James L. Garnett
Rutgers University at Camden
Justin Marlowe
Sanjay K. Pandey
University of Kansas

Perspectives on Performance Management

Penetrating the Performance Predicament: Communication as a Mediator or Moderator of Organizational Culture's Impact on Public Organizational Performance

James L. Garnett is a professor in the Department of Public Policy and Administration at Rutgers University, Campus at Camden. Public administrative communication, administrative reform and reorganization, and crisis management are his key research and teaching interests.
E-mail: garnett@camden.rutgers.edu

Justin Marlowe is an assistant professor in the Department of Public Administration at the University of Kansas. His research and teaching interests include public budgeting and financial management, municipal management, and research methods.
E-mail: jmarlowe@ku.edu

Sanjay K. Pandey is an assistant professor in the Department of Public Administration at the University of Kansas. His research and teaching interests are in public management and health policy. Most recently, he directed the second phase of the National Administrative Studies Project.
E-mail: skpandey@ku.edu

The role of communication in public administration has been emphasized over time in public administration theory. Nonetheless, communication—with the exception of political communication—has been neglected in scholarship. Garnett's performance predicament posits the difficulty of showing linkages between communication and performance. This paper explores the role that communication plays in achieving organizational performance through a review of research that bears on communication's direct and indirect influences on performance. The primary thrust is communication's indirect role in achieving performance by mediating or moderating the effects of organizational culture on performance, thereby adding another perspective on the culture–performance relationship. Adapting the typology of Zammuto and Krakower, two types of organizational culture—rule-oriented culture and mission-oriented culture—are examined to explore how the relationship between organizational culture and organizational performance is influenced by communication. The analysis supports the claim that communication acts as a metamechanism for shaping and imparting culture in mission-oriented organizational cultures, thereby influencing performance. In particular, task orientation, feedback, and upward communication have positive effects on perceived organizational performance in mission-oriented organizations but potentially negative effects on performance in rule-oriented cultures.

Over the years, some public administration scholars and practitioners have paid attention to communication (Downs 1967; Garnett 1992, 1997a; Graber 2002; Gulick 1937; Kaufman and Couzens 1973; Simon, Smithburg and Thompson 1950). But for years, a mismatch has existed between the conventional wisdom that communication is the central management function most crucial to administrative success (Barnard 1938; Garnett 2005; Lorch 1978) and the attention and respect that communication has received within the public administration community in terms of scholarship and teaching. A major reason for this "respect gap" is inadequate research evidence linking communication with performance. This gap is partly attributable to what Garnett calls the performance predicament: "The costs of government communication are generally easier to measure than are its benefits, making it difficult to demonstrate a favorable performance ratio" (1997b, 10). Because of the difficulty of measuring communication performance, researchers have been reluctant to tackle it head on, instead researching communication media, processes, and other aspects. At the heart of this predicament is the nature of the relationship between communication and performance. Communication's powerful, indirect influences on performance have remained, by and large, below the radar of public administration scholarship.

> Communication's powerful, indirect influences on performance have remained, by and large, below the radar of public administration scholarship.

This research more fully explores communication's indirect influence on performance through its effects on organizational culture—a variable that has been shown to influence performance and one that is profoundly shaped by communication. We explore whether communication's indirect influence on performance can be established. We also examine whether different forms of communication—downward, upward, lateral, strategic, task oriented, and feedback—have dissimilar effects on performance in a mission-oriented culture (characterized by innovation and development, growth and resource acquisition, and measurable goals and achievements) compared to a rules-oriented culture (characterized by structure, formal rules and procedures, and lack of conflict).

To address these two major aims, we first review research on communication's direct and indirect influences on organizational performance and then on organizational

culture's impact on performance. From the communication research, we draw variables that show a linkage with performance. From the research on organizational culture, we adapt two contrasting types. Then, using data from a national sample of state health and human service agencies, we examine alternative models that test communication's mediating and moderating roles in a mission-oriented and a rule-oriented culture's relationship with performance. We conclude by drawing implications for public administration theory and practice.

Our research is set in the public sector—state government—partly because empirical research on communication has been conducted largely on business, and partly because this is the sector in which we are most interested. Communication in government is thought to have several key differences from business or nonprofit sector communication, although the principles and tools overlap. Three key differences involve severity, nodality or centrality, and visibility. Government communication can often have more serious consequences than communication in the private or nonprofit sectors. Government communication directs troop movements in battle, cautions about public health or terrorist threats, informs about the seizure of property through eminent domain, or conveys directives that regulate the economy, the workplace, transportation, and other spheres.

Government communication also reflects the position of government as a nexus—what Hood calls "nodality … the property of being in the middle of an information or social network" (1983, 4). Because government is the central player in organizing and regulating the conditions that affect people's lives most, governments tend to communicate with a broader range of audiences than do businesses or nonprofits, which may communicate with other businesses but also certainly have to communicate with government. Because of both these qualities, government communication tends to have more scrutiny and visibility than does communication in business or nonprofit organizations. Governments, to be sure, can practice secrecy, but there tends to be greater scrutiny of government communication from more quarters, including the news media, other government bodies, public interest groups, political parties, and others.

Communication and Organizational Performance

Though scholarship evaluating different aspects of organizational communication has been published since the 1950s (e.g., Odiorne 1954), most of these studies have been descriptive, have not had theory building as a primary goal (Greenbaum, Hellweg, and Falcione 1988), or have lacked comparability (Dozier and Ehling 1992; Garnett 1997b). The accumulation of knowledge has been constrained by this lack of comparability. Independent variables studied have included communication satisfaction, feedback, and many others, while dependent variables have included individual performance, organizational performance, job satisfaction, individual productivity, and organizational productivity. Although research on communication's direct influence on organizational performance has focused on a wide range of communication variables (Downs, Clampitt, and Pfeiffer 1988), most studies have focused on assessing general communication effectiveness and the effect of specific communication behaviors on performance.

Research focusing on the *general impact of communication on performance* has tended to measure a global indicator of communication effectiveness or satisfaction in terms of perceived impact on either organizational or individual performance. For example, Lull, Frank, and Piersol (1955) found that 96 percent of corporation presidents surveyed acknowledged a definite relationship between communication and corporate productivity In a meta-analysis of eight field studies, Tubbs and Hain (1979) found communication effectiveness to be related to variables such as absenteeism, grievances, and efficiency. They concluded, "Taken together [these studies] provide consistent and strong support for the assumption that management communication behaviors do play a significant part in contributing to or detracting from total organizational effectiveness" (7). Pincus (1986) studied hospital-based nurses and found satisfaction with the organization's communication, as measured on a satisfaction scale, to be related to job performance, as measured by supervisor performance ratings. In another general study, Campbell (1993) surveyed corporate chief executive officers and found that 16 of 18 said that public relations as a predominantly external form of communication had a significant effect on the bottom line. The other two said they assumed this impact on financial performance but had no specific data by which to judge its impact.

In a more rigorous study, Kim (2002) found that reputation in service industries was reflected in the quality of management; the quality of products or services; the ability to attract, develop, and keep talented people; value as a long-term investment; the use of corporate assets; financial soundness; innovativeness; and community and environmental responsibility related to market share. Timmerman and Scott (2006) found that a range of communication variables (e.g., responsiveness, thoroughness, connectedness, trust, and engagement) had a greater effect on team outcomes than structural variables (team size, location, and organizational type).

Another strain of scholarship within organizational communication has focused on *specific communication competencies or behaviors,* including the concept of

communication competence. The logic here is that superior communication competence results in better individual and organizational performance. While this concept has been defined and treated differently (Jablin and Sias 2000), the notion that communication competence leads to goal achievement, performance, and effectiveness is most relevant to our work. Lewis, Cummings, and Long (1982), for example, linked emphasis on primarily downward *task communication* with productivity in a military unit, but *person communication* was a better predictor of productivity in a church setting. In another area of communication competence, O'Reilly and Roberts (1977) observed that perceptions of individual performance were related to the skill of coping with information overload.

Clampitt and Downs (1993) tested the relationship of communication with individual worker productivity, assessing communication performance on eight dimensions—supervisory communication, subordinate communication, personal feedback, organizational integration, media quality, corporate information, communication climate, and coworker communication—correlating these with multiple ratings of worker productivity. Subjects were asked to define what they meant by productivity. Their definitions included quantity, quality, getting the job done, meeting goals, and reducing errors. A case could be made that Clampitt and Downs were really measuring the broader concept of "performance" rather than productivity. They concluded that communication had an "above average impact on productivity. Employees in both companies felt that all eight of the communication satisfaction dimensions impacted their productivity" (1993, 18). Another major finding was that the communication variables were perceived to affect productivity to different degrees, with personal feedback, primarily a downward form of communication, having the greatest impact and lateral communication with coworkers the least. Research has generally shown that goal setting, along with feedback on achieving those goals, has a significant effect on performance (Downs, Clampitt, and Pfeiffer 1988). Roberts and O'Reilly (1979) found that employees who were active participants in communication networks and who disseminated communication more openly were more likely to be rated as more productive performers, whereas employees whose communication behaviors were more characteristic of gatekeeping, redundancy, or hoarding were assessed as low performers. In municipal governments, communication quantity and consistency about service performance, reputation, and ethics reduced the level of citizen cynicism (Berman 1997).

Feedback on employee performance has had mixed linkages with organizational performance. In a monumental study of nine large U.S. government bureaus, Kaufman and Couzens (1973) found that seven of the nine bureaus clearly had enough administrative feedback to detect noncompliance of agency policy—one indicator of performance. The other two bureaus had intergovernmental oversight of education and law enforcement (two functions with state and local prerogatives), making the federal bureaus reluctant to gather as much feedback. In the private sector, Kim (1975) discovered that effective feedback about performance was linked to increased productivity. Clampitt (1983) found that feedback had the most significant effect on productivity of all communication variables because employees perceived that feedback affected employee morale and motivation so strongly. Downs, Johnson, and Barge (1984), in an early review of research on feedback, found a positive relationship between feedback and both individual and group task performance.

O'Reilly and Anderson (1980) found that feedback had a weak correlation with performance but a strong correlation with job satisfaction. Part of this weaker linkage between feedback and performance may be because they found this relationship to be moderated by the trust level that employees had for their superiors. Lower trust in superiors tended to negate the effect of feedback on performance.

Although given less emphasis, some research, such as the O'Reilly and Anderson study, has explored indirect effects through communication's influence on other variables. These indirect effects come in the forms of mediation (intervening effects) and moderation (interactive effects). *Mediator* or "intervening" variables describe the nature or process by which an independent variable affects the dependent variable. *Moderator* or "interaction" variables amplify or mitigate the effect of an independent variable on the dependent variable. The mediator–moderator distinction has been clearly delineated by Baron and Kenny (1986), Aguinis (2004), and others. Here, we use the terms "interaction" and "interactive" to denote the effect on relationships among variables rather than to mean the *interactional* perspective on interpersonal communication (Gayle and Preiss 2002).

Research addressing indirect effects of communication on performance has been reported by Schuler and Blank (1976), Tubbs and Hain (1979), Huseman, Alexander, and Driver (1980), and Lewis, Cummings, and Long (1982). In some of this research, the terms "moderated" and "mediated" have been used interchangeably without stated definitions of their more precise meaning or any statistical evidence of the degree to which moderation or mediation occurred. Although the communication literature often conflates the distinction between mediation and moderation, this distinction is important to maintain on both theoretical and practical grounds. Some of the more recent research makes this distinction. For example,

Timmerman and Scott (2006) found that "technology use is not directly related to key team outcomes, but these relationships are moderated by various communicative predictors" (2006, 131).

Although a growing body of research shows linkages between communication and organizational performance, the relationship still needs further exploration, especially because so little of the extant research has occurred in the public sector and the indirect influences of communication remain largely unexplored. This article attempts to bridge these gaps by reporting large-scale research emphasizing government communication's indirect influences on performance—in this case, through organizational culture. The next section sketches relationships between culture and performance and between culture and communication that form the models we test in our analysis.

Organizational Culture and Performance

The relationship between organizational culture and organizational performance has had sporadic but growing interest from a range of disciplines. Although much has been learned about this relationship, systematic, cumulative theory building has been lacking (Wilderom, Glunk, and Maslowski 2000). Part of this gap results from a lack of consistency of variables and definitions, including the definition of organizational culture itself (Alvesson 2002; Ashkanasy, Wilderom, and Peterson 2002). Two definitions dominate the research on organizational culture. The structuralist realist ontology views organizations as structures with properties, such as climate and culture. It is this perspective that looks at the dimensions of climate or culture, comparing organizations on these dimensions and attempting to discover new dimensions that better capture reality (e.g., Denison 1990; Zammuto and Krakower 1991). A contrasting definition views organizational culture less in terms of identifiable properties or dimensions and more as "a system of common symbols and meanings" (Alvesson 2002, 3) that emphasizes symbols (including language), stories, rituals, myths, events, and the interpretation of these. Both definitions are relevant to our research.

General connections between an organization's culture and its performance have been made since the early stages of management and organization theory (e.g., Mayo 1933; Taylor 1911). This first wave of interest in the culture–performance relationship was largely normative/prescriptive. Perhaps because of these loose connections between culture and performance, Wilderom, Glunk, and Maslowski (2000) observe that substantial interest in the culture–performance relationship only surfaced in the 1970s in works touting the Japanese management culture and those presenting a counterclaim for American excellence. Somewhat less ideological but still hardly empirical, Deal and Kennedy (1982) emphasized the importance of a strong adaptive organizational culture to cope with a changing internal and external environment.

Although much of the writing on culture during the 1980s was normative, some was more descriptive/empirical. Team building, with its emphasis on shared responsibility, mutual problem solving, and nonhierarchical relationships—characteristics consistent with Zammuto and Krakower's (1991) developmental and rational culture types and what we view as mission-oriented culture—was associated with profitability and growth (Downs, Clampitt, and Pfeiffer 1988; Downs, Johnson, and Barge 1984). Denison (1991), in a more systematic study, tested four competing hypotheses on culture using data from a sample of 34 business firms. Denison's *involvement* hypothesis emphasizes the importance of a culture of member participation and involvement that leads to ownership, responsibility, and greater organizational effectiveness. The *consistency* hypothesis holds that a strong, widely shared, and consistently reinforced organizational culture produces greater effectiveness. The *adaptability* hypothesis emphasizes the importance of a flexible, proactive culture to organizational effectiveness. The *mission* hypothesis stresses the role of clear direction in an organization's culture. Denison incorporates all of these in a synthetic model of culture and effectiveness, finding that involvement and adaptability lead to both short- and long-term effectiveness. Inconsistency of culture rather than consistency was found to lead to higher performance in the longer term, showing the importance of heterogeneity and variability.

In the public sector, Warwick (1975) drew a general link between the U.S. Department of State's highly formal and secretive culture and the deliberateness of its positions and actions. Replicating Peters and Waterman's success but in the public sector, Osborne and Gaebler (1992) identified dimensions of what they termed the *entrepreneurial* culture, which they connected through unsystematic cases with more adaptive and more successful public management practices. Looking at culture as a dependent variable, Nufrio (2001) examined the extent to which cultural values embodying the reinvention of the Clinton–Gore National Performance Review stimulated by Osborne and Gaebler's work were actually absorbed into federal government agencies. Nufrio's results showed that most of the reinvention cultural dimensions, such as freedom to act, inventing a new learning culture, recognizing and rewarding performance, and putting customers first, were not significantly more embedded in agency culture and practice as perceived by employees. The dimension of teamwork was the cultural dimension most transformed, found to be more present in 9 of the 21 departments.

Wilderom, Glunk, and Maslowski (2000) reported on a succession of other research-based examinations attempting to test the culture–performance relationship more systematically than before. They concluded that "[t]aking these studies together, one could point to a significant C–P [culture–performance] linkage. However, when interpreting the specific findings, we see little room for generalization. This is not only because of the studies' weaknesses but also because hardly any of them seem to have built on one another" (2000, 197). Though all of the 10 studies they reviewed showed some relationships between cultural dimensions and performance—measured in different ways—some inconsistencies also appeared. For example, the dimension strength of organizational culture was found to be related to long-term economic performance by Kotter and Heskett (1992) but was linked with short-term economic performance by Gordon and DiTomaso (1992). Seemingly contradictory dimensions of stability/consistency and flexibility both correlated with measures of financial performance in the same study (Denison and Mishra 1995) that found all cultural dimensions relating to various performance indicators. Wilderom, Glunk, and Maslowski concluded that "the research evidence regarding the claimed effect of organizational culture on organizational performance/effectiveness appears to be there, but not very convincingly so" (2000, 201). Because only three of the studies they reviewed were predictive, Wilderom, Glunk, and Maslowski also concluded that "the hypothesized predictive effect of C on P remains largely inferential" (201).

Relationships between Organizational Culture and Communication

Certainly, public administration theorists have argued for the significance of the relationship between organizational culture and communication performance (Garnett 1997a; Guy 1992). Demonstrating this linkage and the interaction between communication and culture is something else, however. This section first describes the conceptual linkages between communication and organizational culture and then examines the research evidence for these linkages. Mechanisms that have been identified (Schein 1992, 230–53) as important for embedding organizational culture (e.g., leaders' priorities for attention, measurement, and control; observed criteria for allocating resources, rewards, and status; teaching and coaching; observed criteria for hiring, advancing, or shedding members; rites and rituals; stories and legends about the organization; and formal statements of philosophy and creed) mostly involve communication. Communication by various verbal and nonverbal processes in this sense is what we term the *meta-mechanism* for embedding or changing organizational culture. It is those aspects of the priorities, criteria, and rituals that are actually communicated—that is, what receivers actually observe and interpret rather than what the senders intend—that has the most impact on organizational culture. For example, the leader of an organization may intend to inculcate a culture of openness and participation, but if managers and employees observe that the leader sanctions those who bear bad news, the culture that is created is more closed and distrusting (Alvesson 2002; Schein 1992).

The work of Koene (1996) is perhaps most relevant to our quest for examining how communication moderates or mediates the effects of organizational climate on performance. Koene found that the cultural dimensions of openness and orientation not only linked directly with several measures of performance, but also that communication moderated culture's impact on performance through *task communication* and *general communication.*

Empirical scholarship on culture and communication research focused initially on the concept of a communication climate that included openness, trust, and the like. Falcione, Sussman, and Herden (1987) reviewed the literature on organizational climate and noted that organizational climate accounted for only a modest portion of variance in performance outcomes, including communication outcomes. Downs, Clampitt, and Pfeiffer (1988) surveyed a number of studies and concluded that internal communication tended to be more strongly related to interpersonal variables—trust, openness and other components of organizational culture—than did external communication.

Much of the research on the relationship between communication and organizational culture has occurred in the private sector (Eisenberg and Riley 2000; Greenbaum, Hellweg, and Falcione 1988). Some key studies exist in the public sector, however. Tompkins's (1977) incisive study of communication at Marshall Space Center found a number of communication problems that affected the organizational climate, including secrecy with lateral communication: hoarding information and competitiveness among units; hostility between older employees and new managers; morale problems among civil service employees; a lack of cohesion among Marshall, NASA, contractors, and other organizations key to the space program; and a "formalism-impersonality syndrome" that emphasized a culture of control by management tools and procedures over personal control.

When measuring organizational culture in American higher education, Zammuto and Krakower (1991) found that trust, morale, and leader credibility correlated negatively with hierarchical and rational organizational cultures and with conflict and scapegoating. They found significant relationships between the dimensions of organizational culture and the key characteristics of communication performance. On

balance, despite some disagreement about the definition or elements of organizational culture, an organizational culture that reflects an organization's underlying values and orientation (e.g., task, change, or loyalty) is widely seen as setting the climate and tone for communication, particularly for internal and interpersonal communication.

We have adapted Zammuto and Krakower's conceptual and measurement scheme for this study. Based on our analysis, we identify two dimensions of culture: mission-oriented culture and rule-oriented culture. Whereas rule-oriented cultures are focused primarily on compliance, mission-oriented cultures are focused on outcomes. However, we intend these names to be more neutral and less value laden than the terms "authoritarian culture" and "participative culture," which are more common in public relations research. We discuss these two culture dimensions in greater detail later.

Communication as Mediator or Moderator

The procedures for empirically establishing mediator and moderator effects are well documented. Mediation, shown in figure 1a, implies that one variable—the mediator—is the process or mechanism by which an independent variable affects a dependent variable. A statistically significant mediating relationship suggests that some or all of the independent variable's influence on the dependent variable is "carried" or "channeled" through the mediator variable. Mediators are often used in micro-level organizational research to characterize the process by which individuals translate environmental characteristics into individual feelings and actions. From a macro perspective, they are often used to describe how organizations craft policy and management strategy in response to market and other external forces.

Moderation, shown in figure 1b, is a related but distinct concept. It implies that a moderating variable alters the independent variable's effect on the dependent variable. Instead of being channeled through the mediator, the independent variable's effect is instead characterized by its interaction with the moderator. Some moderators mitigate or dampen the independent variable's effect, others amplify or strengthen it, and some have an effect such that the relationship between the independent and dependent variables is present only when the moderator takes on a particular value or range of values.

These effects are distinguished by the degree to which the mediator/moderator is believed to be a consequence of the independent variable. To illustrate this distinction, consider an organizational behavior scenario in which job-related stress is shown to increase the likelihood that employees of a state government agency will experience strong feelings of anxiety and job burnout. The agency's personnel director plans to allocate resources to address this problem but feels that he or she could better target those allocations if more were known about the nature of the relationship among these variables (see Golembiewski and Munzenrider 1988).

One configuration of these variables suggests that job-related stress causes individual feelings of anxiety, which, in turn, increase the likelihood of burnout. Anxiety is not necessarily a preexisting condition but rather one that is induced by employees' work conditions. In this case, anxiety mediates the relationship between job-related stress and burnout, and the personnel director ought to consider an intervention that targets factors that affect how and why individuals internalize job-related stress. Those factors might include one's commitment to the organization's mission, whether an employee has direct contact with clients, and years of experience, among others. Potential interventions might include on-site counseling and support groups, a mentoring program, or other initiatives designed to relieve job-related stress.

An alternative explanation is that job-related stress increases the likelihood of burnout only among employees with preexisting anxiety resulting from personal financial stress, responsibility for an ill family member, divorce, or other non-work-related factors. In this case, all employees experience job-related stress, but burnout is far more likely among employees who are acutely affected by extraorganizational circumstances that erode their capacity to cope with job-related stress. Anxiety is a moderator in this case because it interacts with the independent variable to produce an effect on the dependent variable that is qualitatively different than that of the independent variable alone. If anxiety is, in fact, a moderator, then the personnel director ought to consider strengthening the employee assistance program, providing on-site child care, or other actions to help employees relieve stress that is not necessarily job related.

In practice, moderator and mediator effects often are not mutually exclusive from either a conceptual or

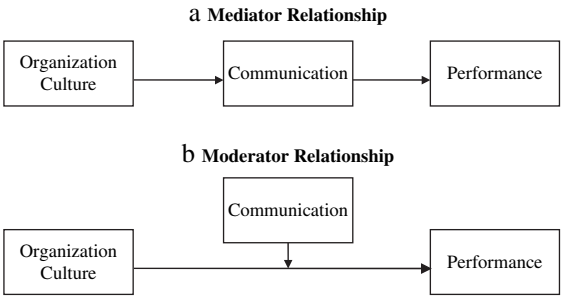

Figure 1 Mediator and Moderator Representations

empirical perspective (see Aguinis 2004; Sheeran and Abraham 2003). The same can be said for this analysis. Communication might mediate the relationship between culture and performance because communication patterns and styles are closely linked with organizational culture and, in turn, are the principal means by which culture affects performance. For example, management theorists and practitioners have judged communication to be important to key organizational functions such as decision making, coordination, motivation, and innovation, all of which influence performance (Garnett 2005; Goldhaber and Rogers 1979; Lorch 1978). Moreover, informal or subformal communication (Downs 1967; Garnett 1992) can help bridge subcultures and formal structures, avoiding some of the cultural dysfunctions that might otherwise occur (Kilduff and Corley 2000). Nonetheless, communication has been shown to amplify or mitigate the relationship between performance and other aspects of organizational culture, such as administrative feedback (Kaufman and Couzens 1973), implementation (Goggin et al. 1990), decision making (Deutsch 1963; Downs 1967; Janis 1989; Majone 1989), and other key administrative processes. Instead of being the medium through which culture is transmitted, communication may instead moderate how other aspects of culture affect organizational outcomes.

We do not posit any specific hypotheses about whether communication is a mediator, a moderator, neither, or both. The purpose of this analysis is to explicate whether these relationships exist, and if they do, what they mean for public management. Therefore, we test the claim that communication is both a mediator and a moderator of the relationship between organizational performance and two types of organizational culture—mission-oriented culture and rule-oriented culture.

Data and Methods

The data used in this analysis were collected as part of phase II of the National Administrative Studies Project (NASP-II). A total of 274 responses were obtained for a response rate of approximately 53 percent. More details on data-collection procedures are available in published literature (e.g., Pandey and Garnett 2006). Survey item wording, descriptive statistics, and correlations among the variables used in the analysis are presented in table 1.[1] Drawing from the communication and organization theory literatures, the communication measures were written specifically for the

Table 1 Variable Descriptions, Descriptive Statistics, and Correlations

Variable	Mean	SD	Low	High	1	2	3	4	5	6	7	8	9	10
1. Organizational performance	7.23	1.49	1	10	1									
2. Task instructions	3.29	1.09	1	5	.43	1								
3. Strategic direction	3.27	1.18	1	5	.39	.60	1							
4. Feedback	3.10	1.07	1	5	.38	.56	.57	1						
5. Upward communication	3.38	1.07	1	5	.29	.36	.40	.41	1					
6. Lateral communication	3.53	.99	1	5	.23	.31	.22	.36	.29	1				
7. Mission-oriented culture	15.77	3.96	5	25	.53	.38	.50	.44	.23	.26	1			
8. Rule-oriented culture	6.85	1.76	2	10	–.15	.04	.01	–.03	–.05	–.06	–.19	1		
9. Goal clarity	8.89	2.06	0	12	.52	.37	.47	.36	.27	.27	.35	–.05	1	
10. Organization size	6028.25	6149.77	85	28500	–.11	–.05	–.02	–.04	–.09	.07	–.12	.10	.01	1

Measurements:

1. "On an overall basis, please rate the effectiveness of your agency in accomplishing its core mission—on a scale of 0–10, with 0 signifying not effective at all and 10 signifying extremely effective."
2. "Downward communication of task performance directives and instructions is adequate."
3. "Downward communication about the agency's strategic direction is adequate."
4. "Downward communication about feedback on work performance is adequate."
5. "Upward communication about problems that need attention is adequate."
6. "Lateral communication giving emotional support to peers is adequate."
7. Additive index including (1) "My agency is a very dynamic and entrepreneurial place"; (2) "The glue that holds my agency together is a commitment to innovation and development"; (3) "My agency emphasizes growth and acquiring new resources"; (4) "My agency emphasizes competitive actions and achievement. Measurable goals are important"; and (5) "The glue that holds my agency together is the emphasis on task and goal accomplishment" (Cronbach's alpha = 0.78).
8. Additive index including (1) "My agency is a formalized/structured place. Bureaucratic procedures generally govern what people do"; and (2) "Formal rules and policies hold my agency together. Maintaining a smooth running agency is important here" (Cronbach's alpha = 0.55).
9. Additive index including (1) "This organization's mission is clear to almost everyone who works here"; (2) "It is easy to explain the goals of this organization to outsiders"; and (3) "This organization has clearly defined goals" (Cronbach's alpha = 0.80).
10. Number of full-time employees (regression models include natural log).

Note: Unless otherwise noted, all items are coded 1 = "strongly disagree" to 5 = "strongly agree."

NASP-II survey and have been used in prior studies (e.g., Pandey and Garnett 2006). The mission-oriented culture, rule-oriented culture, and goal clarity measures are additive indices designed to capture the aspects of these measures previously discussed. Scale reliability coefficients for those indices are .78, .55, and .80, respectively. The reliability for rule-oriented culture is low relative to conventions for acceptable levels of scale reliability. Although the implications of low scale reliability are unclear (see Pedhazur and Schmelkin 1991, 100–110), these findings should nonetheless be interpreted with caution because of the potential multidimensionality inherent to this measure.

The statistical procedures for determining the presence of mediator and moderator effects are intuitive and straightforward for models with continuous dependent variables (Aguinis 2004; Baron and Kenny 1986), binary dependent variables (Ganzach, Saporta, and Weber 2000), and ordinal dependent variables (Jaccard 2001), such as those used here. Nonetheless, establishing those effects requires a several-step process, which is briefly described here. A detailed statistical appendix outlining the mediator–moderator modeling process, the statistical assumptions underlying that process, and tables that report all relevant regression coefficients is available from the authors upon request.

The basic objective of statistical mediation is to show that a portion of the independent variable's effect on the dependent variable is "captured" or "carried" through the mediator variable. If the entire effect is captured, the independent variable is said to be fully mediated. Fully mediated effects are rare in practice. A more common occurrence is partial mediation, whereby the mediator accounts for some but not all of the independent variable's impact on the dependent variable. Partial mediation is expected here because organizational culture is a multifaceted construct that incorporates many organizational characteristics in addition to communication patterns and styles.

Mediation is determined by first establishing that the independent variable—in this case, organizational culture—has an effect on organizational performance that is independent of communication's effect on performance. This is done by regressing organizational culture along with control variables—in this case, organization size and goal clarity—on organizational performance. Size and goal clarity are often-cited determinants of organizational performance, and a series of model respecifications and sensitivity tests showed that these two variables provide the best leveraged, most parsimonious model available.

With that effect demonstrated, it is then necessary to establish a statistical relationship between the mediator—in this case, communication—and the independent variable. This is done with a separate regression model using communication as the dependent variable and organizational culture as the independent variable, again controlling for organization size and goal clarity. With that relationship established, a final model can be estimated, controlling for the combined effects of communication, culture, and the control variables. Mediation is implied when the independent variable's estimated coefficient in the first-step equation is significantly different from its estimated coefficient in the third-step equation. Substantively, this suggests that introducing the mediating variable into the explanatory model accounts for some or all of the independent variable's effect.

Moderation is different in two crucial ways. First, it is a two-step rather than a three-step process. The first step estimates, again using regression analysis, the effect of the independent, moderator, and control variables on the dependent variable. This step is designed to establish that both the independent and the moderator variables have statistically significant relationships with the dependent variable. A separate regression is then run that includes the independent variable, the moderator variable, and an interaction term that captures the combined effect of both. If that interaction term is statistically significant, the difference in the independent variable's effect between the first and second steps is attributed to a moderator effect. In other words, moderation is the change in the independent variable's relationship with the dependent variable that follows from the inclusion of the interaction between the independent and moderator variables.

Mediation is somewhat unique in that it assumes that changes in the mediator variable are caused by or result from the independent variable. This condition is difficult to establish in this context because communication and organizational culture are empirically and conceptually endogenous, and our cross-sectional design does not allow us to establish whether changes in communication produce changes in culture, or vice versa. It can be argued, for instance, that although communication through mission statements, feedback to employees, and other means shapes culture, nonetheless, it can be assumed that communication is derived from culture because the latter is a more fundamental concept derived from organizational history, environment, and other macro-level variables. Culture sets the context for communication by determining who speaks for the organization, which forms of communication are emphasized, whether communication is open and honest, and other critical aspects of organizational communication. Therefore, although there is some concern about endogeneity, it can be safely assumed that for the purpose of testing these models,

communication patterns and styles are derived from culture.

There is also disagreement in the literature over the stringency of criteria for evaluating the presence of mediator and moderator effects. In both contexts, one of the principal disagreements is whether changes in the independent variable's coefficient provide sufficient evidence of that effect, or whether there must be a significant change in the model fit characteristics once the mediator or moderator variable is introduced. Most of the models presented here do exhibit significantly large substantive changes in terms of both model fit and the model coefficients. However, because this is an exploratory analysis, no attempts were made to test those differences or to rule out mediator–moderator effects based on insufficiently large changes.

Mediated and moderated regression analyses are most often conducted with ordinary least squares regression. However, ordinary least squares is unsuitable for this analysis because the dependent variable is measured at the ordinal rather than the interval level. Therefore, we estimate the models with ordered logistic regression (or "ordered logit"), which assumes that the dependent variable can be ordered but does not assume the same distance between adjacent categories of the dependent variable (see Long 1997, 114–17). Relevant diagnostic tests indicate these data meet the ordered logit model's basic assumptions regarding multicollinearity and "proportional odds" (Brant 1990). Moderated regression models present a unique multicollinearity concern because they demand the inclusion of an interaction term between the independent and the moderator variables, which inevitably increases the correlation among the independent variables. Although there has been a notable debate in the literature over the extent to which multicollinearity biases moderator model estimates, analyses by Cronbach (1987) and others have shown that multicollinearity problems are negligible in basic moderator models, such as those tested here, which include only the independent, moderator, and a limited number of control variables.

However, these data do present a heteroskedasticity concern because they contain multiple respondents from the same agency. We address this issue by implementing a version of robust standard errors (Arellano 1987; Moulton 1986) in which the residuals are permitted to cluster across agencies.

The findings are presented here in three sections—an overview of the model fit characteristics, a discussion of communication's observed mediating effects, and a discussion of communication's observed moderating effects. A full reporting and discussion of the ordered logit model estimates can be found in the previously mentioned statistical appendix available upon request.

Model Fit Characteristics and General Trends

Two main trends emerge from this analysis. First, each of the mediation/moderation models has notable explanatory power. Although there is considerable debate surrounding the use of "explained variance" measures (such as the R^2 associated with traditional ordinary least squares regression) to assess model fit in the ordered logit context, statistics that provide information similar to explained variance, such as McKelvey and Zavonia's pseudo-R^2 (DeMaris 2002) suggest that our models capture 28 percent to 40 percent of the variation in respondents' perceptions of organizational performance.

Second and most important, communication does, in fact, have a variety of mediator or moderator effects depending on the type of culture and communication in question. The overall pattern of those findings can be characterized as follows: Communication mediates the relationship between mission-oriented culture and performance, but it moderates the relationship between rule-oriented culture and performance. Table 2 summarizes these findings by organizational culture and type of communication.

The next two sections outline these findings in more detail, but three additional considerations bear mention at the outset. First, each of the mediating effects is shown to be a partial mediator, meaning that organizational culture's effect on performance does not go away once communication is introduced into the regression model. Communication is thus an important, albeit not exclusive, process by which culture affects performance. It is also important to note that no single type of communication serves as both a mediator and a moderator of the culture–performance link. This is a critical consideration, as it shows that under some circumstances, communication is one of the mechanisms by which culture affects performance, whereas in other cases, it is the interface of communication with some other aspect of culture that affects performance. And third, in no cases is communication shown to mediate the relationship between rule-oriented culture and performance. There are several moderating relationships, which are outlined later, but it is worth noting at the outset that we can rule out communication as a mediator of the link between rule-oriented culture and performance. The next sections outline those mediator–moderator effects in greater detail.

Table 2 Summary of Findings

	Mission-Oriented Culture	Rule-Oriented Culture
Task instructions	Mediator	Neither
Strategic direction	Neither	Moderator
Feedback	Mediator	Neither
Upward	Mediator	Moderator
Lateral	Neither	Neither

Mediator Effects

Task instructions, feedback, and upward communications are shown to mediate the relationship between mission-oriented culture and performance, whereas strategic direction and upward communication are shown to moderate the relationship between rule-oriented culture and performance. Lateral communication is shown to be neither a mediator nor a moderator, and none of the communication types is shown to be both a mediator and a moderator.

These results can be effectively illustrated by showing how a respondent's predicted performance perception varies within different types of organizational cultures and across varying levels of communication quality. To that end, we calculated the predicted probability, based on the model estimates, that a respondent would rate his or her organization's performance a 7, which we will call "average," and 9, which we will call "excellent," under different configurations of organizational culture and communication. Communication was considered "average" at 3 and "excellent" at 5. A score of 16 (the mean) on the mission-oriented culture index was thus considered "average," and a score of 19 (one standard deviation above the mean) was considered "highly mission oriented." A score of 7 (the mean) on the rule-oriented culture index was considered "average," and a score of 9 (one standard deviation above the mean) was considered "highly rule oriented." The predicted probabilities are presented in table 3.

These predicted probabilities suggest that better-quality communication amplifies mission-oriented culture's positive effect on performance. For example, at an average level of mission orientation, the movement from average-quality task instruction communication to excellent-quality task instruction communication increases the likelihood of excellent organizational performance from nearly 5 percent to more than 13 percent. In highly mission-oriented cultures, this same effect is even stronger; an increase from average to high-quality task-oriented communication increases the likelihood of excellent organizational performance from less than 10 percent to more than 23 percent. Similar improvements are also observed for better-quality feedback and upward communication.

This effect is further illustrated in figure 2. The shaded area of this figure highlights the difference in the predicted probability of excellent performance between average task instruction communication, which is represented by the bottom line, and excellent task instruction communication, which is represented by the top line. As the organization's level of mission orientation increases, the shaded area, which might be characterized as the "performance dividend" of improved communication, grows wider. At the highest level of mission orientation, the improvement from average to excellent task communication increases the likelihood of excellent organizational performance by more than 17 percent.

These observed mediator effects are particularly important because they clarify two aspects of the oft-made claim that organizational cultures characterized by open, trusting communication, and effective teamwork are associated with better performance (e.g., Denison and Mishra 1995; Kim 2002; Koene 1996; Timmerman and Scott 2006). First, mission-oriented cultures result in better organizational performance, in part, because employees within those cultures tend to exhibit better-quality communication with their superiors and better-quality communication about individual tasks and work performance. The latter two findings are highly consistent with the claim that employees who are able to initiate (task-oriented)

Table 3 Predicted Probabilities of Organization Performance under Varying Levels of Organization Culture and Communication Quality

Mediator Effects	Average Mission Orientation		High Mission Orientation	
Type of Communication	Average Performance	Excellent Performance	Average Performance	Excellent Performance
Average task instruction	43.66%	4.73%	34.23%	9.58%
High task instruction	28.05%	13.25%	16.53%	23.48%
Average feedback	40.51%	6.20%	29.20%	12.48%
High feedback	31.03%	11.32%	18.80%	21.00%
Average upward	41.49%	5.72%	29.82%	12.04%
High upward	31.60%	10.96%	18.66%	21.04%
Moderator Effects	**Average Rule Orientation**		**High Rule Orientation**	
Type of communication	Average Performance	Excellent Performance	Average Performance	Excellent Performance
Average task instruction	37.93%	8.16%	44.35%	3.99%
High task instruction	41.82%	6.00%	44.00%	2.88%
Average strategic direction	30.12%	12.79%	39.96%	6.63%
High strategic direction	42.60%	3.93%	37.82%	1.89%
Average upward	31.64%	11.89%	40.53%	6.49%
High upward	42.89%	4.56%	40.82%	2.35%

communication (Downs and Conrad 1977) and effectively engage in specific communication behaviors, including listening, questioning, and resolving conflicts directly, tend to be more productive (Laird 1982). A second claim is that communication alters the patterns of interaction among employees, which, in turn, integrates subcultures and mitigates informal communication that nullifies or counteracts the culture espoused by top leadership and in turn detracts from performance (Downs, 1967; Garnett 1992). In fact, these findings suggest that lateral and strategic communication do not account for any of the positive link between mission-oriented culture and performance.

Moderator Effects

The moderator effects for strategic direction and upward communication are also presented in table 3. These estimates show that communication affects the culture–performance relationship in different ways across different levels of rule orientation. Unlike in mission-oriented cultures, in which excellent communication increases the likelihood of excellent performance and decreases the likelihood of average performance, excellent communication in rule-oriented cultures increases the likelihood of average performance and decreases the likelihood of excellent performance. For example, the movement from average to excellent communication increases the likelihood of average performance by 5 percent to 12 percent, but it decreases the likelihood of excellent performance by 2 percent to 10 percent. In a highly rule-oriented culture, this same improvement in communication decreases the likelihood of both average and excellent performance by approximately 1 percent to 3 percent and by 1 percent to 5 percent, respectively. This relationship is further illustrated in figure 3, which presents the changes in predicted probability of average performance across the full range of values for rule-oriented culture.

The bottom line in this figure shows probability at an average level of strategic direction communication quality, and the top line shows the same probability when strategic direction communication is excellent. At an average level of rule orientation, communication improvements increase the likelihood of average performance by as much as 20 percent, but at an above-average or high level of rule orientation, that effect is flipped, and communication instead decreases the likelihood of average performance.

These moderator findings suggest that communication has a qualitatively different effect on the culture–performance link in rule-oriented cultures. Unlike the mediator findings, which suggest that improved communication is one of the particular reasons or processes by which mission orientation improves performance, these results imply that communication

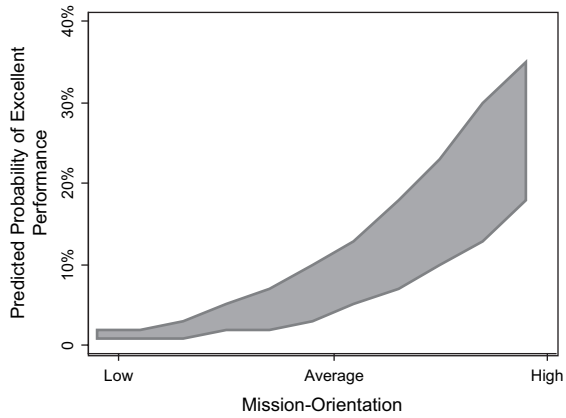

Figure 2 Changes in Predicted Probability of Excellent Organization Performance Across Varying Levels of Mission-Oriented Culture and Quality of Communication about Task Instructions

interacts with other aspects of culture, such as decision making, coordination, motivation, and innovation (Garnett 2005; Goldhaber and Rogers 1979; Lorch 1978), to produce a particular performance profile. Although these findings do not speak to which administrative processes communication interacts with to influence performance, some insights can be gleaned from the fact that significant moderating effects are only observed for strategic direction and upward communication. The former result supports the claim that better communication about strategic direction is more likely to improve the efficiency and effectiveness of policy implementation (Goggin et al. 1990), whereas the latter underscores the claim that high-quality hierarchical communication, which is one of the hallmarks of rule-oriented cultures, is a necessary condition for successful administrative feedback (Kaufman 1973) and decision making (Deutsch 1963; Downs 1967; Janis 1989; Majone 1989). In that sense, better-quality hierarchical communication may enhance the efficiency with which communication occurs in rule-bound cultures. Moreover, each of these processes can be hampered by excessively rule-bound organizational cultures that overshadow or limit communication's positive effects.

Implications for Research and Practice

Before considering implications for research and practice, it should be noted that specific organizations in the real world rarely have a pure type of culture. As a number of authors have suggested (e.g., Quinn and Kimberly 1984; Zammuto and Krakower 1991), organizational culture is typically a mix of different cultural archetypes. To be sure, the relative influence of component cultures does vary, and this variation can have substantial effects on communication processes and organizational performance. Although we recognize this reality, we focus on mission-oriented culture and rule-oriented culture sequentially for

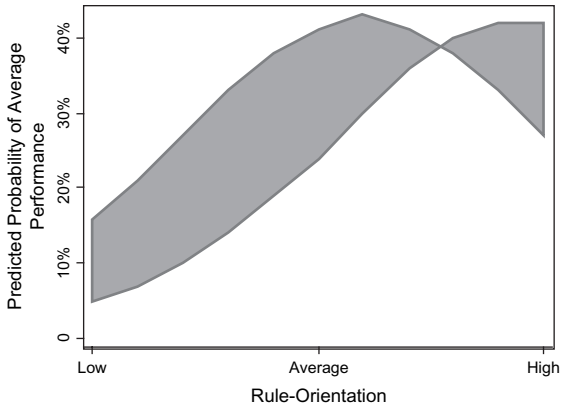

Figure 3 Changes in Predicted Probability of Average Organization Performance Across Varying Levels of Rule-Oriented Culture and Quality of Communication about Strategic Direction

purposes of drawing out implications of this study. From a practical standpoint, the discussion here identifies ways in which culture conditions communication processes and therefore may provide a guide for "molding" organizational culture to meet communication and performance objectives.

For mission-oriented organizational cultures. Our results support the notion that communication does indeed mediate the influence of organizational culture on performance in mission-oriented cultures. Improvements in task-oriented communication, feedback, and upward communication are shown to increase the likelihood of excellent performance by more than 23 percent (for task-oriented communication) in organizations with high mission-oriented cultures. Our research suggests multiple strategies for improving state government performance. In the longer term, state administrators can positively influence performance by guiding their agency's evolution to more mission-oriented culture characterized by measurable goals, innovation, trust, open communication, teamwork, and the like. Such changes in culture are likely to be more fundamental but slower and more difficult to achieve.

An optional strategy for administrators would be to focus on improvements in communication—particularly task-oriented communication, upward communication, and performance feedback—to increase agency performance at whatever level of their agency's present mission orientation. An integrated performance enhancement strategy would entail improving different types of communication combined with working to transform organizational culture. Indeed, the intervening mediator role played by communication in mission-oriented organizations would enable and even facilitate such an integrated strategy.

Further research is needed, however, to explicate the specific communication strategies and practices that best mediate culture and to more fully understand the processes for implementing such strategies and practices. Clarification is specifically needed on why communication about strategic direction had no significant mediating or moderating role in mission-oriented agencies, even though it is arguably the type of communication in our study most directly relevant to mission accomplishment. Our expectation that the moderating effect of communication would also lead to better performance in mission-oriented agencies was not realized. Our results show that this effect on performance comes through communication's mediating role rather than through moderation. This dynamic also deserves further exploration.

For rule-oriented organizational cultures. Communication's positive effect on performance comes in mission-oriented cultures and primarily not in rule-oriented cultures. We had expected that improved communication through its moderating role would ameliorate the restrictive nature of a rule-oriented organizational culture, leading to increases in performance or at least minimizing decreases in performance. That ameliorating effect did occur up to an average level of rule orientation and even facilitated performance improvements up to 20 percent. For above-average and high rule-oriented cultures, improved communication was actually identified with decreased performance. It would appear that communication has a different dynamic in rule-oriented cultures. Communication appears to function positively until the culture is at such a restrictive level that communication is thwarted. Such restrictive, red-tape-dominated cultures and communication appear to be so antithetical that even excellent communication is linked to decreases in performance. It may be the case that in such strongly rule-oriented cultures, communication may be regarded as excellent when it conveys and reinforces the rules rather than promoting performance. Findings reported by Grunig, Grunig, and Dozier (2002) that healthy, symmetrical, two-way communication is less likely to be found in authoritarian, rule-dominated cultures support our explanation. The effects of communication in rule-oriented cultures, however, need further probing to see whether these relationships hold in other settings. If they do, what is the specific explanatory mechanism operating to suppress or distort the effects of communication?

Communication's positive effect on performance comes in mission-oriented cultures and primarily not in rule-oriented cultures.

This study has examined empirically relationships among communication, culture, and performance—all fundamental to improving government's ability to meet increasing challenges. Our research addresses the *performance predicament* by showing that communication does influence performance, as evidenced by the culture–performance relationship. Communication mediates the relationship between mission-oriented culture and performance, and it moderates the relationship between rule-oriented culture and performance. We are convinced that significant breakthroughs in enhancing government performance require a deeper understanding of these fundamental variables and their relationships. Our work points toward some promising directions for both public sector research and practice.

Note

1. A reviewer asked us to note common source bias as a data limitation, given the fact that all study variables are derived from the NASP-II survey questionnaire. This methodological concern is receiving significant attention in public administration scholarship (Moynihan and Pandey 2005, 428). The magnitude of the "method effects" is not as large as is commonly believed, however (Crampton and Wagner 1994; Spector 2006). Put simply, method effects are large enough to be of concern but not large enough to have a bearing on substantive findings. Nonetheless, we note common source bias as a potential study limitation.

Authors' Note: An earlier version of the paper was presented at the Public Management Research Conference, Los Angeles, September 29-October 1, 2005. We thank Brad Wright and the journal's anonymous reviewers for valuable suggestions. Data analyzed in this paper were collected under the auspices of the National Administrative Studies Project (NASP-II), a project supported in part by the Forum for Policy Research and Public Service at Rutgers University and under a grant from The Robert Wood Johnson Foundation to the Center for State Health Policy, also at Rutgers University. Naturally, this support does not necessarily imply an endorsement of analyses and opinions in the paper.

References

Aguinis, Herman. 2004. *Regression Analysis for Categorical Moderators*. New York: Guilford Press.

Alvesson, Mats. 2002. *Understanding Organizational Culture*. Thousand Oaks, CA: Sage Publications.

Arellano, Manuel. 1987. Computing Robust Standard Errors for Within-Groups Estimators. *Oxford Bulletin of Economics and Statistics* 49(4): 431–34.

Ashkanasy, Neal M., Celeste P. M. Wilderom, and Mark Peterson, eds. 2000. *Handbook of Organizational Culture and Climate*. Thousand Oaks, CA: Sage Publications.

Barnard, Chester I. 1938. *The Functions of the Executive*. Cambridge, MA: Harvard University Press.

Baron, Reuben M., and David A. Kenny. 1986. The Mediator-Moderator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology* 51(6): 1173–82.

Berman, Evan M. 1997. Dealing with Cynical Citizens. *Public Administration Review* 57(2): 105–12.

Brant, Rollin. 1990. Assessing Proportionality in the Proportional Odds Model for Ordinal Logistic Regression. *Biometrics* 46(4): 1171–78.

Campbell, C. B. 1993. Does Public Relations Affect the Bottom Line: Study Shows CEOs Think So. *Public Relations Journal* 49(10): 14–17.

Clampitt, Phillip. 1983. Communication and Productivity. PhD diss., University of Kansas.

Clampitt, Phillip, and Cal W. Downs. 1993. Employee Perceptions of the Relationship between Communication and Productivity: A Field Study. *Journal of Business Communication* 30(1): 5–28.

Crampton, Suzanne M., and John A. Wagner. 1994. Percept-Percept Inflation in Microorganizational Research: An Investigation of Prevalence and Effect. *Journal of Applied Psychology* 79(1): 67–76.

Cronbach, Lee J. 1987. Statistical Tests for Moderator Variables: Flaws in Analyses Recently Proposed. *Psychological Bulletin* 102: 414–17.

Deal, Terrence E., and Allen A. Kennedy. 1982. *Corporate Cultures: The Rites and Rituals of Corporate Life*. Reading, MA: Addison-Wesley.

DeMaris, Alfred. 2002. Explained Variance in Logistic Regression: A Monte Carlo Study of Proposed Measures. *Sociological Methods and Research* 31(1): 27–74.

Denison, Daniel R. 1990. *Corporate Culture and Organizational Effectiveness*. New York: Wiley.

Denison, Daniel R., and Aneil K. Mishra. 1995. Toward a Theory of Organizational Culture and Effectiveness. *Organization Science* 6(2): 204–23.

Deutsch, Karl. 1963. *The Nerves of Government: Models of Political Communication and Control*. London: Free Press of Glencoe.

Downs, Anthony. 1967. *Inside Bureaucracy*. Boston: Little, Brown.

Downs, Cal W., and Charles Conrad. 1977. Effective Subordinancy. *Journal of Business Communication* 18: 28–37.

Downs, Cal W., Phillip G. Clampitt, and Angela L. Pfeiffer. 1988. Communication and Organizational Outcomes. In *Handbook of Organizational Communication*, edited by Gerald M. Goldhaber and George A. Barnett, 171–212. Norwood, NJ: Ablex.

Downs, Cal W, K. M. Johnson, and Kevin J. Barge. 1984. Communication Feedback and Task Performance in Organizations: A Review of the Literature. *Organizational Communication Abstracts* 9: 13–47.

Dozier, David M., and William P. Ehling. 1992. Evaluation of Public Relations Programs: What the Literature Tells Us. In *Excellence in Public Relations and Communication Management*, edited by James E. Grunig, 159–84. Hillsdale, NJ: Lawrence Erlbaum, .

Eisenberg, Eric M., and Patricia Riley. 2000. Organizational Culture. In *The New Handbook of Organizational Communication: Advances in Theory, Research, and Methods*, edited by Fredric M. Jablin and Linda L. Putnam, 291–322. Thousand Oaks, CA: Sage Publications.

Falcione, Raymond L., Lyle E. Sussman, and Richard P. Herden. 1987. Communication Climate in Organizations. In *Handbook of Organizational Communication: An Interdisciplinary Perspective*, edited by Fredric M. Jablin, Linda L. Putnam, Karlene H. Roberts, and Lyman L. Porter, 195–228. Beverly Hills, CA: Sage Publications.

Ganzach, Yoav, Ishak Saporta, and Yaacov Weber. 2000. Interaction in Linear vs. Logistic Models: A Substantive Illustration Using the Relationship between Motivation, Ability, and Performance. *Organizational Research Methods* 3(3): 237–53.

Garnett, James L. 1992. *Communicating for Results in Government: A Strategic Approach for Public Managers*. San Francisco: Jossey-Bass.

———. 1997a. Trends and Gaps in the Treatment of Communication in Organization and Management Theory. In *Handbook of Administrative Communication*, edited by James L. Garnett and Alexander Kouzmin, 21–60. New York: Marcel Dekker.

———. 1997b. Administrative Communication: Domains, Threats, and Legitimacy. In *Handbook of Administrative Communication*, edited by James L. Garnett and Alexander Kouzmin, 3–20. New York: Marcel Dekker.

———. 2005. Administrative Communication (or How to Make All the Rest Work): The Concept of Professional Centrality. In *Public Administration: Concepts and Cases*, 8th ed., edited by Richard J. Stillman II, 260–76. Boston: Houghton Mifflin.

Gayle, Barbara Mae, and Raymond W. Preiss. 2002. An Overview of Interactional Processes in Interpersonal Communication. In *Interpersonal Communication Research: Advances through Meta-Analysis*, edited by Mike Allen, Raymond W. Preiss, Barbara Mae Gayle, and Nancy Burrell, 213–26. Mahwah, NJ: Lawrence Erlbaum.

Goldhaber, Gerald M., and David P. Rogers. 1979. *Auditing Organizational Communication Systems: The ICA Communication Audit*. Dubuque, IA: Kendall/Hunt.

Golembiewski, Robert T., and Robert F. Munzenrider. 1988. *Phases of Burnout: Developments in Concepts and Applications*. New York: Praeger.

Gordon, George G., and Nancy DiTomaso. 1992. Predicting Corporate Performance from Organizational Culture. *Journal of Management Studies* 29(6): 783–98.

Goggin, Malcolm L, Ann O'M. Bowman, James P.. Lester, and Laurence J. O'Toole, Jr. 1990. *Implementation Theory and Practice: Toward A Third Generation*. Glenview, IL: Scott, Foresman/Little, Brown Higher Education.

Graber, Doris A. 2002. *The Power of Communication: Managing Information in Public Organizations*. Washington, DC: CQ Press.

Greenbaum, Howard H., Susan, A. Hellweg, and Raymond L. Falcione. 1988. Organizational Communication Evaluation: An Overview, 1950–1981. In *Handbook of Organizational Communication*, edited by Gerald M. Goldhaber and George A. Barnett, 275–317. Norwood, NJ: Ablex.

Grunig, Larissa A., James E. Grunig, and David M. Dozier. 2002. *Excellent Public Relations and Effective Organizations: A Study of Communication Management in Three Countries*. Mahwah, NJ: Lawrence Erlbaum.

Gulick, Luther H. 1937. Notes on the Theory of Organization. In *Papers on the Science of Administration*, edited by Luther H. Gulick and Lyndall Urwick, 191–95. New York: Institute of Public Administration.

Guy, Mary E. 1992. Productive Work Environments. In *Public Productivity Handbook*, edited by Marc Holzer, 321–33. New York: Marcel Dekker.

Hood, Christopher. 1983. The Tools of Government. London: Macmillan.

Huseman, R. C., E. R. Alexander III, and R. W. Driver. 1980. Planning for Organizational Change: The Role of Communication. *Managerial Planning* 28(6): 32–36.

Jablin, Fredric M., and Patricia M. Sias. 2000. Communication Competence. In *The New Handbook of Organizational Communication: Advances in Theory, Research, and Methods*, edited by Fredric M. Jablin and Linda L. Putnam, 819–64. Thousand Oaks, CA: Sage Publications.

Jaccard, James. 2001. *Interaction Effects in Logistic Regression*. Thousand Oaks, CA: Sage Publications.

Janis, Irving L. 1989. *Crucial Decisions: Leadership in Policy Making and Crisis Management*. New York: Free Press.

Kaufman, Herbert, with Michael Couzens. 1973. *Administrative Feedback: Monitoring Subordinates' Behavior*. Washington, DC: Brookings Institution.

Kilduff, Martin and Kevin G. Corley. 2000. Organizational Culture from a Network Perspective. In *Handbook of Organizational Culture and Climate*, edited by Neal M. Ashkanasy, Celeste P. M. Wilderom, and Mark Peterson, 211–24. Thousand Oaks, CA: Sage Publications.

Kim, J. S. 1975. Effect of Feedback on Performance and Job Satisfaction in an Organizational Setting. PhD diss., Michigan State University.

Kim, Yungwook. 2002. Measuring the Bottom-Line Impact of Corporate Public Relations. *Journalism and Mass Communication Quarterly* 77(2): 273–91.

Koene, B. A. S. 1996. Organizational Culture, Leadership, and Performance in Context: Trust and Rationality in Organizations. PhD diss., Rijksuniversiteit Limburg.

Kotter, John P., and James L. Heskett. 1992. *Corporate Culture and Performance*. New York: Free Press.

Laird, P. A. 1982. Coordinated Management of Meaning: An Empirical Investigation of Communication and Productive Action in Two Organizations. PhD diss., University of Kansas.

Lewis, M. L., H. W. Cummings, and L. W. Long. 1982. Communication Activity as a Predictor of the Fit between Worker Motivation and Worker Productivity. In *Communication Yearbook 6*, edited by Michael Burgoon. Beverly Hills, CA: Sage Publications.

Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables* Thousand Oaks, CA: Sage Publications.

Lorch, Robert S. 1978. *Public Administration*. St. Paul, MN: West.

Lull, Paul E., Frank E. Funk, and Darrell T. Piersol. 1955. What Communication Means to the Corporation President. *Advanced Management* 20: 17–20.

Majone, Giandomenico. 1989. *Evidence, Argument, and Persuasion in the Policy Process*. New Haven, CT: Yale University Press.

Mayo, Elton. 1933. *The Human Problems of Industrial Civilization*. New York: Macmillan.

Moulton, Brent R. 1986. Random Group Effects and the Precision of Regression Estimates. *Journal of Econometrics* 32(3): 385–97.

Moynihan, Donald P., and Sanjay K. Pandey. 2006. Testing How Management Matters in an Era of Government by Performance Management. *Journal of Public Administration Research and Theory* 15(3): 421–39.

Nufrio, Philip M. 2001. *Changing Organizational Culture: A Study of the National Government*. Lanham, MD: University Press of America.

Odiorne, George S. 1954. An Application of the Communication Audit. *Personnel Psychology* 7(2): 235–43.

O'Reilly, Charles A., III, and John C. Anderson. 1980. Trust and the Communication of Job Performance and Satisfaction. *Human Communication Research* 6(4): 290–98.

O'Reilly, Charles A., III, and Karlene H. Roberts. 1977. Communication and Performance in Organizations. Paper presented at the Annual Meeting of the Academy of Management, Orlando, FL.

Osborne, David, and Ted Gaebler. 1992. *Reinventing Government: How the Entrepreneurial Spirit Is Transforming the Public Sector*. Reading, MA: Addison-Wesley.

Pandey, Sanjay K., and James L. Garnett. 2006. Exploring Public Sector Communication Performance: Testing A Model And Drawing Implications. *Public Administration Review* 66(1): 38–52.

Pedhazur, Elazar, and Liora Pedhazur Schmelkin. 1991. *Measurement, Design, and Analysis: An Integrated Approach*. Hillsdale, NJ: Lawrence Erlbaum.

Pincus, J. David. 1986. Communication Satisfaction, Job Satisfaction, and Job Performance. *Human Communication Research* 12(3): 395–419.

Quinn, Robert E., and John R. Kimberly. 1984. Paradox, Planning, and Perseverance: Guidelines for Managerial Practice. In *Managing Organizational Translations*, edited by John R. Kimberly and Robert E. Quinn, 295–313. Homewood, IL: Dow Jones-Irwin.

Rainey, Hal G. 1983. Private Agencies and Private Firms: Incentive Structures, Goals and Individual Roles. *Administration & Society* 15(2): 207–42.

Roberts, Karlene H., and Charles A. O'Reilly III. 1979. Some Correlations of Communication Roles in Organizations. *Academy of Management Journal* 22(1): 42–57.

Schein, Edgar H. 1992. *Organizational Culture and Leadership*, 2nd ed. San Francisco: Jossey-Bass.

Schuler, R. S., and L. F. Blank. 1976. Relationships among Types of Communication, Organizational Level, and Employee Satisfaction and Performance. *IEEE Transactions on Engineering Management* 23: 124–29.

Sheeran, Paschal, and Charles Abraham. 2003. Mediator of Moderators: Temporal Stability on Intention and the Intention-Behavior Relation. *Personality and Social Psychology Bulletin* 29(2): 205–15.

Simon, Herbert A., Donald W. Smithburg, and Victor A. Thompson. 1950. *Public Administration*. New York: Alfred A. Knopf.

Spector, Paul E. 2006. Method Variance in Organizational Research: Truth or Urban Legend? *Organizational Research Methods* 9(2): 221–32.

Taylor, Frederick Winslow. 1911. *Principles of Scientific Management*. New York: Harper & Brothers.

Timmerman, C. Erik, and Craig R. Scott. 2006. Virtual Working: Communicative and Structural Predictors of Media Use and Key Outcomes in Virtual Work Teams. *Communication Monographs* 73(1): 108–36.

Tompkins, Phillip K. 1977. Management Qua Communication in Rocket Research and Development. *Communication Monographs* 44(1): 1–26.

Tubbs, S., and T. Hain. 1979. Managerial Communication and Its Relationship to Total Organizational Effectiveness. Paper presented at the Academy of Management National Conference, Kansas City.

Warwick, Donald P. 1975. *A Theory of Public Bureaucracy: Politics, Personality, and Organization in the State Department*. Cambridge, MA: Harvard University Press.

Wilderom, Celeste P. M, Ursula Glunk, and Ralf Maslowski. 2000. Organizational Culture as a Predictor of Organizational Performance. In *Handbook of Organizational Culture and Climate*, edited by Neal M. Ashkanasy, Celeste P. M. Wilderom, and Mark Peterson, 193–209. Thousand Oaks, CA: Sage Publications.

Zammuto, Raymond F., and Jack Y. Krakower. 1991. Quantitative and Qualitative Studies of Organizational Culture. *Research in Organizational Change and Development* 5: 83–114.