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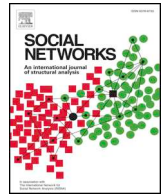
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Does unemployment lead to isolation? The consequences of unemployment for social networks

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ABSTRACT

Popular accounts in both social science and society claim that unemployment goes together with social withdrawal. However, empirical support for this conclusion is largely derived from cross-sectional studies or indirect measurements of social contacts. In this study, we argue that consequences of unemployment for personal networks differ across social groups and by length of unemployment. Using longitudinal data from the Swiss Household Panel (1999–2010), we focus on three frequently employed social network statistics: network size, contact frequency, and perceived support by friends, family, neighbors, and acquaintances. We estimate how short (< 1 year) and long term (> 1 year) unemployment relates to these network characteristics for men and women, people below and above 50 years of age, and lower and higher educated individuals. Our results provide a more-nuanced perspective on the commonly assumed social withdrawal following unemployment.

*Living without employment, oh you get so lonely.
Living without employment, it gets so frustrating.
When you're out of work, they treat you like dirt.*
Newtown Neurotics (1983) – Living with Unemployment

1. Introduction

In 1983, Newton Neurotics released the song “Living with Unemployment”, which did not focus on the *financial* costs of unemployment but rather highlighted its *social* costs. The latter were arguably worse than the former, as the chorus describes how unemployment “makes you feel so lonely”, and that “when you are out of work, they treat you like dirt”. Scientific theory has adopted a similar perspective on the relation between unemployment and social networks. For example, according to latent deprivation theory, unemployment hampers the satisfaction of fundamental individual needs, such as the need for social contacts (Jahoda, 1981). Likewise, unemployment is seen as a major explanatory condition for stigmatization and social exclusion (Gallie et al., 2003).

Given the large body of research that demonstrates the importance of social contacts and social resources, this presumed decline is thought to be detrimental to the personal and professional lives of the

unemployed. For example, social contacts can buffer the psychological impact of unemployment (Cohen and Wills, 2003; House et al., 1988; Kawachi and Berkman, 2001; Mohnen et al., 2015), and can provide crucial access to information about job opportunities (Granovetter, 1973; Sprengers et al., 1988; Lin and Dumin, 1986; Lin, 2001; Chen and Volker, 2016; Rözer and Brashears, 2018). In addition, being embedded in supportive networks increases trust in others, in political institutions, and in society in general (Putnam, 2000; Bhuller et al., 2017) and makes people feel connected and appreciated (Townsend, 1979; Sullivan and von Wachter, 2009; DeWall et al., 2011; Carpianto and Hystad, 2011).

Despite both the importance of understanding the consequences of unemployment and the large body of research on the significance of social relationships, there is remarkably little research on social network changes after becoming unemployed. Previous research shows that after critical life events, such as divorce, widowhood, or childbirth, networks sometimes change rapidly (Kalmijn, 2012; Rözer et al., 2015; McDermott et al., 2013). The same might be true for unemployment, but existing studies are almost exclusively cross-sectional and, hence, provide a limited view of network evolution (e.g. Lahn, 2012; Eliason, 2012; Julkunen, 2002; Paugam and Russell, 2000; Paul and Batinic, 2010; Dieckhoff and Gash, 2015; Lorenzi and Giugni, 2012; Gallie and Paugam, 2003; Böhnke, 2004; Layte et al., 2010). Other work either

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relies on distal proxies for an individual's social network such as participation in social activities or voluntary work as indicators of network contact, or it examines individual perceptions of social isolation rather than actual relationships (Brand and Burgard, 2008; Kunze and Suppa, 2017; Gallie et al., 2003; Gallie and Paugam, 2003; Böhnke, 2004; Layte et al., 2010; Gundert and Hohendanner, 2014; Pohlen, 2018). Needless to say, perceptions of isolation are not the same thing as the reality of social isolation, as is reflected in the common feeling of being “alone in a crowd”. As such, while we would expect a feeling of isolation to be associated with an actual lack of social contact, this association is not required to be especially strong. Of the three existing longitudinal studies, one focuses on a small, selective sample of 82 male respondents and studied network support (see Atkinson et al., 1986), a second large-scale study focuses exclusively on close friendships and not the wider network (Pohlen, 2018), while a third, large-sample study only examines the frequency of contact (Gallie et al., 2003). As a result, it is not clear how and which networks change after unemployment.

Here, we reconsider the prevailing “pessimistic” view of the association between unemployment and social embeddedness and contribute a more nuanced perspective. We argue that a number of potential counter-veiling influences exist. For example, unemployed individuals have more spare time, which may enhance their possibilities for social interaction. Furthermore, unemployed are probably in greater need of support than employed people, which may cause them to actively seek and engage in social contact. Importantly, there may be heterogeneity in the association between unemployment and networks, given different types of relationships that was unrecognized in prior literature. Importantly, experiences of unemployment vary by social categories, such as gender, age and education (cf. Oesch and Lipps, 2013; Nörstrom et al., 2014; Blau and Kahn, 2017; Roex and Rözer, 2017), and this may affect how the social networks of these persons change after unemployment. Also, the correspondence between unemployment and network change might vary by relationship type (e.g., family, acquaintances), by frequency of contact, by supportive potential, or some combination thereof. Hence, in order to more fully understand the network consequences of unemployment, we advance a more nuanced perspective, and include not only best friends, but also family, neighbors, and acquaintances, and recognize the heterogeneous impact of unemployment across social categories.

Our theoretical account of how networks change after unemployment is based on possible social withdrawal, changes in contact opportunities as well as in demand for interaction. Our data are drawn from the unique Swiss Household panel, which includes network questions for twelve consecutive survey waves (1999–2010). These data offer unique insights into people's work statuses and network relations with relatives, friends, neighbors and acquaintances, and permits exploration of differences by gender, age and education. As a result, our strategy allows for a new and nuanced understanding of when, whose, and which social networks change after unemployment.

2. Two perspectives on the consequences of unemployment for personal networks

2.1. Unemployment as a restriction for social contact

Ever since the classic work of Jahoda et al. (1971), unemployment is thought to result in a decline of social contacts. Four (interrelated) arguments are provided for this decline: financial constraints, lower social status, vulnerable mental and physical conditions, and loss of meeting opportunities.¹

¹ Much of the underlying reasoning for the financial constraint mechanism applies to meeting opportunities as well, but financial constraints stand most central in the prior literature (e.g., Pohlen, 2018; Brand and Burgard, 2008; Kunze and Suppa, 2017).

Beginning with the first alleged cause, indeed, income usually declines considerably following job loss. In Switzerland, our empirical site, employees have to be insured against unemployment, and benefits range between 70 and 80 percent of one's prior income for at least 200, and up to 520, days depending on one's age and employment history (European Commission, 2019). As many forms of social participation cost money, unemployment restricts these activities and networks may decline as a consequence (Jenkins and Cappellari, 2007; Pohlen, 2018).

Second, the perceptions of others can change after a person becomes unemployed. Modern Western societies harbor a strong work norm, and social attitudes towards the unemployed are generally negative (Clark, 2003; Stavrova et al., 2011; Stam et al., 2016; Roex and Rözer, 2017). Because mutual recognition and respect are key to forming and maintaining interactions (Laumann, 1966; Brashears, 2008; Kalmijn, 1994), the lack of these may reduce network size, contact frequency, and quality of support given by social contacts.

Third, unemployment changes individuals' mental and physical states. The loss of income and social status as well as the lack of daily structure and feelings of belonging, typically lowers self-confidence and often results in uncertainty, anxiety, or depression (Browning and Heinesen, 2012; Clark and Oswald, 1994; Kassenboehmer and Haiken-DeNew, 2009; Kampen et al., 2013; Paul and Moser, 2009; Luhmann et al., 2012). Such mental and physical strains may induce a withdrawal from social life altogether (Pohlen, 2018).

Fourth, the opportunities to meet and maintain social contacts (e.g., Blau, 1977; Feld, 1981) change after unemployment. Most directly, contact with former colleagues is diminished. Less directly, unemployment may lead to self-stigmatization in which the unemployed avoid social interactions and places in which they can meet others (Jahoda et al., 1971 [2002]; McKee-Ryan et al., 2005; Brand, 2015; Kunze and Suppa, 2017; Von Scheve et al., 2017).

According to these arguments, unemployment is a social burden (and makes it difficult to create and maintain contacts; Jahoda et al., 1971; Pohlen, 2018). This burden may come to be felt in a gradual process. The unemployed will slowly adapt their expenditures and potentially become frustrated about both their fruitless efforts to get a job and their situation in general. This may lead to changing their mental and physical make-up. As a result of this gradual process, social ties can be expected to decline. A number of studies support this perspective, showing a lower number of social contacts of unemployed as compared to employed persons (e.g. Lahn, 2012; Eliason, 2012; Dieckhoff and Gash, 2015; Lorenzi and Giugni, 2012; Gallie and Paugam, 2003) and decreased participation in social activities and increasing feelings of social isolation and exclusion (Layte et al., 2010; Kunze and Suppa, 2017; Pohlen, 2018).

2.2. Unemployment as an opportunity for engaging in social contact

The withdrawal perspective is consistent with both popular accounts of unemployment and much of scientific thought. Yet, this perspective may underestimate the capacity of individuals to adapt to new situations. Moreover, there may even be favorable consequences of unemployment for social participation. There are three arguments for such a perspective.

First, social contact is not simply a function of opportunities or supply but also of demands (Kalmijn, 1998; Brashears and Quintane, 2018). During unemployment, the need for social support might be greatly enhanced and network members might respond to this increased demand. Family and friends might provide obvious channels for such aid. Individuals may even discover that their weaker ties are more helpful than they thought as they are often readily available, and thus become more rapidly aware of one's needs (e.g., Hurlbert et al., 2000).

Second, the additional leisure time following unemployment can be used for social participation. Time use studies show that unemployed persons spend more time in and around the home and in leisure activities than the employed, even when non-social activities such as

watching television are taken into account (Krueger and Mueller, 2012). In addition, although the unemployed volunteer less often, those who *become* unemployed are more likely to volunteer, and those who volunteer devote more time to it (Piatak, 2016). Increased participation in social activities and additional time spent with voluntary work offers opportunities to meet friends and build social ties (Kinsbergen et al., 2013; van Ingen and Dekker, 2011; Piatak, 2016). Furthermore, because the amount of time spent in the home will probably increase, the unemployed are more exposed to their neighbors (Gallie et al., 2003; Pohlen, 2018; Krueger and Mueller, 2012), and contacts might increase.

Third, different types of ties may have unique features that make them durable and supportive through time. For example, neighbors will remain proximate, unless one moves, and thus relationships with them are likely to be maintained. Friends, as strong ties, are often expected to be stable relationships (Rude and Herda, 2010; Marin and Hampton, 2019), particularly because these stronger ties are often built on deeper mutual respect as well as on similarity (McPherson et al., 2001; Pahl, 2000; Rözer et al., 2017; Hofstra et al., 2017). Their familiarity, intimacy, and embeddedness in dense networks makes them stable and easy to maintain (Burt, 2002). Moreover, relationships with friends can span large amounts of time and include a considerable number of reciprocated services, imbuing the ties with considerable subjective weight (Lubbers et al., 2019; Burt, 2002; De Graaf and Flap, 1988; Laursen and Hartup, 2002). Family members, like close friends, are also often stable and close relationships, implying that these relations entail substantial length, and high triadic closure. Consequently, these relationships are not easily disrupted by a single life event, such as becoming unemployed, and research shows that individuals are more tolerant of challenging situations among kin than non-kin (e.g., Brashears and Brashears, 2016).

According to these arguments, it is unlikely that relationships to neighbors, friends and family are lost after unemployment.² Especially in the short run individuals may “use” their additional spare time to visit their family and friends. In the long run, individuals may also be more likely to gain support from their network due to increased need, and slowly become closer with (for instance) their neighbors. Unemployment may also become more burdensome over time, but according to this perspective the later negative effects on people’s social network are partly offset by the initial positive effects.

This perspective is supported by a limited number of empirical studies. In particular previous longitudinal studies provide (partial) support. For example, Atkinson et al. (1986) showed for a sample of 82 unemployed American families – in which both spouses were interviewed – that none of the indicators they used for support and contact with others outside the household declined following unemployment. However, relations within the family changed, indicated by a decline of marital support. Furthermore, length of employment did not affect these measurements of contact, though this resistance to change was more pronounced for white color workers and less so for blue color workers. In the same vein, Pohlen (2018) found among 17,682 respondents in Germany – of which 635 were unemployed – that people’s relations with their closest friends are only minimally affected by unemployment. Last but not least, drawing on information from 72,860 respondents from 11 countries from the European Union – of which 8587 were unemployed – Gallie et al. (2003) found that those who became unemployed did not decrease their sociability with neighbors when compared to the consistently employed. In nine countries the coefficients were positive (i.e., increased sociability), and in three cases they were positive and statistically significant: the UK, Spain and

Greece. Similarly, in none of the countries were the newly unemployed less likely to meet up regularly with friends, and in Greece such contacts were even more likely. In only one country (Germany) unemployment resulted in a decline in club or organizational membership.

2.3. Differential consequences of unemployment

In the former, we provided an account of how there might be heterogeneity in the response to unemployment, and how this response differs by types of social ties. A similar argument applies to different categories of individuals. Prior work has particularly focused on differences by gender, age, and education (Nörstrom et al., 2014).

The effects of unemployment are likely to differ between men and women. Given that female labor market participation is a relatively new development in Western societies, women might experience less social stigma when unemployed. Labor force participation continues to be associated primarily with men, while women, in contrast, have traditionally been expected to be more involved in non-employment roles (Altintas and Sullivan, 2016). The survival of these gendered expectations is reflected in the continuing presence of the so-called “second shift” (Hochschild, 2012). Furthermore, women’s income loss from unemployment may be smaller, because they are more likely to work part time and, thus, are likely paid less than men before the unemployment spell. For men, a loss in income may be more disruptive (Blau and Kahn, 2017; Winkelmann, 2009; Van der Meer, 2014), both in terms of personal finances and psychological impact. Finally, opportunities for contact may not change as much for women compared to men, because women frequently work fewer hours than men. However, women may be more likely to pick up household chores than men, thereby reducing the time to socialize (Cough and Killewald, 2011). Thus, unemployment might form a greater restriction for men than for women because of a greater decline in income, more stigmatization, and a greater psychological impact. Men, however, might be in greater need of support and may – because women are more likely to pick up the household chores – have more time to socialize after unemployment. As such, it is difficult to identify the most-plausible conjecture: the differential consequences for men and women might not be clear from the outset. Empirically, Pohlen (2018), found that social participation following unemployment declined more for men than for women. However, the number of close friends remained unchanged for both men and women.

Similarly, we may also observe differences between younger and older individuals. Older individuals typically face sharper (relative) declines in their incomes after unemployment. In addition, the psychological consequences may be larger for older individuals as they are less likely to be reemployed, and if they are reemployed, they are more likely to end up accepting jobs at lower pay, with fewer hours, and with fewer benefits than before (Chan and Stevens, 2001). Yet, older individuals have more savings that can buffer against an income loss. In addition, they may have peers who are retiring (early) and voluntarily downsizing, meaning that they face less stigmatization (Brand and Burgard, 2008; Freeman, 1999; Carstensen et al., 1999). Moreover, older individuals may, because of their life experience, more easily cope with distress (Winkelmann, 2009). Consequently, the economic and psychological consequences are not clear upfront (and the empirical results are mixed; McKee-Ryan et al., 2005). What may help older individuals is that they will know their social ties longer, possibly translating to more durable ties. Hence, it may take longer to observe any social withdrawal for older individuals. The downside is that older individuals might have more difficulties making new contacts as their peers already have stable networks and might be less open to new social contacts. As a result, their networks may also be less likely to increase after unemployment. This effect may be amplified by the greater emphasis older individuals place on their closest friends (Carstensen et al., 1999). Hence, unemployment might accelerate the trend towards

² Marin and Hampton (2019) show that there is substantial baseline turnover among people’s strong ties, including their friends and family. However, strong ties rarely completely disappear, but instead likely become dormant (Levin et al., 2010) for some time, after which they are reactivated (Mollenhorst et al., 2014).

smaller, but more intense and close networks (Freeman, 1999; Putnam, 2000; Carstensen et al., 1999). Empirically, Brand and Burgard (2008) show that, contrary to younger individuals, unemployment is not associated with lower levels of social involvement for older individuals nearing retirement.

Finally, higher and lower educated individuals arguably face different consequences of unemployment. Any financial consequences after unemployment are likely to impact higher educated individuals less, as they may have more savings available to cover a period of lower income, and chances for re-entry into the labor market may be better compared to the lower educated. The psychological impact might be less straightforward (Brand, 2015). On the one hand, the higher educated might be more confident that they can (financially) manage unemployment and soon reenter the labor market, giving them a sense of ‘being in-between-jobs’ rather than being unemployed. On the other hand, job displacement may instigate a larger shock among the higher educated, who may be less likely to anticipate unemployment spells and whose peers may be financially advantaged, more likely to be employed (Brand and Thomas, 2014), and more critical towards their contacts’ unemployment spells. Yet, the majority of studies find that the effects of unemployment on well-being are more dramatic for disadvantaged groups in terms of education or socioeconomic status (Gundert and Hohendanner, 2014; Nörstrom et al., 2014), suggesting that they are less able to cope with the effects of unemployment. Given this, the lower educated may be the ones facing the greatest need for support. However, coupled with the fewer resources for obtaining this support, unemployment may result in social withdrawal for the lower rather than the higher educated. Especially in the long run, the lower educated may face financial constraints and psychological strain because of lower savings and a lower likelihood of reemployment, resulting in social withdrawal. The findings of Pohlen (2018) partially supported this conjecture, finding that the number of social contacts did not decline for low or high educated individuals, but that social engagement declined most for the lower educated.

3. Data and measurements

3.1. The Swiss Household Panel study

We use the Swiss Household Panel (SHP), a nationally representative, annual panel study. It is based on a random sample of private households and all household members are interviewed. Response rates in all waves are high, i.e., about 65% for the first interviews and above 85% for later measurements (see Fors, 2013). Table 1, Panel A, provides an overview of the numbers of individual respondents in the waves covering 1999–2010, which we use because they included questions about respondent social networks. The table also shows the figures for the second sample, started in 2004. Akin to previous studies, results adjusted for attrition were highly similar to non-adjusted results (Voorpostel and Lipps, 2011; see also Kalmijn, 2012; Rözer et al., 2017), suggesting that not accounting for attrition will not qualitatively alter our results and conclusions. Therefore, we use the unadjusted data for the sake of parsimony and clarity.

We used several criteria to delineate our final sample (see Table 1, Panel B). We selected respondents who participated at least twice. For respondents who experienced a follow-up gap of more than three years, we included only the first available years. Otherwise, changes in the personal network are based on unjustifiably large time gaps, in which many events other than unemployment could have occurred. Furthermore, we included only the working age population: respondents below age 18 and persons who passed the retirement age (65 for men and 64 for women in Switzerland) were excluded from our analysis.³ When possible, missing values were imputed using information from prior

Table 1

Respondents in the analyses.

| Panel A. Number of respondents that filled in an individual questionnaire | | | | | |
|---|-----------------------------------|-------------------|-----------------------------------|-------------------|-------|
| Year | Sample 1 Initial respondent | New respondent | Sample 2 Initial respondent | New respondent | Total |
| 1999 | 7,799 | 0 | 0 | 0 | 7,799 |
| 2000 | 6,345 | 728 | 0 | 0 | 7,073 |
| 2001 | 5,756 | 845 | 0 | 0 | 6,601 |
| 2002 | 4,892 | 808 | 0 | 0 | 5,700 |
| 2003 | 4,360 | 860 | 0 | 0 | 5,220 |
| 2004 | 3,610 | 803 | 3,654 | 0 | 8,067 |
| 2005 | 3,123 | 765 | 2,395 | 254 | 6,537 |
| 2006 | 3,164 | 927 | 2,216 | 352 | 6,659 |
| 2007 | 3,402 | 1,228 | 1,949 | 401 | 6,980 |
| 2008 | 3,200 | 1,294 | 1,899 | 511 | 6,904 |
| 2009 | 3,366 | 1,434 | 1,795 | 514 | 7,109 |
| 2010 | 3,401 | 1,656 | 1,851 | 638 | 7,546 |

| Panel B. Number of respondents after several selection criteria | | | | | |
|---|-----------------------------------|--|----------|---------------------|-----------------------|
| Year | Participated more than once | Participated at least 3 waves before | Age 18 + | < retirement age | No missing data |
| 1999 | 6,785 | 6,785 | 6,369 | 5,589 | 4,844 |
| 2000 | 6,947 | 6,947 | 6,511 | 5,692 | 5,647 |
| 2001 | 6,509 | 6,509 | 6,090 | 5,296 | 5,233 |
| 2002 | 5,665 | 5,665 | 5,308 | 4,594 | 4,508 |
| 2003 | 5,183 | 5,172 | 4,831 | 4,147 | 4,094 |
| 2004 | 7,324 | 7,294 | 6,782 | 5,769 | 5,768 |
| 2005 | 6,444 | 6,433 | 6,010 | 5,063 | 5,063 |
| 2006 | 6,561 | 6,508 | 6,090 | 5,048 | 5,048 |
| 2007 | 6,881 | 6,278 | 5,784 | 4,755 | 4,753 |
| 2008 | 6,819 | 6,608 | 6,112 | 4,969 | 4,957 |
| 2009 | 7,058 | 6,535 | 6,033 | 4,854 | 4,840 |
| 2010 | 7,175 | 6,899 | 6,537 | 5,196 | 5,182 |

waves (e.g., age or gender), and we use listwise deletion to handle the remaining missing values. Our final sample consists of 10,620 respondents, who constituted a total of 59,937 person-years for an average of 5.6 annual questionnaires per respondent.

3.2. Measuring social networks

Social networks in the SHP were measured as follows. First, respondents were asked to provide numerical estimates of the absolute size of their networks via four questions:

- 1 “With how many relatives living outside of your household are you on good terms and enjoy a close relationship?”
- 2 “How many good and close friends do you have?”
- 3 “With how many neighbors are you on good terms and enjoy a close relationship?”
- 4 “With how many work colleagues or acquaintances met during the course of leisure, political, religious or other activities, are you on good terms?”

These measures constitute network sizes of relations to family, friendship, neighbor and acquaintances, respectively.⁴ Respondents could provide any number in their answers, but we censored the answers at 30 for family, friends, and neighbors, and at 50 for acquaintances to avoid the influence of outliers (this decision impacted less

³ Retirement is not compulsory in Switzerland.

⁴ These measures rely on point estimates, which have recently come under increased scrutiny (e.g. Lubbers et al., 2019; Hofstra et al., 2020). However, by using within-person estimates we avoid many of the pitfalls (which we elaborate on the Discussion).

Table 2
Descriptive statistics.

| Variable | Min | Max | Gender | | Age | | Education | | | | | | | |
|---------------------------|-----|-----|---------------|-------|-------------|-------|---------------|-------|-------------|-------|-------------|-------|--------------|-------|
| | | | Women Mean | SD. | Men Mean | SD. | Young Mean | SD. | Old Mean | SD. | Low Mean | SD. | High Mean | SD. |
| Social network | | | | | | | | | | | | | | |
| Size: total | 0 | 130 | 21.44 | 14.07 | 23.67 | 15.87 | 21.61 | 13.74 | 23.00 | 15.37 | 21.89 | 14.85 | 23.33 | 15.04 |
| Size: relatives | 0 | 30 | 6.97 | 5.83 | 6.81 | 5.77 | 6.51 | 5.41 | 7.22 | 5.93 | 7.01 | 6.01 | 6.71 | 5.43 |
| Size: friends | 0 | 30 | 5.14 | 4.05 | 5.98 | 4.91 | 5.93 | 4.33 | 5.31 | 4.38 | 5.29 | 4.48 | 5.89 | 4.42 |
| Size: neighbors | 0 | 30 | 3.03 | 3.71 | 3.18 | 3.97 | 2.20 | 3.12 | 3.44 | 3.99 | 3.11 | 3.83 | 3.07 | 3.82 |
| Size: acquaintances | 0 | 50 | 6.36 | 8.15 | 7.78 | 9.75 | 7.02 | 8.53 | 7.08 | 9.13 | 6.54 | 8.66 | 7.74 | 9.29 |
| Frequency: total | 0 | 90 | 21.15 | 15.03 | 17.96 | 14.07 | 22.41 | 15.15 | 19.07 | 14.52 | 2.68 | 15.05 | 18.15 | 13.93 |
| Frequency: relatives | 0 | 30 | 7.49 | 8.02 | 5.45 | 6.70 | 7.12 | 7.70 | 6.74 | 7.62 | 6.72 | 7.69 | 6.36 | 7.26 |
| Frequency: friends | 0 | 30 | 6.72 | 7.20 | 6.42 | 7.29 | 9.78 | 8.62 | 5.45 | 6.19 | 6.90 | 7.49 | 6.06 | 6.76 |
| Frequency: neighbors | 0 | 30 | 6.93 | 8.61 | 6.12 | 8.11 | 5.51 | 8.01 | 6.88 | 8.39 | 7.05 | 8.73 | 5.75 | 7.73 |
| Support: average | 0 | 40 | 24.22 | 7.33 | 22.58 | 7.16 | 24.37 | 6.63 | 23.66 | 7.35 | 23.46 | 7.57 | 23.55 | 6.81 |
| Support: relatives | 0 | 10 | 7.35 | 2.49 | 6.80 | 2.56 | 7.55 | 2.41 | 7.06 | 2.47 | 7.10 | 2.61 | 7.11 | 2.41 |
| Support: friends | 0 | 10 | 7.51 | 2.32 | 7.06 | 2.33 | 7.98 | 1.83 | 7.22 | 2.33 | 7.28 | 2.48 | 7.37 | 2.05 |
| Support: neighbors | 0 | 10 | 4.63 | 3.50 | 4.12 | 3.26 | 3.67 | 3.46 | 4.76 | 3.33 | 4.51 | 3.47 | 4.22 | 3.29 |
| Support: acquaintances | 0 | 10 | 4.72 | 3.20 | 4.58 | 2.99 | 5.16 | 3.04 | 4.62 | 3.08 | 4.56 | 3.22 | 4.83 | 2.90 |
| Work status | | | | | | | | | | | | | | |
| Work - > work | 0 | 1 | .62 | .48 | .77 | .42 | .63 | .48 | .76 | .43 | .65 | .48 | .76 | .43 |
| Work - > unemployed | 0 | 1 | .01 | .10 | .01 | .09 | .01 | .11 | .01 | .09 | .01 | .09 | .01 | .09 |
| Work - > other* | 0 | 1 | .04 | .21 | .02 | .15 | .04 | .20 | .02 | .14 | .04 | .19 | .03 | .16 |
| Unemployed - > work | 0 | 1 | .09 | .29 | .11 | .32 | .13 | .33 | .10 | .30 | .10 | .30 | .10 | .31 |
| Unemployed - > unemployed | 0 | 1 | .01 | .09 | .01 | .07 | .01 | .10 | .01 | .07 | .01 | .09 | .01 | .07 |
| Unemployed - > other | 0 | 1 | .02 | .15 | .01 | .11 | .02 | .15 | .01 | .10 | .02 | .15 | .01 | .10 |
| Other - > work | 0 | 1 | .04 | .20 | .02 | .13 | .05 | .23 | .02 | .15 | .04 | .18 | .03 | .16 |
| Other - > unemployed | 0 | 1 | .00 | .07 | .00 | .05 | .01 | .08 | .00 | .05 | .00 | .06 | .00 | .06 |
| Other - > Other | 0 | 1 | .15 | .36 | .05 | .22 | .10 | .29 | .07 | .26 | .14 | .34 | .06 | .23 |
| Control variables | | | | | | | | | | | | | | |
| Marital status: Single | 0 | 1 | .25 | .44 | .32 | .46 | .67 | .47 | .13 | .34 | .27 | .44 | .31 | .46 |
| Marital status: Married | 0 | 1 | .60 | .49 | .60 | .49 | .30 | .46 | .73 | .44 | .61 | .49 | .60 | .49 |
| Marital status: Separated | 0 | 1 | .02 | .13 | .01 | .12 | .01 | .07 | .02 | .15 | .02 | .12 | .02 | .13 |
| Marital status: Divorced | 0 | 1 | .10 | .30 | .06 | .25 | .02 | .14 | .10 | .30 | .09 | .29 | .07 | .26 |
| Marital status: Widowed | 0 | 1 | .02 | .15 | .01 | .09 | .00 | .03 | .01 | .11 | .02 | .15 | .01 | .09 |
| Number of children | 0 | 4 | 1.60 | 1.34 | 1.47 | 1.37 | .52 | .96 | 1.94 | 1.27 | 1.59 | 1.35 | 1.47 | 1.37 |

Observations: total = 59,937, women = 33,434, men = 26,503, lower educated = 37,953, higher educated = 21,984, young = 40,872, old = 19,065.

* the “other” category consists of people outside the labor market.

than 1 percent of the cases for any variable).⁵ We also include a combined measure by calculating the total network size (that is, the sum of the network size of relatives, friends, neighbors, and acquaintances). Descriptive statistics for the networks as well as for the independent and control variables (detailed below) are presented in Table 2.

Second, respondents were asked how frequently they had contact with family, friends, and neighbors (contact frequency was not asked for acquaintances). Telephone contacts were explicitly included, but no information was offered on whether (e)mail counted, and no specific answer categories were provided. Again, we censored the answers and allowed for a max of 30 interactions per month (less than 1 percent of relatives, friends, and neighbors were affected by this decision).

Third, respondents were asked how much practical and emotional support they could obtain from family, friends, neighbors, and acquaintances. Specifically, they were asked: “If necessary, in your opinion, can they provide you with practical help? This means concrete help or useful advice.” and “To what extent are they available in case of need and show understanding, by talking with you, for example?” Answer categories ranged from 0) ‘not at all’, to 10) ‘a great deal’.⁶

⁵ Not censoring the data does not markedly alter the results (see Appendix A in Supplementary material). The exception might be the effects on the number of friends. The effect of long-term unemployment becomes statistically significant ($P < .05$) for women ($b = -.079$) and men ($b = .096$). Yet, this does not affect our general conclusion.

⁶ Interviewers were instructed: “Even people who do not need any help should consider possible ways in which they could get support. If some can help a great deal and others not at all, indicate “a great deal”. Practical help is, for example, doing the shopping for them when sick, taking them to the doctor or

Answers to these two questions about practical and mental help were combined by averaging both items (Pearson’s $r = .736$ for family members, .808 for friends, .909 for neighbors, and .905 for acquaintances).

3.3. Measuring unemployment

The individual questionnaires of the SHP measured unemployment using three questions. First, respondents were asked if they “get paid for working, even if only for ONE HOUR, last week, either as an employee, self-employed or an apprentice?”. Second, if this was not the case, they were asked “although you didn’t work last week, were you nevertheless employed, self-employed or apprenticed?”. Third, if they were not employed, respondents were asked “In the last four weeks, have you been looking for a job?”. If they were looking for a job, they were then asked “Let’s imagine that you were offered a job last week. When is the earliest date you could have started?”. Respondents who had no job, were looking for a job, and could start within the first four weeks are labelled as unemployed, while those who were working are labelled as employed, and others as out of the workforce.⁷ This approach resulted in one of the variables created by the SHP team (variable WSTAT\$\$), and is similar to those of other official agencies such as Eurostat and the

(footnote continued)

giving useful advice in case of problems or when looking for specific information.”

⁷ Strictly speaking this is a residual category, and we cannot be entirely sure that they are all out of the labor market. Yet, for consistency, they are labelled as “not in the labor force”.

US census bureau. Unique for longitudinal data with a network module, respondents were asked about their former work status. Therefore, from the first interview wave, measures of work status trajectories (e.g. becoming unemployed) are available.

3.4. Measuring gender, education, and age

We argue that the effects of unemployment may differ by gender, age, or education. For parsimony we split each social group in two categories: men and women, younger (age 18–49) and older individuals (age 50+), and lower and higher educated. The highest educated had obtained at least 14 years of schooling, or ISCED level 4.⁸ Those individuals received “vocational maturity”, went to technical or vocational schooling (high level) or received a master’s degree or PhD. Table 3 summarizes, for each group, the number of transitions by work status.⁹

3.5. Confounding variables

We incorporated several control variables. First, we controlled for *marital status*, which was recorded as single, being in a union (either married or cohabiting), divorced, separated after cohabiting, or widowed. This strategy may lead us to overcontrol our models as divorce can be a response to unemployment. Leaving marital status out, however, produced similar results to the main analyses presented. Second, we control for the number of children at home (truncated to 4). We also included dummies for the year of data collection to control for average network changes over time (for reasons of parsimony they are not presented in the tables).¹⁰

3.6. Analytic strategy

To show how unemployment corresponds with social network change over time, we estimate a series of fixed-effects models. We model each person-year independently allowing each respondent to be observed multiple times. Our models control for variation between persons, and, consequently, we exclusively model within-person variation.

Network size and frequency of contact can be considered as counts of events. Skewness and kurtosis tests for each variable confirm that the variables are not normally distributed ($p < .01$ for each). Therefore, we rely on Poisson fixed-effects regressions.¹¹ Linear fixed effects models are used when estimating network support.

⁸ Individuals with a compulsory school education are assigned 9 years of education, those with a ‘maturity’ an additional 3 years. Vocational maturity in Swiss is a demanding secondary education diploma. Individuals with an elementary training or au-pair stay add another year. Additional apprenticeship, a full-time vocational or a general training school count 3 years, vocational maturity another year. A university degree is “worth” 6 years, a vocational high school or a technical school 3 years. A doctorate gives an additionally 3 years.

⁹ 2.1 percent of all women and 1.6 percent of men became or remained unemployed through the waves, on average. In contrast, 76 percent of all women and 90 percent of all men became or remained employed through the waves. Translating this to unemployment figures, by dividing the unemployed by the sum of employed and unemployed, on average 2.8 percent of women and 1.8 percent of men were unemployed per year between 1999 and 2010. According to the world bank the average unemployment figures for Switzerland between 1999 and 2010 were 4.2 percent for women and 3.2 percent for men and. Thus, unemployed individuals are somewhat underrepresented.

¹⁰ These control variables are similar to those used in Kunze and Suppa (2017).

¹¹ We do not control for overdispersion, as these are generally considered less reliable in a fixed-effects framework (e.g. Allison, 2012, post and his comments: statisticalhorizons.com/fe-nbreg).

4. Results

4.1. Descriptive analysis

We first describe how social networks differ between our employment categories of interest: people who become unemployed (labelled the “short-term unemployed”), who remain unemployed (labelled the “long-term unemployed”), and those who remained employed, who form the reference category. Fig. 1 depicts the bivariate relationships between employment statuses and the network outcomes.¹² The networks of people who remain employed are on average stable over time for each category, irrespective of whether we look at the number of contacts, frequency of contact, or support. The figure depicts how the consequences of unemployment may vary across social categories and relationship type. In particular, findings for women, the younger, and lower as well as higher educated persons seem often in line with the ‘unemployment-as-opportunity’ perspective. Further, especially for the higher educated, withdrawal indices in some relationships seem counterbalanced by increased networking in other relational types. For example, after becoming unemployed the number of relatives and neighbors declines, yet the number of friends and acquaintances increases (see Fig. 1, Panel F). For men and the oldest age group consequences seem slightly more in line with the ‘opportunity-as-restriction’ perspective, as for both groups, network size declines, especially regarding contact with relatives, neighbors, and acquaintances. The long-term network changes are, however, uniformly quite small and, again, social withdrawal in a specific relational category seems offset by more networking in another one. For example, for the youngest age group, long-term unemployment is associated with less support from acquaintances, but with more from relatives and neighbors.

4.2. Explanatory analysis

Next, we present the results from our explanatory analyses of changes in social networks, net of our control variables, using the fixed-effects regression models. Table 4 shows the results for network size, frequency of contact, and social support, respectively. Although we analyzed all possible transitions, we focus here on the results for the transition from work to unemployment, and for remaining unemployed. For reasons of parsimony, other covariates and control variables are not presented in tables of the main text (but see Appendix C for the complete set of results in Supplementary material).

Panel A in Table 4 shows the results for network size. We find that when all groups are considered in combination, the transition from work to unemployment does not change the total network size when compared with those who remained employed. Relatives became less represented in the network, though. Importantly, there are significant differences between the social categories. Overall network sizes decline for men and for the older age group.¹³ For men, this decline is due to smaller networks with neighbors and acquaintances, while for the older age group the size of the neighbor network declined. For women no overall change has been found, but network size with family slightly declined. For higher educated, also no general change took place, but

¹² We plotted the average network size, contact frequency, and support to make the figures more comparable. In the fixed effect analyses we use the total network size, frequency, and support because Poisson fixed effects are generally employed to handle integers. All figures can be found in Appendix B in Supplementary material.

¹³ The interpretation of the coefficients of the Poisson regression models differs from linear effect models. The Poisson regression models the log of the expected count as a function of the covariates, which makes the interpretation less straightforward. For example, for men, who change from employment to unemployment and compared to those who remained working – the log of expected count decreases with $-.037$, which is approximately a 3.6% decrease in the expected network size count (calculation: $1 - e^{-.037} = 1 - 0.964 = 0.036$).

Table 3
Number of transitions by work status.

| Work status | Gender | | | | Age | | | | Education | | | |
|----------------------------|------------|------|----------|------|------------|------|----------|------|-----------|------|-----------|------|
| | Women n | % | Men n | % | Young n | % | Old n | % | Low n | % | High n | % |
| Work -> work | 20,820 | 62.3 | 20,370 | 76.9 | 28,819 | 7.5 | 12,371 | 64.9 | 24,503 | 64.6 | 16,687 | 75.9 |
| Work -> unemployed | 305 | .9 | 208 | .8 | 397 | 1.0 | 116 | .6 | 345 | .9 | 168 | .8 |
| Work -> other ^a | 1,480 | 4.4 | 577 | 2.2 | 1,206 | 3.0 | 851 | 4.5 | 1,502 | 4.0 | 555 | 2.5 |
| Unemployed -> work | 3,062 | 9.2 | 2,990 | 11.3 | 4,534 | 11.1 | 1,518 | 8.0 | 3,744 | 9.9 | 2,308 | 1.5 |
| Unemployed -> unemployed | 252 | .8 | 146 | .6 | 298 | .7 | 100 | .5 | 280 | .7 | 118 | .5 |
| Unemployed -> other | 791 | 2.4 | 325 | 1.2 | 624 | 1.5 | 492 | 2.6 | 871 | 2.3 | 245 | 1.1 |
| Other -> work | 1,432 | 4.3 | 469 | 1.8 | 1,516 | 3.7 | 385 | 2.0 | 1,339 | 3.5 | 562 | 2.6 |
| Other -> unemployed | 154 | .5 | 70 | .3 | 189 | .5 | 35 | .2 | 153 | .4 | 71 | .3 |
| Other -> Other | 5,138 | 15.4 | 1,348 | 5.1 | 3,289 | 8.0 | 3,197 | 16.8 | 5,216 | 13.7 | 1,270 | 5.8 |
| Total | 33,434 | 100 | 26,503 | 100 | 40,872 | 100 | 19,065 | 100 | 37,953 | 100 | 21,984 | 100 |

^a the “other” category consists of people outside the labor market.

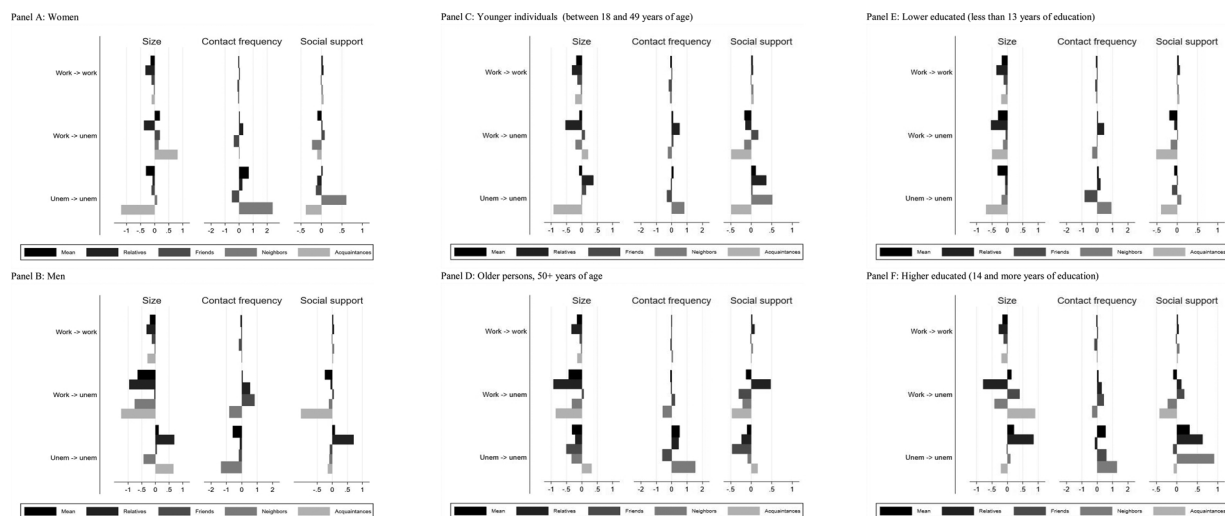


Fig. 1. Changes in social networks by a change in work status, bivariate relationships.

neighbors became less represented in their networks. Despite the overall decline for men, men's networks with friends became larger and the same holds for women's acquaintance network. Remarkably, if unemployment continues, network size increases or recovers for many groups, as well as in general, when all groups are considered together. Women have more neighbors in their network and the size of men's network increases due to a larger family network. The younger age group's networks increase because of more contacts to relatives and neighbors. Lower as well as higher educated have more relatives in their networks after long term unemployment and also the overall networks of higher educated increase. For the older age group, a decline is found, in particular the network with neighbors decreased in size.

Panel B, on contact frequency, shows that after the transition from employment to unemployment, there are overall no statistically significant changes in how frequently individuals see their network members. However, differences occur between social categories. The overall frequency of seeing network members decreases on average for the older age group and for the higher educated. Higher educated have in particular less frequent contact with neighbors. Women, older, and lower educated persons see their friends less often, but men's contact frequency with friends increased. Also, the younger age group's contact frequency increased, although not for friendship but for their neighbors- and family networks. For the younger individuals, we see no statistically significant changes in contact frequency at all. Interestingly, if one remains unemployed, all groups see their network members more often, as also witnessed by the overall increase in contact frequency. In particular, men and the higher educated see their

friends more often, while the other categories have more contact with relatives and neighbors. Only in the case of the oldest age category this offsets the decline in the number of times they see their friends.

Finally, as shown in Panel C on social support – compared to those who remain employed – overall network support declines. Yet, as the different coefficients for the social categories show, this can be attributed to the oldest group and lower educated. All social categories report less support from their acquaintance and the older age group reports in addition less support from friends and neighbors. When remaining unemployed, support from acquaintances declines for every category except for the oldest group,¹⁴ who get less support from relatives and friends. Yet, women, the younger individuals, and the lower educated get more neighbor support, and men and the younger individuals obtain more support from friends.

5. Discussion, limitations and conclusion

Taken together, we examined changes in social networks after becoming and remaining unemployed for gender, age, and educational groups, concerning four types of relationships (relatives, friends, neighbors and acquaintances), and for three network parameters (size, contact frequency, and social support). Table 5 provides an overview of

¹⁴ We explored whether especially the practical or emotional support declined after short- and long-term unemployment. It appears that there are almost no differences between emotional and practical support (see Appendix D for the results in Supplementary material).

Table 4
Fixed effect regression on different types of relationships.

| Panel A. Network size. | | | | | | | | | | | | |
|----------------------------|-----------------|--------|--------|-----------|-------|---------|----|-----------|--------|---------------|-------|--------|
| Group | Parameter | Total | | Relatives | | Friends | | Neighbors | | Acquaintances | | |
| All | Work -> unemp. | -.002 | [.011] | | -.035 | [.021] | + | .027 | [.021] | | .000 | [.021] |
| | Unem. -> unemp. | .026 | [.015] | + | .085 | [.026] | ** | -.014 | [.027] | | .017 | [.027] |
| Women | Work -> unemp. | .024 | [.015] | | -.051 | [.028] | + | .000 | [.028] | | .116 | [.026] |
| | Unem. -> unemp. | .010 | [.019] | | .018 | [.033] | | -.051 | [.035] | * | -.002 | [.034] |
| Men | Work -> unemp. | -.037 | [.018] | * | -.011 | [.032] | | .063 | [.033] | + | -.171 | [.034] |
| | Unem. -> unemp. | .061 | [.025] | * | .206 | [.044] | ** | .048 | [.044] | | .069 | [.045] |
| Young | Work -> unemp. | .015 | [.013] | | .001 | [.024] | | .010 | [.025] | | .026 | [.024] |
| | Unem. -> unemp. | .056 | [.017] | ** | .105 | [.031] | ** | -.007 | [.032] | | .025 | [.032] |
| Old | Work -> unemp. | -.054 | [.024] | * | -.168 | [.045] | ** | .074 | [.044] | + | -.065 | [.043] |
| | Unem. -> unemp. | -.059 | [.033] | + | .038 | [.057] | | -.033 | [.058] | | .010 | [.057] |
| Lower edu | Work -> unemp. | .014 | [.015] | | -.032 | [.026] | | .041 | [.027] | | .018 | [.027] |
| | Unem. -> unemp. | .020 | [.019] | | .082 | [.033] | * | -.032 | [.034] | | .014 | [.035] |
| Higher edu | Work -> unemp. | -.023 | [.019] | | -.036 | [.035] | | .003 | [.035] | | -.018 | [.032] |
| | Unem. -> unemp. | .042 | [.025] | + | .087 | [.046] | + | .017 | [.046] | | .024 | [.042] |
| Panel B. Contact frequency | | | | | | | | | | | | |
| Group | Parameter | Total | | Relatives | | Friends | | Neighbors | | | | |
| All | Work -> unemp. | -.016 | [.011] | | .012 | [.020] | | -.021 | [.018] | | -.014 | [.021] |
| | Unem. -> unemp. | .089 | [.014] | ** | .140 | [.024] | ** | .028 | [.022] | | .130 | [.025] |
| Women | Work -> unemp. | -.022 | [.014] | | .034 | [.024] | | -.087 | [.024] | ** | -.013 | [.026] |
| | Unem. -> unemp. | .103 | [.017] | ** | .158 | [.028] | ** | -.022 | [.028] | | .192 | [.029] |
| Men | Work -> unemp. | -.006 | [.019] | | -.027 | [.034] | | .075 | [.028] | ** | -.022 | [.035] |
| | Unem. -> unemp. | .061 | [.025] | * | .095 | [.047] | * | .108 | [.035] | ** | -.037 | [.051] |
| Young | Work -> unemp. | -.001 | [.013] | | .004 | [.022] | | -.005 | [.020] | | .029 | [.024] |
| | Unem. -> unemp. | .069 | [.016] | ** | .095 | [.027] | ** | .039 | [.024] | | .131 | [.029] |
| Old | Work -> unemp. | -.106 | [.027] | ** | .055 | [.047] | | -.170 | [.047] | ** | -.187 | [.046] |
| | Unem. -> unemp. | .113 | [.033] | ** | .270 | [.054] | ** | -.129 | [.060] | * | .089 | [.054] |
| Lower edu | Work -> unemp. | -.004 | [.014] | | .026 | [.024] | | -.051 | [.022] | * | .032 | [.025] |
| | Unem. -> unemp. | .084 | [.016] | ** | .133 | [.028] | ** | -.023 | [.026] | | .169 | [.029] |
| Higher edu | Work -> unemp. | -.052 | [.021] | * | -.030 | [.037] | | .032 | [.032] | | -.117 | [.038] |
| | Unem. -> unemp. | .094 | [.027] | ** | .143 | [.046] | ** | .149 | [.043] | ** | .019 | [.051] |
| Panel C. Social support | | | | | | | | | | | | |
| Group | Parameter | Total | | Relatives | | Friends | | Neighbors | | Acquaintances | | |
| All | Work -> unemp. | -.644 | [.262] | * | .014 | [.094] | | .002 | [.085] | | -.540 | [.133] |
| | Unem. -> unemp. | -.297 | [.336] | | .135 | [.118] | | -.016 | [.107] | | -.710 | [.170] |
| Women | Work -> unemp. | -.559 | [.341] | | .086 | [.118] | | -.069 | [.110] | | -.356 | [.176] |
| | Unem. -> unemp. | -.355 | [.422] | | -.100 | [.143] | | -.179 | [.133] | | -.555 | [.216] |
| Men | Work -> unemp. | -.765 | [.411] | + | -.095 | [.153] | | .107 | [.134] | | -.788 | [.203] |
| | Unem. -> unemp. | -.107 | [.558] | | .590 | [.208] | ** | .314 | [.182] | + | -.953 | [.276] |
| Young | Work -> unemp. | -.342 | [.293] | | -.014 | [.102] | | .159 | [.090] | + | -.494 | [.153] |
| | Unem. -> unemp. | .091 | [.383] | | .412 | [.132] | ** | .097 | [.116] | | -.843 | [.200] |
| Old | Work -> unemp. | -1.615 | [.586] | ** | .024 | [.218] | | -.485 | [.209] | * | -.614 | [.282] |
| | Unem. -> unemp. | -1.535 | [.741] | * | -.551 | [.268] | * | -.267 | [.255] | | -.467 | [.349] |
| Lower edu | Work -> unemp. | -.751 | [.336] | * | -.046 | [.120] | | -.071 | [.112] | | -.533 | [.171] |
| | Unem. -> unemp. | -.280 | [.425] | | .062 | [.150] | | -.012 | [.139] | | -.791 | [.215] |
| Higher edu | Work -> unemp. | -.440 | [.419] | | .136 | [.149] | | .133 | [.127] | | -.564 | [.211] |
| | Unem. -> unemp. | -.374 | [.548] | | .272 | [.193] | | -.051 | [.165] | | -.554 | [.276] |

Note: control variables are included, but not presented; significance levels: + $p < .10$, * $p < .05$, ** $p < .01$ (two-tailed); source: SHP 1999-2010. Contact frequency is not measured for acquaintances/colleagues.

our findings. In general, short-term unemployment is more likely to result in a decline instead of an increase in sociability. In contrast, long-term unemployment is more often associated with an increase instead of decline in sociability. However, there is considerable heterogeneity underlying these patterns. Importantly, the effects of unemployment differ between the social categories. Older individuals seem to lose social contact after short- and long-term unemployment: network size, contact frequency, and network support declines when they become and remain unemployed – although contact frequency increases when they remain unemployed. In contrast, the networks of the other social groups are more stable or increase after unemployment. Especially younger individuals seem to gain social contact after long-term unemployment as their network size and contact frequency increase when they remain unemployed. Furthermore, the changes in the network

differ between the different aspects of the social network. The effects of unemployment are more negative (or in case of long-term unemployment less positive) for network support, than for network size and contact frequency. The changes in the network differ also between types of social relationship. Weaker ties (neighbors and acquaintances) seem more affected than stronger ties (family and friends). Support (but not size) of acquaintance relations declines for each social category after short- and long-term unemployment. In addition, the changes in the different types of relationships are not independent of each other. For example, after unemployment, for women, network size of relatives declines but acquaintanceship networks increase; for men, networks of neighbors decline in size but the size of the friendship network increases.

People's health status may constitute a moderator or a mediator for

Table 5
Overview of results.

| | | Size | | | Contact frequency* | | | | | | Social support | | | | | |
|------------|------------------------------|-------|------|---------|--------------------|------|-------|------|---------|----------|----------------|------|---------|----------|------|--|
| Group | Transition from: | Total | Rel. | Friends | Neighbb. | Acq. | Total | Rel. | Friends | Neighbb. | Total | Rel. | Friends | Neighbb. | Acq. | |
| All | Work to unemployment | | - | | | | | | | | | | | | - | |
| | Unemployment to unemployment | + | + | | | | + | + | | + | | | | + | - | |
| Women | Work to unemployment | | - | | | + | | | - | | | | | | - | |
| | Unemployment to unemployment | | | | + | | + | + | | + | | | | + | - | |
| Men | Work to unemployment | - | | + | - | - | | | + | | | | | | - | |
| | Unemployment to unemployment | + | + | | | | + | + | + | | | + | + | | - | |
| Young | Work to unemployment | | | | | | | | | | | | + | | - | |
| | Unemployment to unemployment | + | + | | + | | + | + | | + | | + | | + | - | |
| Old | Work to unemployment | - | - | + | | | - | - | | - | - | | - | - | - | |
| | Unemployment to unemployment | - | | | - | | + | + | - | + | - | - | | | - | |
| Lower edu. | Work to unemployment | | | | | | | | - | | - | | | | - | |
| | Unemployment to unemployment | | + | | | | + | + | | + | | | | + | - | |
| Higher edu | Work to unemployment | | | | - | | - | | | - | | | | | - | |
| | Unemployment to unemployment | + | + | | | | + | + | + | | | | | | - | |

Note: + = increase, - = decrease with $p < .10$ or lower, two tailed tests.

* contact frequency is not measured for acquaintances/colleagues.

network changes after unemployment. For example, the long term unemployed may receive increased support because of a decline of their health. Therefore, as an additional analysis, we added four proxies for people's health status into our models: how well people feel at the moment, general satisfaction with their health, health impediment in everyday activities, and a depression scale.¹⁵ The results remained similar when these controls were included (see Appendix E in Supplementary material), suggesting that a change in people's health status cannot fully explain the previous findings. The reason appears to be in part the low correlation between unemployment and these four proxies,¹⁶ suggesting that on average unemployment was not (very) detrimental for people's health, or that poor health did not typically or reliably signal unemployment, in combination with the weak correlation between health and several aspects of people's social networks.¹⁷

Finally, one might challenge our argument by claiming that Switzerland is an exceptional case (cf. Gallie et al., 2003). Therefore, as a robustness check, we performed a cross-country comparison, using cross-sectional data from both the European Social Survey in 2016 and from the US General Social Survey in 2004. In line with our main longitudinal analyses in Switzerland, short- and long-term unemployment was not significantly associated with network size in the majority of other European countries or the United States (see Appendix F for details on measurement and tables with the full results in Supplementary material). Thus, our results cannot be solely attributed to Swiss

exceptionalism.

5.1. Limitations

Several drawbacks of our data and models merit attention, before we move to our conclusion. First, unemployed individuals were underrepresented in our data, and it is likely that the unemployed individuals who are most depleted, who withdraw from social life and thus have the smallest networks, are less likely to participate. As a result, we might have underestimated the actual decline in social contacts. Further research is needed that delves more deeply into these specific selection issues. In line with this, the unemployed might have a higher chance of dropping out of the panel and thus disappearing from our analysis.

Second, and related to the former issue, we could not make a distinction between varieties of the unemployed, for example based on the prior employment status or on whether they are forced into unemployment or not. Consequences for those who became “voluntarily” unemployed are probably smaller. Further, those who had worked in many jobs before becoming unemployed, might be confident that the situation will change quickly. However, we do not think this will make a substantial difference because our effects would be most impacted if many individuals in the data had long histories of prior unemployment (and we already study age, which relates to career length), became employed just before an observation wave, and then quickly lost their job again. In this case, lacking the ability to distinguish such persons from more pedestrian job losers, we would estimate their effects homogeneously. However, we have no reason to posit any noticeable number of such persons to begin with.

Third, the Swiss longitudinal data includes point estimates to measure the social network (i.e., how many friends do you have). However, these measures have recently come under increased scrutiny, because people frequently appear to have difficulties accurately recalling their own network size (e.g., McCormick et al., 2010; Lubbers et al., 2019). Nevertheless, the value of these measures has been shown in a wide range of studies. Furthermore, we controlled for potential biases that are generally found to influence these metrics. More importantly, we studied within-person variation with the Swiss panel data, ruling out all between person biases. And finally, even if these estimates are imprecise, we have no reason to think that they will not fluctuate in a consistent manner with the true state of the underlying network. On the one hand, both social desirability and preferences for larger social networks might lead to overestimation of social contact after unemployment. On the other hand, the unemployed might overestimate any drop because of a lack of energy, depression, or stigmatization. Thus, we conjecture that our results are insensitive to such dynamics.

¹⁵ Questions were: “how do you feel right now” (with response categories 1. very well, 2. well, 3. so, so (average), 4. not very well, 5. not very well at all); “How satisfied are you with your state of health, if 0 means ‘not at all satisfied’ and 10 ‘completely satisfied?’”; “Please tell me to what extent, generally, your health is an impediment in your everyday activities (in your housework, your work or leisure activities), 0 means ‘not at all’ and 10 ‘a great deal.’”; and “Do you often have negative feelings such as having the blues, being desperate, suffering from anxiety or depression, if 0 means ‘never’ and 10 ‘always?’”

¹⁶ The correlation with each of these four proxies was below .08. One explanation is that the health of some individuals declines (e.g. because of the increased financial stress), while for others it declines (e.g. because of additional spare time). Another option is the reliability of the measures. Especially on the question ‘how well people feel at the moment’, people, irrespective of their work status, might answer positively, given that they choose to participate in the survey. However, as expected, being in the labor market was associated with better health (how well people feel at the moment ($r = .10$), satisfaction with health ($r = .11$), health impediment ($r = -.14$), and depression ($r = -.11$)).

¹⁷ Only 4 out of 64 correlations (4 health proxies * 14 network measures) were stronger than .10 (“how well people feel at the moment” correlated .10 with total network support, and “health disabilities” correlated .13 with total network support, .12 with support from relatives, and .11 with support from friends).

Fourth, we estimated 14 dependent variables for each social category. This might cause alpha inflation. Correcting for this may reduce the number of statistically significant covariates below arbitrary $p < .05$ thresholds. However, our core finding is that networks are quite stable after the transition to unemployment. As such, not implementing such corrections is ultimately the conservative approach. Specifically, reducing the number of statistically significant estimates may only lead to further evidence for our general conclusion that there are no drastic changes for (most) social categories by either short-term or long-term unemployment.

Fifth, although we have longitudinal data, questionnaires were still only administered annually. Consequently, respondents who transitioned from employment to unemployment (the short-term unemployed) can be unemployed for 1 or for 364 days, while those who transitioned from unemployment to unemployment (the long-term unemployed) can be unemployed for 366 or 729 days. Anticipated unemployment may have affected people's social networks before they became unemployed, for example because individuals take days off before their contract ends. Furthermore, networks may not immediately be affected by a change in people's work status. For example, if people see their neighbors or friends more frequently after unemployment it does not mean that they will immediately regard them as part of their network or receive support from them. The change in people's network who are long-term unemployed, may be the result of their change in behavior when they first became unemployed. In other words, there is a time-lag in network change, which is hard to measure.

5.2. Conclusion

In line with popular beliefs, the scientific literature typically associated unemployment with social withdrawal and isolation, yet recent work has started to cast doubt on these beliefs. Are popular intuitions confirmed by an analysis of large-scale panel data and what are differences between social categories and different network parts? We answered this question by measuring changes in the relationships to relatives, friends, neighbors, and acquaintances after a person became unemployed, and by distinguishing between three common network characteristics: size, frequency of contact, and perceived support. We made a novel distinction between individuals who became unemployed (the “short-term unemployed”), and those who remained unemployed (the “long-term unemployed”). In addition, we examined the consequences for men and women, people below and above 50 years of age, and the lower and higher educated. We extended previous work and provide an empirically nuanced understanding of the network consequences of unemployment.

Our new perspective shows that there is no “catch all” answer to the question “do social networks change (and decline) after unemployment?” Instead, we show that the effect of unemployment on people's networks varies across social categories, types of relationships and network parameters. For instance, the popular belief that social withdrawal and isolation results from unemployment does largely apply for people above 50 years of age. After becoming unemployed their number of contacts declines, they see their contacts less frequently, and also receive less social support. In addition, when they remain unemployed for more than a year, their network is still smaller, and they receive less social support than before unemployment. Yet, there are no drastic effects of either short-term (< 1 year) or long-term (> 1 year) unemployment on the social networks of the other social categories. For these groups we found, in general, few differences in the network trajectories between employed and unemployed individuals, while only support from acquaintances (including colleagues) systematically declines as a result of short- and long-term unemployment. In fact, some dimensions of social networks even improve after remaining unemployed: contact frequency increased for every social group, while the social networks of men, people below 50, and the higher educated grew when they remained unemployed. These results are (largely) in line

with previous longitudinal studies. Atkinson et al. (1986) showed that social support and contact did not decline after unemployment among 82 American families; Pohlan (2018) found only a small negative effect of long-term unemployment on the number of best friends among 17,682 Germans; and Gallie et al. (2003) found that contact with friends and neighbors did not decline after unemployed among 72,860 respondents from 11 European countries, while it even increased in some countries. Hence, we should carefully start to reconsider the traditional view on social withdrawal after unemployment.

Here, we argued that because of the availability of additional spare time, the persistent nature of (strong) ties, and a greater need for support, social networks may also grow after unemployment. Our results point in this direction, albeit not for everyone and for every type of relationship. Weak ties (especially acquaintances) were more affected by unemployment than strong ties (relatives and friends). Spare time is a good explanation for the greater sociability with neighbors as the unemployed spent the greatest part of their additional time in general in and around the home (Gallie et al., 2003; Pohlan, 2018; Krueger and Mueller, 2012). A need for support might be a less likely, but plausible, explanation, because contrary to what one would expect if a need for support drives the network results, compared to network size and contact frequency, network support increased the least or decreased the most following unemployment.

Additionally, period effects might be at play: nowadays, the experience of unemployment may less dramatically induce network turnover than in the past, when wealth was lower generally. In contemporary Western societies, with increased short-term contracts and an increasingly flexible labor market, the unemployed might be more confident of finding a job in the future, which affects changes and investments in network embeddedness. Older people might deviate from this because they might, due to age discrimination, be less confident of reemployment. For them, unemployment might accelerate the trend towards smaller, but more emotionally close, networks (Freeman, 1999; Putnam, 2000; Carstensen et al., 1999).

Our study provides some interesting directions for future research. In particular the complementary interaction between relational types is worth additional investigation. We found that a loss experienced with some ties, was often replaced by gains among other ties. For example, men and women started to see their acquaintances less frequently but increased their contact with relatives. This suggests that they shifted their focus from work to family – i.e., colleagues-as-acquaintances might have been replaced by family members. In addition, women also experienced increased contact with neighbors, which might indicate that traditional gender norms become more pronounced which are associated with taking care of everything within and around the household (Moore, 1990; Rözer et al., 2017, 2018). As such, future research may probe more deeply into network “roles,” essentially detailing the network categories even more. For instance, which specific acquaintances are lost in an unemployment spell: colleagues or workout buddies? Or what family is relied on after job loss: partners, siblings, or parents?

To conclude, we showed that the consequences of unemployment for people's network varies across social groups and relational types. Contrary to “pessimistic” beliefs, for most groups – except for people above 50 – social integration after becoming unemployed does not drastically decline as such. Instead, in many respects networking increases, while composition changes in the short and long run after unemployment.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.socnet.2020.06.002>.

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