

ACADEMIC

Effective Leader Performance

Michael Mumford, Professor, University of Oklahoma

Interviewed by: Douglas Lindsay

Lindsay: Do you mind just giving a little bit of background? I know you come from a social psychology background, you've got I/O, you've got a lot of work with the military, and you're working on creativity, innovation, and selection. Do you mind telling a little bit about how you got to where you are now, studying what you study, and anything that kind of influenced that along the way?

Mumford: I grew up in Pennsylvania farmland, actually predominantly Quaker farmland. At least at that time, now it's very rich suburbs actually. I went to Bucknell, initially as a biology major with no intention of being a doctor. No interest in it. Of the 120 people in my biology class, there were six of us who did not want to be doctors, but wanted to be research biologists. Of those six, I was the last to leave. Eventually, I decided I'm just not doing this. I'm not going to memorize. In those days in bio you had to memorize. I switched to a psychology degree because of animal behavior. I drifted from animal behavior, although my first publication was urine marking by squirrel monkeys. I drifted from there to basic data analysis and statistics, and quantitative psychology. And true story, I stepped on an alligator while chasing monkeys in Florida, which is easier to do than you would think. Alligator went one way, I went the other way, so that turned out fine. But I went, "This is not the way to spend the rest of my life." From there though, I ended up applying in quantitative psychology communications, urban and regional planning, and one school in industrial psychology, and that was the University of Georgia. It was because they labeled themselves

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as an applied psychology department. It worked out great. They made me get two degrees, one in industrial organizational psychology, and one in psychometrics so that I had to actually hold two Ph.D.s.

From there I went to work for a few years in DC, which was the introduction to leadership, actually. The work I was doing was a new curriculum for Army Sergeant Majors, and their initial work on retooling the army development system, post-Vietnam. And remember, with you guys it takes like 10 years after the effect, for it to feed down into the system. Went from there to Georgia Tech, then went back to George Mason. Oh, actually I forgot, I also actually worked for the Air Force those first two years. There was a debate between the training people and the selection people on too much training time. So we developed this very elaborate model that made everybody happy. The issue was, it was a trade-off, because at some levels they dropped the ability and skill requirements for entry into the higher level technical specialties. And the reason was the trainers thought they could train people. They could eventually, with a few exceptions, but it was costing the Air Force further money, because they were just cycling back through again, and again, and again.

Now, I'm back at George Mason, and I was really doing two pieces of work at the time, one was redoing the security interference procedures, which worked quite well. Bear in mind, this is the eighties and we had problems with the eighties. The complaint wasn't about procedures, it was about execution of procedures. We then did the initial work on redoing the Army development educational system. Following that, I did a chief scientist job for the intelligence community for five years which was more to the initial behavior of the human resources system. I had a group of psychologists, who I was responsible for. It was pretty typical work

of a chief scientist job. I lasted five years and it was time to go back to academia. Then we at the University of Oklahoma and we've been here 23 years. We like Oklahoma.

In that time, I've been senior editor of *Leadership Quarterly*, current editor of *Creativity and Research Journal*. I'm currently president or president elect of Division 10 of the American Psychological Association (APA), which is Psychology of Aesthetics, Creativity, and the Arts. The total funding I've received over the years is about 35 million. A lot of the work in leadership and ethics, much less creativity. There has not traditionally been any venues supporting creativity or innovation research, which is an ethical problem. I have done about 440 peer-reviewed publications. It's been busy. I've also supervised about 75 Ph.D.s over the years. They're all out there somewhere. Some are industrial, some are government, some are academic. It's tended to be heavier academic and government, a little less consulting actually.

One of our old students runs basic research for the Army now. Another one's in Monterey running security research. Another one's down at NASA actually doing prep for the Mars mission from a behavioral point of view. So they've all done well. I am pleased with them.

At the time when we started work, there were a couple central problems. And you got to remember, coming out of Vietnam, the key issues when the Army, particularly with regard to leaders, was fragging. That had to stop. It accounted for a lot of the officer deaths. The actual number is unknown but it's more than 10%. The culture had gotten out of control, and it was unclear what the key requirements were for effective leadership, that was part one. Part two, what considered to contributed to development of those skills, whatever they may be, or personalities the case may be? And

three, how effective was the Army's developmental system in general? Those were three goals.

The first thing that came out, and it's since been validated in a longitudinal study by Bob Kilcullen and company, is that the key cognitive skill for leaders—at least in a military context, and I'll explain why in a second—is they must be able to think creatively. No ambiguity factors, like the magnitude of the relationship between creative thinking skills and hard outcomes, meaning how many medals did you win? What grade did you make it to? It was in the forties, and it holds up over a 20-year period.

Now, if you think about this stuff. The enemy is always trying to do you in. The enemy is trying to outthink you, and be more creative than you and they want you to deploy your forces the wrong way so they can kill you. Well, under those conditions, if you can't think creatively, you got a problem.

The other thing that made a difference too, was intelligence. And, the third thing that made a difference was expertise. None of this is surprising. The thing that surprises people is, military officers have to be creative. What they do is they assume the uniform and regulations are what's going through someone's mind. But someone in combat is dealing with the dynamic situation, and the other side is trying to do you in. You've got to be able to work with stuff. To do that you need a lot of expertise, you have to be intelligent, and you have to be able to think creatively.

The next thing that came up, which is very central, is key creative thinking processes were most strongly related to leader performance. So problem definition, information gathering, conceptual combination, idea generation, implementation, planning, adaptive

adjustment of those plans once they're executed. All were critical to leader performance.

How well was the system doing in developing leaders? Actually, surprisingly well. Basically, all of the Army central leader development for officers, so officer basic, Combined Arms Services and Staff School, Command and General Staff College, War College - worked well. All are actually pretty highly effective. In those days, it was all residence. There is no evidence that I know of looking at resident versus non-resident instruction. Should they do that? Yes. Because my guess is, and this is just talking to people, non-resident courses are nowhere near as effective. In essence, it's because you don't have senior experienced people there actively monitoring this stuff, and encouraging this stuff. So this is a ridiculous example, but factually I suspect true. Conversations about experiences occur in those classrooms, or on that golf course, or at the bar and those are all important developmental experiences.

The next thing that was quite clear, with regard to this, given what I've just said, it's not surprising the kind of experiences that contribute to better leader performance. So this also counts to progression moving up the ranks. Exposure to complex problems, exposure to novel problems, systematic mentoring, what I would call diversity assignments, meaning you move, in your guys' case, a pilot into mission planning. Those are the big things that contributed to development. Now on the whole, the news was good here, but at some levels it raises a lot of questions.

The first issue is it is clear not all officers profit by experience. This is despite the well-educated, actually reasonably effective officer know the system. Part of that is careerism. But the issue that hovers here, the real technical issue, is reflection. When you look at very

successful officers who have acquired the experience before, they are two things. They're very reflective on their past experiences and they are self-critical. It's not that the self-criticism is inhibiting. More like "I did this, well, I didn't do this well, I can do this better." So they're reflecting on what's happened to them, and they're saying, "Where did I do, where didn't I do well?" They're working on the places they didn't do well.

Lindsay: Is that organic? In your experience, was the system allowing people to do that, or those that tended to perform better, more naturally gravitated to doing that on their own?

Mumford: The system, does not encourage self-criticism in military officers. It does not. No, they're doing it naturally because they are highly invested in their careers.

Lindsay: And it goes back to a point you mentioned earlier, about the need, the necessity, and the value of being co-located for a period of time, because then it not just becomes about me, but can be a bit of a norming experience with others, as you share those reflections, right?

Mumford: Correct. Because when they talk with each other they'd say, "I've been in that situation. I didn't do that. I did this, and this worked out better for me". It's peer-based feedback. Particularly with senior officers, when you get to lieutenant colonel level and above, the peer feedback becomes very, very important. So the peer feedback with lieutenant colonels and full colonels, these are the people actually learning things and doing things, and that peer feedback is very valuable. And it perhaps helps because the norms in

the military are rather social. So, the feedback they get from peers is not hypercritical. "You could have done it this way." "You could have done it that way." "When I tried to do this, this happened to me." It's a very technical probing.

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Lindsay: But supportive. Like you said, as well, in terms of we're in this together kind of trend. Not a competition necessarily in that environment, more trying to help each other.

Mumford: Yes. The next thing you see, which is absolutely critical with development, is self-development. I don't actually see how anybody can miss this, frankly. If you read any set of biographies about successful senior officers, meaning major general or above, they read constantly. They read military history, constantly. And by the way, when we're doing that we're developing both mental models and expertise. So it's about getting better mental models, and getting more expertise. But the other thing you're doing is intentionally broadening yourselves. One of the things people forget about the military is particularly for, in Army terms, company level officers, it's a technical job.

In the Air Force, I'm not sure there's anything that's not technical until you are lieutenant colonel, frankly. But when you go to military combat at a higher level, you have to think about economics. You have to think about societal readiness. You have to think about

cross-cultural interactions. That reading and that self-development, plus the war colleges, encourage people to broaden out. But they read. They read a lot, and they're critical and they reflect.

I want to jump back for a minute. There's a timing issue here too. And the timing issue is quite real. Military thinking is very applied. It's creative but it's very applied. The findings here, and work applied with field, the later peak development in creative thinking skillsets. Meaning peak period for performance for most military people probably runs between 45 and 55. It's late, but you're a full colonel or general by that stage in time. So the right people are in charge. The point here being the experiences you're given, the type of complex problems, type of novel problems, the type of diversity problems, have to be tailored to where that person is on the career trajectory.

What skills help with this? The first thing, causal analysis skills. Almost all military operations, actually all forms of leadership I've ever seen, and I don't say this lightly because I believe in the domain specificity of leadership, but organizations are complex operations and they're sufficiently complex that you if can't analyze the causes of outcomes in the system, and take actions to change those causes. You will fail. I don't know that we're doing enough per se, to encourage causal analysis in the officer development system. I don't think we are. And I'll use the academies for this. There's a lot you can do in developing causal thinking skills and education. When you talk to people coming out of the academies, particularly very good academy graduates, the classes they like are their social science classes or their humanities classes. It's not that they're not engineers at heart. They are. But those classes stress causal analysis. I don't know if the academies need to do more of that, just using that to make a point.

The next skill that is absolutely utterly critical is forecasting. Now, forecasting has a bad reputation, but it has a bad reputation because of bad research. I mean this. The initial forecasting research was all, "Can you estimate next year's stock prices?" That's not what's required in forecasting. The issue is to be in the domain. If you're in the range, you're good enough to go. So I'm going to tell you a study report. What we did is we went and pulled old funded proposals, real funded proposals. We gave them to students and we told them estimate how much it'll cost to do this, estimate how long it'll take to do, very functional requirements for executing it. Then we asked them to forecast the outcomes as members of a review board deciding whether they would fund the proposals. Now the kids had no knowledge, okay, of either the topic or the content. If they had expertise in the domain and if they were invested in solving the problem, they were within 20%, a quarter of a standard deviation, literally of the actual outcomes. Now were they deadly accurate? No. Were they within 20%, I think it was a quarter a standard deviation? Yes, they were. That's enough to operate on. Forecasting has a big impact on leader performance. Leaders can forecast. What we don't do, is we do not teach people to forecast. We do not. I once asked this question in an intelligence agency and the comment was we don't forecast, and I kicked my chair back and hit my head against the wall, which apparently provided a huge entertainment factor. The point here being, we need to do more with forecasting than we are.

The next variable here that counts is constraint analysis, and that's good. The military is brilliant at constraint analysis. I mean, at some levels, I think that is you guy's (the Air Force's) great strength. In solving the types of problems the military officers encounter, there are great constraints. You got this much equipment, this much time, this many troops,

this many supply linkages, etc. If you don't take all those constraints into account, you've failed before you've begun. And your system does a very good job from the time they walk into the academies to the time they are a general officer—Feeding into them that you will consider constraints.

Okay? Now what is forgotten about that, is that effective analysis of constraints leads to better creative thinking. Constraints do not shut down creative thinking. Constraints encourage creative thinking as a way to get around the constraints. We've only got so many aircraft. We've only got so many ships. But you tend to be with constraints too fixed. You don't encourage them to think of ways around the constraints. You say you must operate within the constraints. You need both. Okay.

Next variable here is idea evaluation. The problem here is related to military command and control structures. In good idea evaluation, the attempt of creative people is to take an idea, reshape it, reconfigure it, to make it more workable and more effective. In other words, compensate for the deficiencies in the initial idea. It's not a passive process. It's actually quite active and more active analysis of ideas contributes to better creative performance.

Lindsay: Is that where things like diversity and background diversity of members on the team, different experiences, can help with that idea formation and doing that? Does that help the creative process to have that?

Mumford: This question comes up every time I talk. So once again, you're going to get confused about what I'm going to say. I teach a class up at MIT on research and development, and they always ask

this questions. They get mad at my answer too, and my answer is correct. Ethnic diversity is unrelated to problem solving and creative performance. There is zero relationship. Functional diversity, meaning the relevant expertise, but diversity in that expertise, that's always positive related. The functional diversity thing is not trivial. What people do is they equate functional diversity with ethnic/social diversity. It zero related. That's good news. It means it doesn't matter what your ethnicity is. It doesn't matter what your gender is. It matters, do you know what you're talking about, and do you bring value at it? I don't know why people do not understand this. The zero relationship here is something you pray for. For what it's worth, the Army is, in its way, given current policy, trying to work in this issue to build awareness of using expertise and using expertise of junior people and fitting that expertise together. It's coming out under the rubric of collective leadership. It's going to take them a while to work it through though. This isn't going to be quick. It's because, in principle, a Lieutenant Colonel going to a platoon Sergeant, because that platoon Sergeant has particular expertise in working with this particular software system. That's still not viewed as culturally appropriate. It is just going to require some changes in operation, which are going to come.

The next skill here that makes big difference: wisdom. Wisdom's a little bit like forecasting in that it sort of has a bad rap in the military. Military officers are not supposed to be necessarily wise. Military officers are supposed to be action oriented and get the job done. Well, the issue here is, this goes back to the reflection part, you have to think about the impact of your actions in the local context and what is a viable and non-viable action in that context. The way to think about wisdom, and I know this is going to sound ridiculous, is wisdom is *Æsop's Fables*. If you look at people trying to project

the outcomes of Æsop's Fables, which is another study we did. It was a fun study. We translated Æsop's Fables into modern English and removed all the nasty stuff. The game was, here's the fable, guess the outcome. You give them nine options, and then they guess it. The criterion task here was a leadership performance task, and the correlation between wisdom and performance in leadership tasks was about 0.35. So wisdom is, at least in the case of that one study, strongly related to leader performance. But what wisdom entails is saying, what is a workable solution in the long term under these conditions?

Lindsay: Very contextually driven.

Mumford: Yes. It's analyzing your problem solutions in the context in which they exist. Now, developmentally, what you see is that is what lieutenant colonels and full colonels are developing. The creativity tends to develop more at the major, lieutenant colonel level, maybe senior captain post company command. Your guy's (Air Force) system is a little different than the Army's. The basic working expertise is developing throughout, but expanding and growing. I'm going to go back to a really concrete recommendation. In any case though, there is no attempt that I have ever seen outside of the War Colleges, they are the exception here, where there is any attempt to develop wisdom in military officers. I think that is a terrible and tragic error.

Now this relates to another issue. Wisdom does, the forecasting does, the causal analysis does. The biggest problem we saw in our last of leadership, and again, it's a military study, was formation of local mental models. The military gives people a very strong service oriented model. This is the Air Force. This is how we are in the Air Force. This is the Army. This is how we are in the Army. This is how we operate. That model becomes

ingrained in literally the first two weeks someone enters one of the academies, and then it's for the next 10 years. But the problem becomes, effective action in a local context means understanding what's going on in that local context. The formation of those local mental models and particularly local mental models of enemies. What is the enemy's local mental model? What is your local mental model for understanding the situation in front of you? That is critical.

I'm going to use recent events here as an example. Many years ago, I became interested in Afghanistan because I was interested in the British Raj¹ in India, which requires some reading about Afghanistan. Afghanistan is not a country, firstly. It's a group of tribes, living in different valleys who don't really like the other tribes. They like to go shoot at them and steal stuff from them. I'm being somewhat hyperbolic here, but it's basically still true. These people are all armed. If you are male, you are armed by the age of 12. That is not hyperbole. The U.S. military moves in. What happened to a large extent though, they did not, when they moved it, think about what tribes they were dealing with, are the tribes shooting at them just for sport, because Afghans will shoot at you just for sport. But saying to a U.S. military person, "They're shooting at me just for sport," which is, in Afghan terms, totally legitimate. It's something we do to pass the time and have fun. I'm laughing myself, but it's actually kind of true. The U.S. military literally didn't see that. Part one. Now the general other version of this. Trying to create a U.S. model democracy under those conditions where each tribe is unique, they all live in different valleys, they don't like each other, they shoot at each other for fun, and they shoot at anybody who invades their country for fun and foul. And they're good at it. They're very good. Let us remember, the British

¹ The British Raj was British rule in India during the period of 1858 to 1947.

went down, the Russians went down, and we lasted surprisingly longer than anybody else ever has actually.

You see the same thing in another context in Iraq. So, when we went into Iraq, we left the military with their weapons. That wasn't the best idea we've had. We De-Ba'athified the country and that eliminated the whole middle class, and the middle class is a source of stability. So really, when we went into Iraq, we basically de-communized or de-socialized the production industries. So we removed industry, removed the middle class, and left everybody armed. What do you think is going to happen? Now, both those examples kind of make the same point of developing better skill at moving past the institutional model to the local combat model is something the military has to do. You see where I'm going?

Lindsay: My mental model through my training and development, how does that help inform how I am going to need to be in the local context? Right? It is what Petraeus was trying to do with this COIN approach. But it was about shifting the model from guns in people's faces, to guns at our sides, to having tea. The taking the time. It was a different approach to how we're going to do things.

Mumford: The Petraeus example is perfect and it worked in Iraq. But would that work in Afghanistan? No. We need another approach. Afghanistan is a different place, which is a different place than Vietnam, which is a different place than Korea, which is a different place than Germany, which is a different place than Boston. Is the military doing well enough teaching people to be flexible and reconfigure their

understanding of the world based in the situation? No. Although, there is hope here.

So the question we don't know how to answer, and there is nothing out there, so I say this as warning, because you must protect the strength of the internal culture, while teaching people that this is a time you

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think about it differently, and approach it differently, and look for the differences.

I'll give you another good example of this. I think this one actually did involve you guy's (Air Force) and it was managed brilliantly. It was Okinawa, which is a base we really need. This is not a disposable base. But management of the Okinawan base, and after some bad behaviors, the commander did very well. That commander did very well. You don't hear about Okinawa on the news. The Okinawans aren't mad at us anymore. If we had lost that base, it would've been a significant loss.

Those things, to me, all those skills that I went through, including the formulating local mental models, all those are critical and I think the data sets are critical. I do believe not as much in intelligence, because that's a different beast. It truly is a different beast. But the military doesn't talk about the importance of being wise. It doesn't really talk about the importance of self-reflection. It doesn't talk about the importance of reflective self-education. It does talk

about forecasting, but only in a very limited sense, and that's really anticipating threats.

I want to finish with one thing that, goes back literally to Vietnam at a certain level. The system would probably ultimately support almost everything I say. I actually think they would. Certainly the War Colleges. They would say, "Yeah, you should think about what you've read. It would be good if you read more." The question I've ended up asking myself, is why doesn't some of this permeate to the system? I think it is because of an upper out competitive careerist system. What happens is, not all by the way, and not those who make full colonel, not those who make general, actually. The careerism and the immediate performance pressure overrides the self-development. It overrides the wisdom. It overrides the causal analysis. It overrides the forecasting. That careerist issue is at one level good, but at another level it's bad. I think probably the military is going to have to really think about the up or out system. I do. Partly because of technical skills. Literally, some of the technical skills are not easily replaceable. There isn't always a place for the person move up. I think the system's going to have to learn to live with that.

But having said that, my point is with development of these skills, and with thinking about military command and control in these ways, you have to take into account two things. One is the nature of military culture, which is legit. The other is the unofficial; let us call it military social interaction system. Both of them can militate against, for varied reasons, what's needed for officer skill development. If you go and read biographies of four stars, they will talk about their mid-career periods in sort of, "I had to do this, this sneaky way". I think there is an awareness amongst the officers about this, but I don't know that's been directly addressed. Either there needs to be institutional

change or change with the development that is given to junior officers.

I'll use you guys (Air Force) as a final example. If you were a new cadet at the Air Force Academy, and do you try to think a little too differently, I doubt you're making it out of barracks. Part of that's necessary to question where is the line? What are the instructors saying to them? What are the instructors saying at each level? In an Army system, which is not the same for you guys (Air Force), what is the colonel saying in regiment? What is the message he is sending about how you develop these skills, and how much emphasis they're going to place on it. I think that has to be dealt with. I do.

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