Unemployment as a Social Norm: Psychological Evidence from Panel Data

Andrew E. Clark, *Centre National de la Recherche Scientifique and Département et Laboratoire d'Economie Théorique et Appliquée*

This article uses seven waves of panel data to test for social norms in labor market status. The unemployed's well-being is shown to be strongly positively correlated with reference group unemployment (at the regional, partner, or household level). This result, far stronger for men, is robust to controls for unobserved individual heterogeneity. Panel data also show that those whose well-being fell the most on entering unemployment are less likely to remain unemployed. These findings suggest a psychological explanation of both unemployment polarization and hysteresis, based on the utility effects of a changing employment norm in the reference group.

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I. Introduction

Economic models of social norms have generated a great deal of interest over the past 20 years and are often used to rationalize behaviors that seem difficult to explain with standard economic tools. The central idea of these models is that individuals interact in ways other than through the price system or the exchange of information. Although the emergence of the social norm is typically left undefined, its evolution is often thought to depend on the behavior of societal members or "relevant others." The implications of these models touch every field where behavior is derived from utility maximization.[1]

Despite the potential importance of the topic, only few empirical tests have been carried out. This doubtless reflects the difficulty of measuring norms. This article aims to contribute to this small literature, but in a relatively novel way. Whereas most tests of norms, or, more generally, of interdependencies, have focused on outcomes, a direct test of one of the theory's cornerstones is proposed here: that individual utility depends on social norms. This approach may have the advantage of novelty, but it suffers from the disadvantage of requiring information on two typically unmeasured variables: utility and norms. We can, however, appeal to a small recent literature in economics, and a far larger and older one in psychology, that has used well-being measures, such as life satisfaction, overall happiness, or job satisfaction, as proxy indicators of utility. Here I will use one such measure, the General Health Questionnaire (GHQ-12), which has been widely applied over the past 25 years as a measure of psychological well-being.

Perhaps more nebulous is the measurement of social norms. In Akerlof (1980), norms refer to beliefs held by societal members (or, more generally,

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[1] To take just a few examples, social norms of various kinds appear in recent work on economic growth (Futagami and Shibata 1998), consumption (Binder and Pesaran 1997), wages (Bewley 1998), and labor supply (Lindbeck, Nyberg, and Weibull 1999).

relevant others). This article looks at the norm of employment: the degree of adherence to this norm, one minus the unemployment rate, is then supposed to enter utility via a "reputation" effect. The literature is coy about who constitutes the society in question. As the relevant group for the employment norm may well be more narrowly defined than everyone in the economy, the unemployment rates of three different types of relevant others are considered: those in the same region, couple, and household. Differences in these norm unemployment rates between individuals and over time allow the identification of the social norm terms in the regressions.

The main implication of unemployment as a social norm is that the psychological (or utility) impact of an individual's own unemployment will be reduced by a higher level of unemployment among relevant others. I use almost 40,000 observations from 7 years of recent British panel data to test this hypothesis. This represents one of the first attempts to find evidence of such a relationship using a large-scale data set.[2]

Although the above discussion is couched in terms of norms, the relationship examined (broadly, my experience of a phenomenon depends on others' exposure to it) can equally be expressed in terms of social comparisons to reference groups (e.g., Duesenberry 1949; Homans 1961; and Runciman 1966). I will hence use the terms "social norm" and "social comparison" indifferently. Other authors refer to "social custom" or "social status" in the same spirit.

The data set used, the British Household Panel Survey (BHPS), is ideally suited to the task in hand. This general survey includes standard demographic variables, plus detailed information on the individual's labor force status and income (both labor and nonlabor). It also includes, in a self-completion questionnaire, a battery of psychological questions. The responses to these questions yield a summary measure of individual well-being, the GHQ-12, which will serve as the dependent variable in the statistical analysis. The BHPS is a household panel: all adults in the same household are interviewed separately. One measure of the key explanatory variable, unemployment among relevant others, will be the unemployment rate prevailing in the region. The two others will exploit the household aspect of the data: the unemployment rate of all other adults living in the same household and partner's unemployment.

It is shown that, over all respondents, well-being is typically negatively correlated with others' unemployment. However, a closer examination

[2] Lalive and Stutzer (2000) measure the social norm of work in Swiss cantons by the percentage voting for a cut in unemployment benefits in a 1997 referendum. This percentage is then shown to be positively correlated with the transition rate out of unemployment. Their interpretation is of an effect of the strength of the work norm on the behavior of the unemployed.

reveals a distinct pattern in this correlation: the well-being of the employed is often lower when the unemployment rate of others is higher; on the contrary, the unemployed report higher levels of well-being as others' unemployment rises. The psychological experience of unemployment is tempered by the labor market status of those with whom the individual is in close contact, as models of comparisons or norms would imply. This relationship could also help to explain the polarization of work between households.

At the macroeconomic level, another implication of the finding that, loosely speaking, unemployment hurts less the more there is of it around, is that unemployment may return only slowly to equilibrium after a negative shock or may even become stuck at a new higher level. The supposed mechanism here is that the smaller well-being gain from employment (relative to unemployment), as adherence to the employment norm weakens, leads to less, or less effective, search (as this latter is costly) by the unemployed, and thus longer durations of unemployment. Our data allow us to test this hypothesis. We can calculate the drop in well-being experienced by individuals who are employed at wave t and then unemployed at wave $t + 1$. A probit model of search activity at wave $t + 1$ reveals that those who were more hurt psychologically by unemployment are somewhat more likely to be currently searching for work. Probit equations also show that the change in well-being from t to $t + 1$ is significantly negatively correlated with the probability of being back in work at $t + 2$: those who are more hurt by unemployment find work faster. These pieces of statistical evidence point to a psychological explanation of labor market hysteresis, based on reduced adherence to the employment norm in the labor market.

The article is organized as follows: Section II describes the data and presents some initial results on well-being and own unemployment status, and Section III considers the relationship between individual well-being and the labor market status of others. Section IV introduces controls for unobserved heterogeneity. Section V presents panel results on the change in well-being on becoming unemployed and subsequent labor market behavior. Section VI concludes.

II. Data and the Effects of Own Unemployment on Well-Being

An active research area in the analysis of well-being has been its relationship to labor market status, and particularly unemployment. A standard result is that the unemployed report significantly lower well-being scores than other labor force groups. The social psychology literature provides a number of useful summaries (e.g., Fryer and Payne 1986; Feather 1990). Recent work in economics has used large-scale data sets to address this question.[3]

[3] Single-country studies include Clark and Oswald (1994), using the BHPS;

I use data from the first seven waves of the BHPS, a general survey covering a random sample of approximately 10,000 individuals in 5,500 British households. This data set includes a wide range of information about individual and household demographics, labor force status (chosen by the individual from a show card of 10 possible replies), and income. There is both entry into and exit from the panel, leading to unbalanced data. The BHPS is a household panel: all adults in the same household are interviewed separately. The wave-1 data were collected in late 1991–early 1992, the wave-2 data were collected in late 1992–early 1993, and so on.

The analysis will refer to individuals of working age (16–65 years) who are active in the labor force. This produces 39,477 observations in total, falling from 6,199 in wave 1 to around 5,500 from wave 3 onward. The data cover 9,461 different individuals, 2,901 of whom are present over all seven waves, and include 3,148 observations on 1,870 unemployed individuals, giving an average unemployment rate over the seven waves of 8.0%.

The proxy utility measure used in this article is the GHQ-12 measure of mental well-being (see Goldberg 1972). This is constructed from the responses to 12 questions (administered via a self-completion questionnaire) covering feelings of strain, depression, inability to cope, anxiety-based insomnia, and lack of confidence, among others (see app. A). Responses are made on a four-point scale of the frequency of a feeling in relation to a person's usual state: "not at all," "no more than usual," "rather more than usual," and "much more than usual."[4] The GHQ is widely used in medical, psychological, and sociological research, and it is considered to be a robust indicator of the individual's psychological state. The between-item validity of the GHQ-12 is high in this sample of the BHPS, with a Cronbach's alpha score of 0.89.

I use the Caseness GHQ score, which counts the number of questions for which the response is in one of the two "low well-being" categories. This count is reversed so that higher scores indicate higher levels of well-being, running from zero (all 12 responses indicating poor psychological health) to 12 (no responses indicating poor psychological health). The

Winkelmann and Winkelmann (1998), using German Socio-Economic Panel (GSOEP) data; and Frey and Stutzer (1999), using Swiss data. Multicountry studies include Di Tella, MacCulloch, and Oswald (2001), who examine 11 European countries.

[4] It might be thought that the reference to a "usual state" renders the responses problematic, with the term "usual" being defined as whatever the person is currently doing. However, the empirical literature on GHQ scores treat the responses unambiguously as indicators of the level of well-being, and it was for this purpose that the instrument was designed. In the BHPS data, the employed's GHQ is far more strongly correlated with job satisfaction levels than with job satisfaction changes.

Table 1
The GHQ-12 Measure of Well-Being by Current Labor Force Status: BHPS Waves 1–7

Current Labor Force Status	Average Well-Being	Percentage with Low Well-Being
In paid employment:		
Mean	10.31	23.81
Standard error	.015	.241
N	31,348	31,348
Unemployed:		
Mean	9.24	37.61
Standard error	.062	.874
N	3,076	3,076
Self-employed:		
Mean	10.35	22.96
Standard error	.040	.631
N	4,438	4,438
All	10.23	24.81

NOTE.—GHQ = General Health Questionnaire; BHPS = British Household Panel Survey.

distribution of this well-being index in the BHPS sample is shown in appendix table B1. The median and mode of this distribution is 12: no responses indicating poor psychological health. However, there is a long tail: one-third of the sample have a score of 10 or less, and 11% have a score of six or less.

Table 1 summarizes the relationship between GHQ and current labor force status in the BHPS. Both the mean level of well-being and, taking into account the ordinality of the well-being measures, the percentage with "low" well-being (defined as a score of under 10) are shown.[5] The unemployed have significantly lower levels of well-being than do those in work.

There are many characteristics other than labor market status that likely affect subjective well-being. In the context of well-being and unemployment, it would seem particularly pertinent to examine the roles of income and health, for example. This calls for a multivariate approach. As the GHQ score is ordinal, not cardinal, ordered probit regressions are used. For ease of representation, the estimated thresholds are not presented in the regression tables.

Table 2 reports the results of regressions on pooled BHPS data. I adopt the same format as Clark and Oswald (1994), who used only wave-1 data. The first column includes only labor market status as an explanatory variable. The omitted labor market category is "employed" (all regressions

[5] Individuals with more than two responses indicating poor psychological health, i.e., a well-being score of less than 10, are considered to have an increased possibility of becoming a psychiatric case (hence, the term given to the associated measure: the "caseness" index).

Table 2
Well-Being and Own Labor Force Status: Ordered Probit Regressions, BHPS Waves 1–7 Pooled

	Simple Specification	With Some Controls	Broad Specification
Self-employed	.024	−.059	−.057
	(.018)	(.019)	(.019)
Unemployed	−.391	−.433	−.429
	(.020)	(.021)	(.022)
Yearly income (£000)		−.019	−.013
		(.006)	(.006)
Male		.236	.231
		(.012)	(.012)
Age		−.032	−.030
		(.004)	(.004)
Age²/1000		.432	.416
		(.045)	(.048)
Education: high		−.190	−.187
		(.016)	(.016)
Education: A-levels, O-levels, nursing qualifications		−.075	−.078
		(.015)	(.015)
Health: excellent		.718	.717
		(.016)	(.017)
Health: good		.488	.488
		(.014)	(.014)
Married		.044	.037
		(.017)	(.018)
Separated		−.330	−.335
		(.04)	(.04)
Divorced		−.076	−.080
		(.026)	(.026)
Widowed		−.151	−.157
		(.054)	(.054)
Children dummies	No	No	Yes
Wave dummies	No	No	Yes
Regional dummies	No	No	Yes
N	38,862	38,618	38,616
Log likelihood	−66,081.2	−64,313.1	−64,241.2
Log likelihood at zero	−66,270.5	−65,897.6	−65,896.3

NOTE.—BHPS = British Household Panel Survey. Standard errors are in parentheses.

refer only to respondents active in the labor market). The dummy variable for self-employment is positive, but insignificant, while that for unemployment is negative and very significant, with a *t*-statistic of 19.

Column 2 controls for a number of individual characteristics, adding dummy variables for sex, education, health, and marital status, as well as age, age squared, and yearly individual income.[6] All income variables are in real terms, having been adjusted by the private consumption deflator.

[6] The use of yearly income helps to smooth out effects of unusually high income receipt in any 1 month. Empirically, both yearly and monthly income produce very similar results.

Descriptive statistics of all variables are provided in appendix table B2. Column 3 moves to the full specification, adding dummies for number of children, region, and year of interview; unemployment continues to be very strongly negatively correlated with individual well-being.[7] With these control variables, the coefficient on self-employment becomes negative and significant, contrasting with Blanchflower and Oswald's (1998) finding of higher life satisfaction among the self-employed (which they interpret as being consistent with a rent to self-employment because of capital constraints, or with there being a return to risk taking).

Of particular interest is the role of income in these equations. In column 2, the estimated coefficient on income is negative with a *t*-statistic of 3. The addition of further controls in column 3 reduces the absolute size of the estimated coefficient, but it remains negative and insignificant. It should be emphasized that this finding is not unique to the BHPS data. From Easterlin (1974) on, income has been shown to be a poor predictor of many different measures of well-being (see Diener et al. 1999; Di Tella, MacCulloch, and Oswald 2001). One conclusion is that higher income is correlated with other variables that reduce well-being, such as hours of work. The fact that both partner and household income are positively correlated with individual well-being in the BHPS, whereas individual income is not, might be thought to support this interpretation. Another is that it is relative income, not absolute income, which drives well-being (Frank 1985; Clark and Oswald 1996). A third explanation is that income does matter, but not linearly or log-linearly. However, tests with quadratics in both levels and logs, sets of income dummy variables, and a wide variety of splines failed to uncover any positive significant income effects in this data set.

Table 2's other results show that men have, on average, higher levels of well-being than women and that there is a pronounced U-shape in age minimizing at age 36 (see Clark, Oswald, and Warr 1996).[8] Self-reported well-being is lower for those with higher levels of education.[9] These dum-

[7] All key results can be reproduced on the sample, including inactive individuals. In the table 2, col. 3, specification, the use of the full sample produces the following ranking among the BHPS's 10 labor force statuses: worst equals maternity leave, followed by unemployment; best equals retired, followed by employment, then self-employment.

[8] Clark (1997) discusses the finding in the BHPS that, by contrast, women report higher levels of job satisfaction than do men.

[9] This education result is not unusual in the empirical literature. Both Warr (1992) and Shields and Wailoo (1999) find a negative effect of education on well-being. Hagenaars (1986, chap. 10) shows that, in a multicountry study, those with a higher level of education need higher levels of income to attain certain verbal levels of well-being (such as "excellent" or "good"). More generally, literature reviews, such as Diener et al. (1999), conclude that education has only small positive or insignificant effects on well-being. Ruut Veenhoven (personal com-

mies refer to achieved paper certificates—broadly, at age 18+ and between the ages of 16 and 18—rather than to years of schooling. This may indicate either that there is some kind of comparison effect, where education raises expectations at the same time as outcomes (see Clark and Oswald 1996), or that education is endogenous, being chosen by people who are "naturally" more difficult to please. The married have the highest level of well-being, and the separated have the lowest. The strongest correlations are, in the expected direction, with the health variables.

III. The Role of Others' Unemployment

It now seems to have been established beyond reasonable doubt that the unemployed are worse off than the employed, and by more than their lower income would predict. One question is whether certain groups of the unemployed are hurt less by unemployment than are others. Fryer and Payne (1986) considered this question in terms of unemployment duration, race, gender, and age. Here I ask whether the psychological effect of unemployment is related to the labor market situation of relevant others, as social norm theory would predict.

The function estimated by the studies cited in Section II is of the form

$$W_i = W(ue_i, \ \ldots), \tag{1}$$

where W is a well-being index of some description and ue_i is the individual's own unemployment status. One simple way of adding others' unemployment, denoted by ue_i^*, into equation (1) is to use Akerlof's (1980) social norm model. Here, utility, W, is given by

$$W = W(R, A, d^c, X),$$

where R is reputation "in the community," A is a dummy variable for obedience or disobedience of the code, d^c is belief or disbelief in community's code, and X is personal tastes. Reputation is determined by both the individual's own actions, A, and the proportion of the population who believe in the code, μ: $R = R(A, \mu)$. Value R equals zero if the individual follows the code ($A = 1$) but is negative if $A = 0$.

I consider the norm here, A, to be employment. I drop the d^c variable, as I have no way of measuring individuals' beliefs with respect to the code, and identify μ with the proportion of the population who actually follow the code, that is, the employment rate. Utility then becomes

$$W = W(R, 1 - ue_i, X).$$

A linear form is used for R: $R = -ue_i(1 - ue_i^*)$. This fulfills Akerlof's

munication) confirms that, in the studies summarized in his "World Database on Happiness" (1999), negative correlations between education and subjective well-being are common in developed countries.

(1980) criteria of no reputation effect if the employment code is followed ($ue_i = 0$), but a negative effect (of $1 - ue_i^*$) if the code is not respected. The reputational effect from not following the code diminishes as the percentage of relevant others not following the code (ue_i^*) increases. Substituting R into W produces

$$W_i = W[-ue_i(1 - ue_i^*),\ 1 - ue_i,\ X]. \tag{2}$$

The individual's own unemployment reduces well-being, through the first and second terms, while reference group unemployment increases the well-being of the unemployed, through the first term. The empirical counterpart to equation (2), which is estimated in this article, is

$$W_i = \alpha + \beta_1 ue_i + \beta_2 ue_i^* + \beta_3 (ue_i ue_i^*) + \gamma' X + \epsilon_i. \tag{3}$$

Equation (3) introduces a main effect of ue_i^*. I expect to find the following relationships: $\beta_1 < 0$ and $\beta_2 < 0$, but $\beta_3 > 0$. An individual's own unemployment hurts, and the unemployment of "relevant others" hurts for those in employment.[10] However, an individual's own unemployment hurts less when the unemployment of relevant others is higher ($\beta_3 > 0$).

A key specification issue concerns ue_i^*: just who is relevant for the definition of the employment norm? As a norm that is the same for all individuals at all points in time cannot be identified, it is assumed that the relevant others in ue_i^* differ both between individuals and over time. Three different definitions are used: the regional unemployment rate, the unemployment status of the individual's partner, and the unemployment rate among all other adults living in the same household as the respondent.[11]

The standard externality from others' unemployment is negative: more unemployed people make it more difficult for me to find a job if I am unemployed myself (although this may be offset by a thick market externality with more jobs being created, as in Pissarides [1992]). This likely plays only a minor role at the household level but becomes important at the local or regional level. Some preliminary evidence that this correlation might be different for the unemployed was presented in Clark and Oswald

[10] This latter may result from feelings of sympathy with the unemployed; heightened job insecurity as others' unemployment increases (OECD 1997); or, considering ue_i^* as a geographic variable, because jobs in high unemployment areas pay less (Blanchflower and Oswald 1994).

[11] Another reference group is yourself in the past. Clark (1999) shows that current job satisfaction is positively correlated with current wages but negatively correlated with past wages. Clark, Georgellis, and Sanfey (2001) use 11 waves of the GSOEP to show that past unemployment is negatively (positively) correlated with the current life satisfaction of the employed (unemployed), as eq. (3) would imply.

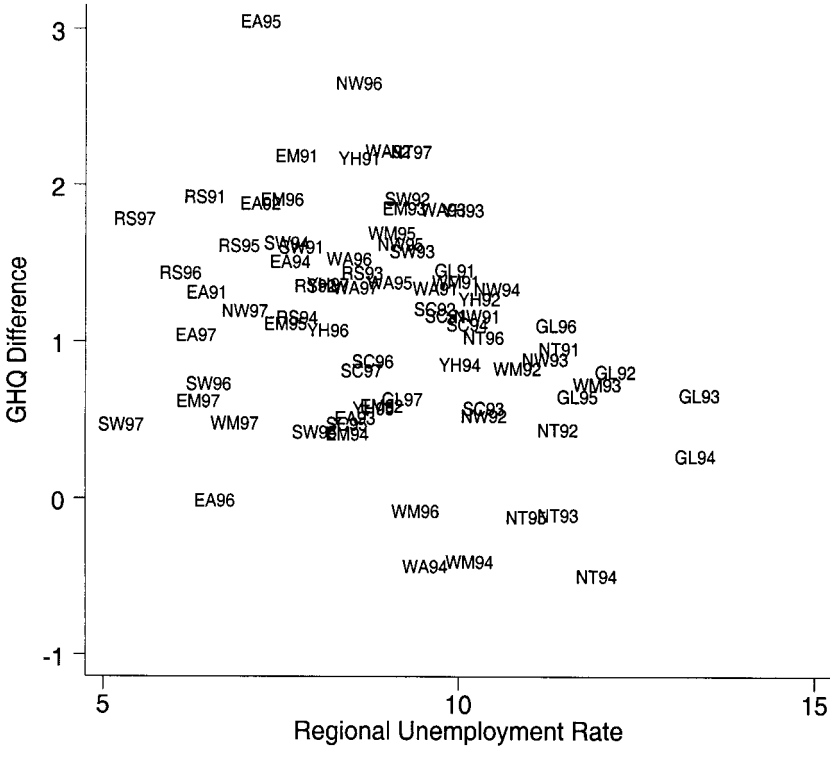

FIG. 1.—The well-being gap between those in work and the unemployed ($GHQ_E - GHQ_U$) and regional unemployment rates BHPS waves 1–7 (11 regions) Key: GL = Greater London, RS = Rest of the South East, SW = South West, EA = East Anglia, EM = East Midlands, WM = West Midlands, NW = North West, YH = Yorkshire and Humberside, NT = North, WA = Wales, SC = Scotland.

(1994), where it was shown that the GHQ-12 gap between the employed and unemployed tended to be lower in high unemployment regions.

Figure 1 updates this analysis using seven waves of BHPS data. The average GHQ score of the employed and the unemployed is calculated by region and by year. The difference between the two is then plotted against the regional unemployment rate, measured according to the International Labour Organisation (ILO) definition by region and year (from the Labour Force Survey). Figure 1 reveals a noticeable negative correlation between this well-being gap and the regional unemployment rate. In an ordinary least squares (OLS) regression, the estimated coefficient on the regional unemployment rate is −0.127, with a standard error of 0.043. Running the same regression separately for the GHQ of the employed and of the unemployed yields coefficients (and standard errors) of −0.033 (0.013) and 0.094 (0.043), respectively. The results do

Table 3
Well-Being and Others' Unemployment: BHPS Waves 1–7 Pooled

	All	Women	Men
Region:			
Self-employed	−.055	−.148	−.019
	(.019)	(.034)	(.023)
Unemployed	−.711	−.705	−1.036
	(.075)	(.183)	(.120)
Regional unemployment rate	.001	−.017	−.013
	(.007)	(.016)	(.012)
Regional unemployment rate × respondent unemployed	.030	.041	.055
	(.008)	(.025)	(.011)
Partner:			
Self-employed	−.058	−.168	−.018
	(.022)	(.041)	(.026)
Unemployed	−.610	−.445	−.698
	(.043)	(.070)	(.055)
Partner unemployed	−.162	−.227	−.059
	(.044)	(.055)	(.073)
Partner not in labor force	−.054	−.112	−.042
	(.021)	(.046)	(.024)
Partner unemployed and respondent unemployed	.259	.109	.305
	(.104)	(.147)	(.151)
Partner not in labor force and respondent unemployed	.346	.402	.417
	(.064)	(.185)	(.073)
Household:			
Self-employed	−.050	−.167	.005
	(.022)	(.040)	(.027)
Unemployed	−.512	−.425	−.552
	(.032)	(.053)	(.040)
Others' household unemployment rate	−.159	−.195	−.116
	(.035)	(.046)	(.053)
Others' household unemployment rate × respondent unemployed	.287	.104	.378
	(.075)	(.116)	(.101)

NOTE.—BHPS = British Household Panel Survey. All regressions include table 2, col. 3, control variables. Standard errors in parentheses.

not change if robust regression techniques are used, if common regional or year disturbances are assumed, or if the percentage with high GHQ is plotted against regional unemployment. These aggregate numbers provide some first evidence that others' unemployment affects the well-being of the employed negatively but has a positive impact on the well-being of the unemployed.

The first panel of table 3 produces individual-level evidence, adding the unemployment rate by sex, region, and year to the table 2, column 3, specification. This yields 154 data points on regional unemployment.

The assumption is therefore that individuals compare with those of the same sex living in the same region. Similar results are obtained without the sex distinction. In the first column the interaction between own and regional unemployment, as in equation (3), attracts a strongly positive coefficient, whereas the main effect of regional unemployment is insignificant. As in figure 1, the well-being gap between the employed and the unemployed is smaller in high unemployment regions.[12] This result is consistent with the medical literature's findings of better mental health (Jackson and Warr 1987) and fewer suicides (both attempted and successful) by the unemployed in high unemployment regions (Platt and Kreitman [1990]; and Platt, Micciolo, and Tansella [1992], for evidence from Scotland and Italy, respectively; see also Neeleman [1998]).

It is worth noting that there is no regional variation in unemployment benefits in Great Britain (and, in any case, income is controlled for in these regressions). There are doubtless regional differences in labor market policies, which may make unemployment more attractive in one area than another, but, to the extent that these differences are fixed over time, they will be picked up by the region dummies. In addition, these results are robust to estimation allowing for correlated errors within sex, region, and year (see Moulton 1986), which increases the standard error on the regional unemployment variables by just over 10%. Table 3's estimates imply that employment and unemployment have equal well-being effects at a regional unemployment rate of 24%, which is out of sample. By way of illustration, the estimated well-being effect of unemployment is two-and-a-half times higher in the data's lowest unemployment region (4%) than in the highest unemployment region (16%).

The reference group for the social norm may well be narrower than the region. One natural tighter definition is the labor market status of others in the same household. The nature of the BHPS, where all adults in a household are interviewed separately, enables us to investigate this possibility. There has been only little work on such interdependencies. Clark (1996) used the first wave of the BHPS to show that individual job satisfaction is lower the more others in the household earn, ceteris paribus. This was argued to reflect comparison effects in subjective well-being. Whelan (1994), using Irish data, finds no significant effect of husband's unemployment on the well-being of the wife. Using Dutch data, Woittiez and Theeuwes (1995) show that partners' reported happiness levels are

[12] Taking a completely different tack, it is a common finding in the social psychology literature that retirement is not associated with any significant change in happiness. As joblessness is the norm for their reference group, in this sense retirees are like the co-unemployed.

strongly positively correlated, but they do not analyze any relationship between happiness and partner's labor force status.[13]

The remainder of table 3 presents well-being regressions using household labor market status information. The second panel looks at the impact of the partner's unemployment or inactivity on the respondent's well-being. The last panel examines the effect of the unemployment rate of all other adults living in the same household as the respondent. Although there are almost 500 observations on unemployed individuals living in the same household as another unemployed adult, there are only 160 on unemployed respondents whose partner is also unemployed.

The partner results reveal a sharp distinction in the effect of a partner's unemployment or inactivity on a respondent's well-being, according to the respondent's own unemployment. For those in work, the effect of partner's unemployment and inactivity is negative and significant. For the unemployed, the story is very different. The estimates on the interaction terms are positive and significant, showing that the effect of a partner's unemployment or inactivity is much less negative for the unemployed. The sum of the "partner unemployed" and "partner unemployed and respondent unemployed" variables is positive ($-0.162 + 0.259 > 0$), although we fail to reject the hypothesis that a partner's unemployment decreases the unemployed's well-being. With respect to inactivity, we can reject the hypothesis that $-0.054 + 0.346 < 0$ at the 1% level: partner's inactivity reduces the well-being of the employed but raises the well-being of the unemployed. Unemployment is still associated with lower well-being, even for those whose partner is unemployed or not in the labor force, but less so than for those with a partner in work. These partner results are robust to controls for partner's income and GHQ.

The last measure of reference group unemployment is the "others' household unemployment rate" (the unemployment rate of all adults of working age in the household, excluding the respondent). Those living on their own are thus omitted from this analysis. The results are similar to those for partner unemployment discussed above and are very significant. A higher household unemployment rate is significantly negatively correlated with the well-being of employed respondents (the -0.159 coefficient on others' household unemployment rate) but is significantly positively correlated with the well-being of unemployed respondents (the test that $0.287 - 0.159 < 0$ is rejected by the data at conventional significance levels); ceteris paribus, the well-being of the unemployed increases

[13] Neumark and Postlewaite (1998) is also in this vein. Their key variable for explaining women's labor supply is household income relative to the wife's sister's household income (a natural reference group). They say that "the phenomenon we are interested in is a particular externality between couples" (p. 5); by contrast, I consider externalities within the household.

if another household member becomes unemployed.[14] These results are robust to a control for household income. One's own unemployment still reduces well-being, even if all other adults in the household are unemployed: the hypothesis that $-0.512 + 0.287 = 0$ is rejected by the data. However, the psychological impact of individual unemployment is lower when shared with others in the same household. This is one of this article's key findings, suggesting some kind of household complementarity or norm.

One question of interest is whether these interactions are stronger for some groups of the unemployed than for others. Probably the most-studied of such groups is men and women. In terms of this article's topic, Clark, Georgellis, and Sanfey (2001), using GSOEP data, find that habituation to unemployment (comparison with the past) is strong and significant for men, but insignificant for women. Table 3, columns 2 and 3, show that the effect of unemployment on well-being is more significant for men than for women. The interaction between own and regional unemployment is positive for both sexes, but only significant (with a t-statistic of 5) for men. The interaction between own unemployment and spouse's unemployment is positive and significant for men, but insignificant for women; the interaction between own unemployment and spouse's inactivity is positive and significant for both men and women, although far more precisely estimated for the former ($t = 5.7$) than for the latter ($t = 2.2$). Finally, the interaction between own and others' household unemployment rate is significant only for men. The hypothesis that, in a household where all others active in the labor force are unemployed, the well-being of an unemployed man equals that of an employed man is not rejected by the data.

Table 3 shows nine (out of 12) significant estimates on interactions between own and others' unemployment.[15] Although this article's pre-

[14] One difference between social comparisons and social norms is that in the former utility depends positively on $x_i - x^*$, whereas in the latter it depends negatively on $| x_i - x^* |$. When $x_i < x^*$, as with unemployment and an employment norm, the two are indistinguishable. However, social comparisons imply that the employed's utility should be positively correlated with others' unemployment, as their relative position improves, whereas the correlation is negative in a norm model. To this extent the regression results are more consistent with a social norm model.

[15] As this is panel data, observations may not be independent. All of table 3's regressions were thus reestimated to allow clustering by individual. This reduced a number of the t-statistics on the interaction terms, but the qualitative results are largely unchanged. Two of the less well-defined coefficients ("partner not in labor force and respondent unemployed" for women and "partner unemployed and respondent unemployed" for men) become insignificant at the 5% level (the t-statistics falling from 2.17 to 1.88, and 2.02 to 1.94, respectively). A recurrent theme in this article is that interaction terms for women are weak, and, as we

ferred explanation of the regression results is in terms of social norms, others are possible. At the regional level, an alternative is that, as unemployment rises, relatively happier people are moving into unemployment, raising the unemployed's average well-being (this only works if the employed's average well-being is less affected by this transition than that of the unemployed). However, I find no significant correlation between the initial GHQ score of those moving into unemployment and the regional unemployment rate, suggesting that a shift-share argument is not behind the regional patterns.

With respect to the partner results, a "preference" by the unemployed for unemployed partners may be linked to the benefits that accrue to an unemployed couple. Indirectly, this explanation is cast into doubt by the weak role of income in table 2's GHQ regressions, and by the similar estimated coefficients, for the unemployed, of the inactive partner and the unemployed partner. A direct test splits income (both respondent's and partner's) into benefit and nonbenefit components. The introduction of these split income variables in no way changes the results.

At the household level, the distribution of household tasks might depend on the distribution of employment, with the unemployed person finding himself or herself with the lion's share of shopping, washing, cleaning, and so on. The presence of another nonworking person will lighten this load. Wave 1 of the BHPS contains information regarding responsibility for cooking, cleaning, shopping, and washing (the respondent, the respondent's partner or some other person, or whether the tasks are shared). The inclusion of dummy variables for these household tasks did not significantly change the estimated coefficients on the unemployment interaction variables.

Finally, the GHQ-12 scale can be unpacked, with separate regressions run on each of its components. This should give an idea of the principal conduits through which the interdependencies work. The results (not reported here) show that the unemployment interactions are typically positive and significant at the 1% level (for eight out of the 12 GHQ components with the regional unemployment rate, and for 10 out of 12 components for others' household unemployment).[16] The positive effects of others' unemployment therefore work via a number of different routes, defying easy categorization.

IV. Fixed Effects Results

Repeated observations on the same individual allow controls for unobserved individual heterogeneity in the normal way. One simple test is to

shall see in Sec. IV's panel results, the coefficient on "partner unemployed and respondent unemployed" is often imprecisely estimated in smaller samples.

[16] For example, the unemployed are less likely to report losing sleep over worry in high unemployment regions (t-statistic = 3.4).

correlate changes in well-being and labor force status in panel data. Table 4's transition matrix makes these calculations. The diagonal elements are small: there is little trend in well-being for those who do not change labor force status. However, the off-diagonal elements show that those who move from employment to unemployment experience a fall in well-being of around one point, whereas those finding work after unemployment report a large rise in GHQ.

For the multivariate analysis, there is, unfortunately, no accepted procedure for the panel estimation of ordinal data with fixed effects, and no such command is available in standard software packages. I therefore convert the 13-point GHQ score into a (1, 0) dummy for having the highest GHQ score of 12 (which roughly cuts the sample in half) and reestimate table 3's specifications using panel logit techniques. Similar results can be obtained by treating the well-being measure as cardinal, and thus amenable to OLS "within" analysis.

Table 4 presents the main results from conditional fixed-effects logit regressions. The first two columns present logit and fixed-effects logit estimates for the whole sample. Columns 3 and 4 then show panel results for women and men, respectively. Finally, column 5 uses only data from the group which might be thought to have the strongest ties to the labor market, prime-age (16–50 years) males. In panel regressions, the identification of the unemployment effects relies on those who are observed to move between employment and unemployment. This has the usual effect of reducing the sample size.

Own unemployment continues to have a strong negative effect on well-being in these panel regressions. Of most interest, however, are the interaction terms between own and others' unemployment. In the first panel of table 4, the interaction with the regional unemployment rate is insignificant over the whole sample (col. 2). However, interesting differences appear by sex. The interaction term is insignificant (and negative) for women, but positive and significant for men. The estimated coefficients in the equation for prime-age men imply that employment and unemployment are equal in terms of well-being at a regional unemployment rate of just over 20%, which is similar to the figure from table 3's pooled ordered probits.

A similar pattern appears throughout table 4. Table 3's pooled results already suggested only weak interaction terms for women: controlling for fixed effects, there is no effect of others' unemployment on the well-being of unemployed women. The interaction between own and partner's unemployment in the second panel is positive at the 10% level for men, but not for women; the interaction between own unemployment and partner's inactivity is positive and significant for men, but not for women. The relative weakness of the interaction between own and partner's unemployment likely results from the small cell sizes. There are only 77 in-

Table 4
Well-Being and Others' Unemployment: Panel Results

	Transition Matrix: Change in Labor Force Status and Change in Well-Being				
	Labor Force Status at t				
Labor Force Status at $t-1$	Employed	Unemployed	Self-Employed		
In paid employment:					
Mean	−.08	−.87	.25		
Standard error	.020	.158	.141		
N	21,715	609	419		
Unemployed:					
Mean	1.44	.00	1.26		
Standard error	.145	.106	.335		
N	684	959	117		
Self-employed:					
Mean	.17	−1.32	−.08		
Standard error	.162	.407	.053		
N	390	88	2,778		
		Fixed Effects Regression			
	Pooled Logit	FE Logit	FE Logit Women	FE Logit Men	FE Logit Prime-Age Men
Region:					
Unemployed	−.865	−.829	.134	−1.547	−1.670
	(.148)	(.256)	(.609)	(.382)	(.429)
Regional unemployment rate	.042	−.002	−.018	.005	−.016
	(.005)	(.016)	(.024)	(.025)	(.015)
Regional unemployment rate × respondent unemployed	.034	.007	−.113	.067	.082
	(.015)	(.026)	(.084)	(.034)	(.038)
N	38,640	26,298	12,526	13,802	11,238

Partner:					
Unemployed	−.741	−.983	−.674	−1.173	−1.168
	(.086)	(.135)	(.220)	(.173)	(.205)
Partner unemployed	−.235	−.396	−.542	−.237	−.226
	(.082)	(.126)	(.175)	(.186)	(.212)
Partner unemployed and respondent unemployed	.240	.612	.165	.798	.638
	(.207)	(.332)	(.533)	(.443)	(.491)
Partner not in labor force	.042	−.198	−.307	−.180	−.244
	(.036)	(.077)	(.189)	(.085)	(.094)
Partner not in labor force and respondent unemployed	.488	.494	1.113	.611	.673
	(.123)	(.215)	(.694)	(.243)	(.275)
N	25,482	17,059	7,629	9,434	7,308
Household:					
Unemployed	−.597	−.990	−.855	−1.070	−1.040
	(.061)	(.108)	(.178)	(.137)	(.155)
Others' household unemployment rate	−.256	−.486	−.584	−.391	−.305
	(.064)	(.109)	(.155)	(.152)	(.170)
Others' household unemployment rate × respondent unemployed	.322	.768	.376	.966	.865
	(.146)	(.274)	(.449)	(.352)	(.382)
N	27,458	17,488	8,708	8,793	7,075
Other explanatory variables	Education, health, marital status, children, and wave	Education, health, marital status, children, and wave	Region, health, and marital status	Age, education, health, marital status, children, and wave	Age, health, marital status, and children

NOTE.—FE = fixed effect. Standard errors in parentheses.

Table 5
Predicted Probabilities: Probability (%) of GHQ Score of 12 (Highest Level)

	Men: Pooled Ordered Probit (Table 3)
In work, regional unemployment rate of 5%	60.2
Unemployed, regional unemployment rate of 5%	30.8
In work, regional unemployment rate of 10%	57.6
Unemployed, regional unemployment rate of 10%	38.4
In work, partner in work	57.9
Unemployed, partner in work	30.9
In work, partner unemployed	55.6
Unemployed, partner unemployed	40.0
In work, others' household unemployment rate of 0%	57.9
Unemployed, others' household unemployment rate of 0%	36.2
In work, others' household unemployment rate of 100%	53.3
Unemployed, others' household unemployment rate of 100%	46.4

NOTE.—GHQ = General Health Questionnaire.

stances of this interaction in column 2's sample, and only 44 in the male sample. The respective figures for the (far more significant) interaction between own unemployment and partner's inactivity are 345 and 326, respectively. Finally, the unemployment rate of other adults in the same household is positively correlated with the well-being of the unemployed in four out of the five regressions in table 4's third panel. The exception is again for women.[17]

The estimated coefficients from logits and ordered probits are difficult to interpret. Table 5 therefore presents some illustrations of the estimated effect of the unemployment variables on the probability of reporting a well-being level of 12 (the highest). All nonunemployment variables are held at their respective sample means for these calculations. Figures are presented for men from table 3's pooled ordered probits.

Table 5 shows how the difference between the employed and the unemployed in the probability of having a GHQ score of 12 shrinks as others' unemployment rises. In the first panel, a rise of five percentage points in the regional unemployment rate reduces this difference from almost 30% to around 20%. In the second column, the presence of an unemployed partner reduces the difference by just under one-half (from 27% to 16%). Finally, in the third panel, a change in the others' household

[17] The same explanatory variables are used by column in table 4. The estimated coefficient on "regional unemployment rate × unemployed" for men is just significant at the 5% level. If a common set of regressors is used for all of the panel estimates (the union of the "other explanatory variables"), this *t*-statistic falls from 1.96 to 1.94. None of the other variables' significance levels are affected by this change of right-hand-side variables.

unemployment rate from 0% to 100% reduces this difference from over 20% to only 7%. The estimated effects of others' unemployment on the well-being of the unemployed are not only statistically significant, they are also sizeable.

V. Behavior

The previous sections have shown that, while others' unemployment reduces the well-being of the employed, it often increases that of the unemployed. One question is, "What difference does this make?" A first response is that others' unemployment has strong effects on individual well-being, and the level and distribution of the latter are among economists' main concerns. A more pragmatic answer is that well-being information may provide useful information about individual behavior.[18] In this spirit, this section will show that the GHQ impact of unemployment has significant explanatory power in models of search and unemployment exits. This leads us naturally to think of models of multiple equilibria, where the economy might become stuck at, or move only slowly away from, a position of high unemployment. The rough idea here is that search behavior by the unemployed will be, ceteris paribus, an increasing function of the utility gain to be had from employment (relative to unemployment), which falls as others' unemployment rises.[19] This is a more psychological approach to search than that found in the standard model, where agents maximize the expected discounted value of the income stream.

Table 6 exploits the panel nature of the BHPS to provide some first evidence that movements in GHQ predict individual labor market outcomes. First, the change in well-being from t to $t + 1$ is calculated for individuals who are employed at wave t and then unemployed at wave $t + 1$ (this information is supplied by the same individual, which avoids problems of interpersonal comparisons of subjective measures). This

[18] Recent research has looked at health outcomes in relation to labor force variables, using aggregate data (see Ruhm [2000], for some recent surprising results) or individual data (Ettner, Frank, and Kessler 1997). Agerbo et al. (1997) use an extensive data set of Danish panel data to show that past unemployment significantly increases the probability of current first admission into a psychiatric institution. This latter can be considered as the extreme end of the scale that I use here.

[19] Darity and Goldsmith (1996) suggest that unemployment may have long-lasting effects on esteem and the locus of control, making the unemployed less productive and shifting the labor demand curve to the left. By contrast, the model sketched in this article works through labor supply. There are, of course, many possible relations between an individual's exposure to unemployment and how his or her own unemployment is experienced. Alternatively, higher unemployment may bring about feelings of motivation and solidarity and, thus, higher search effectiveness and shorter unemployment durations.

Table 6
Labor Market Behavior and the Fall in Well-Being from Becoming Unemployed: Prime-Age Males

	Job Search in Past Week Probit	Remain Unemployed Probit
GHQ fell > two points	.128	−.222
	(.066)	(.083)
GHQ fell <= two points	.065	.021
	(.080)	(.108)
GHQ unchanged	.027	−.051
	(.068)	(.087)
Regional unemployment rate		.024
		(.014)
Education: high		−.240
		(.072)
Education: a-levels, o-levels, nursing qualifications		−.180
		(.074)
Married		.118
		(.068)
N	287	238
Log likelihood	−166.9	−145.4
Log likelihood at zero	−168.9	−156.8

NOTE.—GHQ = General Health Questionnaire. Estimates shown are marginal effects; standard errors are in parentheses.

change is then recoded into four groups as follows: −12 to −3, −2 to −1, 0, and positive (representing 30%, 15%, 35%, and 20% of the sample, respectively). The following regressions refer only to prime-age males (cf. table 4). Marginal effects are reported.

The first labor market outcome considered is search activity by the unemployed at wave $t + 1$, measured here as a dummy variable for "searched for work in the past week" (72% of the sample used here report doing so). The sample size here, 287, is not large. The results show a positive monotonic relationship between the GHQ impact of unemployment and the probability of job search. Those whose GHQ fell more than two points on entering unemployment are significantly more likely (at the 10% level) to have looked for work over the past week. The other GHQ coefficients are positive, but not significant. None of table 3's demographic variables were significant in this regression and have been dropped. Note that these are all individuals who were working 1 year ago, so there is little variation in unemployment duration between individuals.

The next column provides somewhat stronger evidence regarding future employment: going one wave into the future, we can observe labor force status at wave $t + 2$. Overall, 37% of this (small) sample were still unemployed at wave $t + 2$, with 63% employed. However, only 25% of those whose GHQ fell by two points or more remained unemployed 1

year later, compared with 42% of those with a smaller GHQ change (this is a significant difference, $t = 2.5$). More formally, probit equations of remaining unemployed at wave $t + 2$ are estimated (as the sample consists only of those active in the labor force, a probit on being employed at wave $t + 2$ gives the same estimates, with inverted signs). The results show that those whose well-being fell by more than two points from wave t to $t + 1$ are (significantly) 22% less likely to remain unemployed at wave $t + 2$ than those whose unemployment had a smaller psychological impact.[20] This result is robust to the inclusion of a variable measuring the change in income between employment and unemployment. The other estimated coefficients show that moves out of unemployment into employment are lower in high unemployment regions, for the married, and for those with lower levels of education.

Table 6 provides some initial evidence that individual well-being measures may be a useful addition to the economist's toolbox when analyzing labor market outcomes. Added to the previous often-positive effects of others' unemployment on the unemployed's well-being, they suggest an alternative psychological explanation—not based on correlated shocks, insider-outsider theory, or human capital depreciation—of unemployment persistence.

VI. Conclusion

Economists have, over the years, built up a huge arsenal of behavioral predictions, resulting from the market interaction of rational individuals who maximize their utility (or who try to achieve the highest possible level of individual well-being). Perhaps surprisingly, and likely resulting from economists' apparent mistrust of what people say, as opposed to what they do, relatively little is known about what actually brings about this utility or well-being.

This article uses proxy utility data to test theories of social norms and social comparisons in relation to labor market status. The reference group, which determines the level of adherence to the social norm of employment, has been defined at the regional, couple, and household level. The estimation results reveal a sharp dichotomy in the effect of others' unemployment, however defined, on individual well-being. While others' unemployment is often negatively correlated with the well-being of those in work, there is strong evidence of a positive correlation with the well-

[20] It may be that those who know that they will soon find another job will be less unhappy about their unemployment. In this case the psychological effect of unemployment is providing information about the individual's unobserved ability or prospects. This implies a positive correlation between the psychological effect of unemployment and the latter's duration (those whom unemployment hurts least leave soonest), the opposite of that found in table 6.

being of the unemployed. These effects are typically well defined for men but weak for women. The results are robust to controls for individual fixed effects. Heuristically, unemployment always hurts, but it hurts less when there are more unemployed people around. As such, the results provide some of the first direct, large-scale evidence of the utility effects of adherence to an employment norm, as in Akerlof (1980).

Complementarities in labor force status have important implications for potential multiple equilibria: a smaller well-being gap between the employed and the unemployed (when relevant others' unemployment is higher, according to the results in the first part of this article) may provide a reduced incentive for the latter to find work. The last part of this article used panel analysis to show that those who were hurt less by unemployment were somewhat less likely to look for a new job and, one wave into the future, were more likely to remain unemployed.

This article's results have important policy implications. Social norm–type hysteresis in unemployment underlines the importance of prompt labor market intervention before a new social norm of higher unemployment becomes established. However, the weak role of income in well-being regressions casts some doubt on the efficacy of policy aimed solely at reducing unemployment benefits. In terms of welfare analysis, the presence of externalities linked to others' unemployment suggests that not all groups in the labor market benefit from a reduction in unemployment: those who remain unemployed after a fall in unemployment will suffer reduced well-being, according to the results in table 3.

More generally, the results presented here have shown how measures common in the psychology literature may be used fruitfully by economists to investigate labor market phenomena. The increasing availability of such variables in the data sets used by economists should increase the potential for future interdisciplinary work in the social sciences.

Appendix A

The 12 questions used to create the GHQ-12 measure appear in the BHPS questionnaire as follows:

1. Here are some questions regarding the way you have been feeling over the last few weeks. For each question please ring the number next to the answer that best suits the way you have felt.

Have you recently . . .

a) been able to concentrate on whatever you're doing?
Better than usual . . . 1
Same as usual . . . 2
Less than usual . . . 3
Much less than usual . . . 4

then
b) lost much sleep over worry?
e) felt constantly under strain?
f) felt you couldn't overcome your difficulties?
i) been feeling unhappy or depressed?
j) been losing confidence in yourself?
k) been thinking of yourself as a worthless person?
with the responses:
Not at all . . . 1
No more than usual . . . 2
Rather more than usual . . . 3
Much more than usual . . . 4
then
c) felt that you were playing a useful part in things?
d) felt capable of making decisions about things?
g) been able to enjoy your normal day-to-day activities?
h) been able to face up to problems?
l) been feeling reasonably happy, all things considered?
with the responses:
More so than usual . . . 1
About same as usual . . . 2
Less so than usual . . . 3
Much less than usual . . . 4

Appendix B

Table B1
The Distribution of Well-Being in the BHPS (Inverted Caseness Index of the GHQ-12)

Well-Being Score	Number of Observations	Cumulative Percentage
0	397	1.02
1	385	2.01
2	463	3.20
3	536	4.58
4	686	6.35
5	819	8.46
6	1,076	11.22
7	1,323	14.63
8	1,672	18.93
9	2,285	24.81
10	3,318	33.35
11	5,706	48.03
12	20,196	100.00
Total	38,862	100.00

Table B2
Sample Means and Standard Errors

Variable	Mean	Standard Error
GHQ-12	10.23	.0140
Percentage with low GHQ (<10)	24.81	.2191
Self-employed	.11	.0016
Unemployed	.08	.0014
Yearly income (£0000)	1.29	.0055
Male	.53	.0025
Age	37.75	.0599
Age-squared	1.57	.0047
Education: high	.34	.0024
Education: A-levels, O-levels, nursing qualifications	.37	.0024
Health: excellent	.29	.0023
Health: good	.50	.0025
Married	.60	.0025
Separated	.02	.0007
Divorced	.08	.0013
Widowed	.01	.0006
Table 3:		
Regional unemployment rate	8.80	.0130
Partner unemployed	.03	.0011
Partner inactive	.18	.0024
Unemployed and partner unemployed	.01	.0005
Unemployed and partner inactive	.03	.0010
Other's household unemployment rate	.06	.0013
Table 4, percentage with GHQ = 12	.52	.0025

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