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Intergenerational scars? The long-term effects of parental unemployment during a depression

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We studied the intergenerational impact of parental unemployment on the socioeconomic status of children. We used data from the Finnish depression of the 1990s, one of the deepest depressions in the history of OECD countries. We compared the impact of parental unemployment of children aged 12-18 during both a period of economic growth and a period of depression. We used ISEI status to measure social status when the children reached the age of 30. We used propensity score matching to analyse the high-quality Finnish register data, comprising 15991 children. Our results show a negative association between parental unemployment and children's later socioeconomic status that is not significantly lower when parental unemployment occurs during a depression. The association is partially driven by the duration of unemployment during the depression. Our results underline the importance of providing support to families that experience parental unemployment during eras of both depression and growth.
Keywords: Parental unemployment, unemployment, recession, depression, propensity score matching

Introduction

Unemployment is a negative experience that produces economic deprivation and stress in families, which in turn play a crucial role in transmitting social advantages and disadvantages to children. With growing requirements for cognitive and social skills, the economic and social support that parents provide are believed to be increasingly important for children (Bowles et al. 2009; Corak 2006). Therefore, parental unemployment during childhood and youth is now viewed as even more disadvantageous for children than previously believed. Recent economic crises have raised unemployment levels in many developed countries (OECD 2014), making the question of the intergenerational effects of unemployment particularly relevant.

As unemployment becomes more common during a period of depression and increases the number of disadvantages faced by families, the association between parental unemployment and children's outcomes in adulthood may also be affected. Because unemployment is far more common during a depression than in periods of economic growth, the stigma associated with parental unemployment is potentially less severe during periods of economic growth; thus, the supposedly negative intergenerational consequences of unemployment may also be lower. On the other hand, a family's loss of income and other resources is likely to depend more on the length of the unemployment rather than the prevailing economic conditions. However, relatively little is known about the long-term consequences of parental unemployment, particularly the impact of an economic depression

Here, we apply register data to examine the intergenerational effects of parental unemployment during periods of economic growth and depression in Finland. Following a period of strong economic growth, with a low unemployment rate of approximately three percent, in the early 1990s, Finland underwent an exceptionally profound economic crisis, with the monthly unemployment rate peaking at 20 percent. Until the last decade, it remained the most significant economic depression that many developed countries had witnessed since the 1930s. Since the children of the early-1990s depression are now adults, we can gain insight into their current status in adulthood.

In addition, to measure any impact of prolonged unemployment, we compare the effects of long and short spells of unemployment during the depression and growth. We employ propensity score matching methods in our analy-

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sis (Rosenbaum 2002; Rosenbaum & Rubin 1985; 1978). We use Finnish register data from the years of economic growth, 1987-1990, and during the economic depression, 1991-1994, focusing on children who faced parental unemployment when they were 12-18 years old. In the mid-2000s, after a decade of economic growth, the children reached the age of thirty, and their social status is measured using the International Socio-Economic Index (ISEI) scale.

Intergenerational transmission and parental unemployment

Studies of the intergenerational transmission of socioeconomic status have shown that family background affects people through various mechanisms, which can be observed in social status and occupational class (Breen 2004; Erola 2009; Erikson and Goldthorpe 1992; Featherman et al. 1975), education (Björklund & Salvanes 2011; Hauser & Featherman 1976; Sieben et al. 2001), and income (Björklund et al. 2007; Solon 1992; 2002). The mechanisms closely linked to parental unemployment are deprivation of parental economic resources, social ties and social stigma.

One of the most obvious results of parental unemployment is the family's loss of economic resources. Gangl (2006) has shown that in both the U.S. and Western Europe, unemployment reduces not only workers' immediate earnings but also their subsequent earnings. With parents earning less, their opportunities to provide financial support are limited, as is their children's access to material resources. While the modern welfare state may have eliminated the most extreme outcomes of economic deprivation that arise from unemployment (such as malnutrition), other effects have prevailed. Childhood poverty has been shown to have a negative impact on the development of social skills and traits, with some of its consequences observed in family formation as well as education and health (Duncan et al. 1998; Heckman 2006; Hobcraft & Kiernan 2001; Wagmiller et al. 2006).

The negative influence of the childhood family's limited resources on children's adult status does not have conclusive support. For example, Hauser & Sweeney (1995) and Mayer (2009) have argued that evidence is rather weak to prove that the effects of childhood poverty last beyond entry into adulthood. A weak or non-existent effect should be particularly likely in the context of an all-embracing welfare state, where education and health care is free of charge, the level of unemployment benefits is relatively high, and welfare benefits are extensively targeted at families and young people living independently. However, in a Nordic context and elsewhere, evidence does exist to prove the inheritance of low-end economic status. For instance, Airio et al. (2005) showed that childhood poverty predicted the poverty status of adults in Finland in 1990 and 1995 (before and during the depression), although the effect was relatively low and did not change in a statistically significant manner. Other Finnish studies suggest that children from low-income families tend to fare relatively well in adulthood, but intergenerational income elasticity appears to be stronger – and thus the socioeconomic inheritance stronger – at both ends of the income distribution (Jäntti et al. 2006; Sirniö et al. 2013). Kauppinen et al. (2014) have also shown that receiving social assistance is inheritable in Finland, Sweden and Norway, even after the mediating effects of various life-course risk factors are taken into account. The role of economic resources can also be transmitted through parental well-being. For example, Blomgren et al. (2014; 2016) showed that over-indebtedness is associated with several negative health outcomes in Finland. Furthermore, Kestilä et al. (2012) found that the long-term receipt of social assistance was associated with the increased risk of foster care. If economic resources play a particularly important role, we should expect both longer and more frequent unemployment spells to have a more negative impact on child achievement.

The negative effects of unemployment go beyond economic resources. Many of the positive effects of parental employment may be related to the value of the social networks, which is associated with social standing in both the workplace and society in general (Lin 1999). Becoming unemployed reduces social ties, whereas having a wider social network helps the unemployed find a new job (Korpi 2001). While there is evidence that social networks may influence school outcomes by having an impact on parenting (e.g., Hashima & Amato 1994; Morgan & Sørensen 1999), this type of parental resource may be especially important when children themselves try to enter the labour market (Franzen & Hangartner 2006; Härkönen & Bihagen 2011). If parental social networks associated with work are important, even multiple short-term unemployment spells should not be particularly harmful for children. On the contrary, a parent who has been employed multiple times could have more extensive social networks, albeit characterized by weaker ties than those of a parent remaining in the same job for a long period of time (cf. Granovetter 1973).

Parental unemployment may also affect children by other means, particularly through *stigmatization.* This mechanism operates through a sense of disgrace, humiliation and low self-esteem, which are associated with unemployment, weakened social connections and trust, and generated psychological distress (Jahoda 1982; McKee-Ryan et al. 2005). Some evidence suggests that stigmatization related to unemployment may prolong individual unemployment spells (Biewen & Steffes 2010) while increasing health problems (Turner 1995) and the chances of premature death (Martikainen & Valkonen 1996). This parental stigmatization is very likely to be reflected on children.

Children may also feel stigmatized, especially in a community in which their parents are unemployed but other parents are working (Levine 2011). A parent's social and emotional disadvantages may disturb a child's well-being, psychological and cognitive development, and social ties (Christoffersen1994). By giving rise to a generally more pessimistic outlook concerning life opportunities, parental unemployment has been found to exert intergenerational negative psychological effects (Davis-Kean 2005). Children may be socialized to perceive themselves as marginalized and lacking in opportunities, which inhibits their goal attainment

and makes them view unemployment as normal and more acceptable (Brickman & Campbell 1971; Clark et al. 2001).

All of the mechanisms mentioned above might be directly associated with a lower socioeconomic status as an adult or indirectly associated with it, through education or other mediating factors. Indeed, the association between parental unemployment and educational outcomes has been established in the Finnish context (Kallio et al. 2016), and it is clear that educational choices are reflected in socioeconomic status through both direct and indirect routes (Ristikari et al. 2016).

Previous studies

Previous studies have found that parental unemployment is associated with children's unemployment in adulthood. For example, O'Neill & Sweetman (1998) found that having an unemployed father at the ages of 11-16 nearly doubled the risk of adult unemployment among sons. Miller (1998) found that youth unemployment is related to parental unemployment and that the impact of maternal unemployment is even greater than that of the father. However, these and other results based on correlations may be affected by unobservable heterogeneity. For instance, parents who are unemployed are a select group possessing certain features that are not valued by employers and are transmitted to their children.

To better estimate the causal effect of parental unemployment, some researchers have examined the effect of exogenous economic shocks, i.e., an unforeseen loss of work due to plant closure, on the income of the unemployed as well as the intergenerational impact of these shocks on children's economic and education outcomes. Using Canadian data, Oreopoulos, Page, & Stevens (2008) found that sons whose fathers had experienced unemployment shock had nine percent lower income than sons without such a background. The sons of displaced workers were also more likely to receive unemployment insurance and social benefits. On the other hand, in a Norwegian study with a similar design, Bratberg et al. (2008) found that fathers' job loss did not significantly affect the earnings of their children, who were in their late twenties. Rege et al. (2011), also using Norwegian data and using a similar design, found that paternal but not maternal unemployment had a significant negative effect on children's school performance. They argued that the effect was not entirely due to material deprivation caused by the decrease in income; it was also due to the father's mental distress, which can influence children's school performance.

Although these studies effectively address the problems of unobserved third variables, it is important to note that unemployment due to plant closure differs from other, more common unemployment experiences in at least two ways. First, with plant closure, the humiliation and stigmatization, if any, are directed not at the individual but at the social group of fellow workers. As a result, the stigmatization effect associated with parental unemployment may be reduced or negated. On the other hand, because social networks are normally tied to the workplace, at least in part, the unemployment of one's fellow workers might weaken one's chances of finding a new job or otherwise enhance the negative effects of unemployment (e.g., Kauppinen et al. 2011).

Parental unemployment during childhood can have a crucial impact on educational choice. For example, using longitudinal data from Canada, Coelli (2011) found that when children are high school age (16-17), parental job loss affects post-secondary education enrolment. He attributed this to the unemployed parents' loss of income. This finding is consistent with an earlier finding that in the U.S., parental income during children's high school years affects children's college attendance (Jencks & Tach 2006, 47). Likewise, applying U.S. survey data, Kalil & Ziol-Guest (2008) found an association between the father's job loss and children's grade repetition and school suspension.

The impact of parental unemployment is likely to depend on other socioeconomic characteristics of the parents. Levine (2011) studied the impact of the aggregate-level unemployment rate on children's educational tests scores, finding that among low-educated mothers, a higher contextual unemployment rate was associated with lower test scores for children, but the effect was very small and had little socioeconomic significance. At higher maternal education levels, the association between context-level unemployment and children's test scores further decreased, disappeared or even turned positive (when the mother had a college-level degree). When the father or mother was actually unemployed, these effects could not be observed at the individual level. These results suggest that families with greater socioeconomic status are able to cope with the threat of unemployment better than lower-socioeconomic status (SES) families.

Overall, it has been found that parental unemployment is associated with the risk of children's unemployment (Miller 1998; O'Neill & Sweetman 1998) and educational outcomes (Coelli 2011; Kalil & Ziol-Guest 2008). In studies using plant closures as instruments, effects on both later economic and later educational outcomes have been established (Oreopoulos et al. 2008; Rege et al. 2011), but it is still unclear whether they exist for both paternal and maternal unemployment (Rege et al. 2011) or in all country contexts (Bratberg et al. 2008).

Parental unemployment in Finland

The case of Finland provides an excellent setting to compare the impact of parental unemployment during periods of economic growth and depression. In the late 1980s, Finland had one of the most rapidly growing economies among the Nordic countries, with an advanced welfare system and a corporatist labour market (Kalela et al. 2001). During the 1970s and 80s, people became accustomed to relatively low unemployment levels of around five percent. High taxation and income transfers ensured a state-regulated welfare policy. However, unemployment began to rise very quickly, from 3 percent in 1990 to almost 20 percent in 1995 (it was lowest at 2.9 percent in February 1990 and highest at 20 percent in April 1994; see Figure 1 for annual data).

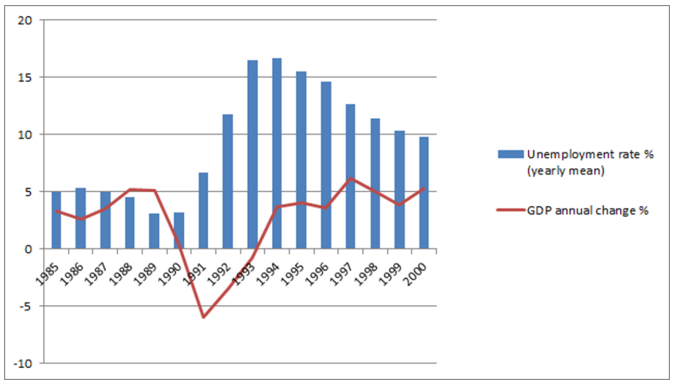

Figure 1. Figure 1. Unemployment rate and GDP annual change in Finland, 1985–2000. (Source: Statistics Finland, Labour Force Survey).

In Finland, the state, together with unemployment funds, provides social security for the unemployed. If the duration of work before the start of unemployment has been at least ten months, the employee is entitled to an earnings-related unemployment allowance for 500 days of continuous unemployment. Typically, this provision is approximately 70 percent of the recipient's pay prior to the start of unemployment. After 500 days, the benefits decrease to approximately one-third of the individual's average pay. This amount is assumed to meet the family's minimum needs.

International comparisons of socioeconomic inheritance have usually found the Nordic countries, including Finland, to be among the most egalitarian (Björklund et al. 2002). The educational system is free of charge at all levels, including tertiary education, and studies are subsidized by student grants. Together with the strong system of social security, this Nordic approach should reduce the negative impact of parental unemployment and the family's lower economic resources.

The intergenerational effects of parental unemployment have not been extensively studied in Finland. Using data from 1990 and 1995 Erola and Moisio (2005) studied the immediate effects of increased long-term parental unemployment on children's social mobility. They found no significant effect, which is not surprising because those who reached the age of 30 by 1995 had experienced the decisive years of early childhood and youth much earlier, in the 1970s and 80s. The set-up applied here, in which parental unemployment occurred during the children's adolescence, is more useful for identifying the long-term intergenerational effects of the early 1990s depression.

Research questions

Following the discussion above, we pose three research questions:

(1) Does parental unemployment have a detrimental effect on the socioeconomic attainment of children in Finland?

(2) Does parental unemployment also have a detrimental effect during a depression?

(3) Is a prolonged period of unemployment during a depression a driving factor of the detrimental effects, independently of the economic cycle?

We expected the answers to the first two questions to be positive. Although we were operating in the context of the Nordic welfare state, it would be surprising if parental unemployment did not have negative consequences for children. Even if the depression decreased the severity of the effects, we would still expect the impact to be significant during a depression. Furthermore, during a depression, the risk of prolonged unemployment raises significantly. However, it is not entirely clear whether the economic cycle influences the effect of prolonged unemployment as such. After 500 days, the economic conditions of families are likely to become worse. During periods of recession, prolonged unemployment is more likely to become even more prolonged, thereby making the economic and social capital-related consequences of unemployment even more severe. However, during periods of high unemployment, the negative stigma – and perhaps the negative effects on social networks – should in fact be weaker.

We do not analyse paternal and maternal unemployment separately. However, based on previous studies, the association between socioeconomic status and parental unemployment is roughly similar in cases of both paternal and maternal unemployment (Lehti et al. 2017).

Data and methods

Data

We compared the socioeconomic statuses of children who experienced parental unemployment in adolescence and those of children who did not. To ensure comparability, we measured parental unemployment at six-year intervals for all of the children, when the children were aged either 12 to 17 or 13 to 18, during a time of strong economic growth (1987–1990) and during one of the most severe depressions in the history of the OECD countries (1991–1994). When the children reached the age of 30, their socioeconomic status was measured on the ISEI scale. Although we might expect the effects of parental unemployment to be stronger for younger children, the stigmatizing effects, in particular, might be expected to be stronger at age 30 (Brand & Thomas 2014). Because the later cohorts have not yet achieved maturity, we were unable to test this group with our dataset.

We analysed a high-quality Finnish sample from the registers of Statistics Finland, comprising 15,991 children who were born between 1974 and 1977. The data were constructed by taking a representative sample of the Finnish population in 1970, which can also be tracked in the previous 1950 census, and then expanding it to include parents, spouses and children of the sample persons, going up and down as many generations as could be found from the registers, from the 1950 census to the year 2007. This method of data construction resulted in a representative sample of the Finnish population, including information about the family members of individuals. It should also be noted that there

were very few immigrants in Finland in 1970; thus, they are not present in the sample except through marriage.

Parental unemployment was measured using register-based information from Statistics Finland. This 'unemployed' group excluded students and mothers on maternity leave as well as persons who, for one reason or another, were not collecting unemployment benefits. A parent was considered unemployed if she or he was unemployed for more than six months during a given year. This was done to exclude people with short transitory periods of unemployment and employed people with regular seasonal (i.e., summer or winter) unemployment. We wanted to exclude the latter group in particular, as they quite often have regular work despite a few months of annual seasonal unemployment. We also distinguished between long-term and short-term unemployment. Long-term unemployment was defined as more than six months of unemployment during each of the three consecutive years. Persons experiencing unemployment in shorter spells were considered short-term unemployed, reflecting the abovementioned threshold of 500 days of higher earnings-related unemployment benefits.

The outcome variable in each analysis was the occupational status of the children at the age of 30. Occupational status can be considered the optimal measure of socioeconomic standing because it is related to both social status and earnings. It is less sensitive to short-term changes to the family's situation than, for instance, income level. We coded the data on occupations into the ISEI status scales (see Ganzeboom et al. 1992). The ISEI measure contains a continuous scale from 16 (lowest) to 90 (highest). Despite being originally intended to measure only the status of men, our sensitivity analyses showed that the results were not significantly different for boys and girls.

We matched children based on parental characteristics by completing the following steps: we 1) divided the childhood families into income quintiles; 2) distinguished among five different levels of education for both mothers and fathers (primary or less, lower secondary, higher secondary, lower tertiary, higher tertiary); 3) included a dummy for parental separation before the period of observation of parental unemployment; and 4) classified both parents according to their occupational standing. All background variables were measured before or at the beginning of the observation period of unemployment, with the exception of parental occupational status, which was measured only in five-year intervals in the data. We thus applied occupational information from 1990. To arrive at a sufficiently high number of cases in each cluster, instead of using the family's ISEI status, paternal and maternal occupational standing was classified according to the seven levels of the Erikson-Goldthorpe class classification (see Erikson and Goldthorpe, 1992; occupational classes for mothers: I Higher managerial and professional occupations, II Lower managerial and professional occupations, IIIa Routine non-manual in admin and commerce, IIIb Routine non-manual in sales and services, IVa+b Self-employed, IVc, Farmers and V-VIb Working class occupation. Occupational classes for Fathers: I Higher managerial and professional occupations, II Lower managerial and professional occupations, IIIb Routine non-manual occupation, IVa+b Self-employed, IVc Farmers, V Lower supervisors and lower technical occupation and VI-VIb Other working class occupation).

The only groups we excluded from our analysis were single mothers and fathers because the effects for these groups might differ greatly compared to other families. We did include children living with repartnered parents. Separate research has already been conducted concerning single-parent households (Brand & Thomas 2014).

Methods

Children experiencing parental unemployment are also likely to be disadvantaged due to other background characteristics, which is why we tend to overestimate the negative effects of unemployment. We attempt to control for this selection bias by applying propensity score matching, a method that has seen a revival in recent studies of unemployment and job displacement (Brand & Thomas 2014; Gangl 2006). Although it does not conclusively solve the problem of selection for unobservable variables, it has some advantages over traditional regression methods.

Matching approaches rely on the classic concept of the experimental framework, in which, ideally, we randomly assign cases to treatment and control groups and then apply the desired intervention to the treatment group (Morgan & Winship, 2007; Rosenbaum 2002). Because the groups are randomly assigned, observations after the treatment can reveal differences between the groups that are large enough not to have resulted from random variation.

In an observational study, which is the most common in the social sciences, we must rely on other approaches to imitate the experimental design. In matching methods, this is done by artificially creating a control group (Morgan & Winship 2007; Rosenbaum 2002; Rosenbaum & Rubin 1985). In our study, groups were formed by matching children according to their family background characteristics, including paternal and maternal SES and educational level, household income by quintile, and an indicator for parental divorce.

In propensity score matching, the estimate of the propensity to experience the treatment, here parental unemployment, is the same for the treatment and control groups, but only the first group has actually experienced unemployment (Rosenbaum, 2002; Rosenbaum and Rubin, 1985; Winship and Morgan 1999). Propensities are obtained by analysing the association of the matching variables on the treatment variable with some form of regression analysis and extracting the predicted values, i.e., *propensity scores (P)*. We employed logistic regression models to acquire the scores.

The matching approach also allows us to differentiate between the average treatment effect on the treated (ATT) and the untreated (ATU) (Gangl, 2010). The ATT reflects the effect on the treated group, which is children experiencing parental unemployment:

$$E(\delta \mid d = 1, P) = E\left(y^{d=1} - y^{d=0} \mid d = 1, P\right) \qquad (1)$$

Here, we focus on the ATT, as we are mainly interested in the effects on people whose parents are likely to be unemployed.

Figure 2 shows the standardized differences in the ISEI between children who experienced parental unemployment and those who did not, before and after matching. Once the groups were matched according to propensity scores, the differences were very small. This was the case in all models.

Using the matching approach instead of the usual regression framework has important advantages. To begin with, we can more rigorously control for differences in other background characteristics that are often associated with unemployment (e.g., Hansen 2004). The matching approach allows us to exclude individuals for whom we are unable to assign a corresponding control person (Hansen 2004; McLanahan et al. 2013; Rosenbaum 2002). With regression methods, we usually assume that we can extrapolate the results outside the covariate support, independently of whether this is truly the case (Gangl 2010; Morgan & Winship 2007; Rosenbaum 2002). Although we were applying a large register-based dataset in our analyses, some children had such unique family backgrounds that no child with a similar background could be identified. To ensure that this did not lead to bias in our estimates, we applied strict restrictions, allowing a propensity score difference of only 0.01.

All the models were run in R, using the optmatch package and its fullmatch algorithm. This allowed matching the same control persons on treatment cases but matching only one control person to each treatment person.

Results

Descriptive statistics

Table 1 shows the absolute and relative levels of parental unemployment based on background variables, between 1987-1994, including both the period of economic growth (end of the 1980s) and the depression (beginning of the 1990s). In the lowest income quintile, over 40 percent of households suffered some form of unemployment, in contrast with 13 percent of the highest quintile households. Similar to parents with higher household income, parents with higher socioeconomic status suffered less from unemployment than those with a lower socioeconomic status. Approximately 16 percent of higher managerial mothers and 15 percent of fathers were unemployed during the covered period, compared to more than 40 percent of working-class mothers and 37 percent of fathers. The mothers and fathers who were more highly-educated were much less likely to be unemployed than those who were less educated. Parental separation predicts a greater probability of unemployment: separated parents had a 45 percent probability of unemployment, while parents who were married or cohabiting had a probability of only 25 percent.

Our descriptive statistics clearly show that higher socioeconomic status, higher income, higher education and marriage or cohabitation are associated with lower levels of unemployment, somewhat more for fathers than for mothers.

Table 1
Parental unemployment by background variables (1987-1994).

1. quintile	43,05	1246
2. quintile	37,94	1222
3. quintile	26,21	858
4. quintile	21,09	696
5. quintile	13,21	434
M. Working class occupation	40,92	1267
M. Farmers	18,29	318
M. Self-employed	25,53	240
M. Routine non-manual in admin and com.	31,9	1.776
M. Routine non-manual in sales and serv.	19,5	333
M. Lower manag. and prof. occup.	18,22	425
M. Higher managerial and prof. occup.	16,39	97
F. Other working class occup.	37,99	1058
F. Low. supervis. and low. tech. occup.	38,51	1548
F. Farmers	18,87	369
F. Self-employed	24,99	477
F. Routine non-manual occup.	27,48	155
F. Lower manag. and prof. occup.	20,15	571
F. Higher managerial and prof. occup.	14,58	278
M. Elementary	34,23	1942
M. Lower secondary	30,2	1866
M. Secondary	18,22	501
M. Lower univ./polytech	11,76	94
M. Higher university	9,25	53
F. Elementary	32,55	1968
F. Lower secondary	31,69	1779
F. Secondary	20,6	445
F. Lower univ./polytech	16,34	176
F. Higher university	8,17	88
Marriage or cohabitation	24,5	3287
Separation	45,72	1169

Overall effect of parental unemployment

We began our analysis of the effects of parental unemployment on the children by examining the possible general harm caused by parental unemployment on children's adult socioeconomic attainment. We compared the ISEI of children experiencing any form of parental unemployment to that of a control group who had a similar family back-

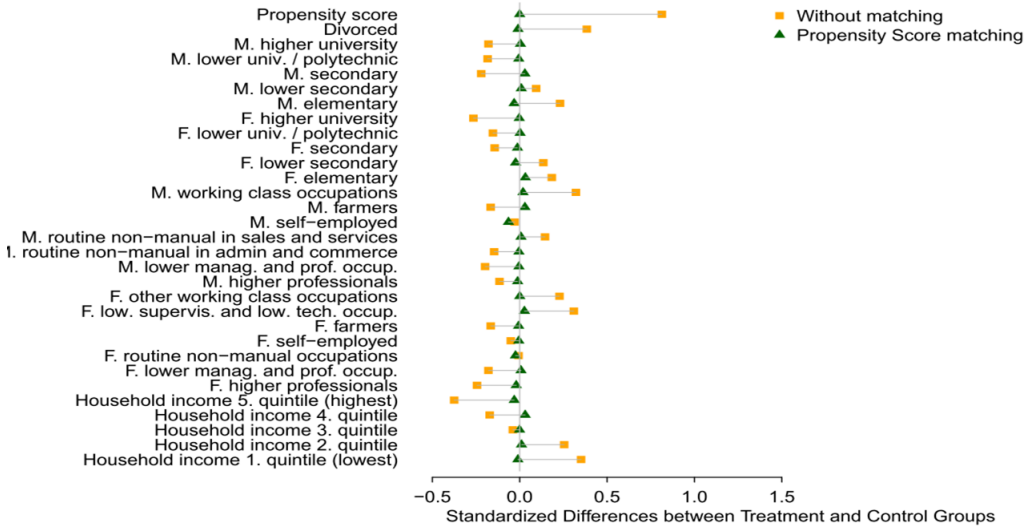

Figure 2. Balance of matching variables before and after matching in first model, including all forms of parental unemployment.

ground but no experience of unemployment (all means and ATTs can be found in Figure 3, as well as Appendix A, Table A1 and boxplot figures for the distributions in Appendix B, Figures B1 to B4). First, we found that the SES of children who experienced parental unemployment was almost 5 points lower than the average for their cohorts on the ISEI scale. When children with similar family background characteristics (control group) were compared to children who experienced parental unemployment, the difference was still significant but also significantly lower. Nonetheless, the average treatment result was clearly negative, assuming that our control variables sufficiently captured the parental background: on average, parental unemployment in Finland has a negative impact on children, even after various factors related to negative background selection are taken into account.

Confirming our hypothesis for the first research question, our results indicate that parental unemployment is negatively associated with later socioeconomic status, even in the context of the Nordic welfare-state model. The suggestion that parental unemployment can have a negative intergenerational effect, even in a society with extensive financial support for the unemployed, is in line with most of the previous literature on the topic (Miller 1998; O'Neill & Sweetman 1998; Oreopoulos et al. 2008; Rege et al. 2011) but in disagreement with some findings related to Norway (Bratberg et al. 2008).

Overall, the statistically significant ATT observed in ISEI was not as large as the effect of other family background factors for the children in question. Yet for an effect of a single childhood event, it was substantial. Compared to negative selection due to other family background variables, it constituted almost a third of the impact on the children in question.

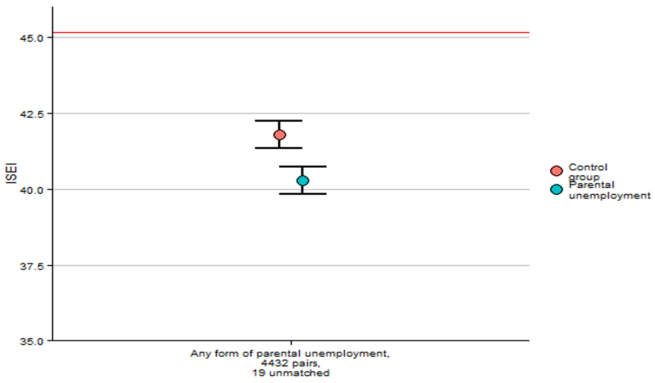

Figure 3. Means and 95 percent confidence intervals of ISEI for control groups and children experiencing any form of parental unemployment; reference line for average ISEI.

Parental unemployment and economic situation

Our second research question considered whether the negative effect of parental unemployment is smaller during a period of depression. The results, shown in Figure 4, suggest that prevailing economic conditions in a society do not make much of a difference. Children experiencing parental unemployment during times of growth show about the same decrease in the ISEI as those who experience it during a time of depression. Negative background selection appears to contribute more or less equally in both cases. The ATT, however, is not statistically significant during the period of economic growth due to the lower number of cases.

Figure 4 also suggests that children who experience parental unemployment at times of both growth and depres-

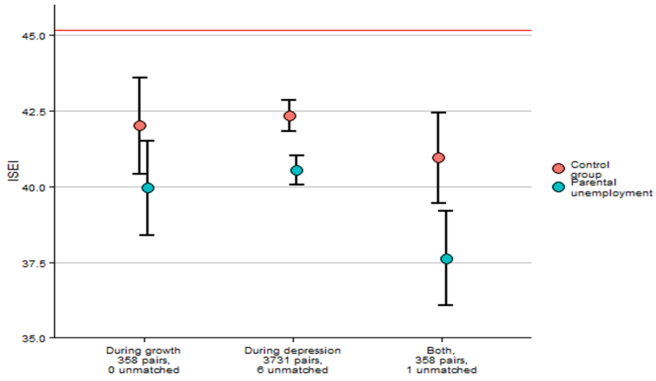

Figure 4. Figure 4. Means and 95 percent confidence intervals of ISEI according to economic situation for control groups and children experiencing parental unemployment; reference line for average ISEI.

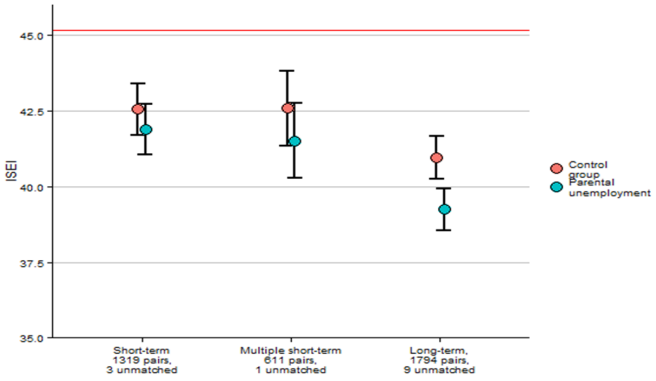

Figure 5. The means and 95 percent confidence intervals of ISEI for control groups and children experiencing parental unemployment during depression, according to length of unemployment spell; reference line for average ISEI.

sion fare the worst. Because this group consists of parents with either long-term unemployment or multiple spells of short-term unemployment, this outcome is to be expected: they can be expected to be more stigmatized and financially deprived. Note, however, that the confidence intervals within this group are relatively wide.

Length of unemployment

In many cases, the risk of prolonged unemployment is much higher during a depression. In our case, 28 percent of parental unemployment spells were examples of long-term unemployment during a period of growth; during a depression, this figure increased to 48 percent. Thus, does the negative effect of the length of parental unemployment vary based on the prevailing economic conditions?

The results for depression are shown in Figure 5. Children with long-term unemployed parents clearly appear to fare worse than those who experienced single, short-term spells of parental unemployment during the depression. In regard to multiple, short-term unemployment spells, the point estimate of the ATT is clearly smaller than that of long-term unemployment (-1.06 compared to -1.72), but the difference is smaller. Furthermore, the ATTs for the short-term and multiple short-term parental unemployment spells are not statistically significant at the 95 percent confidence level. The finding of the especially strong ATT related to long-term unemployment does not appear to be simply related to background selection.

Although the low number of cases of parental unemployment during the period of economic growth make it hard to compare the length of unemployment spells during the growth period, we present these effects in Figure 6. Similar to unemployment during depression, long-term unemployment appears to have a stronger effect than short-term unemployment. Parents with multiple short-term unemployment spells are very few (N=26), and it is hard to conclude much,

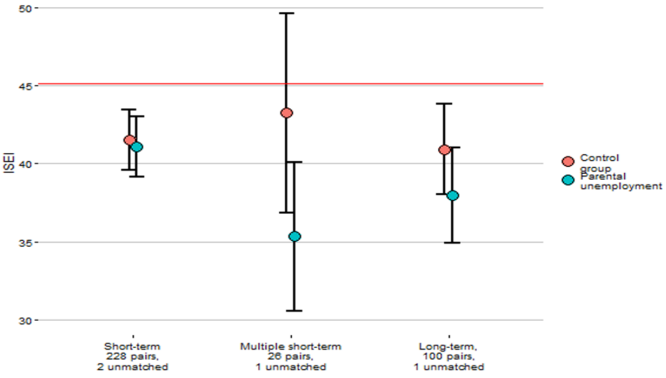

Figure 6. The means and 95 percent confidence intervals of ISEI for control groups and children experiencing parental unemployment during growth, according to length of unemployment spell; reference line for average ISEI (note: different scaling of y-axis).

although the point estimate implies effects that are similar or even stronger than long-term unemployment.

Based on the results, we may assume that the higher rate of long-term unemployment among unemployed parents during a period of depression is at least partly responsible for the enduring negative effects of parental unemployment.

Sensitivity of the results

Due to unobserved determinants of parental unemployment, selection becomes a challenge for both the regression analysis and propensity score matching. In this case, we employ Rosenbaum bounds (Rosenbaum 2002) to measure the effects of any potential bias of unobserved heterogeneity on the results. In general, our models are quite prone to selection, mainly because the number of observations is relatively small, even with a comprehensive sample of register data.

In Table A2 (see Appendix A, Table A2) , we can observe the lower and upper bounds of p-values that are associated with different levels of unobserved heterogeneity. G gives us the odds ratio that is associated with unobserved factors of parental unemployment. Lower and upper bounds present the possible variations in the p-value at different levels of G. We can see that in our model, including all forms of parental unemployment, even a low level of G (1.15) possibly leads to a non-significant p-value. One should note that our control variables are already extensive and highly reliable because they are based on register information. In absolute terms, the effects of parental unemployment are also small, even though it accounts for a considerable share of the effect of family background on ISEI, leading to more sensitive p-values.

Regarding other models, under the circumstances of stronger effects (depression, depression and growth and long-term during depression), the estimates for parental unemployment in this study are approximately as sensitive to selection as the overall model. However, because of the reliability of the dataset, it is unlikely that our results are entirely due to selection.

Conclusion

In the 2010s, many developed societies are witnessing what is perhaps the most severe economic crisis since the Great Depression of the 1930s; they are experiencing, for example, increasing and persistent unemployment (OECD 2014). While opinions regarding how society should react to unemployment can vary, there is a wide consensus that children should not suffer from their parents' misfortunes, such as unemployment. In this study, we sought to determine whether parental unemployment has negative effects on children's adult attainment and, if so, whether these negative effects are equally strong during a period of severe economic depression and during times of general prosperity and whether an increase in prolonged unemployment during a depression drives these effects.

According to our results, parental unemployment can have negative effects on children's socio-economic outcomes. Even in the context of the Nordic welfare state, the association between parental unemployment experienced during adolescence and later socioeconomic status are still observable at the age of 30. Our results further indicate that parental unemployment is equally detrimental at any phase of the economic cycle. At a time of a deep economic depression, parental unemployment had a statistically significant negative association with children's ISEI, which was used as a measure of SES. Furthermore, the results indicate that prolonged unemployment is indeed one of the driving factors of its negative effects but that the negative effect is about the same during periods of growth and recession.

These results are quite different from what might be easily assumed in the context of the generous welfare state. Finland's welfare benefits are specifically targeted to reduce the economic constraints related to unemployment, and comparatively speaking, the level of these benefits can be considered very high. In other societies with less generous welfare systems, one can reasonably assume that the negative effects of unemployment are greater.

As the unemployed in Finland receive higher earnings-dependent benefits for the first 500 days of unemployment, stronger economic deprivation could explain the more severe effect of long-term parental unemployment. Although their influence was stronger than that of a single, short-term spell of unemployment, multiple short-term parental unemployment spells during adolescence did not appear to influence SES in adulthood as strongly as long-term unemployment. It appeared that the generous benefits received for the first 500 days of unemployment were able to counterbalance a portion of the negative effects.

Overall, our results show that if we wish to negate the effects of parental unemployment and equalize opportunities, it is important to provide support for unemployed parents. In particular, the children of parents who are experiencing prolonged unemployment are vulnerable to experiencing long-term negative effects. This support is important during times of both economic prosperity and depression.

Three methodological limitations should be kept in mind when evaluating the results of our study. First, while the counterfactual approach adopted here means the results can measure causal treatment effects with greater validity than the normal regression approach and resolve many of the issues associated with causality, they do not completely eradicate the problem of unobserved third factors. Thus, any causal interpretations of the results should be treated with caution. The second issue concerns the natural limitations that are associated with unemployment during different phases of the economic cycle. In our data, unemployment was not experienced very often during times of prosperity, which made the confidence intervals of those estimates quite wide. Although we do not consider the main arguments presented here to depend on specific coefficients, the reader should interpret the findings concerning specific groups with caution. Third, it should also be noted that the effects were measured in the context of the Nordic welfare state. The results could easily be different in different institutional contexts. Based on the international comparison by Gangl (2006), we would expect the effects to be stronger in other institutional contexts. Thus, we feel safe in concluding that our main argument – the significant negative effects of unemployment during a depression and the importance of the economic mechanisms behind them – would only be more pronounced in many other countries.

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APPENDIX A

Table A1. Means and average treatment effects on treated (ATT) for different forms of unemployment.

	Mean of control group	Mean of treatment group	ATT with 95 ci
Any form parental unemployment	41.79	40.28	-1.55 [-2.15, -0.87]
During growht	42.01	39.95	-2.06 [-4.28, 0.16]
During depression	42.33	40.54	-1.79 [-2.49, -1.09]
During both growht and depression	40.94	37.63	-3.31 [-5.48, -1.14]
Short-term during depression	42.55	41.89	-0.66 [-1.85, 0.54]
Multiple short-term during depression	42.58	41.52	-1.06 [-2.80, 0,67]
Long-term during depression	40.96	39.25	-1.72 [-2.70, -0.73]
Short-term during growht	41.53	41.11	-0.43 [-3.15, 2.30]
Multiple short-term during growht	43.23	35.35	-7.88 [-15.82, 0,05]
Long-term during growht	40.90	37.98	-2.92 [-7.11, 1.27]

Table A2. Rosembaum bounds for the models.

Table 2. Rosenbaum bounds for the models

	All		Growth		Depression		Depression and growth		Short-term during depression		Multiple short-term during depression		Long-term during depression		Short-term during growth		Multiple short-term during growth		Long-term during growth	
Γ	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound
1,00	0,000	0,000	0,048	0,048	0,000	0,000	0,001	0,001	0,165	0,165	0,117	0,117	0,000	0,000	0,375	0,375	0,019	0,019	0,072	0,072
1,05	0,000	0,000	0,020	0,101	0,000	0,000	0,000	0,003	0,042	0,411	0,044	0,248	0,000	0,005	0,264	0,497	0,014	0,024	0,048	0,105
1,10	0,000	0,010	0,008	0,183	0,000	0,005	0,000	0,007	0,007	0,688	0,014	0,423	0,000	0,037	0,177	0,614	0,011	0,030	0,031	0,145
1,15	0,000	0,137	0,003	0,291	0,000	0,077	0,000	0,018	0,001	0,880	0,004	0,607	0,000	0,160	0,113	0,717	0,008	0,037	0,020	0,191
1,20	0,000	0,539	0,001	0,416	0,000	0,369	0,000	0,040	0,000	0,966	0,001	0,763	0,000	0,406	0,069	0,801	0,006	0,045	0,013	0,244
1,25	0,000	0,893	0,000	0,544	0,000	0,762	0,000	0,076	0,000	0,993	0,000	0,874	0,000	0,687	0,040	0,866	0,005	0,054	0,008	0,300
1,30	0,000	0,990	0,000	0,664	0,000	0,957	0,000	0,131	0,000	0,999	0,000	0,940	0,000	0,882	0,023	0,913	0,004	0,063	0,005	0,359

APPENDIX B

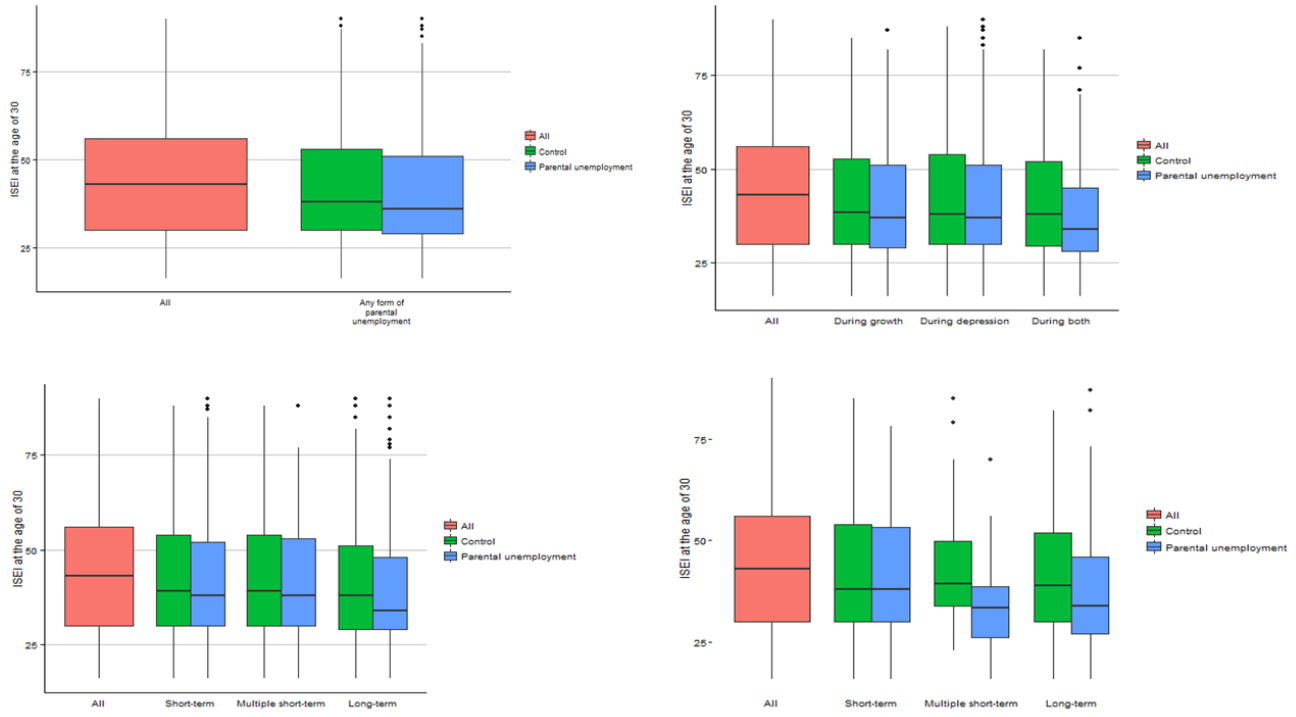

Figure B1. Boxplot of ISEI at the age of 30 for all sample persons, artificial control group and persons experiencing any form of parental unemployment. (Fig: top left).
Figure B2. Boxplot of ISEI at the age of 30 for all sample persons, artificial control group and persons experiencing parental unemployment, according to the timing of the unemployment. (Fig: top right).
Figure B3. Boxplot of ISEI at the age of 30 for all sample persons, artificial control group and persons experiencing parental unemployment during depression according to the length of the unemployment. (Fig: down left).
Figure B4. Boxplot of ISEI at the age of 30 for all sample persons, artificial control group and persons experiencing parental unemployment during growth according to the length of the unemployment (Fig: Down right).