Management and Leadership Performance in the Defense Department

Evidence from Surveys of Federal Employees

Paul S. Oh
David E. Lewis
Princeton University

The authors use data from the Federal Human Capital Survey to measure comparative leadership and management performance among executives in the military bureaucracy. The authors evaluate whether differences in executive backgrounds, training, and management environments influence employee evaluations of leadership, management, and work climate. Military service agencies get systematically higher evaluations in leadership and work climate, but not management. Among the services, the Air Force consistently received the highest evaluations. Air Force managers have the highest ranks, the longest military service, and a high level of graduate education when they assume executive positions; these characteristics are positively correlated with performance. Other managerial characteristics associated with high performance were long job tenures and private management experience. The authors conclude that greater attention to graduate training, exploring ways to increase tenure, and the selection of retired officers with private management experience for important executive posts may improve performance.

Keywords: *leadership; management; defense; surveys; military*

More than any other government agencies, the military services and the Department of Defense (DOD) are sensitive to the cultivation, promotion, and teaching of leadership. The military academies include whole departments dedicated to leadership, and leadership is a central component in the Reserve Officers Training Corps (ROTC) and Officer Candidate School (OCS) curricula. Indeed, career paths and assignments are designed in a manner to give military officers a

breadth of training to promote leadership experience and skills. The reason the military services and the DOD as a whole are so attentive to teaching leadership is that the costs of its absence are so great, with possibly immediate consequences in loss of life. The defense bureaucracy in the United States is also by far the largest component of the federal bureaucracy, with a budget that dwarfs the rest of the federal service. Managerial skills are essential for ensuring effectiveness and efficiency in meeting mission requirements. Poor performance in executive roles can not only cost lives but also waste billions of dollars.

An increasingly important component of military leadership is management of the civilians and contractors that provide mission-critical services and products. Consequently, an important means of evaluating military leadership and professionalism is success or failure in managing these large defense bureaucracies. Indeed, one of the underappreciated ways that the armed forces influence society is through their role managing large complex organizations that are heavily populated with civilian employees.[1] The DOD is the single largest employer of civilian government workers.

Given the importance of leadership and management of the defense agencies, we still know very little systematically about what influences the quality of leadership and management in the U.S. defense apparatus. The services have different practices for promoting and training leaders so that comparable jobs in the military services and the DOD generally are filled by persons with quite different backgrounds and skills. In this article, we use employee evaluations of leader performance from the Federal Human Capital Survey to measure comparative leadership and management performance among managers in the military bureaucracy. We describe differences among military agencies in the types of persons filling leadership roles, their training, and the management environment, and try to determine whether these differences influence employee evaluations of leadership, management, and work satisfaction. Importantly, we find that significant differences exist between performance (where performance is measured by differences in aggregate responses to federal employee surveys) in the military services and nonservice portions of DOD. The military service agencies get systematically higher evaluations in leadership and work climate, but not management. Among the services, the Air Force consistently received the highest evaluations. Air Force executives have the highest ranks, the longest military service, and a high level of graduate education when they assume executive positions, and these characteristics are positively correlated with performance as evaluated by civilian workers in DOD. While Air Force executives were also the most likely to have political experience, this experience was not correlated with performance. Other managerial characteristics associated with high performance were long tenures in the job and private management experience. We conclude that greater attention to graduate training, the exploration of ways to increase tenure, and the selection of retired officers with private management experience for important executive posts may improve performance.

Leadership and Management in Military Agencies

The DOD is unique in structure and culture among other federal agencies. The services within the DOD are "organization professions," serving both as a profession and a bureaucracy. As a profession, the primary concern of its executive leaders is the effectiveness of the organization in meeting the challenges of providing national security in peacetime and war. Its officers are charged to defend the Constitution and provide the expertise and selfless service needed for the defense of the nation.[2] As a bureaucracy, the DOD is the largest executive department in the federal government. Its executive leaders must manage a workforce consisting of 2.6 million military members and 654,000 civilians,[3] as well as overseeing a budget of hundreds of billions of dollars (19.2 percent of the entire federal budget).[4]

While maintaining competence in the full spectrum of war fighting, DOD leaders must also lead and manage extremely complex modern military organizations.[5] These agencies contain hundreds of employment specialties that must work together to perform multiple complex functions, often in an environment of uncertainty.[6] Like other federal agencies, however, these agencies also function within the confines of the domestic and international political environment.[7] The overall success of the DOD, therefore, depends partly on the executives' management acumen and political skills to effectively lead and manage these organizations in the political governmental system. Given the importance of leading these complex organizations, the military services must produce leaders who are not just war fighters, but executives possessing the managerial and political skills necessary for success.

Over time, methods of preparing officers have changed in response to the increased complexity of the environment in which the military functions. Some have described these changes as part of the changing nature of our armed forces from the modern to the postmodern military.[8] Since the 1960s, the services have sought to increase both the civilian education level and the political sophistication of its officers.[9] These efforts have resulted in a highly educated DOD. Through their promotion processes, the services have emphasized the need for a graduate degree for advancement.[10] Today, military officers realize that their chance of reaching the rank of Colonel (or equivalent) without a graduate degree is tenuous. Today's military leaders are also more politically literate. With the Goldwater-Nichols Act of 1986 and increased opportunities to serve among political officials, officers have been able to learn early in their careers about functioning in the complicated Washington environment.[11]

In practice, many have realized the need for military officers to be trained in multiple skill sets in addition to traditional war-fighting expertise. Meese and Calkins, for example, have written about the need to train Army leaders who are Pentathletes, possessing professional expertise in a number of "events."[12] Among other things, leaders need to be skilled in war fighting, statesmanship, and enterprise management. While all the services have accepted the need for diversely trained and educated officers, the changes in military training and education have been uneven among the services.

One reason for the differences among the Army, Navy, and Air Force is the cultures or personalities of the services.[13] These cultures affect what the services emphasize as important in their leaders. Out of the services, for example, Builder argues that the Air Force is the most corporate in orientation. They seem to be more willing to readily adopt managerial techniques and engage political figures to further their service goals. The Navy cherishes its traditions and puts the highest value on the concept of independent command at sea. They seem to be slower than the Air Force in embracing new methodology. The Army has been heavily involved in combat and in operations other than war in recent years and has sought to adjust its approach to emphasize adaptability in recognition of these changes. The struggle seems the greatest in the Army regarding the need to balance nontraditional skill sets with the warrior ethos.

What has been consistent over the history of the services is the focus on developing *persons* even at the expense of organizational performance. Conversely, many civilian agencies have focused on *organizational* performance, often with little attention to the cultivation of leaders. A key tenet of leader development in the military has been the frequent job rotation of officers. The services rotate their leaders through positions every two to three years. Working in the states and abroad, job rotation provides the officers with a broad spectrum of experiences. Interspersed among assignments in military units are assignments in military schools like the Command and General Staff College and the Naval War College, designed to prepare leaders for increased responsibilities. With new challenges and expanded responsibilities in each new position, the services have seen this as an essential method to groom future leaders.[14] Such rotation is much less common in civilian agencies, where the conventional wisdom is that high rates of turnover hurt management performance.[15]

Determining whether these differences among the services matter for performance has been difficult, since measuring comparative management performance systematically is both complex and costly.[16] One difficulty is that it is hard to define good performance. How do we know if the Army Materiel Command is performing well compared to the Naval Air Systems Command? For White House officials, a definition of good management must include responsiveness to the president's policy agenda. This is not the case for Congress, clients of the agency, or other interested parties. Additionally, it is hard to measure agency executives against each other since military agencies have different mandates, operating environments, and constraints. As a consequence, we know very little about whether the differences in leadership training and education matter for performance.

Employee Evaluations of Leadership and Management

It is in this context that data from the Federal Human Capital Survey provide a unique means of measuring comparative management performance within the

**Table 1
Federal Human Capital Survey Questions Related
to Leadership, Management, and
Work Climate, 2002–2004**

Leadership

1. "I hold my organization's leaders in high regard" or "I have a high level of respect for my organization's senior leaders." (Strongly Agree, Agree) for 2002 and 2004, respectively

2. "In my organization, leaders generate high levels of motivation and commitment in the workforce." (Strongly Agree, Agree)

Management

3. "Managers review and evaluate the organization's progress toward meeting its goals and objectives." (Strongly Agree, Agree)

4. "The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals." (Strongly Agree, Agree)

5. "Managers promote communication among different work units (for example, about projects, goals, needed resources)" or "Managers promote communication among different work units." (Strongly Agree, Agree) for 2002 and 2004, respectively

Work Climate

6. "I recommend my organization as a good place to work." (Strongly Agree, Agree)

7. "How would you rate your organization as an organization to work for compared to other organizations?" (One of the Best, Above Average)

defense agencies. Since few direct operational measures of performance exist that are comparable across organizations, employee evaluations across agencies provide a useful indirect measure.[17] In the summer of 2002 and the late fall of 2004, the Office of Personnel Management (OPM) surveyed over 200,000 and 275,000 federal civilian employees, respectively, across the government about different aspects of their work environment.[18] Included within the survey were questions about the level of respect personnel had for the senior leaders of their organization and about the presence or absence of organizational features associated with good management. There is substantial variation across DOD agencies in answers to these questions, which provides insight into which agencies are being led and managed well and which agencies are having difficulty.

We selected the questions from the survey that were most directly related to leadership, management, and work climate. Specifically, we focus on the questions listed in Table 1. While there were other questions arguably related to performance in each of these areas, we tried to balance concerns for rigor with the need for parsimony. We, therefore, focus only on those questions most directly related to performance.[19]

The DOD is composed of the Office of the Secretary, Office of the Joint Chiefs, three service departments, and the Unified Combatant Commands. In Table 2 we

include the different defense agencies identified by OPM where employees were surveyed.[20] There are eleven agencies within DOD proper and an average of fifteen to sixteen agencies in each of the services. Each service and the DOD proper also have an agency called "All other components," which includes all the parts of the service that are not included in one of the other larger agencies on the list.[21] In total, we have fifty-eight agencies surveyed, although not all agencies were surveyed in both years.

During this period there were eighty-two different executives of these agencies. We obtained background information about each manager using publicly available biographies (Table 3). Some interesting differences in backgrounds exist between executives in the services and nonservice portions of DOD, particularly in military background and tenure. While most of the defense department leadership is composed of uniformed officers, nonservice agencies within DOD are the most likely to have a civilian executive. Not surprisingly, managers in nonservice portions of DOD had less combat experience, shorter military tenures, and lower ranks on average at the time of the survey. The executives in the nonservice parts of DOD did, however, have the longest tenures in their jobs. Executives in nonservice DOD agencies had been in their jobs almost twice as long as their service counterparts at the time of the surveys. This is one area in which the practices of professions and practices of bureaucracies are clearly divergent. Services are more likely to see their agencies as part of a profession where job rotation of executives is important.

Among the different parts of the defense bureaucracy there are also interesting differences in educational background, political experience, combat experience, and commissioning source. Most of the defense executives have graduate degrees, with the Army and Air Force executives averaging master's level education. The Navy and nonservice DOD executives average slightly less than this level.[22] Air Force executives are the most likely to have an MBA or equivalent management degree (e.g., MPA, MA in human resources). In the other services and nonservice parts of DOD, some type of MS degree (e.g., engineering, systems technology) is more common.

Air Force executives are also almost twice as likely to have political experience—work in the White House, Congress, or political offices within the DOD. Most of the political experience among executive leaders comes from working with political appointees or elected officials in positions within the DOD in jobs ranging from Vice Chief of Staff to congressional liaison to a position on the Joint Staff.

Additional differences among the services include the tenure in service, combat experience, and commissioning source of executive leaders. Air Force executives have the highest average rank and average years of service prior to taking charge of their agency. Traditionally, the Air Force has been viewed as the "oldest" of the services, emphasizing keeping older airmen in the service because of its investment in technological training. Most likely because of the type of operations the country has been involved in since Vietnam, the Department of the Army has the highest percentage of leaders with combat experience.[23] Relative to the other services, the Department of the Army also has more academy graduates (33 percent) and more OCS graduates

Table 2

Military Agencies Participating in the Federal Human Capital Survey, 2002–2004

Defense Agencies	Department of the Army	Department of the Navy	Department of the Air Force
All Other Components	Acquisition Executive Support Agency	All Other Components	Air Combat Command
Defense Commissary Agency	All Other Components	Assistant for Administration Under Secretary of the Navy	Air Force Materiel Command
Defense Contract Audit Agency	Army Materiel Command	Commander Navy Installations	Air Force Personnel Center
Defense Contract Management Agency	Army National Guard Units (Title 32)	Immediate Office of the Chief of Naval Operations	Air Mobility Command
Defense Finance and Accounting Service	Field Operating Office of the Office of the Secretary of the Army	Military Sealift Command	Air National Guard Units (Title 32)
Defense Information Systems Agency	Imm. Off. Commander-in-Chief of the US Army Europe and 7th Army	Naval Air Systems Command	Air Training Command
Defense Logistics Agency	Military Traffic Management Command	Naval Education and Training Command	All Other Components
Defense Security Service	U.S. Army Contracting Agency	Naval Facilities Engineering Command	Headquarters, Air Force Reserve
Department of Defense Education Activity	U.S. Army Forces Command	Naval Medical Command	HQ Air Intelligence Agency
Office of the Secretary of Defense	U.S. Army Installation Management Agency	Naval Sea Systems Command	Pacific Air Forces
Washington Headquarters Services	U.S. Army Intelligence and Security Command	Naval Space and Warfare Systems Command	Space Command
	U.S. Army Medical Command	Naval Supply Systems Command	U.S. Air Force Academy
	U.S. Army Military District of Washington	Navy Field Offices	

(continued)

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Table 2 (continued)

Defense Agencies	Department of the Army	Department of the Navy	Department of the Air Force
	U.S. Army NETCOM/9th Army Signal Command	Office of Naval Research	
	U.S. Army Reserve Command	U.S. Atlantic Fleet, Commander-in-Chief	
	U.S. Army Test and Evaluation Command	U.S. Marine Corps	
	U.S. Army Training and Doctrine Command	U.S. Pacific Fleet, Commander-in-Chief	
	U.S. Army, Pacific		

Table 3
Background Characteristics of Managers by Defense Agency

	DOD (12)	Army (31)	Navy (20)	Air Force (19)
Manager background				
Commissioned officer (0,1)	0.64	0.96	0.95	1.00
Tenure as bureau chief (Months)	44	21	23	23
Education (0-2)	0.83	1.00	0.80	1.00
Political experience (0,1)	0.45	0.37	0.40	0.84
Combat experience (0,1)	0.18	0.69	0.50	0.47
Commissioning source				
Academy	0.09	0.33	0.25	0.22
Reserve Officer Training Corps	0.45	0.43	0.55	0.78
Office Candidate School	0.09	0.17	0.15	0.00
Other (no commission, direct commission)	0.36	0.06	0.05	0.00
Rank (0–4)	0.91	2.32	2.75	3.16
Years in service	16	29	30	32
Private sector management (0,1) experience	0.20	0.10	0.05	0.06
Management environment				
Bureau employment (10–222,715)	9,336	9,895	12,643	13,040
Number of managers	911	931	1,493	1,627
Ratio of managers to employees	0.10	0.09	0.12	0.12
War fighting agency (0,1)	0.00	0.15	0.40	0.24
Senate confirmed agency head (0,1)	0.08	0.15	0.20	0.05

Note: $N = 84$. Education levels (0–2) are bachelor's, master's, and doctorate. Ranks are colonel and below or no rank (0), brigadier general or equivalent (1), major general or equivalent (2), lieutenant general or equivalent (3), general or equivalent (4). Political experience includes work in the White House, in Congress, or for a political appointee in the Department of Defense.

(17 percent). The Air Force, on the other hand, has the least number of academy graduates (22 percent) and no OCS/OTS graduates.

Differences in Management Environment

Not only do the backgrounds of executive leaders differ among the defense agencies, but the management environments also differ. Air Force agencies in the data set have the largest average number of employees (13,039). Nonservice DOD agencies

have the smallest average number (9,336). The Air Force also has the highest number of managers relative to the other two services, as well as the highest manager-to-worker ratio. The average number of managers is 1,627 (compared to 931 for the Army and 1,492 for the Navy) and the manager to worker ratio is 0.12 (compared to 0.09 for the Army and 0.12 for the Navy). These numbers may be due to the highly technological nature of this service. Interestingly, the Navy has the highest percentage of Senate confirmed agency heads, with 20 percent. This compares to 15 percent for the Army and 5 percent for the Air Force.

Disentangling the Causes of Low and High Performance

To determine whether differences in training, background, and work environment matter for performance, we estimate a series of regressions with appropriate controls. The dependent variables in these analyses are average civilian employee evaluations of leadership, management, and work climate in their agencies as reflected in responses to the questions listed in Table 1.[24] Our expectation is that differences across the services and nonservice portions of DOD in training, background, and work environment explain variation in employee evaluations of leadership, management, and work climate. We include controls for agency size, management structure, politicization, and function, since these characteristics of the management environment are likely to be correlated both with performance and defense manager backgrounds. Specifically, we include controls for the log of agency employment ($M =$ 8.72, $SD = 1.11$), the ratio of managers to employees ($M = 0.14$, $SD = 0.13$), whether the organization is primarily a war-fighting agency (0,1, 18 percent), and whether the agency is headed by a Senate-confirmed appointee (0,1, 16 percent). Controlling for agency employment allows us to rule out this difference in management environments as a cause of high or low performance. We control for thickness of the managerial corps, since thicker hierarchies arguably hurt performance by diffusing accountability, distorting communication, disrupting the unity of command, and increasing the distance between accountability and responsibility.[25] We include a control for war-fighting agencies such as the Pacific Fleet or U.S. Army Europe, since such agencies are arguably different in nature than the Defense Commissary Agency or the Air Training Command. We control for whether the agency is headed by an appointee, since bureaus run by appointees have received systematically lower management evaluations by the Bush Administration.[26]

Apart from the slightly different question wording for two of the seven questions, two immediate problems arise in model estimation. First, there are two observations on most agencies in the dataset (2002, 2004), so the observations are not independent, violating one of the assumptions of OLS. To account for this we include a control for the year of the survey and adjust the standard errors for clustering on

agencies. A second problem is that there are relatively few cases. Since this makes estimates less precise, we proceed carefully, noting instances where coefficients are consistently estimated in one direction but not significant, to suggest where more research might clarify whether or not a true relationship exists.[27]

DOD Agencies and Performance

Table 4 includes models of employee evaluations of leadership, management, and work climate. The models fit the data relatively well; we can easily see that the models improve over a constant-only model. The coefficient estimates on several of the control variables are worth noting. First, the estimates suggest that the employee evaluations were systematically lower in 2002 than in 2004. This may reflect the fact that the continuing professional personnel were still adjusting to the new administration in 2002, or that there was uncertainty in the defense bureaucracy in the buildup to the Iraq War. Second, a higher ratio of managers to employees was positively correlated with work climate, though not leadership or management. The correlation between work climate and the number of managers could reflect the fact that increasing numbers of technical employees without real managerial responsibilities are classified as managers to justify higher pay and keep them in the federal service.[28] The measure of managerial thickness may be a proxy for higher pay and a technology-rich or expertise-driven workplace rather than real thickness in the hierarchy. Finally, agency employment was negatively correlated with employee evaluations of leadership but not management or work climate. The relationship between employment and evaluations of senior leaders could be caused by the increased distance between rank-and-file employees and senior leaders in large organizations. There were few consistently discernible differences in evaluations based on appointee leadership or whether an agency was a war-fighting agency.

Estimates in Table 4 reveal three important findings. First, the executives in the military service agencies got systematically higher employee evaluations of leadership and work climate than their counterparts in the nonservice portions of DOD. The DOD agencies are the base category, so large and significant coefficients are evaluated relative to the DOD agencies. All of the coefficients on the military services were positive and nine out of the twelve coefficients were significant at the 0.10 level at least. Between 3 and 9 percent more employees in the Army, Navy, and Air Force reported high levels of respect for their senior leaders. They were between 1 and 7 percent more likely to report that their leaders generated high levels of motivation and commitment in the workforce. Similarly, between 5.5 and 8 percent more employees in the military services reported that they would recommend their organization as a place to work and that it compared favorably with other organizations. Executives in the military services get higher marks for leadership than their DOD counterparts even when controlling for a host of other factors.

Table 4
Defense Agencies and Employee Evaluations
of Leadership, Management, and Overall
Work Climate, 2002–2004

	Leadership		Management			Work Climate	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Defense agency							
Army	5.65*	3.61	−4.34	2.22	1.73	6.57**	5.50*
Navy	3.73	1.07	−4.85	1.76	0.01	5.59**	6.00**
Air Force	9.32**	7.35**	−2.90	3.00	4.39**	8.01**	6.13**
Controls and constant							
Agency headed by appointee (0,1)	2.50	2.21	−1.65	3.14	1.38	1.29	2.41
War fighting agency (0,1)	−0.34	0.37	−3.02**	−1.78	−1.21	−0.88	−1.64
Ln(employment)	−1.76**	−1.30**	−0.36	−0.29	−0.77	0.97	0.35
Ratio of managers to employees	−1.66	2.39	−1.93	−2.49	3.62	6.56*	6.56**
2002 survey	−8.18**	−3.43**	9.19**	−2.02**	−3.62**	−4.34	−5.54**
Constant	64.05**	48.96**	64.40**	76.97**	59.15**	47.93	47.24**
N	95	95	95	95	95	95	95
F	27.30**	10.96**	14.81**	3.04**	6.20**	4.28**	6.42**
Wald Tests							
Army = Navy	1.42	3.37*	0.08	0.09	1.31	0.28	0.06
Navy = Air Force	15.94**	25.78**	1.79	0.65	10.42**	2.68	0.00
Army = Air Force	3.91*	5.28**	0.64	0.37	3.63*	0.71	0.12
R^2	0.46	0.35	0.41	0.13	0.28	0.33	0.29

Note: Standard errors clustered on agency. Two-tailed tests. The following are the survey questions: (1) "I hold my organization's leaders in high regard" or "I have a high level of respect for my organization's senior leaders (Strongly Agree, Agree)" for 2002, 2004, respectively; (2) "In my organization, leaders generate high levels of motivation and commitment in the workforce (Strongly Agree, Agree)"; (3) "Managers review and evaluate the organization's progress toward meeting its goals and objectives (Strongly Agree, Agree)"; (4) "The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals (Strongly Agree, Agree)"; (5) "Managers promote communication among different work units (for example, about projects, goals, needed resources)" or "Managers promote communication among different work units (Strongly Agree, Agree)" for 2002 or 2004, respectively; (6) "I recommend my organization as a good place to work (Strongly Agree, Agree)"; and (7) "How would you rate your organization as an organization to work for compared to other organizations? (One of the Best, Above Average)."
*$p < .10$. **$p < .05$.

One explanation for the differences between the services and the nonservice DOD agencies may be the clear delineation between professional organizations and bureaucratic organizations. Executive leaders in the services can appeal to esprit de corps, sense of duty and mission, and service traditions and cultures when leading their

agencies. Members in these agencies are more likely to see themselves as part of a greater effort in the defense and service to their country. The nature of the nonservice agencies does not lend itself to the same sense of mission. Executive leaders in the DOD proper, even if they are military leaders, may find it harder to appeal to these factors like their service agency counterparts. On the other hand, different means of cultivating leaders in the different parts of the DOD may also explain this variation. The executives in the services have higher levels of education on average and more varied management and leadership experience prior to assuming top executive posts.

A second notable finding is that the advantage of military services in leadership and work climate do not extend to evaluations of management. The coefficient estimates, though not significant, indicate that the military services were less likely than DOD proper to review and evaluate organizational progress toward long-term goals. In most cases we could not reject the hypothesis that the military services were no different than DOD proper in management performance.

The one management area where there are differences among the parts of the DOD is in communication, where evaluations of Air Force managers were significantly higher than DOD and the other services. Respondents in Air Force agencies were 4 to 5 percent more likely to agree with the statement, "Managers promote communication among different work units." This highlights the third general pattern in the regression estimates in Table 4, which is the generally high evaluation of Air Force managers relative to the other defense agencies. With the exception that the Air Force managers were reported to be less likely than their DOD counterparts to review and evaluate performance, the estimates suggest that Air Force managers received the highest evaluation on all other categories of leadership, management, and work climate, although their performance was not always statistically distinguishable, particularly from the other services.[29]

Manager Characteristics and Performance

The performance difference between the services and the nonservice parts of the Defense Department as well as between the Air Force and the other services suggests that distinctive approaches to leadership preparation matter for performance. Managers in the nonservice parts of the DOD had the longest tenures in their jobs and the highest probability of private sector management experience. Among the services, the Air Force managers had the highest ranks and longest career tenures before assuming their posts. They also were the most likely to have political experience and graduate education (along with the Army).

To test whether these different backgrounds among managers matter for performance, we estimate a new set of models with the manager characteristics listed in Table 3 along with the controls described above.[30] The estimates are included in Table 5 and they help illuminate which of the differences among the managers matter for performance.[31] The estimates on the controls look very similar to those in

Table 5
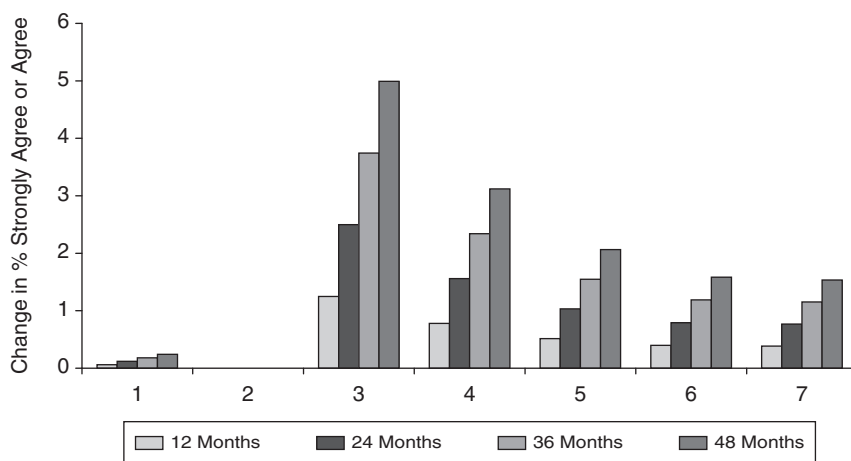### Employee Evaluations of Leadership, Management, and Overall Work Climate by Manager Background, 2002–2004

	Leadership		Management			Work Climate	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Manager background							
Rank (0–4)	2.10*	2.04*	0.01	0.67	1.00	1.84*	1.73
Tenure as bureau chief (months)	0.01	−0.00	0.10**	0.07**	0.04**	0.03**	0.03*
Master's (0,1)	1.46	2.48	3.91	0.38	3.25	3.20	1.58
PhD (0,1)	7.65**	6.76**	2.49	2.97	4.74**	4.61*	3.93*
Political experience (0,1)	2.22	1.55	0.77	0.73	1.51	1.00	0.30
Combat experience (0,1)	0.97	0.60	−0.33	2.69	−0.75	−0.04	−1.05
Academy (0,1)	−3.38	−5.11*	−7.08**	−0.67	−4.44	−0.52	−0.34
Reserve Officer Training Corps (0,1)	−3.16	−4.10	−6.09**	−1.18	−3.07	−0.86	−1.11
Office Candidate School (0,1)	−5.79	−6.05	−4.03	−2.68	−2.15	−1.02	−1.45
Private management experience (0,1)	6.53**	10.75**	7.21*	5.71	8.71**	7.91*	8.68*
Controls and constant							
Agency headed by appointee (0,1)	0.41	−0.87	−3.21	1.19	−0.93	−0.23	0.42
War fighting agency (0,1)	−3.03	−1.57	−1.70	−2.56	−1.63	−1.81	−2.50
Ln(Employment)	−2.48**	−1.79**	−0.04	−0.40	−0.99	0.50	−0.11
Ratio of managers to employees	−2.49	2.00	−1.29	−3.14	4.02	4.91*	3.93
2002 survey	−8.27**	−3.75**	10.22**	−1.94**	−3.07**	−4.64**	−5.47**
Constant	71.19**	52.99**	56.28**	75.69**	58.41**	50.03	51.08**
N	79	79	79	79	79	79	79
F	34.98**	10.85**	13.79**	9.81**	6.44**	2.68**	4.21**
R^2	0.65	0.51	0.73	0.42	0.41	0.33	0.33

Note: Standard errors clustered on agency. Two-tailed tests. See note to Table 4 for survey questions.
*$p < .10$. **$p < .05$.

Table 4, with employee evaluations generally lower in 2002 than 2004, executives in larger agencies getting lower leadership evaluations, and some evidence that agencies with more managers have better work climates. Among manager background characteristics, combat experience and the source of commission appear unrelated to leadership, management, and work climate, as measured by employee evaluations. Those executives that had the highest evaluations based on commissioning source were those without commissions or direct commission (e.g., medical doctors). Among academy graduates and those who received commissions through ROTC or OCS, there were no clear patterns in management performance.

Figure 1
Estimated Influence of Job Tenure on Employee
Evaluations of Performance

Note: See note to Table 4 for survey questions.

One background characteristic that is clearly related to performance is tenure in the job. Longer tenure in the job increases employee evaluations of both management and work climate, though not leadership.[32] Employees are more likely to report that executives review organizational progress, provide the workforce with job-necessary knowledge and skills, and promote communication within the organization the longer their executives have served. The result is the strongest for the likelihood that managers review the organization's progress with respect to long-term goals (Figure 1). Compared to when a manager has served one year, in agencies where the manager has served for two, three, or four years, employees are estimated to be:

- 2.5, 3.7, or 5 percentage points more likely to report that their executives review the organization's progress toward organizational goals.
- 1.5, 2.3, or 3 percentage points more likely to state that their organization has the job-relevant knowledge and skills necessary to accomplish organizational goals.
- 1, 1.5, or 2 percentage points more likely to agree that managers promote communication among different work units.

These apparent improvements with respect to management lead to higher percentages reporting work satisfaction. Employees who serve under an executive who

has served for four years are 1 to 2 percentage points more likely to report that they would recommend their organization as a good place to work and that it compares favorably with other organizations.

This finding is interesting given that the Army, Navy, and Air Force had generally better evaluations than nonservice DOD agencies but managers in the nonservice DOD agencies had significantly longer tenures. The management benefits of long tenure and low turnover are well established for civilian agencies but not entirely expected here.[33] The findings highlight the profession-bureaucracy tradeoff within the Defense Department. The military services focus on the cultivation of leaders, while civilian agency leaders focus on organizational performance. The conscious choice of military services to cultivate persons by rotating them regularly through positions may enhance the leadership evaluations of military leaders but hurt the management of the specific programs within the defense bureaucracy. Specifically, regular rotation and short tenures decreases the likelihood that managers have a long-term perspective toward the organizations' goals and resources needs.

Air Force managers had the highest ranks, were most likely to have political experience, and had high average levels of education. Of these background characteristics, higher rank and higher levels of education were the two features that were significantly related to evaluations of executive performance. In all the models, the coefficients on rank were positively correlated with better leadership, management, and work climate, although they were only significant in three of the seven cases. While rank and military tenure were positively correlated with performance, we could not disentangle whether this result was due to better performance by higher ranking officers or the management environment in jobs that attract the highest ranking officers.[34]

One consistent finding across the evaluations of leadership, management, and work climate was that higher levels of education were correlated with high performance. All the coefficients on master's and PhD level education were positive, indicating that graduate education led to better evaluations, although the coefficients on master's level education were not significant at conventional levels.[35] In Figure 2, we graph the estimated influence of manager education levels on performance. In all of the cases except one, the graph follows a stair-step pattern, indicating that higher levels of education led employees to report better performance in the agencies. In the one exceptional case, managers with master's degrees were estimated to do slightly better in reviewing organizational performance than their PhD counterparts, although both levels of graduate education were estimated to lead to higher performance than bachelor's level education.

While the coefficients on political experience were also positive, indicating that political experience improved employee evaluations of leadership, management, and work climate, none were significant at the 0.10 level or higher.[36]

The coefficient on previous private management experience was positive in all models and significant in six out of seven. Defense executives with private management experience were estimated to rate 5 to10 points higher on all the questions

Figure 2
Estimated Influence of Manager Education on Employee
**Evaluations of Performance, 2002–2004**
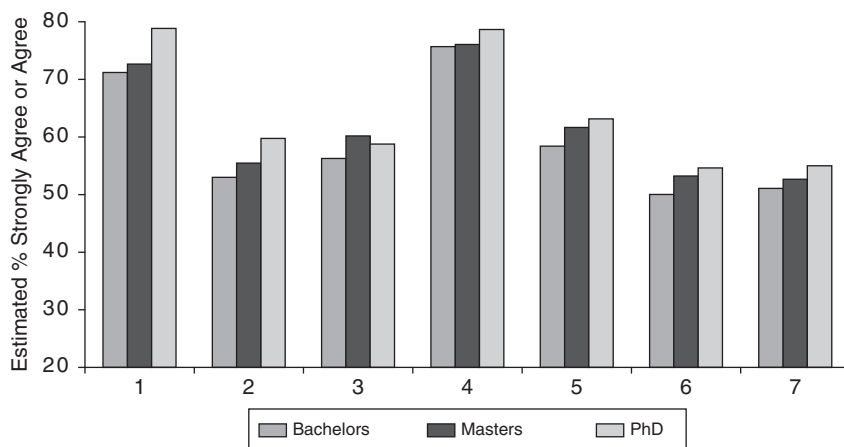
Note: See note to Table 4 for survey questions.

(Figure 3). Most of the executives who served in the private sector held executive positions (president, vice president, CEO) after retirement from active duty in firms that did significant contracting with the military, such as General Dynamics or Northrup Grumman. This suggests that DOD recruitment of retired military personnel of high rank, long experience, and private management experience can help performance.

Summary

In total, the results provide evidence of differences in performance between the services and nonservice portions of the DOD, particularly in evaluations of leadership and work climate. The Air Force ranked consistently higher than other portions of the defense apparatus across the various performance dimensions. While some of the difference in performance is undoubtedly due to the distinct cultures and management environments of the Air Force, its managers have higher ranks and longer military service when they assume executive positions. They also have among the highest average levels of education. These features of managerial background were positively correlated with performance. While Air Force executives were also the most likely to have political experience, this experience was not correlated with performance, except possibly to the extent that the experience was in Congress or the

Figure 3
Estimated Influence of Private Management Experience on
Employee Evaluations of Performance, 2002–2004
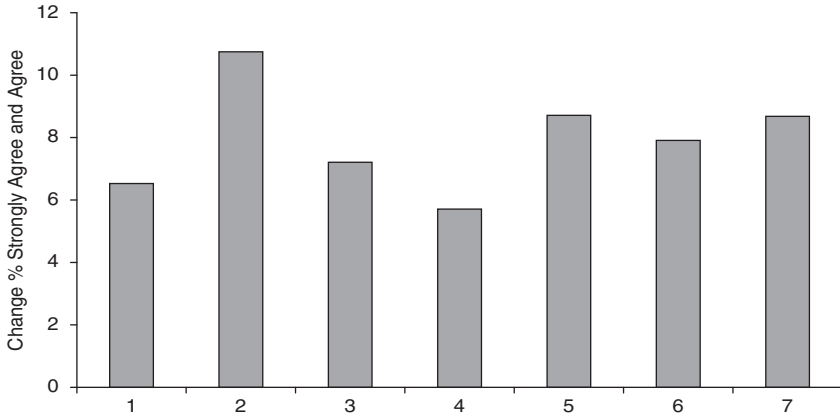
Note: See note to Table 4 for survey questions.

political parts of DOD. Other managerial characteristics associated with high performance were long tenures in the job and private management experience.

Conclusion

An increasingly important component of military leadership is performance in managing large, often civilian populated, organizations in a complex political environment. This article has used federal civilian employee evaluations of leadership, management, and work climate in the defense bureaucracy to assess how different approaches to leadership training and executive staffing have influenced performance of this important task.

The research has both notable limitations and important implications. The former suggest where future research should be conducted. Specifically, the article uses only one measure of performance that reflects the viewpoint of one key stakeholder (federal civilian employees) and does not measure all of the dimensions of performance on which military leaders should be evaluated. Measures of performance from the administration, the Office of the Secretary of Defense, or Congress likely differ significantly from these evaluations because of different criteria for what constitutes good performance. In addition, the military's ultimate effectiveness is

measured primarily by how well it fights and wins the nation's wars, and its leaders must foremost be combat leaders. Yet today's military leaders must also be effective managers, soldier-scholars, and soldier-diplomats, not only because these tasks are important in their own right but because they influence the ability of military leaders to mobilize for and execute wars effectively. Our findings can shed light on what factors contribute to growing a successful well-rounded leader, but more research should be conducted using different measures of performance.

With these caveats in mind, the research has important implications for the way we understand the modern training and education of military leaders. To some extent, the differences in service performance in leadership and management reflect the tension between training war fighters and managers, professionals, and bureaucrats. The military services focus on developing persons and they orient their promotion structure, career patterns, and training programs around the goal of giving officers a variety of work and command experience. Civilian agencies, on the other hand, spend much less effort developing persons and instead focus on organizational performance at the expense of personal development. In the military it is the leader that matters, while in most bureaucracies, it is the program that matters. Military training is characterized by frequent job rotation and short tenures, and it sacrifices managerial performance for personal development. Civilian agencies orient career patterns to cultivate stability, expertise, and predictability to ensure performance at the expense of leadership development.

In one sense, our results seem to validate the main method the military is using to produce adaptive professionals ready for complex and unforeseen challenges. The short tenures in a position do not adversely affect leadership—the main measure of performance for the military. The frequent rotation does seem to shortchange an executive's ability to manage an organization, however. The extent to which the military services can improve managerial performance without compromising leadership, professional development, and war-fighting capacity is unclear. But it is worthwhile to explore some possibilities.

Continued attention to graduate education appears to be one means of improving managerial performance. More research is necessary to determine what types of graduate training are best, but management-oriented degrees like an MBA or MPA are likely to improve performance. Federal management requires knowledge of the uniquely public environment of agency work and the skills to navigate that environment. Public sector work occurs in a political environment where the success or failure of an endeavor can depend fundamentally on coalition building and maintenance.[37] Federal managers must therefore understand their political environment and be able to use the skills of negotiation, public communication, and diplomacy to convince people over whom they have no formal authority to cooperate with them. They need to understand arcane topics like public budgeting, rule making, and personnel system guidelines. They operate under the unique constraints imposed by the political calendar and the difficulties in measuring outcomes in public sector work.

It would be worthwhile to conduct a careful evaluation of the primary mission of an agency and who is needed to lead that agency. Certain agencies may be best led by active duty officers. Others may be just as well led by recently retired officers or retired officers with private management experience. Some agencies may warrant the current billet in terms of the rank and grade of the executive. But perhaps the departments can explore placing more senior and higher ranking executives in these billets.

Certain positions require active duty officers at the helm. Understandably, some of these positions are stepping stones to positions of greater responsibility, and a relatively short tenure may be warranted. Other positions, however, are in agencies that are at the apex of the hierarchy. Officers at the end of their careers can afford to stay longer in their jobs without concerns that doing so will compromise their professional development. Granted, keeping an officer in that position for longer than the present norm may mean that other officers will not be able to experience that leadership opportunity. This may be a worthwhile decision if it means an increase in performance for the organization.

Other positions, especially those more bureaucratic in nature, may not necessarily require active duty officers. Another means of improving managerial performance may be to select retired officers, especially those with private management experience. The selection of retired officers to fill executive positions provides the additional advantage of infusing military management with private sector experience. Such experience was strongly related to evaluations of leadership, management, and work climate. Here, tenure for the sake of professional development is a moot issue.

In total, efforts to improve our understanding of the nexus between military and DOD employment and the changing requirements of military leadership may provide us a means of improving the ways the armed forces interface with society, but not at the expense of war-fighting capacity.

Notes

1. See, however, L. R. Jones, "Management of Budgetary Decline in the Department of Defense in Response to the End of the Cold War," *Armed Forces and Society* 19, 4 (1993): 479-509.

2. Gregg F. Martin and Jeffrey D. McCausland, "The Role of Strategic Leaders for the Future Army Profession," in *The Future of the Army Profession*, ed. Lloyd J. Matthews (Boston: McGraw Hill, 2002), 425-438.

3. U.S. Department of Defense, "DOD 101: An Introductory Overview of the Department of Defense," http://www.defenselink.mil/pubs/dod101/dod101_for_2002.html.

4. "Budget of the United States Government: Historical Tables Fiscal Year 2007," http://www.gpoaccess.gov/usbudget/fy07/hist.html.

5. For additional discussion on the need of senior military leaders to possess different sets of leadership behavior for different situations, see Walter F. Ulmer, "Military Leadership into the 21st Century: Another 'Bridge Too Far?'" *Parameters* 28 (1998): 4-25.

6. Nicholas Jans and Judy Frazer-Jans, "Career Development, Job Rotation, and Professional Performance," *Armed Forces & Society* 30, 2 (2004): 255-77.

7. Michael Barzelay and Colin Campbell, *Preparing for the Future: Strategic Planning in the U.S. Air Force* (Washington, DC: Brookings Institute Press, 2003).

8. Charles C. Moskos, John Allen Williams, David R. Segal, eds., *The Postmodern Military: Armed Forces After the Cold War* (New York: Oxford University Press, 2000).

9. Christopher P. Gibson and Don Snider, "Civil-Military Relations and the Potential to Influence: A Look at the National Security Decision-Making Process," *Armed Forces & Society* 25, 2 (1999): 193-218.

10. See, however, Leonard Wong, "Fashion Tips for the Field Grade," *Strategic Studies Institute Newsletter*, October 4, 2006, www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=731.

11. See Gibson and Snider, "Civil-Military Relations."

12. Michael Meese and Samuel Calkins, "Back to the Future: Transforming the Army Officer Development System," *The Forum* 4, 1 (2006): 1-13.

13. Carl H. Builder, *The Masks of War* (Baltimore: The Johns Hopkins University Press, 1989).

14. Jans and Frazer-Jans, "Career Development."

15. Richard T. Boylan, "Salaries, Turnover, and Performance in the Federal Criminal Justice System," *Journal of Law and Economics* 47 (2004): 75-92; David E. Lewis, "Political Appointments, Bureau Chiefs, and Management" (paper presented at the annual meeting of the Southern Political Science Association, Atlanta, GA, January 5, 2006); Hugh Heclo, *A Government of Strangers: Executive Politics in Washington* (Washington, DC: Brookings Institution, 1977).

16. George A. Boyne, "Sources of Public Service Improvement: A Critical Review and Research Agenda," *Journal of Public Administration Research and Theory* 13, 3 (2003): 367-94; Gene A. Brewer and Sally Coleman Selden, "Why Elephants Gallop: Assessing and Predicting Organizational Performance in Federal Agencies," *Journal of Public Administration Research and Theory* 10, 4 (2000): 685-711; John B. Gilmour and David E. Lewis, "Political Appointees and the Competence of Federal Program Management," *American Politics Research* 34, 1 (2006): 22-50.

17. We evaluate employee perceptions of performance rather than performance directly. There is good reason to trust that differences in average employee perceptions of performance across agencies is correlated with true performance.

18. There was a 51 percent response rate in 2002 and a 54 percent response rate in 2004. For full details see www.fhcs2004.0pm.gov. The OPM made the data publicly available in different levels of aggregation to protect the identity of survey respondents. Individual-level data is only available at the highest level of aggregation. So, for example, we know Respondent 1 works in the Department of Army but we do not know whether he or she works in the Army Materiel Command or the Acquisition Executive Support Agency. Agency level data is available at lower levels of aggregation so that we know that 62.2 percent of the employees in the Army Materiel Command answered "Yes" to question 11 in 2004 compared to 65.0 percent in the Acquisition Executive Support Agency. In this article we use the agency-level data from the departments of Defense, Air Force, Army, and Navy. OPM made the aggregate data on survey responses available to the Partnership for Public Service, a nonprofit agency whose mission is to encourage public service as a career. We obtained the data from the Partnership subject to certain limitations on its use.

19. Interested readers can find the other questions in U.S. Office of Personnel Management, *What Do Federal Employees Say? Results from the 2002 Federal Human Capital Survey* (Washington, DC: U.S. Office of Personnel Management, 2002), Appendix A; U.S. Office of Personnel Management, *What Do Federal Employees Say? Results from the 2004 Federal Human Capital Survey* (Washington, DC: U.S. Office of Personnel Management, 2004), Appendix B. Exploratory factor analysis suggests that the questions load strongly on one dimension, arguably a performance dimension.

20. The size of the samples drawn from the different agencies varies depending, in part, on the size of the agency. The smallest sample was drawn from the U.S. Air Force Academy (269 respondents in 2004) while the largest sample was drawn from the Army Corps of Engineers (6,295 respondents).

21. For these entries in the data we assume that the secretary is the agency head. Since employment data is not available for these parts of the agencies, these cases are omitted in the regressions reported in the text.

22. We count leaders in the U.S. Marine Corps as part of the Navy. When they are not considered part of the Navy, the only notable changes in Table 3 are that Navy personnel have slightly less education and lower levels of political and combat experience. While opportunities exist within the military to earn a

master's through military institutions like the Post Graduate Naval Institute and Command and General Staff College, most leaders have chosen to pursue an additional degree from civilian institutions. Although 82.5 percent of the leaders have graduate degrees, only 9.71 percent of those with graduate degrees possess solely a military graduate degree.

23. In deciding who had combat experience, we relied on the official bios of the officers and their mention of participation in major U.S. combat operations such as Vietnam, Desert Shield/Storm, the Balkans, etc. We recognize, however, that it is difficult to know precisely who has had combat experience. This term applies differently for each of the services and certain combat missions are not publicly mentioned because of their secretive nature.

24. In two of the seven questions, the question wording was slightly different in 2002 than in 2004. Specifically, one question reads, "I hold my organization's leaders in high regard" in 2002, and "I have a high level of respect for my organization's senior leaders" in 2004. Another reads "Managers promote communication among different work units (for example, about projects, goals, needed resources)" in 2002, and simply "Managers promote communication among different work units" in 2004. This can lead to problems in inference if differences in question wording are correlated with key variables of interest. To ensure the comparability of the questions, we (1) compared the distributions of the responses in 2002 with the responses in 2004 in these two cases and (2) correlated responses in 2002 and 2004 with a related variable where there was no difference in question wording. If the distributions looked similar and correlations looked similar, we concluded that variables with different question wordings could be considered the same. In the first case the means were 45 and 54 with standard deviations of 6.37 and 7.17 for 2002 and 2004, respectively. Each was correlated with the question about whether senior leaders created motivation and commitment in the workforce at 0.91. In the second case, the means were 51 and 55 with standard deviations of 4.9 and 5.1. They were correlated at the .68 and .57 level with the question about whether employees would recommend their organization as a good place to work. We also estimated models with split samples and the results are similar with a few exceptions. Specifically, a few of the coefficients are different in size and the estimates are less precise. These results are available on request.

25. Paul Light, *Thickening Government: Federal Hierarchy and the Diffusion of Accountability* (Washington, DC: Brookings, 1995).

26. See Gilmour and Lewis, "Political Appointees," and Lewis, "Political Appointments."

27. All models were estimated using Stata 9.0. We evaluated the models using standard regression diagnostics. Diagnostics revealed noticeable outliers in several cases. Although the diagnostics indicated that the outliers were not influential in most cases, we also estimated models where outliers were excluded. The results are consistent with what is reported here and available on request.

28. Paul Light, *Thickening Government*.

29. The Wald tests in the table test for the equality of the coefficient estimates among the services.

30. When we estimate split-sample models of regard for senior leaders and management communication the results are very similar, although the standard errors become larger since there are fewer cases. These results are available on request.

31. We have also estimated models regressing employee evaluations of leadership, management, and work climate on manager background characteristics and also indicators for the services themselves. The results are similar to what is reported here with a few exceptions. First, coefficient estimates on rank were generally smaller and lost significance, while estimates on private management and education at the master's and PhD level gained significance. The coefficients on master's level education became significant at the 0.10 level in three cases, while the coefficient on private management experience was significant at the 0.05 level in six out of seven cases.

32. Jans and Frazer-Jans ("Career Development") had similar findings in their study of the Australian Defense Force. Tenure was not correlated with increases in self-assessed performance for senior military officers. Their study, however, did not define performance in terms of leadership and management and did not study the effects on work climate for the employees of the organization. As previously noted by Jans and Frazer-Jans, there appears to be a relationship between tenure and education. When models

were estimated including interactions of tenure and education levels, the results suggest that the impact of a PhD education was greater the longer an executive served. There was no relationship between master's level education and job tenure.

33. Boylan, "Salaries, Turnover, and Performance"; Heclo, *A Government of Strangers*; Lewis, "Political Appointments."

34. When we estimated models of the difference in scores between 2002 and 2004 as a means of accounting for the nonindependence of observations, changes in rank were not significantly related to changes in performance. This could imply three things. First, it could be rank *is* correlated with higher performance but we do not have enough cases in the difference models to draw conclusions. Second, it could be that certain agencies attract high ranks and that it is the job rather than the rank that leads to high evaluations. Changing the rank of the agency head would have no influence on performance. Finally, it could be that the effects of management change do not appear instantaneously, so that models of change do not pick up real effects. These results are available on request.

35. In models of the change in evaluations from 2002 to 2004, changes in levels of education were positively correlated with changes in performance in all cases and significant in three out of seven cases at the 0.10 level or lower, despite there being only thirty-four cases. These results are available on request.

36. When we estimated models with the different types of political experience disaggregated, experience in the White House (five managers in our dataset) was negatively correlated with performance in six of seven cases, and significantly so in four of seven. Experience with Congress, and to a lesser extent political personnel in DOD, tended to work in executives' favor, however. To the extent that political experience helps, work in Congress and with DOD political appointees appears to help the most. These results are available on request.

37. Mark H. Moore, *Creating Public Value* (Cambridge, MA: Harvard University Press, 1995).

Paul S. Oh, MAJ, U.S. Army, is a master's candidate in public affairs at the Woodrow Wilson School of Public and International Affairs at Princeton University. E-mail: poh@princeton.edu.

David E. Lewis is an assistant professor of politics and public affairs at Princeton University. His research interests include the presidency, executive branch politics, and public administration. He is the author of *Presidents and the Politics of Agency Design* (Stanford University Press, 2003) and numerous articles on American politics, public administration, and management. *Address for correspondence:* David E. Lewis, Woodrow Wilson School of Public and International Affairs, Princeton University, 311 Robertson Hall, Princeton, NJ 08540; e-mail: delewis@princeton.edu.