

CHAPTER 6

Linking Collaboration Processes and Outcomes

Foundations for Advancing Empirical Theory

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Scholars and practitioners of public and nonprofit management share an interest in understanding the outcomes of the increasingly studied but little understood process called collaboration. That interdependence is the fundamental nature of organizations is nothing new. Resource dependency theory has asserted this reality for a long time (Hudock 2001; Pfeffer 1997; Pfeffer and Salancik 1978). That interdependence characterizes collaboration is also hardly new (Graddy and Chen 2006; Thomson and Perry 2006). Unfortunately, collaboration processes manifest a number of key dimensions that complicate our ability as scholars to examine collaboration outcomes (Thomson and Perry 2006).

To begin to understand collaboration as a process that yields particular outcomes, it is helpful to start with Gray and Wood's (1991) theoretical framework for studying collaboration. To understand collaboration, they argue, scholars need to examine three areas: antecedents to collaboration, the process of collaboration itself, and the outcomes of that process (13). It is noteworthy, however, that these three categories are rarely modeled clearly in collaboration research. Scholars often simultaneously associate antecedents with collaboration processes and outcomes, for example, and fail to distinguish mediating from outcome variables. The literature spanning interorganizational relations (Ring and Van de Ven 1994), policy implementation (O'Toole 1997), cooperation theory (Axelrod 1984), and collaboration research (Huxham 1996) abound with variables likely to enhance collaborations, but these variables either go unanalyzed or are not systematically modeled. Furthermore, process dimensions of collaboration are frequently presented as outcomes (Wood and Gray 1991).

The purpose of this chapter is to demonstrate how a multidimensional model of col-

laboration tested on sample data can be used as a means to study collaboration outcomes. The chapter is organized into three parts. We begin by briefly presenting the multidimensional model of collaboration and describe the scale derived from data collected from a large national service program, AmeriCorps State/National.¹ We then turn to the primary focus of the chapter—the relationship between the collaboration process and outcomes. We conclude with a discussion of the results of the outcomes analyses, noting several useful findings.

A MULTIDIMENSIONAL MODEL OF COLLABORATION

Collaboration is an interactive process between organizations that involves negotiation, development and assessment of commitments, and implementation of those commitments. Organizations negotiate, develop, and make assessments about their commitments based on their own interests and on the interests of the collective. This creative tension inherent in the process of collaboration gives collaboration its ambiguous, dynamic, and complex nature.

The theoretical definition of collaboration upon which our model is based derives from a cross-disciplinary review of the literature, a systematic analysis of multiple definitions from a variety of literatures, and case study research conducted between 1995 and 2000. Results from this grounded theory approach yield the following definition:

Collaboration is a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms and mutually beneficial interactions. (Thomson and Perry 2006, 23)

Five key dimensions of collaboration are embedded in this definition: governance, administration, mutuality, norms, and organizational autonomy. Each of these dimensions involves process-related activities such as: making joint decisions about rules to govern the collaborative effort (governance); getting things done through an effective operating system that supports clarity of roles and effective communication channels (administration); addressing the implicit tension exhibited in collaborations between organizational self-interests and the collective interests of the group (organizational autonomy); working through difference to arrive at mutually beneficial relationships (mutuality); and finally, developing trust and modes of reciprocity (norms); all of which take commitment to process over time (Thomson and Perry 2006). The original theoretical model specified in this study included six unobserved factors—collaboration and its five key dimensions—and fifty-six observed indicators (derived from questions on a survey).

Primary data collected through a mail questionnaire sent to 1,382 directors of organizations that participate in the AmeriCorps national service program provide the basis for a higher-order confirmatory factor analysis of the multidimensional model of collaboration (Thomson,

Perry, and Miller 2006).² Covariance structure modeling permits empirical testing to assess the extent to which this theoretically derived model of collaboration fits sample data.

The 1,382 organization directors to whom we sent surveys are members of local collaborations that are integral to the AmeriCorps national service program. The local collaborations are typically composed of social and human services organizations that come together to address a community problem (e.g., illiteracy, homelessness) in which they share a common interest. In return for their participation in the collaborative, member organizations become host sites for AmeriCorps members. The local collaborations, which are nested in national and state networks, are at the heart of the AmeriCorps national service program (see Perry et al. [1999] and Lenkowsky and Perry [2000] for more details about the origins and operation of AmeriCorps). Because the local collaborations and participating organizations vary in structure, size, capacity, and goals, the sample provides a rich environment for systematically studying the meaning of collaboration (Thomson 2001).

Overall, the analyses demonstrate empirical support for the theoretical definition of collaboration, but suggest some modifications of the original conceptualization of the five dimensions.³ Figure 6.1 illustrates this modified higher-order multidimensional model. The six unobserved factors are shown in Figure 6.1 as circles and the seventeen indicators that emerge from this analysis as statistically valid and reliable are shown as squares.

Table 6.1 includes the questionnaire items for the final seventeen-item collaboration scale organized according to the dimension with which they are associated. The governance dimension is manifest in joint decision making through the more informal negotiation mechanisms of brainstorming and appreciation of each other's opinions rather than the formal mechanisms of standard operating procedures and formal agreements. For the administration dimension, the statistically valid indicators are clarity of roles and responsibilities, effective collaboration meetings, goal clarity, and well-coordinated tasks rather than formal mechanisms of reliance on a manager, formal communication channels, and monitoring. The latter indicators differ conceptually from those of governance because the focus is less on institutional supply and more on implementation and management—doing what it takes to achieve a goal.

Indicators of the mutuality dimension that did not withstand statistical scrutiny are questions that attempt to capture the extent of shared interests and interdependence among partners. Collaboration appears to involve forging commonalities from differences rather than finding solidarity through shared interests. Mutuality in collaboration is manifest in partner organizations that combine and use each other's resources so all benefit, share information to strengthen each other's operations and programs, feel respected by each other, achieve their own goals better working with each other than alone, and work through differences to arrive at win-win solutions.

The primary norms dimension indicators that remain statistically significant and valid are trust indicators with surprisingly little support for indicators of reciprocity. Collaboration involves a process characterized by the beliefs that people who represent partner organizations in collaboration are trustworthy, that partner organizations can count on each other to keep their obligations, and that it is more worthwhile to stay in the collaboration than to leave.

Figure 6.1 Modified Higher-Order Factor Analysis Model of Collaboration

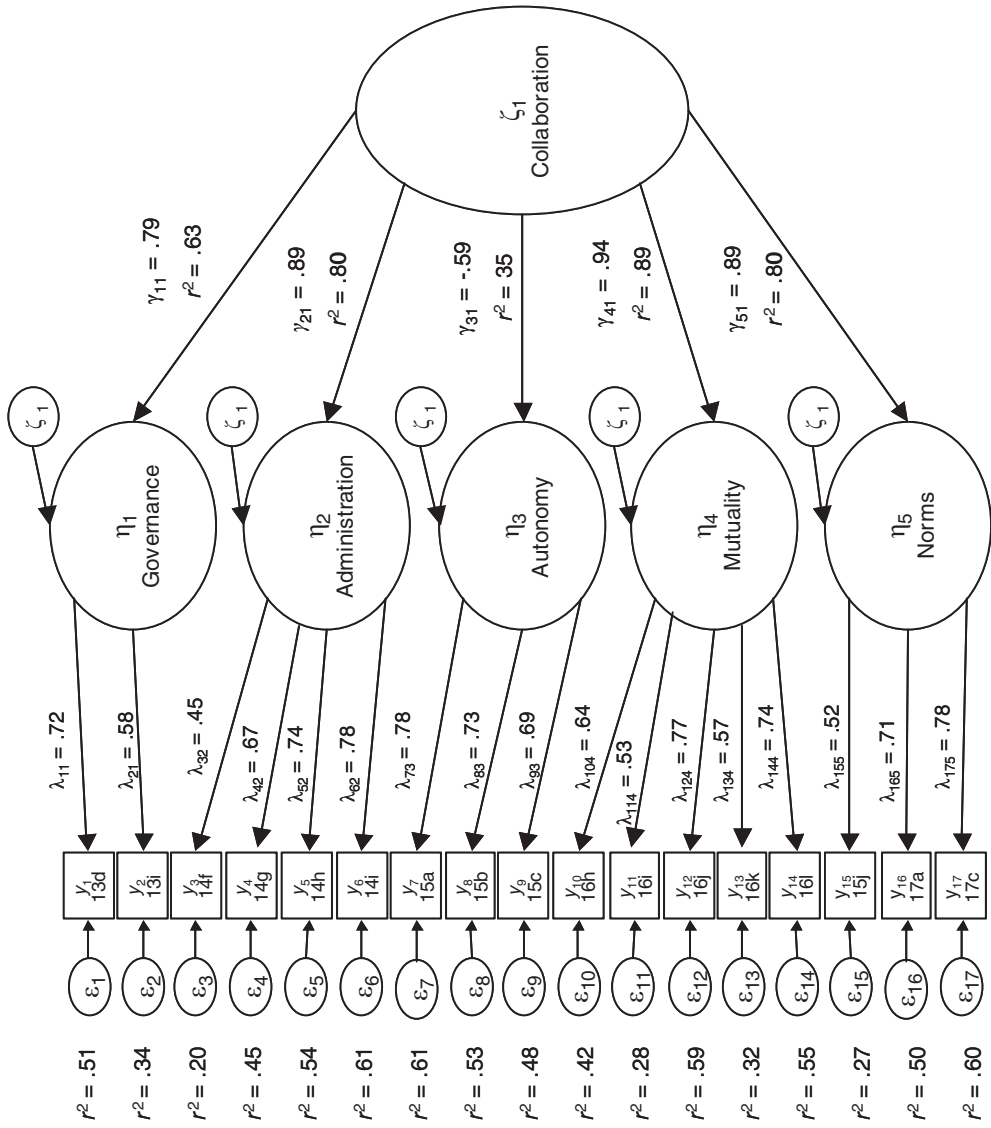


Table 6.1

Five-Dimension, Seventeen-Indicator Collaboration Scale

Dimension	Operationalization
Joint decision making	Partner organizations take your organization's opinions seriously when decisions are made about the collaboration. Your organization brainstorms with partner organizations to develop solutions to mission-related problems facing the collaboration.
<i>Administration</i>	You, as a representative of your organization in the collaboration, understand your organization's roles and responsibilities as a member of the collaboration. Partner organization meetings accomplish what is necessary for the collaboration to function well. Partner organizations (including your organization) agree about the goals of the collaboration. Your organization's tasks are well coordinated with those of partner organizations.
<i>Autonomy</i>	The collaboration hinders your organization from meeting its own organizational mission. Your organization's independence is affected by having to work with partner organizations on activities related to the collaboration. You, as a representative of your organization, feel pulled between trying to meet both your organization's and the collaboration's expectations.
<i>Mutuality</i>	Partner organizations (including your organization) have combined and used each other's resources so all partners benefit from collaborating. Your organization shares information with partner organizations that will strengthen their operations and programs. You feel that what your organization brings to the collaboration is appreciated and respected by partner organizations. Your organization achieves its own goals better working with partner organizations than working alone.
<i>Trust</i>	Partner organizations (including your organization) work through differences to arrive at win-win solutions. The people who represent partner organizations in the collaboration are trustworthy (adapted from Cummings and Bromiley 1996). My organization can count on each partner organization to meet its obligations to the collaboration (adapted from Cummings and Bromiley 1996). Circle the number that best indicates how much . . . Your organization feels it worthwhile to stay and work with partner organizations rather than leave the collaboration.

Note: For joint decision making, administration, autonomy, and mutuality, responses are recorded on scales ranging from 1 (not at all) to 7 (to a great extent) using the prompt "Circle the number that best indicates how much..." For the trust dimension, responses are recorded on scales ranging from 1 (strongly disagree) to 7 (strongly agree) using the prompt "Circle the number that best indicates how much you disagree or agree with the statements below."

Finally, the analysis suggests that collaboration is a process with both aggregative and integrative elements manifest in the autonomy dimension. This dimension attempts to capture the tension implicit in an individual organization's self-interests and the collective interests of collaborating partners. The statistically significant indicators for this dimension are the extent to which organizations perceive the collaboration hindering them from meeting their own missions, organizations believe their independence is affected by collaborating, and organizations' representatives feel pulled between trying to meet the expectations of their own organizations and those of the collaboration. Findings suggest that for this sample, the greater the tension, the less likely collaboration will occur.

It is interesting to note, however, that collaborations need not exhibit a complete lack of tension. In her evaluation of consensus building, Judith Innes (1999) argues that tension holds within it the potential for creativity. "In totally stable environments," Innes writes, "equilibrium powerfully hinders change [while highly] chaotic environments, on the other hand, produce only random responses, and systems cannot settle into patterns" (644). The key, she writes, rests in finding the intermediate state—on the "edge of chaos" (*ibid.*)—where participating organizations can find the potential dynamism implicit in this tension between individual and collective interests by maximizing latent synergies among individual differences.

Overall, the model that emerges from this analysis demonstrates an overall close fit⁴ with the empirical data indicating support for the theoretical conceptualization of collaboration, at least in this sample. Furthermore, the seventeen indicators that represent the multidimensional scale of collaboration are theoretically and statistically valid measures for each of the five dimensions. Reliability, which we assess using *r*-square values in Figure 6.1, is not as high as validity, which underscores an important area for future research.⁵ Until the study is replicated in different settings and tested on other independent samples, it is difficult to make generalizations about the "true" nature of collaboration.

EXAMINING COLLABORATION OUTCOMES

The multidimensional model of collaboration, operationalized with a seventeen-indicator scale, takes us a step closer to a firm foundation for studying the relationship between collaboration processes and outcomes. An increasingly important practical question that drives scholars and practitioners is effectiveness. Program directors, donors, partner organizations, upper-level managers, and scholars all seek an answer to this questions: Can collaborations achieve results? How do you know?

It comes as no surprise that a review of the literature suggests the process-outcome relationship is neither straightforward nor easily conceptualized. The outcomes of collaboration vary significantly depending on which theoretical perspective a researcher takes (Gray and Wood 1991). Logsdon (1991), for example, in her study of two social problem-solving collaborative efforts, views solving concrete problems as a successful outcome of the cross-sectoral collaborative efforts. Ostrom (1990), using a different theoretical perspective, views self-governance as the positive outcome of collective action, which emerges only if actors successfully and collectively solve the problems of institutional supply, credible commitment, and monitoring. Huxham (1996) argues that

collaboration has both instrumental and ideological outcomes: as organizations interact, concrete goals can be collectively achieved and long-term substantive societal changes may occur.

Results from environmental conflict resolution (ECR) research offer a useful way forward in light of the complexity of process–outcome relationships. Different contexts yield different kinds of outcomes at different stages in collaborative ECR processes. Bingham and her colleagues (2003), for example, suggest, that when evaluating the performance of ECR, evaluation criteria tend to fall in “clusters” that are unique to a particular stage of conflict (330). For the early processes of conflict resolution, they identify a cluster of no less than fifteen different possible criteria ranging from information exchange to diversity of views represented. Over the entire ECR process continuum, they identify nearly forty different kinds of criteria for evaluating outcomes. Brogden (2003), in his analysis of a national policy dialogue on State Conservation Agreements, found that the process yielded at least six different outcomes each with different evaluation criteria relating to different collaborative stakeholders.

To further clarify conceptualization of the process–outcome relationship, Bingham and colleagues (2003) go on to ask a key question—how to assess the relative success or failure of any particular collaborative process. “Consider, for example,” they write, “that a collaborative process fails to produce full agreement, but does significantly narrow the range of disagreement and significantly improves relationships among participants. Is the process a success, a failure, neither, or both?” (334). They conclude that when evaluating outcomes, we should avoid labeling them in terms of success or failure unless we are able to identify that the most important indicators consistently point in the same direction over time and across different contexts (334–36).

Bingham and her colleagues’ conclusion is relevant for a growing number of scholars who have argued that the value collaboration holds for a postmodern, increasingly networked, society lies in its unique potential to create public value (Bardach 1998; Cropper 1996; Huxham 1996; Sagawa and Segal 2000). In this stream of research, creation of public value is often associated with sustainable collaboration. Cropper (1996) goes so far as to claim that the survival of collaboration depends on the ability of the participants to create and command value (82). He distinguishes between two primary values, consequential and constitutive. Consequential values, on the one hand, include: productivity, relative efficiency, security, legitimacy, and adaptability. Constitutive values, on the other hand, define the very identity, place, and mode of conduct that govern interorganizational relationships—the values that organizations negotiate. The more value created through collaboration, the greater the likelihood of its sustainability because “with value comes commitment and with commitment, continued existence” (Cropper 1996, 97).

Bardach (1998), though he does not directly address the issue of sustainability as an outcome, agrees that to be successful, collaboration (what he calls interagency collaborative capacity) must achieve a value-creating purpose. He identifies four criteria for determining value-creation: how much customers of the collaboration value its services; the extent to which process values (fairness, representativeness, inclusive-

ness, accessibility, openness, and integrity) exist; the extent to which citizens' value what collaboration does; and the extent to which benefits outweigh costs of the collaborative effort (201–6). Bardach's view of public value falls predominantly within Cropper's consequential values category (focusing as it does on costs and benefits and the perceptions of outcomes by clients and citizens), but process values clearly fall within Cropper's constitutive category.

One of these process values is voice or what the procedural justice literature refers to as "process control" (Lind and Tyler 1988). In their extensive analysis of the social psychology of procedural justice, Lind and Tyler demonstrate that voice need not be purely instrumental. Participants in a process like collaboration, for example, may not be as interested in achieving a particular outcome as they are in the relative fairness of procedures that assure that their voice will be heard regarding any particular aspect of the collaboration. Lind and Tyler (1988) demonstrate, for example, that as long as participants in a process feel they have had a fair chance to voice their views, they express satisfaction with the process regardless of whether or not an outcome proves to be negative or even whether they feel they are able to exert any control over a particular end result. Satisfaction, as one immediate outcome of collaboration, then, may be independent from any end result that partners may have originally agreed to pursue by collaborating. The complexity of the process–outcome relationship, then, lies not only in the clusters of outcomes that may occur at any given stage in the collaboration process but also in the layers of outcomes nested within each other across the various stages over time.

That the process–outcome relationship is complicated comes as no surprise, but that there remains a strong commitment by scholars and practitioners alike to continue trying to understand the relationship regardless of the methodological and conceptual challenges is heartening. In their chapter on the promise and performance of environmental conflict resolution, Bingham and her colleagues (2003) urge scholars to view evaluation of collaborative ECR "as part of an extended, systematic, learning process" that systematically looks for patterns of outcomes across cases over time. The particular operationalization of the process–outcome relationship presented in this chapter is meant to be one contribution toward this learning process.

For the purposes of our empirical research, we rely primarily on Barbara Gray's (2000) discussion of the issues surrounding evaluation of interorganizational collaboration because the different lenses through which she approaches the assessment of collaboration outcomes seemed particularly appropriate to our study. She identifies five different approaches to the evaluation of collaborative efforts. These are: (1) problem resolution or goal achievement; (2) generation of social capital; (3) creation of shared meaning; (4) changes in network structure; and (5) shifts in power distribution. Each approach derives from a different theoretical perspective that only underscores what we already know—the process–outcome relationship is complex and it is unlikely we will ever arrive at a single approach to evaluate collaboration outcomes (Gray 2000). Table 6.2 summarizes the survey measures used to operationalize these outcomes in this study.

Table 6.2

Five Collaboration Outcome Variables Operationalized

Outcome	Question
Perceived effectiveness	Overall, how effective is this collaboration in achieving its expected purpose and outcomes? Not at all effective Very effective 1 2 3 4 5 6 7
Perceived increase in quality of working relationships	Overall, how would you rate the quality of working relationships that have developed between your organization and partner organizations as a result of this collaboration? Very low quality Very high quality 1 2 3 4 5 6 7
Perceived broadening of views	Overall, to what extent has your organization's view of the issue(s)/problem(s) that brought the collaboration together broadened as a result of listening to partner organizations' views? Not at all To a great extent 1 2 3 4 5 6 7
Perceived increase in network density	Overall, to what extent has your organization increased its interaction with partner organizations (like increased referrals and / or service contracts, joint program development) as a result of the collaboration? Not at all To a great extent 1 2 3 4 5 6 7
Perceived increase in power relationships	Overall, to what extent has the collaboration helped to make partner organizations' influence on each other more equal? Not at all To a great extent 1 2 3 4 5 6 7

RELATIONSHIP BETWEEN COLLABORATION AND ITS OUTCOMES

Using latent variable scores generated from the original data,⁶ we specify and estimate five bivariate regression models to explore the relationship between the overall summary construct, collaboration (derived from the hierarchical confirmatory factor model depicted in Figure 6.1), and the five outcome variables to test the proposition,

P1: Collaboration as a process is positively associated with desired outcomes.

In light of the complexity of the process–outcome relationship discussed above, we also specified and estimated five other regression models using the seventeen-indicator multidimensional collaboration scale and the same five outcome variables to test two other propositions about the relationship between the individual process dimensions of collaboration and perceived outcomes.

- P2: The greater the degree of joint decision making, administration, mutuality, and trust in collaboration, the more organizations will perceive collaboration as: effective in achieving goals, increasing the quality of partners' working relationships, broadening partners' views, increasing partner interactions, and creating more equitable power relationships among partners.
- P3: The greater the degree of organizational autonomy, the less organizations will perceive the collaboration: as effective in achieving goals, increasing the quality of partners' working relationships, broadening partners' views, increasing partner interactions, and creating more equitable power relationships among partners.

Included in our analysis are two control variables—size of the collaboration (in terms of numbers of organizations actively involved in the group) and age (length of time the collaboration has existed). Two views of human organizing inform the propositions—a logic of collective action perspective (Coleman 1990; Olson 1971) and a new institutionalist perspective (March and Olsen 1984, 1989; Ostrom 1990, 1998). A logic of collective action perspective predicts an undersupply of collaboration outcomes due to the “reality” that whenever

a number of self-interested persons [and organizations] are interested in the same outcome, which can only be brought about by effort that is more costly than the benefits it would provide to any one of them, [there will be] a failure to bring about that outcome. (Coleman 1990, 273)

This perspective would also predict that the more organizations actively engaged in the collaboration, the less likely a collective outcome will emerge (Olson 1971). The autonomy dimension attempts to capture this logic as a measure of tension between self- and collective interests. The greater the tension, the less we would expect organizations to achieve positive collaboration outcomes.

A new institutionalist perspective, on the other hand, argues that norms such as trust, reciprocity, and shared purpose decrease collective action costs making the potential for collaboration outcomes possible (Ostrom 1998). The multidimensional model of collaboration presented here includes dimensions of trust, mutuality, and joint decision making that are hypothesized to enhance the likelihood of positive collaboration outcomes. This perspective would also predict that the longer organizations have had a chance to develop relationships of trust and mutuality, the greater the likelihood of a positive collective outcome (Axelrod 1984, 1997; Ostrom 1998). The administration dimension with its emphasis on clarity of roles and responsibilities, goal agreement, task coordination, and effective partner meetings is also hypothesized to enhance collaboration outcomes.

REGRESSION RESULTS

Table 6.3 summarizes the regression results for the summary construct of collaboration and the five outcomes.

Table 6.3

Regression of Collaboration, Size, and Age on Five Perceived Collaboration Outcomes

Outcomes	Collaboration	Number of organizations actively involved in collaboration	Length of time collaboration has existed (months)	Adjusted R^2
Perceived effectiveness in achieving goals	0.55** (0.04) 13.71	0.00 (0.00) 0.04	0.12** (0.00) 2.88	0.32
Perceived increase in quality of partners' relationships	0.59** (0.04) 15.00	0.03 (0.00) 0.79	0.10** (0.00) 2.56	0.36
Perceived broadening of partners' views	0.41** (0.06) 9.21	0.01 (0.00) 0.24	0.07* (0.00) 1.65	0.17
Perceived increase in partner interactions	0.34** (0.07) 7.41	0.05 (0.00) 1.11	0.12** (0.00) 2.68	0.13
Perceived increase in equitable influence	0.47** (0.07) 10.87	0.03 (0.00) 0.67	0.07 (0.00) 1.61	0.23

$N = 422$; coefficient, (standard error), t -value; * $p < 0.10$; (critical value for $t = 1.645$); ** $p < 0.05$ (critical value for $t = 1.960$).

As we expected, the results support the proposition that the collaboration process influences collaboration outcomes. The relationships among the five outcome measures explained by the latent variable scores of collaboration are all positive and highly significant. The results provide further empirical support for the validity of the multidimensional collaboration scale, but they are also useful as empirical support for what we already believed intuitively—that collaboration processes influence collaboration outcomes. Furthermore, in four of the five analyses, length of time the collaboration has existed is significant at the 0.10 level or less while size has no significant effect on outcomes. This suggests support for the new institutionalist perspective that as organizations exhibit trustworthy behavior, over time organizations begin to trust each other and develop reciprocal commitments.

As we have already noted, scholars and practitioners of collaboration acknowledge that the relationship between collaboration processes and outcomes is complex, ambiguous, and dynamic (Gray 2000; Gray and Wood 1991; Huxham and Vangen 2000, 2005; Thomson 2001). Table 6.4 presents additional regression results that examine the relationship between individual collaboration dimensions and the five outcomes (propositions two and three).

As we expected, joint decision making, administration, mutuality, and trust are significant and most of them are positively related to collaboration outcomes, but the significant statistical relationships and the direction of their effects do not extend across all process–outcome relationships. At the 0.10 level of significance or less, for example, joint decision making is only significant and positively related to two outcomes: perceived quality of relationships and the equality of influence organizations have on each other. The administration dimension is significant and positively associated with perceived effectiveness in achieving collaboration goals, as one would expect, but not with the other four outcomes.

Mutuality, which we expected to play an important role in all five outcomes, is significant at the 0.05 level and positively related to three of the five outcomes: perceived broadening of partners' views, increased partner interactions, and the equality of influence among partners. It has no statistically significant impact on perceived effectiveness in achieving goals or perceived increase in the quality of partner relationships. Finally, at the 0.05 level of significance, trust is significant and positively associated with only two of the five outcomes: perceived effectiveness and the quality of partner relationships. Furthermore, length of time that the collaboration has existed is positive and statistically significant for four of the five outcomes while size has no significant effect on any of the five process–outcome relationships.

Other results, such as the role of the autonomy and mutuality dimensions, also demands a more nuanced explanation than is implied in propositions two and three. Although we predicted negative relationships between autonomy and collaboration outcomes, all but one of the relationships are positive and only one of the five relationships is significant at the 0.05 level. Autonomy is positively associated with perceived increase in partner interactions. As a measure of tension between self- and collective interests, it has no statistically significant effect on any of the other four process–outcome relationships. We examine this further in the discussion below.

Table 6.4

Regression of Joint Decision Making, Administration, Autonomy, Mutuality, and Trust on Five Perceived Collaboration Outcomes

Outcomes	Joint decision making	Administration	Autonomy	Mutuality	Norms (Trust)	Number of organizations actively involved in collaboration	Length of time collaboration has existed (months)	Adjusted R^2
Perceived effectiveness in achieving goals	-0.03 (0.06)	0.29** (0.09)	0.02 (0.05)	0.01 (0.10)	0.33** (0.09)	0.01 (0.00)	0.11** (0.00)	0.34
Perceived increase in quality of partners' relationships	-0.54 0.10*	3.52 0.04	0.33 -0.01	0.13 0.05	4.04 0.45**	0.28 0.04	2.81 0.10**	0.37
Perceived broadening of partners' views	(0.06) 1.70 0.05	(0.08) 0.44 0.08	(0.05) -0.28 0.09	(0.09) 0.54 0.25**	(0.08) 5.73 0.12	(0.00) 1.11 0.01	(0.00) 2.54 0.07	0.17
Perceived increase in partner interactions	(0.09) 0.68 0.04	(0.12) 0.90 0.12	(0.07) 1.63 0.17**	(0.14) 2.40 0.30**	(0.12) 1.26 -0.00	(0.00) 0.14 0.04	(0.00) 1.51 0.11**	0.15
Perceived increase in equitable influence	(0.10) 3.47	(0.13) -0.21	(0.08) 1.41	(0.15) 2.35	(0.13) 1.53	(0.00) 0.46	(0.00) 1.67	0.24

$N = 422$; coefficient, (standard error), t-value; * $p < 0.10$; (critical value for $t = 1.645$); ** $p < 0.05$ (critical value for $t = 1.960$).

DISCUSSION

Overall, the relationships for proposition two are broadly consistent with expectations, but more highly nuanced than expected. Administration and trust, for example, coupled with the control for age of the collaboration, are the only statistically significant variables related to perceived effectiveness in achieving goals. As implementation and collaboration research (Bardach 1998; Cropper 1996) confirm, administrative features such as role clarity, task coordination, goal agreement, and effective meetings are likely prerequisites for effectiveness in achieving goals. Trust, as a means to decrease transaction costs, should also enhance the level of perceived effectiveness in achieving goals in collaborative settings, especially over time as partners continue to develop trusting relationships (Ostrom 1998).

In their work on professional development in business relationships, Shapiro, Sheppard, and Cheraskin (1992) identify different types of trust at work in groups. Deference-based trust, based as it is on the calculation of the benefits of sustaining a relationship relative to the costs of breaking a commitment, is at play in the operationalization of trust used here (see Table 6.1). This kind of trust, write Lewicki and Weithoff (2000), “tends to occur most frequently in professional, non-intimate, task-oriented relationships;” however, they are quick to point out that when organizations have worked together over time, deference-based trust, “can also be the first, early stage in developing intimate personal relationships” (89) that lead to identity-based trust expressed as mutual appreciation of other partners’ needs and desires.

Deference-based (also called calculus-based) trust, when combined with the joint decision-making dimension, and the age of a collaboration may help to explain the statistically significant and positive effect of these processes on the perceived increase in quality of partners’ relationships. Over time, partners may demonstrate sufficient trustworthy behavior in their brainstorming and willingness to take partners’ opinions seriously that calculus-based trust evolves into identity-based trust. The new institutionalist, interorganizational relations, and organizational behavior literature all support these findings (Hellriegel, Slocum, and Woodman 1986; Levine and White 1961; Ostrom 1998; Ring and Van de Ven 1994).

It is interesting to note that in the three cases where mutuality has a statistically significant effect on outcomes, trust does not. This implies either that trust (operationalized in this scale as more calculus-based than integrity-based), has no impact on the broadening of partners’ view, increased partner interactions, and decreased power imbalances among partners or that the mutuality dimension (with its emphasis on mutual respect, the ability to arrive at win-win solutions, willingness to share information to benefit partners, and the calculation that organizations believe they can better achieve their goals by working with partners than alone) is sufficient regardless of length of time they have worked together or strength of trust among partners (Alter and Hage 1993; Gray 1989, 2000; Huxham 1996).

As noted earlier, the negative effect of autonomy postulated in proposition three is not supported by this analysis. These findings suggest that autonomy plays a different role than that expected by a logic of collective action perspective. Even if autonomy is negatively correlated with collaboration (as demonstrated in Figure 6.1), when it is examined in relation to particular outcomes, outcomes need not be negative.

The positive association between autonomy and collaboration outcomes suggests that Olson's (1971) theory of collective action does not adequately acknowledge the complexity of the negotiation process that characterizes collaboration—a process that involves more than the maximization of self-interest (Thomson and Perry 2006). While the process of negotiation allows for competition and conflict at the margins, Warren (1967) and his colleagues (Warren et al. 1975) argue that organizations tend to advance their own interests only up to a point, which makes possible “a composite result [that] is usually acceptable though never maximal, and perhaps seldom optimal for the community” (Warren 1967, 415).

Both the conflict resolution and the social psychology literatures offer a more complete understanding of this finding. Johnson, Johnson, and Tjosvold (2000), for example, argue that controversy can be constructive depending on the context in which conflicts emerge (70). “Constructive controversy,” they write, “tends to promote creative insight by influencing individuals to (1) view problems from new perspectives and (2) re-formulate problems in ways that allow new orientations to a solution to emerge” (73). From this perspective, it is not surprising that the combination of the autonomy and mutuality dimensions would positively influence collaborative outcomes, but the relative degree of tension manifest in the autonomy dimension is statistically significant for only one of the five outcomes: perceived increase in partner interactions. It may be that organizations participating in the collaborations in this sample have found a way over time to reach what Peter Coleman and Morton Deutsch (2000) refer to as “optimal tension” within a cooperative context sufficient to keep them interacting.

Lind and Tyler (1988) provide another way to explain the positive effect of tension on perceived increase in partner interactions. Drawing on a procedural justice model based on self-interest, they suggest that, even in group situations where the modus operandi is to maximize personal gain, social interaction inevitably involves goal trade-offs that lead to the possibility that partners will accept “outcomes and procedures on the basis of their fairness, rather than on the basis of their favorability to one's own interests” (223). Partners in collaborative endeavors may, in the long term, believe they will gain more by cooperating than by working alone. That the autonomy dimension is statistically and positively significant in our model only when it is combined with the mutuality dimension suggests support for Lind and Tyler's (1988) conclusions. That the autonomy dimension is not statistically significant for any of the other four outcomes (though positive in all but one) may suggest that the organizations in this sample have not yet found ways to reap the creative benefits that conflict can produce, such as broadening of partner organizations' views of the problem or improved quality of partners' relationships (Coleman and Deutsch 2000).

The literature on self-efficacy may also help to explain our findings regarding the positive effect of autonomy on perceived increase in partner interactions. Judge and his colleagues (2007) define self-efficacy as “individuals' beliefs about their capabilities to produce designated levels of performance” (107). The autonomy dimension includes an individual-level indicator that focuses on the extent to which individual organizational representatives (people) feel pulled between their organization's and the collaboration's expectations. In their study of self-directed teams in one manufacturing firm, Alper,

Tjosvold, and Law (2000) found that people feel efficacious when they find themselves in “cooperative conflict” experiences where, over time, team members learn to manage conflict constructively. Tension, when combined with the cooperative environment manifest in the mutuality dimension can, over time, result in a willingness to continue to interact with each other.

That the length of time a collaboration has functioned is statistically significant in four of the five outcomes at the 0.10 level of significance or less while size has no statistical significance suggests that a logic of collective action perspective (Olson 1971) does not adequately explain the process–outcome relationship in collaborative settings. That time plays so critical a role, suggests greater support for Axelrod’s (1984, 1997) evolutionary approach to cooperation that assumes actors exhibit adaptive behavior, not maximizing behavior. Cooperation emerges as a result of learning about other actors’ responses through repeated interactions.

New institutionalism, for example, asserts that institutions accumulate historical experience through learning that enables them to adapt strategies, competencies, and purposes (March and Olsen 1984, 745–46). Ostrom (1998) argues that our evolutionary heritage has “hard-wired us” to learn norms of reciprocity and trust so that over time institutional change is possible (2). Current theories of collective action, she asserts, do not adequately account for the “accretion of institutional capital” and the reality that learning is “an incremental self-transforming process” (Ostrom 1990, 190).

As a measure of tension between self-interest and collective interests, the positive effects of autonomy on increased partner interactions may be best explained by de Tocqueville’s (2006) doctrine of “self-interest properly understood.” This doctrine asserts a positive correlation between self-interest and the interests of others. It appears that in collaboration, both self-interest and collective interests have the potential to coexist in creative balance such that even though autonomy is negatively related to collaboration, when outcomes are at stake, positive outcomes can be achieved.

In the negotiation process, for example, self-interest may be necessary for joint outcomes to emerge. This is not incompatible with Huxham’s (1996) assertion that the first reason to collaborate is self-interest though this does not mean self-interest at the expense of others (3). Nor is it incompatible with findings from the interorganizational relations literature that assert “because organizations can seldom marshal the necessary resources to attain their goals independently, they must establish exchange relationships with other organizations” to achieve their goals (Van de Ven, Emmett, and Koenig 1975, 22). Tension has the potential to increase interorganizational interaction when partners need resources that other partners have.

Thomson’s (2001) view that collaboration involves both aggregative and integrative characteristics provides another way to explain the variation in the individual collaboration dimension–outcome relationships. Aggregative traditions view political institutions as instruments for aggregating private preferences into collective choices (March and Olsen 1989). Integrative traditions, on the other hand, rely on a logic of unity rather than one of exchange (March and Olsen 1989, 126). Integrative traditions, write March and Olsen,

treat conflict of interest as the basis for deliberation and authoritative decision rather than bargaining; [p]resume a process from which emerges mutual understanding, a collective will, trust and sympathy, [and] seek the creation, identification, and implementation of shared preferences. (Ibid.)

From an aggregative perspective, collaboration involves bargaining based on rational self-interested maximizing behavior (the *modus operandi* of aggregative traditions). Organizations enter collaborative agreements to achieve their own goals, negotiating among competing interests and brokering coalitions among competing value systems, expectations, and self-interested motivations (Hanf and Scharpf 1978; March and Olsen 1989; Ostrom 1990). If collaboration threatens their self-interests, organizations will not hesitate to exit rather than to exercise voice.

A strong case can be made, however, that collaboration also shares much of the logic of integration. Cooperation theory's focus on the increased potential for cooperation through adaptive behavior, repeated interaction, and the development of norms like trust and reciprocity lend support to this view of collaboration (Axelrod 1984, 1997; Ostrom 1990, 1998). In the conclusion to his book, *The Evolution of Cooperation*, Axelrod (1984) writes,

We are used to thinking about competitions in which there is only one winner [but] the world is rarely like that. In a vast range of situations mutual cooperation can be better for *both* sides than mutual defection. The key to doing well lies not in overcoming others but in eliciting their cooperation. (190)

In collaboration processes, then, as partners interact, compete, seek to maximize self-interest (aggregative tendencies) and then decide to satisfice for the sake of the collaborative endeavor (integrative tendencies), different processes will affect different outcomes.

Gray (1989) supports this view of collaboration as a process with aggregative and integrative characteristics, though for her, as partners negotiate, they move beyond mere satisficing to arrive at an unknown but improved outcome. For her, collaboration represents a process "through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible" (Gray 1989, 5). That autonomy is statistically significant in increasing partner interactions in the presence of mutuality and length of time a collaboration continues to exist suggests that Gray's (1989, 11) assertion that collaboration assumes "solutions emerge by dealing constructively with differences" (differences presumably rooted in self-interest) has some merit.

In their study of collective bargaining, Walton and McKersie (1965) propose the possibility of combining distributive bargaining, where one person's gain is another person's loss, with integrative bargaining, where "the nature of a problem permits solutions which benefit both parties, or [solutions where] the gains of one party do not represent equal sacrifices by the other" (5). Distributive and integrative bargaining each assume differences among parties, differences rooted in self-interest. When combined, however, joint gains can occur when the parties use tactics that prevent others from achieving most of the gains in order to guarantee themselves a reasonable share of the gains.

SUMMARY

Overall, the outcomes analysis suggests statistically significant, positive effects of different dimensions on different outcomes with mixed support for propositions two and three. It is important to acknowledge the modest *r*-square values for each of the five regression models, suggesting that a large portion of the variability in the five outcomes is not explained with the five collaboration dimensions. This is not surprising given the nature of the data used to measure collaboration outcomes. Although the collaboration scale has been subjected to measurement evaluation, the five outcome measures are single indicators and have not been developed through the rigorous analysis that yielded the process measures (Thomson, Perry, and Miller 2006). The measurement error may be significant especially because of the assumption that the single-item questions measure the perceived outcomes of collaboration.

It is also important to acknowledge that our approach is but one of several competing views. It falls within a collective action view of organizations that focuses on networks of symbiotically interdependent, yet semiautonomous organizations that interact to construct or modify their collective environment, working rules, and options (Astley and Van de Ven 1983, 251). We readily admit (as do Astley and Van de Ven) that this view represents only a “partial view of reality” and, as such, our research is meant to be one contribution to an ongoing debate about the meaning of collaboration.

CONCLUSION

An empirically validated theory of collaboration, one that can inform both theory and practice, demands a systematic approach toward understanding the meaning and measurement of collaboration. Without a more systematic approach, inferences about collaboration will depend on which theoretical perspective one takes. This, in turn, makes theory building difficult and evaluation of collaborative arrangements reliant on inconsistent subjective judgments of evaluators.

Scholars of public management agree that the role of theory is to produce knowledge that enhances the ability of managers to manage effectively, though they disagree on what constitutes “knowledge for practice” (Bozeman 1993; Kettl and Milward 1996; Lynn 1996). Lynn’s (1996) stance—that knowledge for practice needs to move beyond merely experiential knowledge to analytical knowledge that allows public managers to become trained investigators, “able to examine competing claims [and] to resolve uncertainty in a reasoning way” (114)—is equally relevant for scholars and practitioners of collaboration. We agree with Lynn’s assertion that knowledge for practice will suffer without a more explicit focus on rigorous analysis.

Several compelling issues in the collaboration process–outcome relationship call for a more systematic research agenda on collaboration. Wood and Gray (1991), in their excellent discussion of the necessary building blocks for a comprehensive theory on collaboration, identify several overarching issues that are particularly relevant for this study. They urge collaboration scholars to move beyond the individual level of analysis to the aggregate level

when studying collaboration processes and outcomes. “A key limitation of existing theory,” they write, “is that most perspectives are oriented toward the individual focal organization . . . rather than toward an inter-organizational domain” (140). Bingham and her colleagues (2003) agree. For them, understanding collaborative environmental conflict resolution as a complex system with environmental outcomes demands that measurements of diverse, aggregate-level data need to be collected across ECR participants and at multiple points in time (339).

Our findings also confirm what other researchers in this field have found: when examining the process–outcome relationship in collaborative endeavors, we cannot assume a linear cause–effect relationship (Huxham and Vangen 2005; O’Leary and Bingham 2003). Not only are outcomes layered and occur at different junctures in the collaborative process, different process dimensions yield different outcomes. The important question, then, is: How do scholars and practitioners build on descriptive case studies by examining the collaborative process–outcome relationship as a complex system that changes over time?

Studies such as the one presented here attempt to do just this. By examining patterns of outcomes across a large number of cases, we are able to arrive at system-level hypotheses that can be tested in other contexts and across time. Clearly, the cross-sectional nature of this study, however, limits our ability to move beyond hypotheses to generalized statements. Longitudinal data collection is a must for the field of collaboration research.

Another must, if we are to examine system-level relationships, is to develop measurement models that provide us with ever more valid and reliable indicators and scales for empirical research. The multidimensional scale of collaboration used in this study represents a first attempt to wrestle with the meaning of collaboration and how to measure the process in order to explore empirically relationships such as those between collaboration and its outcomes (Thomson 2001; Thomson, Perry, and Miller 2006). This scale is the first of its kind and is meant to be tested in other contexts and refined. This is especially important when examining the relationship between collaboration and its outcomes. We need to subject our conceptualization of outcomes to evaluation of measurement error just as the process indicators have been evaluated. This is complicated, of course, by the many challenges discussed in this chapter

Nevertheless, the field of collaboration research suffers from a paucity of large-scale empirical studies and the refinement of measurement scales is paramount if we are to move from practice to theory. We need more studies like those conducted by Graddy and Chen (2006) and Chen and Graddy (2005) that test the collaboration process–outcome relationship on different samples and in different policy contexts. Comparison of results between multiple studies, like our analysis and Chen and Graddy’s (2005), will help to build theory in the field of collaboration research by identifying recurring similarities and differences in the pattern of results. For example, Chen and Graddy (2005) use Thomson’s (2001) multidimensional scale of collaboration and her outcome variables (customized in the Chen and Graddy study by referring specifically to the Family Preservation Program) to evaluate interorganizational networks in Los Angeles County’s Family Preservation Program. Although they use a different methodology (we use structural equations modeling; Chen and Graddy use fixed-effects modeling), comparing results is informative and illustrates the value of multiple studies in different contexts.

Significant differences in effects of dimensions of collaboration on different outcomes emerge (important differences that warrant further exploration); there are also, however, some interesting similarities. Both analyses identify mutuality (operationalized in Chen and Graddy's study as resource exchange) and trust as the variables with the most predictive power among the five outcomes. The positive though limited role of autonomy in our analysis (only one of the five effects is statistically significant) contrasts with two negative effects (though statistically insignificant) of autonomy in Chen and Graddy's study; both studies, however, found a positive and significant effect of autonomy on increased interactions among partners and Chen and Graddy also found a positive and highly significant effect of autonomy on increased equality of influence among partners.⁷ Comparing the patterns of similarities and differences across multiple studies can only help to further our understanding of the complex and paradoxical nature of collaboration and its effect on outcomes.

The relatively new advances in structural equations modeling have greatly improved the ability of scholars to provide usable knowledge for practice. The ability to estimate latent variables scores is one such advanced technique that holds great promise for theory and practice. Although, models of this kind have limitations (Thomson 2001, 63–67; 185–96), they hold the potential to serve as useful heuristics that make complex statistical and theoretical findings meaningful to daily practice. Other methodologies, such as those of Graddy and Chen (2006), are also useful. The refinement of the multidimensional scale of collaboration used in our study is warranted because of the need for more valid and reliable measures of collaboration and should be an important part of any research agenda that seeks to build collaboration theory.

This study on the collaboration process–outcome relationship fits with the broader research agenda posited in the environmental conflict resolution literature by O'Leary and her colleagues (2003). Many of the same methodological and conceptual challenges in this literature are relevant for the field of collaboration research such as: single, small-*n* descriptive case studies, practitioner–scholar bias, diversity and uniqueness of cases that make cross-case comparisons and controlling for specific variables difficult (Emerson et al. 2003, 16). We agree that, like the environmental conflict resolutions field, the complexity of the collaboration process–outcome relationship is sufficiently complex to warrant a “continuous learning” perspective that will, over time, allow us to make contingent generalizations about how collaboration processes yield particular outcomes and under which conditions.

NOTES

1. This sample represents the operational level of national service policy implementation characterized by a complex system of nested networks of organizations at the national, state, and local levels. The organizations in this sample demonstrate a wide variety in structure, size, capacity, vision, and goals providing a rich environment for systematically studying the meaning of collaboration. For a detailed description of the sample, see Thomson (2001, ch. 6).

2. Implications for AmeriCorps managers are discussed in an earlier study (Thomson and Miller 2002) where we present the practical uses of the multidimensional model for AmeriCorps respondents.

One example of a practical application is use of the original survey as a self-reflection tool to explore differences in interorganizational perceptions of the collaboration. It is interesting to note that a large number of respondents in the original sample requested a summary of the findings (84 percent) and a copy of the questionnaire to use with their collaboration partners (78 percent). Several organizational directors in the sample, unexpectedly, voluntarily, and independently called to request a second copy of the questionnaire to use with their partners in retreat settings.

3. The theoretical foundations of the five dimensions are discussed in greater detail in Thomson and Perry (2006).

4. For a detailed description of overall fit measures, see Thomson (2001, 131–32) and Thomson, Perry, and Miller (2006).

5. Bollen (1989) suggests that we view the overall theoretical model as a system of linear regression equations composed of a systematic direct effect of the unobserved concept on the observed indicator and an error effect (whatever is not “explained” by the concept). From this perspective, the closer the *r*-square is to 1, the greater the reliability of the indicator. Of the seventeen indicators in this model, nine have an *r*-square of 0.50 or greater, three are between 0.42 and 0.48, and the remaining five are between 0.20 and 0.34. As the literature on validity demonstrates, it is possible to have valid but unreliable measures of a particular concept (Bollen 1989; Carmines and Zeller 1983). We view our research as part of a larger research agenda to develop ever more valid and reliable scales. This scale clearly needs cross-validation on other independent samples, but as a first attempt, the empirical findings are promising.

6. Latent variables are variables that cannot actually be measured in the real world but are assumed to influence observed variables that can be measured. In the case of this model, the observed indicators are statistically valid measures of the five key dimensions of collaboration that are, in turn, influenced by the higher-order latent variable, collaboration. The latent variable scores are derived, empirically, from the observed variables—questions on the survey.

7. See discussion in Chen and Graddy (2005, 16–18; and Table 6, 16). Chen and Graddy’s model also includes an analysis of the preconditions–outcome relationship, which helps to fill a gap in empirical research on the theoretical antecedent–process–outcome framework often presented in discussions about collaboration (Gray 1989; Gray and Wood 1991).

REFERENCES

- Alper, Steve; Dean Tjosvold; and Kenneth S. Law. 2000. “Conflict Management, Efficacy, and Performance in Organizational Teams.” *Personnel Psychology* 53: 625–42.
- Alter, Catherine, and Jerald Hage. 1993. *Organizations Working Together*. Newberry Park, CA: Sage.
- Astley, W. Graham, and Andrew H. Van de Ven. 1983. “Central Perspectives and Debates in Organizational Theory.” *Administrative Science Quarterly* 28, no. 2: 245–73.
- Axelrod, Robert. 1984. *The Evolution of Cooperation*. Princeton, NJ: Princeton University Press.
- . 1997. *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration*. Princeton, NJ: Princeton University Press.
- Bardach, Eugene. 1998. *Getting Agencies to Work Together: The Practice and Theory of Managerial Craftsmanship*. Washington, DC: Brookings Institution Press.
- Bingham, Lisa B.; David Fairman; Daniel J. Fiorino; and Rosemary O’Leary. 2003. “Fulfilling the Promise of Environmental Conflict Resolution.” In *The Promise and Performance of Environmental Conflict Resolution*, ed. O’Leary and Bingham, 329–51. Washington, DC: Resources for the Future.
- Bollen, Kenneth. A. 1989. *Structural Equations with Latent Variables*. Toronto: Wiley.
- Bozeman, Barry. 1993. *Public Management: The State of the Art*. San Francisco: Jossey-Bass.
- Brogdon, Mette. 2003. “The Assessment of Environmental Outcomes.” In *The Promise and Performance of Environmental Conflict Resolution*, eds. R. O’Leary and L.B. Bingham, 277–300. Washington, DC: Resources for the Future.

- Carmines, Edward G., and Richard A. Zeller. 1983. *Reliability and Validity Assessment*. Beverly Hills: Sage.
- Chen, Bin, and Elizabeth A. Graddy. 2005. "Inter-Organizational Collaborations for Public Service Delivery: A Framework of Preconditions, Processes, and Perceived Outcomes." Paper presented at the annual meeting of the Association for Research of Nonprofit Organizations and Voluntary Action, Washington, DC, November 17–19.
- Coleman, James. S. 1990. *Foundations of Social Theory*. Cambridge, MA: Belknap Press of Harvard University Press.
- Coleman, Peter T., and Morton Deutsch. 2000. "Some Guidelines for Developing a Creative Approach to Conflict." In *The Handbook of Conflict Resolution: Theory and Practice*, ed. Deutsch and Coleman, 355–65. San Francisco: Jossey-Bass.
- Cropper, Steve. 1996. "Collaborative Working and the Issue of Sustainability." In *Creating Collaborative Advantage*, ed. C. Huxham, 80–100. Thousand Oaks, CA: Sage.
- Cummings L.L. and Philip Bromiley. 1996. The Organizational Trust Inventory. In *Trust in Organizations*, eds. R. M. Kramer and T.R. Tyler, 302–330. Thousand Oaks, CA: Sage.
- de Tocqueville, Alexis. 2006. *Democracy in America*, ed. J.P. Mayer, trans. G. Lawrence. New York: Harper Perennial Modern Classics.
- Emerson, Kirk; Tina Nabatchi; Rosemary O'Leary; and John Stephens. 2003. "The Challenges of Environmental Conflict Resolution." In *The Promise and Performance of Environmental Conflict Resolution*, ed. R. O'Leary and L.B. Bingham, 3–26. Washington, DC: Resources for the Future.
- Graddy, Elizabeth A., and Bin Chen. 2006. "The Consequences of Partner Selection in Service Delivery Collaborations." Paper presented at Syracuse University's Collaborative Public Management Conference, Washington, DC, September 28–30.
- Gray, Barbara. 1989. *Collaborating: Finding Common Ground for Multi-Party Problems*. San Francisco: Jossey-Bass.
- . 2000. "Assessing Inter-Organizational Collaboration: Multiple Conceptions and Multiple Methods." In *Cooperative Strategy: Economic, Business, and Organizational Issues*, ed. D. Faulkner and M. De Rond, 243–60. Oxford: Oxford University Press.
- Gray, Barbara, and Donna J.Wood. 1991. "Collaborative Alliances: Moving from Practice to Theory." *Journal of Applied Behavioral Science* 27, no. 2: 3–22.
- Hanf, Kenneth, and Fritz W. Scharpf, eds. 1978. *Inter-Organizational Policy Making: Limits to Coordination and Central Control*. Beverly Hills: Sage.
- Hellriegel, Don; John W. Slocum; and Richard W. Woodman. 1986. *Organizational Behavior*. 4th ed. New York: West.
- Hudock, Ann C. 2001. *NGOs and Civil Society: Democracy by Proxy?* Cambridge, UK: Polity Press.
- Huxham, Chris. 1996. "Collaboration and Collaborative Advantage." In *Creating Collaborative Advantage*, ed. Huxham, 1–18. Thousand Oaks, CA: Sage.
- Huxham, Chris, and Siv Vangen. 2000. "Ambiguity, Complexity, and Dynamics in the Membership of Collaboration." *Human Relations* 53, no. 6: 771–801.
- . 2005. *Managing to Collaborate: The Theory and Practice of Collaborative Advantage*. New York: Routledge.
- Innes, Judith E. 1999. Evaluating Consensus Building. In *The Consensus Building Handbook: A Comprehensive Guide to Reaching Agreement*, eds. L. Susskind, S.McKernan, and J. Thomas-Larmer, 631–675. Thousand Oaks, CA: Sage.
- Judge, Timothy A.; Christine L. Jackson; John C. Shaw; Brent A. Scott; and Bruce L. Rich. 2007. "Self-Efficacy and Work-Related Performance: The Integral Role of Individual Differences." *Journal of Applied Psychology* 92, no. 1: 107–27.
- Johnson, David W.; Roger T. Johnson; and Dean Tjosvold. 2000. "Constructive Controversy: The Value of Intellectual Opposition." In *The Handbook of Conflict Resolution: Theory and Practice*, ed. M. Deutsch and P.T. Coleman, 65–85. San Francisco: Jossey-Bass.

- Kettl, Donald F., and H. Brinton Milward, eds. 1996. *The State of Public Management*. Baltimore: Johns Hopkins University Press.
- Lenkowsky, Leslie, and James L. Perry. 2000. "Reinventing Government: The Case of National Service." *Public Administration Review* 60, no. 4: 296–307.
- Levine, Sol, and Paul E. White. 1961. "Exchange as a Conceptual Framework for the Study of Inter-Organizational Relationships." *Administrative Science Quarterly* 5, no. 4: 581–601.
- Lewicki, Roy J., and Carolyn Wiethoff. 2000. "Trust, Trust Development, and Trust Repair. In *The Handbook of Conflict Resolution: Theory and Practice*, ed. M. Deutsch and P.T. Coleman, 86–107. San Francisco: Jossey-Bass.
- Lind, E. Allen, and Tom R. Tyler. 1988. *The Social Psychology of Procedural Justice*. New York: Plenum Press.
- Logsdon, Jeanne M. 1991. "Interests and Interdependence in the Formation of Problem-Solving Collaborations." *Journal of Applied Behavioral Science* 27, no. 1: 23–37.
- Lynn, Laurence E., Jr. 1996. *Public Management as Art, Science, and Profession*. Chatham, NJ: Chatham House.
- March, James G., and Johan P. Olsen. 1984. "The New Institutionalism: Organizational Factors in Political Life." *American Political Science Review* 78, no. 3: 734–49.
- . 1989. *Rediscovering Institutions: The Organizational Basis of Politics*. New York: Free Press.
- O'Leary, Rosemary, and Lisa B. Bingham, eds. 2003. *The Promise and Performance of Environmental Conflict Resolution*. Washington, DC: Resources for the Future.
- Olson, Mancur. 1971. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- . 1998. "A Behavioral Approach to the Rational Choice Theory of Collective Action: Presidential Address, American Political Science Association, 1997." *American Political Science Review* 92, no. 2: 1–22.
- O'Toole, Laurence J., Jr. 1997. "Treating Networks Seriously: Practical and Research-Based Agendas in Public Administration." *Public Administration Review* 57, no. 1: 45–52.
- Perry, James L.; Ann Marie Thomson; Mary Tschirhart; Debra Mesch; and Geunjoon Lee. 1999. "Inside a Swiss-Army Knife: An Assessment of AmeriCorps." *Journal of Public Administration Research and Theory* 9, no. 2: 225–50.
- Pfeffer, Jeffrey. 1997. *New Directions for Organization Theory: Problems and Prospects*. New York: Oxford University Press.
- Pfeffer, Jeffrey, and Gerald R. Salancik. 1978. *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper and Row.
- Ring, Peter S., and Andrew H. Van de Ven. 1994. "Development Processes of Cooperative Inter-Organizational Relationships." *Academy of Management Review* 19, no. 1: 90–118.
- Sagawa, Shirley, and Eli Segal. 2000. *Common Interest, Common Good: Creating Value Through Business and Social Service Partnerships*. Boston, MA: Harvard Business School Press.
- Shapiro, Debra L.; Blair H. Sheppard; and Lisa Cheraskin. 1992. "Business on a Handshake." *Negotiation Journal* 8, no. 4: 365–77.
- Thomson, Ann Marie. 2001. "Collaboration: Meaning and Measurement." Ph.D. diss., Indiana University, Bloomington.
- Thomson, Ann Marie, and Theodore K. Miller. 2002. "Knowledge for Practice: The Meaning and Measurement of Collaboration." Paper presented at the annual meeting of the Association for Research of Nonprofit Organizations and Voluntary Action, Montreal, November 14–16.
- Thomson, Ann Marie, and James L. Perry. 2006. "Collaboration Processes: Inside the Black Box." *Public Administration Review* 66, no. 6 (Supplement): 20–31.
- Thomson, Ann Marie; James L. Perry; and Theodore K. Miller. 2006. "Conceptualizing and Measuring

- Collaboration.” Paper prepared for presentation at the Collaborative Public Management Conference, Maxwell School, Syracuse University, Washington, DC, September 28–30.
- Van de Ven, Andrew. H.; Dennis C. Emmett; and Richard Koenig, Jr. 1975. “Theoretical and Conceptual Issues in Inter-Organizational Theory. In *Inter-Organizational Theory*, ed. A.R. Negandhi, 19–38. Kent, OH: Kent State University Press.
- Walton, Richard E., and Robert B. McKersie. 1965. *A Behavioral Theory of Labor Negotiation: An Analysis of a Social Interaction System*. New York: McGraw-Hill.
- Warren, Roland L. 1967. “The Inter-Organizational Field as a Focus for Investigation.” *Administrative Science Quarterly* 12, no. 3: 396–419.
- Warren, Roland L.; Ann F. Burgunder; J. Wayne Newton; and Stephen M. Rose. 1975. “The Interaction of Community Decision Organizations: Some Conceptual Considerations and Empirical Findings.” In *Inter-Organizational Theory*, ed. A.R. Negandhi, 167–81. Kent, OH: Kent State University Press.
- Wood, Donna J., and Barbara Gray. 1991. “Towards a Comprehensive Theory of Collaboration.” *Journal of Applied Behavioral Science* 27, no. 2: 139–62.