Knabe, Andreas; Rätzel, Steffen

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Scarring or Scaring?
The Psychological Impact of Past Unemployment and Future Unemployment Risk

ANDREAS KNABE
STEFFEN RÄTZEL

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Abstract

We reassess the "scarring" hypothesis by Clark et al. (2001), which states that unemployment experienced in the past reduces a person's current life satisfaction even after the person has become reemployed. Our results suggest that the scar from past unemployment operates via worsened expectations of becoming unemployed in the future, and that it is future insecurity that makes people unhappy. Hence, the terminology should be altered by one letter: past unemployment "scars" because it "scares".

JEL Code: I31, D10 , J60.

Keywords: unemployment, scarring, happiness, life satisfaction.

Andreas Knabe
Free University Berlin
School of Business & Economics
Boltzmannstrasse 20
14195 Berlin
Germany
Andreas.Knabe@fu-berlin.de

Steffen Rätzel
Otto-von-Guericke-University Magdeburg
Faculty of Economics and Management
P.O. Box 4120
39016 Magdeburg
Germany
Steffen.Raetzel@ovgu.de

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1. Introduction

The fear of becoming unemployed in the future is destructive to a person's subjective well-being. Taking into account the devastating impact of the risk of future unemployment, having been unemployed in the past has only a negligible effect on individual life satisfaction. This is the main result of this paper, which provides a more detailed view of the findings of Clark et al. (2001), who show that unemployment experienced in the past makes an individual less satisfied with his current life situation even if he has become reemployed in the meantime. Clark et al. (2001) label this the "scarring" effect of unemployment: past unemployment leaves a permanent scar on one's face, it inflicts permanent damage on the human psyche that leads to lower life satisfaction independently of a person's current labor market status. In this paper, we will provide an explanation why this scarring effect arises. We argue that past unemployment influences current well-being mainly indirectly because people use the information on how often they have been unemployed in the past as an indicator of their future labor market success. If a person infers from more frequent unemployment episodes in the past that he is also more likely to be unemployed in the future, the drop in life satisfaction correlated with past unemployment will, to a large extent, be caused by the fear of future unemployment. Past unemployment leaves a "scar" because it "scares" the individual about the future.

While Clark et al. (2001) show that past unemployment is negatively correlated with current life satisfaction, they use the term scarring descriptively, leaving open why this phenomenon occurs. To fill this gap, we extend the study by Clark et al. (2001) by including different measures of the likelihood of future unemployment in our regression analysis. This allows us to distinguish between two interpretations of the scarring effect. Our first interpretation is that past unemployment is genuinely scarring. In this case, it would reduce current life satisfaction independently of its impact on future expectations. To support this interpretation, we would need to find that past unemployment has a negative impact on current life satisfaction, even if we held a person's expectations about future unemployment constant. Our second interpretation is that past unemployment works through scaring a person about the future. According to this view, we should find that the fear of future unemployment reduces current well-being, holding the time a person has been unemployed in the past constant. While both effects could potentially be present at the same time, our analysis supports the scaring effect: the fear of future unemployment is detrimental to current well-being. The inclusion of future expectations as a separate predictor of life satisfaction substantially weakens the genuine scarring hypothesis. Once we control for insecurity about future employment prospects, past unemployment loses much of its explanatory power for current life satisfaction.

The paper is structured as follows. In the next section, we present our data and our estimation methodology. Section 3 contains our empirical results. The last section provides a summary and concludes.

2. Data and Econometric Framework

Our empirical analysis is based on the German Socio-Economic Panel (GSOEP).[1] The data set we use is the 22 waves for the period from 1984 to 2005. We consider all German nationals of working age between 25 and 55. This yields an unbalanced panel with about 120,000 person-year observations.[2]

Our data on subjective well-being stem from a question in the GSOEP that asks respondents: "How satisfied are you with your life, all things considered?" The question had to be answered on an ordinal scale from 0 (completely dissatisfied) to 10 (completely satisfied).

As our benchmark, we reproduce the estimation specification by Clark et al. (2001). Under this approach, contemporary life satisfaction is explained by a set of personal characteristics, a person's current employment status, and his unemployment history. We estimate the empirical well-being function:

$$LS_{it} = \beta_0 + \beta_1 UN_{it} + \beta_2\left((1-UN_{it})\times PASTUN_{it}\right) + \beta_3\left(UN_{it}\times PASTUN_{it}\right) + X'_{it}\gamma + \nu_i + \mu_t + \varepsilon_{it}, \qquad (1)$$

where LS_{it} is the life satisfaction reported by individual i at time t. UN_{it} takes on the value 1 if individual i is registered unemployed at time t, and 0 otherwise. $(1-UN_{it})$ thus indicates that a person is employed. $PASTUN_{it}$ is a measure of past unemployment. Following Clark et al. (2001), we define $PASTUN_{it}$ by the time spent in unemployment as a percentage of total time active in the labor force during the preceding three years. Our specification differs from that of Clark et al. (2001) only in that we have two separate interaction effects of past unemployment, ($(1-UN_{it})$*$PASTUN_{it}$) for the employed and (UN_{it}*$PASTUN_{it}$) for the unemployed, while Clark et al. (2001) had a main term for past unemployment for everyone, ($PASTUN_{it}$), and then an interaction term, (UN_{it}*$PASTUN_{it}$). While this affects the interpretation of the interaction terms, it represents the same projection in the data space and does not affect any of

[1] The data used in this publication were made available by the German Socio-Economic Panel Study (GSOEP) at the German Institute for Economic Research (DIW), Berlin. The data were extracted using the Add-On-package PanelWhiz for Stata, see Haisken-DeNew and Hahn (2006) for details.

[2] The sample restrictions are the same as in Clark et al. (2001). The only difference concerns the separate treatment of the individuals that are out of the labor force and those active in the labor force in the estimation specification. This is necessary because the out of the labor force group do not provide information about their future employment prospects.

the results.[3] The vector X_{it} is a set of explanatory variables that can potentially influence the well-being of the individual (such as income, marital status, etc.). ν_i is an individual fixed effect that captures unobserved time-invariant differences between individuals (personal traits), μ_t denotes unobserved time-varying circumstances in a specific year that affect all individuals equally, and ε_{it} is a random error term.

We compare this benchmark with an extended model in which we take indicators of the fear of future unemployment into account. We extend the estimation equation (1) by including measures of a person's subjective expectation about the likelihood of future unemployment:

$$\begin{aligned} LS_{it} = {} & \beta_0 + \beta_1 UN_{it} + \beta_2\left((1-UN_{it})\times PASTUN_{it}\right) + \beta_3\left(UN_{it}\times PASTUN_{it}\right) \\ & + \beta_4\left((1-UN_{it})\times EMPLOYSECURITY_{it}\right) + \beta_5\left(UN_{it}\times EMPLOYCHANCE_{it}\right). \\ & + X_{it}'\gamma + \nu_i + \mu_t + \varepsilon_{it} \end{aligned} \qquad (2)$$

$EMPLOYSECURITY_{it}$ indicates whether an employed person considers his current job as secure or not. We construct this variable from the answers to the question: "How concerned are you about your job security?" Respondents had three answer options: "very concerned", "somewhat concerned", or "not concerned at all". The variable $EMPLOYCHANCE_{it}$ is the counterpart for the unemployed. Respondents were asked "If you are/were currently looking for a new job: Is it or would it be easy, difficult or almost impossible to find an appropriate position?", where the answer options were "easy", "difficult" or "almost impossible".[4]

The amount of time a person has been unemployed in the past is correlated with this person's perception of future unemployment risk. This correlation is illustrated in Table 1. Among all employed persons who have been unemployed for less than one third of the previous three years, 46.0 percent feel that they have high job security ("not concerned"). Only 13.6 percent think that their job security is low ("very concerned"). Employed persons with more past unemployment experience deem their jobs riskier. Among currently employed persons who have been unemployed for more than two-thirds of the previous three years, only 26.8 percent are not concerned about their job security, while 32.8 percent are very concerned. A similar picture emerges for the unemployed. The share of unemployed who think that it is easy for them to find a new job drops from 9.1 percent for those with unemployment of less than one-third of the previous three years to only 1.5 percent for past unemployment more than two-thirds of the previous three years. The share of unemployed who find it almost impossible to find a new job rises from 16.0 percent to 39.9 percent when comparing the un-

[3] In the GSOEP, employed and unemployed persons are not asked the same question about their future prospects. In the following analysis, we thus cannot group the impact of future insecurity on the employed and the unemployed into a common effect and a differential effect. Instead, we have to estimate separate interaction effects. For expositional consistency, we apply the same distinction for the effect of past unemployment as well.

employed with little experience of past unemployment with those who have experienced unemployment for most of the previous years. These numbers clearly illustrate that past unemployment is an indicator of a person's subjective perception of future unemployment risk.

	$0 \leq PASTUN_{it} \leq 1/3$	$1/3 < PASTUN_{it} \leq 2/3$	$2/3 < PASTUN_{it} \leq 1$
employed			
high job security	46.0%	27.3%	26.8%
medium job security	40.4%	44.6%	40.4%
low job security	13.6%	28.1%	32.8%
observations in column	98,897	2,340	772
Pearson's Chi^2		777,02	
unemployed			
easy to find a job	9.1%	3.7%	1.5%
hard to find a job	74.9%	70.4%	58.6%
almost impossible to find a job	16.0%	25.9%	39.9%
observations in column	3,688	2,293	3,483
Pearson's Chi^2		671,47	

Note: The figures are column percentages.

Table 1: Past unemployment and perceptions of future unemployment risk

Clark et al. (2001) estimate the total effect of past unemployment on life satisfaction without distinguishing between the direct effect of past unemployment and its indirect effect through its negative impact on future unemployment risk. We can operationalize these two effects by writing the life satisfaction function as $LS(X, PASTUN, PROSPECTS(PASTUN))$. X is a vector of various determinants of life satisfaction. $PASTUN$ has a direct effect on life satisfaction LS and an indirect effect via future prospects. The total impact of past unemployment on life satisfaction is then determined by

$$\frac{dLS}{dPASTUN} = \underbrace{\frac{\partial LS}{\partial PASTUN}}_{\substack{\text{direct effect} \\ \text{(genuine scarring)}}} + \underbrace{\frac{\partial LS}{\partial PROSPECTS}\frac{\partial PROSPECTS}{\partial PASTUN}}_{\substack{\text{indirect effect} \\ \text{(scaring)}}}.$$

The total effect of past unemployment is empirically determined by estimating function (1), which corresponds to implicitly imposing $\beta_4 = \beta_5 = 0$ in specification (2). Clark et al. (2001) find that current unemployment leads to lower life satisfaction ($\beta_1 < 0$), past unemployment

[4] For the actual estimation in the next section, we construct separate dummy variables for the three respective categories.

reduces current well-being for those who are currently in employment ($\beta_2 < 0$), and that past unemployment has a smaller negative effect on currently unemployed than on currently employed persons ($\beta_2 < \beta_3$). This last finding can also be interpreted as a "habituation" effect because it implies that becoming unemployed hurts less if one has already experienced more unemployment in the past.

In our estimations, we do not impose any restrictions on β_4 and β_5 in specification (2) and are thus able to distinguish between the effects of past unemployment and future unemployment risk on current well-being. This allows us to test whether past unemployment has a direct impact on current well-being or whether the negative effect is indirectly caused by the fear of future unemployment. Thus, our two hypotheses are:

Genuine Scarring: Past unemployment scars directly. It reduces current well-being both for currently unemployed persons ($\beta_3 < 0$) and also for persons who have become reemployed in the meantime ($\beta_2 < 0$), holding a person's future employment prospects constant.

Scaring: The prospect of being unemployed in the future is frightening and reduces current well-being both for those currently employed ($\beta_4 < 0$) and unemployed ($\beta_5 < 0$).

Life satisfaction is measured as an ordinal categorical variable. To take the ordinal nature of the life satisfaction variable into account, we first estimate our model using the ordered probit model. In a second step, we apply the fixed-effect ordered logit estimator developed by Ferrer-i-Carbonell and Frijters (2004) to control for time-invariant personal traits.[5] We choose the fixed effect model because recent findings indicate that time-invariant individual traits exert a strong influence on life satisfaction. For example, Lykken and Tellegen (1996) find evidence that up to 80 percent of the interpersonal variation in well-being is influenced by individual genes and personal traits. More recently, Ferrer-i-Carbonell and Frijters (2004) show that taking account of individual-specific effects is essential in explaining happiness (even more than distinguishing between cardinality and interpersonal ordinality of the satisfaction answers).

[5] We follow Clark et al. (2001) in conducting a pooled ordered probit regression before the fixed-effects logit estimation. Clark et al. (2001), however, use the fixed effect logit estimator developed by Chamberlain (1980), which transforms the categorical *LS*-scale into a binary variable by imposing one and the same cut-off level on all individuals. This method has the disadvantage of losing all observations of individuals who always report *LS*-

	Without intertemporal effects		Only past variables		With past variables and future expectations	
	(1)	(2)	(3)	(4)	(5)	(6)
	Men	Women	Men	Women	Men	Women
Dependent variable	Life satisfaction	Life satisfaction	Life satisfaction	Life satisfaction	Life satisfaction	Life satisfaction
Employed						
full-time	reference	reference	reference	reference	reference	reference
part-time	-0.171***	0.100***	-0.138***	0.098***	-0.181***	0.041***
	(0.029)	(0.011)	(0.035)	(0.013)	(0.035)	(0.013)
self-employed	-0.175***	0.029	-0.207***	0.025	-0.208***	-0.027
	(0.015)	(0.020)	(0.018)	(0.024)	(0.018)	(0.024)
past unemployment			-0.708***	-0.443***	-0.486***	-0.307***
			(0.059)	(0.049)	(0.059)	(0.050)
high job security					reference	reference
medium job security					-0.355***	-0.315***
					(0.011)	(0.013)
low job security					-0.751***	-0.594***
					(0.017)	(0.019)
Unemployed	-0.851***	-0.589***	-0.750***	-0.526***	-0.410***	-0.078
	(0.017)	(0.017)	(0.032)	(0.034)	(0.079)	(0.102)
past unemployment			-0.343***	-0.078	-0.197***	-0.033
			(0.056)	(0.051)	(0.060)	(0.052)
easy to find new job					reference	reference
difficult to find new job					-0.704***	-0.702***
					(0.082)	(0.103)
almost impossible to find new job					-0.984***	-0.895***
					(0.091)	(0.107)
Income (CPI adjusted total net household income divided by number of household members)						
income/1000	0.215***	0.289***	0.111***	0.197***	0.076***	0.171***
	(0.009)	(0.009)	(0.014)	(0.016)	(0.014)	(0.016)
past income/1000			0.108***	0.119***	0.086***	0.081***
			(0.016)	(0.018)	(0.016)	(0.018)
personal controls	yes	yes	yes	yes	yes	yes
individual fixed effects	no	no	no	no	no	no
time fixed effects (annual)	yes	yes	yes	yes	yes	yes
log likelihood	-114,374	-114,562	-79,996	-81,360	-78,793	-80,626
observations	62,939	62,034	44,439	44,349	44,439	44,349

*Note: Ordered probit estimation with time fixed effects. Personal controls include marital status, number of children, years of education, out of labor force, an interaction term between past unemployment and out of labor force, 5-year age brackets, living in owned accommodation, and having a household member in need of care. Standard errors in parentheses. * denotes significance at the 10-percent-level, ** at the 5-percent-level, *** at the 1-percent-level.*

Table 2: Regression results (Ordered Probit)

levels above or below this cut-off. The fixed effect logit estimator of Ferrer-i-Carbonell and Frijters (2004) avoids this shortcoming by imposing individual-specific cut-offs.

3. Estimation Results

The results of our ordered probit estimation are presented in Table 2.[6] The results shown in Columns 1 and 2 refer to a specification without any intertemporal effects (setting $\beta_2 = \beta_3 = 0$ in equation (1)). This is the standard approach taken by most studies on the well-being effect of unemployment that restrict their attention to how variables at time *t* influence well-being at time *t*.[7] Our results are in line with these studies, which provide overwhelming evidence that becoming unemployed reduces individual life satisfaction by much more than what can be explained by the associated income loss. Even if one could entirely compensate a person for the loss in income caused by unemployment, so that the person could, in principle, enjoy more leisure without reducing consumption, the person would nevertheless suffer from lower life satisfaction. "Work" not only serves the purpose of earning a living, but also has additional, non-pecuniary benefits. Part-time work and self-employment reduce the life satisfaction of men, but not that of women. The income coefficient is positive and highly significant: more income increases life satisfaction of men and women.

Columns 3 and 4 present the results obtained by estimating the benchmark specification (1). We integrate separate measures of past unemployment of the employed and the unemployed as well as a measure of past income (average income over the previous three years). Our results reproduce the main findings of Clark et al. (2001), even with our larger dataset. Currently unemployed individuals are worse off than those in full-time employment. Past unemployment significantly reduces the life satisfaction of all groups (except for unemployed women). The effect is larger for the employed than for the unemployed, so that switching from employment to unemployment hurts less if a person has already been unemployed more often in the past. This can be seen by calculating the difference between the life satisfaction of employed and unemployed persons with the same amount of past unemployment. The life satisfaction of an employed man who had been unemployed for *x* percent of the previous three years is lower by -0.71**x* than the life satisfaction of an employed men without any past unemployment experience.[8] An unemployed man has a lower life satisfaction than an employed man given by the coefficient -0.75, but past unemployment of *x* percent affects his satisfaction

[6] We abstain from presenting summary statistics of the happiness scores and do not explicitly report the coefficients of our control variables because the results are in line with previous studies (see Frey and Stutzer (2002), Blanchflower and Oswald (2004), or Frijters et al. (2004)).

[7] There are numerous studies showing that contemporaneous unemployment has a strong, negative effect on subjective well-being, see, for example, Clark and Oswald (1994), Gerlach and Stephan (1996), Winkelmann and Winkelmann (1998), Korpi (1997), Frey and Stutzer (2000, 2002), Clark (2003, 2006), Blanchflower and Oswald (2004).

[8] It should be kept in mind that the magnitude of the coefficients of an ordered probit estimation are not to be interpreted as marginal effects directly, but that they represent shifts in the cut-offs of a normal distribution.

only by -0.34 * *x*. The difference between the life satisfaction of an employed man and an unemployed man with past unemployment experience of *x* percent is then given by -0.71*x* - (-0.75 - 0.34*x*) = 0.75 - 0.37*x*. This shows that the loss in life satisfaction from unemployment is smaller if the fraction of time spent unemployed in the past is larger. Hence, the benchmark model produces supportive evidence both for the scarring effect and for habituation to unemployment.[9]

We now want to test whether this negative impact of past unemployment persists once we control for the fear of future unemployment. The main results of estimating specification (2) are shown in Columns 5 and 6 of Table 2. We find clear evidence that the fear of future unemployment substantially reduces current life satisfaction for both men and women. If a person is currently employed, but has the feeling that her job security is only medium ("somewhat concerned") or low ("very concerned"), her happiness falls far below what it would be if she did not have to worry about her job security. If a person is currently unemployed and deems it difficult or almost impossible to find a suitable job, she experiences a much larger drop in life satisfaction than if it was easy for her to find reemployment. The size of the different expectation coefficients is remarkable. Bad future employment prospects exert the strongest negative influence on well-being of all variables in the estimation. These findings strongly support the hypothesis that future unemployment is scaring.

With respect to unemployment experienced in the past, Table 2 shows that the ordered probit estimation also finds evidence for a scarring effect, although the coefficients are smaller (in absolute values) than in the specification without future effects. Even if one holds a person's assessment of her future employment prospects constant, having experienced more unemployment in the past still turns out to be detrimental to subjective well-being. The impact of past unemployment, however, is overestimated in the benchmark model because people interpret longer unemployment spells in the past as an indicator of a higher risk of becoming unemployed in the future (past unemployment and the subjective assessment of bad future prospects are positively correlated). Since people are afraid of future unemployment, omitting future prospects from the estimation causes an overestimation of the coefficients on past unemployment in specification (1). To sum up, the ordered probit model shows that both the experience of past unemployment and the fear of becoming (or remaining) unemployed in the future have a negative impact on current well-being.

[9] Since past unemployment refers to the number of months spent in unemployment, independently of the number of distinct unemployment spells, our results suggest that a person becomes habituated to the general state of unemployment rather than to a particular unemployment spell.

A drawback of the ordered probit model is that it does not allow us to control for time-invariant personality traits. This raises doubts about the causality of the relationship between unemployment and unhappiness. If it were the case that inherently unhappy people tend to become unemployed more often, or have a tendency to be more pessimistic about their future, one would observe that (past) unemployment and bad future prospects are correlated with less happiness, but their relation would be simultaneous instead of causal. To correct for such causality problems, it has become common practice in the happiness literature to apply a fixed effects model that effectively uses only data about changes in the life circumstances of the same individual instead of comparing different persons with each other. By using fixed effects, one can thus control for personal predispositions in life satisfaction.[10]

Table 3 contains the results from a fixed-effect conditional logit estimation (Ferrer-i-Carbonell and Frijters (2004)). In columns (1) and (2), we present the estimation without past unemployment effects. The results are similar to the ordered probit estimation in Table 2. Being unemployed reduces well-being both for men and for women. Compared to full-time employment, both men and women suffer from being employed part-time or self-employed. Income raises the life satisfaction of both sexes. In columns (3) and (4), we add past unemployment and past income as explanatory variables. Even with fixed effects, past unemployment maintains its negative impact on the life satisfaction of currently employed and unemployed men. For unemployed women, however, it is insignificant, and it even becomes positive for employed women.[11]

[10] Even though the fixed effects model controls for time-invariant personality traits, we cannot rule out an alternative explanation to the scaring hypothesis. It might be that past unemployment reduces a person's current life satisfaction and his general level of optimism at the same time because both could be two different manifestations of the same underlying emotional state. In this case, the correlation between less optimistic outlooks on the future and currently lower happiness would not be causal but only simultaneous. Our data do not allow us to test directly how the causality runs. The available evidence, however, points to a causal relationship going from past unemployment to an increased fear of becoming unemployed in the future to lower well-being. Arulampalam et al. (2001) were able to show that an individual's past history of unemployment is the best predictor of his future risk of unemployment. The psychological literature has also established that job insecurity causes lower well-being (see de Witte 1999 for a survey). Taken together, it seems plausible that the relationship is causal rather than just simultaneous.

[11] A possible explanation for this positive effect (that becomes apparent only after controlling for the sorting effect by considering individual fixed effects, c.f. Table 2) could be that finding a job after having been unemployed for some time is a surprising, favorable occasion and thus gives a larger boost to life satisfaction. Another explanation is that finding a new job after being unemployed causes an "overshooting" in life satisfaction with subsequent downward adaptation to its long-run level. Since the *UEPAST3* measure (time spent in unemployment during the last three years) declines during each year the person stays in his new job, downward adaptation in happiness and lower measures of past unemployment are correlated, yielding a positive relationship between past unemployment and happiness of employed persons. An explicit analysis of this adaptation process is, however, beyond the scope of this paper.

	Without intertemporal effects		Only past variables		With past variables and future expectations	
	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women
Dependent variable	Life satisfaction	Life satisfaction	Life satisfaction	Life satisfaction	Life satisfaction	Life satisfaction
Employed						
full-time	reference	reference	reference	reference	reference	reference
part-time	-0.336***	-0.156***	-0.277***	-0.158***	-0.306***	-0.182***
	(0.083)	(0.037)	(0.104)	(0.046)	(0.105)	(0.046)
self-employed	-0.260***	-0.018	-0.340***	-0.051	-0.338***	-0.065
	(0.062)	(0.070)	(0.078)	(0.086)	(0.078)	(0.087)
past unemployment			-0.214	0.380***	-0.115	0.438***
			(0.165)	(0.137)	(0.167)	(0.138)
high job security					reference	reference
medium job security					-0.421***	-0.311***
					(0.032)	(0.035)
low job security					-0.931***	-0.615***
					(0.049)	(0.054)
Unemployed	-1.076***	-0.851***	-1.123***	-0.794***	-0.510***	-0.047
	(0.051)	(0.050)	(0.087)	(0.088)	(0.188)	(0.249)
past unemployment			-0.401**	0.047	-0.164	0.066
			(0.178)	(0.144)	(0.186)	(0.146)
easy to find new job					reference	reference
difficult to find new job					-1.163***	-1.041***
					(0.193)	(0.249)
almost impossible to find new job					-1.557***	-1.179***
					(0.224)	(0.261)
Income (CPI adjusted total net household income divided by number of household members)						
income/1000	0.350***	0.280***	0.263***	0.235***	0.236***	0.221***
	(0.031)	(0.033)	(0.039)	(0.043)	(0.039)	(0.044)
past income/1000			0.260***	0.147***	0.261***	0.131**
			(0.049)	(0.056)	(0.050)	(0.056)
personal controls	yes	yes	yes	yes	yes	yes
individual fixed effects	yes	yes	yes	yes	yes	yes
time fixed effects (annual)	yes	yes	yes	yes	yes	yes
log likelihood	-26,905	-26,617	-17,981	-18,199	-17,753	-18,105
observations	58,231	57,450	39,609	39,850	39,609	39,850

*Note: Fixed-effects ordered logit estimation with individual and time fixed effects. Personal controls include marital status, number of children, years of education, out of labor force, an interaction term between past unemployment and out of labor force, 5-year age brackets, living in owned accommodation, and having a household member in need of care. Standard errors in parentheses. * denotes significance at the 10-percent-level, ** at the 5-percent-level, *** at the 1-percent-level.*

Table 3: Regression results (Fixed Effects Logit)

Adding expectations about the future changes these results significantly (columns (5) and (6)). As in the ordered probit estimation, taking future unemployment risk into account captures a large proportion of the negative well-being effect previously assigned to past unemployment. The coefficients on past unemployment weaken so much that we do not find evidence for a scarring effect for employed and unemployed men anymore. Unfavorable expectations about the future, however, maintain their strong impact on life satisfaction even when we control for fixed effects. This holds for the employed as well as for the unemployed. Employed persons with more job security are significantly happier than if they were employed in riskier jobs, and the unemployed are much happier if they expect finding a new job to be easy compared to situations where they see more difficulties in becoming reemployed. Even if we control for time-invariant personality traits, we find overwhelming evidence for a scaring effect of future unemployment.

It is also an illuminating exercise to compare the relative size of the estimates. High insecurity about future (un)employment is one of the most harmful conditions for individual well-being. On the other hand, current unemployment in itself matters much less than suggested by previous studies if the unemployed person considers it easy to find a new job. For women, we find that the state of unemployment does not even reduce well-being significantly as long as their future expectations concerning their employment chances are good. Furthermore, our results indicate that, *ceteris paribus*, an employed individual with a high risk of losing his job is less satisfied with his life than an unemployed person who can find a new job easily. This finding puts the negative life satisfaction effects of unemployment typically found in previous studies into perspective and points to the strong influence of individual expectations about one's future employment biography.

To sum up, our results suggest that the evidence for a genuine scarring effect, which postulates that past unemployment has a direct effect on current well-being, is substantially weakened by taking into account a person's future employment prospects and by allowing for fixed personality traits. We find overwhelming evidence, however, that employed persons suffer from a much lower level of life satisfaction if they feel that their job is insecure and that they might become unemployed in the near future. Likewise, persons without a job feel much happier if it is easy for them to find a new job so that they expect to become reemployed rather quickly. It is not so much that a person has experienced unemployment in the past that causes a loss in life satisfaction, but that unemployment might occur (again) in the future.

4. Conclusion

Our starting point is the "scarring" hypothesis of Clark et al. (2001), according to which people who were unemployed in the past are less happy than continuously employed persons even after they return to employment. In their terminology, unemployment leaves a scar on a person's face. Our results suggest that the scarring effect of Clark et al. (2001) works mainly through its impact on how people judge their own future. People interpret their own past unemployment as an indicator of their future labor market prospects. If they have experienced more unemployment in the past, they are more afraid that this might happen to them again. This insecurity about the future is detrimental to life satisfaction. Our findings suggest that it is the fear of future unemployment rather than having experienced unemployment in the past that makes people feel less happy.

Using data from the German Socio-Economic Panel for the years 1984 to 2005, we modify the analysis of Clark et al. (2001) by distinguishing between the impact of past unemployment and insecurity about future employment prospects on current life satisfaction. Our results show that, once we control for future insecurity and time-invariant personality traits, the amount of time a person was unemployed in the past loses much of its explanatory power for current well-being. We find only weak evidence that past unemployment has a direct negative effect on the well-being of both currently employed and currently unemployed persons. We do find, however, that the prospect of being unemployed in the future is highly detrimental to current life satisfaction. Low job security for the employed and unfavorable reemployment chances of the unemployed are harmful to subjective well-being even after controlling for individual-specific fixed effects.

Our results show that the scarring effect of past unemployment can be explained best through its effect on people's fear of future unemployment. It is this fear, rather than any direct effects of past unemployment, that makes people unhappy. The label for the intertemporal effects of unemployment should thus be changed by one letter: past unemployment "scars" because it "scares".

References

Arulampalam, W., P. Gregg, and M. Gregory (2001): "Unemployment Scarring", *Economic Journal* 111, F577-F584.

Blanchflower, D., and A. Oswald (2004): "Well-being over time in Britain and the USA", *Journal of Public Economics* 88, 1359-1386.

Oswald, A., and A. Clark (1994): "Unhappiness and Unemployment", *Economic Journal* 104, 648-659.

Chamberlain, G. (1980): "Analysis of covariance with qualitative data", *Review of Economic Studies* 47, 225-238.

Clark, A. (2003): "Unemployment as a Social Norm: Psychological Evidence from Panel Data", *Journal of Labor Economics*, 21, 2, 323-351.

Clark, A. (2006): "A Note on Unhappiness and Unemployment Duration", *Applied Economics Quarterly (formerly: Konjunkturpolitik)* 52(4), 291-308.

Clark, A., Y. Georgellis, and P. Sanfey (2001): "Scarring: The Psychological Impact of Past Unemployment", *Economica* 68, 221-41.

De Witte, H. (1999): "Job Insecurity and Psychological Well-being: Review of the Literature and Exploration of Some Unresolved Issues, *European Journal of Work and Organizational Psychology* 8, 155-177.

Ferrer-i-Carbonell, A., and P. Frijters (2004): "How important is methodology for the estimates of the determinants of happiness?", *Economic Journal* 114, 641-659.

Frey, B., and A. Stutzer (2000): "Happiness, Economy and Institutions*", Economic Journal* 110, 918-938.

Frey, B., and A. Stutzer (2002): "What Can Economists Learn from Happiness Research?", *Journal of Economic Literature* 40, 402-435.

Frijters, P., J. Haisken-DeNew, and M. Shields (2004): "Money does matter! Evidence from increasing real income and life satisfaction in East Germany following reunification", *American Economic Review* 94(3), 730-740.

Gerlach, K., and G. Stephan (1996): "A paper on unhappiness and unemployment in Germany", *Economics Letters* 52 (3), 325-330.

Haisken-DeNew, J. P., and M. Hahn (2006): *PanelWhiz: A Flexible Modularized Stata Interface for Accessing Large Scale Panel Data Sets,* http://www.panelwhiz.eu.

Lykken, D., and A. Tellegen (1996): "Happiness is a stochastic phenomenon", *Psychological Science* 7, 186-189.

Korpi, T. (1997): "Is Utility Related to Employment Status? Employment, Unemployment, Labor Market Policies and Subjective Well-being among Swedish Youth", *Labour Economics* 4(2), 125–147.

Winkelmann, L., and R. Winkelmann (1998): "Why are the Unemployed So Unhappy? Evidence from Panel Data", *Economica* 65(257), 1-15.

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