The Ripple Effect of Personality on Social Structure: Self-Monitoring Origins of Network Brokerage

Hongseok Oh
Yonsei University

Martin Kilduff
University of Texas at Austin

Despite growing interest in social network brokerage, its psychological antecedents have been neglected. One possibility is that brokerage relates to self-monitoring personality orientation. High self-monitors, relative to low self-monitors, in adapting their self-presentations to the demands of different groups, may occupy positions as brokers between disconnected social worlds. For 162 Korean expatriate entrepreneurs in a Canadian urban area, the results showed that those high in self-monitoring tended to occupy direct brokerage roles within the Korean community—in terms of their direct acquaintances being unconnected with each other. Those high in self-monitoring also tended to occupy indirect brokerage roles—in terms of the acquaintances of their acquaintances being unconnected with each other. Finally, for recent arrivals, those high in self-monitoring tended to establish ties to a wider range of important non-Korean position holders outside the community. These results (which controlled for strongly significant effects of network size on individuals' brokerage within the community) suggest a ripple effect of self-monitoring on social structure and contribute to a clearer understanding of how personality relates to brokerage at different levels.

Keywords: social networks, self-monitoring, brokerage, social capital, ethnic community

Individuals differ radically from each other in the extent to which they occupy brokerage positions in social networks (cf. Burt, 1992), positions that connect people who are themselves unconnected. Individuals who occupy brokerage positions spanning across interpersonal gaps (or "structural holes," as Burt, 1992, refers to them) tend to benefit from higher job performance ratings (e.g., Mehra, Kilduff, & Brass, 2001) and early promotions (e.g., Burt, 1992) but may also incur more negative outcomes such as loss of reputation (e.g., Podolny & Baron, 1997). At the community level, brokers whose acquaintances are themselves not acquainted help knit otherwise isolated clusters of people together, facilitating cross-community action (Granovetter, 1973) and promoting social cohesion (Putnam, 2000).

Although the outcomes of brokerage have been much discussed, studies of why some individuals (rather than others) occupy brokerage positions are scarce (Burt, 2005, p. 28). One possibility is that brokerage is related to self-monitoring personality orientation, given that individuals high in self-monitoring, relative to those low in self-monitoring, regulate attitudes and behaviors to promote successful interactions with different groups of people (cf. Gangestad & Snyder, 2000; Ickes, Holloway, Stinson, & Hoodenpyle, 2006; Snyder, 1974, 1979). Those high in self-monitoring resemble successful actors in their ability to play different roles for different audiences (Snyder, 1987). Self-monitoring, compared with other personality variables, may be particularly relevant to the prediction of brokerage because of the theoretical (Day & Kilduff, 2003; Day & Schleicher, 2006) and empirical (Flynn, Reagans, Amanatullah, & Ames, 2006; Mehra et al., 2001) emphases on how personal identity affects the structuring of relationships.

This article examines the structure of acquaintance ties across a dispersed community of expatriate Koreans in a Canadian urban area. These Koreans own and run small businesses such as grocery stores catering predominantly to non-Koreans. There are three contributions related to the metaphor of personality effects rippling across social structure. First is the contribution to self-monitoring theory and research. We examine whether high self-monitors (relative to low self-monitors) tend to create social worlds in which people are unacquainted with each other. Despite suggestive experimental research (Snyder & Gangestad, 1982; Snyder, Gangestad, & Simpson, 1983), self-monitoring field studies have neglected this "audience segregation" thesis by focusing on small organizations in which all employees are likely to be acquainted with each other (e.g., Mehra et al., 2001). Second is the contribution to social network theory and research. We examine self-monitoring antecedents of individuals' brokerage, both within the community (for both direct and indirect acquaintances) and outside the community. Third, we consider a potentially powerful rival explanation of direct and indirect brokerage within the community—that some people, relative to others, have more acquaintances. The number of structural holes in an individual's network tends to

increase disproportionately with the size of the individual's network (Bossard, 1945). Previous research examining self-monitoring effects on structural holes has left untested the issue of whether personality contributes additional explanatory power beyond the variance explained by network size (e.g., Kalish & Robins, 2006; Mehra et al., 2001).

Our research ties in with a long-standing debate concerning the relative importance of different levels of brokerage. In his classic article on acquaintance ties, Granovetter (1973, p. 1370) noted that "information or favors available through direct contacts may depend on *their* contacts." Although a recent test of the effects of brokerage at different levels within organizations showed individuals benefiting only from direct brokerage (Burt, 2007), other research looking at communities of individuals not constrained by joint organizational membership showed the importance of both direct and indirect ties. The structure of indirect ties among independent entrepreneurs within the community of New York apparel firms affected firms' chances of survival (Uzzi, 1996). Further, both direct and indirect ties have significant effects on people's risk of obesity (Christakis & Fowler, 2007). Part of our contribution in this article is to relate direct brokerage to indirect brokerage and to investigate the personality origins of both types of brokerage.

Network theory distinguishes between strong ties (e.g., friendship), which constrain individual freedom, and weak ties (e.g., acquaintanceship), which impose less constraint on the individual (Granovetter, 1973). Structural holes in friendship networks tend to induce psychological strain (Heider, 1958) such as thoughts of suicide among teenage girls whose friends are not friends with each other (Bearman & Moody, 2004). By contrast, acquaintance ties, being weak, are assumed to exert "no such pressure toward linking the two others" (Freeman, 1992, p. 156). It is in the weaker situations that personality differences are likely to emerge (see the recent discussion in Beaty, Cleveland, & Murphy, 2001). Indeed, self-monitoring theory is particularly appropriate in situations in which "individuals . . . have considerable freedom to choose where to be, when to be there, and with whom to be there" (Snyder & Gangestad, 1982, p. 124).

Self-Monitoring and Brokerage

Self-monitoring theory concerns the monitoring and control of expressive behavior (Snyder, 1974). The theory has developed over a 30-year period (see Day & Kilduff, 2003, for a relevant review) with two types of people emerging as representatives of contrasting interpersonal orientations. The prototypical high self-monitor strives to generate affective states and behaviors appropriate to specific situations, whereas the prototypical low self-monitor generates expressive behavior from inner affective states and attitudes (Snyder, 1979). Theory (Ickes et al., 2006) suggests that the high self-monitoring advantage in relating to people across different situations derives from the strong motive of those high in self-monitoring to produce successful social interactions. Supportive empirical evidence shows that, relative to those low in self-monitoring, people high in self-monitoring (a) tend to speak first and to use conversational overtures to break periods of silence (Ickes & Barnes, 1977), (b) inject positive affect into social interactions through the use of humor (Turner, 1980), (c) pace conversations appropriately (Dabbs, Evans, Hooper, & Purvis, 1980), (d) reciprocate self-disclosures (Shaffer, Smith, & Tomarelli, 1982),

and (e) are more lenient in their evaluations of others (Jawahar, 2001).

Direct and Indirect Brokerage

Particularly relevant to the current study is the theoretical prediction that low and high self-monitors differ systematically in the extent to which they tailor their behaviors to the expectations of different social circles. Prototypical high self-monitors tend to endorse the following statement (taken from the Self-Monitoring Scale; Snyder, 1974), indicating their willingness and ability to change self-presentations to appeal to quite different social circles: "In different situations and with different people I often act like very different persons." By contrast, prototypical low self-monitors tend to experience difficulty in changing self-presentations to appeal to diverse social circles and therefore tend to endorse this statement: "I have trouble changing my behavior to suit different people and different situations."

Research has provided some evidence that high self-monitors may indeed engage specialized social circles for their different inclinations and strivings, whereas low self-monitors may invest relatively more of their activities within one social circle within which they feel accepted and validated. High self-monitors prefer to join groups in which they can tailor their self-presentations to fit clearly defined specifications of behavioral appropriateness, whereas low self-monitors "gravitate toward social situations that call for personalities of the type actually possessed by them" (Snyder & Gangestad, 1982, p. 134). Experiments showed that the willingness of high self-monitors to take on a role in a particular social group (a role that called for a behavioral expression of extraversion) reflected the clarity with which the role was defined, whereas the willingness of low self-monitors to take on the role reflected their individual introverted or extroverted disposition (Snyder & Gangestad, 1982). A follow-up experimental study showed that high self-monitoring individuals preferred relatively partitioned social worlds in which they could engage in well-defined activities only with specific partners, whereas low self-monitoring individuals preferred relatively homogeneous and undifferentiated social worlds in which they could spend time with people who were globally similar to themselves (Snyder et al., 1983).

Building on this experimental research, we suggest that in a community of people unconstrained by work interdependence, the acquaintances of high self-monitors (relative to those of low self-monitors) may exhibit audience segregation, that is, they may be organized as sets of acquaintances who are unacquainted with each other. The capability of high self-monitors to act out different, and potentially incompatible, roles with different groups of people (Snyder, 1987, pp. 62–63) contrasts with the hypothesized preference of low self-monitors for bringing members from different areas of their lives together (Snyder, 1987, p. 63) to create relatively homogeneous social worlds in which they can "express it as they feel it" without social constraint (Graziano & Bryant, 1998, p. 251). Relative to low self-monitors, high self-monitors appear to be better at relating to different types of people and may see no need to acquaint different types of people with each other. To the extent that people high in self-monitoring (relative to those low in self-monitoring) do ingratiate themselves into distinctly different social circles of acquaintances, the acquaintances of these acquaintances are likely to be unconnected with each other.

Despite prior experimental research and the interesting conjectures described above, the partitioning-versus-closed-social-worlds hypothesis has been little studied in subsequent work. One organizational study (Mehra et al., 2001) looked at the whole network of employees at a small high-technology company. Given the small size of this company and the fact that all the employees were located at one site, audience segregation in terms of creating social worlds in which people were unacquainted with each other was not possible. More recently, a study of self-reported brokerage among college students deliberately maximized the extent to which students reported bridging across structural holes (Kalish & Robins, 2006, p. 69) by requiring students to choose contacts across quite different social groups. This study used a dichotomous measure of self-monitoring rather than the recommended (Gangestad & Snyder, 1991) continuous measure (Kalish & Robins, 2006, p. 70). The net result of these judgment calls would be to diminish self-monitoring effects, and indeed no effects were found on direct brokerage. The distinction between direct and indirect brokerage was not addressed in either of the two studies discussed in this paragraph.

Thus, the audience segregation hypothesis, as it relates to the ripple effect of personality across different levels of social structure, remains untested. Following on from the upsurge in interest concerning different levels of brokerage (e.g., Burt, 2007), we differentiate between direct and indirect brokerage in examining the effects of self-monitoring. Figure 1 illustrates the expected difference between prototypical high and low self-monitors with respect to direct brokerage. The prototypical high self-monitor is shown as the sole link between three acquaintances, whereas the prototypical low self-monitor is shown as inhabiting a relatively closed social network in that the acquaintances have acquaintance
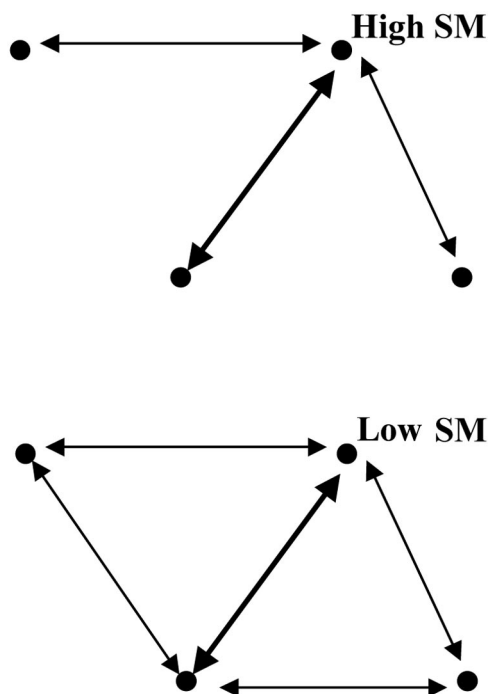
links with each other. Figure 2 illustrates the anticipated patterns with respect to indirect brokerage. The high self-monitoring pattern involves the acquaintances of the acquaintances of the focal individual (A) remaining unconnected with each other and thus dependent upon person A for indirect brokerage in terms of news and message transmission. The low self-monitoring pattern involves the acquaintances of the acquaintances of the focal individual (H) being relatively connected with each other and thus remaining independent of person H for any indirect brokerage. Note that Figure 2 shows that the direct pattern of ties is exactly the same for persons A and H, the difference in network structure being solely attributed to the pattern of indirect ties among acquaintances of acquaintances.

In the following two hypotheses, we go beyond prior studies to examine self-monitoring effects on brokerage in acquaintance networks for (a) direct ties surrounding the individual and (b) indirect ties beyond the immediate reach of the individual.

> *Hypothesis 1:* The higher the self-monitoring score, the more individuals will exhibit brokerage in the structure of their direct acquaintance ties.

> *Hypothesis 2:* The higher the self-monitoring score, the more individuals will exhibit brokerage in the structure of their indirect acquaintance ties.

Brokerage Beyond the Community

Given that our sample was drawn from a dispersed community of self-employed ethnic business owners active around a Canadian city in selling goods and services to people outside the ethnic community, we were able to examine the extent to which self-monitoring affected the range of ties formed with nonethnics. The high self-monitoring performance advantage in "go-between" positions requiring effective interaction with people different from each other (cf. Caldwell & O'Reilly, 1982) extends to establishing relationships with people from different cultures (e.g., Caligiuri & Day, 2000). There is a tendency for people to negatively stereotype demographically different others (Miller & Brewer, 1984) and to view outgroup (relative to ingroup) members as less trustworthy, honest, and cooperative (cf. Tajfel, 1982). However, those higher in self-monitoring tend to be more successful than those lower in self-monitoring in overcoming these prejudices. Specifically, the higher the self-monitoring score, the more individuals engender positive impressions from those who are demographically different (Flynn, Chatman, & Spataro, 2001). Thus, those higher in self-monitoring are better at dealing with people across a variety of different roles, better at relationship building across cultural boundaries, and better at creating positive impressions in the minds of people different from themselves. This boundary-spanning advantage should enable those high in self-monitoring (relative to those low in self-monitoring) to make acquaintanceship ties across a wider range of people demographically different from themselves.

> *Hypothesis 3:* The higher the self-monitoring score, the wider the range of individuals' acquaintances outside the ethnic community.

Figure 1. Expected patterns of direct brokerage for high and low self-monitors. SM = self-monitor.

High self-monitoring pattern: Brokerage
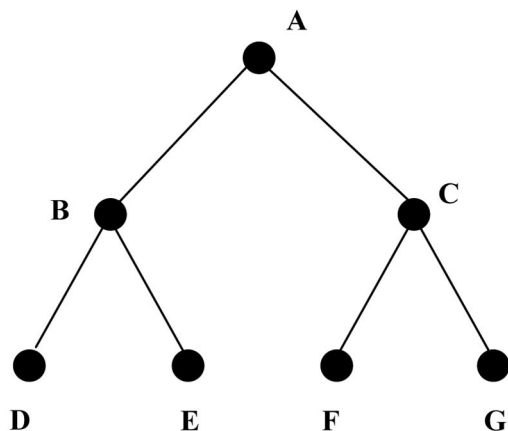
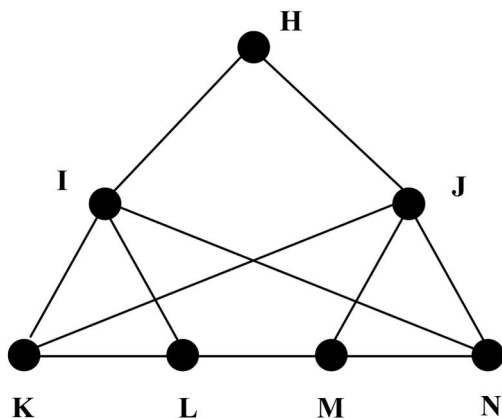**Low self-monitoring pattern: Closure**

Figure 2. Expected patterns of indirect brokerage for high and low self-monitors.

Self-Monitoring and Tenure Interaction

From a network theory perspective, gaining timely access to diverse others is a crucial aspect of brokerage (Burt, 1992). A review of entrepreneurship research concluded that "in the earliest stage of the entrepreneurial process, entrepreneurs appear to benefit from diverse information flows" (Hoang & Antoncic, 2003, p. 173). Thus, the benefits of self-monitoring in terms of forging relations with outside others will be most evident during early rather than later stages of an entrepreneur's history. As the authors of a previous study suggesting a self-monitoring and tenure interaction on boundary spanning explained: "Over time, the competitive advantage [of high self-monitors] should be less important as . . . low self-monitoring subjects who are less successful leave" (Caldwell & O'Reilly, 1982, p. 125; see Moser & Galais, 2007, for similar reasoning). All entrepreneurs who survive in business are likely to be compelled by environmental pressures to establish acquaintances with bank managers, government officials, and other important officeholders in the surrounding community (Thompson, 1967). The benefits of self-monitoring in terms of forging relations with outside others are likely, therefore, to be most evident during early rather than late stages of an entrepre-

neur's history. (Note the different logic in Mehra et al., 2001, concerning the effects of self-monitoring on the development of centrality in strong tie networks over time within organizations.) Over time, the range of host country acquaintances forged by ethnic entrepreneurs is likely to exhibit a ceiling effect as all surviving entrepreneurs tend to become acquainted with a range of host country representatives.

> *Hypothesis 4:* The relationship between self-monitoring and the range of contacts with people outside the ethnic community will be stronger for individuals with shorter tenure in the community.

Alternative Explanations

Network size. According to the "law of family interaction" (Bossard, 1945), as the number of people in a network increases, the number of possible relations between these people increases disproportionately. For example, as a network increases from four to eight members, the number of possible relations increases from six to 28. Thus, large networks tend to exhibit low density in terms of the proportion of connections between people that are actually established. Prior theorizing has emphasized that achieving centrality through lots of connections requires "substantial investment in terms of time and energy" (Day & Kilduff, 2003, p. 212), but this caveat applies more to strong ties such as friendship than to weak ties such as acquaintanceship. An individual with a large network of acquaintances will have a high *degree centrality* (Kilduff & Tsai, 2003, p. 133) in terms of being connected with lots of people, but this individual is also likely to have a high *betweenness centrality* (Kilduff & Tsai, 2003, p. 132) in terms of serving as a potential go-between, or broker, for many acquaintances who are not connected with each other. An individual could establish a brokerage role in a community by cultivating many acquaintances (irrespective of personality orientation). This neglected possibility should be examined (and controlled for in any analysis) in order to evaluate the predictive validity of self-monitoring in relation to brokerage.

Geographic closeness centrality covariates. Network research shows that people who live or work close to each other are likely to interact (Festinger, Schachter, & Back, 1950). Therefore, our tests of self-monitoring effects on social interaction should control for the physical proximity of entrepreneurs to each other to show the added explanatory power of self-monitoring above and beyond proximity effects. Within a metropolitan area, frequency of interaction is affected by residential closeness (Wellman, 1979). Further, the extent to which ethnic entrepreneurs' businesses are located close to businesses owned by coethnics can have important implications for social capital (Kalnins & Chung, 2004). The geographical closeness of entrepreneurs to each other may affect the extent to which they develop brokerage in acquaintance networks. The geographic closeness centrality measure accounts for both direct and indirect links indicating how close a person is to others (Brass & Burkhardt, 1993, p. 445). The higher the closeness centrality, the easier it is for an actor to reach all other actors in the network and the more autonomous the actor is in terms of being less dependent on intermediaries (Freeman, 1979).

Method

Site

The research site was a community of Korean small business owners in a Canadian city. Most of the adult population of Korean immigrants was self-employed in small businesses such as grocery stores, dollar shops, and coffee shops.

Data

A questionnaire was pretested on 10 representative business owners and then mailed to 276 business-owner members of the citywide Korean Business Association (KBA) whose addresses we acquired from the KBA president. Follow-up phone calls after one week encouraged completion and return of the questionnaire. English-language scales were translated into Korean by a bilingual member of the research team, the Korean version was then independently back-translated into English by two other bilingual Korean Americans, and these back translations were then compared with the original English versions to improve the accuracy of the Korean-language versions. We received 162 usable responses (59 percent response rate). Archival data made available by KBA allowed us to test for and find no significant differences between respondents and nonrespondents with regard to type of business owned. However, given lack of data from nonrespondents, we were not able to test for differences relating to size of business or business owner tenure. Ninety-one percent of respondents were male. Respondents indicated current age by checking one of nine categories ranging from *26–30* to *over 65.* The modal response was *56–60* (27 percent), and 85 percent of the sample was between 41 and 65 years of age. Respondents checked one of five boxes to indicate highest level of education completed. The modal response was *four-year college graduate* (50 percent), followed by *high school graduate* (23.5 percent). Neither age nor education was significant in any analysis and did not affect any reported results, but the exclusion of these variables did improve the overall fit of the regression models.

Acquaintance Ties

We included in the questionnaire the names of the 276 Korean business owners, listed alphabetically, and asked respondents to check the acquaintanceship box next to the name of each individual they regarded as an acquaintance. (Similarly, we collected friendship data not analyzed here.) The instructions regarding acquaintances specified that "you do not have to know them very well, as long as you have met them, have talked to them, and know them by their name and by sight." We created a 162×162 respondent matrix, with cell X_{ij} coded as 1 if respondent i reported j as an acquaintance and coded as 0 otherwise. Acquaintanceship is an inherently mutual relationship between two people who know each other (Newcomb, 1961). To capture this mutuality, we symmetrized the 162×162 respondent matrix using the rule that an acquaintance tie exists between person i and person j only if person i claimed person j as an acquaintance and person j also claimed person i as an acquaintance (Cartwright & Harary, 1956; Krackhardt & Kilduff, 1999). Results are unchanged if instead a tie is said to exist if either person claimed the other as an acquaintance.

Measures

Self-monitoring. This was measured with the 25-item Self-Monitoring Scale (Snyder, 1974), for which higher scores indicate higher levels of self-monitoring. Assessing high self-monitors as those scoring 13 or higher, we found that 56 percent were low self-monitors and 44 percent were high self-monitors, which was comparable to samples in other research (e.g., Kilduff, 1992). Following the recommendations of Gangestad and Snyder (1991), we used the continuous measure of self-monitoring in all regression analyses. Given that items on the scale were scored as either zero or one, we estimated the Kuder–Richardson reliability as .73. Previous research has shown acceptable reliability and validity of the Self-Monitoring Scale for non-U.S. respondents including Koreans (Gudykunst, Yang, & Nishida, 1987; Nicholas, 1994).

Direct brokerage. Direct brokerage was measured as the extent to which, within the Korean community, the acquaintances of each focal individual ("ego") were unconnected to each other. Specifically, we counted the number of transitive (i.e., fully connected) triads that included ego, and divided this by the number of potentially transitive triads that included ego (Brass, 1995; Holland & Leinhardt, 1977) to produce a measure of connectedness. Because we were interested in the extent of disconnectedness surrounding ego, we then changed the sign of the proportion from positive to negative in reporting the analyses in the tables: The less transitivity in ego's network, the more ego plays a brokerage role (cf. Baker & Obstfeld, 1999). Note that a triad is potentially transitive if two actors are connected to the third actor and is actually transitive only if all three actors are connected to each other. In calculating transitivity, we included only those people (134 of 162 respondents) with at least two acquaintances whose ego networks were, therefore, potentially transitive. In cases where one person claimed the other as an acquaintance but was claimed in turn as a friend, we counted the mutual tie as an acquaintance tie. We used the logit transformation (Cohen & Cohen, 1983, pp. 269–270) in calculating proportional transitivity values, given that the distribution of transitivity scores exhibited both skewness (.88) and kurtosis (3.4).

Indirect brokerage. Indirect brokerage was calculated as betweenness centrality within the Korean community (Borgatti, Everett, & Freeman, 2002), with direct brokerage controlled for in all analyses. Betweenness centrality represents the frequency with which an actor falls between other pairs of actors on the shortest (i.e., geodesic) paths connecting them (Freeman, 1979, p. 221) and takes into account both direct and indirect ties (Brass & Burkhardt, 1992).

Range. This refers to the extent to which the individual is connected with a diversity of other actors (Burt, 1983, p. 176) or a diversity of occupants of relevant positions (Erickson, 1996). We were not able to determine the complete set of people outside the Korean community to which each respondent was connected. Following previous studies that have addressed this problem (e.g., Lin & Dumin, 1986), we employed the position generator method (Lin, 2001), which involves a sample of structural positions salient in a society to estimate the range of each respondent's contacts (see Erickson, 1996, for an example). We elicited from key informants in the Korean community 25 occupations (e.g., bank manager, lawyer, politician, government officer, professor) that, if occupied by non-Koreans, could provide Korean business owners with access to expertise and resources. Respondents estimated the number of non-Koreans they knew in each of the 25 occupations, following

precedents in previous research (e.g., Erickson, 1996). A high range score indicated that the individual was relatively unconstrained and was able to access many different types of external contacts.

Tenure.   Tenure was measured as the number of years that each respondent had lived in Canada.

Network size.   Network size was measured as the number of direct connections that each individual had with other actors in the acquaintance network, a measure also known as degree centrality (Kilduff & Tsai, 2003, p. 133). Recall that, as defined above, an acquaintance tie exists only if both individuals claim the other as an acquaintance.

Geographic closeness centrality.   This was calculated as two scores for each respondent based on home and business addresses. Using the postal map of the Canadian city, we coded each pair of addresses (home and business) as proximate, that is, sharing the first two elements of the postal code (cell = 1) or distant (cell = 0) and calculated closeness centrality (see Wasserman & Faust, 1994, for the formula) as the extent to which the geodesic paths connecting the address to the other addresses were short rather than long (Burkhardt & Brass, 1990, p. 113).

Language proficiency.   We controlled for second language ability because of its possible role in facilitating acquaintanceship with non-Koreans (cf. Portes, 2000, p. 9). Following previous investigations (e.g., Chiswick & Miller, 1998; Espenshade & Fu, 1997), we relied on self-report 5-point scales, given the unavailability of objective measures. Respondents checked one category (out of five ranging from *not at all* to *very well*) for English and one for French to estimate how well they spoke the languages. Proficiency equaled the mean of the two self-reported values.

Results

The descriptive statistics in Table 1 show that the typical Korean business owner had resided in Canada for about 14 years, had attained an average proficiency level of English and French ($M = 2.52$ on a 5-point scale, $SD = 0.73$), and knew at least one non-Korean in 15 different occupational categories ($M = 15$ out of 25 occupational categories, $SD = 5.67$).

Compatible with the hypotheses, individuals high in self-monitoring, compared with those low in self-monitoring, tended to exhibit more brokerage—directly, in terms of their acquaintances being unacquainted with each other ($r = .33$, $p < .001$), and indirectly, in terms of betweenness centrality across the ethnic

community ($r = .29$, $p < .01$). These correlations for weak-tie brokerage are higher than the $r = .18$ correlation between self-monitoring and betweenness centrality reported in a previous analysis of an organizational strong-tie network (Mehra et al., 2001). Business owners high in self-monitoring tended to have more acquaintances ($r = .23$, $p < .01$), and the number of acquaintances significantly correlated with the extent of both direct ($r = .47$, $p < .001$) and indirect ($r = .74$, $p < .001$) brokerage. There was no significant relationship between self-monitoring and range of contacts outside the community.

Recall that Hypothesis 1 suggested that the higher the self-monitoring score, the more individuals would exhibit direct brokerage. We found support for this prediction in the regression analysis summarized in Model 2 in Table 2. The overall model including self-monitoring was significant, $F(6, 127) = 8.51$, $p < .001$, and explained 29 percent of the variance. Controlling for the significant effects of the size of the individual's network, self-monitoring significantly predicted the extent of individuals' direct brokerage ($\beta = .23$, $p < .001$), accounting for an additional 5 percent of the variance beyond that explained by the control variables.

Is there also evidence to support the suggestion of Hypothesis 2 that self-monitoring would be positively related to indirect brokerage? The answer is yes. The overall regression model shown in Model 2 of Table 3, which includes self-monitoring, was significant, $F(7, 126) = 27.00$, $p < .001$, and explained 60 percent of the variance. Controlling for the significant effects of the size of the individual's network, self-monitoring predicted the extent of individuals' indirect brokerage ($\beta = .15$, $p < .05$). Thus, the acquaintances of those high in self-monitoring (compared with the acquaintances of those low in self-monitoring) tended to have acquaintances who were unacquainted with each other. Self-monitoring accounted for an additional 2 percent of the variance beyond that explained by the control variables.

Hypothesis 3 suggested that self-monitoring would relate to the range of entrepreneurs' acquaintances outside the ethnic community. We found no support for this hypothesis, as the nonsignificance of the self-monitoring term in Model 2 in Table 4 shows. Model 3 in Table 4 does show support for the interaction Hypothesis 4. The overall regression model was significant, $F(9, 124) = 4.01$, $p < .001$. As predicted, there was a significant interaction between self-monitoring and tenure, such that self-monitoring related more strongly to the range of external ties for business

Table 1
Means, Standard Deviations, and Correlations for Descriptive Statistics

Descriptive statistics	M	SD	1	2	3	4	5	6	7	8
1. Tenure (in years)	14.33	6.33	—							
2. Language proficiency	2.52	0.73	.32***	—						
3. Geographic closeness centrality (home)	0.88	0.10	−.11	−.08	—					
4. Geographic closeness centrality (business)	0.90	0.12	.04	−.05	.59***	—				
5. Network size	18.86	16.38	.14	.10	.03	.19*	—			
6. Self-monitoring	9.09	4.25	−.05	−.05	.09	.08	.23**	—		
7. Direct brokerage[a]	0.12	0.31	.01	−.04	.06	.06	.47***	.33***	—	
8. Indirect brokerage[b]	68.99	157.58	.14	.08	−.09	.08	.74***	.29***	.35***	—
9. Range	14.59	5.67	.20*	.29***	.02	.10	.16	.07	.23**	.21*

Note. $N = 134$.
[a]Measured as the negative of the logit transformation of the proportion of triads involving ego that were transitive. [b]Measured as betweenness centrality.
*$p < .05$.   **$p < .01$.   ***$p < .001$.

Table 2
Summary of Regression Analyses Predicting Direct Brokerage

Variable	Model 1	Model 2
Tenure	−.02	−.01
Language proficiency	−.08	−.07
Geographic closeness centrality (home)	.09	.07
Geographic closeness centrality (business)	−.10	−.09
Network size	.50***	.45***
Self-monitoring		.23***
R^2	.24	.29
F	8.07***	8.51***
SE	0.28	0.27
*df*s	5, 128	6, 127

Note. $N = 134$. Values represent standardized coefficients.
*** $p < .001$.

owners of more recent tenure compared with that of business owners of more lengthy tenure ($\beta = -.19$, $p < .05$). Controlling for significant effects of language proficiency and direct brokerage, we found that the self-monitoring interaction explained an additional 4 percent of the variance.

To check whether, in general, people high in self-monitoring relative to those low in self-monitoring tended to inflate the number of acquaintances they claimed (a tendency that might help produce the interaction effect), we calculated the relationship between self-monitoring and the proportion of acquaintance ties within the community that were reciprocated. There was a positive relationship between self-monitoring and proportion of reciprocated ties ($r = .20$, $p < .05$), indicating that people high in self-monitoring compared with those low in self-monitoring tended to be more accurate in assessing acquaintanceship. This reduces concerns that people high in self-monitoring might have inflated their self-reported estimates of acquaintance ties outside the community. (Note that in all tests of brokerage within the community, any potential bias was eliminated because an acquaintance tie was defined as existing only if both parties to the tie stated that there was an acquaintance relationship.)

Following Aiken and West's (1991) standards for graphing interactions using a regression model, we used unstandardized beta weights to plot the self-monitoring and tenure interaction (self-monitoring beta = 0.10, tenure beta = 0.19). Low and high values of

Table 3
Summary of Regression Analyses Predicting Indirect Brokerage

Variable	Model 1	Model 2
Tenure	.03	.04
Language proficiency	−.02	−.01
Geographic closeness centrality (home)	−.12	−.13
Geographic closeness centrality (business)	.01	.01
Network size	.75***	.74***
Direct brokerage	−.01	−.05
Self-monitoring		.15*
R^2	.58	.60
F	29.29***	27.00***
SE	112.92	110.70
*df*s	6, 127	7, 126

Note. $N = 134$. Values represent standardized coefficients.
* $p < .05$. *** $p < .001$.

Table 4
Summary of Regression Analyses Predicting Range

Variable	Model 1	Model 2	Model 3
Tenure	.10	.10	.11
Language proficiency	.28***	.28***	.29***
Geographic closeness centrality (home)	−.02	−.01	−.01
Geographic closeness centrality (business)	.13	.13	.12
Network size	−.18	−.18	−.16
Direct brokerage	.26***	.26***	.25**
Indirect brokerage	.21	.22	.19
Self-monitoring		−.03	−.03
Self-Monitoring × Tenure			−.19*
R^2	.19	.19	.23
F	4.25***	3.71***	4.01***
SE	5.25	5.27	5.18
*df*s	7, 126	8, 125	9, 124

Note. $N = 134$. Values represent standardized coefficients; interaction terms are centered (Aiken & West, 1991).
* $p < .05$. ** $p < .01$. *** $p < .001$.

the variables were calculated as one standard deviation above and below the mean for self-monitoring (high = 13.34, low = 4.84) and tenure (old-timers = 20.66, newcomers = 8). The resulting Figure 3 helps us understand the significant interaction reported above by showing that, among those who were relative newcomers to the community, high self-monitors (relative to low self-monitors) reported a wider range of ties to position holders outside the community but that, among those who were old-timers in the community, being low or high on self-monitoring made no difference concerning the range of ties to position holders outside the community.

Discussion

Despite growing interest in social network brokerage, its antecedents have been neglected. In his review, Burt (2005, p. 48) commented, "We know little about how people come to be brokers." One possibility is that brokers tend to be high in self-monitoring. Our results indicate a ripple effect of self-monitoring in showing that self-monitoring relates to both direct brokerage, in the set of acquaintances around the entrepreneur, and indirect brokerage, among the acquaintances of the entrepreneur's acquaintances. Thus, these results contribute to a clearer understanding of whether and how self-monitoring relates to the partitioning of social worlds at different levels. Both direct and indirect brokerage connect the focal person with sources of diverse information (in the form of contacts who are unacquainted with each other) and provide potential control over whether to replace sources of such information (Burt, 1992, pp. 38–40).

The article focuses on an ethnic minority embedded within a majority culture. In such contexts, there is a tendency for minority individuals to form ties preferentially with those similar to themselves concerning salient demographic characteristics (Mehra et al., 1998). Consistent with the idea of personality effects rippling beyond the community, in our results, relative newcomers who were high in self-monitoring were able to forge a wide range of acquaintance ties to those outside the minority culture. These external ties can facilitate information and resource flows that
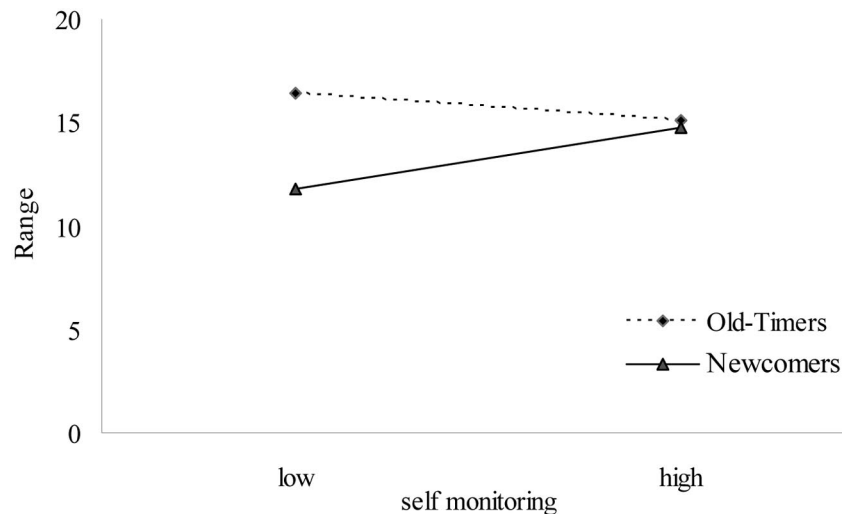
Figure 3. Split-plot analysis of interaction effects of self-monitoring and tenure on the range of external ties linking business owners to important position holders outside the community (Hypothesis 3). High and low levels of self-monitoring and the distinction between old-timers and newcomers in terms of tenure were calculated as one standard deviation above and below the relevant means (Aiken & West, 1991).

benefit the minority community as a whole in terms of connecting it to important sources of support (Granovetter, 1983).

Contribution to Theory and Research

As far as we know, this is the first study of how personality relates to brokerage within and beyond a community of entrepreneurs (see Burt, Jannotta, & Mahoney, 1998, for a preliminary effort to create another approach). Within the community, we found that self-monitoring orientation related most strongly to the direct structure of social ties around individuals but also significantly affected the extent to which acquaintances of acquaintances knew each other. From these results, we build a picture not just of how self-monitoring orientation relates to the individual's social circle but also of how personality differences can affect social structure beyond the reach of the individual. Self-monitoring, therefore, helps us understand how individuals enact the environments that then constrain and enable their actions (cf. Weick, 1979). People high in self-monitoring relative to those low in self-monitoring, in adapting their self-presentations to the demands of quite different groups, may unwittingly be creating both direct and indirect connections between previously disconnected social worlds.

There is ongoing debate within social network research concerning the relative advantages of cohesive versus fragmented social networks (e.g., Burt, 2005) and concerning the importance of direct and indirect brokerage in predicting business success (Burt, 2007; Uzzi, 1996). A network dilemma facing the individual entrepreneur is whether to invest scarce resources (such as time) in developing acquaintances. A further contribution of the current study is to suggest that individuals (irrespective of their self-monitoring orientation) who cultivate many acquaintances rather than few are likely to occupy brokerage positions with respect to both their direct contacts and their indirect contacts. Network size was strongly associated with brokerage at two different levels. Thus, there is a route to brokerage for individuals who are low in

self-monitoring that does not involve attempting to alter their characteristic dispositions: They can develop many acquaintances.

Limitations

Our research is limited in its focus on ties within and beyond one distinctive ethnic community. We were not able to examine the full range of ties between business owners and owners of non-Korean businesses, and the sample is limited in consisting of mainly men and only a small proportion of young business owners. Women tend to be lower in self-monitoring score than men (Day, Schleicher, Unckless, & Hiller, 2002), and this may contribute to their lower levels of brokerage reported in other research (cf. Burt, 1992). The somewhat elderly makeup of the sample may have restricted the extent to which links were forged outside the ethnic community. This research is, as far as we know, the first examination of an expatriate Korean community from the self-monitoring perspective. Thus, our conclusions are necessarily contingent on further research concerning self-monitoring and social network patterns.

Our research is also limited in its focus on one personality variable, leaving unstudied, for example, possible relationships between the Big Five and brokerage. We know from recent research on the five-factor model of personality (Klein, Lim, Saltz, & Mayer, 2004) that highly educated individuals with low neuroticism tend to be high in numbers of friends and advisees and low in numbers of negative ties. Other research suggests that self-monitoring may moderate the effects of the Big Five on social behavior (Barrick, Parks, & Mount, 2005). We were not able to explore these possible relationships in the current research.

Future Research

Future research can advance understanding of brokerage and entrepreneurship by investigating social network change. As entrepreneurs proceed from opportunity perception through to com-

pany founding (Greve & Salaff, 2003), we might expect self-monitoring to play a role in the structuring of the support networks that provide emotional, technical, and financial support. Given their preference for partitioned social worlds, budding entrepreneurs high in self-monitoring are likely to develop relatively open support networks in which they act as brokers, whereas entrepreneurs low in self-monitoring are likely to develop relatively closed support networks. Further, we might anticipate more turnover in the support networks of those high in self-monitoring, given the negative relationship between self-monitoring and commitment to relationships (e.g., Snyder et al., 1983), with a particular emphasis by those high in self-monitoring on recruiting to the support network individuals of relatively high status (see Flynn et al., 2006, for a recent discussion of self-monitoring and status seeking). We also think that positive affectivity (see Lucas & Diener, 2003, for a review) will predict initial brokerage in the networks around the focal entrepreneur (cf. Baron, 2008) but that the networks of high positive-affectivity entrepreneurs are likely to become closed over time, given that these energetic and sociable people are likely to draw their contacts together.

Conclusion

Self-monitoring theory shows itself to be particularly valuable for facilitating research on individual personality, social relationships, and social structure (cf. Day & Schleicher, 2006). Self-monitoring research can help us understand the extent to which individual differences play a role in shaping not just individual behavior but also social patterns of interaction. As individuals strive to pursue their careers, they create social structures that serve as channels for resources, mechanisms for acculturation, and linkages to new opportunities. If self-monitoring theory as employed in this study has an overall message, it is that individual differences are important not just for individuals but also for understanding the structure of the social environments in which their interactions take place.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* Newbury Park, CA: Sage.

Baker, W. E., & Obstfeld, D. (1999). Social capital by design: Structures, strategies, and institutional context. In R. Leenders & S. M. Gabbay (Eds.), *Corporate social capital and liability* (pp. 88–105). Boston: Kluwer.

Baron, R. (2008). The role of affect in the entrepreneurial process. *Academy of Management Review, 33,* 328–340.

Barrick, M. R., Parks, L., & Mount, M. K. (2005). Self-monitoring as a moderator of the relationships between personality traits and performance. *Personnel Psychology, 58,* 745–767.

Bearman, P. S., & Moody, J. (2004). Suicide and friendships among American adolescents. *American Journal of Public Health, 94,* 89–95.

Beaty, J. C., Cleveland, J. N., & Murphy, K. R. (2001). The relation between personality and contextual performance in "strong" versus "weak" situations. *Human Performance, 14,* 125–148.

Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). *UCINET 6 for Windows: Software for social network analysis.* Harvard: Analytic Technologies.

Bossard, J. H. S. (1945). The law of family interaction. *American Journal of Sociology, 50,* 292–294.

Brass, D. J. (1995). A social network perspective on human resource management. *Research in Personnel and Human Resource Management, 13,* 39–79.

Brass, D. J., & Burkhardt, M. E. (1992). Centrality and power in organizations. In N. Nohria & R. Eccles (Eds.), *Networks and organizations: Structure, form, and action* (pp. 191–215). Boston: Harvard Business School Press.

Brass, D. J., & Burkhardt, M. E. (1993). Potential power and power use: An investigation of structure and behavior. *Academy of Management Journal, 36,* 441–470.

Burkhardt, M. E., & Brass, D. J. (1990). Changing patterns or patterns of change: The effects of a change in technology on social network structure and power. *Administrative Science Quarterly, 35,* 104–127.

Burt, R. S. (1983). Range. In R. S. Burt & M. J. Minor (Eds.), *Applied network analysis: A methodological introduction* (pp. 176–194). Beverly Hills, CA: Sage.

Burt, R. S. (1992). *Structural holes: The social structure of competition.* Cambridge, MA: Harvard University Press.

Burt, R. S. (2005). *Brokerage and closure: An introduction to social capital.* New York: Oxford University Press.

Burt, R. S. (2007). Second-hand brokerage: Evidence on the importance of local structure for managers, bankers, and analysts. *Academy of Management Journal, 50,* 119–148.

Burt, R. S., Jannotta, J. E., & Mahoney, J. T. (1998). Personality correlates of structural holes. *Social Networks, 20,* 63–87.

Caldwell, D. F., & O'Reilly, C. A. (1982). Boundary spanning and individual performance: The impact of self-monitoring. *Journal of Applied Psychology, 67,* 124–127.

Caligiuri, P. M., & Day, D. V. (2000). Effects of self-monitoring on technical, contextual, and assignment-specific performance. *Group and Organization Management, 25,* 154–174.

Cartwright, D., & Harary, F. (1956). Structural balance: A generalization of Heider's theory. *Psychological Review, 63,* 277–293.

Chiswick, B. R., & Miller, P. W. (1998). Language skill definition: A study of legalized aliens. *International Migration Review, 32*(4), 877–900.

Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. *New England Journal of Medicine, 357,* 370–379.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Dabbs, J. M., Evans, M. S., Hooper, C. H., & Purvis, J. A. (1980). Self-monitors in conversation: What do they monitor? *Journal of Personality and Social Psychology, 39,* 278–284.

Day, D. V., & Kilduff, M. (2003). Self-monitoring personality and work relationships: Individual differences in social networks. In M. R. Barrick & A. M. Ryan (Eds.), *Personality and work: Reconsidering the role of personality in organizations* (pp. 205–228). San Francisco: Jossey–Bass.

Day, D. V., & Schleicher, D. J. (2006). Self-monitoring at work: A motive-based perspective. *Journal of Personality, 74,* 685–713.

Day, D. V., Schleicher, D. J., Unckless, A. L., & Hiller, N. J. (2002). Self-monitoring personality at work: A meta-analytic investigation of construct validity. *Journal of Applied Psychology, 87,* 390–401.

Erickson, B. H. (1996). Culture, class, and connections. *American Journal of Sociology, 102,* 217–251.

Espenshade, T. J., & Fu, H. (1997). An analysis of English-language proficiency among U.S. immigrants. *American Sociological Review, 62,* 288–305.

Festinger, L., Schachter, S., & Back, K. (1950). *Social pressures in informal groups: A study of human factors in housing.* Stanford, CA: Stanford University Press.

Flynn, F. J., Chatman, J. A., & Spataro, S. E. (2001). Getting to know you: The influence of personality on impressions and performance of demographically different people in organizations. *Administrative Science Quarterly, 46,* 414–442.

Flynn, F. J., Reagans, R. E., Amanatullah, E. T., & Ames, D. R. (2006). Helping one's way to the top: Self-monitors achieve status by helping

others and knowing who helps whom. *Journal of Personality and Social Psychology, 91,* 1123–1137.

Freeman, L. C. (1979). Centrality in social networks: Conceptual clarification. *Social Networks, 1,* 215–239.

Freeman, L. C. (1992). The sociological concept of "group": An empirical test of two models. *American Journal of Sociology, 98,* 152–166.

Gangestad, S., & Snyder, M. (1991). Taxonomic analysis redux: Some statistical considerations for testing a latent class model. *Journal of Personality and Social Psychology, 61,* 141–146.

Gangestad, S., & Snyder, M. (2000). Self-monitoring: Appraisal and reappraisal. *Psychological Bulletin, 126,* 530–555.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78,* 1360–1380.

Granovetter, M. S. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory, 1,* 201–233.

Graziano, W. G., & Bryant, W. H. M. (1998). Self-monitoring and the self-attribution of positive emotions. *Journal of Personality and Social Psychology, 74,* 250–261.

Greve, A., & Salaff, J. W. (2003). Social networks and entrepreneurship. *Entrepreneurship Theory and Practice, 28*(1), 1–22.

Gudykunst, W. B., Yang, S., & Nishida, T. (1987). Cultural differences in self-consciousness and self-monitoring. *Communication Research, 14,* 7–34.

Heider, F. (1958). *The psychology of interpersonal relations.* New York: Wiley.

Hoang, H., & Antoncic, B. (2003). Network-based research in entrepreneurship: A critical review. *Journal of Business Venturing, 18,* 165–187.

Holland, P. W., & Leinhardt, S. (1977). Transitivity in structural models of small groups. In S. Leinhardt (Ed.), *Social networks: A developing paradigm* (pp. 49–66). New York: Academic Press.

Ickes, W., & Barnes, R. D. (1977). The role of sex and self-monitoring in unstructured dyadic interactions. *Journal of Personality and Social Psychology, 35,* 315–330.

Ickes, W., Holloway, R., Stinson, L. L., & Hoodenpyle, T. G. (2006). Self-monitoring in social interaction: The centrality of self-affect. *Journal of Personality, 74,* 659–684.

Jawahar, I. M. (2001). Attitudes, self-monitors, and appraisal behaviors. *Journal of Applied Psychology, 86,* 875–883.

Kalish, Y., & Robins, G. (2006). Psychological predispositions and network structure: The relationship between individual predispositions, structural holes and network closure. *Social Networks, 28,* 56–84.

Kalnins, A., & Chung, W. (2004). Social capital, geography, and survival: Gujarati immigrant entrepreneurs in the U.S. lodging industry. *Management Science, 52,* 233–247.

Kilduff, M. (1992). The friendship network as a decision-making resource: Dispositional moderators of social influences on organizational choice. *Journal of Personality and Social Psychology, 62,* 168–180.

Kilduff, M., & Tsai, W. (2003). *Social networks and organizations.* London: Sage.

Klein, K. J., Lim, B., Saltz, J. L., & Mayer, D. M. (2004). How do they get there? An examination of the antecedents of centrality in team networks. *Academy of Management Journal, 47,* 952–963.

Krackhardt, D., & Kilduff, M. (1999). Whether close or far: Social distance effects on perceived balance in friendship networks. *Journal of Personality and Social Psychology, 76,* 770–782.

Lin, N. (2001). *Social capital: A theory of social structure and action.* New York: Cambridge University Press.

Lin, N., & Dumin, M. (1986). Access to occupations through social ties. *Social Networks, 8,* 365–385.

Lucas, R. E., & Diener, E. (2003). The happy worker: Hypotheses about the role of positive affect in worker productivity. In M. R. Barrick & A. M. Ryan (Eds.), *Personality and work: Reconsidering the role of personality in organizations* (pp. 30–59). San Francisco: Jossey–Bass.

Mehra, A., Kilduff, M., & Brass, D. J. (1998). At the margins: A distinctiveness approach to the social identity and social networks of underrepresented groups. *Academy of Management Journal, 41,* 441–452.

Mehra, A., Kilduff, M., & Brass, D. J. (2001). The social networks of high and low self-monitors: Implications for workplace performance. *Administrative Science Quarterly, 46,* 121–146.

Miller, N., & Brewer, M. D. (Eds.). (1984). *Groups in contact: The psychology of desegregation.* New York: Academic Press.

Moser, K., & Galais, N. (2007). Self-monitoring and job performance: The moderating role of tenure. *International Journal of Selection and Assessment, 15,* 83–93.

Newcomb, T. M. (1961). *The acquaintance process.* New York: Holt, Reinhart, & Winston.

Nicholas, H. P. (1994). Self-monitoring, locus of control, and social encounters of Chinese and New Zealand students. *Journal of Cross-Cultural Psychology, 25,* 353–368.

Podolny, J. M., & Baron, J. N. (1997). Resources and relationships: Social networks and mobility in the workplace. *American Sociological Review, 62,* 673–693.

Portes, A. (2000). The two meanings of social capital. *Sociological Forum, 15,* 1–12.

Putnam, R. (2000). *Bowling alone: The collapse and revival of American community.* New York: Simon & Schuster.

Shaffer, D. R., Smith, J. E., & Tomarelli, M. (1982). Self-monitoring as a determinant of self-disclosure reciprocity during the acquaintance process. *Journal of Personality and Social Psychology, 43,* 163–175.

Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology, 30,* 526–537.

Snyder, M. (1979). Self-monitoring processes. *Advances in Experimental Social Psychology, 12,* 85–128.

Snyder, M. (1987). *Public appearances/private realities: The psychology of self-monitoring.* New York: Freeman.

Snyder, M., & Gangestad, S. (1982). Choosing social situations: Two investigations of self-monitoring processes. *Journal of Personality and Social Psychology, 43,* 123–135.

Snyder, M., Gangestad, S., & Simpson, J. A. (1983). Choosing friends as activity partners: The role of self-monitoring. *Journal of Personality and Social Psychology, 45,* 1061–1072.

Tajfel, H. (1982). The social psychology of intergroup relations. *Annual Review of Psychology, 33,* 1–39.

Thompson, J. D. (1967). *Organizations in action.* New York: McGraw–Hill.

Turner, R. G. (1980). Self-monitoring and humor production. *Journal of Personality, 48,* 163–172.

Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review, 61,* 674–698.

Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications.* New York: Cambridge University Press.

Weick, K. E. (1979). *The social psychology of organizing* (2nd ed.). New York: Random House.

Wellman, B. (1979). The community question: The intimate networks of East Yorkers. *American Journal of Sociology, 84,* 1201–1231.