Getting a Job, Again: Does Unemployment Scar for Life?

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ABSTRACT

Previous research suggests that unemployment leaves permanent "scars" on psychological wellbeing, which remain even after people get reemployed. However, these findings are based on data that systematically over-weights long-term and frequent unemployment and on models that are potentially mis-specified. In this paper, I use monthly employment data from the Panel Study of Income Dynamics (PSID) to construct complete employment histories of prime working age Americans for a 15-year period. Using distributed fixed effects models to account for the temporal relationships between wellbeing and employment transitions, I find that while wellbeing declines during unemployment, individuals recover to pre-unemployment levels within 2-3 years of reemployment. I replicate the analysis using data on a younger cohort and with different measures of subjective wellbeing and find consistent results.

INTRODUCTION

Studies on wellbeing have found that people tend to rebound to their baseline levels of happiness after major life events – a phenomenon known as "hedonic adaptation". Accordingly, one would expect that getting a job would lead to a recovery of wellbeing to pre-unemployment levels. Surprisingly, a substantial body of research suggests that this is not the case, finding instead that re-employment only recovers part of the loss in wellbeing suffered during job loss. This phenomenon has been termed the psychological "scarring" effect of unemployment (Clark et al. 2001).

However, literature on scarring has important methodological and theoretical limitations.

One, this research has exclusively relied on employment statuses reported on annual or even less frequent basis, ignoring employment transitions that took place between the surveys. This leads to systematic classification of most short-term or rarely unemployed individuals as consistently employed. Additionally, by ignoring period effects and not fully accounting for the possibility that adaptation may take place over time, previous research has potentially used mis-specified models. Finally, only a weak theoretical case can be made in favor of scarring.

In this paper, I re-examine the scarring hypothesis, using more detailed data and a more rigorous research design than has been used in past studies. Using longitudinal data from the Panel Survey of Income Dynamics (PSID), I compare individuals' subjective wellbeing as they transition from employment to unemployment and then back to employment. I replicate the findings using data from the 1997 cohort of the National Longitudinal Study of Youth (NLSY97). In both datasets, I do not find any evidence of scarring, and instead find support for the hedonic adaptation hypothesis.

BACKGROUND

Unemployment is more than an economic experience. It is also a social and psychological experience, entailing role loss, loss of status, relationship strain, and psychological stress (for a review on these effects of unemployment, see Brand 2015). Because it is such a powerful social and psychological experience, researchers have been intrigued by the possibility that unemployment may affect individuals long after they become re-employed. A central question motivating this research is whether unemployment temporarily *bruises* psychological wellbeing or if it leaves an enduring *scar*.

Defining Subjective Wellbeing

Researchers have defined subjective wellbeing from three different perspectives:

satisfaction, mental health, and affect. These approaches are by no means mutually exclusive but they nevertheless have different disciplinary origins: in economics and psychology, wellbeing has traditionally been viewed as utility or satisfaction. From a medical standpoint, wellbeing is health, and often specifically mental health. Sociological investigations have tended to use clinical criteria but have regarded them as insights into affective experiences.

Economists have traditionally viewed subjective wellbeing "as a proxy measure for individual welfare" (Stutzer and Frey 2010: 680).[1] The economic definition of welfare is in turn rooted in utilitarian theory, which often interprets utility as satisfaction. Indeed, early wellbeing theorists used the terms utility and satisfaction interchangeably (e.g. Brickman and Campbell 1971). As such, most economic and psychological investigations into the enduring effects of unemployment have defined subjective wellbeing as satisfaction with life (e.g. Lucas et al. 2004; Clark et al. 2008; Knabe and Ratzel 2011; although see Warr and Jackson 1985 and Kreuger and Mueller 2012).

In psychiatry and epidemiology, on the other hand, the outcome of interest has been mental illness, particularly depression and anxiety disorders. As such, this body of research has looked at incidence rates of disease or mental health evaluations as the primary outcomes of interest (e.g. Claussen, Bjorndal, and Hjort 1993; Catalano et al. 2000; Flint, et al. 2013; Milner et al. 2014).

In sociology, one of the earliest studies on unemployment effects by Kessler, Turner, and House (1989) used a psychiatric evaluation checklist (SCL-90) to operationalize their dependent variables of depression, anxiety, and somatization. This tradition of using clinical mental illness or distress scales continues to be followed in more recent sociological research (e.g. Halvorsen 1998; Dooley, Prause, and Ham-Rowbottom 2000; Young 2012). However, a central way in

which the recent sociological literature departs from the clinical model is that while in medicine these scales are used to define thresholds to classify patients and non-patients, sociological research uses them as indicators of distress, interpretable as measures of wellbeing. Indeed, Young (2012) asserts that the CES-D (Center for Epidemiological Studies Depression scale that asks individuals about the frequency of distressed states) should be treated as "a generic measure of subjective wellbeing, a measure that is richer and more detailed than the simple life satisfaction question" (p. 617). Economists Kahneman and Krueger (2006) support using something akin to a distress scale to measure of subjective wellbeing. Specifically, they argue that life satisfaction is a global retrospective measure, susceptible to biases due to recall as well as earlier questions on the survey and may or may not be consonant with experienced utility (Kahneman and Krueger 2006). As an alternative, Kahneman and Krueger suggest measuring wellbeing as a "misery index" that captures the proportion of time individuals spend in unpleasant states. While clinical scales of depression and distress do not measure *proportion* of time spent in a given state, they do include a time dimension since they ask individuals how *frequently* they experience certain negative states. Of all the measures available to us so far, psychological distress scales probably come closest to a misery index.

These two ways of understanding wellbeing, i.e. as frequency of negative or positive experiences versus global life satisfaction, roughly map on to hedonic and eudaimonic views of wellbeing (for a detailed summary, see Ryan and Deci 2001). In summary, hedonic views of wellbeing focus on negative and positive experiences, while in the eudaimonic view wellbeing is self-realization, pursuit of goals in consonance with one's values, feeling competent, and feeling integrated in society. In most cases one would expect these two aspects of wellbeing to be correlated. Indeed, a study comparing employed and unemployed workers found lower wellbeing

among the unemployed in terms of both life satisfaction as well as utility experienced from the same daily activities (such as eating, socializing, and pursuing hobbies) (Knabe et al. 2010).

Evidence of "Scarring"

A long-standing finding in wellbeing research is that unemployment permanently lowers subjective wellbeing, even after the period of unemployment ends. The most substantial support for this hypothesis comes from three studies using panel data on German households (Clark, Georgellis and Sanfey 2001; Lucas, Clark, Georgellis, and Diener 2004; and Clark, Diener, Georgellis, and Lucas 2008). Clark et al. (2001) first used the term scarring to describe the phenomenon that individuals with a history of unemployment on average have lower life satisfaction regardless of their current employment status. Later studies by Lucas et al. (2004) and Clark et al. (2008) looked at how life satisfaction changes in years leading up to and following unemployment. Both these studies find that life satisfaction after unemployment was lower on average than pre-unemployment levels, suggesting that unemployment permanently alters the baseline level of subjective wellbeing.

Later studies based on American and British household data and using different metrics of wellbeing corroborate the scarring hypothesis. These studies essentially compare the absolute effect of job loss and job gain on psychological wellbeing and find that the latter is much smaller in magnitude. For instance, using data from two consecutive waves of the PSID, Young (2012) finds that the absolute wellbeing effect of job gain is 50 percent smaller than the loss in wellbeing suffered due to job loss. A similar study of British households by Flint, Bartley, and Shelton (2013) using over 10 years of data also finds that moving from employment to unemployment entails a greater loss in wellbeing than is compensated by job gain.

However, while the body of research supporting unemployment scarring is substantial, this research has important methodological and theoretical limitations.

Methodological Limitations of Scarring Research

Past research on scarring suffers from some important methodological weaknesses: 1) bias due to missing unemployment data, 2) absence of period effects, 3) inadequate comparisons, and 4) insufficient attention to the temporal nature of wellbeing-employment relationship.

The first problem with all of the above-cited research is that they are biased towards observing as unemployed workers who experience longer term or more frequent job losses. Specifically, past research has operationalized employment transitions using employment status at the time of the survey. A problem with this method is that individuals with brief or intermittent unemployment spells may often be classified as having been consistently employed. Because the unemployed observed in these studies are more likely to be long-term and frequent unemployed individuals, these studies may have overstated not only scarring but also the average wellbeing loss caused by job loss because these individuals may have lower wellbeing in general and may respond to unemployment more severely than others. Indeed, a study of Finnish workers found that the wellbeing effect of unemployment varies by baseline happiness: while unhappy people get unhappier, there is negligible effect on happy individuals (Bockerman and Ilmakunnas 2006).

Second, none of these studies include period effects, which could result in mis-specified models (Bruderl and Ludwig 2018). In particular, macroeconomic circumstances have significant effects on psychological wellbeing (Tausig and Fenwick 1999) and these can be particularly salient for those undergoing labor market transitions. As such, the absence of period effects could have biased the findings of prior studies.

Third, some of the findings rest on inadequate comparisons. For instance, in the only study of unemployment scarring in the US, Young (2012) compares the effect of job gain and job loss among different sets of individuals over a period of two years. It is possible that due to changes in the economy, there were systematic differences among those who got employed versus those who lost their job, as well as differences in how individuals responded to employment transitions.

Finally, most past studies have not allowed for temporal variation in the wellbeing-employment relationship, particularly in post-unemployment years (except for Lucas et al. 2004 and Clark et al. 2008). Thus, past research has ignored the possibility that full recovery may take place over time.

A Theoretical Case Against Scarring

There are two plausible explanations for scarring, which can be categorized into direct and indirect effects. However, I argue below that both are subject to endogeneity.

Direct effects result from the psychological trauma experienced during unemployment, which can eventually lead to depressive and anxiety disorders. For example, if unemployment triggers depression, future illness can be attributable to past unemployment because depression tends to be highly recurrent (Burcusa and Iacono 2007). However, it is difficult to test this assumption because those with higher risk of depression also tend to have higher rates of unemployment (Dooley, Prause, Ham-Rowbottom 2000; Fletcher 2013). Moreover, research on Finnish workers finds that unemployment only lowered the wellbeing of workers who were already had low levels of happiness but did not have any effect on those with higher pre-unemployment levels of happiness (Bockerman and Ilmankunnas 2006). As such, some people may select into unemployment based on characteristics that also make them more sensitive to

unemployment. This means that the findings about unemployment may not be generalizable to those who did not experience unemployment.

Indirect scarring mechanisms entail loss of resources that are not compensated by reemployment, including losses related of wealth, work experience, status, relationships, and health. For example, studies of British and Swedish workers find that unemployment permanently lowers wage trajectories (Arulampalam 2001; Eliason and Storrie 2006). Another indirect effect of unemployment could transpire through lost social support networks: e.g. involuntary job loss in prime working years leads to a permanent loss of social participation (Brand and Burgard 2008). Other long-term casualties of unemployment include physical heath and family disruptions (for a review, see Brand 2015), which can result in losses that last well beyond the duration of joblessness.

However, some studies caution against causally associating such enduring losses to unemployment because such losses are systematically concentrated among certain types of individuals. For example, a study of American workers found that labor market outcomes varied by cause of unemployment: those who lost jobs due to plant closures (i.e. no fault of their own) had much shorter spells of unemployment than those who were laid off (Gibbons and Katz 1991). Similarly, Charles and Stephens (2004) find that while being fired increases the risk of divorce, losing a job because of plant closure or disability does not threaten marriage. These studies suggest that the experiences of unemployed workers vary by reason for job loss, and that this reason may itself affect both labor market and life outcomes and wellbeing.

To sum, the case for scarring rests on two broad theoretical mechanisms: a psychological mechanism whereby unemployment triggers a mental illness and a resource mechanism.

However, as discussed above, it is difficult to cleanly attribute causality to unemployment because these mechanisms are potentially endogenous.

Hedonic Adaptation: An Alternative Hypothesis

For proponents of the theory of hedonic adaptation, scarring is a surprising hypothesis. The hedonic treadmill theory, first proposed by Brickman and Campbell (1971), argues that individuals get habituated to their circumstances, and respond to changes in their circumstances by comparing the current situation to the past, rather than to any absolute criterion. An important corollary of the hedonic adaptation theory is that individuals have "set points" of subjective wellbeing to which they eventually return after happy and sad events alike (Brickman and Campbell 1971). This mean reversion potentially results from the fact that people's baseline levels of subjective wellbeing are largely "determined" by intrinsic personality traits, specifically extraversion and neuroticism (for a review, see Diener, Oishi, and Lucas 2003). Thus, once the negative stimulus of unemployment is removed, individuals should revert to their baseline levels of wellbeing.

The hedonic adaptation hypothesis is consistent with identity theory in sociology. Specifically, identity theory suggests that when social situations fail to affirm valued identities, individuals experience psychological distress (Burke and Stets 2009). Unemployment can be viewed as a change in situation that results in invalidation of valued identities, such as professional, occupation, breadwinner, and good citizen identities. According to this theory, identity loss would explain the psychological distress experienced during unemployment. However, reemployment reestablishes a situation where work-related identities are affirmed. As such, we should expect individuals to return to baseline wellbeing levels once reemployed.

Additionally, a major reason why scarring seems improbable is that several studies report that a key mediator between employment and wellbeing is economic distress (for a review, see Nordenmark and Strandh 1999). Since economic distress is likely alleviated after reemployment, it is not obvious why unemployment will continue to affect wellbeing.

A handful of longitudinal studies observing mental health and psychological distress among the unemployed indeed find that unemployment *bruises* rather than scars (e.g. Kessler, Turner, and House 1989; Norway, Claussen, Bjorndal, and Hjort 1993; Krueger and Mueller 2012). Instead, these studies find that after re-employment, psychological wellbeing of the formerly unemployed is either comparable to the consistently employed or at least substantially higher than the consistently jobless. However, a weakness of these studies is that they do not compare the same individuals before and after unemployment, and thus fail to provide an adequate counterfactual needed to evaluate the scarring hypothesis.

A true test of scarring would entail comparing the differences in pre- and post-unemployment levels of subjective wellbeing within the same individuals. This is the objective of the present study.

METHOD

I use a distributed fixed effects (DFE) model to study the relationship between employment transitions and psychological wellbeing over time. The treatment is employment following job loss and the primary comparison of interest is between wellbeing levels before and after job loss. In order to interpret the effect of getting a job as causal, the treatment should be "strictly exogeneous", i.e. be independent of the error term across time, conditional on covariates (Bruderl and Ludwig 2018). The strict exogeneity assumption can potentially be violated if there is any meandering between the transitions from pre- to post-job loss employment. Specifically,

between work and unemployment, individuals can also exit the labor market, and these periods

of labor market exit can both be triggered by or themselves trigger life changes that in turn affect

contemporaneous or future wellbeing. For instance, school enrollment, employment training,

changes in illness and disability status, marriage, divorce, and parenthood, could be correlated

with both labor market decisions and wellbeing. Therefore, I limit my analysis to individuals

who transitioned from employment to unemployment and back to employment without any

significant time spent outside the labor force; a sequence of events that I term *reemployment*. A

consequence of this definitional restriction is that the findings of the present research can only be

generalized to those who experienced labor market transitions in this sequence. This excludes

new labor market entrants and re-entrants. Individuals exit the sample at the end of their post-

unemployment spell.

Fixed effects estimators show how much, on average, does wellbeing change *within*

individuals as they move from one employment status to another. By removing variation caused

by fixed individual-specific factors, this model removes bias caused by differential selection into

the treatment, thus allowing for causal attribution (Bruderl and Ludwig 2018). A simple fixed

effects model in this case can be specified as:

$$SWB_{it} = \alpha_i + \theta_{pre}U_{pre,it} + \theta_{in}U_{in,it} + \theta_{post}U_{post,it} + \sum_j \beta_j X_{jit} + \varepsilon_{it}$$

Where SWB_{it} denotes subjective wellbeing for individual *i* in survey year *t*, α indicates

individual fixed effects. The effects of being in different employment statuses is captured by the

dummy variable *U*, subscripted by *pre*, *in* and *post* to denote pre-job loss employment, in

unemployment, and post-job loss employment.[2] X indicates a vector of time varying covariates

and ε_{it} is the error term. If $\theta_{pre} > \theta_{post}$, it is evidence in favor of unemployment scarring. θ_{in}

provides a benchmark.

One shortcoming of the above model is an underlying restrictive assumption that wellbeing is homogeneous over time spent in each employment status. However, this assumption may not be tenable. For instance, past research documents negative anticipatory effects of unemployment on wellbeing beginning 1-2 years before unemployment (Clark et al. 2008). Similarly, wellbeing may vary by duration of unemployment: compared to short-term job loss, longer-term unemployment is typically regarded as more distressing (e.g. Basbug and Sharone 2017) and research suggests that individuals who experience long-term unemployment tend to have lower baseline wellbeing levels from the very outset (Halvorsen 1998). As such, a simple fixed effects model may be mis-specified.

This mis-specification can be addressed by using *distributed* fixed effects that allow the treatment effect to vary over time (Dougherty 2006). Essentially, a DFE model breaks the treatment states into shorter time spans. The DFE model is specified as follows:

$$SWB_{it} = \alpha_i + \sum_{-s}^{s} \theta_s U_{s,it} + \sum_j \beta_j X_{jit} + \varepsilon_{it}$$

Where *s* denotes distance from unemployment in months, with negative values measuring time in employment prior to job loss. The first summation $\sum_{-s}^{s} U_{s,it}$ denotes distributed fixed effects over the period –s to s.

One challenge with using the above specification is that we can potentially lose the contrast with those who did not experience reemployment. In the case of marriage as the treatment, Dougherty (2006) suggests that not having a contrast category is not problematic if individuals very far away from the treatment (in this case unemployment) may be viewed as "no different in maturity from an individual who never marries" (p. 435). However, in the present case, the assumption that years prior to unemployment individuals are similar to those who never

experienced unemployment is difficult to justify. This is because on average people grow happier

with age, particularly in their 20s and 30s (Galambos et al. 2015).[3] Since individuals grow older

at the same time as they transition from pre-unemployment to post-unemployment, any recovery

to pre-job loss wellbeing levels does not necessarily mean absence of scarring: it is also possible

that although individuals are no worse off than they were before being unemployed,

unemployment lowered their wellbeing trajectory. In the absence of a counterfactual trend for

wellbeing over age, it is difficult to distinguish between the effects of getting a job versus an

improvement in wellbeing that would regardless have taken place over time. A small sample

size, as in this case, exacerbates this problem. In order to address this, I include in my sample

individuals who did not experience reemployment. The inclusion of these individuals supplies

the necessary degrees of freedom to parse out the effect of age and getting a job. However, in

order to allow for the possibility that age effects may vary among the reemployed and the non-

reemployed, I include an interaction between age and a binary indicator of whether the

individual experienced reemployment during the study period.[4]

The final estimated model is as follows:

$$SWB_{it} = \alpha_i + \sum_{-s}^{s} \theta_s U_{s,it} + \beta_1 Age_{it} \times Reemployed_{jit} + \beta_2 Age_{it} + \sum_j \beta_j X_{jit} + \varepsilon_{it}.$$

Finally, because the data I use were collected over a long span of time, it is possible that

there are period effects that are ubiquitously experienced by all individuals in a given year. I

include period fixed effect to account for such sources of variation.

DATA

I use the PSID, a nationally representative longitudinal dataset that has followed a sample

of American families every two years since 1968. Over time, the original 1968 sample of 5,000

families created "split-offs", growing to 8,500 families by 1997. Because of the growing sample

size, about 2,200 of these split-offs were dropped from the sample in 1997. Additionally, because

the original sample of 5,000 families did not represent immigrant families that arrived in the US

after 1968, an additional pool of 500 immigrants was added in 1997.[5] There is considerable

movement in and out of the sample due to births, deaths, marriages, cohabitation, re-entry and

non-response. For instance, in 2015, the PSID includes data for 9,048 families and 24,637

individuals. Of these, 2,643 individuals were new entrants or re-entrants, while 2,958 sample

members left the survey in 2015 for various reasons. Because of the PSID's complex sample

design, the data are not representative of the US households without using appropriate weights.

The study period is limited to years for which both monthly employment history and

wellbeing data available, i.e. 2001-2015.[6] Beginning in 2003, the PSID collected wave monthly

employment history of the household head and spouse for the prior two calendar years using

event history calendars (EHC).[7] Prior research shows that EHC data on events such as work and

unemployment are superior in quality compared to the standard questions about the events (Belli,

Shay, and Stafford 2001). In addition, the quality of EHC data in the PSID was further enhanced

through a number of consistency checks in the data collection software (Beaule, Dascola, and

Liu 2009). Because the data were collected for the prior two years, the 2015 wave collected

monthly employment history for 2013 and 2014, but not 2015. However, using the employment

status at the time of interview in 2015, it is possible to interpolate employment status in that year:

for interviews conducted within the first four months of 2015, I interpolate employment based on

the status reported at the time of the interview.[8] As such, I have complete monthly employment

history for both heads and spouses from January 2001 to April 2015.

Questions about subjective wellbeing were asked in years 2001-2015, with the exception

of 2005. Additionally, wellbeing data were only collected for the family member (either the head

or partner/spouse) who responded to the survey. Thus, in terms of wellbeing, an individual can be observed for a maximum of 7 points in time, only if they happened to respond to all survey waves themselves. In my analytical sample, I include both heads and spouses; however, in a given year, wellbeing is observed of only one person from each household.

Since age is an important factor in shaping individuals' relationship with the labor market, it is customary to restrict analysis of the labor market to primary working years (e.g. Gangl 2006). As such, I restrict my analysis to ages 25-55. After excluding observations with missing data on the dependent variable or independent variables, I have an unbalanced panel of 29,714 person-year observations and 9,579 unique individuals.[9] Respondents are observed on average for 3.1 waves (5 years). The minimum period of observation is one survey wave and the maximum is 7 waves (13 years). The analytical sample is representative of household heads and spouses in the US who were aged 25-55 years between the period January 2001-April 2015.

Finally, while the unit of analysis is technically an individual, in terms of probability of selection, these data represent families. I use sampling weights for all families for their last year in my analytical sample.

Dependent variable. I measure subjective wellbeing using K-6, which is an indicator of non-specific psychological distress. The K-6 has been validated in clinical reappraisals to detect emotional problems with a high degree of precision and is consistent across socio-demographic groups (Kessler et al. 2002). The items on the K-6 ask respondents how often they have experienced the following in the past 30 days: sadness, nervousness, restlessness, hopelessness, worthlessness, and feeling that everything was an effort. Responses are recorded on a scale of 1 to 5, with 1 indicating "all of the time" and 5 indicating "none of the time". As recommended by the originators of the scale, I add up the scores of the 6 items to create the composite K-6 index

(Kessler et al. 2002: 972). A higher K-6 score indicates greater wellbeing. Finally, for ease of interpretation, I have rescaled the index to vary from 1-5 (from the original range of 5-30).

Employment transitions. In the PSID, complete monthly employment status of heads of households and their residential partner is recorded through two sets of survey questions. First, each individual is asked to provide a monthly record of when they began and stopped working for an employer, including start and stop dates if there are gaps in working for that employer. For any given month, employment status of an individual is available with respect to up to four employers. Second, for each month, each individual is asked if there were any times during the month when the individual was "not employed (not working at all for pay)… [and] looking for a job, or not looking (for a job)?". Individuals who were not employed and looking for a job are coded as unemployed. I use both these questions to construct monthly series of employment and unemployment. Months where an individual reports being neither employed nor unemployed were considered out of labor force. Months for which both employment and unemployment record exists were coded as employed if the future status is employed, and unemployed if the future status is unemployed (with the rationale that somewhere during the month, the individual transitioned to the new status and hence there is likely an anticipatory effect of the new status). Finally, if an out-of-labor force spell was shorter than two months, I recoded it as the status of the following month, with the rationale that a short spell of being out of workforce may not affect wellbeing significantly and that there is likely an anticipatory affect of the future status. All individuals who experienced a transition from employment-unemployment-employment with less than two consecutive months out of the labor force during the period 2001-2015 are regarded as "re-employed". I only follow these individuals up to the end of their second employment spell. All others are termed "non-reemployed": including those who were

consistently employed, out of labor force, as well as those who experienced transitions between unemployment and employment but in a sequence other than what has been defined here as reemployment.

I break down reemployment into 13 time-based categories: 3+ years to unemployment, 2-3 years to unemployment, 1-2 years to unemployment, 7months-1 year to unemployment, 1-6 months to unemployment; 1-3 months in unemployment, 4-6 months in unemployment, 7+ months in unemployment; 1-6 months in post-unemployment job; 6months-1year post unemployment, 1-2 years post unemployment; 2-3 years post unemployment, and over 3 years after unemployment.[10]

Control variables. I include controls for age, marital status (married/cohabiting or single), a binary indicator of having children in the household, years of education, and financial distress. Age, marital status, children and years of education are measured in each survey wave.[11] For financial distress, I use as a proxy the usage of food stamps by any household member in the past 12 months.[12] I also include year fixed effects. To ensure that these effects are not collinear with age, I have created a variable by combining years in which the period effects have similar magnitude and direction.

**Table 1. Descriptive Statistics of Analytical Sample**

	Mean	SD
Subjective wellbeing[1]	4.47	0.63
Duration (months)		
Pre-job loss employment	35.41	37.30
Unemployment	5.38	5.15
Post-job loss employment	20.16	14.44
Heads (vs. spouses, share)	0.58	0.00
Women (share)	0.59	0.49
Age in years	39.76	9.09
Years of education	13.77	2.51
Married or cohabiting (share)	0.66	0.47
Family unit has children (share)	0.55	0.50
Family used food stamps in past 12 months (share)	0.08	0.27

Notes: Weighted statistics. N individuals = 29,714; N person-years= 9,579. Source: PSID 2001-2015. [1]Subjective wellbeing is measured as K-6 index rescaled to 1-5.

RESULTS

Figure 1 shows the trend in subjective wellbeing over the course of reemployment among the reemployed. The horizontal line shows the average wellbeing of these individuals 3+ years before unemployment. These data suggest that there is an anticipatory effect of unemployment on wellbeing that begins up to 6 months before job loss, as well as a lingering effect that lasts up to two years after unemployment. After two years of employment, the wellbeing level of the employed returns to pre-unemployment levels. However, most of the confidence intervals overlap, which suggests that there is a great deal of variation in the effects of unemployment.

Fig. 1 Subjective Wellbeing of Re-employed Workers Aged 25-55
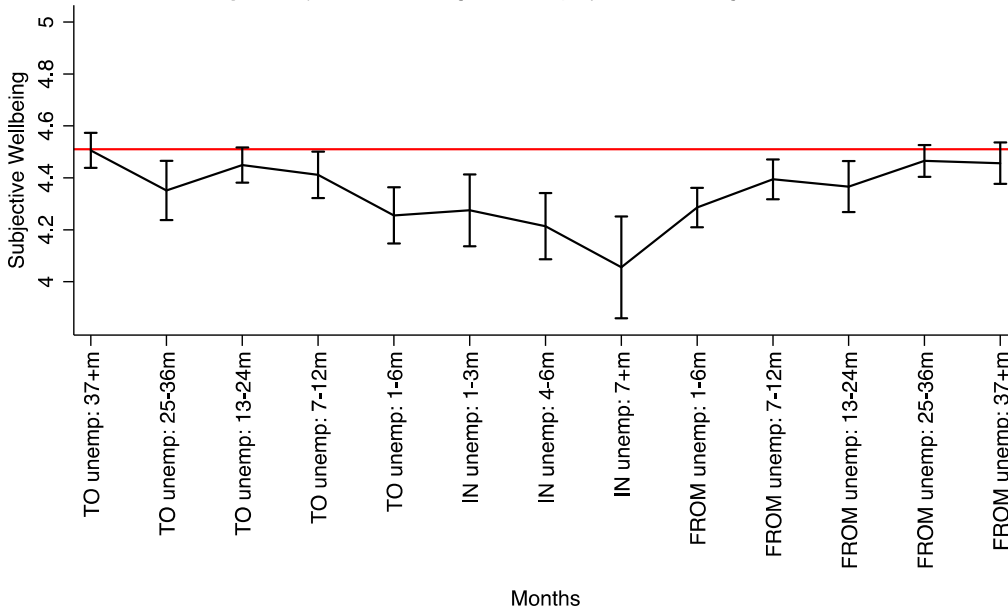
Note: Subjective wellbeing is measured as inverse of K-6 distress scale, rescaled to 1-5. Weighted averages shown. Bars show 95% confidence interval. Horizontal line shows weighted average wellbeing of the reemployed 3+ years before job loss. Source: PSID 2001-2015. N=9,579 individuals.

The distributed fixed effects models presented in Table 2 address this concern. Model 1 shows a DFE model controlling for only period effects. After controlling for individual fixed effects, there are no longer any statistically significant differences in wellbeing levels during the course of reemployment. However, after controlling for covariates (Model 2), it appears that there is a positive age effect as expected and that during periods of unemployment, wellbeing is significantly lower than the baseline levels, as defined here as 3+ years before unemployment. In these data, I do not find any difference in wellbeing trajectories of employed and unemployed individuals with age, as is shown by the statistically insignificant interaction of age with reemployment.

Covariates in model 2 have expected relationships with wellbeing. Within individuals, marriage and children increase levels of wellbeing while financial hardship decreases wellbeing. Education is also non-significant, which is likely attributable to little within individual change in education during the study period.

Table 2. Distributed Fixed Effects Estimates of Subjective Wellbeing

	Model 1	Model 2
Time w.r.t. unemployment (ref: 37+ months in pre-job loss employment)		
To unemployment: 25-36 months	0.027	0.012
	(0.071)	(0.078)
To unemployment: 13-24 months	-0.014	-0.027
	(0.049)	(0.069)
To unemployment: 7-12 months	-0.037	-0.062
	(0.055)	(0.077)
To unemployment: 1-6 months	-0.063	-0.081
	(0.066)	(0.090)
In unemployment: 1-3 months	-0.145*	-0.157
	(0.062)	(0.088)
In unemployment: 4-6 months	-0.146*	-0.154
	(0.071)	(0.087)
In unemployment: 7+ months	-0.205*	-0.214*
	(0.087)	(0.104)
From unemployment: 1-6 months	-0.084	-0.092
	(0.059)	(0.100)
From unemployment: 7-12 months	-0.116*	-0.132
	(0.052)	(0.092)
From unemployment: 13-24 months	-0.052	-0.073
	(0.061)	(0.101)
From unemployment: 25-26 months	-0.034	-0.057
	(0.051)	(0.112)
From unemployment: 36+ months	0.050	0.018
	(0.060)	(0.117)
Age (years)		0.003
		(0.002)
Age x Reemployed		0.002
		(0.010)
Education (years)		-0.006
		(0.009)
Married or cohabiting		0.044*
		(0.019)
Kids present in household		0.039**
		(0.014)
Food stamps used in past 12 mos.		-0.109***
		(0.032)
Period effects	Yes	Yes
Constant	4.400***	4.324***
	(0.010)	(0.139)
R-squared	0.007	0.010

Note: Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10 (two-tailed test). N=9,579 individuals and 29,714 person years. Sample includes household heads and spouses aged 25-55. Source: PSID 2001-2015.

Figure 2 summarizes the results of model 2. In contrast to the plot of unconditional average in Figure 1, after controlling for covariates I no longer find any anticipatory effect of unemployment. However, similar to the unconditional averages, after controlling for covariates there does appears to be a short-run lingering effect of unemployment (although not statistically significant). Nevertheless, after two years after employment ends, wellbeing recovers to pre-unemployment levels. In sum, I find no evidence of long-term scarring in these data.

Fig. 2 Predicted Effects of Employment Transition on Subjective Wellbeing
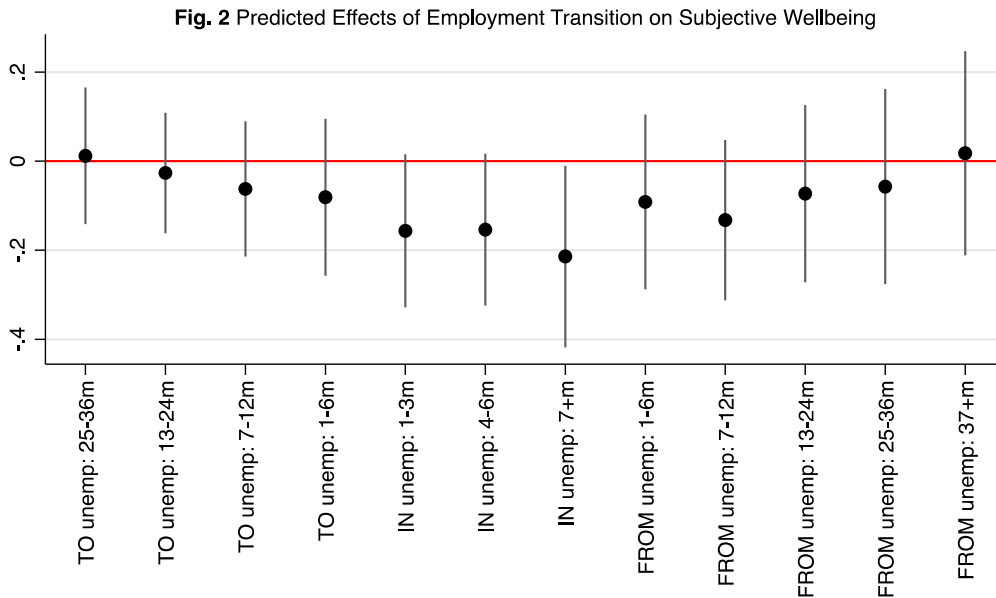
Note: Wellbeing is measured on a scale of from 1-5. Horizontal line shows the reference category of 3+ years before job loss. Bars show 95% confidence interval. Model controls for age, marital status, parenthood, use of foodstamps, and individual and year fixed effects. Source: PSID 2001-2015. N=9,579 individuals.

A VALIDATION TEST

Two limitations that affect the generalizability of the above analysis are that it relies on a specific definition of subjective wellbeing (namely, frequency of experiencing negative affect)

and that it is based on heads of households and their spouses, for whom provider identities may be more salient than for working age adults in general. To test whether the findings apply to a different set of outcomes and individuals, I replicate the above analysis using data for a younger cohort of workers and for a different set of wellbeing measures.

The replication is based on data from the National Longitudinal Survey of Youth for the 1997 cohort (NLSY97), a nationally representative dataset of 8,984 individuals living in the United States who were born between 1980-1984. The dataset contains complete weekly employment history and positive and negative affect from years 2000 to 2010, and in 2015. By the last interview wave, the oldest person in the sample was 35 years old. As such, the analytical sample is restricted to ages 25-35. After attrition and accounting for missing data, there are 6,710 individuals in the analytical sample, on average observed for 2 survey waves (3 years), and maximum for 4 survey waves (7 years). The total sample size in terms of person-years is 13, 666. To make the analyses representative of the US population, all analyses are weighted using "custom weights" provided through the NLSY online software.[13]

A variable measuring employment status is constructed in a manner similar to the PSID. However, in the NLSY, the average duration of unemployment is shorter, as such I have only two categories of unemployment status: 1-3 months and over 4 months.
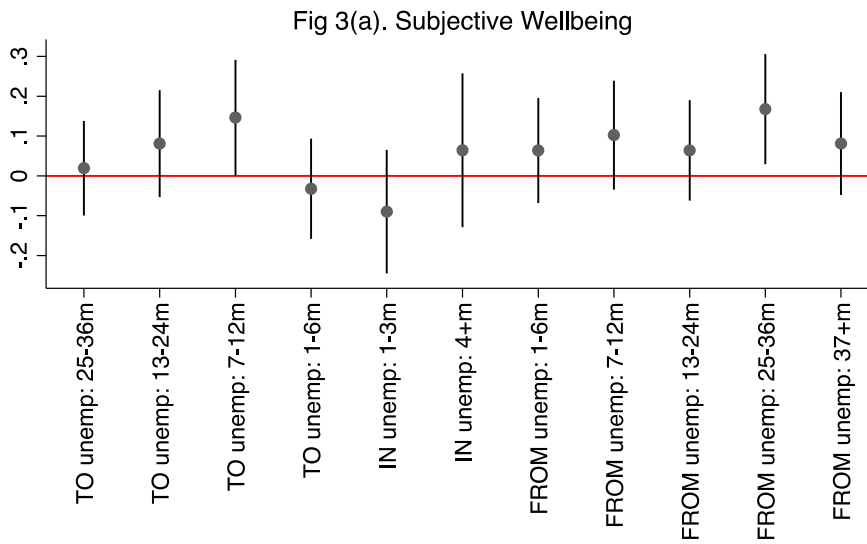
To measure subjective wellbeing, the NLSY97 collected information on Mental Health Inventory scores (MHI-5), a 5-item index used to assess depression and anxiety disorders (Berwick et al. 1991). Unlike the K-6, MHI is based on frequency of both positive and negative affect in the past month, including feeling blue, depressed, nervous, peaceful, and happy. Responses are recorded on a scale of 1 to 4, with 1 indicating "all of the time" and 4 indicating "none of the time". To make the findings comparable to analysis with PSID, I rescale the MHI-5

to 1-5, such that higher scores indicate greater wellbeing.

I ran distributed fixed effects regression with two outcome variables: subjective wellbeing (as measured by MHI) and happiness. These models are similar to the PSID models except that they do not control for financial hardship.[14] The coefficients of the estimated models are presented in figures 3a and 3b. Model output is shown in Appendix C.

The results support findings from the PSID data. Whether measured as a composite index (MHI-5), or simply as positive affect (happiness), subjective wellbeing only declines during unemployment but recovers after individuals find a job. Interestingly, unlike the PSID where longer durations of unemployment lowered wellbeing, NLSY data show that while wellbeing is lower during the first three months of unemployment, it rebounds to baseline after 4 months of joblessness, suggesting that individuals get habituated to unemployment. This discrepancy in the findings may be due to some underlying difference in how positive and negative affect is experienced or due to the underlying differences between the NLSY and PSID samples: namely, NLSY respondents are on average younger and are not necessarily household heads or spouses of heads. Nevertheless, what is important here is that these data also do not support the scarring hypothesis.

Fig 3. Predicted Effects of Employment Transitions on Subjective Wellbeing of Adults in NLSY97

Fig 3(a). Subjective Wellbeing

Source: NLSY97 2004-2015. Note: Subjective Wellbeing is measured as Mental Health
Invetory (MHI) Index, re-scaled to 1-5.
Reference category is 3+ years of pre-job loss employment.

Fig 3(b). Feeling Happy
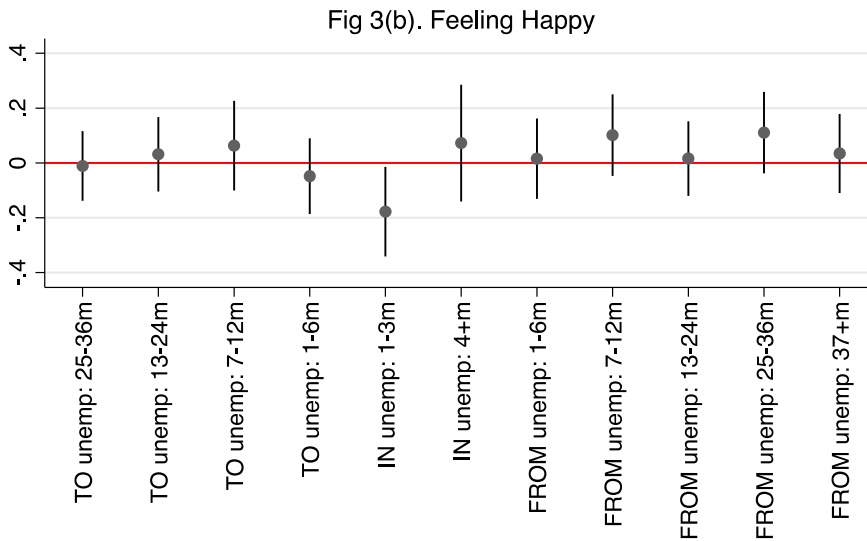
Source: NLSY97 2004-2015. Note: Happiness is measured on a scale of 1-4.
with 4 indicating greatest frequency of experiencing the feeling.
Reference category is 37 months or longer of pre-job loss employment.

Note: Subjective Wellbeing is measured as Mental Health Inventory (MHI) score, re-scaled to 1-5.
Happiness is measured on a scale of 1-4, with 4 indicating greatest frequency of affect.
Reference category is 3+ years pre-job loss employment. Source: NLSY97 2004-2015.

DISCUSSION

This paper has used new data and research design to reexamine the scarring hypothesis. Using two longitudinal datasets with several waves allowed employing a rigorous test for scarring. I find in both datasets that pre- and post-unemployment wellbeing is comparable. Thus, this paper discredits scarring in favor of the hedonic adaptation hypothesis.

Studies investigating effects of unemployment hope to guide policy discussions and influence how people in general think about this important social phenomenon. This paper also harbors such aspirations. Specifically, the broader questions that this paper speaks to are: One, how should we think about the fact that unemployment can be a negative experience in the short-run but barely leaves a trace on subjective wellbeing in the long run? And two, does it mean that unemployment is not as grave a social problem as we thought it was?

First, important caveats need to be restated. It may be recalled that these findings only apply to those who made a nearly uninterrupted transition from employment-unemployment-employment. Thus, this paper does not claim that unemployment never has any lasting effects on individuals, but only that a certain type of employment transition does not leave psychological scars. This means we have ignored important types of unemployment experiences, such as first time labor market entry, re-entry after illness or childbirth, and exiting the labor force after becoming a discouraged worker. The job search experiences of these workers are potentially more distressing than those of the individuals in this study.

Nevertheless, the findings offer a hopeful insight into psychological resilience in general. During unemployment, individuals in this study experienced substantial, if not extreme, levels of psychological distress. Yet, once the negative stimulus of unemployment was removed, the average individual recovered. Given the stigma faced by long-term unemployed in hiring

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processes (Eriksson and Rooth 2014) and the sense of shame that can accompany unemployment (Brand 2015), it is encouraging and important to know that individuals are not "permanently damaged" by the their negative experiences.

Finally, these findings also offer some policy-relevant advice. The broader question this raises for policymakers is this: if something does not alter *subjective* wellbeing, can it still be bad for *objective* wellbeing? And should public policy still aim to alleviate such ills? I think this study points to the limitations of a subjective wellbeing measure to adequately reflect quality of life and encourages us to envision a broader measure of wellbeing.

There are two ways in which I suggest we reconsider how we think about wellbeing. First, knowing that human beings are psychologically highly adaptive creatures, I think it is imperative to also fold into our discussions of wellbeing people's objective conditions of life. As economist Amartya Sen puts it, subjective measure are "just too malleable to be a firm guide to deprivation and disadvantage" (2001: 63). Instead, objective aspects of wellbeing, such as health, material deprivation, environmental risks, and exposure to vulnerabilities, should heavily factor into policy calculus. Second, we need to reconsider why we discount short-term experiences in favor of long-term outcomes. One way to think about the quality of life is as a sum of experiences over the life course. Even if they recover after reemployment, unemployed workers experience a loss of lifetime happiness/utility and accumulate memories of hardship and distress. These may be good enough reasons to support policies (such as more generous unemployment benefits and employment protection policies) that make unemployment a more tolerable and less frequent experience.

Appendix A: Hausman Test

[Note: Probability weights are not compatible with random effects models. For consistency, both models presented here are unweighted.]

Ho: Difference in coefficients is random.

The test statistic is greater than the critical value so we can reject Ho. A fixed effects model is more appropriate.

	(b) fixed	(B) random	(b−B) Difference	sqrt(diag(V_b−V_B)) S.E.
msince				
2	−.0884979	−.0590664	−.0294315	.0370277
3	−.0007972	.0087919	−.009589	.0340411
4	−.0859604	−.0623822	−.0235781	.0439151
5	−.0825297	−.0859463	.0034167	.0457776
6	−.1002416	−.1272633	.0270217	.0488469
7	−.1348595	−.1406112	.0057517	.0483321
8	−.1668808	−.186181	.0193003	.0510621
9	−.0950457	−.069459	−.0255867	.0547172
10	−.0922333	−.0351088	−.0571245	.0577708
11	−.0407474	−.0091181	−.0316293	.0624742
12	−.0642494	−.006478	−.0577713	.0706866
13	−.0011899	.0310738	−.0322637	.0765771
age	.0071523	.0035671	.0035852	.0007436
reemployed# c.age				
1	.0040779	.001117	.0029609	.006666
educ	−.0055317	.0248338	−.0303655	.005082
1.married	.0516949	.1060997	−.0544048	.0084234
1.kids	.0327764	.0373232	−.0045468	.0062912
1.foodstamps	−.0995395	−.2094746	.1099351	.0085981
1.recession	−.0044681	−.0075414	.0030733	.0022355

```
            b = consistent under Ho and Ha; obtained from xtreg
    B = inconsistent under Ha, efficient under Ho; obtained from xtreg

 Test:  Ho:  difference in coefficients not systematic

        chi2(19) = (b-B)'[(V_b-V_B)^(-1)](b-B)
               =      273.30
        Prob>chi2 =    0.0000
```

Appendix B. Model with Age Squared

VARIABLES	swb
msince = 2, TO unemp: 25-36m	0.009
	(0.079)
msince = 3, TO unemp: 13-24m	-0.016
	(0.069)
msince = 4, TO unemp: 7-12m	-0.052
	(0.077)
msince = 5, TO unemp: 1-6m	-0.073
	(0.090)
msince = 6, IN unemp: 1-3m	-0.148
	(0.087)
msince = 7, IN unemp: 4-6m	-0.141
	(0.086)
msince = 8, IN unemp: 7+m	-0.204*
	(0.104)
msince = 9, FROM unemp: 1-6m	-0.079
	(0.100)
msince = 10, FROM unemp: 7-12m	-0.119
	(0.092)
msince = 11, FROM unemp: 13-24m	-0.060
	(0.101)
msince = 12, FROM unemp: 25-36m	-0.046
	(0.112)
msince = 13, FROM unemp: 37+m	0.032
	(0.117)
Age	0.004
	(0.008)
1.reemployed#c.age	-0.010
	(0.025)
Age squared	0.000
	(0.000)
1.reemployed#c.age2	0.000
	(0.000)
educ	-0.009
	(0.009)
RECODE of marstat = 1, Married	0.045*
	(0.019)
Has kids in family unit = 1	0.041**
	(0.016)
foodstamps = 1, Used foodstamps this year	-0.111***
	(0.031)
recession = 1	-0.012
	(0.011)
Constant	4.321***
	(0.180)
Observations	29,714
Number of caseid	9,579
R-squared	0.009

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Appendix C. Validation with NLSY Data

VARIABLES	SWB	Happy
msince = 2, TO unemp: 25-36m	0.019	-0.011
	(0.061)	(0.065)
msince = 3, TO unemp: 13-24m	0.081	0.032
	(0.069)	(0.069)
msince = 4, TO unemp: 7-12m	0.146*	0.063
	(0.074)	(0.083)
msince = 5, TO unemp: 1-6m	-0.032	-0.048
	(0.064)	(0.070)
msince = 6, IN unemp: 1-3m	-0.090	-0.178*
	(0.079)	(0.083)
msince = 7, IN unemp: 4+m	0.064	0.073
	(0.099)	(0.109)
msince = 9, FROM unemp: 1-6m	0.064	0.015
	(0.067)	(0.075)
msince = 10, FROM unemp: 7-12m	0.102	0.101
	(0.070)	(0.076)
msince = 11, FROM unemp: 13-24m	0.064	0.016
	(0.064)	(0.069)
msince = 12, FROM unemp: 25-36m	0.168*	0.111
	(0.070)	(0.076)
msince = 13, FROM unemp: 37+m	0.081	0.034
	(0.066)	(0.074)
age at time of interview	0.005*	0.002
	(0.002)	(0.003)
years of education	0.003	-0.004
	(0.009)	(0.010)
RECODE of partnership (partnership status) = 1, married	0.011	0.006
	(0.020)	(0.022)
RECODE of partnership (partnership status) = 2, marriage ended	-0.056	-0.029
	(0.041)	(0.043)
RECODE of ch_bio_hh = 1	-0.007	-0.008
	(0.019)	(0.022)
recession = 1	-0.059***	-0.025*
	(0.010)	(0.012)
Constant	3.738***	2.803***
	(0.117)	(0.140)
Observations	13,666	13,666
R-squared	0.017	0.004
Number of caseid	6,710	6,710

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

REFERENCES

Allison, Paul. 2009. *Fixed Effects Regression Models*. Thousand Oaks, CA.: Sage Publications Inc.

Arulampalam, Wiji. 2001. "Is Unemployment Really Scarring ? Effects of Unemployment Experiences on Wages." *The Economic Journal* 111(475).

Beaulé, April, Mary Dascola, and Youhong Liu. 2009. "Development and Programming of an Employment Event History Calendar in the Panel Study of Income Dynamics." Proceedings of the *12th International BLAISE Users Conference*. Riga, June 2009.

Berwick, D., Murphy, J., Goldman, P., Ware, J., Barsky, A., Weinstein, M., 1991. Performance of a five-item mental health screening test. Med. Care 29, 169e176.

Blanchflower, David G. and Andrew J. Oswald. 2008. "Is Well-Being U-Shaped over the Life Cycle?" *Social Science and Medicine* 66(8):1733–49.

Brand, Jennie E. and Sarah A. Burgard. 2008. "Job Displacement and Social Participation over the Lifecourse: Findings for a Cohort of Joiners." *Social Forces* 87(1):211–42.

Brand, Jennie E. 2015. "The Far-Reaching Impact of Job Loss and Unemployment." *Annual Review of Sociology* 41(1):359–75.

Böckerman, Peter and Pekka Ilmakunnas. 2006. "Elusive Effects of Unemployment on Happiness." *Social Indicators Research* 79(1):159–69.

Bruderl, Josef and Volker Ludwig. 2018. "Fixed-Effects Panel Regression." Pp. 327–58 in *The Sage Handbook of Regression Analysis and Causal Inference*. London: SAGE Publications.

Burgard, Sarah, Jennie Brand, and James House. 2007. "Toward a Better Estimation of the Effect of Job Loss on Health." *Journal of Health and Social Behavior* 48(4):369–84.

Burke, P. J. and J. E. Stets. 2009. *Identity Theory*. New York: Oxford University Press.

Charles, Kerwin Kofi and Melvin Stephens, Jr. 2004. "Job Displacement, Disability, and Divorce." *Journal of Labor Economics* 22(2):489–522.

Clark, Andrew E., Yannis Georgellis, and Peter Sanfey. 2001. "Scarring : The Psychological Impact of Past Unemployment." *Economica* 68(270):221–41.

Clark, Andrew E. 2006. "A Note on Happiness and Unemployment Duration." *Applied Economics Quarterly* 52(2406):291–308.

Danziger, Sheldon. 2013. "Evaluating the Effects of the Great Recession." *Annals of the American Academy of Political and Social Science* 650(1):47–76.

Dougherty, Christopher. 2006. "The Marriage Earnings Premium as a Distributed Fixed Effect." *Journal of Human Resources* 41(2):433–43.

Diener, Ed, Shigehiro Oishi, and Richard E. Lucas. 2003. "Personality, Culture, and Subjective Well-Being: Emotional and Cognitive Evaluations of Life." *Annual Review of Psychology* 54:403–25.

Dooley, D., J. Prause, and KA Ham-Rowbottom. 2000. "Underemployment and Depression: Longitudinal Relationships." *Journal of Health and Social Behavior* 41(4):421–36.

Eriksson, Stefan and Dan-Olof Rooth. 2014. "Do Employers Use Unemployment as a Sorting Criterion When Hiring? Evidence from a Field Experiment." *American Economic Review* 104(3):1014–39.

Frijters, Paul and Tony Beatton. 2012. "The Mystery of the U-Shaped Relationship between Happiness and Age." *Journal of Economic Behavior and Organization* 82(2–3):525–42.

Galambos, Nancy L., Shichen Fang, Harvey J. Krahn, Matthew D. Johnson, and Margie E. Lachman. 2015. "Up, Not down: The Age Curve in Happiness from Early Adulthood to Midlife in Two Longitudinal Studies." *Developmental Psychology* 51(11):1664–71.

Gangl, Markus. 2006. "Scar Effects of Unemployment : An Assessment of Institutional Complementarities." *American Sociological Review* 71:986–1013.

Halvorsen, Knut. 1998. "Impact of Re-Employment on Psychological Distress among Long-Term Unemployed." *Acta Sociologica* 41(3):227–42.

Heflin, Colleen M. and John Iceland. 2009. "Poverty, Material Hardship, and Depression." *Social Science Quarterly* 90(5):1051–71.

Kahneman, Daniel and Alan B. Krueger. 2006. "Developments in the Measurement of Subjective Well-Being." *Journal of Economic Perspectives* 20(1):3–24.

Kessler, Ronald C., J.Blake Turner, and James House. 1989. "Unemployment , Reemployment , and Emotional Functioning in a Community Sample." *American Sociological Review* 54(4):648–57.

Kessler, Ronald et al. 2002. "Short Screening Scales to Monitor Population Prevalences and Trends in Non-Specific Psychological Distress." *Psychological Medicine* 32:959–76.

Johnson, Monica Kirkpatrick, Rayna Amber Sage, and Jeylan T. Mortimer. 2012. "Work Values, Early Career Difficulties, and the U.S. Economic Recession." *Social Psychology Quarterly* 75(3):242–67.

Knabe, Andreas and Steffen Ratzel. 2011. "Scarring or Scaring ? The Psychological Impact of Past Unemployment and Future Unemployment Risk." *Economica* 78:283–93.

Krueger, By Alan B. and Andreas I. Mueller. 2012. "Time Use , Emotional Well-Being , and Unemployment : Evidence from Longitudinal Data." *American Economic Review* 102(3).

Lucas, Richard E., Andrew E. Clark, Yannis Georgellis, and Ed Diener. 2004. "Unemployment Alters the Set Point for Life Satisfaction." *Psychological Science* 15(1):8–13.

Lyubomirsky, Sonja. 2011. "Hedonic Adaptation to Positive and Negative Experiences." Pp. 200–224 in *The Oxford Handbook of Stress, Health, and Coping*, edited by S. Folkman. Oxford University Press.

Milner, A., M. J. Spittal, A. Page, and A. D. PageLaMontagne. 2014. "The Effect of Leaving Employment on Mental Health: Testing 'Adaptation' versus 'Sensitisation' in a Cohort of Working-Age Australians." *Occupational and Environmental Medicine* 71(3):167–74.

Myrskylä, Mikko and Rachel Margolis. 2014. "Happiness : Before and After the Kids." *Demography* 51(5):1843–66.

Nordenmark, Mikael and Mattias Strandh. 1999. "Towards a Sociological Understanding of Mental Well-Being among the Unemployed: The Role of Economic and Psychosocial Factors." *Sociology* 33(3):577–97.

Okbay, Aysu et al. 2016. "Genetic Variants Associated with Subjective Well-Being, Depressive Symptoms, and Neuroticism Identified through Genome-Wide Analyses." *Nature Genetics* 48(6):624–33.

Oswald, Andrew J. and Nattavudh Powdthavee. 2008. "Does Happiness Adapt? A Longitudinal Study of Disability with Implications for Economists and Judges." *Journal of Public Economics* 92(5–6):1061–77.

Ryan, Richard M. and Edward L. Deci. 2001. "On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being." *Annual Review of Psychology* 52:141–66.

Steptoe, Andrew, Angus Deaton, and Arthur A. Stone. 2015. "Subjective Wellbeing, Health, and Ageing." *The Lancet* 385(9968):640–48.

Stutzer, Alois and Bruno S. Frey. 2010. "Recent Advances in the Economics of Individual Subjective Well-Being." *Social Research* 77(2):679–714.

Tausig, Mark and Rudy Fenwick. 1999. "Recession and Well-Being." *Journal of Health and Social Behavior* 40(1):1–16.

Young, Cristobal. 2012. "Losing a Job: The Nonpecuniary Cost of Unemployment in the United States." *Social Forces* 91(2):609–33.

NOTES

[1] In economics, welfare typically means the total sum of utilities (Varian 2010).

[2] I have included all three statuses here for completeness. In practice we would exclude one of the employment status dummies because of collinearity.

[3] This relationship also exists in my analytical dataset.

[4] Whether the relationship between age and wellbeing is linear remains controversial. While some studies document a U-shaped relationship between age and wellbeing, with wellbeing being lowest around ages 40-50 (e.g. Blanchflower and Oswald 2008; Steptoe, Deaton and Stone 2015), this relationship disappears when fixed effects are used (Frijters and Beatton 2012).

[5] A Latinx sample was added in 1990 but subsequently dropped in 1995.

[6] Note: wellbeing data were not collected in the 2005 wave; however, I include data from the 2005 survey wave for constructing monthly employment histories.

[7] The PSID defines a spouse as a married partner or a cohabiting romantic partner who has lived in the family unit for at least one year.

[8] Thus, if an individual was (un)employed at the time of an interview conducted in March 2015, they are considered (un)employed in January and February 2015. In the analytical sample, there are total 1,226 interpolated person-year observations, 543 of these are from interviews conducted in March 2015 while 683 are from April 2015 interviews.

[9] 403 observations were excluded because they have a family weight of 0. PSID assigns zero weight to families that are indirectly related to the original PSID sample (e.g. former spouse of a descendent of an original PSID member).

[10] The maximum ranges of pre-job loss employment, unemployment, and post-job loss employment are 13.33, 2.50, and 7.25 years, respectively. However, the sample sizes significantly taper off as they approach the end of the range.

[11] I also estimated the model with a quadratic age term, presented in Appendix B. However, age has a linear relationship with wellbeing in these data.

[12] It is important to note that food stamp usage likely only reflects financial distress among lower-income households but not among higher income households. Ideally, a measure of financial distress would capture distress at both ends of the income spectrum. However, this is the only measure that is consistently available for all survey waves in included in the analysis.

[13] I have used the weights appropriate for analysis of data in "any or all" survey rounds.

[14] In the NLSY97, there is a large amount of missing data on poverty, which is why I have not used it as a control. In future analysis, I plan to incorporate data on welfare receipts.