Faculty Publications: Agricultural Leadership, Education & Communication Department

Agricultural Leadership, Education & Communication Department

2014

Leading Dangerously: A Case Study of Military Teams and Shared Leadership in Dangerous Environments

Alex J Ramthun
University of Nebraska - Lincoln

Gina S. Matkin
University of Nebraska-Lincoln, gmatkin1@unl.edu

Leading Dangerously:
A Case Study of Military Teams
and Shared Leadership in
Dangerous Environments

Alex J. Ramthun and Gina S. Matkin

University of Nebraska–Lincoln, Lincoln, NE, USA

Corresponding author — Alex J. Ramthun, 225 Easterly Drive,
New Bern, NE 28560-8551, USA. Email: alexramthun@gmail.com

Abstract

In a qualitative case study, we described and explained shared leadership in dangerous contexts for military teams. We conducted eight semistructured interviews with shared, team, and military leadership subject matter experts in order to gain an improved understanding of the relationship between shared leadership and team performance in the presence of danger. We found the themes of mutual influence, leadership emergence, dangerous dynamism, and distributed knowledge, skills, and abilities provided rich description of the phenomenon. Specifically, our findings suggest military teams in dangerous situations use mutual influence and leadership emergence to share leadership and achieve high performance. Additionally, we found dangerous dynamism and distributed knowledge, skills, and abilities may moderate the relationship between shared leadership and performance for teams in dangerous contexts. Implication, limits, and recommendations are discussed.

Keywords: case study, dangerous context, shared leadership, qualitative

To successfully negotiate challenging modern contexts (globalization, complexity, environmental dynamism, etc.), organizations have begun to transform from primarily topdown or centralized command and control structures (Dunphy, 2000; Pearce, Manz, & Sims, 2009) into selfmanaged teams (Manz & Sims, 1987, 1993, 2001; Millikin, Horn, & Manz, 2010; Solansky, 2008). These teams— rather than using rigid hierarchies and structures of leadership to direct work efforts and meet objectives (Kozlowski & Bell, 2003)—rely on one another, as team members, to exhibit leadership when appropriate based on their knowledge, skills, abilities (KSAs), experience, and the situation (Pearce, 2004; Pearce et al., 2009). This alternative model to traditional forms of vertical influence is called shared leadership, defined as a, "Dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both" (Pearce & Conger, 2003, p. 1). The emergent team property of shared leadership results from the distribution of leadership influence across multiple team members (Carson, Tesluk, & Marrone, 2007) and characterizes a group process in which the team as a whole carries out leadership, rather than a single designated individual (Ensley, Hmieleski, & Pearce, 2006).

Though found to positively predict performance in conventional contexts (Carson et al., 2007; Pearce & Sims, 2002), scholars have yet to examine shared leadership in unconventional environments, such as extreme or dangerous situations, where "Leaders or their followers are personally faced with highly dynamic and unpredictable situations and where the outcomes of leadership may result in severe physical or psychological injury (or death) to unit members" (Campbell, Hannah, & Matthews, 2010, p. S3). Many organizations, such as military (special forces, aircrew, embedded training teams, provincial reconstruction teams, etc.), emergency services (firefighting, search and rescue, emergency medical teams, disaster response teams, etc.), law enforcement (task forces, special weapons and tactics teams, hostage rescue teams, etc.), aircrew (commercial airline, private, corporate, and contract pilots), and intelligence services, often employ teams to face the threats and challenges of dangerous environments (Hannah, Campbell, & Matthews, 2010). Yet considering the likely importance and criticality of shared leadership and team performance

in dangerous situations, researchers have failed to examine this phenomenon. As the study of leadership advances, a greater need exists for a fuller and richer accounting of context: dependent, specific, or free (Yammarino, 2013). The lack of scholarly understanding of shared leadership in dangerous environments highlights an important gap in team leadership research requiring additional attention.

In an effort to address this gap in research, we have taken the initial step for the field to describe and understand shared leadership and team performance in dangerous contexts. To accomplish this objective, we employed qualitative methods and a case study design. Using a semistructured interview protocol, we conducted interviews with subject matter experts (SME) in the areas of shared leadership, military teams, and dangerous environments. Our discovery of primary and supporting themes provided rich description and compelling insight for how effective military teams share leadership while facing danger. The themes also revealed potential moderators for the relationship between shared leadership and team performance in extreme contexts. Finally, we addressed theoretical and practical implications, limitations, and recommendations for future directions of research.

Method

Qualitative Approach Rationale

Describing and developing an understanding of shared leadership for military teams in dangerous environments represents the primary purpose of this study. This objective seeks to find and paint a valid and holistic picture of people's interpretations and perceptions of shared leadership. To achieve this interpretative objective, the researcher needs to capture the significance team members obtain from native context (Denzin & Lincoln, 2005). Qualitative methods offer effective approaches for addressing research problems investigating the meaning people derive from social or human context (Creswell, 2007). Qualitative research results provide rich, deep, and real description, answering research problems requiring understanding vice prediction (Stainbeck & Stainbeck, 1988). Additionally, qualitative research approaches provide appropriate methods for exploring the nature of

a phenomenon with relatively little information (Hatch, 2002; Merriam, 2009). With this study's purpose requiring description and understanding rather than correlation or control and the lack of previous research on the central phenomenon in dangerous context, qualitative methods offer the most appropriate approaches to properly address the research problems.

Tradition of Inquiry

This research employs the case study qualitative tradition of inquiry in order to achieve its objective. Case studies represent in-depth descriptions and analyses of bounded systems (Merriam, 2009). This tradition of inquiry enables researchers to derive an up close or in-depth understanding of a single or small number of cases within their real-world context in order to develop new insight on real-world behavior and its meaning (Bromley, 1986; Merriam, 2009; Yin, 2012). Case studies also act as effective methods for addressing descriptive and exploratory research questions, such as the following: What is happening or has happened and how or why did something happen (Yin, 2012)?

The primary outputs of case studies are case-based themes and description (Creswell, 2007; Merriam, 2009). To be a valid case study, the central phenomenon must be intrinsically and clearly bounded (Creswell, 2007). Additionally, the unit of analysis characterizes the nature of the case study (Hatch, 2002). Rather than focusing on the research topic, the case study method investigates specific instances by which the topic may be bounded. The case study approach also enables researchers to describe and illuminate a phenomenon found in complex social units with little previous investigation (Merriam, 2009). Specific instances offer opportunities for rich description of the central phenomenon in areas lacking previous investigation.

The case study approach represents an appropriate method for this research project. Describing and explaining the relationship between shared leadership and performance for military teams in dangerous environments represents the primary purpose of this study. The unit of analysis of this study is U.S. military personnel operating teams. The unit of analysis provides an instance and context lacking previous research to bind the topic. The case study approach also provides the researcher with the ability to build richly descriptive results,

addressing the research questions in a real-life context. Finally, given the lack of studies examining the central phenomenon, we deemed an explanatory case study approach the most appropriate (Merriam, 1998; Yin, 2003).

Sample

See **Tables 1 and 2** for descriptive summaries of each participant in the study. Since qualitative methods do not seek to provide generalizable results (Merriam, 2009), this phase of the study employed non-probability sampling methods (Miles & Huberman, 1994). Seeking to build rich, informational descriptions within the results, we purposefully sampled individuals using both reputational-case (Schumacher & McMillian, 1993) and chain or snowball sampling method (Patton, 2002). With few previous studies investigating the central phenomenon of shared leadership in dangerous environments, we began the reputational-chain sample by establishing participant selection criteria designed to identify SMEs able to provide data concerning the unit of analysis.

Table 1. Descriptive Summary of Team and Shared Leadership Subject Matter Expert Participants.

Participant	Fields of expertise	Professional association	Position	Total criteria publications	Total criteria empirical publications
1	Self-managed teams, shared leadership	U.S. Consulting, Research	Firm President	14	8
2	Teams, shared leadership, social network analysis	Southern U.S. Private University	Associate Professor	5	4
3	Teams, shared leadership Military psychology	Southern U.S. Public University	Professor, Chair	5	3
4	Self-managed teams, shared leadership	Northeastern U.S. Public University	Professor, Distinguished Chair	6	5

Note. $M_{\text{total pub}}$ = 7.5, SD = 2.17; $M_{\text{empricial pub}}$ = 5, SD = 1.08.

Table 2. Descriptive Summary of Military Leadership Subject Matter Expert Participants.

Participant	Military field	Service association	Military rank	Combat deploy-ments	Years team leadership experience	Instructor qualifi-cations
5	Officer, AV-8B Harrier Jet Pilot	United States Marine Corps, Active Duty	Major	3	16	5
6	Officer, Artillery, AH-1Z	United States Marine Corps, Active Duty	Major	5	16	6
7	Cobra Helicopter Pilot	United States Navy, Active Duty	Commander	6	19	8
8	Officer, Special Warfare and Operations, SEAL Enlisted, Infantry, Recon-naissance	United States Marine Corps, Active Duty	Staff Sergeant	1	3	3

Note. M_{deploy} = 3.75, *SD* = 1.11; $M_{experience}$ = 13.5, *SD* = 3.57; $M_{qualification}$ = 55, *SD* = 1.04.

First, we solicited leadership scholar participants possessing research experience on and expert knowledge of shared leadership in teams. To identify these SMEs, we searched for shared leadership and team theoretical-, empirical-, and practitioner-related books, book chapters, conference papers, conference proceedings, and peer-reviewed journal articles via the Google Scholar website; we bounded the search from the Year 2000 (beginning the era of shared leadership study) to the present in order to avoid false positive content and ensure the scholars were still available to solicit participation. Additionally, we employed search teams, such as shared, distributed, decentralized, and team leadership to focus our potential pool of participants. We found a total of 89 independent items related specifically to teams and shared leadership. These shared leadership items included 42 empirical study articles, 14 theoretical articles, 4 practitioner articles, 22 book chapters, and 9 conference papers or proceedings summaries. Using the authors of these 89 shared leadership related items, we developed reputational SME

selection criteria for individuals with greater than four published works involving teams and shared leadership, to include at least two empirical research publications.

We initially found six potential participants meeting or exceeding our selection criteria. These individuals' total number of shared leadership publications ranged from 4 to 14 ($M_{publications}$ = 6; SD = 1.16); total published empirical studies ranged from 2 to 8 ($M_{empirical}$ = 4.17; SD = 0.83). We submitted a prefabricated participation request e-mail, along with a copy of our institutional review board–approved informed consent letter and interview protocol, to the potential participants. We initially received two responses from scholars agreeing, one response from a scholar regretting the invitation because of other priories, and three nonresponses. To obtain additional shared leadership SME participants, we asked the three initial respondents to provide us with reputable referrals to locate and solicit other experts. Each of these respondents referred us to 4 shared leadership scholars; from these 12 total referrals, 6 included individuals we originally selected and solicited. Of the six other referrals, only two met our selection criteria ($M_{publications}$ = 5.5; SD = 0.50) and ($M_{empirical}$ = 4; SD = 1). On contacting these two referrals, both agreed to participate in the study. The snowball or chain effect of the reputable referrals enabled us to quickly find experts meeting the selection criteria to participate in the study.

Second, we solicited military leadership participants possessing practical experience as an expert knowledge of team leadership in dangerous environments. Often the academic field judges expertise and credibility of researchers and scholars through their number and type of publications and citations (Antonakis, Bastardoz, Liu, & Schriesheim, 2014). In contrast, military organizations regularly assess expertise and credibility of SMEs through years and type of experience and instructor designations or ratings. Seeking SMEs with knowledge of leadership in dangerous contexts, we developed a reputation selection criteria based on possessing combat experience (greater than one combat deployment), team leadership experience (greater than 4 years of total experience in team leadership billets), and combat instructor qualifications (greater than two instructor qualifications). Since many instructors populating Reserve Officer Training Corps (ROTC) commands share these characteristics,

we submitted interview requests to 10 different ROTC commands at public universities in all regions of the United States. We initially received three responses; however, only 1 respondent, military officer instructor at a large, southeastern U.S. university, met the selection criteria with three combat deployments, 10 years of team leadership experience, and 5 instructor qualifications. After receiving our prefabricated participation request e-mail, along with a copy of our institutional review board–approved informedconsent letter and interview protocol, he agreed to be interviewed for the study.

Seeking additional military team leadership expert participants, we asked our lone participant to provide us with reputable referrals to conduct additional interviews. The participant provided six referrals to other subject matter experts; from these referrals, all of them met our selection criteria ($M_{\text{combat deployments}}$ = 3.5; SD = 0.62), ($M_{\text{experience}}$ = 12.8; SD = 2.18), and ($M_{\text{instructor}}$ = 5.33; SD = 1.02). On contacting the referrals, three agreed to participate in the study and three did not respond to our requests. Similar to the shared leadership snowball effect of the reputable referrals, the same process enabled us to find additional subject matter experts meeting the selection criteria to participate in the study.

Data Collection Strategy

The study employed the formal interview method (Hatch, 2002) to collect interview data. The formal interview method used a semistructured design (see interview protocol and questions in the appendix[1]) in order to maximize the use of probes and follow-up questions, providing flexibility to the researcher and drawing out in-depth data (Merriam, 2009). Each interview was conducted via telephone, with the researchers and participants in a private setting, using an interview instrument with prefabricated questions designed to capture rich description of the phenomenon. We completed each interview in a single, uninterrupted session and collected data via handwritten

---

1. Though the interview protocol contains questions requesting a courtesy peer review for the preliminary results of an unpublished quantitative doctoral dissertation on shared leadership in dangerous contexts, these data were not used for this present article.

researcher notes and digitally voice/interview recording. The interview protocol's primary or probing questions were structured to draw out rich description from each participant. Follow-up questions were designed to gather additional meaning from responses to the probing questions. The semistructured follow-up questions also set flexible conditions for additional and unplanned questions to draw greater meaning from unanticipated responses.

We originally designed the interviews to be approximately 60 minutes in length; however, we completed a total of 674 interview minutes ($M_{\text{interview length}}$ = 84.25; SD = 7.71). We transcribed all interview data into Microsoft Word, accumulating 118 total single-space typed pages ($M_{\text{interview length}}$ = 14.75; SD = 1.42). From our experiences in previous qualitative research, we set goals to obtain greater than 8 hours or 88 pages of single-spaced transcripts in order to collect enough data to facilitate an effective inductive coding analysis (Hatch, 2002). In the event we failed to meet our data collection goals, we planned to recontact the original nonrespondents or seek additional referrals to collect more data. However, after we completed the eighth interview, we concluded enough data were available to conduct a proper analysis.

Analysis

Organization and Exploration

This study employed a simultaneous data collection and analysis strategy (Merriam, 2009). As the interviews were individually completed, we conducted rudimentary analyses in order to narrow the focus prior to final analysis, develop improved analytic questions, and test emerging themes on participants (Bogdan & Biklen, 2007). Hatch (2002) has argued, "Data analysis is a systematic search for meaning" (p. 148). Once we completed the data collection phase, the raw data were organized in order to facilitate a systematic interrogation to discover patterns, ideas, and themes; all interview data were transcribed from verbal digital recordings into computer type documents in order to support the open coding system of segmenting information (Lincoln & Guba, 1985).

Each set of data was printed off to support shorthand designation process coding. We also systematically read and reread each transcript to ensure data familiarity. With these tasks complete, we

conducted a preliminary exploratory analysis (Creswell, 2008) to obtain a general sense of the data's content and direction. The preliminary exploratory analysis provided us with a general orientation to data trends and confirmation of the presence of enough data to continue the analysis.

Codes and Themes

Using an inductive process, we employed a typological (Hatch, 2002), open and axial (Corbin & Strauss, 2007), hand-analysis data coding method (Creswell, 2008) for this project using two coders working independently. The typological element of the method requires researchers to divide data sets into groups using typological categories in order to find patterns and develop themes (Hatch, 2002; Lincoln & Guba, 1985). Unlike computer programs that automatically store, analyze, and make sense of the data, the hand-analysis element of the method requires scholars to manually develop typological categories, read the data, color code the text, and derive themes (Creswell, 2008). Computer analysis is convenient for ultra-large amounts of data; because of the manageable data pool and our high proficiency for manual coding, we elected to employ the hand-analysis method.

The primary goal of the typological hand analysis was to make sense of the data through the discovery of themes (Creswell, 2007). These types of findings enable researchers to answer original research questions and develop a strong understanding of the central phenomenon (Creswell, 2008). Since qualitative data analysis is primarily inductive and comparative (Merriam, 2009), this project's analytical process included organizing, consolidating, coding, comparing, reducing, and interpreting data to form descriptive findings. The preliminary exploratory analysis phase enabled us to complete data organization and consolidation. During coding, we identified text segments within the data, assigning code words describing the meaning of each segment (Creswell, 2008); the initial coding effort found 32 total code words. These were compared for overlapping trends in meaning and redundancy. As common themes were identified, we grouped them within broader concepts, reducing the total number of 32 items to 10 potential themes. Assessing some potential overlap within these 10 themes, we repeated our reduction process final time, coming to

a consensus on four total themes (two primary and two supporting) describing the central phenomenon (see **Table 3**). The meaning from each theme was interpreted and described within the results section of the project.

Table 3. Codes and Themes.

Initial codes	Initial themes	Final themes
Accurate information	Danger	Dangerous dynamism[a]
Cognitive demand	Distribution skills, and abilities[a]	Distributed knowledge,
Danger	Dynamism	Leadership emergence[b]
Distraction	Emergence	Mutual influence[b]
Distributed leadership	Empowerment	
Distributed responsibility	Influence	
Distributed skills and abilities	Knowledge, skills, and abilities	
Emergence	Leadership	
Empowerment	Mutual support	
Experience level	Teams	
Fixation		
Hierarchy		
Influence		
Influence		
Information prioritization		
Instability		
Knowledge		
Lead change		
Leadership		
Mutual support		
Perception		
Qualifications		
Rapid change		
Relationships		
Risk		
Situational awareness		
Social power		
Teams		
Teamwork		
Time		
Trust		
Uncertainty		

a. Primary theme.
b. Supporting theme.

Verification Procedures

To mitigate potential data collection problems with regard to construct validity and reliability, our case study employed a process of triangulation to improve the quality of findings and conclusions (Denzin & Lincoln, 2005; Yin, 2003). To validate the findings via this process, we subjected our themes to member checking and peer review following the completion of the analytic process (Creswell, 2008; Lincoln & Guba, 1985). First, we employed member checking to ensure the accuracy of our findings. By providing the preliminary analysis to the participants, we received valuable feedback on our interpretation of the data and results, ensuring accuracy of the rich description (Creswell, 2007; Merriam, 2009). We provided all transcripts to each participant to verify all statements were transcribed and qualified properly. Additionally, we supplied the participants with preliminary findings of this phase of the study. Of the eight participants, we received six responses providing feedback that the content was valid and accurate; two participants did not respond to our member checking request.

Second, the themes were subjected to verification by the procedure of peer review, designed to validate the findings. We achieved validation through extensive discussions with three impartial peers throughout the analysis process. Using three business management and agriculture leadership doctoral students with conceptual and empirical shared leadership backgrounds, they confirmed ideas regarding emerging themes and minimized bias within the inquiry by authenticating researcher interpretation (Spall, 1998). The peer reviews provided objective feedback used to improve the framework and structure of the paper, ultimately validating the study's themes, inferences, and credibility. The use of these verification procedures ensures the project's findings "match reality" (Merriam, 2009, p. 213).

Results

Primary Themes

Mutual Influence. The participants richly described the important impact of mutual influence on the performance of teams in

dangerous environments. Mutual influence represents a key component of shared leadership, acting as a multidirectional pattern of reciprocal leadership and enabling team members to lead each other to achieve common objectives (Pearce & Conger, 2003). Participant 1 explained mutual influence as

> Beyond mere role playing within teams. Rather, you would see this in your military teams when team members step forward and provide leadership when their experience, knowledge, and overall strengths are required and leading themselves to step down and enable other team members to lead when their abilities are needed in the dangerous situation. For the team members, you must to know "when to lead and when to get out of the way," as they say.

Participant 5 provided a real-life military aviation team example of this phenomenon in action:

> I was a wingman this time and we checked in over Musa Qalah to help out the Brits. While my flight lead was talking to the guys on the ground, I witnessed a truck with a large mortar tube pull within range of their position. I immediately took charge of the situation . . . I kicked my lead off of the radio and gave the Brits a direction and distance for the vehicle from their position. My lead now transferred tactical responsibility of the situation over to me until we eliminated the threat or another situation rose up where I did not have the awareness or ability to be in the lead.

Participant 2 explained, "Shared leadership, as a construct, is a process of mutual influence." Additionally, he assessed in some cases, "Mutual influence was stronger than individual influence. It is fair to say these teams did not over-rely on one individual to ensure the performance of their team . . . they were stewards of the shared leadership process."

Participant 3 commented on the role mutual influence played for teams in extreme situations:

Mutual influence probably built strength across the entire team, not only in the best application of the team members' abilities, but in mitigating the high degree of vulnerability military teams face, such as the loss of the team leader within the team process due to an lost communications, injury, or possibly death. So teams relying on mono-influence from the team leader may be more apt to fail when their leader is no longer able or available to provide influence.

Participant 7 further described Participant 3's comment, stating from his experience that, "Technology seems to fail when you need it. If the team leader goes lost comm, then he is out of the fight. The team members simply recognize this problem and take charge until it is fixed." Given these descriptions, mutual influence has the potential to enhance the overall capabilities of a team to do more when facing the temporary or permanent loss of their designed leaders, often a consequence of dangerous environments.

This leads to the question: How many should be involved in the mutual influence process? Participant 2, a social network analysis subject matter expert, explained thus:

I don't think it is much of a question of "how many people provided influence in a team" as much as it is a question of "did the right people, at the right time, provide mutual influence?" Who knows if the right relationships developed quickly enough to support broader mutual influence? This may also play a role in determining the degree of mutual influence to foster performance.

The experts explain, in the case of dangerous context, there may not be enough time for all team members to simultaneously provide influence. Rather, the mutual influence process may be more related to appropriateness of application rather than representing a collective decisionmaking vehicle, where most or all team members have an influential contribution to an outcome.

Leadership Emergence. The experts explained leadership emergence within teams contributes to the high performance of those sharing

leadership in dangerous environments. Emergent leadership often refers to leader selection by team members in the absence of leadership (Hollander, 1974). Also a property of shared leadership (Carson et al., 2007), the experts described emergent leadership as less concerned with the selection of a leader and centered around the serial emergence of many different leaders across a team (Pearce & Sims, 2002). Participant 1 described leadership emergence for shared leadership as, "Involving the serial emergence of both official and unofficial leaders within a team context." In the case of our study, Participant 4 stated, "The emergence of leadership across these teams provided 'leadership sustainability' in the face of difficult and dangerous challenges, allowing them to do more." Participant 7 echoed this assessment, stating,

> As a SEAL, you don't ask permission to lead, you just do it in the absence of leadership. My team members play their assigned role, but also rise above it in the event the situation demands them to do more, especially while attempting to avert catastrophe!

In conventional studies, those teams rating higher on shared leadership (i.e., emergence of unofficial leaders in the team), on average, performed higher than those teams failing to use serial emergence leadership (Carson et al., 2007; Pearce & Sims, 2002). What does this look like in dangerous situations? Participant 5 explained this phenomenon in a real-life event from his military team experience:

> We were on an approach into Al Asad airbase and I was flying as the wing. The flight leader was jabbering with the air traffic control guy on final approach when I noticed my flight leader was about to land with his gear up, well, not good and quite dangerous, as you might imagine! I took control of the flight, directing him to waive off and go around to execute a new approach. He didn't understand the problem until I told him to check his gear handle's position. He paused for a moment and replied to my command, "Now I know why you took the lead, thanks for saving our behinds! So, I can handle this all now; I have the lead on left."

In the case of Participant 5, he recognized a potentially dangerous problem with the flight leader's landing configuration just prior to landing. However, if he failed to emerge as a leader to influence his flight leader to waive off the approach, it is likely the situation would result in a deadly mishap. Participant 6 confirmed, "In dangerous situations, the best designated leaders know they may not have all the answers. They support a team culture for others to take the lead until the team leader is able to take it back." In this cultural context, these types of leaders stimulate leadership emergence across the team. In a contrasting, highly structural team culture, Participant 1 believed a team leader making a mistake may, "go unchecked, resulting in a bad situation turning out to be much worse!"

Supporting Themes

Dangerous Dynamism. The military professional participants described their operating environment as dangerously dynamic, presenting potential obstacles and barriers to team and leadership performance. In dangerous or extreme contexts, threats to team members may reach intolerable magnitudes and in these cases, personal safety and life become high priority and imperative outcomes of leadership (Hannah, Uhl-Bien, Avolio, & Cavarretta, 2009). Additionally, the SMEs offered uncertainty, rapid and discontinuous change, obsolete information, imperfect information, problematic information, absence of leadership, and distractions as presenting the primary barriers to high performance when leaders face life or death situations. In this regard, shared leadership may be indispensable to team performance as the team faces increasing complexity and uncertainty, demanding more than individual act in role of leader (Day, Gronn, & Salas, 2004, 2006). Participant 5 emphasized from the beginning of the interview, "Military aviation and ground combat are both highly dangerous and dynamic environments with little forgiveness for poor assumptions, errors, mistakes, and a general lack of leadership." Participant 6 noted military teams operating in dangerously dynamic situations are generally prepared for dynamic contingencies:

> Well, our team's pre-mission briefings are focused on addressing contingences such as changes in weather, mission,

> equipment, weapon systems, threats, enemy activity, friendly movements, airspace availability, communications, leadership location, casualties, and other administrative requirements. We tend place an emphasis on the worst case scenario, drawing on lessons learned from our respective communities. We understand our business is dangerous and tirelessly prepare for this expectation. I mean, our worst nightmare is to be operational and rapidly enter a dangerous situation without having a contingency plan ready for action.

The participants also explained military teams facing threats of danger and change, but only experiencing routine situations, become complacent and show poor performance in the face of dangerous dynamism. Participant 8 argued military teams dynamically transitioning from a routine mission to an unknown mission face the ultimate dangerous challenge:

> In combat, for the grunts, many of our contingencies are based on our local operating area, pretty much anywhere we can get to on foot or by vehicle. These are not too large in size, you know, so it is easy to develop pre-mission plans and checklists to get out of trouble faster than you got into it. Stuff like rally points, causality collection points, predetermined airstrike targets, etc. But, when your squad or team was quickly sent on a new mission in an unfamiliar area, many of our original contingency plans go out the window at that point. In this situation of dynamic mission priorities, this is when you see teams acting in the highest elements of danger.

Checklists and predeployment training attempt to reduce danger in combat. However, because of changes in the situation on the ground or a lack of communication with the leaders, military teams in combat may face increasing danger as a mission becomes more dynamic. Participant 1 provided a vignette from a military aviation team perspective to highlight this phenomenon:

So we get overhead the working area and this friendly convoy hits an IED. Boom! We can see it out the cockpit and we know the stuff is about to hit the fan. The convoy leader starts working a MEDEVAC request as we search the area for Taliban units looking to take advantage of the situation, you know? Ten minutes goes by and nothing, not a damn thing. Everything is quiet and the chopper is on the way to drag several wounded guys outta there. After the chopper does its thing, the whole convoy begins to be hit by mortars. I keep trying to communicate with the convoy leader, but he rarely responds and is basically overwhelmed by the situation. Just as my wingman thinks he has a location for Taliban team on this mountain and BOOM! The convoy hits two more IEDs after only pulling away 50 meters from the original blast. I don't think their leadership supervised the follow sweep of the area; it's obvious someone forgot or did their job poorly. In the meantime, the possible mortar team has darted away and we finally get a hold of a young solider claiming the latest IED strike injured the convoy commander. Now no one is in charge at the moment the situation goes from bad to worse. It's really hard to prepare for a situation like this.

Participant 3 noted military teams face difficult leadership challenges in periods of dangerous dynamism: "We found doing human factors research that as the environment changes and levels of danger become ever present, leaders become distracted, fixated, and in some cases, unable to perform their jobs." This describes the negative impact dangerous dynamism has on team processes and leadership. Participant 1 further explained, "This ever changing, dangerous environment may simply paralyze or prevent the most effective of team leaders from providing influence to the most appropriate people at the most crucial place and time." Participant 7 summarized by stating, "In the end, the difference here between life and death, mission accomplishment and failure, is leadership. If your team lacks the ability to motivate, inspire, adapt, decide, and supervise, then only bad things happen." As a result, leadership emergence and mutual influence team acts as the catalyst for effective performance. As Participant 7 continued, "Regardless of the team leader's status, you know,

dead, injured, or just plain ineffective, it is on the other team members to pull it together and lead each other to accomplish the mission." Participant 1 qualified this statement by saying, "That is why in these types of dangerous environments you see teams sharing influence and leadership are more effective than those who act in the absence of influence and leadership."

Distributed Knowledge, Skills, and Abilities. Both scholars and military professionals described teams with distributed KSAs as a supporting theme and effective for dealing with dangerous situations using sharing leadership. KSAs refer to an individual's level of competence in a given context (Pearce & Conger, 2003). Teams with KSAs centralized into a single member may be less effective at sharing leadership; in this context, the less competent team members may be unable to successfully influence each other and achieve high performance (Conger & Pearce, 2003). However, a team with distributed KSAs across multiple individuals with highly specialized competencies presents more opportunities for team members to influence others, especially in the absence of leadership. Participant 6 described military team members as "not being equal when it comes to skills and general experience." In the dangerous contexts, Participant 7 stated his SEAL teams shared leadership at times when an individual's KSAs fit best for addressing the situation. For example, he explained as follows:

> In my community, the teams normally have many highly trained and educated operators with expertise multiple disciplines. For example, you know, Mike has lots of training calling in air support. Karl may be a well trained sniper and intelligence processor. Bob has enough combat medical training to earn an MD. Bill's seven combat deployments make him a walking lessons learned bank. Tom, the officer and team leader, may be right out of our initial selection and training programs and schools, but has a Naval Academy education. If we get into a dangerous situation, Tom is going to rely on all of us to do more than simply be role players. He will look to each of us, when the time is right, to provide mutual support, guidance, and take charge. See, we are not only are built this way, but we train this way as well.

Participant 4 provided additional insight to this phenomenon from a research perspective:

> In a very real sense, shared leadership in teams consists of leadership through mutually influencing self-leaders. This is in contrast to a process in which one person plays a totally static, authoritative role when leading others who are generally expected to simply follow and do nothing else. However, you aren't going to get to shared leadership if no one else in the team has much to offer in the way of influence. When you have team members with strong skills and experience, the influence process is more fluid and shifts the immediate leadership role, beyond hierarchical position and authority, as required throughout the process to achieve high performance. In the end, you get more out of your team when the ability to lead is distributed around, especially in a dangerous situation.

Participant 5 explained the pitfalls of sharing leadership with those lacking the potential to lead:

> We are all professionals in the air, but some pilots bring more to the fight than others. If I am flying with a strong pilot on my wing, I have no problem passing him the lead when it is clear I am not in a position to make the best decisions for the flight. However, I am not going to do this with everyone in any situation. If my weapon systems are down and the ground guys want a danger close strike, I am not going to let an inexperienced pilot make a terrible mistake based on the conditions of the situation and his experience level. Some pilots, well, I would say, "Make it happen," while others I would be more inclined to do much less.

In this regard, the participants do not describe shared leadership as an all-encompassing leadership solution in dangerous contexts. Rather, they explain the performance of a team may be related to more than simply shared leadership alone. Participant 3 remarked,

You found shared leadership and combat experience both contributed to team performance in your dangerous simulations and this accounted for more variance then shared leadership alone. So you see, having that wider access to essential experience made the teams perform higher than if they were to just share the lead regardless of the team's potential to effectively lead during periods of danger, right?

Thus, the distribution of KSAs among military teams may enhance their performance when attempting to share leadership in dangerous environments. From the perspective of the participants, this appears to be an important key for structuring and training teams to perform highly in dangerous situations.

Discussion

In this case study of military teams, we interviewed subject matter experts to describe shared leadership in dangerous environments, an important phenomenon previously receiving little attention from scholars. Our research represents the first step in developing a more complete understanding of the relationship between shared leadership and performance for teams operating in dangerous contexts and under extreme circumstances. Facing threats of harm or death in challenging situations integrated with uncertainty, rapid change, and imperfect information, we found military teams often turn to shared leadership, through mutual influence and leadership emergence, to achieve high performance. The experts also described dangerous dynamism and distributed KSAs as potential moderators between shared leadership and team performance. Overall, the descriptions of our primary and secondary themes suggest important confirmations and extensions of shared leadership theory and research.

First, already confirmed in conventional contexts (Avolio, Jung, Murry, & Sivasubramaniam, 1996; Carson et al., 2007; Pearce & Sims, 2002), the description of mutual influence as a contributor to high military team performance in dangerous contexts suggests shared leadership may act as an effective compliment or substitute for traditional forms of vertical leadership. As observed with trauma

resuscitation teams (Klein, Ziegert, Knight, & Xiao, 2006; Yun, Faraj, & Sims, 2005; Yun, Faraj, Xiao, & Sims, 2003), military teams generally expressed as rigid in hierarchy and structure may depart from vertical influence while facing danger in order to maximize the various high reliability capacities of team members to achieve success. The experts described dangerous events in which hierarchical team leaders accepted influence from peers and subordinates in order to effectively meet the demands of the situation. The potential alternative of these leaders solely executing a vertical model of influence may be catastrophic. The prospect and ability to mutually influence other group members enables a team in dangerous situations to share leadership as required to complete their mission. Mutual influence makes shared leadership both possible and potentially effective for military teams during times of danger.

Second, the SMEs described emergent leadership as a property enabling multiple individuals in military teams to step beyond their assigned roles and provide leadership. Scholars typically define emergent leadership as the selection of an appointed leader in a leaderless group of individuals (Hollander, 1974). Related to leadership emergence, shared leadership acts an alternate source of leadership to support and sustain ongoing team functioning (Pearce & Sims, 2002). In dangerous situations, team members often identify with the team purpose and mission, becoming willing to make individual sacrifices for the team and to enhance other team members' potential and capabilities (Yammarino, Mumford, Connelly, & Dionne, 2010). Seen in conventional contexts, individuals other than the designated team leaders may emerge in a serial fashion to provide influence and direct the team toward its common mission (Pearce & Conger, 2003; Pearce & Sims, 2002). We also found this form of serial emergence presented in the experts' descriptions shared leadership in the face of danger, richly explaining individual team members may not only rise up to take the lead but also return to their previous role when the requirement for their leadership no longer exists. Additionally, we found an expectation for the serial emergence and sharing of leadership in high-reliability teams, such as the U.S. Navy SEALs and tactical jet pilots. These observations suggest leadership emergence serves as a facilitator of the shared leadership process for military teams in dangerous contexts, enabling multiple individuals to provide leadership in

its absence and later continue to execute other assigned team roles. This conclusion is of particular importance, since military teams operating in combat conditions may likely experience interruptions in team communications or suffer designated team leader causalities. In this regard, serial emergence contributes to the shared leadership process, enabling military teams to potentially overcome temporary barriers to vertical command and control regularly found in dangerous situations.

Third, the experts' descriptions of dangerous dynamism suggest this may serve as a moderating variable between shared leadership and performance for military teams. Discontinuous and rapid change, increasing uncertainty, imperfect or obsolete information, and the high risk of physical or psychological injury may induce stress at individual and team levels, affecting the outcomes of various leadership and team processes (Hart & Cooper, 2002). Perry, Pearce, and Sims (1999) have argued that the shared leadership process, taking time to develop, may not be applicable to situations requiring swift action. However, as described by the SMEs, this possible degrader to effectiveness in the presence of danger may be mitigated by military teams with highly capable members and a strong sense of team process. The experts explained elements driving dangerous contexts change the nature of group tasks from routine to challenging and complex. Working for a common goal, teams dynamically share influence in order to meet the challenges and interconnected requirements of complex tasks rather than failing to act and succumbing to the negative outcomes found in extreme situations. As the level of danger increases for military teams sharing leadership may be likely to see increases in performance.

Fourth, we found the distribution of KSAs across a team may act as a moderating variable for the relationship between shared leadership and team performance. Conger and Pearce (2003) have argued teams with highly centralized distributions of KSAs among team members may fail to achieve effective shared leadership and high team performance. In contrast, the SMEs described distributed task competence spread throughout military teams increases the potential for mutual influence and leadership emergence, as these individuals may have more to offer the team as the context becomes more dangerous. By sharing leadership in dangerous environments, team members may

more effectively utilize complementary KSAs to meet the demands of the situation, enabling them to effectively negotiate timesensitive and complex tasks (Cox, Pearce, & Perry, 2003; Pearce & Sims, 2002). Additionally, the volatility in dangerous contexts makes it impractical for a vertical leader to maintain hierarchical control of a team, leading to negative outcomes (Yammarino et al., 2010). Given the unlikely prospect that a single team member may possess all the KSAs required to negotiate the high task demands of a dangerous situation, the wide distribution of KSAs across a military team may stimulate team performance under the most challenging and threatening of circumstances.

Finally, though military teams represented the unit of analysis for this case study, the richly descriptive results may be generalizable across and applied similar teams from other organizations. Like the types of military teams described in this article, teams of firefighters, police officers, and aircrew share similar hierarchical structures (Steinheider & Wuestewald, 2008; Weick, 1993) and potential life-threatening outcomes from dangerous environments (Baran & Scott, 2010; Hannah et al., 2010). We would expect mutual influence, leadership emergence, dangerous dynamism, and distributed KSAs to partially describe how these types of nonmilitary teams share leadership and achieve effectiveness in dangerous contexts. However, we should be cautious since our current results do not represent a leadership panacea; nonmilitary teams may possess others characteristics not accounted for in military teams.

Limitations and Recommendations

This study contains some limitations. The aim of this study is to describe and understand shared leadership and performance for military teams in dangerous contexts. With little known about this central phenomenon, our qualitative method and case study act as appropriate approaches to achieve our exploratory scholarly objectives (Morse & Field, 1995). In order to possibly facilitate more rich description and improve our results through tighter triangulation, we could have employed an ethnographic methodology using on-site direct observations and deep review of archival information regarding military teams. Multicollection approaches often contribute to highly valid findings using triangulation to corroborate evidence from different sources,

types, or methods of data collection (Merriam, 2009). However, we did not receive access to conduct this type of study and focused on achieving verification and validation through other means (i.e., peer review, member checking, etc.). Future studies seeking additional description from the native point of view may consider attempting ethnography (Vidich & Lyman, 1994). Also, since we do not attempt to apply quantitative methods to test theory or achieve generalization, our results are limited to description rather than prediction. Follow on studies may want to use our findings and themes to form a testable model of shared leadership and performance with potential moderators for teams in dangerous contexts in order to draw quantitative conclusions beyond our deep description. Finally, as mentioned previously, others types of teams outside of the military may operate in dangerous contexts. Future studies should continue to examine the cases of other teams from areas outside the military to confirm and further extend earlier findings.

Conclusion

Our research represents the first attempt in the field to study shared leadership and team performance in dangerous environments. Although many studies have examined shared leadership in conventional contexts, little is still known about shared influence in dangerous situations. Our findings further the field of leadership by providing rich description of military teams used shared leadership in dangerous environments. We have potentially begun to set aside the myth of shared leadership in the military and dangerous context as a pipedream (Lindsay, Day, & Halpin, 2011). Though our study's qualitative results highlight new explanations in team, shared leadership, and dangerous environmental research, further investigation is required to provide additional insight and advance the field of study.

Appendix

Interview Protocol

Demographic and Administrative Information

Title:
Job Title:
Age:
Professional Experience:
Gender:
Race:
Date of Interview:
Location of Interview:

Introduction

Thank you for speaking with me today. With your permission, I shall record and transcribe (verbatim) this interview, to include all questions, responses, and comments. Following the conclusion of the transcription, I shall provide you with a draft copy for your review in order to ensure I have properly documented the context and meaning of your statements. You shall expect for me to integrate quotations and information from this interview into a final research paper. This paper may be published in a large, academic or professional journal.

This interview aims to collect data describing the results from "Shared Leadership and Team Performance in Dynamic Environments." As a subject matter expert in the field shared leadership, team leadership, and/or military combat, your input shall prove valuable in achieving this objective. You shall expect me to ask a series of semistructured, open-ended questions in order to illicit descriptive, meaningful responses; these are the same questions I provided you previously in order to prepare your responses for the interview. Please answer each question freely in order to provide as much detail and context. If the questions are unclear, please ask me to clarify and I shall do so. You may end the interview at any time; however, I respectfully request you complete the interview in its entirety in order to maximize the value of your responses. At this, are there any questions before we begin the interview?

Questions

1. From the results of the quantitative project, please describe how you believe the participants shared leadership to perform at high levels?
2. From the results of the quantitative project, please describe how you believe the participants failing to employ shared leadership performed at lower levels?
3. Please describe your experiences measuring and analyzing shared leadership data. Do you believe the researchers used the best approach, why or why not?
4. How would have you expected the teams to perform in this type of environment? Please provide and describe examples.
5. Does combat experience play a major role in the determining team performance? If so, how? Please provide and describe examples.
6. How would you have conducted this quantitative study differently? Please provide and describe examples.
7. Do you think shared leadership has a place in modern military, dangerous contexts? Why or why not? Please provide and describe examples.
8. Where would you recommend shared leadership be implemented within the military or organizations in dangerous contexts? Please provide and describe examples
9. Where do shared leadership practices already exist in the military and dangerous contexts? Please provide and describe examples.
10. Have you previously experienced shared leadership in practice? If so, in what context? Please describe the process in action and provide examples.

End Interview Protocol

References

Antonakis, J., Bastardoz, N., Liu, Y., & Schriesheim, C. (2014). What makes articles highly cited?. *Leadership Quarterly*, *25*, 152-179.

Avolio, B., Jung, D., Murry, W., & Sivasubramaniam, N. (1996). Building highly developed teams: Focusing on shared leadership process, efficacy, trust, and performance. In M. Beyerlein, D. Johnson, & S. Beyerlein (Eds.), *Advances in interdisciplinary studies of work teams* (pp. 173-209). Greenwich, CT: JAI Press.

Baran, B., & Scott, C. (2010). Organizing ambiguity: A grounded theory of leadership and sensemaking within dangerous contexts. *Military Psychology*, *22*(S1), S42–S69.

Bogdan, R., & Biklen, S. (2007). *Qualitative research for education: An introduction to theories and methods* (5th ed.). Boston, MA: Pearson Education.

Bromley, D. B. (1986). *The case-study method in psychology and related disciplines*. Chichester, England: Wiley.

Campbell, D., Hannah, S., & Matthews, M. (2010). Leadership in military and other dangerous contexts: Introduction to the special topic issue. *Military Psychology, 22*(Suppl. 1), S1-S14.

Carson, J., Tesluk, P., & Marrone, J. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of Management Journal*, *50*, 1217-1234.

Conger, J., & Pearce, C. (2003). A landscape of opportunities: Future research on shared leadership. In C. Pearce & J.

Conger (Eds.), *Shared leadership: Reframing the hows and whys of leadership* (pp. 285-303). Thousand Oaks, CA: Sage.

Corbin, J., & Strauss, A. (2007). *Basics of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.

Creswell, J. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.

Creswell, J. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle Creek, NJ: Pearson Education.

Cox, J., Pearce, C., & Perry, M. (2003). Toward a model of shared leadership and distributed influence in the innovation process: How shared leadership can enhance new product development team dynamics and effectiveness. In C. Pearce & J.

Conger (Eds.), *Shared leadership: Reframing the hows and whys of leadership* (pp. 48-76). Thousand Oaks, CA: Sage.

Day, D., Gronn, P., & Salas, E. (2004). Leadership capacity in teams. *Leadership Quarterly*, *15*, 857-880.

Day, D., Gronn, P., & Salas, E. (2006). Leadership in team-based organizations: On the threshold of a new era. *Leadership Quarterly*, *17*, 211-216.

Denzin, N., & Lincoln, Y. (Eds.). (2005). *The Sage handbook of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.

Dunphy, D. (2000). Embracing paradox: Top-down versus participative management of organizational change. In M. Beer & N. Nohria (Eds.), *Breaking the code of change* (pp. 123-136). Boston, MA: Harvard Business School Press.

Ensley, M., Hmieleski, K., & Pearce, C. (2006). The importance of vertical and shared leadership within new venture top management teams: Implications for the performance of startups. *Leadership Quarterly*, *17*, 217-231.

Hannah, S., Campbell, D., & Matthews, M. (2010). Advancing a research agenda for leadership in dangerous contexts. *Military Psychology, 22*(Suppl. 1), S157-S189.

Hannah, S., Uhl-Bien, M., Avolio, B., & Cavarretta, F. (2009). A framework for examining leadership in extreme contexts. *Leadership Quarterly*, *20*, 897-919.

Hart, P., & Cooper, C. (2002). Occupational stress: Toward a more integrated framework. In N. Anderson, D. Ones, H. Sinangil, & C. Viswesvaran (Eds.), *Handbook of industrial, work, and organizational psychology* (*Vol. 2*, pp. 93-114). London, England: Sage.

Hatch, J. (2002). *Doing qualitative research in educational settings*. Albany: State University of New York Press.

Hollander, E. P. (1974). Processes of leadership emergence. *Journal of Contemporary Business*, *3*, 19-33.

Klein, K., Ziegert, J., Knight, A., & Xiao, Y. (2006). Dynamic delegation: Shared, hierarchical, and deindividualized leadership in extreme action teams. *Administrative Science Quarterly*, *51*, 590-621.

Kozlowski, S., & Bell, B. (2003). Work groups and teams in organizations. In W. C. Borman, D. Ilgen, & R. Klimoski (Eds.), *Comprehensive handbook of psychology: Industrial and organizational psychology* (pp. 333-375). New York, NY: Wiley.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Lindsay, D., Day, D., & Halpin, S. (2011). Shared leadership in the military: Reality, possibility, or pipedream? *Military Psychology*, *23*, 528-549.

Manz, C., & Sims, H. (1987). Leading workers to lead themselves: The external leadership of self-managing work teams. *Administrative Science Quarterly*, *32*, 106-128.

Manz, C., & Sims, H. (1993). *Business without bosses: How selfmanaging teams are building high-performing companies*. New York, NY: Wiley.

Manz, C., & Sims, H. (2001). *The new superleadership: Leading others to lead themselves*. San Francisco, CA: Berrett- Koehler.

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Merriam, S. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.

Miles, M., & Huberman, A. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage.

Millikin, J., Horn, P., & Manz, C. (2010). Self-management competencies in self-managing teams: Their impact on multi-team system productivity. *Leadership Quarterly*, *21*, 687-702.

Morse, J., & Field, P. (1995). *Qualitative reach methods for health professionals* (2nd ed.). Thousand Oaks, CA: Sage.

Patton, M. (2002). *Qualitative research and evaluation* (3rd ed.). Thousand Oaks, CA: Sage.

Pearce, C. (2004). The future of leadership: Combining vertical and shared leadership to transform knowledge work. *Academy of Management Executive*, *18*, 47-57.

Pearce, C., & Conger, J. (Eds.). (2003). *Shared leadership: Reframing the hows and whys of leadership*. Thousand Oaks, CA: Sage.

Pearce, C., Manz, C., & Sims, H. (2009). Where do we go from here?: Is shared leadership the key to team success? *Organizational Dynamics*, *38*, 234-238.

Pearce, C., & Sims, H. (2002). Vertical versus shared leadership as predictors of the effectiveness of change management teams: An examination of aversive, directive, transactional, transformational, and empowering leader behaviors. *Group Dynamics: Theory, Research, and Practice*, *6*, 172-197.

Perry, M., Pearce, C., & Sims, H. (1999). Empowered selling teams: How shared leaderships can contribute to selling team outcomes. *Journal of Personal Selling & Sales Management*, *19*(3), 35-51.

Schumacher, S., & McMillian, J. (1993). *Research in education: A conceptual introduction* (3rd ed.). New York, NY: HarperCollins.

Solansky, S. (2008). Leadership style and team processes in selfmanaged teams. *Journal of Leadership & Organizational Studies*, *14*, 332-341.

Spall, S. (1998). Peer debriefing in qualitative research: Emerging operational models. *Qualitative Inquiry*, *4*, 280-292.

Stainbeck, S., & Stainbeck, W. (1988). *Understanding and conducting qualitative research*. San Francisco, CA: Jossey-Bass.

Steinheider, B., & Wuestewald, T. (2008). From the bottom-up: Sharing leadership in a police agency. *Police Practice and Research*, *9*, 145-163.

Vidich, A., & Lyman, S. (1994). Qualitative methods: Their history in sociology and anthropology. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 23-60). Thousand Oaks, CA: Sage.

Weick, K. (1993). The collapse of sensemaking in organizations. The Mann Gulch disaster. *Administrative Science Quarterly*, *38*, 628-652.

Yammarino, F. (2013). Leadership: Past, present, and future. *Journal of Leadership & Organizational Studies*, *20*, 149-155.

Yammarino, F., Mumford, M., Connelly, M., & Dionne, S. (2010). Leadership and team dynamics for dangerous military contexts. *Military Psychology, 22*(Suppl. 1), S15-S41.

Yin, R. (2003). *Case study research: Design and methods* (Vol. *5*, 3rd ed.). Thousand Oaks, CA: Sage.

Yin, R. (2012). *Applications of case study research* (3rd ed.). Thousand Oaks, CA: Sage.

Yun, S., Faraj, S., & Sims, H. (2005). Contingent leadership and effectiveness of trauma resuscitation teams. *Journal of Applied Psychology*, *90*, 1288-1296.

Yun, S., Faraj, S., Xiao, T., & Sims, H. (2003). Team leadership and coordination in trauma resuscitation. *Advances in Interdisciplinary Studies of Work Teams*, *9*, 189-214.

Biographies

Alex J. Ramthun is an Associate Professor of Naval Science at the University of Nebraska-Lincoln. Dr. Ramthun earned his PhD from the University of Nebraska-Lincoln. His current research interests include antecedents and boundary conditions of shared leadership, leadership in dangerous environments, leadership in multicultural contexts, and Psychological Capital.

Gina S. Matkin is an Associate Professor of Leadership in the department of Agricultural Leadership Education and Communication at the University of Nebraska-Lincoln. Dr. Matkin earned her MA from Iowa State University and her PhD from the University of Nebraska-Lincoln. Her research interests include outcomes of culturally competent leaders, gender and leadership, sustainability leadership, and developmental models of leader development.