Political Behavior, Vol. 27, No. 3, September 2005 (© 2005)
DOI: 10.1007/s11109-005-5512-0

JAPANESE NETWORK CAPITAL: THE IMPACT OF SOCIAL NETWORKS ON JAPANESE POLITICAL PARTICIPATION

Ken'ichi Ikeda and Sean E. Richey

Recent scholarship shows that social capital has a large influence on political behavior. Social capital's definition includes trust, norms of reciprocity, and social networks. Most studies, however, ignore the networking component. Here, we test the influence of social networks on political participation using new Japanese survey data. We separately test the effects of involvement in formally organized voluntary associations and informal social networks. We also examine whether hierarchical networks have a different impact on participation than equal relationships. To determine if networks with bridging or bonding social capital affect participation differently, we also measure the openness to outsiders of these networks. Negative binomial regression models indicate a strong positive relationship between formal and informal social networking—including network hierarchy and some forms of openness—and political participation.

Key words: social capital; social networks; Japanese political behavior.

INTRODUCTION

Do social networks influence political participation? Recent scholarship shows that social capital greatly influences political behavior (e.g., Putnam, 2000). Social capital is defined as trust, norms of reciprocity, and social networks (Putnam, 1995). Yet, most social capital studies ignore the networking component, and focus only on the political impact of trust and reciprocity

Ken'ichi Ikeda, Professor, Department of Social Psychology, The University of Tokyo, 7-3-1 Hongo, Bunkyo-Ku, Tokyo 113-0033, Japan (ikeken@l.u-tokyo.ac.jp). Sean E. Richey, Visiting Scholar, Department of Social Psychology, The University of Tokyo, 7-3-1 Hongo, Bunkyo-Ku, Tokyo 113-0033, Japan (srichey@l.u-tokyo.ac.jp).

(Freitag, 2003). In this study, we test the influence of social networks on political participation. There are, however, vast differences in networks and the types of interaction in these networks. Therefore, we evaluate the influence of both involvement in organized voluntary associations and informal networks. In addition, we examine whether hierarchical or equal networks influence participation differently. We also measure network openness to outsiders to determine how bridging and bonding social capital affect participation. Using newly available Japanese national-sample survey data, we create negative binomial regression models of political participation and social networking that control for political interest, efficacy, civic duty, local interest, ideology, mobilization, and socioeconomic differences. The results show a strong positive relationship between social networking—including network hierarchy and some forms of openness—and political participation.

It is important to test the network portion of social capital theory in a non-Western democracy, where networks are purportedly more closed and hierarchical (Ikeda, 2002). The traditional conception of social capital is in an idealized Toquevillian environment of equals interacting with large diverse groups (Gannett, 2003). This is the ideal setting for this theory, even though America may not have been as diverse or equal as Toqueville describes. Allegedly, Japan has fewer situations of social equality and interactions with those outside one's close-knit group than America. If the cultural and societal bonds of social networks are different, then perhaps these differences alter the impact of social capital. Social capital studies on Japan are rare, due in part to the lack of survey data.[1] Despite this, it is important to analyze Japanese political behavior. As Inoguchi (2000) states, "Japan is an interesting case since it is one of the very few countries among non-Western nations that have been practising democratic politics for as long as 50 years" (Inoguchi, 2000, p. 74). Thus, this research is important because of its implications on how social capital theory applies to non-Western cultures, particularly those with traditionally hierarchical and closed social networks.

SOCIAL CAPITAL AS SOCIAL NETWORKS

There is growing recognition of the importance of social capital in the last ten years. Ostrom and Ahn (2003) state that only fourteen social capital papers were published annually between 1992 and 1995, but between 1998 and 2000 the number increased to 150 per year. Particularly, Putnam's studies of Italian and American social capital triggered numerous empirical tests as well as theoretical controversies (Putnam, 1993, 2000), including several comparative studies. Most focus on the "bowling alone" thesis of whether social capital is declining at an aggregate level. For example, Putnam, Pharr, and Dalton (2000) focus on the relationship between

the worldwide erosion of social capital, the decline of performance in democratic institutions, and soaring political distrust. It is, however, important to separate the bowling alone thesis of decline from the original thesis of social capital, which we test with this research. As for Japan, Pharr (2000) claims that the bowling alone thesis may not be applicable, as she finds both thriving Japanese voluntary organizations and declining trust in democratic institutions. Inoguchi (2000) points out that there was no decline in Japanese civic engagement between 1981 and 1996. In fact, social capital may be rising due to the widespread growth of volunteer organizations triggered by new NGO laws, NGO achievements responding to the Great Hanshin-Awaji Earthquake in 1995, and the rise of voluntary social welfare NGO's.

Whether rising or declining, we still need to determine the impact of these social networks on political participation. Wellman and Frank (2001) refer to interpersonal network-based social capital as "network capital". Network capital needs more empirical study to determine if and how it influences participation. Does the Japanese cultural context change the predicted positive outcomes from social networking? Do social networks organized hierarchically or closed to outsiders have different impacts? Our data allows us to test these questions.

Our research proceeds as follows. After reviewing the hypotheses and data, we determine the influence of activities in civic organizations, which we define as "formal social networks." We then analyze everyday casual interaction, which we define as "informal social networks". In addition, we investigate the possible effects of hierarchy and openness in social networks on political participation. We also test whether the impact of hierarchy is due to reluctant participation.

FORMAL SOCIAL NETWORKS

Putnam (2000) shows that a chief social capital indicator is active "horizontal" voluntary associations. Let us examine closely the processes suggested by this theory. He states that voluntary civic organizations function as a "school of democracy", in which people develop citizenship skills through laborious deliberations with their peers (Putnam, 2000, p. 338). Organized involvement facilitates citizens' socialization, creating resources for better societal management. Furthermore, as by-products of organizational involvement, Putnam (2000, p. 21) suggests that citizens have increased expectations that people are trustworthy, that institutions deserve their confidence, and that politics is worth the effort to participate. He states that this produces a spiral of positive feedback: a high evaluation of political institutions invites citizens' confidence, which in turn makes people proud and responsible, thus motivating them to a higher evaluation. Political

efficacy solidifies if politicians respond to citizens making their voices heard on social problems, and if their actions have real political consequences (Putnam, 2000, p. 23). Responsiveness amplifies the perception that political participation is beneficial (Putnam, 2000, p. 22). Thus, "making democracy work" implies civic organizational involvement, greater participation, and better governmental performance. In sum, the theory stresses the positive influence of voluntary associations on participation.

The implications of this theory lead to three hypotheses. The first is that people involved in voluntary associations and civic organizations participate more in politics. This tests Putnam's basic point in the context of Japanese society. The presence of this effect in Japan is important for the generalization of social capital theory to non-Western democracies. Some researchers have found this affect in Japan for voter turnout, but did not test other types of political participation or in the context of social capital (Kabashima, 1986, 1988; Watanuki and Miyake, 1997). This hypothesis applied to broader participation deserves inspection with newer data.

The second hypothesis is that there is less impact in organizations where members have hierarchical relationships. Putnam (2000, p. 157) states that interaction among equals is more conducive to participation, because hierarchical relationships are rife with coercion and acquiescence. These relationships are not likely to have an equal sharing of beliefs and opinions (Putnam, 2000, p. 159), and thus may not create citizenship skills by the processes listed above. Hierarchies famously structure American voluntary organizations (Skocpol and Ganz 2000), but in Japan, an additional cultural context may make hierarchy more problematic for social capital.

In Japanese culture, there is a clearer demarcation between social superiors (*meue*) and social inferiors (*meshita*).[2] Traditionally, the meshita almost exclusively follow the meue's judgments, and thus may not develop citizenship skills due to the lack of deliberation and experiences negotiating outcomes with their fellow citizens. As Japanese voluntary organizations may have these clear social hierarchies, this hypothesis is one of the core tests to determine if the Putnamian position is sustainable in Japan. A well-known stereotype is that Japanese political culture uses "carte blanche leadership" (Ishida, 1968). Ishida (1968) defines it as "a type of leadership based on the unconditional and unanimous dependence of the rank and file on their leader, without specifying their demands but with a general expectation that services will be rendered on their behalf by their leader". Pharr (2000) shows, however, that this kind of leadership is declining, and that the trend is towards decision by discussion, similar to other liberal democracies. In addition, by comparing two national surveys in 1983 and 1993, Yamada (2002) demonstrates a decline in pressure from others to conform during this period. Alternatively, it is also plausible that hierarchy will increase participation because the meshita will follow the meue's advice or instructions

to get involved. We discuss and test below the influence of candidate direct mobilization, e.g., in a Koenkai. But we also need to test the influence of general social hierarchy in organizations not based on political mobilization. Since this long tradition of hierarchy may hinder the benefits of a vigorous civil society, we need to test this possible influence.

The third hypothesis is that membership in organizations open to outsiders increases participation. This tests the impact of bridging versus bonding social capital in Japan. The Japanese are more likely to have closed personal networks and not accept outsiders (Ikeda 2002). Formal networks open to outsiders expose members to more people and their problems. Exposure to society's diverse problems may increase one's motivation to get involved in politics to solve these problems. The impact may be less in networks closed to outsiders due to less exposure. These hypotheses are necessary to determine if social capital theory applies to Japanese society.

INFORMAL SOCIAL NETWORKS

In addition, everyday interaction may promote participation. For example, daily conversations in informal social networks provide numerous chances to speak about politics. Talking politics enables people to get information at a low cost (Scheufele and Eveland, 2001). Research shows that people talk politics more often when interacting with those close to them, because the risk of exposing ignorance and losing face is less consequential (Ikeda and Huckfeldt, 2001). Huckfeldt, Ikeda, and Pappi (2000) demonstrate that political conversation increases proportionally to the political knowledge of those in the informal network, henceforth called "network others". Daily conversation provides ordinary citizens an opportunity to cultivate political opinions, and thus forms one of the essential starting points for civic life. This research empirically counters Schudson's (1997) contention that daily conversation is essentially sociable and is without the possible discomfort of political talk. Studies also show the availability of political information in informal networks also facilitates participation. For example, Huckfeldt and La Due Lake (1998) find that available political expertise within one's interpersonal environment augments participation. In addition, our understanding of politics is often a product of communication in informal networks. Studies show that interpersonal communication is sometimes necessary to comprehend the nightly news (Robinson and Levy, 1986; Roessler, 1999; Wright, Kunkel, Pinon, and Huston, 1989). Thus, our political understanding often derives from informal networks, even if the original information comes from mass media. In this sense, without support from networks, our political comprehension is limited. In sum, discussing politics and the

availability of political information may promote participation, and we test these potential influences below.

Putnam (2000, chapter 6 and 16) notes the importance of informal social networks, and includes a variable on "informal sociability" in his social capital index. He, however, only considers informal ties to be necessary for the maintenance of networks. Informal relations not only function to maintain formal networks, but also may promote discussion and facilitate sharing political information, and in turn promote participation. Given this possibility, we must test informal social networks as a separate influence.

A time-budget study in 2000 from Japan shows the possible importance of informal networks (see NHK, 2002). The Japanese spend more time in daily communication than in voluntary organizations. The number of people who participate in civic engagement is only six percent on weekdays, ten percent on Saturday, and fourteen percent on Sunday. On the other hand, the rates for private conversation and socializing are twenty-four percent, twenty-eight percent, and twenty-nine percent respectively. The mean for time spent in civic engagement was eight minutes on weekdays, twenty-one minutes on Saturday, and twenty-seven minutes on Sunday. Again, there is more time spent in informal social networks: twenty-two minutes, thirty-seven minutes, and forty-three minutes, respectively. The high level of involvement suggests the potential of informal networks to be influential.

We test which kind of network properties may promote participation with four hypotheses. First, people participate more in politics if they have more political discussion. A related hypothesis is that people participate more if their network others are sources of political information. The third hypothesis is that informal networking influences participation more among equals than among hierarchical (meue/meshita) pairs. This hypothesis uses the same logic as above for hierarchical organizations. The fourth hypothesis is that the respondent will be more politically active if their network others are heterogenous. This tests the impact of heterogenous open informal networks using the same logic as for formal networks.

DATA

The data are from a Japanese national sample survey: the Japanese Election and Democracy Study 2000 (JEDS 2000).[3] The main survey was conducted by face-to-face interviews in April 2000 during non-election time. There were no crucial salient issues specific to this time that would have unusually driven participation. The response rate was 64.7 percent, n=1618. The data is summarized in Table 1.

TABLE 1. Summary Statistics (Average of the Multiple Imputed Data Sets)

Variable	Mean	SD	Minimum	Maximum
Participation	2.937	2.31	0	10
Participation Reluctancy	.322	1.60	−6	6
Formal Social Networks	1.955	1.525	0	10
Informal Social Networks-Information	.928	1.214	0	6
Informal Social Networks-Discussion	1.144	1.287	0	6
Hierarchy	.253	.567	0	1
Openness	.522	.808	0	2
Meue	.226	.419	0	1
Similar	.558	.497	0	1
Interest	.533	.499	0	1
Ideology	5.524	1.631	0	10
Efficacy	1.878	.99	1	4
Duty to Participate	.901	.299	0	1
Local Interest	.541	.498	0	1
Koenkai	.143	.351	0	1
Male	.537	.499	0	1
Residency	3.712	1.156	1	5
Education	11.878	2.689	5.087	17
Income	3.406	1.785	−2.386	8.452
City size	3.001	1.467	1	5
Age	51.63	15.804	20	93

Social Network Variable Codings

Formal Social Network Variable Codings

To determine involvement with formal social networks, we create an index from the survey responses.[4] From a list of associations, the respondent was asked to name the ones to which he or she affiliates, and to answer questions on those affiliations. We have data for the type of groups joined, the level of involvement, and the hierarchy and openness of these associations.

The types of formal networking are joining a resident association (seventy-one percent), alumni association (thirty-five percent), parent-teacher association (eighteen percent), farmers' cooperative (sixteen percent), trade association (fifteen percent), consumer cooperative (fourteen percent), volunteer group (nine percent), religious group (seven percent), neighborhood improvement group (two percent), and citizen's improvement group (two percent). We create the *Formal social networks* variable by summing the number of voluntary associations the respondent joins. The variable is then weighted according to the degree of involvement for each association. The answer very actively involved has a weight of three, somewhat actively involved is two, and limited affiliation is one (Cronbach's $\alpha = .79$).

To measure hierarchy, the survey asks "Do you find a hierarchical relationship among the members of this organization?" (coded zero for no, one

for some, and two for much). About twenty-five percent of the respondents affiliate with associations they see as hierarchical. The survey measures openness by asking the respondents how often their associations interact with outsiders: "Does this organization interact with outsiders?" (coded zero for no, one for some, and two for often). One third of respondents affiliate with associations that interact with outsiders.

Informal Social Network Variables Coding

The network data was collected by asking the main respondent about his or her spouse (if married), and then about their non-spousal most frequent first and second contact. The survey question reads, "Please recall the person with whom you talk most (second and third most) frequently". The next step was to ask the respondent questions regarding each network other. The causal variables are the amount of discussion between the respondent and the network other, whether the network other is a source of political information, whether the network other is socially superior or equal, and perceived similarity in the pair. The network discussion variable comes from a question that asks "Do you talk about politics with this person?". The network information variable measures the amount of information that the respondent receives from the network other. This question asks "Is this person a source of information about politics for you?". For both variables possible answers are zero if no, one if sometimes, and two if often. For each variable, we add together the answers about the three network others to form the *Informal social networks-Discussion* and *Informal social networks-Information* variables. Thus, possible scores of informal social networks-discussion range from zero if no network others do it, to six if all three do it often.

To measure the impact of hierarchy (variable *Meue*), we use data on the whether the respondents consider their network peer is socially equal (coded zero), or superior (coded one).[5] We use Mutz's (2002) measure of the openness of informal networks by asking the respondent if the network other is *Similar* to them (coded one if they think similar, zero if not). Although this is not objective data, it is important to test our hypotheses using what the respondent believes. Our hypotheses predict that networking changes people's beliefs about the outside world—i.e., the need to get involved in politics. Thus, what is important for these hypotheses is what the respondent believes (not necessarily knows) about their network others.

Dependent Variable Coding

We use six measures of political participation, asking the respondent to rate each one with one of three degrees: "often participated" coded two, "once or twice" coded one, and "never" coded zero. These categories are

chosen because they represent a wide range of political activities, and are often used in studies of participation (e.g., Verba, Schlozman, and Brady, 1995). At the same time, we exclude some participation activities that are forms of social networking (e.g., encouraging friends to vote).[6] The data shows that the most frequently experienced participatory behavior is, of course, voting (seventy-one percent). The other categories are: "to sign a petition" (twenty-one percent); "to write a letter or call a national or local representative" (fourteen percent); "to contact city hall" (fourteen percent); "to donate to a political party" (eleven percent) "run for elected office" (1 percent). We construct the *Participation* variable by adding all the categories with weights for participation frequency (Cronbach's α = .83).

Control Variables Coding

We control for human-capital variables that promote political participation such as *Interest* in politics (Kabashima, 1988), coded one if interested and zero if not. *Efficacy* also promotes participation (Teixeira 1993). The efficacy question is worded as agreement with the statement "I have no power over what the government does" and coded from one for agree to four for disagree. *Ideology* is coded from one to ten, with higher as conservative. *Duty to participate* measures if the respondent feels that it is their duty to participate in politics, coded one if so, and zero if not. *Local interest* measures if the respondent wants to improve the local area, also coded one if so, and zero if not.

We also control for socioeconomic demographic variables including *Male* (male as one, female as zero), *Age* (in years), length of *Residency* (from one for less than three years to five for since birth), *Education* (years of schooling), family *Income* (in 2,000,000 yen categories), and *City size* variables (coded from one for small towns through five for large cities).

We should clarify the *koenkai* control variable. Mobilization influences participation (Rosenstone and Hansen, 1993), and we must control it to determine the influence of social networks. In Japan, however, mobilization usually occurs through a candidate's voluntary association known as a *koenkai*. Koenkai are social support networks associated with particular candidates. The term "social network" in the context of Japanese election studies traditionally meant the influence of the koenkai. Many contend that the important determinant of voting behavior is not a social cleavage such as class, but obedience to these candidate-based social networks. Japanese voters are often cynically described as "passively" mobilized, and obediently vote as their social superiors request. Richardson (1991) states that in Japanese elections, the koenkai are an important source of mobilization. The data show, however, that only fourteen percent of respondents are involved in koenkai. Richardson (1991, p. 339) labels this type of electoral mobilization

as *influence communication*. "[These] communications are interpersonal and organizational communications designed to directly mobilize and manipulate voting support through activation of personal obligations, feelings of deference, or other kinds of sentiment pertaining to specific ongoing social relationships that extend well beyond any given election campaign." (Richardson, 1991, p. 339). Koenkai is not a party organization but a support group for some specific candidate, and unique to Japan. Koenkai are, naturally from their purpose, not open organizations, i.e., members are not exposed to the outer world with their campaigning activities, but rather try to mobilize people the already know (Ishikawa and Hirose, 1989). Koenkai are known as a wheel organization in which the candidate is the center, and members are not interconnected with each other (Ishikawa and Hirose, 1989).

The Japanese voters depicted here are not active participants in public debates. The Tocquevillian image of citizens who are the core of grassroots democracy is absent, if participation is due to peer pressure that mobilizes obedient Japanese voters. If this is correct, it will challenge the social capital benefit, even though social networks will appear to influence participation, and bias our results. Social network's influence on participation will be high, but the social capital benefits will not necessarily be present. Thus, we test separately the affect on participation for involvement in this type of influence-based formal social network. The question for *Koenkai* is "Are you a member of a koenkai?" (coded one if so, zero if not).

Multiple Imputation

The data has only 994 complete cases, out of a possible of 1618. A source of error is if missing data are not missing completely at random (King, Honaker, Joseph, and Scheve, 2001). Five hundred and thirty-one of the cases are missing only one variable's response, but regression analysis using listwise deletion throws out the entire case. Multiple imputation is a better alternative than listwise deletion (King et al., 2001). Multiple imputation creates data for the missing responses based on information in the case, and the other data. Simulated data are trustworthier than the biased data after listwise deletion (King et al., 2001). We use the *Amelia* (King et al., 2001) program to create five imputed data sets. We use *Clarify* (King, Tomz, and Wittenberg, 2000) and *MI*, packages for *Stata* to handle the multiple data sets, run the regressions, calculate the standard errors, and create the simulations below.[7]

METHODS

The dependent variable *Participation* is measured as the number of political activities that one participates in (weighted for frequency), and, thus,

are a type of event count data.[8] Event count data are integer counts of observable events or things, examples of which are the number of presidential vetoes, the number of wars experienced by a country, and the number of times someone has moved. These data are event count because we are "counting" the number of political activities in which the respondent participates. The α test of over-dispersion shows that these data are over-dispersed, with α over two in all models.[9] These data are not zero inflated as the Vuong test of zero inflation is negative and significant in all models (z below negative eight and $p < .00$). Thus, a negative binomial regression model is acceptable (see Long 1997, pp. 230–238).

For each test we show two models, one with human capital control variables and one with only demographic variables. This is because we want to establish that there is not endogeniety between the human capital variables—which might be caused by social networking—and the social networking causal variables. Also, we present simulations from *Clarify*, drawn from the data to show the effect of a change in a quantity of interest on the dependent variable.[10] Here, all the other independent variables are held at their mean, and the predicted amount of participation for each level of social networking is shown for the lowest and highest categories of the variables *Hierarchy*, *Meue*, *Openness*, and *Similar*. To predict the level of participation for each level of each model, the program creates 1000 simulations from the data. The lines on the graphs display the distance between the results of the 25 and 975th simulation (i.e., the 95 percent confidence intervals) going from low to high predicted levels. Finally, we include a square of the *Age* variable, due to the nonlinear relationship between age and participation (Miller and Shanks, 1996).

RESULTS

Network Influence on Participation Results

The results of the negative binomial regression models in Table 2 show a positive effect for formal social networks (b .06 and significant). The more involved the respondent is with civic organizations, the more he or she participates in politics. For example, the *Clarify* simulations show that an increase from no formal social networking to being actively involved in three groups results in an increase of two—with a .37 standard error—in the political participation scale (out of ten), while holding all else constant. Discussion in informal social networks increases participation (b .04 and significant). A change from never discussing politics to often results in an increase of 1.1—with a .54 standard error—in the political participation scale, while holding all else constant. Participation also increases if the respondent

TABLE 2. Negative Binomial Regression Models of Japanese Political Particpation

Variable	Coefficients (SE)	Coefficients (SE)
Formal Social Networks	.059**** (.011)	.055**** (.011)
Informal Social Networks-Discussion	.040** (.017)	.037** (.018)
Informal Social Networks-Information	.053**** (.017)	.048*** (.018)
Interest		.074** (.037)
Efficacy		.021 (.016)
Duty to Participate		.075 (.061)
Local Interest		.044 (.032)
Ideology		−.015 (.010)
Koenkai	.136**** (.042)	.123*** (.045)
Male	−.059* (.031)	−.045 (.034)
Residency	−.013 (.015)	−.016 (.015)
Education	.024**** (.007)	.019*** (.008)
Income	.000 (.010)	.003 (.010)
City Size	.000 (.011)	.004 (.012)
Age	.040**** (.007)	.036**** (.007)
Age2	.000**** (.000)	.000**** (.000)
Intercept	−.526*** (.200)	−.440 (.233)
n	1618	1519
χ^2	279.74****	252.68****
Pseudo R^2	.0498	.0509

Note: Cells represent unstandardized coefficients and standard errors for negative binomial regression models of the likelihood of participating in political activities. Coefficients averaged from the five imputed data sets, standard errors computed with *MI*.
*$p < .10$, **$p < .05$, ***$p < .01$, ****$p < .001$.

receives political information from their discussants (*b* .05 and significant). An increase from no information transfer to often results in an increase of 1.8 points—with a .69 standard error—in the political participation scale, while holding all else constant. Belonging to a *Koenkai* has a strong significant positive impact on participation (*b* .13). When the human capital variables are entered in the model, the social network variables remain positive and significant. This shows that people are not both joining voluntary groups and participating in politics because of some human capital reason: e.g., they are interested in politics or have feelings of efficacy. *Interest* and *Efficacy* significantly promote participation, but *Ideology*, *Duty to participate* and *Local interest* do not show an influence. *Education*, *Age*, and *Age2* affect participation as expected. Males participate less in both models, but in the human capital model *Male* is not significant. *Income*, *City size*, and *Residency* have weak effects and are not significant.[11] The results of this model matches the hypotheses and expectations for the control variables, and shows that social networks increase participation.

Results for Hierarchy in Networks

The next analysis shows that, contrary to our expectation, affiliation with vertical associations increases participation (*b* .109 and significant). Figure 1 shows the predicted level of participation increases at higher levels for those in hierarchical networks. The graph shows vertical 95 percent confidence intervals for *Participation* for the low and high categories of *Hierarchy* at each level of *Formal social networking*, while holding all else constant. Participation increases in both hierarchical and equal relationships as social networking increases, but hierarchical relationships do so at a higher level.

Informal hierarchical relationships also facilitate participation (*b* .07 and significant). This is not as we predicted, but is consistent with the results for hierarchical formal networks. Figure 2 shows that the predicted level of participation increases at a higher level when network others are meue.

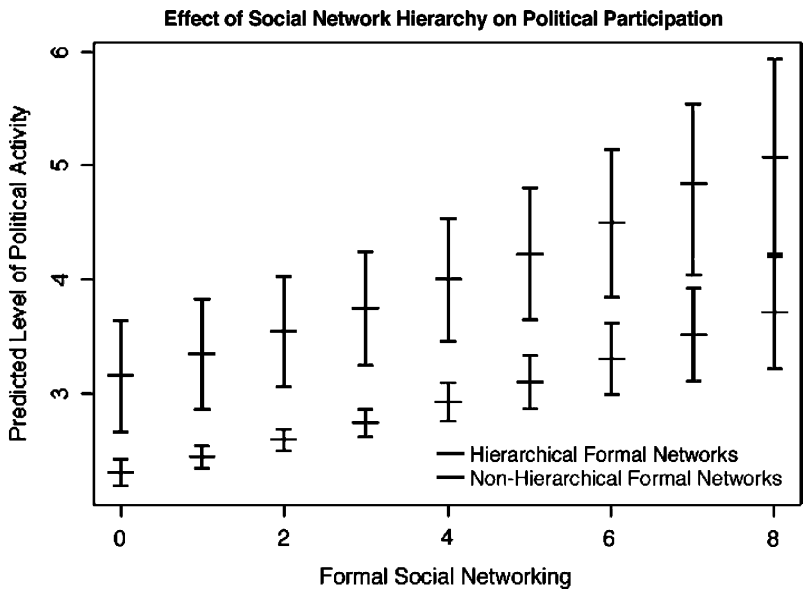

FIG. 1. Effect of Social Network Hierarchy on Political Participation. This graph shows that hierarchical formal social networks promote participation more than non-hierarchical networks. Lines represent simulations of the difference between social networks with hierarchy (top) and no hierarchy (bottom) in 95 percent confidence intervals. These simulations hold all other control variables (political interest, efficacy, koenkai, ideology, duty to participate, local interest, informal social networking-discussion, informal social networking-influence, and socioeconomic differences) at their mean and display only a change in one unit of the casual variable (Formal Social Networking) on the dependent variable (Participation).

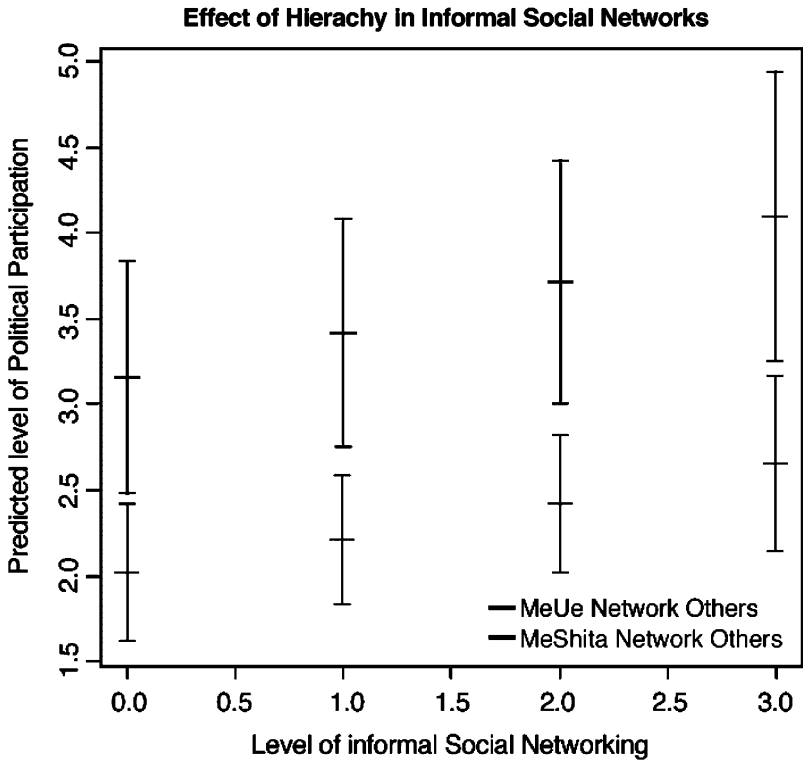

FIG. 2. Effect of Hierarchy in Informal Social Networks. This graph shows that hierarchical informal social networks promote participation more than non-hierarchical networks. Lines represent simulations of the difference between informal social networks with Meue (top) and Meshita (bottom) in 95 percent confidence intervals. These simulations hold all other control variables (political interest, efficacy, duty to participate, local interest, koenkai, ideology, formal social networking informal social networking-discussion. and socioeconomic differences) at their mean and display only a change in one unit of the casual variable (Informal social networking-information) on the dependent variable (Participation).

Results for Openness in Networks

We find a significant positive effect for formal network openness (*b* .077). The more organizations interact with outsiders, the more they facilitate participation. Figure 3 shows that participation increases at a higher level for those in open formal networks.

We also tests the influence of heterogeneity in informal networks on participation.[12] The results show no impact, as the coefficient is not strong or

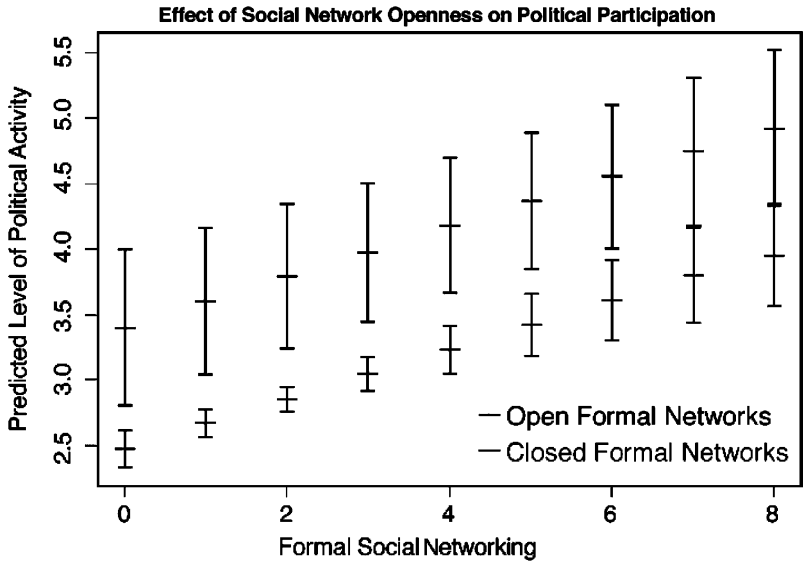

FIG. 3. Effect of Social Network Openness on Political Participation. This graph shows that formal social networks open to outsiders promote participation more than closed networks. Lines represent simulations of the difference between open social networks (top) and closed networks (bottom) in 95 percent confidence intervals. These simulations hold all other control variables (political interest, efficacy, koenkai, ideology, duty to participate, local interest, formal social networking informal social networking-discussion, and socioeconomic differences) at their mean and display only a change in one unit of the casual variable (Formal social networks) on the dependent variable (Participation).

significant (*b* −.03 and SE=.06). Figure 4 shows that the predicted level of participation increases at the same level for those with homogenous and heterogenous network others, based on perceived similarity, i.e. the confidence intervals overlap.

DISCUSSION

The results show that hierarchical social networks promote participation. But the question over Japanese political culture and hierarchy is still not answered. Perhaps people are participating because they are influenced by discussion with older (perhaps wiser) people they respect,[13] or it may be that they are obeying the orders of their meue. In order to investigate whether this is coercion or advice, we create a new dependent variable to measure intention to engage in political activities. The survey question asks:

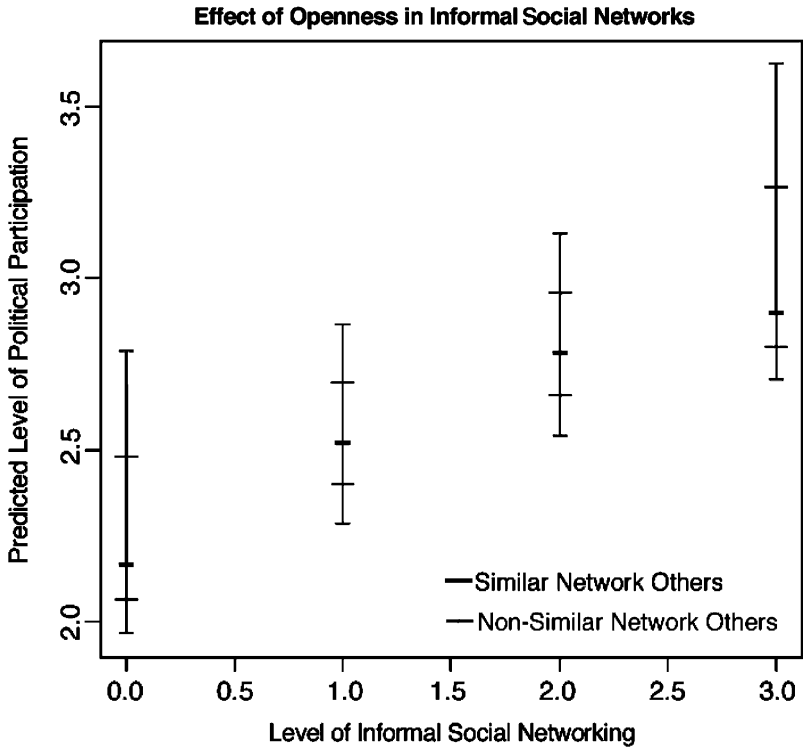

FIG. 4. Effect of Openness in Informal Social Networks. This graph shows that informal social networks open to outsiders does not impact participation more than closed networks. The indistinguishable lines represent simulations of the difference of networking with similar people (top) and networking with diverse people (bottom) in 95 percent confidence intervals. These simulations hold all other control variables (political interest, duty, local interest, efficacy, koenkai, ideology, formal social networking, discussion, and socioeconomic differences) at their mean and display only a change in one unit of the casual variable (Informal Social Network-information) on the dependent variable (Participation).

"Some people think that they would continue doing these activities or would try if they were given a chance to do them. Some people think that they would rather not have anything to do with them. What is your opinion? Please answer for each activity by replying by 'would like to do it', 'neither of them', or 'would rather not to be involved with it'." We use answers for the same political activities included in the political participation scale. As the questions measure the desire to participate, they enable us to examine whether people are participating reluctantly. These desire variables are

TABLE 3. Ordered Logistic Regression Model of Japanese Reluctant Political Participation

Variable	Coefficients (SE)
Formal Social Networks	−.060 (.039)
Informal Social Networks-Discussion	−.030 (.058)
Informal Social Networks-Information	−.084 (.059)
Hierarchy	−.014 (.091)
Interest	−.563*** (.113)
Efficacy	.036 (.031)
Duty to Participate	−.075 (.061)
Local Interest	−.044 (.032)
Ideology	.036 (.031)
Koenkai	−.152 (.156)
Male	−.167 (.104)
Education	−.015 (.024)
Income	−.019 (.031)
Residency	−.076 (.046)
City Size	−.098** (.036)
Age	.104**** (.020)
Age2	−.001**** (.000)
n	1350
χ^2	162.61****
Pseudo R^2	.0331

Note: Cells represent unstandardized coefficients and standard errors for ordered logistic models of the likelihood of reluctantly participating in political activities. Coefficients averaged from the five imputed data sets, standard errors computed with *MI*.
**$p < .05$, ***$p < .01$, ****$p < .001$.

then subtracted from their similarly coded counterpart variables used in the actual participation scale. This new number shows the amount of reluctant participation. The higher the score, the more these people participated against their will. These are added together to create a participation reluctancy scale similar to the participation scale used previously (Cronbach's $\alpha = .85$). Table 3 displays the new model using the same independent variables as before.[14]

None of the social networks variables are significant, including *Hierarchy*. The results show that age and ruralness are significantly related to having done political activities and not wanted to. *Interest* and the *Age2* are negative correlated, which can be interpreted as meaning that the very old and those interested in politics have wanted to participate and have not. Interestingly, *Koenkai* is not significant. In sum, our results suggest that people are taking the advice of their meue through political discussion, and not participating reluctantly due to social pressure. But older and rural people do reluctantly participate in politics. The result is consistent with the traditional view of Japanese politics only for older and rural people.

In comparing these results to the previous section, we showed in Japan the impact of voluntarism on political participation which Putnam argues. Yet, counter to Putnam's theory, hierarchy has a positive impact. The results in this section suggests there can be a beneficial effect on participation from hierarchy, as people are not reluctantly participating even though they are in hierarchical relationships. An alternative interpretation may be that the effect for hierarchy is the result of some heterogeneity elements in these organizations; the top and bottom are perhaps heterogeneous in terms of demography or social power (though we do not have data to test this contention). More work should be done on this topic.

CONCLUSION

The results demonstrate that Japanese political behavior is fruitful to determine the influence of network capital on political participation. We find that social networking does increase participation. The results support both the Putnamian civic organization hypothesis and its extension to informal social networks. Although impact of networks on participation has not had enough investigation, it is clear that scholars should pay it more attention. The support of the basic hypotheses by the Japanese data bodes well for the universality of social capital theory.

On the other hand, we predicted that the effect in vertical relationships is negative. The evidence, however, shows that hierarchy promotes political participation. Even after we control for mobilization, hierarchy still has an effect. A possible explanation is that vertical associations and network others use their influence to positively encourage civic-mindedness. The results of the reluctant participation model suggests that the influence of hierarchy in networks is not due to unwilling obedience. More work, however, is needed on this topic. Does this reflect the "vertical society (*tate-shakai*)" characteristics of Japanese culture (Nakane, 1967), which emphasizes the emotional nature of vertical interpersonal relationships? Or is this a legacy of the Confucian idea that the meue should (must) have more virtue and wisdom than the meshita? Another possibility is that this phenomenon may exist in Western cultures, which has not been investigated.

Although this study has produced a number of insights on the pan-cultural nature of social capital, the results show that more questions need to be solved. For example, openness in formal social networks has a significant positive impact, but these data show none for open informal networks. This difference needs to be investigated by future research. A possible explanation is that occasionally politicians make visits to civic organizations, and perhaps these mobilizing visits are included when the respondents answer that their organizations are open to outsiders, i.e. the politician as outsider. Ikeda and Kobayashi (2004) find that access to socially diverse networks

prompts participation because it creates access to people higher in the social ladder. If so, more work is needed to discover how access to people in politically powerful positions in social networks influence participation. Also, the amount of political participation itself has not increased at the aggregate level in recent years, but the number civic organizations have increased. Thus, investigating the effect of these organizations over time is worthwhile. The new questions suggest more empirical research should target how the embeddedness of citizens in organizations, groups, and social networks enables participation.

Acknowledgements. We thank Bonnie Erickson, Barry Wellman, Gill Steel, and Masahiko Aida for their beneficial comments on this paper.

NOTES

1. The few we know of published in English are Freitag (2003), Inoguchi (2000), and Pharr (2000).
2. These Japanese words are metaphors for hierarchy. Meue literally means "eyes up," or better translated as those you look up to. Meshita means "eyes down," or those you look down to.
3. The fund for JEDS 2000 project is supported by the Ministry of Education in Japan. The data, questionaire, and information on the sampling procedure and survey administration are available at http://ssjda.iss.u-tokyo.ac.jp/pages/ssjda-e/.
4. The descriptive statistics of each scale item for all scales—and some additional variables used in models not shown below—are available upon request.
5. Only forty-five respondents saw their network other as meshita, so for simplicity we dichotomize this variable to equal or superior.
6. Not shown, we also test a participation variable using an additional five types of political participation—*Help Campaign*, *Ask Friends*, *Party Membership*, *Assembly*, and *Protest*—and find similar substantive results. The results, however, are clearer without the possible endogeneity of using potential social networks in the dependent variable. These tables are available upon request.
7. No data imputed is for opinions like ideology. We do not know whether the data are missing, or if the respondent did not respond because they are neither conservative or liberal. The opinion variables, however, were almost fully present. Most missing data are from demographic variables such as *Income*. To address possible concerns over imputation, we test the results using the non-imputed data. They are substantive similar for all causal variables, and thus any bias is negligible.
8. Our findings are robust to different specifications. We find similar substantive results for ordered logit and ordinary least squares estimations. In fact, of the three, the negative binomial models show the least impact for the causal variables. These results are available upon request.
9. The choice of which event count model to employ depends on if the data are over-dispersed, under-dispersed, or equi-dispersed and if they are zero-inflated (Long, 1997, p. 237). The test statistic for whether to use a poisson or a negative binomial regression model is the α test of over-dispersion. If $\alpha \asymp 1$, then Poisson is an accurate model. As α rises significantly above one, it shows that the data are over-dispersed and a negative binomial

regression model is required. The Voung tests recommends non-zero inflated models if the results show large significant negative values.

10. *Clarify's* authors King, Tomz, and Wittenberg (2000) describe its process as "(t)he program draws simulations of the main and ancillary parameters from their asymptotic sampling distribution, in most cases a multivariate normal with mean equal to the vector of parameter estimates and variance equal to the variance–covariance matrix of estimates."
11. For brevity, we omit discussion of the human capital and demographic variables in the other models, but all have similar impacts.
12. For brevity, not shown are the results that test the difference in impact from spouse and non-spouse and party identification congruence with networks others. None had strong effects or were significant. These tables are available upon request.
13. In Japan, age is an important determinant of hierarchy, and status is usually based on age. This includes co-workers, who are also most always older if they are boss.
14. We use an ordered logistic regression model because event count models cannot have negative numbers in the dependent variable (Long 1997, p. 218).

REFERENCES

Freitag, Markus (2003). Social capital in (dis)similar democracies: The development of generalized trust in Japan and Switzerland. *Comparative Political Studies* 36: 936–967.

Gannett, Robert T. (2003). Bowling ninepins in Tocqueville's township. *American Political Science Review* 97: 1–16.

Huckfeldt Robert, La Due Lake, Ronald (1998). Social Networks as Social Capital: Individual and Collective Incentives for Political Participation. Paper prepared for the Workshop on Urban Democracy, Russell Sage Foundation, NY, April 2–3.

Huckfeldt, Robert, Ikeda, Ken'ichi, and Pappi, Franz U. (2000). Political expertise, interdependent citizens, and the value added problem in democratic politics. *Japanese Journal of Political Science* 1: 171–195.

Ikeda, Ken'ichi (2002). "Political Culture and Social Capital from Eastern and Western Perspectives". Paper submitted for Copenhagen workshop for EPCReN (Eurasia Political Culture Research Network) project held at August 26–27.

Ikeda, Ken'ichi, and Huckfeldt, Robert (2001). Political communication and disagreement among citizens in Japan and the United States. *Political Behavior* 23: 23–51.

Ikeda, Ken'ichi, and Kobayashi, Tetsuro (2004). "Making Democracy Work via Functioning of Heterogeneous Personal Networks: Empirical Analyses Based on Japanese Election Study". Paper prepared for the "International Social Capital Conference: Institutions, Organizations and Communities" held at Tunghai University in Taiwan on December 12–14, 2004.

Inoguchi, Takashi (2000). Social Capital in Japan. *Japanese Journal of Political Science* 1: 73–112.

Ishida, Takeshi (1968). The development of interest groups and the pattern of modernization in Japan. In Robert E. Ward (ed.), *Political Development in Modern Japan*, pp. 293–336. Princeton, NJ: Princeton University Press.

Ishikawa, Masumi, and Hirose, Michisada (1989). *The LDP: The Structure of the Long Political Rule*. Tokyo: Iwanami (in Japanese).

Kabashima, Ikuo (1986). Political participation. In Joji Watanuki, Ichiro Miyake, Takashi Inoguchi and Ikuo Kabashima (eds.), *Japanese Electoral Behavior*, pp. 175–202. Tokyo: The University of Tokyo Press (in Japanese).

Kabashima, Ikuo (1988). *Political Participation*. Tokyo: The University of Tokyo Press (in Japanese).

King, Gary, Tomz, Michael, and Wittenberg, Jason (2000). Making the most of statistical analyses: Improving interpretation and presentation. *American Journal of Political Science* 44: 347–361.

King, Gary, Honaker, James, Joseph, Anne, and Scheve, Kenneth (2001). Analyzing incomplete political science data. *American Political Science Review* 95: 49–69.

Long J., Scott (1997). *Regression Models for Categorical and Limited Dependent Variables. Advanced Quantitative Techniques in the Social Sciences, Volume 7*. Thousand Oaks, CA: Sage Publications.

Miller, Warren E., and Shanks J., Merrill (1996). *The New American Voter*. Cambridge, MA: Harvard.

Mutz, Diana C. (2002). Cross-cutting social networks: Testing democratic theory in practice. *American Political Science Review* 96: 111–126.

Nakane, Chie (1967). *Tate Shakai no Ningen Kankei: Tanitsu Shakai no Riron. (Human Relationship in Vertical Society: Theory of Mono-Society)*. Tokyo: Kodansha (in Japanese).

Nippon Housou Kyoukai (NHK) (2002). *Japanese Time Budget 2000*. Tokyo: NHK Publishing Co. (in Japanese).

Ostrom, Elinor, and Ahn, T. K. (2003). *Foundations of Social Capital*. Cheltenham, UK: Edward Elgar Publishing.

Pharr, Susan J. (2000). Official's Misconduct and Public Distrust. In Susan J. Pharr and Robert D. Putnam (eds.), *Disaffected Democracies*, pp. 173–201. Princeton, NJ: Princeton University Press.

Putnam, Robert D. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.

Putnam, Robert D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy* 6: 65–78.

Putnam, Robert D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.

Putnam, Robert D., Pharr, Susan J., and Dalton, Russell J. (2000). Introduction: What's troubling the trilateral democracies?. In Susan J. Pharr and Robert D. Putnam (eds.), *Disaffected Democracies: What's Troubling the Trilateral Countries?*, pp. 3–27. Princeton, NJ: Princeton University Press.

Richardson, Bradley M. (1991). The Japanese voter: Comparing the explanatory variables in electoral decisions. In Flanagan Scott C., Kohei Shinsaku, Miyake Ichiro, Richardson Bradley M. and Watanuki Joji (eds.), *The Japanese Voter*, pp. 369–430. New Haven: Yale University Press.

Robinson, John P., and Levy, Mark R. (1986). Interpersonal communication and news comprehension. *Public Opinion Quarterly* 50: 160–175.

Roessler, Patrick (1999). The individual agenda-designing process: How interpersonal communication, egocentric networks, and mass media shape the perception of political issues by individuals. *Communication Research* 26: 666–700.

Rosenstone, Steven J., and Hansen, John M. (1993). *Mobilization, Participation, and Democracy in America*. New York: MacMillan.

Schudson, Michael (1997). Why conversation is not the soul of democracy. *Critical Studies in Mass Communication* 14: 297–309.

Scheufele, Dietram A., and Eveland, William P. Jr. (2001). Perceptions of "public opinion" and "public" opinion expression. *International Journal of Public Opinion Research* 13: 25–44.

Skocpol, Theda, and Ganz, Marshall (2000). A nation of organizers: The institutional origins of civic voluntarism in the United States. *American Political Science Review* 94: 527–547.

Teixeira, Ruy A. (1993). The politics of turnout decline. In Niemi Richard G. and Weisberg Herbert F. (eds.), *Controversies in Voting Behavior*, pp. 23–38. Washington, DC: CQ Press.

Verba, Sidney, Schlozman, Kay Lehman, and Brady, Henry (1995). *Voice and Equality: Civic Voluntarism in American Politics*. Cambridge, MA: Harvard University Press.

Watanuki, Joji, and Ichiro, Miyake (1997). *Environmental Change and Voters' Attitude Change*, Tokyo: Bokutaku-sha (in Japanese).

Wellman, Barry, and Frank, Kenneth (2001). Network capital in a multilevel world: Getting support from personal communities. In Lin Nan, Cook Karen and Burt Ronald S. (eds.), *Social Capital: Theory and Research*, pp. 233–273. New York: Aldine de Gruyter.

Wright, John C., Kunkel, Dale, Pinon, Marites, and Huston, Aletha C. (1989). How children reacted to televised coverage of the space shuttle disaster. *Journal of Communication* 39: 27–45.

Yamada, Masahiro (2002). Party mobilization. In Hiwatari Nobuhiro and Miura Mari (eds.), *Japanese Politics in Flux*, pp. 31–49. Tokyo: The University of Tokyo Press (in Japanese).