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Partnership, Gender, and the Well-Being Cost of Unemployment

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Abstract We examine the relationship between unemployment, life satisfaction and affective well-being depending on family status and, within couples, on the employment status of one's partner. Our data, that we collected using the Day Reconstruction Method, show that unemployment is negatively related to life satisfaction, but not to affective well-being. Living in a partnership strengthens the loss in life satisfaction of men, but weakens that of women. Unemployment of a person's partner is associated with a smaller loss in life satisfaction for unemployed men, but with a larger loss for women. We argue that these findings reflect to a large extent changes in cognitive well-being, which is closely related to identity utility. The unemployed's feeling of identity appears to be affected by traditional gender roles.

Keywords Unemployment · Life satisfaction · Cognitive well-being · Affective well-being · Day reconstruction method · Identity · Partnership · Gender

JEL Classification I31 · J60 · J22

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1 Introduction

Unemployed people report a lower subjective well-being than employed people. Only part of the well-being loss from unemployment can be attributed to the income loss that goes along with losing one's job. Jahoda (1981, 1982) refers to the positive aspects of employment that go beyond its "manifest consequence" of earning an income as employment's "latent consequences". She argues that these latent consequences comprise different channels through which employment is psychologically beneficial, and explicitly mentions five of them: employment (1) gives a time structure to the day, (2) allows people to get in contact with others outside the family, (3) forces people to be active, (4) links people with broader goals, and (5) defines personal status and identity.

Numerous empirical studies have confirmed the importance of "non-pecuniary costs" of unemployment (for a review, see Weimann et al. 2015). Compared to the pecuniary costs for the affected individuals, the non-pecuniary costs are substantial. For Germany, Winkelmann and Winkelmann (1998) estimate that the non-pecuniary costs exceed the pecuniary costs by a factor of seven. Using a more cautious method, Knabe and Rätzel (2011a, b) find that the non-pecuniary costs are about twice as large as the pecuniary costs. Blanchflower and Oswald (2004) find non-pecuniary costs of unemployment that by far exceed the pecuniary loss also for the United States and for Great Britain. Despite this evidence, it still remains unresolved to what extent the loss of each of the five above-mentioned factors is responsible for these non-pecuniary costs. Therefore, it is important to learn more about the quantitative importance of these different latent benefits as it could explain the different coping strategies the unemployed are using to make up for each of the lost latent benefits of work, and show how successful these attempts are. A better understanding of why people suffer from unemployment beyond the income loss could have important consequences for the design of social policy. If the unemployed suffered mainly because they were missing the first three latent benefits (time structure, social contacts, forced activity), public employment programs outside the regular labor market could provide these benefits. If it were the latter two latent benefits (purpose, status and identity), the loss of which caused the decline in well-being, however, the policy implications would be quite different. As long as social norms cannot be directly controlled by policymakers, the only way to overcome unemployment's negative psychological effects is to restore norm conformity of the affected persons by bringing them back into the regular labor market.

In this paper, we reexamine the non-pecuniary costs of unemployment by proposing a decomposition strategy that helps to shed light on the question of which of the latent benefits of work matter most. To be clear, our data do not allow a direct investigation of these effects. However, we can approach this problem indirectly by looking at two different subdimensions of subjective well-being—affective well-being and cognitive well-being.[1] The affective component captures people's emotional states, i.e. their positive and negative feelings, in everyday life. It refers to the pleasantness of people's emotional lives and can be represented by the summation of the strength of positive and negative feelings people actually experience over time (Kahneman 1999). Cognitive well-being is a more reflective judgment of how close one's own life circumstances come to a hypothetical ideal life. People have to create a reference framework for what constitutes the best and the worst possible life and then compare their own life circumstances with these extremes. To

[1] For a discussion of the subdimensions of well-being, see Campbell (1976), Diener (1984), and Schimmack et al. (2008).

do so, people take into account how other people are living and how their own life was at other points in time (Dolan and Kahneman 2008). They also consider their purpose and meaning in life, which transcends the day-to-day experiences relevant for affective well-being (Loewenstein 2009). Beside personal conceptions of life goals, this is also influenced by the ethical values and normative judgments of the society the person lives in. We argue that the latent benefits forced activity, social contacts, and a structured course of the day directly affect people's day-to-day experiences and should thus relate to their affective well-being. Issues of social status and identity are of a more abstract, evaluative nature and should thus be reflected in people's cognitive well-being. Hence, separately analyzing how unemployment affects the cognitive and affective components of well-being contributes to our understanding of which latent benefits of employment matter most.

To analyze cognitive and affective components of well-being separately, we follow the observation "that measures of subjective well-being can be ordered along a dimension varying from evaluative judgments of life at one end to experienced affect at the other" (Diener et al. 2009, p. 239) and make use of the different weights cognitive judgments and affective experiences receive in two distinct measures of subjective well-being. The two measures of subjective well-being are derived from a Day Reconstruction Survey that we conducted with more than 700 respondents in Germany. The Day Reconstruction Method (DRM) combines features of time-budget measurement and experience sampling (Kahneman et al. 2004a, b). Respondents are asked to construct a diary of the previous day consisting of all activities the person engaged in during that day. Respondents also report the feelings and emotions they experienced during each activity. The aggregation of reported emotions allows us to derive a measure that is closest to the affective component of well-being. In addition, respondents in our survey are asked the standard question of how satisfied they are with their life. Life satisfaction is a compound measure reflecting both cognitive and emotional aspects of well-being (Kahneman and Deaton 2010, p. 4), but is much more heavily weighted with cognitive judgments (see Diener et al. 2009, p. 234). By combining the available information on the two well-being measures, we can isolate the impact of unemployment on life satisfaction that does not run via its effect on affective well-being. We argue that the residual impact of unemployment on life satisfaction when controlling for the level of affective well-being is indicative of a cognitive well-being effect of unemployment.

In a previous paper (Knabe et al. 2010), we used the same dataset to examine the differences in life satisfaction and affective well-being between employed and unemployed persons. The study found that unemployment affects life satisfaction negatively, but has no impact on affective well-being. In this paper, we use the proposed decomposition technique to explicitly extract the cognitive impact of unemployment from these two measures. We confirm previous results that unemployment exerts its negative effect on subjective well-being through its cognitive component. Following our above-mentioned interpretation, this suggests that the well-being loss from unemployment is mainly caused by deviating from the social norm which entails a loss in identity and social status.

Our data also allow us to investigate how strongly the effect of own unemployment on cognitive well-being depends on family status and the employment status of one's partner. Being single or living in a partnership may affect how important employment is for an individual's social status. If traditional gender or marital roles (see e.g. Ross et al. 1983) still matter, then having a family might raise the societal expectation to have a job for men (who are assumed to be the "breadwinner" of the family), whereas it might reduce this expectation for women (who can revert to the traditional role of the "housewife"). Similarly, the employment status of a partner may affect the degree to which one suffers from

deviating from the social work norm. A priori, the effect can go in either direction. One possibility is that being unemployed hurts one's well-being more if one's partner is also unemployed because one cannot shift the responsibility to be the breadwinner onto one's partner. The reverse effect is also conceivable: the partner's unemployment may alleviate the well-being loss from own unemployment if it means that the strength of the social work norm within the family is reduced.

The effect of unemployment on the well-being of couples has received some attention in the literature. Winkelmann and Winkelmann (1995) find that German women suffer strongly when their partner becomes unemployed, while no such effect can be found for men in Germany. Carroll (2007) finds for Australia that men lose life satisfaction when their partner becomes unemployed, while there does not seem to be such an effect for women. Focusing on mental health instead of life satisfaction, Marcus (2013) shows that both partners experience lower mental health when one partner becomes unemployed. Taking the other partner's employment status into account, Clark (2003) finds that, in Britain, both employed and unemployed women suffer from lower mental well-being when their husbands become unemployed, while men seem to suffer from their wives' unemployment only when they are employed themselves. When they are unemployed, their wives' unemployment appears to alleviate the well-being loss from unemployment. Luhmann et al. (2014), using German SOEP data, find that both men and women suffer from their partner's unemployment only if they are employed, but not if they are unemployed themselves.

Which factors are responsible for the interactions between the two partners' employment statuses found by Clark (2003), Luhmann et al. (2014)? One could imagine that unemployment becomes easier to bear if the partner is unemployed as well because this might make it easier to structure the day and to have contacts with other people. It might also prevent the boredom of having to spend a large part of the day alone. If these are the reasons for the observed effects, they should show up in affective well-being. If, however, the main reason for the observed effect is that one's partner constitutes an immediate reference group, so that if he or she is unemployed, one's own unemployment feels less deviant from the social norm (as argued by Clark 2003), then this should show up in the cognitive part of subjective well-being. In this study, we will use our data and our decomposition technique to analyze how the effects of unemployment on cognitive and affective well-being differ between men and women depending on their partnership status and their partner's employment status. We find that men's cognitive well-being suffers more from unemployment if they live in a partnership, and in particular if their partner is employed. Women's cognitive well-being, on the other hand, seems to suffer less from unemployment if they live in a partnership, but their partner's unemployment hurts them too. We will argue that these results are compatible with the hypothesis that the well-being costs of unemployment mainly result from deviations from social norm and are thus influenced by traditional gender roles.

We will proceed as follows. We describe the survey design in Sect. 2 and then present descriptive statistics and first results in Sect. 3. In Sect. 4, we present regression analyses and empirically illustrate how the data on affective well-being can be used to identify the non-affective impact of unemployment on well-being. We present regression analyses, discuss the different possible explanations for our empirical findings and provide a social-identity interpretation of the gender-specific effects on cognitive well-being that differ in size depending on both family status and the partner's employment status. Section 5 dicusses limitations. The last section summarizes the main findings and concludes.

2 Survey Design, Data, and Measurement

Between March and July 2008, we interviewed a total of 1054 randomly selected persons in Germany (in the cities of Berlin and Magdeburg), of whom 737 respondents were either employed full-time or unemployed without being engaged in any type of workfare program. From these 737 persons, we had to drop 25 interviews due to lack of understanding and missing answers. The total number of usable interviews was 712, 365 of which were with full-time employees and 347 with unemployed persons.[2]

A comparison of the observable characteristics of respondents in our dataset with nationally representative data from the German Socio-Economic Panel (SOEP) shows that our sample corresponds well to the observations from the SOEP. Nevertheless, there are some differences. For the subgroup of the employed, we do find that our sample underrepresents men and overrepresents people with college or university degrees. For the unemployed, our sample contains a larger share of men, singles, people with higher education and longer unemployment durations than the SOEP. As in Knabe et al. (2010), we calculated survey weights based on sex, age, vocational training, family status, unemployment duration, and day of the week, using data from the SOEP. In all the following analyses, we will make use of the weighted data.[3]

To measure the emotional experience at any moment, one ideally needs a measure that does not suffer from distortions arising from measurements of subjective well-being that are reported retrospectively. The gold standard here is the Experience Sampling Method (ESM). The Panel on Measuring Subjective Well-Being in a Policy-Relevant Framework, which was initiated by the National Research Council to assess the current state of research on experienced well-being, considers the Day Reconstruction Method (DRM), developed by Kahneman et al. (2004a, b), to be a promising alternative method for assessing affective experiences (National Research Council 2013). We applied the DRM to assess the emotional well-being of survey respondents. Emotional well-being refers to the pleasantness of people's emotional lives and can be represented by the summation of the strength of positive and negative feelings people actually experience over time (Kahneman 1999). The central point is the measurement of affective experiences of the participants during the previous day. Using a standardized survey questionnaire, the respondents were asked to list all activities they were engaged in during the course of that day, beginning with the first one after waking up and concluding with the last one before going to bed, and to note the start and end time of each activity. After finishing this part of the questionnaire, respondents had to describe each activity by answering questions concerning what exactly they did during that activity, with whom they interacted, and how they felt during each activity listed in their diary. We specifically asked respondents to assess how strongly they experienced various affect dimensions on a scale from 0 ("not at all") to 10 ("very much"). Positive affects were measured using the attributes "relaxed", "happy", "comfortable/at ease", and "enjoying myself". Negative affects comprised "lethargic/dull", "insecure/anxious", "stressed", and "frustrated/annoyed".

To compare affective experiences between different individuals, we calculated the net affect A, a common measure of mood and emotions in the psychology literature (Bradburn 1969). The net affect is constructed in two steps. First, one derives a single index of

[2] A more detailed description of the survey design can be found in Knabe et al. (2010).

[3] We compared our findings when using weighted and unweighted data. Even though the statistical significance of some of the results differs depending on the use of weights, our qualitative findings remain unaffected.

affective experiences for each activity, defined as the difference between the average score the respondent gives to all positive attributes and the average score of all negative attributes. Then the index, weighted with the duration of the activity, is summed up over all activities during the day. This time-weighted affective experience of an individual over the course of the entire day yields the net affect A.[4]

We also asked people about their subjective assessment of their life satisfaction LS_i. Respondents were asked to answer the question "How satisfied are you with your life as a whole?" on a scale from 0 ("not at all") to 10 ("very much"). Life satisfaction is a (one-dimensional) construct in which respondents have already weighted and aggregated cognitive and affective aspects of their individual well-being. To conduct a cognitive, judgmental assessment of what constitutes a satisfied life, people have to create a reference framework for what constitutes the best and the worst possible life and then compare their own life circumstances with these extremes. To do so, people take into account how other people are living and how their own life was or will be at other points in time (Dolan and Kahneman 2008). They also consider their purpose and meaning in life, which transcends the day-to-day experiences relevant for affective well-being (Loewenstein 2009). Furthermore, expectations concerning future prospects will enter into one's evaluation of life satisfaction (Knabe and Rätzel 2011b). Finally, the contemporaneous affective experiences may have a substantial impact on how people answer the life satisfaction question (Diener et al. 2009). Instead of asking respondents about their life satisfaction at the beginning of the interview, respondents were asked this question after they completed the diary part and reported their affective evaluations to avoid that drawing attention to these evaluative issues would influence the responses to questions about their affective well-being.

In the final part of the questionnaire, respondents answered questions about themselves and their life circumstances. In this study we make use of information on the respondents' subjective assessment of health status (on a scale from 0 to 10), highest level of vocational education, monthly gross and net labor income, monthly net household income, own employment status, employment status of the partner/spouse, weekly working hours (where applicable), marital status/living in a permanent relationship, and number of children living in the household.

3 Descriptive Statistics and First Results

Descriptive statistics of our sample show that the subsamples of single and partnered respondents (also separated by their partner's employment status) are quite similar with respect to average personal characteristics. The strongest differences arise with respect to average household income and the average level of education. On average, employed people enjoy a substantially higher net household income (absolute and equivalized) and have obtained higher levels of education than unemployed people in our sample. For a detailed comparison, see Table 3 in the "Appendix".

Knabe et al. (2010), using the same data set, find that employed persons report higher satisfaction with their life (7.074) than the unemployed (4.385). By contrast, the difference in the net affects is quantitatively negligible and not statistically significant.[5] They conjectured that people who become unemployed are hardly able to adapt to the new situation

[4] For a discussion of the net affect and alternative measures of affective experiences see e.g. the contributions in the volume edited by Krueger (2009).

[5] The correlation coefficient between life satisfaction and net affect at the individual level is 0.36.

because unemployment does not cause people to adjust their aspirations. The unemployed continue to consider "being in employment" as a desirable and meaningful part of their life as suggested by the last two latent consequences of Jahoda (1981). Consequently, they report low levels of life satisfaction. Nevertheless, unemployed people face hedonic adaptation in so far as they become used to changing life circumstances in their day-to-day experiences, i.e. one observes adaptation to having to give up the first three latent benefits from employment mentioned above. Even though the unemployed report lower emotional well-being levels during many leisure activities, the employed experience the worst emotions during the time they spend at work. The unemployed can make up for the lower emotional well-being in leisure activities by spending the time the employed have to work on leisure activities that are relatively more emotionally beneficial. Hence, the driving force for hedonic adaptation to unemployment is the opportunity to use the time in a way that yields higher levels of satisfaction than working and work-related activities.

In this paper, we disentangle these aggregate effects by looking at men and women separately and distinguishing each group with respect to its partnership status. In this case, a more differentiated picture emerges.

Table 1 presents the average net affect and life satisfaction scores of singles and partnered persons (columns 1, 2, 5, and 6). We find substantial gender differences. For men, partnership is associated with significantly higher life satisfaction for employed men ($\Delta = 7.058 - 6.324 = .734$, $p = .043$), but significantly lower life satisfaction for unemployed men ($\Delta = -1.263$, $p = .003$). We do not find significant differences between the net affect of partnered and single men, neither when they are employed ($\Delta = -.336$, $p = .486$) nor when they are unemployed ($\Delta = .068$, $p = .870$). The life satisfaction of unemployed partnered men is much lower than that of employed partnered men ($\Delta = 3.678 - 7.058 = -3.380$, $p < .001$), while, by contrast, the net affect is significantly higher for the unemployed than for employed partnered men ($\Delta = .577$, $p = .083$).[6] For single men, the well-being differences between the employed and the unemployed are much smaller for both measures. The life satisfaction difference is also negative and statistically significant ($\Delta = -1.383$, $p = .001$), while we cannot reject the hypothesis that the net affect difference between employed and unemployed single men is zero ($\Delta = .153$, $p = .780$). It turns out that the well-being ranking of the different employment and partnership statuses for men is exactly reversed between the two dimensions of subjective well-being. The highest life satisfaction is observed for employed men with partners (7.058), while partnered unemployed men report the lowest life satisfaction (3.678). The ranking is turned on its head when we look at the average net affect scores. The group with the strongest positive and least negative emotions is that of unemployed men living in a partnership (4.623), while employed men living in a partnership report the lowest net affect (4.066).

We do not find such a complete well-being reversal for women. First, we only find small and statistically insignificant differences between the life satisfaction and net affect of partnered and single women. Contrary to men, however, the life satisfaction difference between single and partnered women who are unemployed is positive and statistically significant ($\Delta = .829$, $p = .031$). Second, while the life satisfaction is substantially lower for unemployed than for employed women, both for singles ($\Delta = -3.041$, $p < 0.001$) and for those with a partner ($\Delta = -2.457$, $p < 0.001$), the net affect differences have the opposite sign of those found for men and are in both cases statistically insignificant ($\Delta = -.642$, $p = .133$, for singles and $\Delta = -.354$, $p = .383$, for partnered women). These

[6] Throughout this section, Wald tests are used to examine statistical significance.

Table 1 Life satisfaction and net affect by employment group, sex, partnership status, and employment status of the partner

	Employed				Unemployed			
	Single (1)	Partnered (all) (2)	Partner employed (3)	Partner unemployed (4)	Single (5)	Partnered (all) (6)	Partner employed (7)	Partner unemployed (8)
Men								
Net affect	4.402 (0.452)	4.066 (0.481)	4.063 (0.191)	3.204 (0.790)	4.555 (0.310)	4.623 (0.276)	6.543 (0.403)	3.660 (0.383)
Life satisfaction	6.324 (0.332)	7.058 (0.360)	7.167 (0.163)	5.948 (0.462)	4.941 (0.272)	3.678 (0.313)	3.518 (0.569)	3.413 (0.493)
Women								
Net affect	5.258 (0.356)	4.858 (0.432)	4.766 (0.263)	5.105 (0.897)	4.616 (0.233)	4.504 (0.324)	5.346 (0.481)	3.499 (0.599)
Life satisfaction	7.132 (0.247)	7.377 (0.289)	7.351 (0.175)	7.422 (0.356)	4.091 (0.245)	4.920 (0.292)	5.738 (0.341)	3.313 (0.445)

Standard errors in parentheses. Note that the "partnered (all)" group comprises more persons than the sum of "partner employed" and "partner unemployed" because partners might also be out of the labour force

gender-specific differences in the relation between unemployment and partnership with life satisfaction and affective well-being highlight the multi-dimensionality of subjective well-being.

In Table 1, Columns 3, 4, 7, and 8, we focus on partnered persons and further disentangle the interactions between unemployment, partnership, and the two subjective well-being measures by also looking at the employment status of the partners. The life satisfaction of employed men is lower when their partner is unemployed than when she is employed ($\Delta = -1.219$, $p = .014$). For unemployed men, by contrast, the relation between the employment status of their partner and their own life satisfaction is much smaller and statistically insignificant ($\Delta = -0.105$, $p = .890$). Taken together, these two results imply that the relation between own unemployment and life satisfaction is less negative for men if their partner is also unemployed, although the difference-in-differences is not statistically significant (Δ in $\Delta = 1.114$, $p = .216$).

Again, we find substantial gender-specific differences as we observe the reverse results for women. The employment status of their partner does not seem to play a substantial role for employed women ($\Delta = 0.071$, $p = .858$), but unemployed women report a significantly lower life satisfaction when their partner is also unemployed ($\Delta = -2.425$, $p < .001$). This implies that the partner's unemployment reduces a woman's life satisfaction significantly more when she is unemployed than when she is employed (Δ in $\Delta = -2.496$, $p < .001$).

By analyzing the differences in affective well-being separately for men and women, we also obtain some striking results. Both unemployed men and women whose partners are working enjoy their daily routines significantly more than those whose partners are unemployed. Apparently, hedonic adaptation to unemployment is impeded when both partners are unemployed. A potential explanation is that the opportunities to use their time in a way that yields higher levels of satisfaction than working might be restricted when both partners stay together for the whole day. In fact, unemployed men and women with employed partners exhibit the highest net affect of all four groups (6.543 and 5.346, respectively). Only for women we find that this translates into a higher life satisfaction score. Again, the use of two distinct measures of well-being allows us to detect substantial gender-specific differences in how the employment status of the partner relates to well-being. We will postpone the discussion of possible explanations to the next section.

4 Disentangling Cognitive and Affective Components of Subjective Well-Being

In the last section, we reported substantially different patterns for men and women concerning the relationship between partnership and the partner's employment status and the two well-being measures of life satisfaction and net affect. In this section, we will show how we can relate this to the concepts of cognitive and affective well-being. In doing so, we hope to learn more about the potential channels through which unemployment affects well-being.

4.1 Method

Life satisfaction is a compound measure in which respondents have already aggregated cognitive and affective aspects of their individual well-being. Reported life satisfaction *LS*

can thus be represented by a life satisfaction function that depends on a person's contemporaneous affective experiences A, for which we can use our measure of the net affect, and the cognitive assessment of her life C, for which no direct measure is at hand (see Sect. 2). The empirical challenge is to distinguish between the impact of employment on life satisfaction that occurs via cognitive well-being and that one that works via affective well-being, keeping in mind that both components of subjective well-being (C and A) depend to different degrees on a set of contemporaneous factors (such as income, health, family status, age, or the number of children). The well-being differences observed in our comparison of group means in Sect. 3 might in part be influenced by group differences in these other factors. Identifying the relation between employment status and subjective well-being thus requires taking the differences in other influential factors into account.

To deal with these issues, we regress life satisfaction on personal economic and socio-demographic characteristics, *while controlling for individual differences in affective experiences* A_i. Controlling for affective well-being captures all influences on LS via A, so that finding a significant residual relationship between a person's employment status and life satisfaction would be suggestive of a change in cognitive well-being.[7] The corresponding regression equation is

$$LS_i = \omega_A A_i + \beta_1 UE_i^{own} + \beta_2 Partner_i + \beta_3 UE_i^{own} * Partner_i + \alpha + \gamma' \mathbf{X}_i + \varepsilon_i. \quad (1)$$

UE^{own} is a dummy variable indicating that the person is unemployed (or employed otherwise), $Partner_i$ is a dummy variable for living in a partnership, α is a constant, $\mathbf{X}_i$ is a vector of control variables, and ε_i is an error term. Equation (1) applies to the full sample in which we can analyze differences between single and partnered persons. For the subsample of partnered persons, with which we can analyze well-being differences according to the partner's employment status, the regression equation is

$$\begin{aligned} LS_i = {} & \omega_A A_i + \beta_1 UE^{own} + \beta_2 UE^{partner} + \beta_3 OLF^{partner} \\ & + \beta_4 UE^{own} * UE^{partner} + \beta_5 UE^{own} * OLF^{partner} + \alpha + \gamma' \mathbf{X}_i + \varepsilon_i, \end{aligned} \quad (2)$$

where, in addition to the above notation, UE^j and OLF^j are dummy variables indicating that the person itself ($j = own$) or the person's partner ($j = partner$) is unemployed (UE) or inactive (out of the labor force—OLF). In Eqs. (1) and (2), the relationship between LS and A is assumed to be linear. In the following analyses, we relax this assumption and also conduct estimations with more flexible transformations of A.

4.2 Regression Results

Table 2 presents the estimation results when estimating regression Eqs. (1) and (2). There is a strong positive relationship between the net affect and life satisfaction. Any relationships between employment statuses and life satisfaction that remain after controlling for differences in emotional well-being are suggestive of changes in cognitive well-being.

Own unemployment is strongly negatively related to the cognitive well-being of men and women, independently of their family status and their partner's employment situation (the estimated coefficients are highly significant except for the case of single men). We also find strong evidence that having a partner is associated with higher cognitive well-being for employed men, whereas this relation is reversed for unemployed men. For employed and unemployed women, the estimated relationships between partnership and

[7] This identification strategy faces a number of caveats, which we will discuss in Sect. 5.

Table 2 Regression results (controlling for differences in emotional well-being)

	Life satisfaction			
	Men	Women	Partnered men	Partnered women
Unemployed	−0.510 (0.493)	−1.898 (0.404)***	−4.311 (0.524)***	−1.184 (0.398)***
Partner	0.757 (0.405)*	−0.133 (0.358)		
Unemployed × partner	−2.299 (0.509)***	0.406 (0.417)		
Unemployed partner			−0.259 (0.571)	−0.161 (0.767)
Inactive partner			0.655 (0.503)	−0.175 (0.895)
Unemployed × unemployed partner			1.656 (0.761)**	−0.877 (0.849)
Unemployed × inactive partner			2.198 (0.936)**	−0.782 (1.028)
Net affect	0.275 (0.046)***	0.344 (0.038)***	0.306 (0.066)***	0.371 (0.042)***
Age	−0.070 (0.071)	−0.104 (0.065)	−0.096 (0.101)	−0.142 (0.079)*
Age_squared	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)*
Married/cohabiting	0.757 (0.405)*	−0.133 (0.358)		
Health assessment (on a scale from 0 to 10)	0.238 (0.046)***	0.271 (0.043)***	0.274 (0.059)***	0.252 (0.060)***
Vocational training	−0.076 (0.329)	1.015 (0.256)***	0.239 (0.498)	1.304 (0.357)***
University education	0.305 (0.389)	1.395 (0.362)***	0.699 (0.538)	1.925 (0.461)***
Number of children	−0.142 (0.103)	0.318 (0.103)***	−0.236 (0.125)*	0.120 (0.140)
ln(net household income)	0.547 (0.224)**	0.285 (0.236)	0.138 (0.301)	0.032 (0.281)
Constant	0.726 (2.096)	2.401 (2.139)	4.835 (3.155)	4.520 (2.754)
Observations	357	350	199	181
R-squared	0.497	0.556	0.586	0.665

OLS, standard errors in parentheses. The reference category in columns 1 and 2 is "employed, single"; in columns 3 and 4 it is "employed with an employed partner"

* denotes significance at the 10 % level; ** at the 5 % level; and *** at the 1 % level

cognitive well-being appear to be small and are statistically insignificant. Among partnered men, the cognitive well-being gap between the employed and the unemployed is largest for those with employed partners. The gap is significantly smaller if the partner is inactive or unemployed herself. This pattern cannot be found for partnered women. The cognitive well-being of unemployed women is significantly smaller than that of employed women when both have employed partners. The same holds true for women with inactive or unemployed partners. Contrary to men, we do not find evidence that unemployment reduces the cognitive well-being of women with inactive or unemployed partners less than that of women with employed partners (the—statistically not significant—coefficients even point in the other direction).

In further robustness checks, we also examine to what extent our findings depend on the assumption that *A* enters the life satisfaction function linearly. When we run the regressions with more flexible transformations of *A* by subsequently adding polynomials of the second, third, and fourth order, we obtain virtually identical results. Moreover, we also test whether our findings critically depend on single components of the aggregate net affect measure *A*. When we conduct our estimations with modified net affect measures that are calculated by subsequently leaving out one of the eight affects, our results stay unchanged. Hence, we do not find evidence that a single affect drives our findings. In another check, we allow all components of *A* to have different effects on *LS* by adding them in separately. Again, this does not affect our results. We also checked to what extent our results depend on controlling for absolute or equivalent net household income. It turns out that running the regressions using equivalent net household income instead of absolute net household income has only a negligible impact on the results.

4.3 Interpretation

Psychological studies, which use survey data containing self-reported information about respondents' subjective well-being and their perceived deprivation of the latent benefits of work, generally show that, indeed, the loss of social status and identity emerges as the most important non-pecuniary cost of unemployment (Creed and Macintyre 2001; Paul and Batinic 2010). Indirect evidence for such identity effects is also provided by studies showing that the well-being gap between the employed and the unemployed narrows as regional unemployment increases. This suggests that the social work norm is weakened if unemployment becomes a social normality (Clark 2003; Shields and Price 2005; Shields et al. 2009; Powdthavee 2007; Clark et al. 2010), though the social norm effect may not be generated by unemployment per se but be induced by becoming dependent on welfare (see Chadi 2011). Hetschko et al. (2014) show that when unemployed people retire, their life satisfaction increases. Since their objective life circumstances remain practically unaffected by this transition, they conclude that the happiness increase has to be attributed to the fact that moving from unemployment to retirement changes a person's social category and allows the non-employed to move from norm deviance to norm conformity.

Coping strategies play a part in how strongly people suffer as a result of unemployment, and coping with this new situation may depend on gender as well as family status. Jahoda (1982), Warr and Parry (1982) argue that the possibility of engaging or emphasizing alternative social roles, such as being a spouse or parent, can be used to partially offset the detrimental effect of unemployment. Waters and Moore (2002) show that women may redefine unemployment as a retreat to the classical role of a housewife who focusses on domestic work and motherhood, while men may feel unable to escape the low-status group of the "unemployed" and thus perceive a larger loss in self-worth or "identity value".

Similar results are found by Grogan and Koka (2013) who show empirically that, in the aftermath of the breakdown of the Soviet Union, women were better able to cope with unemployment by taking on other roles in the household, while social norms prevented men from changing their roles. Consequently, men suffered more from unemployment than women. For the US and Australia, Bittman et al. (2003) find that the share of housework done by men falls when his income falls relative to that of his wife. Apparently, men seem to avoid further deviations from the male gender norm by spending less time on other "non-male" activities. This is consistent with the interpretation that unemployed men are not willing to take on the role of the "homemaker".

Our findings about cognitive well-being can be interpreted as reflecting changes in identity utility in the sense of Akerlof and Kranton (2000). According to their framework, 'identity utility' represents the utility derived from adhering to social norms and ideals, which forms an important part of cognitive well-being. Having a partner increases the identity utility of employed men, while it lowers the identity utility of unemployed men. We do not find such effects for women. One possible interpretation—though speculative—of the different impact of unemployment on the identity utility of men and women living in partnerships is that different gender roles still play an important role for identity utility and seem to be internalized in a person's concept of the self. Partnered men might feel more unhappy when unemployed because they deviate more from their gender role as the "breadwinner". This loss in identity is even more accentuated when the partner is working. When a man's status as provider for the household is taken from him, his position may be challenged by other family members, in particular by a working partner who takes on the role of the provider. This interpretation is also supported by the similarity of the interaction effects with respect to whether the partner is unemployed or inactive. Looking at this from the perspective of the effects of having a partner, further analyses of our data suggest that employed men benefit from having a partner, no matter whether she is employed or unemployed. For unemployed men, however, having an employed partner is associated with a significantly lower cognitive well-being than being single. Even though having an unemployed partner hurts unemployed men significantly less than having an employed partner, the cognitive well-being of unemployed single men is still significantly higher than that of unemployed men with an unemployed partner.

By contrast, single women might feel a stronger social norm of employment when they have to make their own living, whereas living in a partnership makes it harder for others to distinguish between stigmatized unemployment and voluntary inactivity due to intra-household division of labor. For women, it is thus easier to self-categorize as "housewife" or "mother" rather than "unemployed", in which case the prescriptions of their respective social role put less emphasis on being employed (see McFadyen 1995; for gender role attitudes also see e.g. Thornton et al. 1983; Fortin 2005; Brown and Roberts 2014). There are no statistically significant differences in the cognitive well-being of employed single women, employed women with employed partners, and employed women with unemployed partners. There is also no statistically significant difference between the cognitive well-being of unemployed single women and unemployed women with unemployed partners. We do find, however, that unemployed women with a partner who is employed have a significantly higher cognitive well-being than unemployed single women.

5 Limitations

Even though our interpretations are completely consistent with our empirical analysis, we are fully aware that due to a number of limitations we will discuss in this section, our interpretations necessarily have to be taken with caution for the time being. The results presented in the preceding section could be driven by selection in at least two dimensions.

First, unemployed individuals and employed individuals are likely to differ with respect to many personal characteristics that also affect emotional well-being and life satisfaction in different ways. Different personal characteristics may also affect the probability with which individuals live in a partnership. We thus may have selection into the different groups under consideration and it may actually be the difference in personal characteristics that explains the differences in the well-being measures rather than employment and family status. We already take care of possible selection on observables by including many socio-demographic control variables in the regressions presented in the last section. Admittedly though, we cannot rule out that our sample is biased by selection on unobservables. Such a selection bias, however, can only be responsible for the results derived above in so far as the selection bias is systematically different with respect to affective and cognitive well-being, depending on gender. One set of candidates of unobservables that might explain—at least in parts—our results are personality traits. However, Schimmack et al. (2002) show that the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) are not related to life satisfaction when affective well-being is included as a predictor in the regression. Selection due to differences in the Big Five are thus very unlikely to explain the observed differences in cognitive well-being described in Table 2. Although we cannot rule out other potential selection biases due to other unobservable variables, we are not aware of any other factors that bias our result in a systematic way and thus we do not consider selection as a very relevant part of the explanation of the results derived above.

Related to this issue is the worry that controlling for the net affect in our regressions might cause a "bad control" problem. There might be unobservable variables that simultaneously affect cognitive and affective well-being. In this case, the estimated effect of unemployment on life satisfaction for a given level of affective well-being suffers from a selection bias (cf. Angrist and Pischke 2009, 64f). Intuitively, when a group of employed people and a group of unemployed people (with otherwise identical characteristics) have the same net affect, and if unemployment has a negative impact on affective well-being, then the unemployed group needs to have unobservable characteristics that are favorable for the net affect. If the impact of the unobservable characteristics on cognitive well-being goes in the same direction as those on affective well-being, the selection bias is positive. For our study, this means that the unbiased effect of unemployment on cognitive well-being will be more negative than our estimates suggest. Hence, under the conditions that unobservable characteristics affect cognitive and affective well-being in the same direction and that unemployment has a non-positive effect on affective well-being, this does not restrict the validity of our findings concerning the direction of the unemployment effect on cognitive well-being. Comparisons of the magnitudes of these effects between different groups have to be treated with caution, though, which applies, *a fortiori*, if the above-mentioned conditions are not fulfilled.

Second, our results may also hinge on the different channels by which the cognitive assessment of well-being may be influenced. The participants in our survey report lower life satisfaction than the representative SOEP sample suggests. It is conceivable that the

life satisfaction measure of the unemployed in our sample is biased downwards in so far as the specific interview questions direct the attention of the respondent to the fact that he or she is unemployed (see e.g. Dolan and Powdthavee 2012). In this case, an inherent focusing illusion would be part of the residual cognitive effect. We partially controlled for this effect as we asked about life satisfaction twice, once before we asked about employment status and socio-demographics and once at the very end of the questionnaire. We did not find any reduction in reported life satisfaction after asking questions about personal unemployment (in fact, life satisfaction scores were higher when asked again at the end of the interview), suggesting that at least there is no intra-interview attention bias with respect to unemployment.

The employment status as well as the partnership status and the employment status of the partner may affect the assessment of the subjective future prospects. Current unemployment might cause only a small change in current consumption as temporary income shocks may be smoothed out via changes in saving behavior (see e.g. Knabe and Rätzel 2011a). Reduced savings today then reduce consumption in the future. The cognitive assessment may also account for lower future income expectations and an increase in uncertainty due to increased volatility of future income (see Knabe and Rätzel 2011b). Last but not least, unemployment today may affect how an individual perceives her or his cognitive well-being tomorrow. All these negative future consequences affect the current cognitive well-being in so far as the person is forward-looking when assessing her life. Our analysis, unfortunately, cannot distinguish the different channels by which the cognitive assessment is altered due to unemployment. Although it is reasonable to assume that future uncertainty partly explains the differences in life satisfaction between employed and unemployed people that we find for all groups under consideration, it is unlikely that this accounts for all observed differences. Hetschko et al. (2014) show that when unemployed persons retire their life satisfaction increases substantially, although daily routines do not change, disposable income hardly changes, and future income uncertainty has been resolved.

Furthermore, future uncertainty can hardly explain the huge differences in life satisfaction we find between employed and unemployed persons depending on the family status and the unemployment status of the spouse. Can future uncertainty explain why men suffer so much more from unemployment when they are partnered than when they are single, whereas the opposite is true for unemployed women? Partnership may help attenuate the negative consequences of both lower expected income and higher income volatility because they only concern a smaller share of total household income, but this moderating effect should go in the same direction for men and women. The employment status of the partner should also affect the future uncertainty for men and women in the same way: if the partner becomes unemployed one can expect that future uncertainty will rise. Our results show that the cognitive well-being is higher for unemployed men whose spouse is unemployed compared to the well-being of those unemployed men whose spouse is employed, while for women it is the other way round. This difference cannot plausibly be explained by changes in future uncertainty but rather hints at identity effects.

Our data were obtained from interviews in the German cities of Berlin and Magdeburg, so most respondents were living in urban areas. Magdeburg is located in the former East Germany, while the Western part of Berlin used to be a Western exclave within East Germany. Our findings present a snapshot of the group of respondents in selected regions, so we do not claim representativity for the entire population in Germany or even larger geographical regions. However, it should be noted that respondents were mainly from

urban areas and that many were from the former East Germany. Both factors are often associated with more gender equality, in particular with respect to women's role in the labor market (Statistisches Bundesamt 2013, Chapter 14). This strengthens our results as we would expect that the observed gender differences should be even larger in more traditional societies.

Finally, another caveat to our analysis is that our data is cross-sectional only. Hence, as discussed above, we cannot fully rule out problems of selection bias when people select into partnership or employment statuses based on their subjective well-being. Such problems could be tackled with panel data. However, available panel datasets so far do not contain information on affective well-being comparable to that collected with the Day Reconstruction Method used in this paper. In that sense, our empirical analysis should be seen as a first approach to use distinct multidimensional subjective well-being measures to learn more about the heterogeneous impacts unemployment may have on individuals and encourage further research in this direction, using panel data.

6 Conclusion

Unemployment is detrimental to people's subjective well-being. This has been proven by a multitude of studies showing that, on average, self-reported life satisfaction drops when workers become unemployed. Examining the life satisfaction effects of unemployment is illuminating, but it ignores important facets of subjective well-being by making use of only one composite indicator of well-being. In this paper, we argue in favor of taking a more differentiated approach to subjective well-being analysis that acknowledges that well-being has an affective and a cognitive component. We provide a methodological framework that, by using two distinct measures of subjective well-being, allows us to separate these two components of well-being when one has information on affective well-being.

We find that unemployment is associated with substantially lower cognitive well-being, but does not reduce affective well-being. One possible explanation for this striking result is that unemployment imparts its negative well-being effect not through everyday experiences, e.g. by reducing contacts with other people or by dissolving established time structures, but through the perceived deviation from the social norm and the resulting loss of social status and identity.

The well-being cost of unemployment differ substantially according to family status and gender. We do not find evidence that living in a partnership is beneficial to affective well-being: singles do not have more negative or less positive feelings than partnered individuals in everyday life. The cognitive well-being of partnered and single individuals, however, shows marked differences depending on a person's own employment status. For employed men, partnership is associated with higher cognitive well-being than being single, whereas the opposite is true for unemployed men. For women, we do not find statistically significant relationships between cognitive well-being and partnership status.

The differences in how unemployment affects cognitive well-being provide suggestive evidence that traditional gender roles persist. A potential reason why men suffer more from unemployment when they have a partner is that they feel obliged to provide for their partner. The failure to do so when unemployed makes them feel like they deviate more from the social norm than would be the case for unemployed singles. Women, on the other hand, might feel under less social pressure to have a job when they have a partner if it is

socially acceptable (or perhaps even considered desirable) to dedicate oneself more to household and family work.

A similar argument applies to the role of a partner's employment status. Again, we do not find gender differences in the relationship between a partner's employment status and emotional well-being. Among both unemployed men and women, emotional well-being is lower when the partner is also unemployed. By contrast, the relationship between the partner's employment status and cognitive well-being is of opposite signs for unemployed men and women. The cognitive well-being of unemployed men is higher when their spouse is unemployed than when she is employed, while our results point in the opposite direction for unemployed women (although the results for women are not statistically significant). Again, a likely explanation is the persistent influence of traditional gender roles on identity utility. An unemployed man is made more aware of his inability to fill the role of the "breadwinner" if his wife is employed, while he does not feel as if he has shifted this burden to his wife if his wife is unemployed, too. An unemployed woman might suffer a loss in cognitive well-being when her partner is unemployed, because assuming the role of the "housewife" requires the partner to be employed. If he is not, it appears to be much harder for women to come to terms with their own labor market inactivity.

To yield a better understanding of the well-being cost of unemployment, it is essential to pay closer attention to the multidimensionality of subjective well-being and to distinguish between cognitive and affective aspects of well-being. Our results highlight the different channels through which unemployment affects subjective-well-being and support the view that an important reason for the loss of well-being experienced by the unemployed is to be found in the damage to an individual's perception of social status and identity.

These findings have important policy implications. Referring back to the latent deprivation model by Jahoda (1981, 1982) that we discussed in the Introduction, the apparent unaffectedness of affective well-being from unemployment suggests that the loss of social contacts, time structure, and forced activity entailed by unemployment does not—on average—cause suffering among the unemployed, most likely because they find substitutable activities during the day. Instead, the well-being loss appears to be a cognitive phenomenon, caused by the loss of social status and the detachment from broader social goals. This interpretation implies that it does not suffice to implement off-market social programs that support the unemployed by providing a structured daily environment with social contacts, but that instead it is of paramount importance to bring the unemployed back into the regular labor market. Only by restoring conformity with the social work norm can the suffering of the unemployed be overcome.

Appendix

See Table 3.

Table 3 Descriptive statistics

	Single		Partnered							
	Employed	Unemployed	Overall		Partner employed		Partner unemployed		Partner inactive	
			Employed	Unemployed	Employed	Unemployed	Employed	Unemployed	Employed	Unemployed
Dichotomous variables										
Share of male persons	55.9 %	62.2 %	27.9 %	55.5 %	30.3 %	60.3 %	19.0 %	48.7 %	18.6 %	50.6 %
Qualification (shares)										
No degree	5.3 %	21.3 %	1.8 %	23.3 %	0.5 %	16.7 %	7.1 %	28.8 %	4.2 %	12.5 %
Vocational degree	56.4 %	62.8 %	37.6 %	64.8 %	38.4 %	63.0 %	28.6 %	64.4 %	33.3 %	75.0 %
University degree	38.3 %	16.0 %	60.5 %	11.9 %	61.1 %	20.4 %	64.3 %	6.8 %	62.5 %	12.5 %
Continuous variables										
Age	40.3 (9.7) (21; 63)	42.4 (11.7) (18; 64)	42.4 (10.7) (21; 63)	39.9 (12.5) (18; 63)	43.2 (10.3) (21; 62)	38.5 (12.5) (20; 62)	37.6 (8.8) (23; 56)	42.2 (11.5) (18; 62)	50.1 (9.4) (31; 63)	45.9 (10.2) (33; 63)
Income (in €)										
Gross labor income	2032 (980) (400; 7000)		2980 (1508) (139; 9000)		2999 (1482) (139; 9000)		1967 (548) (1650; 4000)		4332 (1485) (2200; 8000)	
Net household income	1589 (626) (500; 6300)	674 (279) (165; 2500)	3194 (2301) (200; 25,000)	1107 (424) (300; 4000)	3212 (1461) (200; 10,000)	1305 (475) (300; 4000)	2246 (740) (1430; 4200)	991 (287) (500; 2100)	5084 (6044) (2000; 25,000)	890 (397) (795; 2524)
Equivalent net household income	1412 (524) (500; 4200)	578 (157) (83; 1507)	1976 (1470) (87; 16,667)	686 (218) (150; 2222)	1984 (830) (87; 6000)	799 (262) (200; 2222)	1192 (357) (833; 2000)	616 (110) (278; 1200)	3150 (4112) (1180; 16,667)	603 (140) (476; 935)
Number of children in the household	0.6 (0.7) (0; 3)	1.1 (1.1) (0; 5)	1.1 (1.1) (0; 5)	1.3 (1.2) (0; 11)	1.2 (1.0) (0; 5)	1.1 (1.0) (0; 4)	1.7 (1.0) (0; 3)	1.4 (1.0) (0; 8)	1.1 (1.1) (0; 5)	1.3 (2.3) (0; 11)
Persons in the household	1.4 (0.7) (1; 5)	1.5 (1.0) (1; 6)	2.5 (1.1) (1; 6)	2.5 (1.0) (1; 6)	2.5 (1.0) (1; 6)	2.6 (1.0) (1; 5)	3.4 (1.2) (1; 5)	2.4 (0.9) (1; 5)	2.8 (1.1) (2; 6)	2.1 (1.5) (1; 6)

Table 3 continued

	Single		Partnered							
	Employed	Unemployed	Overall		Partner employed		Partner unemployed		Partner inactive	
			Employed	Unemployed	Employed	Unemployed	Employed	Unemployed	Employed	Unemployed
Working hours per week	39.4 (6.0) (30; 70)	0.0 (3.3) (6; 30)	42.7 (8.8) (6; 72)	0.0 (3.2) (5; 80)	42.6 (9.1) (6; 72)	0.0 (3.5) (20; 80)	45.7 (8.8) (30; 60)	0.0 (3.4) (5; 55)	44.8 (6.9) (34.65; 60)	0.0 (0.0) (30; 30)
Wake-up time (h:min)	6:52 (1:32) (3:15; 9:00)	7:17 (1:38) (2:30; 12:30)	6:51 (1:33) (3:30; 14:30)	7:29 (1:24) (3:30; 14:00)	6:49 (1:26) (3:30; 14:30)	7:37 (1:29) (3:30; 9:30)	6:29 (1:16) (5:00; 8:20)	7:06 (0:58) (3:30; 10:00)	6:25 (1:34) (4:45; 10:00)	7:33 (1:27) (4:50; 11:00)
Go-to-sleep time (h:min)	23:05 (1:19) (16:00; 3:00)	23:03 (1:42) (19:00; 4:30)	23:15 (1:28) (20:30; 10:00)	23:04 (1:13) (20:30; 3:00)	23:18 (1:34) (20:30; 10:00)	22:53 (1:11) (20:30; 3:00)	22:54 (0:25) (21:40; 0:00)	22:49 (1:15) (20:30; 1:30)	23:24 (1:28) (21:30; 2:00)	23:01 (1:38) (20:30; 3:00)
Number of distinct activities reported by a person	13.1 (3.4) (7; 22)	12.6 (4.0) (4; 22)	11.7 (3.5) (4; 26)	12.4 (4.4) (6; 25)	11.7 (3.5) (4; 26)	12.5 (4.5) (7; 25)	13.6 (2.3) (8; 17)	12.2 (4.0) (6; 22)	11.5 (4.5) (6; 24)	12.7 (3.9) (6; 19)
Observations	94	188	271	159	216	54	14	59	24	16

The column "partnered—overall" also includes people whose partners are in education or workfare measures or whose employment status is unknown. For continuous variables, we report the mean (first line), standard deviation (second line) and minimum and maximum values (third line). Gross labor income refers to the respondent's individual gross labor income (i.e. wage income before taxes; without other household member's wage income). Net household income refers to the sum of disposable incomes of all household members (after taxes). We use the modified OECD scale to calculate equivalent household incomes (additional adults receive a weight of .5, additional children a weight of .3 of the first adult in the household; see OECD 2005)

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