Unemployment by Socio-economic Group

S.E.G.	Senior and Intermediate non-manual	Junior non-manual	Personal service	Foreman and skilled manual	Semi skilled manual	Unskilled manual
Unemployment rate (%) (Standard error)	1.2 (0.29)	3.3 (0.62)	19.3 (5.7)	4.0 (0.40)	6.7 (0.83)	14.2 (1.6)
Ceteris paribus unemployment rate (%) (Standard error) (t-ratio)	1.3 (0.48)(3.9)	2.0 (0.83)(2.0)	12.1 (4.9)(3.1)	2.8 (0.77)(2.4)	4.0 (1.2)(-)	7.7 (1.9)(4.0)
Mean duration in weeks of completed unemployment spells	12.3	16.3	14.0	15.3	17.1	17.8
Weekly percent. probability of entry into unemployment	0.098	0.20	1.4	0.26	0.39	0.80
Annual percent. probability of entry into unemployment	4.9	10.0	51.4	12.7	18.5	34.1

Notes: i) The computation and interpretation of these results is the same as in table 2. As before the ceteris paribus unemployment rate is based on the standard man and the t ratio tests the difference between the individual referred to and the standard man. The results here are based on table 1A model 3 and table 2A model 3.

It is clear, then, that these two groups of workers suffer from considerable instability of employment which must, in part, be due to their lack of specific human capital which implies that firms find it more economic to part with them in preference to members of other groups when the economic outlook is bleak.<sup>7/</sup>

The relatively high unemployment rate for unskilled workers thus follows directly from the fact that as the economy fluctuates and as firms expand and contract relative to each other, unskilled workers bear the brunt of these fluctuations in terms of unemployment. In addition, however, they remain out of work for longer periods than the average and assuming this is not entirely a supply side phenomenon,<sup>8/</sup> this seems to indicate a relative lack of demand for such workers which is confirmed by the persistently low levels of vacancies to unemployment ratios for unskilled groups recorded in the D.E. Gazette. For example, in December 1971, the registered vacancy to unemployment ratio for general labourers was 0.013 compared with 0.14 for engineering workers and 0.23 for administrative, technical and professional workers. Nevertheless, even if the mean duration of unemployment spells for unskilled workers was halved, they would still have higher unemployment rates than the other groups and this seems to arise from the very structure of the economic system. These issues will be taken up again when we come on to discuss policies.

Family Composition. The relationship between family composition and unemployment is somewhat startling because, at first sight, there are no very obvious theoretical reasons why there should be any very strong association.

Nevertheless, as the first row of table 4 reveals, those who are unmarried have a very much higher incidence of unemployment than their married counterparts and among the married, those with large numbers of children have unemployment rates which are dramatically high, a fact which has already been brought to light in the work of Stern and Smee (1976) and Daniel and Stilgoe (1977). The third and second rows of table 4 reveal a similar pattern when just age is controlled and when all the observed variables are held constant although the variations are somewhat attenuated.

Looking more closely at the distinction between married and unmarried men aged 39, we see that the unmarried have more than a 50 per cent higher incidence of unemployment, the majority of which may be accounted for by the higher duration of the unmarried. Their probability of entry is only 20 per cent greater. This seems to indicate either that unmarried individuals are more likely to extend their unemployment spells, perhaps because there is less pressure on them to take up another job, or that prospective employers prefer married men because they feel that they are more reliable. There is some casual evidence in favour of this latter proposition and it is also well known that unmarried men of that age are more likely to suffer from such things as mental instability and alcoholism than their married counterparts.<sup>9/</sup> Once men are married, however, their incidence of unemployment tends to increase with the number of dependent children rising to very high levels for those with four or more. One plausible explanation is that the considerable discrepancy in the level of state-provided family support between those in work and those out of work leads

Table 4

Analyses of Unemployment by Family Composition

Family composition	Unmarried	Married	Married, no dependent children	Married, 1 dependent child	Married, 2 dependent children	Married, 3 dependent children	Married, 4 dependent children	Married, 4 + dependent children
Unemployment rate (%)	7.3	3.8	3.2	2.8	3.9	4.5	10.3	12.3
(Standard error)	(0.73)	(0.27)	(0.38)	(0.51)	(0.58)	(1.0)	(2.3)	(2.0)
Ceteris paribus unemployment rate (%)	7.44	4.0	3.27	3.96	4.78	5.76	6.94	
(Standard error) (t ratio)	(2.2)(3.9)	(1.2)(-)	(1.0)(3.6)	(1.2)(-)	(1.4)(3.6)	(1.8)(3.6)	(2.3)(3.6)	
Unemployment rate (%) for age 39	4.7	3.0	2.0	2.31	3.7	5.0	7.7	
(Standard error) (t ratio)	(0.7)(5.72)	(0.4)(-)	(0.3)(5.0)	(0.4)(-)	(0.5)(5.0)	(0.7)(5.0)	(1.0)(5.0)	
Mean duration in weeks of completed unemployment spells for age 39	19.6	15.3	14.3	15.2	16.0	16.9	17.8	
Weekly percent probability of entry into unemployment for age 39	0.24	0.20	0.14	0.15	0.23	0.30	0.43	
Annual percent probability of entry into unemployment for age 39	11.7	9.7	7.0	8.5	11.1	14.3	20.1	

- Notes: i) The unemployment rates for over aged 39 are computed from a logit model of the probability of being unemployed, the specification of which is discussed in the Appendix. The same applies to the model used for computing mean durations. Models 1 and 3 - table 1A and model 2 in table 2A are the relevant ones here:
- ii) The ceteris paribus rates in the second row we again based on the standard man described in the notes to table 2.

men with large families to prolong their unemployment spells in the search for relatively highly paid work. This view is put forward in Daniel and Stilgoe (1977) who adduce evidence which purports to show that unemployed married men who have a large number of children seek higher levels of pay than similar men with fewer children. The evidence itself, which was reprinted in New Society, 10 November 1977, table 3, p. 288, consists of the fact that married men with four or more children who had recently worked received net weekly pay which was 18.4 per cent higher than married men with only one child (£45 p.w. as opposed to £38 p.w.). These figures do not, however, support the conclusion. On average, the weekly hours worked by manual workers rises by approximately one hour for each dependent child.<sup>10/</sup> If this is the case and if two men entered the same relatively low paid job at the time of the survey, the one with four or more children will have net take home pay which is at least 20 per cent higher than the man with one child, the difference arising from the hours worked and the available tax allowances.<sup>11/</sup> Thus the Daniel and Stilgoe data appear to indicate that men with four or more children accept lower paying jobs than their counterparts with fewer children. In any event this explanation does not hold much water because, as table 4 indicates, the variations in unemployment incidence with family size are due, in large part, to variations in the chances of entering unemployment and not to variations in duration. So, unless it can be argued that men with large families enter unemployment voluntarily, which seems unlikely given the small proportion who do, it is hard to see how family dependent benefits can play a very important role. Furthermore, the results in Nickell (1979), table 2, indicate that men with large families have longer durations of unemployment ceteris paribus on the replacement ratio which only serves

to reinforce the above point. Consequently, one must look elsewhere for an explanation of this relationship. There are a number of possibilities. First, it is likely that men with large numbers of dependents are less mobile than average. Again, however, this might go some way towards explaining the longer duration but does not contribute to an explanation of the markedly higher inflow rates. Second, it may be that men with large families are concentrated in the lower skill groups although the evidence from fertility studies indicates that this effect will be slight.<sup>12/</sup> This is confirmed by the fact that if we take skilled men aged 39, the range of unemployment incidence for those with no children up to those with 4 children is 1.9% to 6.15% as compared with 2.0% to 7.7% when we do not control for skill (these figures are based on table 1A, model 2). So, although controlling for skill slightly attenuates the effect, the relationship remains very marked and seems to be a bit of a puzzle. Why should the unemployment incidence of men of the same age in the same skill group rise so dramatically if they have a large number of children? In the work that has been done on fertility, some attention has been paid to the relationship between fertility and measures of personal alienation which are derived from the Marxian concept of alienation and the Durkheimian notion of *anomie*. In empirical work it has been possible to isolate at least four independent measures of alienation which have been termed meaninglessness, powerlessness, namelessness and social isolation (see, for example, **Seeman** (1959), Dean (1961), Groat and Neal (1967)). Indices of alienation and its various aspects are constructed on the basis of questionnaire data and may be thought of as measures of the way in which



individuals relate to their social situation. Powerlessness, for example, may be defined in the words of Seeman (1959) as "the expectancy or probability held by the individual that his own behaviour cannot determine the occurrence of the outcomes, or reinforcements, he seeks." It must, of course, be distinguished from the objective situation of powerlessness, that is, it is a subjective view of the situation.

In the work of Groat and Neal (1970), (1973) on Catholic and Protestant fertility, they find that within religious and socio-economic groups, there is a strong positive relationship between alienation and fertility, which does not seem to arise because highly alienated individuals wish to have more children. The explanation hypothesised by Groat and Neal is that alienation, and in particular, powerlessness, is known empirically to be inversely related to the ability to absorb information directly relevant to personal well-being. Lack of such ability then leads to a reduction in the ability to control fertility.

As far as unemployment is concerned, the evidence on the relationship between unemployment and alienation is somewhat slender although there are obvious theoretical reasons why one might expect some association. Kohn (1976) indicates that there is a significant, ceteris paribus, relationship between powerlessness and the fear of losing one's job<sup>13/</sup> which is presumably related to actual unemployment experience. Thus we have at least some weak evidence of an association between fertility and unemployment via well defined personal characteristics which have some independent impact. The causal structure of all this remains to be sorted out but

it does take us a short step beyond the bald statement that the sort of individuals who have lots of children are those who are likely to become unemployed.

Other Factors. There are two other factors which it is particularly interesting to look at in relation to unemployment incidence. The first of these is the benefits to income or replacement-ratio, which in this case is defined in terms of after-tax family income. In table 5, we see the steady increase in unemployment incidence as the replacement ratio rises which is partly due to the direct supply side effect on duration which is discussed at length (Nickell (1979a) and partly to the fact that those in lower socio-economic groups have lower incomes and hence higher replacement ratios and also have higher chances of entering unemployment as we have already seen. The interesting facts to emerge from this table are that, at least in 1972, about 8 per cent of the male working population would have been at least 90 per cent as well off out of work as in it and of these some 90 per cent were, nevertheless, actually working.

The other point of some note is the relationship between housing circumstances and unemployment. The details are set out in table 6 and reveal the enormous discrepancy between owner occupiers and renters which, of course, reflects socio-economic group in particular. The high level of unemployment incidence for those who rent in the public sector is particularly interesting, especially when it is noted that this factor is still highly significant when we control for all the variables noted at the bottom of Table 2 (see Appendix, table 1A, model 3). The ceteris

Table 5

Unemployment Incidence by Replacement Ratio

Replacement ratio	0.0-0.49	0.5-0.59	0.6-0.69	0.7-0.79	0.8-0.89	0.9-0.99	1.0-1.1
Percentage of working population	16.6	19.4	23.7	19.5	11.4	5.5	2.5
Percentage unemployed (S.E.)	4.0 (0.63)	3.2 (0.46)	3.6 (0.48)	4.6 (0.60)	6.1 (0.90)	10.0 (1.63)	9.9 (2.38)

- Notes:
- i) 1.5 percent of the working population have measured replacement ratios over 1.1 and only 3% of these are unemployed. This number is highly misleading because it is likely that a large number of these individuals are under-reporting their income in work.
  - ii) The replacement ratio, which is defined as the after tax family income while the individual is unemployed divided by the after tax family income if he is in work, is calculated as follows. Most of the sample were employed and hence their prospective benefits while unemployed must be imputed. This is done using the rules current at the time and the benefits included are unemployment and supplementary benefits, rate and rent rebates, family allowances, free school meals and family income supplement. These are added to the wife's income and unearned income as reported in the survey. Tax rebates which are due are assumed to occur evenly over the first 26 weeks of an unemployment spell. Incomes in work are reported in the survey except for those who have been out of work for more than a year, and for those who refused to answer this question. Their incomes in work are imputed using the fitted values of an earnings function as described in Nickell (1979). The total income of the family is computed, relevant benefits were added and the whole is taxed according to the standard rules. N.I. contributions are also deducted.

Table 6

Housing Circumstance and Unemployment

Housing circumstance	Owner occupier	Owns outright	Buying	Renting	Public sector renting	Private sector renting
Percentage unemployed (S.E.)	1.9 (0.26)	3.1 (0.66)	1.5 (0.27)	6.1 (0.47)	6.8 (0.60)	4.6 (0.73)

Notes: The standard errors are computed as in previous tables.

paribus rate of such individuals is 60 per cent higher than the rate for the standard man described in note ii) of Table 2, the difference having a  $t$  ratio of 3.7. The reasons underlying this large differential are not obvious. It could simply reflect the fact that, within each region, local authority housing is concentrated in areas where there is low demand for labour, particularly in inner city areas, for example. On the other hand it may partly be a consequence of the fact that living in local authority housing restricts regional mobility, it being rather difficult for such individuals to move from one local authority area to another. The differential is so large, however, that this question seems worth further investigation.

Regional Unemployment. To round off this picture of male unemployment in Britain, it is worth looking briefly at the structure of regional unemployment. This is a subject which has been rather thoroughly investigated in, for example, Cheshire (1973) and Metcalf (1975), the general consensus being that regional unemployment differentials are due, in part, to demographic and related factors and in part to regional variations in the level of demand deficiency.<sup>14/</sup> Here we shall do little more than point to one or two salient facts. First, if we take the gross regional unemployment rates and compare them with the rates which are computed for the standard man defined in note ii) of table 2 (using model 3 of table 1A in the Appendix) we find that the elasticity of the latter with respect to the former is about 0.87. This indicates that most of the variation in regional rates cannot be attributed to demographic or skill factors. This appears to be

somewhat at variance with the findings of Metcalf (1975) who explained some 54 per cent of the variance of unemployment across English county boroughs by such factors. Thus, although some considerable proportion of the variation in unemployment across towns may be attributed to demographic and skill factors, this is not the case across the broad regions of Britain. Second, if we look at the gross regional rates and the durations of unemployment across regions (computed from model 4, table 2A in the Appendix) we find that the elasticity of the latter with respect to the former is about 0.36.<sup>15/</sup> Thus most of the regional variation in unemployment may be attributed to differences in the chances of becoming unemployed in the different regions. This contrasts strongly with cyclical variations in the aggregate unemployment rate over time which may be attributed in the main to movements in duration.<sup>16/</sup> Since cyclical variations in aggregate unemployment are due to variations in demand and since these variations have their impact via changes in duration, this sheds some doubt on the view that variations in regional unemployment, being mainly caused by differing inflows, are mainly due to regional variations in demand deficiency. If they are, then the mechanism is certainly very different from that which operates in the aggregate. Finally, it is worth noting that there appears to be no evidence in favour of the hypothesis put forward by Hall (1972) which essentially points out that large variations in local unemployment levels may be stable if the local real wages are such as to compensate appropriately for the chances of being unemployed. If we correct skill specific money wages for regional variations in housing costs which are the biggest factor in regional cost

of living differentials, then the slope coefficient when regional wages for semi-skilled manual workers is regressed on regional unemployment is 0.32 ( $t = 0.09$ ) indicating more or less no relationship.<sup>17/</sup>

## II. Some Policies to Overcome the Inequitable Distribution of Unemployment

Having gained some insight into the structure of unemployment is worth briefly commenting on some of the policies which have been put forward to deal specifically with the inequities inherent in this structure. If one individual is unemployed more frequently and for longer periods than another, this does not, of course, necessarily imply that he is any the worse off. His wages while employed and his leisure and unemployment compensation while unemployed may be more than adequate to compensate. However, given the differential access to secure occupations, wages will not be enough to offset the costs of high unemployment incidence particularly if this is associated with long spells of unemployment. Thus it is probably safe to say that those who suffer relatively frequent and lengthy bouts of unemployment are inadequately compensated which is some justification for the introduction of special measures to assist such individuals.

There are essentially two ways of targeting such assistance. The first is to introduce special measures to help those groups in the population whom we know to be at risk. That is, in particular, the old, the unskilled and the sick. The disadvantage of this method is that a large number of individuals within these groups, even if they become unemployed, will obtain a new job very quickly. There seems little point in giving them special assistance which they do not require. The alternative, which gets around this problem, is only to provide special assistance to those individuals who have been out of work for longer than a specified period. This method

will automatically pick up the individuals who are most in need although at the cost of introducing a slight moral hazard problem by encouraging unemployed individuals to remain unemployed for long enough to qualify for special assistance.

In the light of these remarks we shall first discuss policies specifically for the long term unemployed and then look at some policies which have been suggested to help particular groups.

#### Policies for the Long-term Unemployed

##### (a) Additional benefits

Since being unemployed for a long period is a manifestly unpleasant experience for most people, the argument for generosity seems unanswerable. There is, of course, the worry about incentive effects although the evidence for this group suggests that such worries are ill founded (see Nickell (1979a)). There is, however, a danger which is that once an individual becomes eligible for long term additional benefit, even fewer efforts will be devoted to placing him into a job than is currently the case. This would be highly undesirable and it may be worth combining this policy with other special measures to help the long term unemployed into jobs.

##### (b) Job quotas

The aim here would be to force firms to employ a given number of long-term unemployed individuals. There are a number of severe problems with such a policy. First, how is the quota to be defined? This can either be done in terms of a fixed proportion of the stock of employees or of the inflow of new employees. The latter seems more sensible since long-term unemployment is not a characteristic of individuals throughout



their lives and if the quota is defined as a stock we may have the rather ludicrous situation of part of the quota being filled by people who have been with the firm for twenty years who happen to have been unemployed for more than a year before joining it. A flow quota, on the other hand, would have to be combined with guarantees by the firm of some stability of employment for quota members which may be very hard to police adequately. The fact that it would need to be policed arises from the second problem which is that if the long-term unemployed are less productive or are thought to be less productive, quotas would be thought to reduce firms' profits and they would therefore oppose them. This hardly bodes well for such a scheme, particularly since quotas would have to be separately negotiated with each firm as many of them hardly employ any workers of the kind who make up the vast bulk of the long-term unemployed. Finally, quotas cannot increase aggregate employment and indeed may reduce it because of the deleterious effect on profits.

(c) Subsidies

Before considering particular types of subsidy, a number of general points should be made. First, as in the discussion of quotas, firms are assumed to be motivated by profit. Second, there is the question of the stigma which may attach to individuals who have a special 'subsidised' job. This may be partially nullified by the employment office negotiating directly with prospective employers concerning the possibility of employing particular individuals, for which the firms would directly receive a subsidy. The individuals concerned are then simply submitted for jobs to these employers. Third, if suitable vacancies can be offered to long-term

unemployed individuals, it may be thought desirable to exert some pressure on them to accept the jobs. It is not clear (at least to me) how easy or desirable this is but clearly a policy of this type, if linked with an increase of long-term benefits, might make the latter more generally acceptable. Fourth, a subsidy policy cannot reduce the total number of jobs available and could well create new jobs by making it profitable, given the reduced net labour cost, for firms to employ people to do things which were previously unprofitable. It should be borne in mind, however, that this policy is not costless and its employment creation aspects have to be compared with the employment created by other methods of spending the money. Furthermore, there is the thorny question of displacement. If subsidies create no extra jobs, then an increase in the rate of hiring of the long term unemployed implies an increase in duration for the remainder of the unemployed. This may be acceptable on equity grounds, particularly as the increase in average duration would clearly not be very great, but there is also the possibility of firms laying off existing workers in order to collect the subsidy on new ones. Given the fact that they consider the long-term unemployed as less productive than others, otherwise they would presumably take them on anyway, there is obviously some subsidy which is large enough to encourage firms to take on the long-term unemployed but which is small enough not to encourage firms to use them as replacements for existing workers. The size of such a subsidy is not, however, readily apparent.

The next question is whether to make subsidies lump sum or per week. The problem with a lump-sum subsidy is that the employer must guarantee

employment for a particular period. It may also encourage excessive turnover. A weekly subsidy is, on the other hand, probably more expensive if it is to be at a realistic level and is rather an open ended commitment. A good compromise may therefore be a weekly subsidy which is paid for a fixed number of weeks, at least up to the point when the Employment Protection Act comes into play.

#### Policies for particular groups

##### (a) Age related measures

There is little to be said concerning the plethora of special measures which have already been introduced in Britain to deal with youth unemployment. As we have seen, the young have a relatively high incidence of unemployment which is due entirely to their high chances of becoming unemployed. Thereafter they have very much shorter spells than average. Furthermore, they are much more likely to enter unemployment voluntarily than older workers. In the light of this, it is worth considering why there should be any special measures devoted to young workers. The following reasons may be put forward. First, the position of young workers is now relatively worse than it was in 1972 although their spells of unemployment are still the shortest of any age group. Second, it may be hypothesised that if individuals have lengthy spells of unemployment at the beginning of their working lives this will have a detrimental effect which will stay with them throughout their lives. There is no empirical evidence in favour of this hypothesis but it is not entirely implausible. Third, large groups of unemployed youths are a far more socially disruptive force than large groups of unemployed 60 year olds. This last is probably the most telling factor.

Old workers appear to be among the least wanted. Firms make them redundant more readily and they have much greater difficulty obtaining new jobs once they become unemployed. Early retirement is a policy which, in a sense, confirms this state of affairs. There are, of course, a number of unemployed older workers who would be only too happy to drop out of the labour force entirely, particularly those who suffer from ill-health. It seems quite sensible for this option to be open to them. On the other hand, the danger of the early retirement policy is that if an old worker finds himself unemployed, the efforts made to place him in another job will be minimal because he has an early retirement option. Scarce job placement resources will be devoted to younger men. This would, of course, be grossly unfair on those older workers who like and enjoy working. In the light of the fact that they have special difficulty in finding work it seems only fair that any policy of subsidies for the long term unemployed should be applied with particular vigour on behalf of those older workers who are keen to work. Indeed it may be worth providing extra subsidies or a shorter unemployment qualifying period for these particular individuals.

(b) Skill related measures

Given the present structure of the labour market and the fact that firms wish to minimise their production costs, if there are any economic fluctuations the workers at the bottom of the skill ladder will inevitably become unemployed more frequently than the remainder. Indeed, unless there are some rather dramatic changes in the structure of the economic system, this will remain the case. It is worth bearing this in mind when

considering the policy of training or retraining unskilled workers. Thus, although an individual who receives the training to become a skilled worker undoubtedly has an improved lot with lower prospects of unemployment, the workers who have been overtaken now find themselves lower on the skill ladder which will tend to raise their chances of unemployment. Thus, to some extent, training policies may simply reorder the work force in relation to unemployment incidence leaving those currently at the bottom of the ladder as the worst off group at any particular time. There are, however, some benefits, notably the fact that training policies will reduce the supply of the unskilled relative to the skilled thereby raising the relative wages of the latter. Furthermore, as the general skill level in the population rises and as a consequence everyone develops more specific human capital, this may lead to smaller employment fluctuations relative to output fluctuations within any firm and hence to a general lessening of unemployment incidence and to a greater general level of job security.

(c) Measures related to family composition

Men with large families are particularly prone to unemployment and equity demands that their families be protected during these periods. This implies that they receive some benefits which are related to the number of dependents within the family. If the level of these benefits is strongly related to the man's employment status this will imply that the family income is more or less independent of this status particularly if he is unskilled. Although this fact is not the main cause of the excessive unemployment incidence of men with large families, it is nevertheless not particularly desirable. The obvious way of removing its influence is to provide means tested child benefits which are independent of the father's

employment status per se. This is clearly part of the much larger problem of rationalizing the benefits system so that effective marginal tax rates never rise above a certain level, something which cannot be considered here.

### III Conclusions

At any point in time, some people in Britain are far more likely to find themselves unemployed than the average. Such individuals probably have at least one of the following characteristics. They are either young or old or unskilled with a large family or living in a council house in the Northern half of Britain. There is little evidence to suggest that a high degree of proneness to unemployment is very much a matter of personal choice. Of course, it may be argued that people choose to be highly paid building workers rather than poorly paid park keepers in spite of the insecurity of the former job. The fact remains, however, that members of both these occupations are more likely to become unemployed than solicitors and few bricklayers ever had much in the way of a choice to be a solicitor.

Becoming unemployed is not a very pleasant experience for most people and remaining unemployed for a long period of time is even less pleasant for reasons which are not entirely related to loss of income.<sup>18/</sup> It therefore seems only proper, on equity grounds if nothing else, that special efforts should be made on behalf of the long term unemployed to place them in work and one of the best ways of doing this is to provide employers with special subsidies for taking them on. This may not solve the unemployment problem in Britain but at least it might help to spread it around a little more equitably.

## Appendix

Sample. The sample consists of those males interviewed in the General Household survey of 1972 over the age of 18 who were employees or unemployed. An employee who is in employment is defined to be anyone who has been working as an employee for pay or profit or has had a job at some time during the seven days prior to the Sunday before the interview. An unemployed individual must not have worked at any time during this period and must either be waiting to take up a job or be out of employment but looking for work or be in the situation where he would have been looking for work but for temporary sickness or injury. These definitions will therefore rule out of the unemployed category all those who have left employment and have been unemployed for less than one week. Finally the sample excludes the rather small number of individuals whose reported income is so low that their computed replacement ratio is above 10. This leaves a total of 7492 men of whom 4.5 per cent are unemployed.

### The Logit Model of Unemployment Incidence

In order to estimate the unemployment incidence of small groups from a limited population one must impose some structure by limiting the number of interactions between variables in their effect on the unemployment rate. Suppose we have a set of variables and interactions in the form of a vector  $x$ . Then we may specify a function  $p(x)$  where  $p$  is the probability of an individual with characteristics  $x$  being unemployed. In this analysis we define  $p(x)$  by

$$p(x) = (1 + \exp - (\beta_0 + \sum_i \beta_i x_i))^{-1}.$$

Then if we have a sample with  $j = 1 \dots J$  unemployed individuals with characteristics  $x_j$  and  $k = 1 \dots K$  employed with characteristics  $x_k$ , the likelihood of this sample occurring is simply

$$L(\beta_0, \beta) = \prod_{j=1}^J p(x_j) \prod_{k=1}^K (1-p(x_k)).$$

This may be used to find maximum likelihood estimates,  $\hat{\beta}_0 \hat{\beta}$ . The estimated unemployment rate in the group of individuals who have personal characteristics  $\bar{x}$  is then given by  $100 \hat{p}(\bar{x}) = 100(1 + \exp - (\hat{\beta}_0 + \sum_i \hat{\beta}_i \bar{x}_i))^{-1}$  per cent. The standard error of this estimate is computed by estimating  $\left\{ \text{Var}(\hat{\beta}_0 + \sum_i \hat{\beta}_i \bar{x}_i) \right\}^{1/2}$  from the asymptotic variance-covariance matrix, computing the 1 standard error bounds on  $100 \hat{p}(\bar{x})$  and dividing the difference between these bounds by 2. This is, of course, only an approximation to the true standard error.

The estimated coefficients which are relevant for the various estimated unemployment rates presented in the body of the paper are given in table A-1.

#### Model for Estimating the Duration of Unemployment

In order to estimate the expected duration of unemployment for different groups from a cross section of currently unemployed individuals, it is necessary to estimate the conditional probability of leaving unemployment in a given week of an unemployment spell. The method which is used here is discussed at length in Nickell (1979) and more briefly in Nickell (1979a) and so we shall not repeat it here. If  $x$  is a set of variables and  $s$  is the duration of unemployment so far, then we specify  $q(x, s)$ , the weekly probability of leaving unemployment conditional on having reached the  $s^{\text{th}}$



Table A 1

Estimated Parameters for a Logit Model of Unemployment Incidence

Independent Variables	Model No.		
	1	2	3
Constant	-4.08 (20.7)	-2.99 (14.0)	-2.731 (8.48)
Age < 25	0.693 (3.20)	0.574 (2.67)	0.907 (3.85)
25 ≤ Age ≤ 39	0.343 (1.91)	0.349 (1.93)	0.579 (2.88)
50 ≤ Age ≤ 59	0.517 (2.36)	0.485 (2.24)	0.192 (0.86)
60 ≤ Age	1.21 (5.29)	0.983 (4.35)	0.624 (2.65)
Long-term sick			1.27 (8.90)
Qualified			-0.414 (2.05)
Years of Schooling			-0.069 (0.78)
Unmarried	0.926 (5.72)	0.862 (5.63)	0.669 (3.93)
Number of dependent children	0.318 (4.97)	0.303 (6.04)	0.198 (3.59)
1 dependent child (dummy)	-0.155 (0.81)		
4 + dependent children (dummy)	0.152 (0.74)		
Wife Working			-0.538 (3.57)
Senior non-manual		-2.32 (9.08)	1.85 (6.41)
Junior non-manual		-1.35 (6.29)	1.14 (5.08)
Personal Service Workers		0.417 (1.16)	0.504 (1.31)
Skilled manual		-1.12 (7.36)	-1.08 (6.78)
Semi-skilled manual		0.637 (3.76)	-0.701 (3.98)
Public Landlord			0.508 (3.70)
Years of schooling above 12.			0.151 (1.11)
Father manual			-0.01 (0.080)
South East (enc. G.L.)			-1.01 (3.93)
Greater London			-0.797 (3.01)
East Anglia			-0.927 (2.06)
South West			-0.656 (2.04)
West Midlands			-0.415 (1.73)
East Midlands			-0.590 (1.91)
Yorks and Humberside			-0.188 (0.77)
North West			0.205 (0.98)
North			0.547 (2.49)
Wales			0.552 (2.56)

- Notes:
- i) Asymptotic t ratios are given in brackets
  - ii) Qualified refers to the possession of any qualification at least as valuable as one 'O' level.
  - iii) "Years of schooling" refers to number of years of full time education above eight. "Years of schooling above 12" takes the value zero if years of schooling is less than 12, and years of schooling less 12 otherwise. The reasons lying behind this structure of schooling variables is discussed at some length in Nickell (1979b).
  - iv) Omitted characteristics are 40 ≤ Age ≤ 49 unskilled manual and Scotland.

week of a spell as

$$q(x,s) = \{1 + \exp - (\alpha_0 + \alpha_1 s/10 + \alpha_2 s^2/100 + \sum \beta_i x_i)\}^{-1}.$$

In table 2A we present estimates of the parameters  $\alpha, \beta$  for the various models required in the paper. The estimated expected duration,  $d(\bar{x})$ , of an individual with characteristics  $\bar{x}$  is given by

$$d(\bar{x}) = \sum_{\tau=1}^{\infty} \hat{q}(\bar{x}, \tau) \prod_{v=0}^{\tau-1} (1 - \hat{q}(\bar{x}, v))$$

where  $\hat{q}$  is defined as  $q$  evaluated using the estimated parameters  $\hat{\alpha}, \hat{\beta}$  and the characteristics  $\bar{x}$ .

Table 2 A

Parameter Estimates for the Conditional Probability of Leaving Unemployment

Independent Variables	Model Number			
	1	2	3	4
Constant	-2.05 (55.2)	-2.15 (27.2)	-2.72 (78.9)	-2.74 (73.2)
s/10	-0.0078 (2.80)	-0.0027 (2.70)	-0.0073 (2.55)	-0.011 (5.20)
s <sup>2</sup> /100	-0.015 (1.12)	-0.020 (0.71)	-0.017 (0.30)	-0.013 (1.63)
Age	-0.0156 (6.74)	-0.0187 (7.13)		
Number of dependent children		0.061 (2.21)		
Marital Status		0.372 (3.88)		
Senior Non-manual			0.42 (2.96)	
Junior Non-manual			0.11 (1.00)	
Personal Service Worker			0.28 (1.31)	
Skilled Manual			0.18 (2.22)	
Semi-skilled Manual			0.049 (0.52)	
South East (exc. G.L.)				0.39 (2.84)
Greater London				0.46 (3.41)
East Anglia				-0.94 (1.26)
South West				0.27 (1.41)
West Midlands				0.35 (2.92)
East Midlands				-0.023 (0.12)
Yorks and Humberside				-0.034 (0.24)
North West				0.18 (1.74)
North				0.20 (1.66)
Wales				0.19 (1.21)

Notes i) Asymptotic t ratios in brackets  
ii) Omitted characteristics are unskilled manual and Scotland.

### Footnotes

1. The 1972 General Household Survey, table 3.2, reveals that some 7% of the registered unemployed who did not have jobs to go to were not actively seeking work.
2. For example, Daniel (1974), p. 17, indicates that 61% of those in his unemployed sample over the age of 55 had never been out of work before.
3. This does not necessarily imply that at most 20.7% of the inflow into unemployment is voluntary but, as it happens, the evidence suggests that voluntary entrants have slightly longer durations than involuntary ones which means that they will be slightly over-represented in the stock relative to the inflow.
4. These figures appear to indicate a higher incidence of "voluntary" quitters in Daniel's data but this is not the case, the longer proportions arise solely because there are a higher proportion of "voluntary" quitters among women as opposed to men.
5. It is not necessary to rely on variations in specific human capital to generate a link between redundancies and lack of skill. Azariadis (1976) demonstrates that the optimal labour contract will imply that unskilled workers are more likely to be laid off than skilled workers, essentially because it is relatively more expensive for firms to compensate the latter for expected unemployment. Azariadis' argument does, however, rely on the fact that unemployment compensation does not increase with wages which is not the case in Britain.
6. It is worth noting that all these and subsequent results on the inflows and durations of particular groups are conditional on the fact that aggregate unemployment is at its 1972 level, which incidentally was relatively high at about 70% of the current level.
7. It is worth noting that the evidence in Daniel (1974) p. 54 indicates that unskilled workers are no more likely than average to enter unemployment voluntarily.
8. Unskilled workers are likely to have higher replacement ratios because of their low wages in work. However, the evidence in Nickell (1979) indicates a significant skill related demand effect even when the replacement ratio is controlled.
9. For example, Chesler (1972), appendix table 9, reveals a strong inverse correlation between mental ill-health and marital status for males.
10. See Layard, Piachaud and Stewart (1978), table 5.6, p. 63. The relevant coefficient is 0.89.

11. For example, if a married man with one child between 11 and 15 earns £1.25 per hour and works 40 hours per week, his net weekly income would have been £42.06 in 1976. A married man with four children, two under 11 and two between 11 and 15 working 43 hours per week would have had a net weekly income of £50.79 per week in the same year which is 21 percent higher.
12. Thus Woolf and Pegden (1976), table 2.11 reveals that the women who married unskilled or semi-skilled husbands between 1960 and 1967 had, on average, 2.1 children in 1972. This compares with an overall average of 2.0. However, it is worth noting that 34% of these women had three or more children compared to a population average of 25%.
13. See Kohn (1976), p. 123 footnote 12.
14. Demand deficient unemployment is defined to be equal to the amount by which unemployment exceeds the quantity at which the level of unemployment equals the level of vacancies. This latter point is in fact arbitrary.
15. This elasticity is computed as the average of the slope coefficients in the regression of log duration on log unemployment and the inverse of the slope coefficient when this regression is reversed. In the previous elasticity estimates given in this paper the relationship between the logs of the variables has been so close to linear that the definition of the elasticity is unambiguous. In this case, however, this is not so and the above definition seems a suitable method of capturing the average elasticity. The figure of 0.36 in the text compares with alternative estimates of 0.44 and 0.86. The former figure is derived from the D.E. Gazette, February 1973, p. 114, table 5 and March 1973, p. 253, table 4 and refers to 1968. The latter figure which is completely out of line with the other results is derived from Table VI in Cripps and Tarling (1974) and refers to 1966.
16. There has been no secular increase in the aggregate inflow into male unemployment since 1967. Indeed, the inflow in 1976 was about the same as it was in 1967 in spite of the enormous increase in unemployment between these two dates.
17. The wage rates used are the average hourly earnings (excluding overtime premia) of semi-skilled time workers in engineering, taken for D.E. Gazette, October 1972, p. 886, table 4. Regional housing costs are a weighted average of rent and mortgage costs as reported in the G.H.S. 1972, tables 2.59, 2.60. The unemployment rate is the gross male regional rate. Given that the correlation between this and the ceteris paribus rate is 0.99, it is clear that there is no significant relationship between real wages and unemployment whether we use the gross or the ceteris paribus unemployment rates.
18. For example, as many unemployed people cited boredom/inactivity/depression as opposed to lack of money as the worst aspect of being out of work in Daniel (1975), table V3, p. 45.

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