Running Head: Social Integration at Work and Employee's Health across Three Societies

Institutional Embeddedness of Network Embeddedness in the Workplace: Social Integration at Work and Employee's Health across Three Societies*

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Abstract

Durkheim's social integration theory is a classic research paradigm in the health literature. But little is known about the health impact of social integration at work and institutional contingency of that impact across societies. Using data simultaneously collected from three societies (urban China, Taiwan, and the United States), this study revisits the social integration hypothesis expecting a positive association between social integration at work and employee's health, and further examines an institutional contingency hypothesis predicting that positive association to be stronger in urban China than in Taiwan and the United States. This study measures five indicators of social integration at work (the percentage of work contacts among daily contacts, the number of daily work contacts, the percentage of daily work contacts within the company/organization among all daily work contacts, the number of daily work contacts within the company/organization, and the percentage of work discussants within the company/organization) and two health outcomes (psychological distress and self-reported health limitation). Consistent with the institutional contingency hypothesis, results show stronger evidence for the social integration hypothesis in urban China than in Taiwan and the United States.

Key words: social integration at work, institutional theory, health

Institutional Embeddedness of Network Embeddedness in the Workplace: Social Integration at Work and Employee's Health across Three Societies

Social integration reflects individuals' embeddedness (or involvement) in various social ties or relationships, social roles, and social activities (Brissette, Cohen, & Seeman, 2000; House, Umberson, & Landis, 1988). It represents one crucial structural aspect of the social network perspective, and determines other network-based factors, in particular social support, social cohesion, and social capital (Berkman & Glass, 2000; House et al, 1988; Song, 2011). Since Durkheim's pioneering study on social integration and suicide (1951 [1897]), scientists have investigated health consequences of diverse forms of social integration (for reviews see Berkman, 1984; Berkman, Glass, Brissette, and Seeman, 2000; House, Landis and Umberson, 1988; Lin & Peek, 1999; Pescosolido, 2006; Seeman, 1996; Smith & Christakis, 2008; Umberson & Montez, 2010).

Despite the substantial development of the social integration and health literature and the importance of work in people's life course and social life in contemporary society (Elder, 1994; House, 1981; Fischer et al., 1977; Wellman, 1979, 1985), the health impact of social integration at work have received limited research attention (Lincoln & Kalleberg, 1985; Loscocco & Spitze, 1990). Also we know little about the institutional embeddedness or contingency of that impact, that is, whether that impact is contingent on societies with different institutional arrangements (Ganzeboom, Treiman & Ultee, 1991; Kerckhoff, 1995; Lin, 2001a, 2001b; Nee and Ingram 1998; Song, forthcoming). Combining the perspectives of network embeddedness and institutional embeddedness, the purpose of this study is to focus on social integration at work, that is, involvement and connection in the workplace, and further apply an institutional approach to analyze the varying health impacts of social integration at work across three

societies with different institutions in terms of relational culture and the centrality of work and work organizations: urban China, Taiwan, and the United States.

This paper is organized as follows. First, it reviews the relevant literature on social integration and health and identifies the gaps in existing research. It then proposes four hypotheses on the relationship between social integration at work and health. Next, it tests these hypotheses through analyses of unique data simultaneously collected in urban China, Taiwan, and the United States, and reports empirical results. It concludes with the theoretical implications of this study for future research.

LITERATURE REVIEW: SOCIAL INTEGRATION AND HEALTH

Durkheim proposed social integration theory in his seminal work on suicide (1951 [1897]). Observing that the married, the married with children, people with more family members, and the Catholics were less likely to commit suicide than the unmarried or the divorced, the married without children, those with fewer family members, and the Protestants, he concluded that "suicide varies inversely with the degree of integration of the social groups of which the individual forms a part" (209), and argued that social integration could protect people from committing suicide through social attachment, social control, and social support.

Durkheim's classic work on suicide has stimulated voluminous research on protective impacts of social integration in or across diverse life domains on various health outcomes: the presence of marital and family relationships indicating domestic integration (Hughes & Waite, 2009; Kessler & Essex, 1982; Ross & Mirowsky, 2002; Simon, 2002; Umberson, 1987); the degree of religious participation indicating religious integration (Ellison, Boardman, Williams, &

Jackson, 1995; Pescosolido & Sharon 1989; Strawbridge, Cohen, Shema, & Kaplan, 1997); the level of social participation in voluntary organizations (Li & Ferraro, 2005; Thoits & Hewitt, 2001); and the quantity of social roles, social ties, and social activities in general (Berkman & Syme, 1979; House, Robbins, & Metzner, 1982; Lin, Ye, & Ensel, 1999; Moen, Dempster-McClain, & Williams, 1989; Perry & Pescosolido, 2010; Thoits, 1986; Umberson, Chen, House, Hopkins, & Slaten, 1996).

Work career represents one crucial life stage for adults in contemporary society (Elder, 1994). Work is "the most structured and organized" aspect of "most adults' life" (House, 1981: 8). It is increasingly important for adults' life chances and choices. The number of paid work hours per family has been rising in recent decades (Jacobs & Gerson, 2004). Work shapes the composition of individuals' (especially men's) social networks due to the gendered division of labor (McDonald & Mair, 2010; Song, 2012; Wellman, 1979, 1985). One study on men's friendship networks found that work was the most important source for men's friendships, followed by neighborhood, childhood and juvenile friends, kinship, and voluntary associations (Fischer et al., 1977). One recent study reported that people had more coworker ties than neighbor ties in their strong-tie social networks whose largest share was family ties (Dahlin, Kelly, & Moen, 2008).

Networks of social relationships at work have long been recognized as one major social determinant of health (House, 1981; Payne, Jick, & Burke, 1982). Social integration at work as the degree of individuals' contact and connection with colleagues is one important structural aspect of work networks. It directly determines other structural or functional aspects of work networks that are more proximately related to health (Berkman & Glass, 2000; House, Umberson, & Landis, 1988; Song, 2011; Song, Son & Lin, 2010, 2011), including social capital representing

assets network members possess or control (Lin, 2001a), social support indicating various forms of aid individuals receive or perceive from their network members (Berkman, 1984; House, 1981), social cohesion reflecting trust and reciprocity among network members (Kawachi & Berkman, 2000), social attachment or belonging (Durkheim, 1951 [1897]), and social control or regulation (Durkheim, 1951 [1897]).

Despite the burgeoning social integration and health literature, the significance of work in people's life course and social networking, and the upstream influence of social integration at work on other downstream network-based factors, the health impact of social integration at work has received limited attention in comparison with other downstream network forces. Some health and social integration research took the workplace into account, but studied only the role of employment (Moen, Dempster-McClain, & Williams, 1989; Ross & Mirowsky, 1995). Some health research claimed to study social integration at work but actually measured it as social support at work (e.g., Wallace, 1995).

Two exceptional studies contribute to our understanding of health consequences of social integration and connections at work. One study of workers in manufacturing industries in south central Indiana measured social integration as the frequency of talk with supervisor about work- or nonwork-related issues and the existence of company programs (i.e., a company newspaper or newsletter, company-sponsored sports, recreational and social activities, and in-house training program, company support of enrollment in outside courses, and company ceremonies) (Loscocco & Spitze, 1990). It found that the frequency of talk with supervisor was positively associated with happiness for men and the presence of company programs was positively related to happiness for women.

The other study is a comparative examination of the impact of social integration at work on work satisfaction among workers in manufacturing plants in central Indiana and in the Atsugi region of Kanagawa Prefecture of Japan (Lincoln & Kalleberg, 1985). It found that participatory work structures and employee services were more typical of Japanese plants, and that social integration at work—indicated by company services or activities (company supported enrollment in courses, in-house training programs, company-sponsored employee newspapers, ceremonies, company-sponsored sports, recreational, and social activities, formal orientation programs, employee handbooks, regular peptalks/meetings with all employees) and the number of fellow employees as close friends—was positively associated with work satisfaction but only among Japanese workers. These results were consistent with "the welfare corporatist thesis that Japanese firms have assembled a system of organization and employment" which improves workers' satisfaction with their jobs (758).

Despite their contribution, these two studies had weaknesses. First, the generalizability of their findings was limited due to the fact that they both analyzed community data of workers only from manufacturing industries. Second, their measurement of social integration at work was limited. Although they both measured the presence of company programs which arguably increased structural opportunities for employee's social interaction at work, that measurement was an indirect indicator of social integration at work. The first study examined connection with supervisor, and ignored possibly more frequent interaction with other colleagues in similar hierarchical levels. The second study investigated the size of friendship network at work that was based on strong ties, and ignored the size of social network at work in general that was not constrained by tie strength. Additionally, the second study was praiseworthy for its institutional perspective, but its outcome of interest—work satisfaction—was an indirect health indicator.

Using unique nationally representative data simultaneously collected from three societies: urban China, Taiwan, and the United States, this study measures social integration at work based on workers' daily social contacts and work discussants and examines its varying effects across three societies from an institutional perspective. The next section proposes a theoretical map of multilayer networks with work-related networks at the center and research hypotheses based on available data.

HYPOTHESES

Before proposing research hypotheses, it is necessary to conceptualize a multilayer of networks with work-related networks at the center, based on available data (see Figure 1). The first outside layer is the society or the institutional field (Lin, 2001a), which shapes ego's social interaction and the formation of ego's social network—the second outside layer—through institutional factors. Embedded in ego's social network is ego's daily social network—the third layer—composed of daily contacts ego makes and ego's work discussion network—the fourth layer—composed of contacts ego discuss work issues with. Dwelling in ego's daily social network is ego's daily work network—the fifth layer—constituting of daily contacts ego makes at work. Ego's work discussion network and daily work network can be further decomposed into two sections: the first section with contacts inside ego's company or organization and the second one with contacts outside ego's company or organization. Furthermore, ego's work discussion network may overlap incompletely with ego's daily social networks and daily work network to certain degree. Some discussants may be ego's daily contacts or daily work contacts (e.g., a strong-tie coworker), but some discussants may not be so (e.g., a weak-tie friend).

To capture the degree of social integration at work based on this conceptual map, it is necessary for us to measure 1) the proportional share of daily work network inside the daily social network, 2) the size of daily work network, 3) the proportion of daily work contacts within the company or organization among all daily work contacts, 4) the size of daily work contacts within the company or organization, 5) the proportion of work discussants within the company or organization among all work discussants, and 6) the size of work discussants within the company or organization. Three proportion measures capture the relative prominence or importance of, respectively, work contacts among all contacts, within-company work contacts among all work contacts, and within-company work discussants among all work discussants. Three size measures indicate the quantity of, respectively, work contacts, within-company work contacts, and within-company work discussants. Higher values of these six factors correspond to higher degrees of ego's social integration at work. Available data allow the measurement of the first five factors that will be introduced later in the data and methods section.

This study examines two questions. First, this study revisits the question of whether social integration at work exerts salubrious effect on employee's health. Social integration at work can protect health through multiple social antecedents of health: accumulating social capital as network resources (McDonald, Lin, & Ao, 2009; Song, 2011; Song & Chang, forthcoming; Song & Lin, 2009); delivering various forms of social support (Billings & Moos, 1982; Karasek, Gardell, & Lindell, 1987; Viswesvaran, Sanchez, & Fisher, 1999; Wallace, 1995; Wellman & Wortley, 1990; Wells, 1982); reinforcing social regulation and social control (Umberson, 1987); enhancing social cohesion (Oksanen et al., 2008; Suzuki et al., 2010); sustaining social attachment (Oksanen et al., 2008); and decreasing exposure to stress in

particular occupational stress (Wells, 1982). Thus, the first hypothesis (H1) proposes that social integration at work is positively associated with employee's health.

Second, this study asks whether the protective effect of social integration at work on employee's health varies across societies with different institutional arrangements. Institutional theory (Ganzeboom, Treiman & Ultee, 1991; Kerckhoff, 1995) states that different institutional arrangements produce diverse inequality patterns across space. Institutional arrangements can shape the formation and function of social connections (Lin, 2001a; Nee & Ingram, 1998; Song, forthcoming). Two institutional factors may shape the strength of the positive relationship between social integration at work and health across these three societies (urban China, Taiwan, and the United States): relational culture and centrality of work and work organizations.

Relational culture determines the degree to which a society institutionalizes the legitimacy and values of social connections. In a relational culture where instrumental functions of social ties including work ties are more highly legitimated, individuals are more likely to recognize and mobilize those ties to maintain and protect their health. The dominant relational culture in China is characterized by a more highly institutionalized legitimacy of social relationships than those of the United States and Taiwan.

The dominant relational culture in China resides in the concept of *guanxi,* which is traceable to Confucian ethics and emphasis on collectives and interdependence over individuals and independence (Bian, 2001; Hwang, 1987; Yang, 1994). Guanxi refers to a particular social network composed of "enduring, sentimentally based instrumental relations that invoke private transactions of favors and public recognition of asymmetric exchange" (Lin, 2001b: 159). Chinese are committed to maintain their guanxi on a long-term basis of loyalty, obligation, and

reciprocity, and prioritize the maintenance of social relationships, exchanges, and recognition (Lin, 2001b). They use guanxi to obtain resources from and exchange resources with network members, and to establish new guanxi to people who control desirable resources. In contrast, the prevalent relational culture in the United States values autonomy, economic bonds, economic transaction, and economic profits under the influence of the dominant ideologies of individualism and free-market capitalism (Lin, 2001b). In Taiwan, the strength of guanxi culture may have been attenuated to a great degree, due to its long adoption of the market economy.

Also, centrality of work and work organizations directly determines the importance of social integration at work in individuals' daily life. In a society where work and work organizations more strongly dominate people's life chances, social connections at the workplace are more likely to affect people's health. The dominance of work and work organizations is more pronounced in China than in Taiwan and the United States. China as a state socialist country since 1949, organizes and controls its urban population through a rigid hierarchical structure of work organizations, or work units (*danwei*), based on their property-rights relationship to the state (Zhou, 2004). State work units receive more redistributive resources and benefits than other work units (e.g., collective, private). Work units further control urban workers' daily life with limited opportunities for job mobility across work units. Work units rather than occupational status are more important for Chinese status attainment because urban workers rely on their work units for necessary resources including wages, housing, various services (e.g., health, food, and funeral expenses), pensions, and benefits for family members such as nurseries, schools and employment (Lin & Bian, 1991; Walder, 1986; Whyte & Parish, 1984).

Even after the market-oriented reform in 1978, work units still affect people's life chances and health in urban China (Cao & Nee, 2005; Wu, 2002; Yu, 2008; Zhou, 2004).

Because of the centrality of work units or workplaces, work stress has a stronger effect on Chinese psychological well-being than family stress in urban China (Lai, 1995). The most important source of stress is the work context in urban China but the family context in the United States (Lin & Lai, 1995).

Combining the relational culture argument and the centrality of work and work organization argument, this study proposes an institutional contingency hypothesis: the protective effect of social integration at work on employee's health is stronger in urban China than in Taiwan and the United States (H2).

DATA AND METHODS

Data

Data are drawn from the research project "Social Capital: Its Origins and Consequences" (for a detailed survey procedure, see Lin & Ao, 2008; Lin, Ao, & Song, 2009). These are three-society data collected simultaneously in 2004-2005 in urban China, Taiwan, and the United States from national stratified representative samples of adults ages twenty-one to sixty-four, currently or previously employed. The urban China sample consists of 3,500 respondents; the Taiwan sample totals 3,280 respondents; and the U.S. sample has 3,000 respondents.[1] Some information on social integration at work was collected only from employed respondents at the survey time. Thus unemployed respondents are excluded from the analysis samples (urban China: N=799, Taiwan: N=874, and the United States: N=683). This study further excludes cases whose response to questions on social integration at work is "Not applicable," "Do not know," "No need for work discussants," or "Cannot find work discussants" (urban China: N=367, Taiwan:

N=387, and the United States: N=121).[2] After the listwise deletion of cases with missing values in variables of interest, the final analysis sample has 2,205 respondents in urban China, 1,910 in Taiwan, and 1,873 in the United States.[3] Table 1 shows the summary of sample characteristics.

Insert Table 1 about here

Dependent Variables

Psychological distress, an indicator of mental health, is measured by eight items from the CES-D scale that proves applicable among Chinese and Taiwanese adults (Chien and Cheng 1985; Lin, 1989; Radloff, 1977). Each respondent was asked, "Please tell me how often you have felt this way during the past week." The eight items were: "I did not feel like eating; my appetite was poor," "I felt like everything I did was an effort," "My sleep was restless," "I felt depressed," "I felt lonely," "People are unfriendly," "I felt sad," and "I could not get going." These indicators are rated on a four-point scale (0=rarely or none of the time: less than 1 day in the past week; 1=some or little of the time: 1–2 days in the past week; 2=occasionally or moderate amount of time: 3–4 days in the past week; 3=most or all of the time: 5–7 days in the past week). The summed total score ranges from 0 to 24 in all three societies, with higher values indicating higher levels of psychological distress. I apply a logarithmic transformation to normalize this rightly skewed variable.

Self-reported health limitation is an indicator of physical health. Respondents were asked, "Now I would like you to think of the last twelve months; how often was your daily life

disrupted for more than a week due to health related matters?" I create a dummy variable to measure self-reported health limitation (1="frequently or occasionally," 0="seldom or never"). About 8 percent of respondents in urban China, 6 percent of respondents in Taiwan, and 20 percent of respondents in the United States have frequent or occasional disruption in daily life due to health issues.

Independent Variables

The survey collected information on respondents' daily social network, daily work network, and work discussion network, and allowed the measurement of five indicators of social integration at work: 1) the percentage of daily work contacts among daily contacts, 2) the size of daily work contacts, 3) the percentage of daily work contacts within the company/organization among all daily work contacts, 4) the size of daily work contacts within the company or organization, and 5) the percentage of work discussants within the company or organization. The higher the values of those indicators, the higher the degree of social integration at work.

The survey first asked respondents the size of their daily social networks: the number of people they made contact with on average in a typical day (1=0-4, 2=5-9, 3= 10-19, 4=20-49, 5=50-99, 6=more than 100). It then asked respondents how many of their daily work contacts were among their daily contacts (1=almost all of them, 2=most of them, 3=about half of them, 4=a few of them, and 5=almost none of them) and how many of their daily work contacts were within the company or organization (1=almost all of them, 2=most of them, 3=half of them, 4=a few of them, 5=almost none of them). I recode the values of those two variables into percentages that are empirically more meaningful (100 percent=almost all of them, 75 percent=most of them,

50 percent=about half of them, 25 percent=a few of them, zero percent=almost none of them).[4] I further calculate the size of daily work contacts (the size of daily social network times the percentage of daily work contacts among daily contacts) and the size of daily work contacts within the company (the size of daily work contacts times the percentage of daily work contacts within the company or organization among all daily work contacts).

Also the survey asked respondents how many of the people they discussed work related issues with were within the company or organization (1=almost all of them, 2= most of them, 3= half of them, 4= a few of them, 5= almost none of them). I recode the values of this variable into percentages (100 percent=almost all of them, 75 percent=most of them, 50 percent=about half of them, 25 percent=a few of them, zero percent=almost none of them).[5]

All analyses control for three demographic factors: age, gender (1=female, 0=male), and marital status (1=married, 0=unmarried); three socioeconomic indicators: educational level (1=none, 2=self-educated, 3=elementary school, 4=middle school, 5=high school, 6=associate college, 7=Bachelor degree, 8=Master Degree and above), occupational class of the current job (1=lower class, 2=middle class, 3 =professional class, and 4=executive class), and annual family income; and one indicator of social participation (the number of memberships in voluntary organizations). A dummy variable for each category of occupational class is created with executive class as the reference group. Annual family income has ordinal ranges (twenty-two in the urban China sample, twenty-seven in the Taiwan sample, and twenty-eight in the U.S. sample). I calculate medians of all ranges and take these medians' natural logarithms for a normal distribution of income.

China and the United States also have some unique social stratifiers. The analyses of the urban China sample further control for political capital as a dummy variable (1=Communist

Party member) and work units as a dummy variable (1=state-owned, 0=others). The analyses of the U.S. sample further control for race/ethnicity (1=white, 2=black, 3 =Latino, and 4=other race/ethnicity). A dummy variable for each racial/ethnic category is created with white as the reference group. In addition, the analyses of the Taiwan and U.S. sample further control for residential location as a dummy variable (1=urban cities).

Analytic Strategy

This study examines the hypothesized negative effects of social integration at work on psychological distress by running one OLS regression of psychological distress on each of those five indicators of social integration at work and control variables in each society. Also this study investigates the hypothesized negative effects of social integration at work on self-reported health limitation by running one logistic regression of self-reported health limitation on each of those five indicators of social integration at work and control variables in each society.

RESULTS

Evidence from Urban China

Table 2 shows results from the OLS regressions of psychological distress on five indicators of social integration at work and control variables in urban China. These indicators of social integration at work are first entered into the regression model separately (see Models 1-5). With the exception of the percentage of daily work contacts within the company or organization, the other four indicators are all significantly associated with psychological distress in a negative

direction. Individuals whose work contacts constitute a larger share of their daily social contacts and individuals who make more daily work contacts and make more such contacts inside the company or organization report lower levels of psychological distress than those whose work contacts represent a smaller part of their daily social contacts and those who make fewer contacts in daily work and make fewer such contacts in daily work within the company or organization. Also, individuals who have a larger share of their work discussants within the company or organization have lower degrees of psychological distress than those who have a smaller share of work discussants within the company or organization.

Insert Table 2 about here

The first two and the fourth indicators of social integration at work—the percentage of work contacts among daily contacts, the number of daily work contacts, and the number of daily work contacts within the company or organization—are all closely related to the daily work network and correlated with each other. The number of daily work contacts and the number of daily work contacts within the company are particularly highly correlated with each other. The simultaneous entry of all three indicators into the OLS regression model can lead to multicollinearity. Thus a factor analysis is conducted, and shows that three indicators load onto one single latent factor (.31 percentage of work contacts among daily contacts + .44 number of daily work contacts + .44 number of daily work contacts within the company or organization). Then that latent factor and the percentage of work discussants within the company or organization are both entered into the final model (see Model 6). Both of them are significantly

associated with psychological distress in a negative direction net of each other and control variables. In brief, all significant results are consistent with the social integration hypothesis (H1). Among control variables (see Model 6), women and individuals with less family income report more psychological distress than men and those with more annual family income.

Table 3 shows results from the logistic regressions of self-reported health limitation on five indicators of social integration at work and control variables in urban China. These indicators of social integration at work are entered into the regression model separately (see Models 1-5). Only the second indicator is significantly associated with self-reported health limitation in a negative direction (see Model 2). Individuals making more daily contacts due to work are less likely to suffer life disruption due to health issues than those contacting fewer people in daily work. This only significant result is consistent with the social integration hypothesis (H1). Among control variables (see Model 2), younger adults, the married, and the lower and professional classes are less likely to suffer life disruption due to health problems than older adults, the unmarried, and the executive class.

Insert Table 3 about here

Evidence from Taiwan

Table 4 shows results from the OLS regressions of psychological distress on five indicators of social integration at work and control variables in Taiwan. These indicators of social integration at work are entered into the regression model separately (see Models 1-5). Only the last indicator

is significantly associated with psychological distress in a negative direction (see Model 5). Individuals who have a larger share of their work discussants within the company or organization report lower degrees of psychological distress than those whose coworkers within the company or organization represent a smaller part of their work discussants. This only significant result is consistent with the social integration hypothesis (H1). Among control variables (see Model 5), older adults, men, the married, the middle class, and individuals with more annual family income have lower degrees of psychological distress than younger adults, women, the unmarried, the executive class, and those with less annual family income.

Insert Table 4 about here

Table 5 shows results from the logistic regressions of self-reported health limitation on five indicators of social integration at work and control variables in Taiwan. These indicators of social integration at work are entered into the regression model separately (see Models 1-5). Only the fourth indicator is significantly associated with self-reported health limitation in a negative direction (see Model 4). Individuals contacting more coworkers inside the workplace because of work are less likely to suffer life disruption due to health problems than those who make fewer such contacts within the company or organization. This only significant result is consistent with the social integration hypothesis (H1). Among control variables (see Model 4), men and the more educated are less likely to suffer life disruption due to health problems than women and the less educated.

Insert Table 5 about here

Evidence from the United States

Table 6 shows results from the OLS regressions of psychological distress on five indicators of social integration at work and control variables in the United States. These indicators of social integration at work are entered into the regression model separately (see Models 1-5). Only the last indicator is significantly associated with psychological distress in a negative direction (see Model 5). Individuals who have a larger share of their work discussants within the company or organization report lower degrees of psychological distress than those whose coworkers within the company or organization represent a smaller part of their work discussants. This only significant result is consistent with the social integration hypothesis (H1). Among control variables (see Model 5), older adults, men, Latinos, the married, and individuals with more annual family income have lower degrees of psychological distress than younger adults, women, whites, the unmarried, and those with less annual family income.

Insert Table 6 about here

Table 7 shows results from the logistic regressions of self-reported health limitation on five indicators of social integration at work and control variables in the United States. These indicators of social integration at work are entered into the regression model separately (see Models 1-5). Only the last indicator is significantly associated with self-reported health

limitation in a negative direction (see Model 5). Individuals whose coworkers within the company or organization constitute a larger share of their work discussants are less likely to suffer life disruption due to health issues than those whose coworkers are a smaller part of their work discussants. This only significant result is consistent with the social integration hypothesis (H1). Among control variables (see Model 5), older adults, women, blacks, the lower class, and people with less family income are more likely to experience life disruption due to health issues than younger adults, men, whites, the executive class, and those with more annual family income.

Insert Table 7 about here

Summary of Evidence from Three Societies

Do the protective effects of social integration at work on health vary across societies? Results are consistent with the institutional contingency hypothesis (H2) that social integration at work in general is more important and salubrious in urban China than in Taiwan or the United States. The analyses of the urban China sample (see Tables 2 and 3) show that four out of five indicators of social integration at work are negatively associated with psychological distress, and that one indicator—the number of daily work contacts—is negatively related to self-reported health limitation. In contrast, the analyses of the Taiwan sample (see Tables 4 and 5) show that only one indicator of social integration at work—the percentage of work discussants within the company or organization—is negatively associated with psychological distress and only one indicator—the number of daily work contacts within the company or organization—is negatively related to self-reported health limitation. The analyses of the U.S. sample (see Tables 6 and 7)

show that only one indicator of social integration at work—the percentage of work discussants within the company or organization—is negatively associated with psychological distress and self-reported health limitation.

CONCLUSION AND DISCUSSION

Using data simultaneously collected from three societies (urban China, Taiwan, and the United States), this study revisits the social integration hypothesis expecting a positive association between social integration at work and employee's health and further examines an institutional contingency hypothesis predicting that positive association to be stronger in urban China than in Taiwan and the United States. This study measures five indicators of social integration at work and two health outcomes (psychological distress and self-reported hbvgealth limitation). Consistent with the institutional contingency hypothesis, results show stronger evidence for the social integration hypothesis in urban China than in Taiwan and the United States.

This study extends the relevant literature theoretically and methodologically in three ways. First, this study advances our understanding of health consequences of social integration at the workplace. Social integration or social connectedness takes diverse forms, depending on its embededness in different life domains or social roles. Despite the significance of work in adults' lives (Elder, 1994; House, 1981; Wellman, 1985), social integration at the work sphere receives limited research. This study proposes a conceptual framework of multilayers of networks with work-related networks as the center (see Figure 1), and measures five indicators of social integration at work using available data. Although varied by social integration measurement, health outcome, and society, significant findings in each society are consistent with the original

social integration argument. Employees who are more integrated into the workplace report lower levels of psychological distress and self-reported health limitation, controlling for their social integration in the domestic and public spheres (marital status and social participation) and other demographic and social attributes. To achieve a fuller picture of health dynamics of social integration at work, future research should examine and compare the relative importance of possible downstream mechanisms in linking social integration at work to health, such as social capital, social support, social cohesion, social control, and social attachment, whose health effects have been well documented. Also note that social integration at work has a much stronger association with mental health than with physical health in urban China. Its potential varying influence on other health outcomes should be explored in future research.

Second, this study merges the social integration paradigm with an institutional perspective and demonstrates the varying health effect of social integration at work across institutional arrangements. Social integration at work is composed of two elements: social integration or connectedness and the work context. Its health consequences of social integration are thus contingent on two institutional factors: relational culture that determines the legitimacy and function of social connections and centrality of work and work organization that shapes the significance of the work context in people's daily life. Urban China is characterized by the relational culture of *guanxi* which highly legitimates the mobilization and use of social relationships and centrality of work units in that work units control employee's access to various necessary resources and benefits beyond salaries. This study proposes the positive association between social integration at work and health to be stronger in urban China than Taiwan and the United States. That proposal is supported by the empirical findings. Four out of five indicators of social integration at work exert salubrious health effects in urban China, but only two indicators

affect health in Taiwan and the United States. There have been a few calls for research on the embeddedness of health effects of social network factors including social integration within a broader social structure (Berkman et al. 2000; House, Landis, & Umberson 1988). This study demonstrates that future social networks and health research should further go beyond the social structure within one single society, and bring varying institutional arrangements across societies into the picture. As the conceptual framework in Figure 1 proposes, any social network is embedded in a society or institutional field, and its formation and operation are constrained by attributes of that institutional field (Lin, 2001a).

In addition, this study measures five indicators of social integration at work based on available data, and its results has three important methodological implications. First, the last indicator, which is related to work discussion networks, is a more consistent predictor of health across societies than other indicators, which are related to daily work networks composed of general work contacts. The percentage of work discussants within the company is negatively related to psychological distress in all three societies and to self-reported health limitation in the United States. Among the other four indicators, the percentage of work contacts among daily contacts is negatively related to psychological distress in urban China; the number of daily work contacts is negatively associated with both health outcomes in urban China; and the number of daily work contacts within the company/organization is negatively related to psychological distress in urban China and to self-reported health limitation in Taiwan. These findings are not surprising. Discussion networks tend to be small, relatively dense, homogenous, and composed of strong ties (i.e., high-intimacy relationships) (Marsden, 1987). Such strong-tie relationships are often used as a surrogate for social support, and are more protective of health than weak-tie relationships (Lin and Peek, 1999). Thus work discussion networks, which map connections ego

seek and use for the need of discussing work-related issues, are more likely to be composed of strong ties, require a certain degree of trust and reliance, be valuable sources of salubrious social support, and further protect ego's health. Daily work networks, in contrast, tend to capture ego's routine interactions and ties with others due to work. If simply required by the performance of work, such interactions and ties may be superficial and weak, involve less closeness, and be less likely to help maintain ego's health as mobilized sources of social support. To achieve a more complete understanding of the different layers of work-related social networks and the multidimensional nature of social integration at work, future research should examine these speculations through the simultaneous analysis of those two components of social integration at work, tie strength at work, and social support at work.

Second, social integration related to daily work networks composed of work contacts is a more salient predictor of health in urban China than in the other two societies. Out of its four indicators, three indicators exert health effects in urban China, while only one indicator has such effects in Taiwan and no indicators have such impacts in the United States. These findings support the institutional contingency hypothesis. Although as discussed earlier, daily work networks may not be as salubrious as work discussion networks across societies, they can operate to protect health in urban China, where Chinese may be more likely or motivated to identify and use connections at work for the purpose of health under the influence of guanxi culture and the institutionalized centrality of work and work organizations (Bian, 2001; Lin 2001b; Walder, 1986; Whyte & Parish, 1984). Daily work networks reflect the availability of ties through which resources may flow from work contacts to ego. The actual flow of resources through those ties to ego resides in the concept of mobilized social capital (Lin, 2001a). To draw a more comprehensive picture of how and why connections with work contacts influence health

differently across societies, future research should explore the nature of social interaction between work contacts and ego and the actual mobilization process through which ego seeks, obtains, and use certain resources from work contacts.

Furthermore, the quantity measurements of social integration at work appear to be a stronger predictor of health than its prominence measurements. The study measures the quantity of daily work contacts and its prominence among daily contacts. Also this study measures the quantity of daily work contacts within the company/organization and its relative prominence among daily work contacts. Results show only one significant health impact of the prominence measurement (i.e., the negative effect of the percentage of work contacts among daily contacts on psychological distress in urban China) but four significant health impacts of the quantity measurement (i.e., the negative effects of the number of daily work contacts on two health outcomes in urban China, the negative effects of the number of daily work contacts within the company/organization on psychological distress in China and on self-reported health limitation in Taiwan). Note that this study cannot measure the quantity of work discussants within the company or organization but measure its relative prominence among work discussants which exerts significant health effects on one or both health outcomes in all three societies. These findings suggest that social integration at work have at least two distinct aspects with different health consequences: its quantity and its relative prominence among general social integration or within (versus outside) the company or organization.

It has been decades since social connection at work was identified as one crucial structural precursor of health (House, 1981; Payne et al, 1982). This study represents a major advance by shedding light on the varying functions of multiple aspects of social integration at work in the social dynamics of employees' health across three societies. As in any study, this

current study has limitations. Four data limitations must be acknowledged. First, this study is based on cross-sectional data. A process of social selection is possible. Mental distress or health limitations may prevent individuals from establishing new or maintaining old social ties with coworkers at the workplace. For purposes of stronger causal inference, future studies should examine the competing arguments of social causation and social selection using prospective data. Second, the data were collected from national samples of adults aged 21 to 64. Data are not available from elderly employed adults. The labor force participation rate among the elderly in the United States, for example, has been steadily growing since the early 1990s (Shattuck, 2010). Social integration at work may be more important for elderly adults who may be less integrated into the domestic life due to widowhood or the absence of children. For purposes of generalizability, future studies should collect data from national samples of respondents of all ages. Third, the data do not have information on actual work ties and personal network at the workplace or connections with different types of work contacts (e.g., supervisors versus fellow coworkers at similar hierarchical levels). Such information is necessary for purposes of more comprehensive measurement of multidimensional social integration at work and comparison with prior research (Lincoln & Kalleberg, 1985; Loscocco & Spitze, 1990). Additionally, the data do not allow the direct measurement of macro-level institutional factors such as relational culture and centrality of work and work organizations. Future larger-scale comparative studies across more societies are needed to examine the generalizability of findings in this study to other societies and cultures, and achieve a deeper understanding of how health consequences of network embeddedness at work is further embedded in institutional arrangements.

ENDNOTES

1. During the U.S. survey process another sampling criterion was used to aggressively recruit more qualified minorities (especially African Americans and Latinos) so that the sample approximates the census ethnic distribution. A dummy variable, quota, is created to identify respondents sampled after the recruitment change (value = 1). Supplemental analyses find no significant health effects of that variable. Results are available upon request.

2. Supplemental analyses create a dummy variable to indicate this exclusion (1=the excluded, 0=the analysis sample), and find no evidence for its effect on health in all three societies. Results are available upon request.

3. The percentage of cases with missing values on the variables of interest is about 6% in urban China and Taiwan and 15% in the United States. Supplemental analyses impute missing values in independent variables based on ten imputations using a multiple imputation method and one Stata user-written program, Ice (Royston, 2005), and find similar results. Results are available upon request.

4. Supplemental analyses using the original values of those two variables show similar results. Results are available upon request.

5. The original wording for this question is "Among the people with whom you discuss the work related issues, how many of them are from within the company (organization)? How many are from outside the company (organization)?" Supplemental analyses using the original values of this variable show similar results. Results are available upon request.

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Table 1. Summary of Sample Characteristics

	Urban China (N=2,205)		Taiwan (N=1,910)		United States (N=1,873)	
	Mean/ Percent	SD	Mean/ Percent	SD	Mean/ Percent	SD
Dependent Variables						
Psychological Distress	3.95	4.00	3.44	3.84	4.54	4.51
Self-Reported Health Limitation (1=Frequently/Occasionally)	7.98		6.18		19.81	
Independent Variables: Social Integration at Work						
Percentage of Work Contacts among Daily Contacts	68.84	.22	73.55	.23	75.04	.28
Number of Daily Work Contacts	20.55	20.72	29.58	27.36	32.73	30.49
Percentage of Daily Work Contacts within the Company/Organization	61.52	.27	59.28	.32	59.50	.33
Number of Daily Work Contacts within the Company/Organization	12.63	15.94	17.23	21.10	19.48	23.48
Percentage of Work Discussants within the Company/Organization	77.51	.22	78.86	.26	79.66	26.02
Control Variables						
Age	36.10	8.82	38.13	10.19	41.20	10.02
Gender (1=Female)	44.49		41.10		48.21	
Race/Ethnicity						
White	--		--		69.46	
Black	--		--		11.80	
Latino	--		--		13.40	
Other Race/Ethnicity	--		--		5.34	

Quota	--		--		44.52	
Marital Status (1=Married)	81.27		66.39		63.11	
Residential Location (1=Urban Cities)	--		84.19		89.70	
Education (Levels)	5.64	1.12	5.55	1.32	6.15	1.22
Occupational Class						
Lower Class	43.58		19.11		26.16	
Middle Class	19.91		59.95		37.16	
Professional	29.02		12.09		23.65	
Executive	7.48		8.85		13.03	
Political Capital (1= Communist Party Member)	26.21		--		--	
Work Units (1=State-Owned)	57.51		--		--	
Annual Family Income (Median Range)	20,000-24,999		70,000-80,000		60,000-74,999	
Social Participation (Number of Memberships in Voluntary Organizations)	.19	.63	.65	.85	2.14	1.87

Table 2. OLS Regression of Psychological Distress on Social Integration at Work and Control Variables in Urban China (N=2,205)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Percentage of Work Contacts among Daily Contacts	-.260**					
	(.086)					
Number of Daily Work Contacts		-.003**				
		(.001)				
Percentage of Daily Work Contacts within the Company/Organization			-.106			
			(.070)			
Number of Daily Work Contacts within the Company/Organization				-.004***		
				(.001)		
Latent Factor						-.067***
						(.019)
Percentage of Work Discussants within the Company/Organization					-.282***	-.259**
					(.084)	(.084)
Age	-.002	-.002	-.002	-.002	-.002	-.002
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Gender (1=Female)	.161***	.159***	.159***	.159***	.164***	.167***
	(.039)	(.039)	(.039)	(.039)	(.039)	(.039)
Marital Status (1=Married)	-.108*	-.103	-.109*	-.105	-.109*	-.105
	(.055)	(.055)	(.055)	(.055)	(.055)	(.055)
Education (Levels)	.001	-.003	.000	-.002	-.001	-.002
	(.021)	(.021)	(.021)	(.021)	(.021)	(.021)
Political Capital (1=Communist Party Member)	-.033	-.039	-.038	-.039	-.040	-.038
	(.047)	(.047)	(.047)	(.047)	(.047)	(.047)
Occupational Class (Reference: Executive)						
Lower	-.102	-.106	-.095	-.099	-.098	-.099
	(.079)	(.079)	(.080)	(.079)	(.079)	(.079)
Middle	-.120	-.125	-.111	-.122	-.108	-.117
	(.082)	(.082)	(.082)	(.082)	(.082)	(.082)
Professional	-.055	-.056	-.044	-.050	-.044	-.047
	(.079)	(.079)	(.079)	(.079)	(.079)	(.078)
Work Units (Reference: State- Owned)	.016	.011	.024	.018	.028	.022
	(.044)	(.044)	(.044)	(.044)	(.044)	(.044)
Annual Family Income	-.094**	-.087**	-.099***	-.087**	-.101***	-.088**
	(.030)	(.030)	(.030)	(.030)	(.030)	(.030)
Social Participation (Number of Memberships in Voluntary Organization)	.045	.053	.046	.050	.047	.050
	(.031)	(.031)	(.031)	(.031)	(.031)	(.031)
Constant	2.536***	2.365***	2.455***	2.345***	2.626***	2.492***
	(.346)	(.344)	(.346)	(.343)	(.350)	(.351)
Adjusted R-squared	.018	.017	.015	.019	.018	.024

Notes: Standard errors in parentheses; *** p<.001, ** p<.01, * p<.05

Table 3. Logistic Regression of Self-Reported Health Limitation on Social Integration at Work and Control Variables in Urban China (N=2,205)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Percentage of Work Contacts among Daily Contacts	-.030				
	(.360)				
Number of Daily Work Contacts		-.013**			
		(.005)			
Percentage of Daily Work Contacts within the Company/Organization			.205		
			(.298)		
Number of Daily Work Contacts within the Company/Organization				-.011	
				(.006)	
Percentage of Work Discussants within the Company/Organization					-.451
					(.350)
Age	.035***	.034**	.034***	.035***	.035***
	(.010)	(.010)	(.010)	(.010)	(.010)
Gender (1=Female)	.121	.124	.117	.123	.133
	(.164)	(.164)	(.164)	(.164)	(.164)
Marital Status (1=Married)	-.619**	-.603**	-.617**	-.613**	-.621**
	(.221)	(.221)	(.221)	(.221)	(.221)
Education (Levels)	-.094	-.099	-.096	-.097	-.096
	(.088)	(.088)	(.088)	(.088)	(.088)
Political Capital (1=Communist Party Member)	-.322	-.320	-.325	-.323	-.325
	(.209)	(.209)	(.209)	(.209)	(.209)
Occupational Class (Reference: Executive)					
Lower	-.592*	-.608*	-.608*	-.586*	-.586
	(.299)	(.299)	(.300)	(.299)	(.299)
Middle	-.295	-.327	-.307	-.303	-.277
	(.308)	(.309)	(.309)	(.308)	(.309)
Professional	-.600*	-.620*	-.617*	-.595*	-.585
	(.303)	(.303)	(.304)	(.303)	(.303)
Work Units (Reference: State-Owned)	.013	-.021	.004	.011	.030
	(.184)	(.184)	(.185)	(.184)	(.185)
Annual Family Income	-.011	.031	-.010	.014	-.015
	(.124)	(.125)	(.125)	(.125)	(.124)
Social Participation (Number of Memberships in Voluntary Organization)	.085	.109	.090	.089	.085
	(.121)	(.121)	(.121)	(.121)	(.121)
Constant	-2.096	-2.241	-2.211	-2.233	-1.764
	(1.439)	(1.428)	(1.435)	(1.424)	(1.448)
Pseudo R-squared	.021	.027	.021	.023	.022

Notes: Standard errors in parentheses; *** p<.001, ** p<.01, * p<.05.

Table 4. OLS Regression of Psychological Distress on Social Integration at Work and Control Variables in Taiwan (N=1,910)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Percentage of Work Contacts among Daily Contacts	-.028				
	(.086)				
Number of Daily Work Contacts		-.000			
		(.001)			
Percentage of Daily Work Contacts within the Company/Organization			-.048		
			(.062)		
Number of Daily Work Contacts within the Company/Organization				.000	
				(.001)	
Percentage of Work Discussants within the Company/Organization					-.303***
					(.077)
Age	-.011***	-.011***	-.011***	-.011***	-.011***
	(.003)	(.003)	(.003)	(.003)	(.003)
Gender (1=Female)	.118**	.118**	.119**	.117**	.135**
	(.041)	(.041)	(.041)	(.041)	(.041)
Marital Status (1=Married)	-.182***	-.183***	-.184***	-.183***	-.191***
	(.050)	(.050)	(.050)	(.050)	(.050)
Residential Location (1=Urban Cities)	.101	.100	.099	.100	.100
	(.057)	(.057)	(.057)	(.057)	(.056)
Education (Years)	-.000	-.001	-.000	-.001	-.005
	(.020)	(.020)	(.020)	(.020)	(.020)
Occupational Class (Reference: Executive)					
Lower	-.124	-.124	-.124	-.124	-.105
	(.089)	(.089)	(.089)	(.089)	(.089)
Middle	-.160*	-.159*	-.160*	-.159*	-.148*
	(.075)	(.075)	(.075)	(.075)	(.075)
Professional	-.098	-.098	-.092	-.099	-.086
	(.090)	(.090)	(.090)	(.090)	(.089)
Annual Family Income	-.081**	-.081**	-.080**	-.081**	-.087**
	(.031)	(.031)	(.031)	(.031)	(.030)
Social Participation (Number of Memberships in Voluntary Organization)	.017	.017	.015	.017	.015
	(.024)	(.024)	(.024)	(.024)	(.024)
Constant	2.777***	2.757***	2.771***	2.759***	3.106***
	(.439)	(.435)	(.435)	(.435)	(.442)
Adjusted R-squared	.041	.041	.042	.041	.049

Notes: Standard errors in parentheses; *** p<.001, ** p<.01, * p<.05.

Table 5. Logistic Regressions of Self-Reported Health Limitation on Social Integration at Work and Control Variables in Taiwan (N=1,910)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Percentage of Work Contacts among Daily Contacts	-.193				
	(.398)				
Number of Daily Work Contacts		-.005			
		(.004)			
Percentage of Daily Work Contacts within the Company/Organization			-.296		
			(.290)		
Number of Daily Work Contacts within the Company/Organization				-.013*	
				(.006)	
Percentage of Work Discussants within the Company/Organization					.077
					(.388)
Age	.007	.006	.007	.007	.007
	(.012)	(.012)	(.012)	(.012)	(.012)
Gender (1=Female)	.565**	.572**	.571**	.588**	.558**
	(.198)	(.198)	(.198)	(.199)	(.199)
Marital Status (1=Married)	.098	.108	.090	.104	.095
	(.245)	(.246)	(.245)	(.246)	(.245)
Residential Location (1=Urban Cities)	-.320	-.320	-.338	-.344	-.331
	(.244)	(.243)	(.242)	(.243)	(.243)
Education (Years)	-.301**	-.300**	-.304**	-.299**	-.301**
	(.096)	(.096)	(.095)	(.096)	(.096)
Occupational Class (Reference: Executive)					
Lower	-.153	-.160	-.147	-.210	-.152
	(.471)	(.472)	(.471)	(.473)	(.472)
Middle	-.011	-.034	-.011	-.061	-.011
	(.427)	(.427)	(.427)	(.428)	(.427)
Professional	.556	.556	.601	.621	.551
	(.496)	(.495)	(.499)	(.496)	(.496)
Annual Family Income	-.170	-.157	-.159	-.140	-.167
	(.113)	(.114)	(.113)	(.114)	(.113)
Social Participation (Number of Memberships in Voluntary Organization)	-.055	-.046	-.065	-.059	-.053
	(.120)	(.120)	(.121)	(.121)	(.120)
Constant	.983	.818	.895	.673	.750
	(1.732)	(1.712)	(1.701)	(1.719)	(1.755)
Pseudo R-squared	.045	.046	.046	.051	.045

Notes: Standard errors in parentheses; *** p<.001, ** p<.01, * p<.05.

Table 6. OLS Regression of Psychological Distress on Social Integration at Work and Control Variables in the United States (N=1,873)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Percentage of Work Contacts among Daily Contacts	-.059				
	(.073)				
Number of Daily Work Contacts		.001			
		(.001)			
Percentage of Daily Work Contacts within the Company/Organization			-.088		
			(.061)		
Number of Daily Work Contacts within the Company/Organization				.001	
				(.001)	
Percentage of Work Discussants within the Company/Organization					-.190*
					(.077)
Age	-.008***	-.009***	-.008***	-.009***	-.008***
	(.002)	(.002)	(.002)	(.002)	(.002)
Gender (1=Female)	.105**	.102*	.104*	.104*	.106**
	(.041)	(.041)	(.041)	(.041)	(.041)
Race/Ethnicity (Reference: White)					
Black	.017	.025	.023	.022	.016
	(.065)	(.064)	(.064)	(.064)	(.064)
Latino	-.177**	-.164**	-.164**	-.172**	-.174**
	(.063)	(.063)	(.063)	(.063)	(.063)
Others	-.108	-.092	-.095	-.098	-.091
	(.090)	(.090)	(.090)	(.090)	(.090)
Marital Status (1=Married)	-.146***	-.144***	-.143***	-.147***	-.144***
	(.043)	(.043)	(.043)	(.043)	(.043)
Residential Location (1=Urban Cities)	.027	.023	.027	.024	.020
	(.067)	(.067)	(.067)	(.067)	(.067)
Education (Years)	-.030	-.032	-.030	-.032	-.032
	(.020)	(.020)	(.020)	(.020)	(.020)
Occupational Class (Reference: Executive)					
Lower	.103	.104	.102	.104	.111
	(.072)	(.072)	(.072)	(.072)	(.072)
Middle	.070	.069	.067	.070	.075
	(.065)	(.065)	(.065)	(.065)	(.065)
Professional	.101	.095	.111	.095	.108
	(.070)	(.070)	(.070)	(.070)	(.070)
Annual Family Income	-.104***	-.103***	-.106***	-.103***	-.103***
	(.030)	(.030)	(.030)	(.030)	(.030)
Social Participation (Number of Memberships in Voluntary Organization)	.020	.019	.019	.020	.019
	(.012)	(.012)	(.012)	(.012)	(.012)
Constant	3.007***	2.935***	3.025***	2.963***	3.108***
	(.345)	(.344)	(.344)	(.344)	(.346)
Adjusted R-squared	.034	.035	.035	.034	.037

Notes: Standard errors in parentheses; *** p<.001, ** p<.01, * p<.05.

Table 7. Logistic Regressions of Self-Reported Health Limitation on Social Integration at Work and Control Variables in the United States (N=1,873)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Percentage of Work Contacts among Daily Contacts	-.232				
	(.210)				
Number of Daily Work Contacts		.001			
		(.002)			
Percentage of Daily Work Contacts within the Company/Organization			-.032		
			(.182)		
Number of Daily Work Contacts within the Company/Organization				-.000	
				(.003)	
Percentage of Work Discussants within the Company/Organization					-.478*
					(.220)
Age	.012*	.012	.012	.012	.012*
	(.006)	(.006)	(.006)	(.006)	(.006)
Gender (1=Female)	.796***	.796***	.797***	.798***	.803***
	(.124)	(.124)	(.124)	(.124)	(.124)
Race/Ethnicity (Reference: White)					
Black	.553**	.572**	.570**	.570**	.555**
	(.175)	(.174)	(.174)	(.174)	(.175)
Latino	-.054	-.031	-.032	-.036	-.039
	(.193)	(.193)	(.193)	(.192)	(.192)
Others	.366	.402	.400	.398	.424
	(.260)	(.259)	(.259)	(.259)	(.260)
Marital Status (1=Married)	.181	.181	.181	.180	.182
	(.130)	(.130)	(.130)	(.130)	(.131)
Residential Location (1=Urban Cities)	.112	.105	.107	.107	.091
	(.205)	(.205)	(.205)	(.205)	(.205)
Education (Years)	-.103	-.107	-.106	-.106	-.109
	(.061)	(.061)	(.061)	(.061)	(.061)
Occupational Class (Reference: Executive)					
Lower	.552*	.556*	.555*	.556*	.578*
	(.229)	(.229)	(.229)	(.229)	(.230)
Middle	.309	.309	.309	.310	.327
	(.216)	(.216)	(.216)	(.216)	(.217)
Professional	.289	.280	.288	.285	.311
	(.229)	(.230)	(.231)	(.231)	(.230)
Annual Family Income	-.293***	-.294***	-.295***	-.295***	-.289***
	(.084)	(.084)	(.084)	(.084)	(.083)
Social Participation (Number of Memberships in Voluntary Organization)	.041	.042	.042	.042	.038
	(.035)	(.035)	(.035)	(.035)	(.035)
Constant	.929	.794	.829	.815	1.107
	(.983)	(.980)	(.982)	(.979)	(.986)
Pseudo R-squared	.051	.051	.051	.051	.053

Notes: Standard errors in parentheses; *** p<.001, ** p<.01, * p<.05.

Figure 1. The Theoretical Map of Social Network, Daily Social Network, Daily Work Network, and Work Discussion Network within a Society