Occupational Inheritance: Impact on Long-Term Worklessness and Unemployment, Human Networks, and Happiness

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In this paper, the author empirically examines the impact of occupational inheritance from father to son as a factor lying behind the increasing trend toward solitary long-term worklessness. SSM data reveal that rates of occupational inheritance have decreased since the war. JGSS data, meanwhile, show that inheritors (i) tend to become self-employed or business owners rather than non-regular workers, (ii) tend not to experience long-term worklessness or unemployment, (iii) have high levels of satisfaction with friendship and tend to feel a sense of attachment to their place of residence, and (iv) have low degrees of solitary long-term worklessness. The data also show, more generally, that (v) long-term worklessness and unemployment tend to break down human networks, (vi) experience of long-term unemployment has a negative effect on happiness later in life, although, in the case of men, the frequency of eating out with friends does not impact happiness, while in the case of women, happiness increases significantly when the frequency of eating out with friends increases, among other findings.

I. Introduction

Since the publication of Genda (2013)'s *Koritsu Mugyo (SNEP)* (Solitary Non-Employed Persons, referred to below as SNEPs), a number of books on this subject have appeared (Kudo and Nishida 2014; Sekimizu and Fujiwara 2013). The message shared by them all includes a sense of reality in sites of support at ground level. Namely, that it is difficult to make a good description, from an economical viewpoint (i.e. from a perspective that explains decision-making on the provision of labor in terms of rational human choices), of the situation of people who belong to the non-labor force over the long term; and that the current trend toward worklessness must be analyzed from a perspective that also takes into account the sociological perspective of whether they belong to communities based around friends outside family relationships, and whether they are maintaining or building human relationships (whether they retain social capital focused on human networks).

These data analysis and case studies paint a picture of a contemporary society in which having a job and having friendship and other social relationships are two sides of the same coin in social life; if one of them is damaged, it is harder to keep the other one in its normal form.

However, as Genda (2013) also points out, social science research on the relationship between this long-term unemployment or worklessness and social capital, and the elements that come to bear on these, has only just started.

Based on such a background, this paper will attempt an empirical investigation of

causes behind the increase in SNEPs and others, and the weakening of their connections (local ties, etc.) with other people (Tachibanaki 2010). This will be based primarily on empirical analysis of JGSS (Japanese General Social Survey) data on the impact of inheritance of the father's occupation, supported by secondary analysis of SSM (Social Stratification and Social Mobility Survey) data.

To preempt the conclusions drawn by this paper, the results obtained are that

- The proportion of sons (inheritors) choosing the same occupation[1] as their fathers decreased between the postwar period and around 2000.
- Inheritors tend to become self-employed or business owners rather than non-regular workers.
- Inheritors tend not to experience long-term worklessness or long-term unemployment.
- Inheritors have high levels of satisfaction with friendship and tend to feel a sense of attachment to their place of residence.
- Long-term worklessness and unemployment tend to break down human networks.
- Experience of long-term worklessness and unemployment has a negative effect on happiness later in life, although, in the case of men, the frequency of eating out with friends does not impact happiness, while in the case of women, happiness increases significantly when the frequency of eating out with friends increases.

As mentioned above, the data used in this paper are taken from JGSS and SSM surveys. As social science researchers have already produced numerous papers based on these two data sources, and given the lack of space available, descriptive statistics will be kept to the very minimum in this paper. Plenty of information on descriptive statistics and various papers using these data can be obtained from the JGSS Research Center at Osaka University of Commerce (http://jgss.daishodai.ac.jp/english/index.html), the Center for Social Research and Data Archives in the Institute of Social Science, University of Tokyo (http://csrda.iss.u-tokyo.ac.jp/en/), and the Osaka University "Social Research Database on Questionnaires" (http://srdq.hus.osaka-u.ac.jp/en/), among others. The reader is therefore referred to these for more detailed information.

It should be noted that, due to problems of sample selection related to the provision of labor, the analysis used in this paper will focus on men in all figures and tables, with the exception of the final Table 7. Also, the JGSS variables used in this paper are pooled from all survey years in which they are continuously surveyed (2000–2010, excluding 2004, 2007 and 2009).

Finally, it should also be noted that the definition of "worklessness" in this paper is a broader concept that includes "unemployment." While unemployment applies to those who were actively looking for work but had no job at the time of the survey, worklessness means that they had no job at the time of the survey, whether or not they were actively looking for

[1] In JGSS data, "Occupation" refers to the respondents' current job coded as xxjob and their fathers' jobs when the respondents themselves were aged 15, coded as ppjbxx15.

work. Therefore, worklessness has a broader meaning that includes unemployment.

II. Occupational Inheritance and Income: Past Trends and Present Situation

1. Occupational Inheritance and Income

In Sannabe (2014), data were pooled from the JGSS in 2000–2010 (except 2004, 2007 and 2009) to reveal a disparity between the annual incomes of inheritors and non-inheritors (inheritors have higher average incomes than non-inheritors). Inheritors are defined as men who, at the time of the survey, had the same occupation as their father had when they were aged 15, and non-inheritors as those who did not.[2]

These same definitions also apply when using the terms occupational inheritance, inheritors and occupational inheritance dummy in this paper. On measuring the ATE (Average Treatment Effect) of the effect of occupational inheritance in an all-male sample, based on the Doubly Robust Estimator,[3] a difference of around 500,000 yen in annual income has been measured. Besides this, estimates have also been made using the eldest son dummy and the number of siblings as instrumental variables.

On the other hand, in OLS analysis using SSM data (data at ten-year intervals from 1955 to 2005), the effect of the occupational inheritance dummy was only significantly positive in FY2005. Like JGSS, the SSM data use an occupational inheritance dummy variable to define inheritors and non-inheritors (a variable taking inheritors as 1 and non-inheritors as 0) as the explanatory variable and annual wage income as the explained variable. On conducting OLS analysis using JGSS data based on the same formulation, the occupational inheritance dummy again showed a positive effect.[4]

From the above results, it may be surmised that the higher income of inheritors could be a phenomenon that started after the beginning of the 2000s.

So why has this kind of phenomenon occurred?

Figure 1 shows chronological changes in the ratio of male non-regular workers to all male workers. As is well known, this ratio has risen dramatically since around the start of the 2000s. Ota (2010) revealed that, in around 2000, there was a significant decrease in so-called “good” jobs from young workers’ perspective, and low-income male non-regular workers increased. On the other hand, inheritors tend not to become non-regular workers. The relative wage levels of inheritors and non-inheritors are thought to have changed because the inheritors were spared this kind of impact. Here, multinomial logit analysis will be conducted to confirm this fact.

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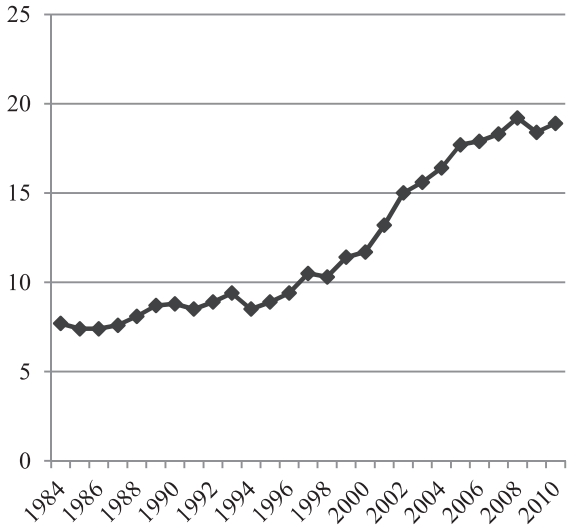
[2] When the SSM data include a question about the father’s main occupation, those data are used.

[3] Under this estimation method, it is known that a consistent estimator of cause and effect can be obtained if the formulation for either the covariates for calculating the propensity score or the explanatory variables that explain the outcome variable is correct (Bang and Robins 2005; Hoshino 2009).

[4] In the SSM data, OLS estimates are used because estimation based on the Doubly Robust Estimator is not possible due to the small sample size.



Source: Created by the author from *Labor Force Surveys*.

Figure 1. The Increase in Male Non-Regular Workers (%)

The explained variable shows the respondents' present employment format, classified as 1. Business owner or company officer, 2. Ordinary employee in full-time employment with no position title, ordinary employee in full-time employment with unknown position title, 3. Ordinary employee in full-time employment as foreman, team leader or group leader, ordinary employee in full-time employment as chief clerk or equivalent position, 4. Ordinary employee in full-time employment as section manager or equivalent position, ordinary employee in full-time employment as department manager or equivalent position, 5. Temporary worker, part-time or *arubaito* worker, temporary agency worker, home worker, and 6. Self-employed, freelancer or family business employee. The explanatory variable shows the occupational inheritance dummy and the father's employment format (categories are similar to those for the employment formats of the respondents shown above, with the addition of the two categories, "No occupation" and "No father").

Table 1 shows the result of this analysis. The sample is limited to men. The result shows that inheritors have a significant tendency to become business managers or self-employed, and not to become non-regular workers.

Non-regular workers tend to be the first to be dismissed or have their employment terminated in an economic downturn, and could be described as more prone to experiencing unemployment. Moreover, they must also be more exposed to the risk of prolonged periods of unemployment once they fall into that state, due to problems with their employment record, etc. These points are connected with the fact that inheritors tend not to experience long-term worklessness and unemployment, as discussed later.

A conceivable second reason why inheritors' wages are higher would be that inherited

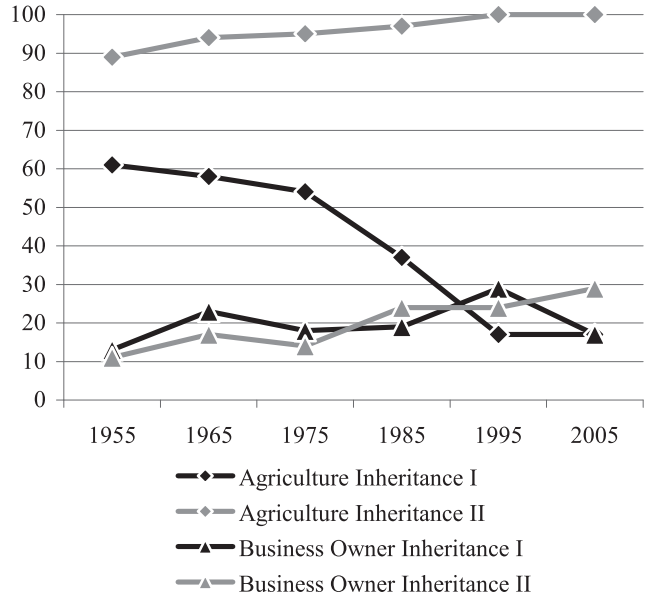
Table 1. The Impact of Occupational Inheritance and the Father's Employment Format on the Employment Format of the Son (Multinomial Logit)

	Business owner	Chief clerk class	Dept/Section manager class	Non-regular	Self-employed / Family business
Inheritance	1.009 ***	-0.245	-0.121	-0.950 **	2.320 ***
	(0.240)	(0.261)	(0.257)	(0.455)	(0.177)
Father:					
Business owner	2.282 ***	0.298	0.362	0.873 **	0.225
	(0.304)	(0.333)	(0.357)	(0.445)	(0.383)
Chief clerk class	-0.0617	0.736 ***	0.593 **	0.351	-0.391
	(0.349)	(0.210)	(0.230)	(0.328)	(0.360)
Dept/Section manager class	0.222	0.528 ***	0.805 ***	0.366	-0.283
	(0.291)	(0.204)	(0.202)	(0.327)	(0.323)
Non-regular	-0.117	0.430	-0.665	0.634	-0.132
	(0.734)	(0.417)	(0.625)	(0.569)	(0.607)
Self-employed / Family business	-0.0734	0.0929	-0.00376	0.0975	0.486 ***
	(0.197)	(0.142)	(0.155)	(0.183)	(0.160)
No occupation	-0.349	-1.434	0.405	-0.942	-0.299
	(0.896)	(1.113)	(0.554)	(0.931)	(0.648)
None	0.147	0.148	0.207	0.103	0.752 ***
	(0.306)	(0.244)	(0.253)	(0.278)	(0.229)
Dropout experience	0.775 **	-0.523	-0.980 **	-0.191	0.798 **
	(0.321)	(0.360)	(0.497)	(0.446)	(0.320)
Marriage	0.741 ***	0.892 ***	1.283 ***	-0.637 ***	0.233
	(0.270)	(0.173)	(0.231)	(0.164)	(0.177)
Age	0.104 ***	0.000506	0.0454 ***	0.0834 ***	0.0908 ***
	(0.00767)	(0.00462)	(0.00522)	(0.00767)	(0.00597)
University graduation	0.443 ***	0.113	0.614 ***	0.151	0.000989
	(0.167)	(0.129)	(0.133)	(0.191)	(0.149)
Annual income	0.00215 ***	0.00105 ***	0.00174 ***	-0.00218 ***	0.000654 ***
	(0.000185)	(0.000161)	(0.000161)	(0.000387)	(0.000193)
Large city	0.236	0.129	0.137	0.110	0.160
	(0.239)	(0.178)	(0.195)	(0.237)	(0.188)
Small city	0.188	-0.0244	0.168	0.0187	0.0485
	(0.184)	(0.141)	(0.151)	(0.180)	(0.141)
Constant	-9.531 ***	-2.542 ***	-5.942 ***	-4.011 ***	-6.512 ***
	(0.510)	(0.255)	(0.323)	(0.482)	(0.370)
Observations	3,248	3,248	3,248	3,248	3,248
Pseudo R2	0.191	0.191	0.191	0.191	0.191
Log likelihood	-4351	-4351	-4351	-4351	-4351

Notes: 1. Robust standard errors in parentheses.

2. The basis for the father's employment format and explained variables is the ordinary employee class.

*** p<0.01, ** p<0.05, * p<0.1.



Source: Created by the author using SSM data.

Figure 2. Change in Rates of Occupational Inheritance for Agriculture and Business Owners (%)

occupations (job types) have changed. While inheritance of less lucrative occupations has decreased, higher income occupations continue to be inherited as before, and the incomes are thus thought to have increased.

Figure 2 shows changes in the rate of occupational inheritance in business ownership and agriculture, forestry and fisheries, which are contrastive in terms of average income. Here, two rates of occupational inheritance need to be distinguished when considering problems of inheritance in terms of different occupations. In this paper, these two are called "Inheritance rate I" and "Inheritance rate II." Inheritance rate I indicates the degree to which the father's occupation has been inherited, while Inheritance rate II shows how many inheritors there are in each occupation. In the field of social sciences, the concept showing the degree to which the parent's occupation is inherited is generally called "outward flow," and the concept showing the number of inheritors in their current occupations is called "inward flow" (Sato 2000).

Specifically, if we take agriculture as an example, the data show that while sons inheriting their fathers' jobs (≒ agriculture) have sharply decreased, those engaged in agriculture are nearly all inheritors; in other words, almost 100% of the fathers of sons engaged in agriculture were also engaged in agriculture.

From this, we know that the rate of occupational inheritance amongst business owners has risen in both I and II, albeit gradually, while in agricultural industries Inheritance

Table 2. Chronological Changes in the Rate of Occupational Inheritance for the Whole Sample

	SSM		JGSS
1955	43%		
1965	24%		
1975	18%		
1985	12%		
1995	7%		
2005	10%	2000−2010	10%

Source: Prepared by the author from SSM and JGSS data.

rate I has continued to fall but Inheritance rate II has trended almost consistently at 100%. It may be assumed that inheritors' income has increased relatively as a result of these trends.

Meanwhile, Table 2 shows chronological changes in the rate of occupational inheritance for occupations as a whole.

From this, we can see that the ratio of people inheriting occupations fell consistently up to around 2000.[5] The emergence of various new job types associated with economic growth and migration from the provinces to the cities are thought to be behind this. Besides this, in addition to the decreased occupational inheritance in agriculture as mentioned above, a decline in the number of self-employed may also be a conceivable factor (Genda and Kambayashi 2001).

2. Existing Research on Occupational Inheritance

A vast body of social science research has been accumulated on parents' occupations vis-à-vis their children's occupations, in the form of class mobility research. Generally, these may be understood mainly to assume social strata such as upper and lower white collar, upper and lower blue collar, and to research the openness of movement between generations (for example, see Ishida and Miwa [2011]). Again, on income mobility, one could point to Sato and Yoshida (2007).

Compared to that context, the difference with this paper is that the main focus is on occupational inheritance in specific occupations, as a discussion from the angle of economics. Research on intergenerational class mobility has also come to be undertaken more actively from the context of economics, a typical example being Long and Ferrie (2013). In research on intergenerational class mobility until then, the focus had mainly been on analyzing intergenerational class mobility in the 20th century; the general view was that there had been no significant variation in social mobility in developed nations. But if we expand the temporal parameters of the analysis to include America in the 19th century, we find that

[5] It should be noted, however, that the occupational categories in the SSM data for 1955–1985 are different from those in fiscal 1995 and 2005. The JGSS categories are the same as the SSM ones for fiscal 1995 and 2005.

openness in 19th century America was very high compared to that since the 1970s.

Let us now briefly summarize existing research on occupational inheritance in the field of economics. The existence of occupational inheritance has been observed in common throughout the world, and is by no means limited to Japan. Although the incentive of receiving physical capital (land, businesses, equipment and other capital) from the parent may be cited as a feature, this is not all. We may also point to the incentive of economic merits received from occupational inheritance, in that job-specific human capital can be sustained or enhanced, brand value can be sustained, and human networks (including clients) can be inherited.

Viewing these forms of occupational inheritance in social terms, it is difficult to discuss whether or not they are desirable. We could see it as socially desirable for traditions cultivated up to the new generation to become human capital as tacit knowledge (Nonaka, Toyama, and Hirata 2010) and to be passed on by virtue of occupations being inherited. On the other hand, it could also be seen as a social loss and unfair if this obstructs efforts to promote movements of people to new industries born of technological progress, etc., nepotism becomes rife, and jobs are taken by people with less ability, compared to others with greater ability who wanted the jobs, due to the influence of their parents. In other words, nepotism could be seen as a phenomenon that most strongly reveals the negative aspects of occupational inheritance.

As existing research on occupational inheritance from the angle of economics, the series of collaborative studies by Laband and Lentz spring most readily to mind. In Laband and Lentz (1983), they highlight a tendency for the children of farm business owners to work in the same agricultural sector as their parents, and point out that both physical capital (land and fields) and human capital in the form of farm employees are inherited. In Laband and Lentz (1990a), they point out that about half of company proprietors are second generation owners who have inherited from their parents' generation, and show that brand value and both physical and human capital can be inherited. In Laband and Lentz (1990b), they suggest that, if a baseball player's child becomes a baseball player, the child often plays in the same position as the parent, and that human capital may be inherited. In Laband and Lentz (1985), they show that, if a politician's child becomes a politician, the child is stronger than the parent in elections, on average, and thus assert that both brand value and human capital are inherited. In Laband and Lentz (1992), they point out that children of lawyers are more inclined to become lawyers, as they receive legal knowledge and others from their parents, while their incomes also tend to be higher than other non-inheriting lawyers.

On the problem of connections, meanwhile, Lentz and Laband (1989) discovered that in a certain US medical school, doctors' children were admitted to the school even if their grades were somewhat inadequate. They therefore label this as nepotism. Groothuis and Groothuis (2008) analyze nepotism in the US car racing business NASCAR. Meanwhile, Scoppa (2009) introduces the advantages of public sector jobs in Italy, and shows that, if the parent is a civil servant, the likelihood of the children becoming civil servants rises by more

than 44%, even when other conditions are controlled. Scoppa uses various evidence to show that this is due to nepotism.

More generally, Hellerstein and Morrill (2011), Earmisch and Francesconi (2004), Carmichael (2000), Di Pietro and Urwin (2003), and Corak and Piraino (2010) highlight various forms of correlation between parents' and children's occupational choices (a tendency to take up the same occupation, a tendency to enter the same company, a tendency to take up a job with the same occupational prestige, etc.). Even in developed countries, they find that equal opportunities are not completely guaranteed in occupational choices, and that the parent's occupational status impacts the child's choice of occupation in the labor market.

Finally, a particularly important point is that there is a lot of existing research on the phenomenon whereby "if the parent is self-employed, the child also tends to be self-employed" (Dunn and Holtz-Eakin 2000). This is a topic that concerns so-called family businesses, but is also observed in large corporations (Pérez-González 2006; Bennedsen et al. 2007). For more detail on family businesses and their performance, see Saito (2008).

III. Occupational Inheritance, Long-Term Worklessness and Unemployment, and Human Networks

1. Psychological Cost and Risks Reduced by Occupational Inheritance

It must be well known that prolonged unemployment[6] acts as a major negative in subsequent occupational life. Another well-known fact is that the length of blank periods on a candidate's résumé causes problems in job interviews. Moreover, if such periods of worklessness occurred in younger years, the individual would have generated a large opportunity cost that would normally have led to growth in human capital. As this causes extremely large problems in social terms, it becomes conceptualized and formulated in various forms, as problems of so-called NEETs and freeters, or in recent years, as the problem of solitary worklessness. This could be said to represent a key talking point (Genda and Maganuma 2004; Kosugi 2003, 2005; Genda 2013).

In this paper, the impact of occupational inheritance on experience of long-term worklessness and unemployment will be examined. Being able to inherit the father's occupation not only avoids the damage to human capital caused by not having a job; it may also reduce the psychological risk that a lengthy absence from work could cause difficulties in rejoining society in future.

Meanwhile, the employment format of working in a family business, or assisting a parent's job, must make it possible to avoid high psychological hurdles, such as having to prepare résumés or attend job interviews, or having to converse with strangers and sell themselves (or to avoid having to make big decisions). In other words, as long as the relationship with the parent is good, it should be possible to start working with relatively little

[6] Shinozaki (2004) is an example of Japanese research on long-term unemployment.

psychological burden, and even if falling into a state of unemployment or worklessness, the individual should be able to find work straight away. Again, as the parent can ascertain the child's character and abilities to a certain degree, this must also make it easier to assign job roles appropriately. There must also be merits when actually working, such as that the individual can feel free to report or consult on various problems that arise in the course of the work.

It would be fair to say, however, that there has so far been hardly any accumulation of analysis on the various impacts of occupational inheritance from the angle of economics.

In this section, based on the problem awareness outlined above, quantitative analysis will be carried out to see whether occupational inheritors have been able to avoid long-term unemployment and worklessness in their lives until that point.

2. Occupational Inheritance, Long-Term Worklessness and Unemployment

In 2000 and 2001, the JGSS included questions on long-term worklessness and unemployment. The length of protracted worklessness can be gleaned from questions on the number of years out of work after graduating and, of this workless period, the length of time when the respondents were looking for work. Firstly, variables are created for the long-term workless and long-term unemployed.[7] For the long-term workless, 0 represents cases when there is no workless period after final graduation, 1 when there is a workless period of less than one year, 2 when it is between one and less than three years, 3 when it is between three and less than five years, 4 when between five and less than ten years, and 5 when it is ten years or more.

Next, as data on the long-term unemployed, 0 represents cases when there is no workless period after final graduation, 1 when there is an unemployment period of less than one year, 2 when it is between one and less than three years, 3 when it is between three and less than five years, 4 when between five and less than ten years, and 5 when it is ten years or more.

Table 3 is a cross tabulation showing differences between inheritors and non-inheritors in these periods of worklessness and unemployment.

In Table 3, the sample is limited to men who have some kind of job at the present time.[8] From the results, we know that inheritors' workless periods and jobseeking periods are clearly shorter, and that this is consistent with the forecasts made above.[9]

[7] We use sznowork for long-term worklessness and szfindjb for long-term unemployment, but not for cases of "Don't know" and No response.

[8] Specifically, people who did some kind of work throughout the previous week, or were planning to work but circumstances prevented them from doing so, are defined as people who have a job at the present time.

[9] When asked about the possibility of unemployment in future, similarly, inheritors respond that there is a fairly low likelihood of becoming unemployed.

Table 3. The impact of Occupational Inheritance on Periods of Long-Term Worklessness and Unemployment

	Non-inheritance	Inheritance	Total
Period of worklessness			
None	75.4%	91.1%	77.2%
Less than 1 year	16.1%	6.1%	15.0%
1 year to less than 3 years	5.8%	2.4%	5.4%
3 years to less than 5 years	1.5%	0%	1.4%
5 years to less than 10 years	0.9%	0.5%	0.8%
10 years or more	0.3%	0%	0.3%
Total	100%	100%	100%
Sample size	1718	213	1931
Chi-square test of independence			
Chi-square value 26.97			
Significant probability 0.000			

	Non-inheritance	Inheritance	Total
Period of unemployment			
None	80.2%	95.6%	81.9%
Less than 1 year	16.1%	3.5%	15.0%
1 year to less than 3 years	2.6%	1%	2.4%
3 years to less than 5 years	0.6%	0%	0.5%
5 years to less than 10 years	0.4%	0%	0.4%
10 years or more	0.1%	0%	0.1%
Total	100%	100%	100%
Sample size	1617	203	1820
Chi-square test of independence			
Chi-square value 29.168			
Significant probability 0.000			

3. Social Capital

Analysis related to social capital continues to be a subject of lively interest in social sciences. Since these analyses cannot all be included in this paper, it shall suffice to pick out a few representative examples. Inaba, et al. (2014) introduce the current status of social capital research in various fields of social sciences. Iriyama (2012) introduces the flow of social capital research in management studies, organized in a way that is easy to understand. Meanwhile, Lin (2001) gives detailed information on the impact of networks in status attainment and class differentiation. Suggestions on issues like the relationship between economic growth and social capital may be obtained from Putnam (1993, 2000), which triggered the current boom in social capital research. And Granovetter (1995), already regarded as a classic text, points out the importance of weak connections when looking for work, while Genda (2001) is an example of this research in Japan.

Cabinet Office (2003) provides reference on the actualities of empirical analysis aimed at social capital. When creating indices of social capital, measurement focuses on the

Table 4. Occupational Inheritance and Human Networks

	Non-inheritance	Inheritance	Total
Frequency of eating out with friends			
Never	8.3%	8.8%	8.4%
About once a year	7.7%	6.9%	7.6%
Several times a year	33.5%	36.8%	33.9%
About once a month	29.9%	28.6%	29.8%
About once a week	13.8%	13.5%	13.8%
Several times a week	6.1%	4.5%	6.0%
Nearly every day	0.7%	0.8%	0.7%
Total	100%	100%	100%
Sample size	7,070	969	8,039
Chi-square test of independence			
Chi-square value 8.3339			
Significant probability 0.215			

	Non-inheritance	Inheritance	Total
Sense of attachment to current place of residence			
No sense of attachment	2.5%	3.3%	2.6%
Little sense of attachment	11.1%	2.2%	9.7%
Some sense of attachment	49.0%	38.9%	47.5%
Feel a sense of attachment	37.4%	55.6%	40.1%
Total	100%	100%	100%
Sample size	516	90	606
Chi-square test of independence			
Chi-square value 14.2774			
Significant probability 0.003			

	Non-inheritance	Inheritance	Total
Satisfaction with friendships			
Dissatisfied	1.4%	1.2%	1.4%
	7.6%	5.4%	7.4%
↕	42.9%	38.4%	42.4%
	29.8%	31.9%	30.1%
Satisfied	18.2%	23.1%	18.8%
Total	100%	100%	100%
Sample size	8,090	1,102	9,192
Chi-square test of independence			
Chi-square value 24.9075			
Significant probability 0.000			

three aspects of the "relationship and interaction index," the "confidence index" and the "social participation index."

4. Occupational Inheritance and Human Networks

Because it is important to examine the impact of human networks when studying the relationship between isolation and worklessness or unemployment, the focus in this paper is

on issues connected with relationships and interaction. The following types of question in JGSS can be used when investigating the relationship between long-term worklessness or unemployment and human networks ("Frequency of eating out with friends," "Satisfaction with friendships," "Sense of attachment to current place of residence"). Table 4 shows a cross-tabulation of occupational inheritance and the variables related to social capital in connection with these human networks.

On the frequency of eating out with friends, there is no significant difference between occupational inheritors and non-inheritors. On the other hand, inheritors are found to feel a stronger attachment to their current place of residence than non-inheritors.[10] As they have taken up the same occupations as their parents, local ties are thought to have been nurtured over many years through continued residence from the parents' generation.[11] It is easy to imagine how the formation of such local ties will also form human networks with local people.

We could assert that local ties form mutually assisting communities and lead to a variety of merits, including maintenance of public order and care for children and the elderly, while inheritors could be the ones responsible for forming these local ties. Of course, this kind of attachment to communities and local affection may actually encourage the choice of occupational inheritance, and this kind of cause and effect relationship should be a topic for future research. Inheritors also tend to feel more satisfied with their friendships, and the reasoning used in the logic above should hold true in this case as well.

5. Long-Term Worklessness or Unemployment and Social Capital

Next, let us look at the relationship between past experience of long-term worklessness or unemployment and the current frequency of eating out with friends. For experience of long-term worklessness, the variables mentioned above are used, divided into three stages, namely, "No experience of worklessness," "Experience of worklessness or unemployment for less than 1 year," and "Experience of worklessness for 1 year or more." The results are shown in Table 5, revealing that experience of long-term worklessness causes a tendency to eat out with friends less frequently[12]). In particular, a high proportion of those with experience of long-term worklessness have no opportunities at all to eat out with friends. This kind of trend would appear to indicate two possibilities – namely, (i) that protracted periods of worklessness could cause relations with friends to be severed, and (ii) that once a person with no friendships becomes unemployed, the duration of that unemployment

[10] As with the sense of attachment to the place of residence, the wish to continue living in the same area is also stronger among inheritors.

[11] In fact, it may be confirmed that occupational inheritors are more likely than non-inheritors to live in the same prefecture at the time of the questionnaire as they did at age 15.

[12] Satisfaction with friendships is also lower among those with experience of long-term worklessness. The relationship between long-term worklessness and attachment to the place of residence cannot be investigated, as the survey years are different.

Table 5. Workless Periods and the Frequency of Eating Out with Friends

	No experience of worklessness	Experience of worklessness for less than 1 year	Experience of worklessness for 1 year or more	Total
Frequency of eating out with friends				
Never	6.5%	9.2%	22.6%	10.6%
About once a year	7.2%	8.1%	9.8%	8.0%
Several times a year	34.8%	36.4%	31.7%	34.3%
About once a month	28.9%	25.2%	23.0%	27.0%
About once a week	15.6%	14.3%	8.3%	13.7%
Several times a week	6.3%	5.6%	3.7%	5.6%
Nearly every day	0.7%	1.1%	0.9%	0.8%
Total	100%	100%	100%	100%
Sample size	1,492	357	540	2,389
Chi-square test of independence				
Chi-square value 129.1084				
Significant probability 0.000				

could become protracted. It would be desirable for this point to be investigated in detail in future research, using panel data or other resources.

IV. Occupational Inheritance and the Degree of Solitary Long-Term Worklessness

In this section, the focus will turn to the causal impact of occupational inheritance on solitary long-term worklessness. As stated above, existing research and experts in the field suggest that worklessness and human networks are mutually dependent, and that there is great significance in handling them as a single entity. Therefore, principal component analysis will be conducted on the basis of long-term worklessness and unemployment, the frequency of eating out with friends, and satisfaction with friendships. A "degree of solitary long-term worklessness" will then be established, and focus placed on the impact of certain variables on these indicators, particularly that of occupational inheritance. As instrumental variables influencing the choice of occupational inheritance, the aim is to ascertain the causal effect of occupational inheritance on the degree of solitary long-term worklessness, using a dummy variable showing whether the individual in question is the eldest son or not, or the number of elder or younger brothers or sisters.

The variables used in Table 3 are also applied to long-term worklessness and long-term unemployment. Principal component analysis has been conducted on four variables, i.e. these two added to the frequency of eating out with friends and satisfaction with friendships. After normalizing the four variables, these variables are multiplied by the respective eigenvectors of the first principal component, a synthetic scale is created, and this

is then taken as the degree of solitary long-term worklessness.[13] The average degree of solitary long-term worklessness is -0.37, the standard deviation is 1.2, the maximum value is 5.06, and the minimum value is -1.91. The higher the value, the greater the degree of solitariness in human relationships. The value also indicates experience of long-term worklessness or long-term unemployment in terms of occupations.

Table 6 shows the causative effect of occupational inheritance, taking this degree of solitary long-term worklessness as an explained variable.

If the eldest son dummy is made an instrumental variable, the result is shown after conducting 2SLS (row [3]), while row (4) takes the number of elder or younger brothers or sisters as an instrumental variable and shows the result of two-step GMM.

F-test conducted on the instrumental variable in row (1) shows a result of 3.33, with a significant probability of 0.07, while in row (2) the result is 2.45 with a significant probability of 0.0488. Meanwhile, the significant probability for the Hansen J statistic (over-identification test of all instruments) in row (4) is 0.843.

For instrumental variables, the importance of birth order for inheritors in the traditional family system is taken into account. However, birth order is assumed not to affect the outcome of jobseeking activity or the frequency of eating out with friends, after factors such as educational level (university graduation dummy, dropout experience) have been controlled.

Occupational inheritance shows a negative effect, which is consistent with the results of cross-tabulation analysis seen so far.

In the analysis using the eldest son dummy as an instrumental variable, on the assumption that monotone conditions are established, the effect of the occupational inheritance dummy shows the local average treatment effect (LATE) of people (compliers) who would not have inherited if they had not been the eldest son, but inherited because they were the eldest son. However, explanatory variables other than the instrumental variables have been added to ensure the validity of instrumental variables in this paper. As such, it should be noted that the effects of the occupational inheritance dummy variable are covariate-specific LATE, and the results cannot necessarily be interpreted intuitively (Angrist and Pischke 2009).

As to the effect of other explanatory variables, the level of occupational prestige for different occupations (using data obtained from the FY1995 SSM Survey), the marriage dummy, annual household income, and the university graduation dummy are negative, and these reduce the degree of solitary long-term worklessness. Conversely, dropout experience and age have the effect of raising the degree of solitary long-term worklessness.

[13] Specifically, the formula is (0.6786 x workless period)＋(0.6765 x unemployment period) – (0.2267 x frequency of eating out with friends) – (0.1748 x satisfaction with friendships), using the z-transformed versions of the variables.

Table 6. Impact of Occupational Inheritance on the Degree of Solitary Long-Term Worklessness

	(1)	(2)	(3)	(4)
	Inheritance		Degree of solitary long-term worklessness	
Inheritance			-1.347 *	-1.517 **
			(0.735)	(0.655)
Eldest son	0.0721 *			
	(0.0395)			
Number of older brothers		-0.0347 *		
		(0.0207)		
Number of younger brothers		-0.00730		
		(0.00931)		
Number of older sisters		5.82e-05		
		(0.00956)		
Number of younger sisters		0.0217 **		
		(0.00915)		
Years of service	0.000350 *	0.000358 *	-0.000381	-0.000337
	(0.000209)	(0.000216)	(0.000270)	(0.000250)
Occupational prestige score	-0.00187	-0.00176	-0.0117 ***	-0.0121 ***
	(0.00158)	(0.00157)	(0.00313)	(0.00296)
Dropout experience	-0.00682	-0.00728	0.552 **	0.625 ***
	(0.0413)	(0.0426)	(0.229)	(0.215)
Marriage	-0.0500 **	-0.0469 **	-0.133 *	-0.132 *
	(0.0197)	(0.0199)	(0.0757)	(0.0749)
Age	0.00286	0.00272	0.00782 ***	0.00780 ***
	(0.00216)	(0.00211)	(0.00272)	(0.00231)
University graduation	-0.0193	-0.0205	-0.0706 *	-0.0747 *
	(0.0177)	(0.0170)	(0.0425)	(0.0420)
Annual household income	6.55e-05 ***	6.45e-05 ***	-0.000143 **	-0.000125 **
	(2.08e-05)	(2.10e-05)	(5.76e-05)	(5.64e-05)
Large city	-0.00568	-0.00679	0.0337	0.0141
	(0.0231)	(0.0233)	(0.0566)	(0.0559)
Small city	0.0263	0.0276	-0.0270	-0.0402
	(0.0284)	(0.0278)	(0.0488)	(0.0456)
Father self-employed	0.101 *	0.101 *	0.0589	0.0558
	(0.0583)	(0.0590)	(0.0777)	(0.0719)
Constant	-0.0356	0.0206	-0.246	-0.218
	(0.0841)	(0.0636)	(0.190)	(0.178)
Observations	1,279	1,273	1,279	1,273
R-squared	0.083	0.086		

Notes: 1. Cluster-Robust standard errors in parentheses.
2. Clusters are the respondents' job type, numbering 138.
*** p<0.01, ** p<0.05, * p<0.1.

V. Degree of Solitary Long-Term Worklessness and Happiness

Finally, let us simply confirm the relationship between the degree of solitary long-term worklessness and happiness. Taking the degree of solitary long-term worklessness discussed above as the explanatory variable, sequential logit analysis was conducted using the level of satisfaction with life in general (1: Unhappy – 5: Happy, reversing the order in the original data) as the explained variable.

Of the variables that make up the degree of solitary long-term worklessness, analysis was carried out using the long-term unemployment variable and the frequency of eating out with friends. Here, as an exception, analysis results using a female sample are also reproduced in this Table. In the analysis until now, the female sample has been excluded from the analysis. This is because a strong sample selection bias is thought to occur in the female sample, in terms of whether or not labor is provided, and the effect of occupational inheritance is very strongly observed. But because the present analysis focuses on the level of happiness (a variable that is observed in both working people and workless people alike), women have been added to the subjects of analysis. The results in Table 7 reveal that an increase in the degree of solitary long-term worklessness significantly reduces happiness. Although Hintikka et al. (2000), among others, report that having many friends tends to result in high levels of happiness, irrespective of gender, the focus here will be on differences between men and women in results concerning the frequency of eating out with friends.

While the frequency of eating out with friends does not have a significant impact on men, for women it is significant at the level of 1%. This would suggest that women can obtain direct benefits from human networks, but that for men this effect is weaker. A tendency for men to become isolated more easily could be concluded to result from this. And it is thought possible that this tendency to become isolated could have the effect of prolonging periods of unemployment.

On long-term unemployment, as Ohtake (2004) and Sano and Ohtake (2007) also found, we see that, even when the experience of unemployment was in the past, it diminishes the level of happiness in the present.

Here, the effect of occupational inheritance is only significant in the case of women. As stated above, many inheritors are self-employed. As Kawaguchi (2008) points out, self-employed workers can ensure a level of autonomy that is important for the endogenous motivation to perform their work, and their levels of job satisfaction also tend to be higher. However, the results show this to be insignificant for men but significant for women, suggesting that, for men, autonomous working formats might only have a weak impact on happiness. This is thought to be linked to a problem with the sample selection. That is, as women are not so well endowed with employment opportunities, this result most likely reflects the effect of being able to work in the first place. Points such as this could be seen as issues for future research.

Table 7. Solitary Long-Term Worklessness and Happiness

	(1)	(2)	(3)	(4)
	Men		Women	
Degree of solitary long-term worklessness	-0.309 ***		-0.216 ***	
	(0.0646)		(0.0609)	
Frequency of eating out with friends		0.0677		0.212 ***
		(0.0464)		(0.0543)
Experience of long-term unemployment		-0.204 ***		-0.161 **
		(0.0766)		(0.0817)
Inheritance	0.0635	0.150	0.531 *	0.504 *
	(0.163)	(0.159)	(0.282)	(0.277)
Dropout experience	0.0552	0.00398	0.0623	-0.0305
	(0.290)	(0.288)	(0.590)	(0.587)
Marriage	1.491 ***	1.508 ***	1.035 ***	1.063 ***
	(0.154)	(0.154)	(0.186)	(0.184)
Age	-0.0929 ***	-0.0874 ***	-0.140 ***	-0.130 ***
	(0.0258)	(0.0256)	(0.0331)	(0.0332)
Age squared	0.000823 ***	0.000732 ***	0.00150 ***	0.00139 ***
	(0.000261)	(0.000258)	(0.000341)	(0.000342)
University graduation	0.0625	0.0672	0.305	0.336 *
	(0.107)	(0.107)	(0.187)	(0.188)
Household income	0.000333 **	0.000426 ***	0.000333 **	0.000327 **
	(0.000138)	(0.000138)	(0.000155)	(0.000152)
Large city	0.218	0.215	-0.166	-0.361 *
	(0.159)	(0.158)	(0.215)	(0.217)
Small city	0.0549	0.0569	-0.0617	-0.111
	(0.121)	(0.120)	(0.173)	(0.171)
Cut1	-5.699 ***	-5.367 ***	-6.456 ***	-5.707 ***
	(0.662)	(0.692)	(0.759)	(0.809)
Cut2	-3.711 ***	-3.535 ***	-4.864 ***	-4.088 ***
	(0.615)	(0.647)	(0.726)	(0.780)
Cut3	-1.204 **	-1.105 *	-2.639 ***	-1.837 **
	(0.592)	(0.624)	(0.695)	(0.755)
Cut4	0.396	0.481	-1.207 *	-0.411
	(0.592)	(0.624)	(0.688)	(0.751)
Observations	1,435	1,454	781	795
Pseudo R2	0.0476	0.0436	0.0360	0.0380
Log likelihood	-1737	-1781	-978.1	-993.6

Note: Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

VI. Conclusion

Probable reasons for the increase in SNEPs are thought to include changes in the socio-economic structure, or the advance of ICT and other technologies. This paper has been one small attempt to investigate changes in socio-economic structure lying behind the increase in SNEPs, or Japan's transformation into a disconnected society.

Of course, it goes without saying that this paper has merely scratched the surface of certain problems. For example, why is occupational inheritance practiced, how is it practiced, and what results does it produce? Again, how has the postwar decrease in occupational inheritance impacted Japan's socio-economy?

As a concept related to worklessness, the use of the term "NEET" (Not in Education, Employment or Training) has generally become very widespread. In the process, it has also been subject to criticism (Honda, Naito, and Goto 2006).

In Japan, "NEET" refers to young workless people, specifically those aged 15–34 in the non-working population who are neither attending school nor engaged in housework. Somewhere along the way, this term has deviated from its original meaning to assume the image of all underdogs in the labor market. It has been recursively accepted by society in this form, and has appeared in particular as a term carrying a nuance of criticism towards workless people in general. As a result, people who used to be vaguely aware of the term have been explicitly shown that there are actually many people who are called NEETs, as an embodiment of the worklessness into which anyone could fall in contemporary Japan. This has heightened people's anxiety and led to "workless bashing." People criticize and discriminate against those who are similar to them but are slightly different (Karatani 1987). The very scale of this criticism of NEETs could be seen as evidence for the latent existence of many people with a high degree of solitary worklessness.

Ultimately, the only way to prevent mistaken images, information and prejudices from being fed back into society is to accumulate research on solitariness or worklessness, and to reinvest it in society.

Note

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