

Risk Culture in Public and Private Organizations

Barry Bozeman, Georgia Tech
Gordon Kingsley, Georgia Tech

Among the many assumptions about public management widely embraced but rarely tested is the notion that public sector managers are more averse to risk than managers in the private sector. Taking a multivariate measure of "risk culture," this study seeks to identify and to explain differences between public and private organizations. The concept of risk culture pertains to managers' perceptions that their co-workers and superiors take risks and promote risk-taking. Some of the factors examined as possible determinants of risk culture include political control, nature of reward systems, levels of formalization and red tape, bureaucratic structures, and goal ambiguity. Using questionnaire data from a variety of public and private organizations, we find that there is considerable variance in organizations' risk culture but the sector of an organization tells us little about its risk culture. Risk culture is, however, well accounted for by the various explanatory factors employed here. Particularly, a riskier culture is positively related to the willingness of top managers to trust employees and to the clarity of organizations' missions. Organizations with more red tape, weak links between promotion and performance, and high involvement with elected officials tend to have a less risky culture.

Compared to private managers, are public managers more afraid to take risks? If so, why? These questions have permeated much of the recent discussion of bureaucratic reform, especially the work of the National Performance Review (Gore, 1993). The familiar view is that public sector managers are risk-averse, that the risk aversion results in managerial ineffectiveness and that incentives should be provided to embolden public managers. Interestingly, while most government reformers take the risk aversion of public managers as both axiomatic and as a malady that must be addressed, the gurus of "re-invention," Gaebler and Osborne, are not convinced of the connection between risk-taking and effective public management. Osborne and Gaebler (1993: p. xx) argue that the need to be more entrepreneurial should not be interpreted as taking risks:

Many people also assume that entrepreneurs are risk-takers. They shy away from the notion of entrepreneurial government because, after all, who wants bureaucrats taking risks with their hard earned tax dollars? But, as careful studies demonstrate, entrepreneurs do not seek risks, they seek opportunities.

Other studies of reform accept that risk-taking is a part of public entrepreneurship but argue that this can be tempered. For example, Bellone and Goerl (1992) suggest that public entrepreneurial behavior should be accompanied by a "civic-regarding" ethic that encourages citizen participation. But the pervasive view is that risk aversion is a problem and that it impedes entrepreneurial behavior.

Not only are the supposed deleterious effects of risk aversion not proved, the empirical claim that public sector managers are more risk averse than private managers has not been conclusively determined. Empirical research on risk-taking has grown markedly in the past two decades or so (e.g. Jackson and Dutton, 1988; MacCrimmon and Wehrung, 1985, 1990; Osborne and Jackson, 1988; Singh, 1986; Sitkin and Weingart, 1995), but none of the best known empirical studies differentiate systematically between public and private organizations.

Research on risk-taking by private sector managers defines risk as the exposure to the chance of loss from one's actions or decisions (Fischhoff, Watson and Hope, 1984; Hanson, 1989; MacCrimmon and Wehrung, 1986; Yates and Stone, 1992). Several components of risk-related behaviors have been empirically investigated by psychologists and managers concerned with business organizations. Some of these topics include risk perception and propensity (Sitkin and Weingart, 1995; Bettman, 1973), risk and decision-making (Figenbaum and Thomas, 1988; Janis, 1977; Libby and Fishburn, 1977), and personal characteristics of risk-takers (McClelland, 1961; Jackson and Dutton, 1988; Vlek and Stallen, 1980; MacCrimmon and Wehrung, 1990).

Yet if our knowledge of risk-taking and risk perceptions has grown dramatically, our insights into the supposed risk aversion of public organizations and their managers is more an article of faith than a subject of research. This is not to say, of course, that there are no good theoretical reasons to expect public managers to be more risk averse. In the first place, economists have long argued that the nature of proprietary property rights (and the public sector's lack of them) provides incentives for private sector risk-taking not present in the public sector. Second, the "life in a fishbowl" characteristics of high level public sector jobs means that risk-taking behavior of public managers may be subject to greater scrutiny. Third, public organizations have been demonstrated, in a number of diverse empirical studies (e.g. Rainey, Pandey and Bozeman, 1995; Bozeman, Reed and Scott, 1989; Pandey and Bretschneider, 1997; Pandey, 1995; Buchanan, 1971; Crow and Emmert, 1990) to have higher degrees of formalism and "red tape" and one might well expect this environment to undermine risk-taking. These are just a few of the reasons one might expect risk aversion in the public sector, but none of these expectations constitutes proof.

The paucity of research on public managers' risk-taking is somewhat surprising in light of the growth of literature in public management and, in particular, the recent interest in empirical studies comparing public and private management. Nor has the burgeoning literature on risk assessment made much headway on this issue, despite the great interest in the nature of risk that public managers face, ranging from implementation of hazardous waste disposal policies to the safety of hamburgers to financial investments in Orange County, California.

One might expect that the current debate concerning public entrepreneurship would raise the issue of risk-taking to a central place in the research and policy literature. Reform proposals that encourage managers to replace regulations with incentives, delegate responsibility and authority, privatize, downsize, and base success on customer satisfaction certainly have the potential to expose organizations to losses and hence managers to risk-taking. But as the discussion has emerged, empirical research has not followed.

The effort to distinguish entrepreneurship from risk-taking reflects, in part, the negative connotation of public bureaucracy in the United States. Indeed, much of the criticism of reform proposals is based upon concerns that unleashing public managers with entrepreneurial values would damage important democratic (Terry, 1993), legal and structural controls upon managerial behavior (Goodsell, 1993; Moe, 1994).

Despite this reluctance to engage the issue of risk-taking, it is a common aspect of the work life of public managers. While we are

uncomfortable with the idea of public managers engaging in risk-taking, we are less troubled by the idea of public managers tackling issues that involve a great deal of risk. This is particularly true of areas where our values hold that the marketplace cannot or should not be the sole arbiter of risk (for example, the issues of defense, public health and safety, research and development, and education). An interesting question is whether we want managers dealing with these types of issues to emulate the entrepreneurial style of private sector managers.

Given the importance of these issues it would be useful to have a better understanding of risk-taking by public and private managers. This research seeks an enhanced understanding of public managers' risk-taking, especially in comparison to private managers. There are several dimensions to this issue and we explore only a few. Specifically, we are concerned with managers' *perceptions* that individuals in their organization are risk averse. We do not examine specific instances of risk-taking or objective indicators of risk. We contend that both the perceptions and the reality of risk-taking are important, but our concern is only with perceptions. Why are perceptions important? In the first place, it seems plausible that one's perception of risk-taking in one's organization is related to the propensity to take risks. If one believes that others take risks and, especially, that one's superiors take risks, then, in all likelihood, risk-taking will be perceived as legitimate and less likely to meet with disapproval. A perception of a risk tolerant organization culture is itself important.

Our study, based on questionnaire responses from 365 middle-level and top-level managers in a wide variety of public and private organizations, examines differences in the "risk culture" of public and private organizations. We define "risk culture" in terms of the perception that co-workers and top managers take risks and promote risk-taking. Our core hypothesis is that the risk culture will, indeed, differ between public and private sector and, specifically, that the conventional wisdom, and such research as exists (e.g. Bellante and Link, 1981) will be corroborated. We examine several hypotheses about differences in risk cultures of organizations, each related to more general propositions about differences between public and private organizations. These include hypotheses pertaining to: (1) motivation and expectations that good performance will be rewarded, (2) level of external government control, (3) level of internal control, (4) formalization and red tape, (5) goal clarity, (6) and the centralization of decision-making. The following section of the paper presents each of the hypotheses and examines literature relevant to the respective explanations of risk-taking.

Risk-Taking and Organizations' "Risk Culture"

Two concurrent developments in organization research and theory are an interest in the concept of organization culture (e.g. Schein, 1985) and organizations' propensity to take risk (e.g. MacCrimmon and Wehrung, 1986). While there are many streams in these respective research topics that do not converge, the intersection is considerable. In particular, Deal and Kennedy's (1982) typology of organizational cultures takes organizations' risk-taking propensity as a starting point. Their notion of a "process culture" depicts a highly formal, bureaucratized organization that is too

entangled in its procedures, internal controls and processes to sustain risk. Several other scholars (Hofstede, 1980; Bowman, 1980; Baird and Thomas, 1985), including some dealing with public organizations (Backoff and Nutt, 1988) develop theories or typologies of organizational culture or strategy in which risk is among the most significant elements.

In this study, we employ the concept "risk culture" as a tool to understand possible differences between public and private organizations and their environments. We define risk culture as the organization's propensity to take risks as *perceived by the managers in the organization*. We contend that it is the perception that creates the culture, even more than any tangible and documented set of decisions or actions taken by organizational actors, because it is the perceptions that provide the cues to acceptable behavior. As Sitkin and Pablo (1992: 21) note, "Organizational members come to view their world through the lens of their organization's culture, which can distort their perceptions of situational risks, sometimes by overemphasizing risks or underemphasizing risk." Top managers and organizational leaders play a particularly important role in influencing perceptions that risk is or is not legitimate and "even subtle cues from leaders about their preferences regarding risk can powerfully affect the risk perceptions of other decision makers" (Sitkin and Pablo, 1992: 22). Thus, if we have knowledge of perceptions of top managers' risk behavior we have insight into perceptions of acceptable behavior concerning risk. It is these perceptions, taken in aggregate, we conceptualize as "risk culture."

Sector Differences in Risk-Taking

Two types of arguments have been advanced that suggest there should be basic differences between the public and private sector with regard to risk-taking. One argument is that the economic character of public sector work is inherently different from private sector work. The alternative explanation focuses on the worker rather than the work and suggests there are selection effects resulting in systematic differences between public and private sector workers.

Property Rights Theory and Risk-Taking Behavior

Property rights theorists have long claimed that there are basic differences in the behavior of public and private managers stemming from differences in the ownership of organizations (Alchian and Demsetz, 1972 and 1973). Since ownership is transferable in the private sector, the marketplace can value organizational activities. Correspondingly, public sector organizations generally have no direct market values for goods and services, resulting in incentives for shirking. Davies (1981) found evidence that supports property rights theorists and extends the argument by implying that one consequence is greater risk aversion by public managers.

By avoiding errors of commission in contrast to errors of omission, the manager avoids a visible "disaster" and the personal tragedy of transfer, demotion, or outright dismissal and assumes for himself a longer tenure in office and, consequently, a higher lifetime income (Davies, 1981, p. 115).

Selection Effects and Risk-Taking

A more common argument in the public management literature is that the self-selection into public sector employment is an indication of aversion to risk. There is some evidence that supports this contention. Bellante and Link (1981) found that individuals with a higher degree of risk aversion in their personal lives (i.e. with regard to insuring personal automobiles, use of seat belts, extent of medical coverage, smoking habits and drinking habits) were more likely to seek employment in the public sector.

MacCrimmon and Wehrung (1986) have demonstrated that personal risk-taking behavior is weakly correlated with private sector managers' attitudes about their organizations' propensity to take risks. This finding does not preclude the possibility of a link between public sector managers' personal risk behaviors and their organizations' risk-taking.

"Publicness," External Control, and Risk-Taking

Bozeman (1989), among others, has advanced the notion that "publicness," defined as the degree of external government constraint affecting an organization, is sometimes a more important explanation of differences in organizations' and organization members' behavior than is the actual legal status (public vs. private) of the organization. Several empirical studies (e.g. Bozeman and Bretschneider, 1994) have tested this theory. Results indicate that sector is in some cases the more important explanatory variable, in other cases publicness fares better. Sector tends to provide a better explanation in issues pertaining to personnel management, whereas publicness provides a superior explanation for agenda-setting and decision-making issues.

For present purposes, the question can be framed as follows: are differences in public and private managers' perceptions of risk-taking better explained by the *sector* of their organization or by the *degree of external governmental control* (independent of sector)? Thus, it is plausible that, for example, managers in *private* organizations, which have high degrees of external government control (such as a high level of dependence on government for financial resources), will exhibit risk perceptions different from those in organizations with low degrees of external government control.

Hypotheses

In this section we provide several hypotheses seeking to explain differences in organizations' risk cultures and managers' perceptions of risk-taking in their organizations. Many of these hypotheses are related, directly or indirectly, to differences between public and private sector organizations.

Effects of Sector and Publicness on Risk Culture

Given the pattern of findings of previous studies of risk-taking (e.g. Bellante and Link, 1981) and previous empirical studies of the effects of publicness (e.g. Bozeman and Bretschneider, 1994), we expect sector's explanatory power to be greater than publicness. Thus, we hypothesize:

Hypothesis 1.0: Managers in public sector organizations will tend

to perceive lesser risk-taking than managers in private organizations; the degree of external control by government (publicness) will not mitigate this relationship.

Internal Control and Risk Culture

Several studies have found that public sector organizations tend to have more emphasis on controlling employees and going through proper channels. Pugh, Hickson and Hinings (1969) reported that compared to private organizations, government organizations have a greater concentration of authority at the top, especially with respect to personnel management activities. Based on case-study evidence, Warwick (1975) argued that public sector organizations tend to emphasize hierarchy and control. Meyer (1979) concluded from his study of state bureaucracies that government organizations, due to legal and political pressures, have no alternative to rigid management and personnel systems. Following a tradition reaching back to Merton's (1940) early work, Bozeman and Rainey (1998) found evidence supporting a "bureaucratic personality" interpretation of internal control. Public sector managers reported a greater desire (than private managers) for increased rules and management control, apart from any objective differences in the degree of control already in place.

Whatever the source, higher levels of internal control and more intense supervision might well be associated with organizations' risk culture. Risk-taking requires some considerable level of discretion and an ability to approach decisions unencumbered by rigid structures and inflexible procedures. Thus, we hypothesize:

Hypothesis 2.0: Managers in organizations with higher degrees of internal control will tend to perceive lesser risk-taking than managers in organizations with lower levels of internal control.

Formalization, Red Tape, and Risk Culture

The internal control argument regarding organizations' risk culture is closely related to arguments regarding the influence of formalization and red tape. However, the concepts are not identical and some studies (e.g. Bozeman and Loveless, 1987) have shown that red tape and strong internal controls do not go hand-in-hand. A major issue, of course, is the particular constructs employed for these sometimes-ambiguous concepts. Moreover, findings for *perceptions* of red tape and formalization often are quite different than those for objective indicators (such as the number of sign-offs required for decisions or the number of weeks required for core tasks).

By formalization, we mean "the extent to which rules, procedures, instructions and communications are written" (Pugh, et al., 1968: 75). By our usage, "red tape," unlike formalization is not neutral. Instead, red tape refers to rules, regulations, and procedures that remain in force and entail a compliance burden for the organization but serve no legitimate function for the organization (Bozeman, 1993). We expect that both formalization and red tape would have negative effects on organizations' risk culture. To some extent, these effects can be interpreted as an outgrowth of organizational control efforts simply because much red tape reflects an effort to exert control (Buchanan, 1975). But red tape can result from many others sources, including organizational drift, poor predictions about the effects of rules, and a lack of clarity about juris-

dictional authority (Bozeman, 1993). Thus, we hypothesize:

Hypothesis 3.0: Managers in organizations with higher degrees of red tape and formalization will tend to perceive less risk-taking than managers in organizations with lower levels of red tape and formalization (Pandey, 1995; Bozeman, et al., 1992).

Expectancy Theory and Risk Culture

In motivation theory, a number of studies (e.g. Vroom, 1964; Perry and Porter, 1982) have supported the view that an employee's *expectation* that good performance will be rewarded (and bad performance punished) is a key to understanding the behavioral consequences of motivation. One might expect risk-taking behavior to be one of many organizational behaviors affected by employees' reward expectations (Evans, 1986) and, related, employees' *perceptions* of risk-taking may be even more closely tied to reward expectations. Why take risks if there is an expectation that good performance will not be rewarded, especially if there is, instead, an expectation that "no good deed will go unpunished?"

There is good reason to believe public and private employees differ substantially in reward expectancy. Several surveys of government employees have shown consistently low expectation of reward for good performance (U.S. Office of Personnel Management, 1979; 1980; 1983). In one study focusing on government organizations, Baker and colleagues (1988) argue that the valence of promotion is not matched by a similar willingness to sacrifice in order to get the promotion. In other words, there is no overall expectation that a sacrifice will yield a promotion. Recently, Rainey and colleagues (1995) found lower expectation of reward among public managers compared to private managers and found that patterns of expectancy were related to patterns of rule enforcement and personnel process red tape. Thus, we hypothesize

Hypothesis 4.0: Managers who have low expectation that good performance will be rewarded will tend to perceive lesser risk-taking than managers who expect that good performance will be rewarded.

Goal Clarity and Risk Culture

One of the most widely cited differences between public and private organizations is the clarity of goals in the respective sectors. In particular, it is alleged, public sector organizations have more complexity and less goal clarity and this, in turn, explains a wide variety of managerial shortcomings. Perhaps the most highly developed theory on this topic is Thompson's (1967) which claims that there is a vicious cycle of complexity, lack of clear goals, managerial insecurity and poor performance. He identified a number of bureaucratic pathologies that seemed to flow from insecurity and lack of goal clarity.

The chief problem with the goal clarity explanation of organization behavior is that the supposed distinction between public and private organizations does not seem to exist, at least not as operationalized in the few empirical studies on the topic (Rainey, 1983; Lan and Rainey, 1992; Rainey, Pandey and Bozeman, 1995). There *is* a strong relationship between managers' self-reported goal clarity and a variety of organization behaviors, including decision-making style and approaches to managerial control, *but* these effects are not mediated by sector. Thus,

Hypothesis 5.0: Managers who report low levels of goal clarity will tend to perceive lesser risk-taking than those who report higher levels of goal clarity. This relationship is not mitigated by the sector of managers' organizations.

Data Collection and Methods

The data for this study are drawn from the National Administrative Studies Project (NASP) surveys.¹ We examine a stratified sample of public and private sector organizations from the Syracuse and Albany metropolitan areas in New York. The public organizations are state agencies in Albany, branches of state government agencies in Syracuse, and city and county government organizations in Syracuse. The ranges of functions carried out by the organizations include education, law enforcement, health services, welfare, economic development, and environmental protection. The sample of private sector organizations is composed of manufacturing organizations (metalworking, plastics, ceramics, chemicals, electrical, and electronic products).² Organizations having less than ten employees are excluded from the sample frame.

The respondents are top and mid-level managers.³ A two-stage sampling procedure was used. First, a sample of top-level managers (chief executive officers or equivalent) was drawn. Second, one to three mid-level managers were sampled from the same organization depending upon the size of the organization. From a sample of 921 managers there were 368 responses for a response rate of 40 percent.⁴ Wave analysis was used to test for non-response bias.⁵ The results indicate that later and early respondents are not significantly different from one another.

Managers were asked to react to statements regarding their organization and the administrative procedures with which they work. Likert scales of varying range (from 4 to 10 points) were used in the questionnaire. To reduce instrument bias, choices associated with strong agreement were periodically reversed in the questionnaire.

The chief dependent variable for this study, TOTAL RISK, is an additive scale from two questionnaire items. Respondents were asked to react to the following statements indicating their level of agreement using a 10 point scale (10=strong agreement; 1=strong disagreement):

"Most employees in this organization are not afraid to take risks."

"Top management in this organization is not afraid to take risks."

An additive scale is among the simplest forms of index but an appropriate one in this case. While a z-score based index was contemplated, the means and variance for the respective items were close enough that no such transformation was required. The two items displayed attributes attractive in an index, including high intercorrelation, representation of an underlying dimension (i.e. two different elements of perceptions of risk culture) and desirable properties with respect to the distribution of the observations.

The data analysis is conducted in two stages. First, a series of models is constructed to test the individual hypotheses. Five models are tested at this stage of the analysis: 1) a sector and publicness model; 2) an internal control model; 3) a red tape and formalism model; 4) an expectancy model; and 5) a goal clarity model. The initial tests focus only on variables that the corresponding theory suggests as relevant. The second stage of the analysis takes the initial models' most significant explanatory variables and tests an

aggregate "best explanatory" model. Ordinary least squares is used to regress perceptions of risk culture, as measured in TOTAL RISK, against each of the tests of hypothesis and in the aggregate model.

Results

In beginning the analysis, a first issue is the extent to which public and private managers have different risk cultures, as reflected in their perceptions about risk-taking in their organizations. The variable TOTAL RISK ranges from 2 to 20, with a larger score indicating a perception of great risk-taking behavior. While the private sector respondents tend to view their organizations as more risk-oriented, the differences are neither striking nor statistically significant (private sector mean = 13.0, public sector mean = 12.4).

Sector, "Publicness," and Risk Culture.

Hypothesis 1.0 asserts a relationship between sector and risk culture but with no expectation that "publicness," or the degree of external political authority attenuates the relationship. Table 1 is a regression model where the dependent variable TOTAL RISK is regressed first on SECTOR and two measures of external influence that affect both government and business organizations.⁶ The first variable POLITICAL CONTROL is based on responses to the item "Elected government officials routinely exert strong influence on this organization."⁷ The variable GOVERNMENT CONTROL is based on responses to the item "This organization is subject to extensive external control by government organizations."

The results from Table 1 do not support the hypothesis. In the first place, sector is of modest importance in explaining risk culture, but one of the "publicness" variables has a strong influence. Interestingly, the *source* of external political influence seems to matter a great deal. Whereas GOVERNMENT CONTROL is not a significant predictor of risk culture, POLITICAL CONTROL is strongly related, indicating that the influence of elected

Table 1
Sector and Publicness Model

Dependent Variable: TOTAL RISK					
Independent Variables:					
1. SECTOR					1=Public sector, 0=Private sector
2. GOVERNMENT CONTROL					external control by government org.
3. POLITICAL CONTROL					influence by elected govt. officials
Multiple R		.28837			
R ²		.08315			
Adjusted R ²		.07530			
Standard Error		3.87528			
Analysis of Variance:					
	DF	Sum of Squares		Mean Square	
Regression	3	476.72237		158.90746	
Residual	350	5256.21548		15.01776	
F = 10.58130	Signif F = .0000				
Variable	B	SE B	Beta	T	Sig T
POLITICAL CONTROL	-.329735	.083155	-.282766	-3.965	.0001
GOVERNMENT CONTROL	.059983	.076609	.046340	.783	.4342
SECTOR	-.321434	.518102	-.039885	-.620	.5354
Constant	13.748459	.515024		26.695	.0000

political officials plays a major role in risk culture. Specifically, if there is strong influence by elected political officials, it has a dampening effect on risk-taking (as reflected in perceptions of risk behavior). This finding is *independent* of sector, indicating that private organizations are just as subject as public ones to the effects of political officials' influence.

Internal Control and Risk Culture

In order to ascertain the effects of internal organizational control on risk culture, four variables were examined. TOP TRUST reflects responses to the item "Top management displays a high level of trust in this organization's employees." The item "How things are done here is left pretty much to the person doing the work" is labeled AUTONOMY. "People here are allowed to do almost as they please" is labeled ALLOWED. Finally, CHANNELS measures responses to "Going through proper channels is constantly stressed."

Table 2 indicates that the internal control hypothesis receives some support, ($R^2 = .376$), chiefly due to the importance of TOP TRUST ($p = .000$). Apparently, it is not internal control in general that affects risk culture but, specifically, a perception of trust. Such factors as allowing wide ranging freedom do not seem to be nearly so important.

Formalization, "Red Tape," and Risk Culture

The third hypothesis contends that organizations with high degrees of formalization and red tape will tend to have risk cultures that eschew risk. Formalization and red tape are measured in a number of ways. One variable, TOTAL TIME examines the number of weeks taken by organizations to perform core managerial processes including hiring, firing, buying equipment, reorganizing, starting a new project and contracting out.⁸ RULE WATCH is

comprised of responses to the item "People here feel as though they are constantly being watched to see they obey all the rules." The item PROCEDURES is comprised of responses to "Whatever situation arises, we have procedures to follow in dealing with it." The item "In this organization, conformance to rules and procedures is very important," has the variable label RULE CONFORM. Finally, REDTAPE reflects responses to the item "If red tape is defined as burdensome administrative rules and procedures that have negative effects on the organization's effectiveness, how would you assess the level of red tape in your organization?"⁹

The red tape and formalization hypothesis receives strong support, as indicated in Table 3. The variables in the model explain a considerable degree of variance in risk culture ($R^2 = .236$). Only one variable, TOTAL TIME, is not significant at the .05 level of significance. Among the other variables in the model, only RULE CONFORM is not significant at the .000 level. In general, red tape and formalization appears to have a strong bearing on organizations' risk cultures.

Expectancy Theory and Risk Culture

The expectancy hypothesis posits that managers will perceive lesser risk-taking when there is a low expectation that good performance will be rewarded. Four variables are used to assess the link between rewards and risk culture.¹⁰ The variable PROMOTE/PERFORM assesses responses to "Because of the rules here, promotions are based mainly on performance." PROMOTE/RULES captures responses to "The rules governing promotion make it hard for a good manager to move up faster than a poor one." PAY/RULE measures responses to "Due to rules, pay raises for managers are based more on longevity than on performance." The variable PROMOTE/QUALITY assessed agreement

Table 2
Internal Control Model

Dependent Variable: TOTAL RISK					
Independent Variables:					
1. TOP TRUST					top managers trust in employees
2. CHANNELS					stress to go through proper channel
3. ALLOWED					allowed to do almost as people please
4. AUTONOMY					left to person doing work
Multiple R	.61318				
R ²	.37598				
Adjusted R ²	.36889				
Standard Error	3.20248				
Analysis of Variance:					
	DF	Sum of Squares	Mean Square		
Regression	4	2175.14684	543.78671		
Residual	352	3610.06884	10.25588		
F =	53.02196	Sig F =	.0000		
Variable	B	SE B	Beta	T	Sig T
ALLOWED	.443166	.283657	.084068	1.562	.1191
CHANNELS	-.300569	.211629	-.063292	-1.420	.1564
AUTONOMY	-.191350	.237428	-.043560	-.806	.4208
TOP TRUST	.918739	.065568	.597963	14.012	.0000
Constant	5.960750	.930627		6.405	.0000

Table 3
Formalism and Red Tape Model

Dependent Variable: TOTAL RISK					
Independent Variables:					
1. TOTAL TIME					number of weeks to perform core tasks
2. PROCEDURES					procedures to deal with all situation
3. RULE WATCH					watched to obey rule
4. RULE CONFORM					conformance to rule & procedure
5. REDTAPE					the level of red tape in organization
Multiple R	.48641				
R ²	.23660				
Adjusted R ²	.22605				
Standard Error	3.50990				
Analysis of Variance:					
	DF	Sum of Squares	Mean Square		
Regression	5	1382.14847	276.42969		
Residual	362	4459.60978	12.31936		
F =	22.43863	Sig F =	.0000		
Variable	B	SE B	Beta	T	Sig T
PROCEDURES	.789760	.232490	.163893	3.397	.0008
REDTAPE	-.607914	.078041	-.390011	-7.790	.0000
RULE CONFORM	.524505	.233673	.111534	2.245	.0254
RULE WATCH	-.886608	.241023	-.183110	-3.679	.0003
TOTAL TIME	.005620	.004040	.065532	1.391	.1650
Constant	13.016638	.839671		15.502	.0000

with the following statement: "Producing a low quality of work decreases my chances for promotion."

The expectancy hypothesis receives considerable support ($R^2 = .192$), as indicated in Table 4. The most significant variable is PROMOTE/PERFORM ($p = .000$). According to this finding, managers who agree that organizational rules encourage promotion based on performance are more likely to perceive their organizations as having risk-oriented cultures. The variable PROMOTE/RULES ($p = .036$) is significantly and negatively associated with TOTAL RISK. PROMOTE/RULES is based on responses to the item "The rules governing promotion make it hard for a good manager to move up faster than a poor one." Thus, a negative association between this variable TOTAL RISK is in conformance to the hypothesis. Similarly, the negative relation between PAY/RULE ($p = .017$) and TOTAL RISK supports the hypothesis, as these data are in response to the item "Due to the rules, pay raises for managers are based more on longevity than performance." Thus, managers who perceive rules as 1) dictating links between pay and longevity, and 2) increasing the difficulty for good managers moving up faster than poor ones, are less likely to perceive their organization as having a risk-oriented culture.

Goal Clarity and Risk Culture

Three variables were used in measuring the influence of goal clarity.¹¹ Perceptions of the clarity of the organizations' goals were measured in the variable GOAL/CLEAR where managers were asked to respond to the following statement: "This organization has clearly defined goals." TASK/CLEAR measured the clarity of managerial tasks by asking top and mid-level managers to assess the following: "Most employees are clear about the tasks they are expected to perform." For CLEAR MISSION managers responded to the following: "This organization's mission is clear to most everyone who works here."

The Goal Clarity Model receives strong support ($R^2 = .291$). Much of the variance in perceptions of an organization's risk culture is explained by the variable CLEAR MISSION ($p = .000$). Managers who work in settings where the organization's mission is clear are likely to perceive their organization's culture as more favorable to risk-taking. Similarly, risk-orientation is perceived as higher when managers feel that tasks are clearly assigned among employees (TASK/CLEAR, $p = .024$) and goals for the organization are clear (GOAL/CLEAR, $p = .002$). (Note: the difference in sign for GOAL/CLEAR is a result of the fact that the scale is reversed for this variable; strong agreement = 1, strong disagreement = 10). These findings suggest that for a risk-oriented culture to thrive it must be nurtured by clear communications concerning the purpose, goals, and tasks to be pursued.

Aggregate Model

The tests of hypotheses for the different models confirmed several possible explanations for perceptions of risk culture in an organization. An aggregate model was then created drawing upon the most significant variables as a means of comparing these influences. From the Sector and Publicness Model the measure for the amount of influence by politicians, POLITICAL CONTROL, was

drawn. From the Internal Control Model the measure for top management's trust of employees, TOP TRUST, was selected. From the Formalization and Red Tape Model the measure of the amount of red tape in the organization, REDTAPE, was drawn. From the Expectancy Model the degree to which promotions are based on performance, PROMOTE/PERFORM, demonstrated the most influence. From the Goal Clarity Model the degree to which the organization mission was clear to managers and employees, CLEAR MISSION, was selected. The variable SECTOR was included as a control.

The aggregate model was quite successful in explaining perceptions of an organizations' risk culture ($R^2 = .486$). The most significant factors supporting a risk-oriented culture are the clarity of the organization mission (CLEAR MISSION, $p = .0000$), the degree to which top-level managers trust employees (TOP TRUST, $p = .0000$), and the absence of rules that are so burdensome they are perceived by managers as red tape (REDTAPE, $p = .0001$). This linkage between rules and risk-adverse cultures is continued with the significance of PROMOTE/PERFORM ($p = .017$). This suggests that as organizations use rules to formalize procedures and promotion standards they are also sending a signal to managers that risk-taking on behalf of the organization is not encouraged.

Managerial perceptions of the factors that positively support a risk culture are surprisingly similar between public and private managers. This agreement was further reflected in the lack of statistical significance of SECTOR as an explanatory variable in the Aggregate Model. The publicness variable, POLITICAL CONTROL ($p = .04$), suggests that as the influence of elected officials increases so to does the risk aversion of the culture for both public and private organizations.

Table 4
Expectancy Model

Dependent Variable: TOTAL RISK

Independent Variables:

1. PROMOTE/QUALITY promotion by quality of work
2. PAY/RULE pay based on longevity by rule
3. PROMOTE/PERFORM promotion based on performance by rule
4. PROMOTE/RULES rule make promotion of good manager hard

Multiple R	.43864
R^2	.19240
Adjusted R^2	.18350
Standard Error	3.60509

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	4	1123.97080	280.99270
Residual	363	4717.78744	12.99666

F = 21.62038 Signif F = .0000

Variable	B	SE B	Beta	T	Sig T
PROMOTE/ PERFORM	.946544	.229261	.220823	4.129	.0000
PROMOTE/ RULES	-.526130	.250646	-.134161	-2.099	.0365
PAY/RULE	-.538469	.225338	-.147328	-2.390	.0174
PROMOTE/ QUALITY	-.278396	.168320	-.083132	-1.654	.0990
Constant	13.076093	.957959		13.650	.0000

Discussion

The risk orientation of organizations continues as a popular theme in management literature and in managerial prescriptions. In many instances, prescriptions begin with a presumption of the poor health and fragility of public sector organizations. If government can just be more entrepreneurial, can entertain appropriate risks, then many of its (presumed) managerial problems will disappear or at least be diminished. Naturally one does not question the existence of cowering bureaucrats, one only ponders what to do about them. To be sure, the stereotype sometimes corresponds with reality. Among the millions of government employees and thousands of government agencies there are enough cowering bureaucrats for any of us to either experience them directly or, perhaps more often, read popular accounts of their sad legacy. But there is very little evidence of the *incidence* of risk aversion or that the incidence is greater in the public than the private sector.

There are many approaches one might take to ascertaining the incidence and causes of risk aversion in organizations but the topic remains little studied and poorly understood. The approach we have taken in this study is a more global one, examining responses to survey questionnaires.

We must consider several limitations of the study, including the limitations resulting from reliance on mailed questionnaires. What this gains in breadth it sacrifices in depth. There is good reason to believe that questionnaire data can cast light on broad-based perceptions and behaviors of constructs with shared meaning. In our view, there is enough shared meaning in the concept of organizational risk-taking that questionnaire assessments are useful. One acid test of the meaning derived from such studies is whether such variance can be systematically explained. By that criterion, this study fares well.

A major limitation of our study is its reliance on perceptual data which, of course, are subject to framing. Thus, the finding about sector requires additional research. Working in the public

Table 6
The Grand Model

Dependent Variable: TOTAL RISK					
Independent Variables:					
1. SECTOR					1=Public sector, 0=Private sector
2. CLEAR/MISSION					clarity of organization mission
3. PROMOTE/PERFORM					promotion based on performance by rule
4. REDTAPE					the level of red tape in organization
5. TOP TRUST					top managers trust in employees
6. POLITICAL CONTROL					influence by elected govt. officials
Multiple R	.69754				
R Square	.48656				
Adjusted R Square	.47802				
Standard Error	2.88247				
Analysis of Variance:					
	DF	Sum of Squares	Mean Square		
Regression	6	2842.33827	473.72305		
Residual	361	2999.41997	8.30864		
F =	57.01570	Signif F =	.0000		
Variable	B	SE B	Beta	T	Sig T
POLITICAL CONTROL	-.117073	.057147	-.100281	-2.049	.0412
TOP TRUST	.587707	.068066	.384619	8.634	.0000
REDTAPE	-.275956	.070865	-.177042	-3.894	.0001
PROMOTE/PERFORM	.427356	.178582	.099700	2.393	.0172
CLEAR/MISSION	.397996	.067639	.255113	5.884	.0000
SECTOR	.457650	.391926	.057289	1.168	.2437
(Constant)	6.355823	.775063	8.200	.0000	

sector may, possibly, affect one's perception of the nature and degree of risk. This possible framing effect can be tested by examining objective decision-anchored data, for example, or by examining sub-sets of individuals who have worked in both public and private sectors. But one must recognize the possibility that risk may have different meaning in the respective sectors.

With these caveats, the "non-finding" about sector remains of interest. In this study, sector actually says very little about risk culture, especially when other variables that co-vary with sector are taken into account. But risk culture is amenable to explanation. Indeed, using the not-so-stringent standard of conventional questionnaire-based organizational research, the ability to provide empirically based theoretical explanations of risk culture is quite encouraging. Relatively few organizational phenomena, especially in the field of public management, yield up explained variance exceeding the models tested here. Moreover, the outcomes of these empirical tests seem to "make sense" both in terms of relevant theory and experiential knowledge. The findings presented here have direct relevance to application. Managers who wish to promote a risk orientation can, if the findings from this study are convincing, take several steps.

In the first place, and not surprisingly, managers who trust their employees are likely to have employees who will take calculated risks. Even if there is otherwise a high degree of internal managerial control, trust is likely to produce risk-taking.

Second, if goals are clear, people take risks. The "goal clarity hypothesis" may be among the most overused in the managerial literature and this study, in conformance to the few *empirical* studies

Table 5
Goal Clarity Model

Dependent Variable: TOTAL RISK					
Independent Variables:					
1. TASK/CLEAR					task clarity
2. GOAL/CLEAR					clearly defined org. goals
3. CLEAR/MISSION					clarity of organization mission
Multiple R	.53977				
R Square	.29135				
Adjusted R Square	.28551				
Standard Error	3.37238				
Analysis of Variance:					
	DF	Sum of Squares	Mean Square		
Regression	3	1701.99459	567.33153		
Residual	364	4139.76365	11.37298		
F =	49.88417	Signif F =	.0000		
Variable	B	SE B	Beta	T	Sig T
GOAL/CLEAR	-.799306	.264936	-.154068	-3.017	.0027
CLEAR/MISSION	.597582	.084720	.383045	7.054	.0000
TASK/CLEAR	.220502	.097679	.112600	2.257	.0246
Constant	7.744316	1.049194	7.381	.0000	

on the topic, provides no distinction between public and private organizations. Goal clarity is important to risk-taking, regardless of sector.

Third, red tape and formalism undercut risk. Again, this is not surprising but it is not a logical imperative. While the data do not permit us to determine the exact nature of the causal connection between red tape and risk aversion, it seems likely that it just makes risk a much poorer cost-benefit proposition. That is, it increases the cost of risk (by imposing higher transaction costs) and may well reduce the benefit if favorable outcomes are likely to be subject to the same red tape that pervades the organization.

The expectancy hypothesis received support suggesting a fourth implication of the results. If would-be risk-takers can, as part of their risk calculations, have some confidence that the fruits of their risk (at least the ones that succeed) will translate into reward, promotion or some form of recognition, then the risk taker is better informed, more likely to be acting on the basis of perceived self-interest (i.e. being more rational) and, generally, is making a better decision.

Perhaps the least encouraging finding for public managers is that external influence by elected officials is likely to have a damp-

ening effect on risk. Few public agencies are long out of the range of vision of elected public officials and, when they do come into view, risk-taking is much less likely. Politicians have the same effect on private sector organizations but, of course, they are much less likely to exert direct influence on private sector organizations. This is not to say that external control by elected public officials is inappropriate or otherwise harmful, but that there may be a price to pay for political accountability and responsiveness.

Perhaps the most encouraging finding for public managers is that they differ little from private sector managers in their risk orientations and, indeed, the respective sectors' risk orientations seem a function of an identical set of variables. The prescriptions for greater goal clarity, employee trust, and cutting red tape and formalism are as likely to work in one sector as the other. This does not invalidate the efforts of the National Performance Review and other such government reforms, it simply suggests that many of the nations' businesses would also do well to have their performance reviewed, at least those performances related to risk.



Barry Bozeman and Gordon Kingsley teach public administration at Georgia Tech.

Notes

1. The data for this study were collected under the auspices of the National Administrative Studies Project (NASP), which has participating researchers at Florida State University, University of Denver, University of Georgia, Ohio State University, and Syracuse University. The objective of the project is to collect data to extend comparative empirical knowledge about public and private organizations. The data used in this study are limited to responses collected at Syracuse University.
2. These organizations were chosen because manufacturing is one of the few business activities that (at least in the United States) has no government counterpart. In the National Administrative Studies Project, there was a desire to include the private sector organizations that were not confounded by functional equivalence in government, as well as the private sector organizations that had parallel functions in government (this sample, however, focuses only on the former).
3. Almost half of the respondents came from organizations with less than 100 employees. About 22 percent of the respondents came from organizations with more than 1,000 employees. The managers were predominately male (82 percent) and less than 50 years old (less than 10 percent were over 60 years of age). More than three quarters of the managers had a bachelor's degree or more education.
4. The number of respondents by different categories was—109 top public managers, 83 top private managers, 88 mid-level public managers, 88 mid-level private managers.
5. The first wave of surveys was mailed in the first three weeks of May, 1992. To encourage the respondents to fill out the surveys, no deadline for returning the surveys was indicated in the accompanying cover letters. Approximately eight weeks after the first wave of surveys were sent, follow-up efforts were launched to encourage the non-respondents to

- respond to the survey. A variety of steps were taken in the follow-up efforts including telephone calls, reminder postcards, and mailing a letter urging the respondent to respond along with a blank copy of the survey. The first wave yielded 145 usable responses and the second wave yielded 47 usable responses.
6. The multiple regression analysis is ordinary least squares, with variables entered according to the highest *F* value.
7. The response scale is 1-10 where 1=strong disagreement with the item and 10=strong agreement. This is the same scale used for the other variables unless specifically noted.
8. TOTAL TIME is an index variable created from the aggregation of eight measures of specific managerial activities. In each case, the respondent was asked to indicate "for each activity, how much time (in weeks) is typically required between a request made by a unit within the organization and the actual approval of the request." The items included the managerial activities enumerated above (e.g. hiring full-time employees, buying equipment costing less than \$10,000, and so forth). The responses were then converted to z-scores and values for each case were added to comprise the variable TOTAL TIME.
9. REDTAPE is measured on a 0-10 scale with 0=almost no red tape.
10. Four-point scales where 1 indicated strong agreement were used for the first three variables PROMOTE/PERFORM, PROMOTE/RULES, PROMOTE/QUALITY). A five-point scale where a score of 1 indicated strong agreement was used for the variable PAY/RULE.
11. GOAL/CLEAR was measured through a 4-point scale where 1=strong agreement. TASK/CLEAR and CLEAR MISSION employed a 10-point scale where 1=strong disagreement and 10=strong agreement.

References

- Alchian, A.A. and Demsetz, H. 1973. "The Property Rights Paradigm" *Journal of Economic History*, 33, 16-27.
- Alchian, A.A. and Demsetz, H. 1972. "Production, Information Costs, and Economic Organization" *American Economic Review*, 62, 777-779.
- Backoff, R.W. and Nutt, P.C. 1988. "A Process for Strategic Planning with Specific Application for the Nonprofit Organization" In J.M. Bryson and R.C. Einsweiler (eds.) *Strategic Planning*. Chicago: Planners Press.
- Baird, I.S. and Thomas, H. 1985. "Toward a Contingency Model of Strategic Risk Taking" *Journal of Management Review*, 10, 230-243.
- Baker, P.M., Markham, W.T., Bonjean, C.M. and Corder, J. 1988. "Promotion Interest and Willingness to Sacrifice for Promotion in a Government Agency" *The Journal of Applied Behavioral Science*, 24 (1), 61-80.
- Bellante, D. and Link, A.N. 1981. "Are Public Sector Workers More Risk Averse than Private Sector Workers?" *Industrial and Labor Relations Review*, 34 (3), 408-412.
- Bellone, C. and Goerl, G. 1992. "Reconciling Public Entrepreneurship and Democracy" *Public Administration Review*, 52 (2), 130-134.
- Bettman, J.R. 1973. "Perceived Risk and Its Components: A Model and

- Empirical Test" *Journal of Market Research*, 10, 184-190.
- Bowman, E.H. 1980. "A Risk/Return Paradox for Strategic Management" *Sloan Management Review*, 21 (3), 17-31.
- Bozeman, B. 1989. *All Organizations Are Public*. San Francisco: Jossey-Bass.
- Bozeman, B. 1993. "A Theory of Government "Red Tape" *Journal of Public Administration Research and Theory*, 3 (3), 273-303.
- Bozeman, B. and Bretschneider, S.B. 1994. "The "Publicness Puzzle in Organization Theory: A Test of Alternative Explanations of Differences Between Public and Private Organizations" *Journal of Public Administration Research and Theory*, 4 (2), 197-224.
- Bozeman, B. and Loveless, S. 1987. "Sector Context and Performance: A Comparison of Industrial and Government Research Units" *Administration and Society*, 19, 197-235.
- Bozeman, B. and H. Rainey. 1998. "The Bureaucratic Personality Revisited," *American Journal of Political Science*, vol 42(1), 163-189.
- Bozeman, B., Reed, P.N. and Scott, P. 1992. "The Presence and Predictability of Red Tape in Public and Private Sector Organizations" *Administration and Society*, 24, 290-322.
- Buchanan, B. 1975. "Red Tape and the Service Ethic: Some Unexpected Differences Between Public and Private Managers" *Administration and Society*, 6, 423-438.
- Crow, M.M., Emmert, M.A. and Jacobson, C.I. 1990. "Government-Supported Industrial Research Institutes in the United States" *Policy Studies Journal*, 19, 59-75.
- Davies, D.G. 1981. "Property rights and Economic Behavior in Private and Government Enterprises: The Case of Australia's Banking System" In R.O. Zerbe, Jr. (ed.) *Research in Law and Economics*, 3. Greenwich, CN: JAI Press.
- Deal, T.E. and Kennedy, A.A. 1982. *Corporate Cultures: The Rites and Rituals of Corporate Life*. Reading, MA: Addison-Wesley.
- Evans, M. 1986. "Organization Behavior: The Central Role of Motivation," *Yearly Review of Management of the Journal of Management*, 12, 203-223.
- Figenbaum, A. and Thomas, H. 1988. "Attitudes Toward Risk and the Risk-Return Paradox: Prospect Theory Explanations" *Academy of Management Journal*, 31, 85-106.
- Fischhoff, B., Watson, S.R., and Hope, C. 1984. "Defining Risk" *Policy Sciences*, 17, 123-139.
- Goodsell, C.T. 1993. "Reinvent Government or Rediscover It" *Public Administration Review*, 53, pp. 85-86.
- Gore, A. 1993. *Creating a Government that Works Better and Costs Less: The Report of the National Performance Review*. New York: Plume.
- Hansson, S.O. 1989. "Dimensions of Risk" *Risk Analysis*, 9 (1) 107-112.
- Hofstede, G. 1980. *Culture's Consequences: International Differences in Work-Related Values*. London: Sage.
- Jackson, S.E. and Dutton, J.E. 1988. "Discerning Threats and Opportunities" *Administrative Science Quarterly*, 33, 370-387.
- Janis, I.L. 1972. *Victims of Group Think*. Boston: Houghton Mifflin.
- Kingsley, G. and Reed, P.N. 1991. "Decision Process Models and Organization Context: Level and Sector Make a Difference" *Public Productivity and Management Review*, 14, pp. 397-413.
- Lan, Z. and Rainey, H.G. 1992. "Goals, Rules, and Effectiveness in Public, Private, and Hybrid Organizations: More Evidence on Frequent Assertions About Evidence" *Journal of Public Administration Research and Theory*, 2, 5-28.
- Libby, R. and Fishburn, P.C. 1977. "Behavioral Models of Risk Taking in Business Decisions: A Survey and Evaluation" *Journal of Accounting*, 15, 272-292.
- MacCrimmon, K.R. and Wehrung, D.A. 1986. *Taking Risks: The Management of Uncertainty*. New York: The Free Press.
- MacCrimmon, K.R. and Wehrung, D.A. 1990. "Characteristics of Risk Taking Executives" *Management Science*, 36, 422-435.
- MacCrimmon, K.R. and Wehrung, D.A. 1985. "A Portfolio of Risk Measures" *Theory and Decision*, 19, 1-29.
- McClelland, D.C. 1961. *The Achieving Society*. Princeton: Van Nostrand.
- Merton, R. 1940. "Bureaucratic Structure and Personality" *Social Forces*, 18, 560-568.
- Meyer, M. 1979. *Change in Public Bureaucracies*. London: Cambridge University Press.
- Moe, R.C. 1994. "The Reinventing Government Exercise: Misinterpreting the Problem, Misjudging the Consequences" *Public Administration Review*, 54 (2), 111-122.
- Osborn, R.N. and Jackson, D.H. 1988. Leaders, Riverboat Gamblers, or Purposeful Unintended Consequences in the Management of Complex Dangerous Technologies. *Academy of Management Journal*, 313, 924-947.
- Osborne, D. and Gaebler, T. 1993. *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*. New York: Penguin Books.
- Pandey, S.K. 1995. *Managerial Perceptions of Red Tape*. Unpublished Ph.D. Dissertation. Syracuse University.
- Pandey, S.K. and Bretschneider, S.B. 1997. "The Impact of Red Tape's Administrative Delay on Public Organizations' Interest in New Information Technology" *Journal of Public Administration Research and Theory*, 7, 113-130.
- Perry, J.L. and Porter, L.W. 1982. "Factors Affecting the Context for Motivation in Public Organizations" *Academy of Management Review*, 7, 89-98.
- Pugh, D.S., Hickson, D.J., Hinings, C.R. and Turner, C. 1968. "Dimensions of Organizational Structure" *Administrative Science Quarterly*, 13, 65-91.
- Pugh, D.S., Hickson, D.J., Hinings, C.R. and Turner, C. 1969. "The Context of Organization Structures" *Administrative Science Quarterly*, 14, 91-114.
- Rainey, H.G. 1983. "Public Agencies and Private Firms: Incentives, Goals, and Individual Roles" *Administration and Society*, 15 (2), 207-242.
- Rainey, H.G., Pandey, S.K. and Bozeman, B. 1995. "Public and Private Managers' Perceptions of Red Tape" *Public Administration Review*, 55 (6), 567-574.
- Schein, E. 1985. *Organizational Culture and Leadership: A Dynamic View*. San Francisco: Jossey-Bass.
- Singh, J. 1986. "Performance, Slack, and Risk Taking in Organizational Decision Making." *Academy of Management Journal*, 29, 562-585.
- Sitkin, S.B. and Weingart, L.R. 1995. "Determinants of Risky Decision-Making Behavior: A Test of the Mediating Role of Risk Perceptions and Propensity" *Academy of Management Journal*, 38 (6), 1573-1592.
- Sitkin, S.B. and Pablo, A.L. 1992. "Reconceptualizing the Determinants of Risk Behavior" *Academy of Management Review*, 17, 9-39.
- Terry, L.D. 1993. "Why We Should Abandon the Misconceived Quest to Reconcile Public Entrepreneurship with Democracy" *Public Administration Review*, 53 (4) 393-395.
- Thompson, J.D. 1967. *Organizations in Action*. New York: McGraw-Hill.
- U.S. Office of Personnel Management. 1979. *Federal Employee Attitudes: Phase I*. Washington, D.C.: U.S. Office of Personnel Management.
- U.S. Office of Personnel Management. 1980. *Federal Employee Attitudes: Phase II*. Washington, D.C.: U.S. Office of Personnel Management.
- U.S. Office of Personnel Management. 1983. *Federal Employee Attitudes: Phase III*. Washington, D.C.: U.S. Office of Personnel Management.
- Vlek, C. and Stallen, P.J. 1980. "Rational and Personal Aspects of Risk" *Acta Psychologica*, 45, 273-300.
- Vroom, V.H. 1964. *Work and Motivation*. New York: Wiley.
- Warwick, D. 1975. *A Theory of Public Bureaucracy*. Cambridge: Harvard University Press.
- Yates, J.F. and Stone, E.R. 1992. "The Risk Construct" In J.F. Yates (ed.) *Risk-Taking Behavior*. New York: John Wiley & Sons Ltd.