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SOUNDS LIKE A MISNOMER? ON THE ROLE OF FORMAL AND INFORMAL LEADERS IN SELF-MANAGING VIRTUAL TEAMS

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Abstract

Self-managing virtual teams are increasingly becoming common in the workplace. While the name self-managing virtual teams, by definition seem to suggest teams without any formal leaders, this is not the case. While some of the self-managing virtual teams have no leaders, many others may have internal or external formal leaders. However, most of the self-managing team research focuses on the leadership that is provided to these teams by external formal leaders. With this research-in-progress study, we aim at explicating the role of all leaders, formal or informal, external or internal. Our research questions are: (1) Which behaviors do individuals manifest to emerge as informal leaders in self-managing virtual teams? 2) In what capacity do formal and informal leaders contribute leadership of self-managing virtual teams? This pilot study is conducted through semi-structured qualitative interviews of key informants from self-managing virtual teams. Despite its abundance, traditional leadership research cannot be claimed to transfer directly to the leadership context of self-managing virtual teams. Unique conditions of these novel team environments require focused studies of leadership in virtual team settings. Thus, it is important to combine an inductive grounded theory approach with a deductive literature based approach. This combination allows for confirming which of the self-managing team leadership behaviors already exist in the literature, and identifying the leadership behaviors that do not apply to the SMV team setting, and eliciting behaviors that are only uniquely seen as leadership within the SMV team context. To this end, in this study, we use the research from traditional organizational leadership literature, self-managing team leadership literature and virtual team leadership literature as a way to categorize leader behaviors that are extracted from data based on inductive coding of the interviews. This paper presents the overall study, its motivations, a brief overview of relevant literature, research methods and preliminary findings.

Keywords: leadership; self-managing virtual teams; formal leadership; emergent leadership

1 INTRODUCTION

This paper provides a pilot-study on how individuals emerge as informal leaders in self-managing virtual (SMV) teams, a novel and increasingly ubiquitous form of organization. This section provides the justification for the study of leadership in SMV teams, introduces the research questions and the context for the study.

Self-managing teams have been common in the United States (Cohen, Ledford Jr, & Spreitzer, 1996; Osterman, 1993; Towers Perrin, 1990) and elsewhere (Kirkman & Benson, 1999). Due to amplified

global competition, these teams are progressively also becoming virtual teams (Kirkman & Shapiro, 1997). A self-managing virtual team is a virtual team with a high degree of decision-making autonomy and behavioral control at the work-group level... (where) a much greater emphasis is placed on control from within the group (Adapted from Manz & Sims, 1980).

SMV teams enable companies to take advantage of experts who might be distributed around the world. Yet, they are difficult to lead and manage due to challenges such as incongruent temporal rhythms (Hinds & Bailey, 2003), cultural and organizational differences, lack of non-verbal cues (Sproull and Kiesler, 1986), time zone differences (Maznevski & Chudoba, 2000), time delays in receiving feedback (Yoo & Alavi, 2004), language barriers, differences in understanding and lack of shared frame of reference (Cramton, 2001). Organizational behavior and small group researchers suggest that leadership is one of the most important variables that contribute to the development of effective teams (Kozlowski, Gully, McHugh, Salas, & Cannon-Bowers, 1996). Kayworth and Leidner's (2001) review of existing studies of virtual teams suggests that team leadership is also vital for virtual teams. Given the increasing ubiquity of SMV teams, it is crucial to understand how leadership manifests in these teams, and how leaders contribute to the teams.

While self-managing virtual team, by definition seems to imply lack of formal leaders, this is not the case in practice (Manz & Sims Jr, 1987). In fact, many teams have "external leaders" who support the SMV teams, or have some sort of formal manager/administrator role with a *laizzes-faire* approach to leadership, therefore enabling the team to act as an SMV team. Regardless of the existence of a formal role virtual teams whose members work interdependently and have the collective authority and responsibility of managing and performing relatively whole tasks can be identified as self-managing virtual teams (De Jong, De Ruyter, & Lemmink, 2004). Understanding leadership in these teams require understanding both how informal leaders emerge and contribute to the team as well as how formal internal and external leaders contribute to the team. However, most self-managing team leadership literature focuses on external leaders of self-managing teams.

The goal of this pilot study is to identify emergence and manifestation of leadership in two types of SMV teams, those with a formal leader, and those without any formal leaders. The ultimate goal of this in-process-research paper is to fill this literature gap and answer the following research questions: Which behaviors do individuals manifest to emerge as informal leaders in SMV teams? 2) In what capacity do formal and informal leaders contribute leadership of self-managing virtual teams?

2 LITERATURE REVIEW

While self-managing teams are important for software development and other teams (Carmel & Sawyer, 1998), creating and leading such teams is a challenge (Moe, Dingsoyr, & Dyba, 2009) and may be resisted by the employees (Kirkman & Shapiro, 1997). Most studies of self-managing teams focus on how external leaders create certain structures in order to foster team's self management (Wageman, 2001). Key findings of this stream of literature show that that how formal external leaders design their teams (Manz & Sims Jr, 1987; Salas, Sims, & Burke, 2005; Stewart & Manz, 1995), empower teams (Druskat & Wheeler, 2003) and the quality of their coaching (Stoker, 2008; Wageman, 2001) influence team self-management and success. While the self-managing teams, by definition suggest internal leadership (Manz & Sims Jr, 1987), there are very few studies of emergent leadership of self-managing virtual team members (for e.g., Carte, Chidambaram, & Becker, 2006; Kevin Crowston, Heckman, Misiolek, & Eseryel, 2007; Eseryel, 2009).

While there is abundant literature on leadership, the unique conditions of SMV teams make it difficult to generalize the findings of organizational leadership studies in these settings without focused studies. (Carte et al., 2006; Hooijberg, Hunt, & Dodge, 1997; Zhang & Fjermestad, 2006). The key challenge is to identify which of the leadership behaviors apply to the SMV setting, which ones do not apply and which new behaviors emerge as leadership SMV teams that have not been considered as leadership

within traditional organizations. Similar arguments were made for self-managing teams. For example Cummings (1981) and Hackman (1986) suggest that the general group effectiveness models do not apply to self-managing teams. Focused studies of leadership in the novel environments SMV teams are needed (Bell & Kozlowski, 2002; Yoo & Alavi, 2004; Zaccaro & Bader, 2003; Zhang & Fjermestad, 2006).

Since this study focuses on leader behaviors, behavioral leadership literature will be provided next. Behavioral leadership studies emerged out of three groups of researchers: Bales and his associates at Harvard, the Ohio State Leadership Center (in the late 1940s), and the Institute for Social Research at the University of Michigan (Bass, 1990; House & Aditya, 1997). Most recently, Yukl and colleagues distinguished between task- and relationship-oriented behaviors in his book on leadership in organizations and provided the following definitions (Yukl, 2002): Task-oriented behaviors are those that move the team forward in the accomplishment of its task, such as planning and scheduling work, and coordinating subordinate activities (Yukl, Gordon, & Taber, 2002). Relationship-oriented behaviors are those that allow the team to maintain a positive social environment—for example by showing trust and confidence, acting friendly and considerate, keeping subordinates informed, and providing recognition for subordinates' accomplishments" (Yukl et al., 2002). The four types of leadership behaviors below are identified based on Crowston, Heckman and Misiolek's (2007) categorization of the leadership behaviors in the behavioral leadership literature. According to this, leaders can help advance the group's work by either making substantial work-related or by coordinating the work of others. Leaders also contribute to the team environment by helping maintain the group together (group maintenance) and connecting the team to the outside (boundary spanning).

2.1 Task-Oriented Leadership Behavior: Substantive Task Contribution

Since the earliest leadership literature typically focused on analyzing managers' leadership, substantive task contribution (i.e., actual work behavior) was not a consideration. However, in self-managing teams without formal leaders, there is no formally established managerial person (or role) tasked solely with team oversight and task coordination. Instead, everybody is expected to contribute to the work. Misiolek and Heckman (2005) call these kind of task-oriented leader behaviors substantive behaviors based on their study of virtual self-managing student teams. Based on interviews with Free/Libre Open Source Software development team members Scozzi, Crowston, Eseryel and Li (2008) suggested that leadership seems to be correlated with sustained contribution in these teams.

2.2 Task-Oriented Leadership Behavior: Task Coordination

Yoo and Alavi (2004) concluded that emergent virtual team leaders sent more task-oriented email messages, particularly ones related to coordination. Task coordination is also identified as a leadership behavior in some SMV's without formal leaders (Kevin Crowston, Robert Heckman, et al., 2007; Kevin Crowston, R. Heckman, et al., 2007). The task coordination leadership behaviors include: planning (Yukl et al., 2002) and organizing work (Stogdill, 1974), determining goals (Stogdill, 1974), providing necessary tools, technical infrastructure and technical assistance (Yukl et al., 2002), integrating the teams' contributions (Morse & Wagner, 1978; Yoo & Alavi, 2004), task assignment (K. Crowston, Li, Wei, Eseryel, & Howison, 2007; Morse & Wagner, 1978; Yukl et al., 2002) and defining timeline (T. Kayworth & Leidner, 2000; Stogdill, 1974).

2.3 Relationship-Oriented Leadership Behavior: Group Maintenance

Group maintenance behaviors keep interpersonal relations pleasant, resolve disputes, provide encouragement, stimulate self-direction and increase interdependence among members (Cartwright & Zander, 1960). Leaders' group maintenance behaviors include; encouraging contribution (Bales, 1950; Scialdone, Na, Howison, Crowston, & Heckman, 2007; Yukl et al., 2002), showing trust and confidence (Yukl et al., 2002), acting friendly, considerate and kind (Cartwright & Zander, 1960; T. R. Kayworth & Leidner, 2001; Scialdone et al., 2007; Yukl et al., 2002), helping to develop others / act as mentors (T. R. Kayworth & Leidner, 2001; Yukl et al., 2002), keeping others informed (Yukl et al.,

2002), resolving conflicts/ releasing tension (Bales, 1950; Bass, 1990; Cartwright & Zander, 1960; Morse & Wagner, 1978) and give or ask for opinion (Bales, 1950; Cartwright & Zander, 1960).

2.4 Relationship-Oriented Leadership Behavior: Boundary Spanning

The relationship-oriented functions of leaders are not limited only to relationships within the team. Ancona and Caldwell (1988) observed that there are leadership functions of maintaining relations with individuals and groups outside the team, called boundary-spanning. Boundary (spanning) roles can be defined as links between the teams and their environment (Aldrich & Herker, 1977). Druskat and Wheeler (2003) found that the effective external leaders of self-managing teams acted as an interface between the team and its organizational environment (in Yoo & Alavi, 2004, p. 48).

3 RESEARCH METHOD

Given limited theory about transformational leadership at SMV teams, a qualitative approach is chosen to identify relevant constructs that contribute to leadership emergence. At the core of qualitative paradigm is the notion that people assign meaning to the objective world and relevant phenomenon (such as leadership) and their experiences are situated within social context (team context in this case) (Tesch, 1990). Informal leadership emergence is a perceptual concept: a person is identified as a leader when others perceive them as a leader. Thus, qualitative paradigm is appropriate for understanding the social phenomenon of leadership from the viewpoint of participants in creation of the leadership phenomenon, through detailed descriptions of actions (leadership behaviors) and through the richness of meaning associated with observable behavior (Wildemuth, 1993). Qualitative interviews are based on conversation, and interviewees are meaning makers, not passive conduits for retrieving information from an existing vessel of answers (Holstein & Gubrium, 1995). We chose qualitative interviews to derive interpretations from respondent talk (Warren, 2001). These types of studies are especially useful for developing theoretical insights when research focuses on areas that extant theory does not address well (Ozcan & Eisenhardt, 2009).

3.1 Data Collection

Our data includes interviews with the members of 51 teams originated in the Netherlands. Interviewees were identified based on convenience sampling based on the following requirement: Self-managing virtual teams are identified based on the following definition: (1) Each team has at least 2 members, (2) team members are geographically distant, (3) team members use ICTs in order to communicate with each other and coordinate their work activities.

Interview protocol consisted of four major parts describing the nature of the team, its work-processes, member contributions and influence and team roles. Finally, the interviewees were asked to identify leader(s) with the following question: “Would you say your team has one leader, more than one leaders or no real leaders?”. Then for each leader they identified, they were why they perceive that individual as leader.

Open-ended interviews lasted about 40-70 minutes. The interviews were carried out in the Netherlands, mostly through face-to-face interviews and over Skype conference call, due to travel restrictions and the participants’ availability. The oldest team, as an exception, worked together for 16 years on a Dutch governmental translation services project. Table 1 provides descriptive data about the interviews.

Out of 51 teams, 28 work from different locations in the Netherlands, 7 have multinational members from across Europe and 13 have intercontinental team members, (there is no specific information about the contents of 3 teams). Among the teams, 16 have one formal leader, while the 35 out of 51 confirmed to have informal leaders in addition to the formal one.

Characteristics	Values
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Gender:	Male / Female	40 / 11
Interviewee Role:	Team leader / Team member	24 / 27
Team Duration:	Range / Average	1 to 16 years / 3.29
Interviewee Involvement:	Range / Average	1 month – 10 years / 27 months
Team Size:	Range / Average	2 to 40 / 11 members
Team Composition:	Multinational / Same nationality	20 teams / 28 teams
Number of Leaders:	One leader / Multiple leaders	16 teams / 35 teams

Table 1. Characteristics of the interviewees in their team of SM virtual team

3.2 Data Analysis

Interviews were transcribed and analyzed using grounded theory methodology (Glasser and Strauss, 1967). Each interview transcription ranged from 7 to 15 pages. We used two levels of coding, open coding and selective coding (Charmaz and Mitchell, 2001). Data was coded according to grounded theory method by the second author and reviewed by the first author.

4 FINDINGS AND DISCUSSION

In our study, we had asked in general about who is perceived as a leader. Our findings show that formal managers are typically also perceived as leaders. Yet, in some teams, in addition to managers, other individuals may also be viewed as leaders. In both cases, the team members can easily identify the leadership behaviors of these individuals. In addition to formal and informal leaders, interviewees mentioned the existence of ephemeral leadership of one or more members when a situation requires. However, these individuals do not exhibit leadership on a continuous basis or have formal role, and hence, they are not perceived as leaders. As an interviewee mentions:

“We only observe leadership when there is a problem. For example, if I don’t perform my function well, someone says: “Ok guys, we need to finish this because we have been working on it for 30 minutes”. He or she becomes a leader at that moment. But it is more situational behavior than a formal leadership; we don’t have that person who will solve everything.”

In comparing formal and informal leaders, we find that both exhibit the following behaviors: contribute to doing work, coordinate the group’s task, share knowledge, have good new ideas, show their creativity. They both have an informal relationship with team members and they help resolve conflicts with the team. Table 2 shows the leadership behaviors of formal and informal leaders.

Formal Leaders		Informal Leaders	Leadership Category
4	task contribution	7	Task contribution
1	knowledge contribution	13	
1	vision determination	2	
1	new idea or process generation	2	
1	creativity	1	
9	coordination of team members' actions	6	Task coordination
1	maintaining a positive group environment	1	Group maintenance
3	facilitating communication, being spokesperson	1	
1	linking project to the rest of the company (upper level or other teams)	2	Boundary spanning
2	connecting to the external markets	1	
1	representing the team to stakeholders	1	

Table 2. Leadership behaviors exhibited by formal and informal leaders

While both informal and formal leaders seemed to provide similar benefits to the team, the informal leaders seemed to differentiate themselves by how much they support and enable others by giving their opinions, or helping others. Generally our respondents mentioned how friendly, and approachable the informal leaders are. Moreover being reliable and always available were other important aspects of informal leaders.

“He does not pretend he has the right answer. He always sits and thinks and ... weighs all the information he has in order to make a decision. He’s always approachable. There has not been one situation – and I am sure I am not the only one who can say this – when I went to him and he said ‘I’m not helping you because I am not in the mood or I don’t want to because you should have known that already’ . So, he is helpful.”

“He brings in quite some experience on the technical side of our team. He helps out other members with questions about coding and compiling.” And another time: *“He is great in fresh perspectives and new ideas. If everybody is just going forward he is the one who says stop and keeps everybody sharp on details.”*

Table 3 shows the task- and relationship-oriented leadership behaviors exhibited by teams with one leader and teams with more than one leader. These findings are interesting in that they show a variety of leadership behaviors exhibited by formal and informal leaders of self-managing virtual teams. However, at this stage of the analysis, we have not found observable differences between the informal and formal leadership of self-managing teams. Perhaps the difference lies in whether the behaviour is done voluntarily, as in the case of informal leaders mentioned above, or as part of formal duties, as the quote below indicates:

The department head has mainly the task of keeping the atmosphere positive within the group. This is not changed by the project or other matters.”

Task-Oriented Leadership Behavior					Relationship-Oriented Leadership Behavior					
Teams with more leaders			Teams with one leader		Teams with more leaders			Teams with one leader		
	Formal Leaders	Informal leaders		Formal Leaders	Informal Leaders		Formal Leaders	Informal Leaders	Formal Leaders	
task coordination	9	6		1	0	external mentor	1	0	creating positive atmosphere	1
task contribution	4	7		0	1	spokesperson	3	0	recruiting team members	1
knowledge sharing	1	13		2	1	recruiting team members	1	0	knowing the team	1
discussion moderation	0	1		1	0	linking project to company	1	2	customer relationship	2
administration	2	0		1	0	informal relationships with members	1	0	contribute to group functioning	1
task tracking	2	0		1	0	boundary spanning	2	2	relationship with upper managers	1
creativity	1	2				stakeholder representation	1	1		
plan development & new ideas	1	3				delegating roles when absent	1	0		
goal & vision determination	1	2				mediating and resolving conflicts	0	1		
task assignment	1	0				group maintenance	0	1		
logistics	1	0				giving opinions	0	2		
						reliable, available	0	2		
						helping others	0	4		

Table 3. Task- and relationship-oriented leadership behaviors of the formal and informal leaders across teams

In this study, we show that self-managing virtual teams may have formal or informal leaders and we identified what constitutes leadership behaviors as identified and perceived by team members. A limitation of this study is that data is collected through convenience sampling. Future research is needed that focuses on what differentiate the informal leaders of self-managing teams from the formal ones.

Our finding on ephemeral leadership shows the existence of a third dynamic than formal and informal leadership. It suggests that we need to improve our understanding of temporal aspect of leadership and that we need to investigate the relationship between leadership acts through time and leadership perception.

References

- Aldrich, H., & Herker, D. (1977). Boundary Spanning Roles and Organization Structure. *The Academy of Management Review*, 2(2), 217-230.
- Ancona, D. G., & Caldwell, D. F. (1988). Beyond Task and Maintenance: Defining External Functions in Groups. *Group & Organization Management*, 13(4), 468-494.
- Bales, R. F. (1950). A set of categories for the analysis of small group interaction. *American Sociological Review*, 15(2), 257-263.
- Bass, B. M. (1990). *Bass & Stogdill's handbook of leadership* (3rd ed.). New York: The Free Press.
- Bell, B. S., & Kozlowski, S. W. J. (2002). A typology of virtual teams - Implications for effective leadership. *Group & Organization Management*, 27(1), 14-49.
- Carmel, E., & Sawyer, S. (1998). Packaged software development teams: what makes them different? *Information Technology & People*, 11(1), 7-19.
- Carte, T. A., Chidambaram, L., & Becker, A. (2006). Emergent leadership in self-managed virtual teams - A longitudinal study of concentrated and shared leadership behaviors. *Group Decision and Negotiation*, 15(4), 323-343.
- Cartwright, D., & Zander, A. F. (1960). *Group Dynamics: Research and Theory*. Evanston, IL: Row, Peterson & Co.
- Cohen, S. G., Ledford Jr, G. E., & Spreitzer, G. M. (1996). A predictive model of self-managing work team effectiveness. *Human Relations*, 49(5), 643-676.
- Crowston, K., Heckman, R., & Misiolek, N. (2007). *A structural perspective on leadership in virtual teams*. Paper presented at the IFIP Working Group 8.2 Working Conference on Virtuality and Virtualness, Portland, OR.
- Crowston, K., Heckman, R., Misiolek, N., & Eseryel, U. Y. (2007). *Emergent leadership in self-organizing virtual teams*. Paper presented at the Twenty Eighth International Conference on Information Systems Montreal, Canada.
- Crowston, K., Li, Q., Wei, K., Eseryel, U. Y., & Howison, J. (2007). Self-organization of teams in free/libre open source software development. *Information and Software Technology Journal, Special Issue on Qualitative Software Engineering Research*, 49(6), 564-575.
- Cummings, T. G. (1981). Designing effective work groups. In I. Nystrom, P.C. & W. H. Starbuck (Eds.), *Handbook of Organizational Design* (Vol. 2, pp. 250-271). London: Oxford University Press.
- De Jong, A., De Ruyter, J. C., & Lemmink, G. A. M. (2004). Antecedents and consequences of the service climate in boundary-spanning self-managing service teams. *Journal of Marketing*, 68(2), 18-35.
- Druskat, V. U., & Wheeler, J. V. (2003). Managing from the boundary: The effective leadership of self-managing work teams. *Academy of Management Journal*, 46(4), 435-457.
- Eseryel, U. Y. (2009). *Leadership in a non-traditional setting: Self-managing virtual IS development teams*. Paper presented at the International Conference in Information Systems <http://aisel.aisnet.org/icis2009/65>
- Hackman, J. R. (1986). The psychology of self-management in organizations. In M. S. Pallak & R. O. Perloff (Eds.), *Psychology and Work: Productivity, Change and Employment* (pp. 87-136). Washington, DC: American Psychological Association.
- Hinds, P. J., & Bailey, D. E. (2003). Out of sight, out of sync: understanding conflict in distributed teams. *Organization Science*, 14(6), 615-632.
- Holstein, J. A., & Gubrium, J. F. (1995). *Active Interview*. Thousand Oaks, CA: Sage.
- Hooijberg, R., Hunt, J. G., & Dodge, G. E. (1997). Leadership complexity and development of the leaderplex model. *Journal of Management*, 23(3), 375-408.
- House, R. J., & Aditya, R. N. (1997). The Social Scientific Study of Leadership: Quo Vadis? *Journal of Management*, 23(3), 409-473.

- Kayworth, T., & Leidner, D. (2000). The global virtual manager: a prescription for success. *European Management Journal*, 18(2), 183-194.
- Kayworth, T. R., & Leidner, D. E. (2001). Leadership effectiveness in global virtual teams. *Journal of Management Information Systems*, 18(3), 7-40.
- Kirkman, B. L., & Benson, R. (1999). Beyond Self-Management: Antecedents and Consequences of Team Empowerment. *The Academy of Management Journal*, 42(1), 58-74.
- Kirkman, B. L., & Shapiro, D. L. (1997). The impact of cultural values on employee resistance to teams: toward a model of globalized self-managing work team effectiveness. *Academy of Management Review*, 22(3), 730-757.
- Manz, C. C., & Sims, H. P., Jr. (1980). Self-management as a substitute for leadership: A social learning perspective. *Academy of Management Review*, 5(3), 361-367.
- Manz, C. C., & Sims Jr, H. P. (1987). Leading workers to lead themselves: The external leadership of self-managing work teams. *Administrative Science Quarterly*, 32(1), 106-129.
- Maznevski, M. L., & Chudoba, K. M. (2000). Bridging space over time: global virtual team dynamics and effectiveness. [empirical ; read; hardcopy and softcopy]. *Organization Science*, 11(5), 473-492.
- Misiolek, N. I., & Heckman, R. (2005). *Patterns of emergent leadership in virtual teams*. Paper presented at the Proceedings of the 38th Annual Hawaii International Conference, Hawaii.
- Moe, N. B., Dingsoyr, T., & Dyba, T. (2009). Overcoming barriers to self-management in software teams. *Software, IEEE*, 26(6), 20-26.
- Morse, J. J., & Wagner, F. R. (1978). Measuring the Process of Managerial Effectiveness. *The Academy of Management Journal*, 21(1), 23-35.
- Osterman, P. (1993). How common is workplace-transformation and who adopts It. *Industrial and Labor Relations Review*, 47(2), 173-188.
- Ozcan, P., & Eisenhardt, K. M. (2009). Origin of alliance portfolios: entrepreneurs, network strategies, and firm performance. *Academy of Management Journal*, 52(2), 246-279.
- Salas, E., Sims, D. E., & Burke, C. S. (2005). Is there a big five in teamwork? *Small Group Research*, 36(5), 555-559.
- Scialdone, M. J., Na, L., Howison, J., Crowston, K., & Heckman, R. (2007). *Group maintenance in technology-supported distributed teams*. Paper presented at the 2008 Academy of Management Annual Meeting: The Questions We Ask, Anaheim, CA.
- Scozzi, B., Crowston, K., Eseryel, U. Y., & Li, Q. (2008, Jan 7-10). *Shared mental models among open source software developers*. Paper presented at the 41st Annual Hawaii International Conference on System Sciences (HICSS 2008), Hawaii.
- Stewart, G., & Manz, C. (1995). Leadership for self-managing work teams: a typology and integrative model. *Human Relations*, 48(7), 747-770.
- Stogdill, R. M. (1974). *Handbook of Leadership: A Survey of Theory and Research*. New York: Free Press.
- Stoker, J. I. (2008). Effects of team tenure and leadership in self-managing teams. *Personnel Review*, 37(5), 564-582.
- Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. New York: The Falmer Press.
- Towers Perrin. (1990). *Workforce 2000 today: A bottom-line concern*. New York: Towers Perrin.
- Wageman, R. (2001). How leaders foster self-managing team effectiveness: design choices versus hands-on coaching. *Organization Science*, 12(5), 559-577.
- Warren, C. A. B. (2001). Qualitative interviewing. In J. Gubrium & J. Holstein (Eds.), *Handbook of Interview Research: Context & Method* (pp. 83-101). Thousand Oaks, CA: Sage.
- Wildemuth, B. (1993). Post-positivist research: two examples of methodological pluralism. *Library Quarterly*, 63, 450-468.
- Yoo, Y., & Alavi, M. (2004). Emergent leadership in virtual teams: what do emergent leaders do? *Information and Organization*, 14(2004), 27-58.
- Yukl, G. (2002). *Leadership in Organizations*. Upper Saddle River, NJ: Prentice Hall.

- Yukl, G., Gordon, A., & Taber, T. (2002). A hierarchical taxonomy of leadership behavior: integrating a half century of behavior research. *Journal of Leadership and Organizational Studies*, 9(1), 15-32.
- Zaccaro, S. J., & Bader, P. (2003). E-leadership and the challenges of leading e-teams: minimizing the bad and maximizing the good. *Organizational Dynamics*, 31, 377-387.
- Zhang, S., & Fjermestad, J. (2006). Bridging the gap between traditional leadership theories and virtual team leadership. *International Journal of Technology, Policy and Management*, 6(3), 274-291.