University of Groningen

Wisdom in the military context

Zacher, Hannes; McKenna, Bernard; Rooney, David; Gold, Steven

Published in:
Military Psychology

DOI:
[10.1037/mil0000070](https://doi.org/10.1037/mil0000070)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2015

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Zacher, H., McKenna, B., Rooney, D., & Gold, S. (2015). Wisdom in the military context. *Military Psychology*, 27(3), 142-154. <https://doi.org/10.1037/mil0000070>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Wisdom in the Military Context

Hannes Zacher
University of Groningen

Bernard McKenna
The University of Queensland

David Rooney
Macquarie University

Steven Gold
The Art Institute of California–Orange County

On the basis of the Berlin wisdom paradigm, we define wisdom in the military context as expert knowledge and judgment concerning in extremis military operations. We measured wisdom in the military context by asking participants to give advice to an inexperienced officer facing an in extremis operation; subsequently, we coded their responses. Data were provided by 74 senior noncommissioned officers (NCOs) in the U.S. defense forces. In support of convergent validity, wisdom in the military context was positively related to general objective wisdom and general self-assessed wisdom. Relationships of wisdom in the military context and general objective wisdom with Big Five personality characteristics were nonsignificant, whereas general self-assessed wisdom was positively related to extraversion, agreeableness, and openness to experience, and it was negatively related to neuroticism. The findings provide initial support for the validity of the new wisdom in the military context measure. We discuss several implications for future research and practice regarding wisdom in the military context.

Keywords: wisdom, military, in extremis, leadership, personality

Wisdom is an individual virtue and character strength that involves extraordinary knowledge, skills, and judgment in fundamental questions of life meaning and conduct (Baltes & Staudinger, 2000; Peterson & Seligman, 2004; Rooney, McKenna, & Liesch, 2010). A core characteristic of wise people is that they possess deep insights into difficult and ambiguous situations as well as superior advice-giving skills regarding those situations (Baltes & Smith, 2008; Karelitz, Jarvin, & Sternberg, 2010; Staudinger & Glück, 2011;

Sternberg, 1990). Recent empirical research on wisdom in different work settings has demonstrated that individuals' general wisdom positively predicts leadership behaviors that, in turn, promote the well-being and development of other people and organizations (Greaves, Zacher, McKenna, & Rooney, 2014; Yang, 2011; Zacher, Pearce, Rooney, & McKenna, 2014).

Given the general importance of virtues and character strengths (Matthews, Eid, Kelly, Bailey, & Peterson, 2006) as well as positive forms of leadership in the military (Schaubroeck et al., 2012; Wong, Bliese, & McGurk, 2003), it is surprising that little research so far has examined wisdom in this context. An exception is a study by Jennings, Aldwin, Levenson, Spiro, and Mroczek (2006), who examined whether combat exposure and perceived benefits from military experience were associated with greater self-assessed wisdom later in life. Using longitudinal data across 11 years, these researchers found that only moderate, but not low or high, levels of combat exposure were associated with higher levels of self-assessed wis-

This article was published Online First March 2, 2015.

Hannes Zacher, Department of Psychology, University of Groningen; Bernard McKenna, UQ Business School, The University of Queensland; David Rooney, Faculty of Business and Economics, Macquarie University; Steven Gold, The Art Institute of California–Orange County.

The authors thank Command Sergeant Major (r) Philip Johndrow for his invaluable assistance in encouraging participation in this project.

Correspondence concerning this article should be addressed to Bernard McKenna, UQ Business School, The University of Queensland, Brisbane, Queensland 4072, Australia. E-mail: b.mckenna@uq.edu.au

dom, whereas perceived benefits and coping behaviors positively and linearly predicted self-assessed wisdom. A limitation of this study is that it focused only on assessing general and self-assessed wisdom, as compared with more military-specific and more objective forms of wisdom.

Therefore, our goals in this study are to define the construct of wisdom in the military context and to conduct an initial validation study of a new measure to assess this construct using data provided by a unique sample of senior noncommissioned officers (NCOs) in the U.S. defense forces. NCOs exercise influence primarily at a direct leadership level; thus, they “operate in a bounded subsystem where the processes are direct and concrete. Defining tasks, setting goals, and monitoring progress are key requirements at this level” (Wong et al., 2003, p. 677). Research by Chen and Bliese (2002) has identified two important roles that NCOs play: they are crucial in developing soldier self-efficacy and unit collective efficacy and “soldiers are more likely to consult with their NCOs than with their officers regarding work-related stressors (e.g., conflicts with other soldiers, work-family conflict)” (p. 550). Studying wisdom among NCOs is also timely because criteria for the selection and development of military leaders are changing to increasingly include ethical orientations and interpersonal competencies related to the selection and development of future leaders (Fallesen, Keller-Glaze, & Curnow, 2011; Halpin, 2011; Morath, Leonard, & Zaccaro, 2011). Furthermore, with changes in technology and the speed with which decisions are made on the battlefield, NCOs make instantaneous decisions that previously only an officer would make.

Defining and Measuring Wisdom in the Military Context

We base our definition and measure of wisdom in the military context on the Berlin wisdom paradigm, which provides the most prominent and the most widely studied theory of wisdom to date and, importantly, it focuses on advice-giving by experts in difficult and ambiguous situations (Baltes & Smith, 2008; Staudinger & Glück, 2011). According to the

Berlin paradigm, wisdom consists of expert knowledge and judgment in the “fundamental pragmatics of life”; that is, “the ways and means of planning, managing, and understanding a good life” (Baltes & Staudinger, 2000, p. 124). Participants are asked to “think aloud” about a challenging and ambiguous life problem (e.g., suicide of a friend). Their responses are subsequently transcribed and rated on a standardized scale by independent experts (Staudinger, Smith, & Baltes, 1994).

Consistent with the Berlin wisdom paradigm, we define wisdom in the military context as expert knowledge and judgment concerning in extremis military operations. In extremis situations “may result in an extensive and intolerable magnitude of physical, psychological, or material consequences to—or in close physical or psycho-social proximity to—organization members” (Hannah, Uhl-Bien, Avolio, & Cavarretta, 2009, p. 898). Military leaders who score high in wisdom in the military context should be able to provide superior advice to other people (e.g., inexperienced officers) facing in extremis situations. Previous research suggested that strengths and virtues such as trust, optimism, resilience, and loyalty are crucial to successful leadership in these situations (Fisher, Hutchings, & Sarros, 2010; Kolditz & Brazil, 2005).

We operationalized wisdom in the military context in our study consistent with the Berlin paradigm by asking participants to respond to an open-ended question regarding an in extremis military situation, and by subsequently coding their responses. However, in contrast to most previous empirical research based on the Berlin wisdom paradigm, in which participants’ responses to the wisdom task are independently scored by multiple raters on five wisdom dimensions (i.e., rich factual and procedural knowledge about life, life span contextualism, relativism of values and life priorities, and recognition and management of uncertainty), we used global wisdom ratings obtained from two independent raters (cf. Staudinger, Smith, & Baltes, 1992). Staudinger et al. (1992) showed that such global wisdom ratings possess concurrent validity because they correlate moderately to highly with scores based on the five wisdom dimensions.

Convergent and Divergent Validity of Wisdom in the Military Context

We propose that wisdom in the military context is positively related to, but distinct from, more general forms of individual wisdom (convergent validity). Wisdom researchers have distinguished self-assessed (or subjective) general wisdom measures from performance-based (or objective) general wisdom measures (Glück et al., 2013; Staudinger & Glück, 2011). First, we examine the relationship between wisdom in the military context and general objective wisdom as conceptualized and operationalized by the Berlin wisdom paradigm (Baltes & Smith, 2008; Staudinger et al., 1992). Numerous studies have provided support for the validity of this wisdom measure. For instance, researchers found that wisdom was higher among clinical psychologists, who are trained experts in life planning, management, and review, compared with other occupational groups (Smith, Staudinger, & Baltes, 1994).

Second, we investigated the association between wisdom in the military context and general self-assessed wisdom based on Ardel's (2004) wisdom conceptualization, which defines personal wisdom as a personality characteristic reflecting the simultaneous presence of advanced cognitive, reflective, and affective attributes. The cognitive wisdom component involves superior knowledge, understanding, and acceptance of life and human nature (Ardelt, 2004). The reflective wisdom component refers to abilities for self-insight and self-examination and to perceive events from multiple perspectives (Ardelt, 2004). Finally, the affective wisdom component captures consideration and concern for others (Ardelt, 2004). For instance, research using this conceptual framework has shown that general self-assessed wisdom positively predicts psychological well-being and the quality of family relationships (Ardelt, 2000, 2003).

We argue that wisdom in the military context involves the expression of individuals' general wisdom-related knowledge and judgment in a particular context; therefore, we propose the following two hypotheses:

Hypothesis 1: Wisdom in the military context is positively related to general objective wisdom.

Hypothesis 2: Wisdom in the military context is positively related to general self-assessed wisdom.

We further assume that wisdom in the military context is positively related to individuals' trait openness to experience (convergent validity), but unrelated to the other Big Five personality characteristics (divergent validity). The Big Five framework describes people's stable tendencies to be extraverted, conscientious, agreeable, neurotic, and open to new experiences (Digman, 1990). Researchers have argued and demonstrated that objective measures of general wisdom are distinct from the Big Five personality characteristics, and that general wisdom is only positively related to openness to experience (Staudinger, Lopez, & Baltes, 1997). Openness to experience involves the relatively stable tendencies to have an active imagination, value aesthetic and diverse experiences, and to be intellectually curious and sensitive to inner feelings (Digman, 1990). Research in the work context has shown that objective general wisdom predicted successful leadership above and beyond the Big Five personality characteristics (Greaves et al., 2014). In contrast, the Big Five personality characteristics should be more strongly correlated with general self-assessed wisdom than with objective measures of general wisdom (Ardelt, 2004; Staudinger, Maciel, Smith, & Baltes, 1998). For instance, Ardel (2004) proposed that general self-assessed wisdom should be strongly positively related to agreeableness and negatively related to neuroticism. Consistently, Zacher, McKenna, and Rooney (2013) found that relationships between general self-assessed wisdom and subjective well-being became weak and nonsignificant after controlling for participants' emotional intelligence.

On the basis of previous research using the Berlin wisdom paradigm and Ardel's (2004) conceptualization of personal wisdom, we propose the following two hypotheses:

Hypothesis 3: Wisdom in the military context is positively related to openness to experience.

Hypothesis 4: Relationships of extraversion, neuroticism, conscientiousness, and agreeableness with wisdom in the military context are weaker than relationships of

these personality characteristics with general self-assessed wisdom.

Method

Participants and Procedure

Data for this study came from 74 senior NCOs officers in the U.S. defense forces, all of whom were Command Sergeants Major training to be Brigade or Battalion NCOs. Participants were restricted to elite senior NCOs for two reasons. First, this guaranteed that only highly experienced soldiers were included in our study given that experience was an important aspect of this work, whereas many commissioned officers would have considerably less service. Second, we sought “raw” discourse and understanding that was less likely to be influenced by the leadership training available to officers. Of the participants, 71 (89.9%) were male and three (3.8%) were female. Their ages ranged from 34 to 62 years with a mean age of 46.31 years ($SD = 5.25$). In terms of the highest level of education completed, one participant (1.3%) indicated a high school degree, 15 (19%) indicated some college, 34 (43%) held an undergraduate degree, and 24 (30.4%) held a postgraduate university degree. Most participants (71; 95.9%) served in the Army; the others (3; 3.8%) served in the Navy. For military tenure, the number of years served ranged from 16 to 39 years with an average of 25.84 years ($SD = 4.11$). Finally, the number of previous deployments ranged from 0 to 20, with an average of 4.03 ($SD = 2.70$).

Participants were recruited through professional networks of one of the authors, who was an academic gate-keeper and staff member at a virtual university in which many senior NCOs were enrolled. Command Sergeant Majors were sent e-mail requests to participate in an online survey. Participants were restricted to the E9 level, which, by congressional statute, can constitute only the top 1% of military NCOs, thereby limiting this survey to the most highly respected and highly experienced NCOs in the U.S. defense forces. In total, 79 senior NCOs started the survey, and 74 of them provided data on most of the study variables (72 participants provided complete data on all of the study variables).

Measures

Wisdom in the military context. We used an objective measure of wisdom in the military context that we developed for this study based on the Berlin wisdom paradigm (Baltes & Staudinger, 2000). The task shown to participants was, “Based on your experience, if you were asked by an inexperienced officer for advice about leading soldiers into a military engagement with a high possibility of casualties or death, what would your advice be?” After reading the task, participants were asked to respond in writing with at least 200 words or more. We developed this task based on descriptions of in extremis contexts (Hannah et al., 2009) and research with combat troops, which showed that most junior military officers reconsidered trust in their leaders’ competence and character before combat operations (Sweeney, 2010). Moreover, our task was informed by an international study on the leadership development of junior military officers, which found that their social interactions with significant others, including soldiers, peers, and superiors, enhanced their feeling of security, thus allowing them to flexibly adapt their overt behavior (Larsson et al., 2006). A word count analysis showed that the number of words in participants’ responses ranged from 5 to 336 words, with a mean of 92.62 words ($SD = 72.47$). Thus, more than 85% of participants did not comply with our request to write at least 200 words (for further discussion of this issue, see *Additional Analyses and Discussion*).

The second and third authors, who have published extensively on social practice wisdom and wisdom in work settings (McKenna, Rooney, & Boal, 2009; Rooney & McKenna, 2007, 2008; Rooney et al., 2010) and who are highly familiar with the Berlin wisdom paradigm and other conceptualizations of wisdom in the literature, rated the level of wisdom in the military context, as defined in this study, that was contained in the written responses by the NCOs. They also rated the responses to the general wisdom task. It was agreed that the criteria for both types of wisdom should draw from the Berlin wisdom paradigm notion of expert knowledge and judgment in the fundamental pragmatics of life. However, for practical reasons, we used global wisdom ratings obtained from these two independent raters (cf. Staudinger et al., 1992) instead of

independently scoring and combining all five dimensions of the Berlin wisdom paradigm (i.e., rich factual and procedural knowledge about life, life span contextualism, relativism of values and life priorities, and recognition and management of uncertainty). The use of global ratings in our study is justified by research showing moderate to high correlations between global wisdom ratings and aggregate scores based on the five wisdom dimensions (Staudinger et al., 1992).

All responses were evaluated on a 4-point scale, with the scale points labeled *no indications of wisdom* (0), *some indications of wisdom* (1), *moderate level of wisdom* (2), and *high level of wisdom* (3). Inter-rater agreement was good, as indicated by a Krippendorff's α of .88 (cf. Hayes & Krippendorff, 2007). After all ratings had been completed, the raters discussed all of the responses on which they did not agree (note that only in one case disagreement was >1 on the 4-point scale) to determine agreed upon final scores for all responses. Figure 1A shows the distribution of wisdom in the military context scores, and the Appendix provides an example response that was rated highly on wisdom in the military context.

General objective wisdom. We measured general objective wisdom by asking participants to respond in writing to a difficult life problem from the Berlin wisdom paradigm: "In reflecting over their lives, people sometimes realize that they have not achieved what they once planned to achieve. What should they do and what should they consider?" (Baltes & Staudinger, 2000; Staudinger et al., 1994). We asked participants to write at least 200 words or more in response to the task. A word count analysis showed that the number of words in participants' responses to the general wisdom task ranged from 8 to 321 words with a mean of 85.27 words ($SD = 75.58$). Again, more than 85% of participants did not comply with our request to write at least 200 words (see also *Additional Analyses and Discussion*).

The same two raters who evaluated participants' responses to the wisdom in the military context task evaluated the responses to the general wisdom task using the same 4-point scale. Again, for practical reasons, we used global wisdom ratings obtained from these two independent raters instead of independently scoring all five dimensions of the Berlin wisdom para-

digm. The use of global wisdom ratings has been shown to be a valid approach (Staudinger et al., 1992). Inter-rater reliability was also high for ratings of general objective wisdom (Krippendorff's $\alpha = .82$). In case of disagreements, the two raters discussed the response and agreed on a final score. Figure 1B shows the distribution of general objective wisdom scores, and an example response that was rated highly on general wisdom is provided in the Appendix.

General self-assessed wisdom. We measured general self-assessed wisdom using Ardel's (2003) 39-item scale. The scale assesses three fundamental components of wisdom with 14, 12, and 13 items for cognitive (e.g., "I am hesitant about making important decisions after thinking about them" [reverse coded]), reflective (e.g., "When I'm upset at someone, I usually try to 'put myself in his or her shoes' for a while"), and affective wisdom (e.g., "I can be comfortable with all kinds of people"), respectively. Participants provided their ratings on 5-point scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and from 1 (*not true of myself*) to 5 (*very true of myself*). Consistent with her theory on self-assessed wisdom as the integration of advanced cognitive, reflective, and affective characteristics, Ardel (2003) suggested that researchers should average the scores on the three wisdom dimensions to compute an overall personal wisdom score. Cronbach's α for the scale was .89 in this study. Ardel (2003) demonstrated the validity of her measure by showing that participants who scored highly on this self-assessed wisdom scale were also more likely to be nominated as wise by other participants.

Personality characteristics. We measured the Big Five personality characteristics using 44 items of the widely used, reliable, and well-validated Big Five Inventory (John, Donahue, & Kentle, 1991). Answers were provided on 5-point scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Example items and Cronbach's α for the scales in this study are "I see myself as someone who . . . is talkative" (extraversion; $\alpha = .88$), ". . . tends to find fault with others" (reverse coded; agreeableness; $\alpha = .81$), ". . . does a thorough job" (conscientiousness; $\alpha = .82$), ". . . is depressed, blue" (neuroticism; $\alpha = .81$), and ". . . is original, comes

Figure 1. Distributions of (A) wisdom in the military context scores and (B) general objective wisdom scores.

up with new ideas” (openness to experience; $\alpha = .78$).

Demographic and work-related characteristics. We assessed NCOs age in years, gender, education (1 = *some high school*, 2 = *completed high school*, 3 = *some college*, 4 = *undergraduate degree*, 5 = *postgraduate university degree*). In addition, we asked participants in which branch of the military they served (Army or Navy), their military tenure in years, and the number of previously completed deployments.

Results

Table 1 shows the descriptive statistics and correlations of the study variables. Wisdom in the military context, general objective wisdom, and general self-assessed wisdom were not significantly related to participants’ age, education, military tenure, and number of deployments. However, it is worth noting that the relationships between number of deployments and wisdom in the military context, $r = -.14$, $p = .238$, and general objective wisdom, $r = -.23$, $p = .055$, were negative (albeit not significant); we will return to these findings in the *Discussion*.

In support of Hypothesis 1, wisdom in the military context was positively related to general wisdom ($r = .70$, $p < .001$). Moreover, wisdom in the military context was positively related to general self-assessed wisdom, $r = .25$, $p = .035$. Thus, Hypothesis 2 was also supported. The relationship between general objective wisdom and general self-assessed wisdom was also positive, $r = .34$, $p = .003$. According to Hypothesis 3, wisdom in the military context is positively related to openness to experience. As can be seen in Table 1, correlations between wisdom in the military context and personality characteristics were relatively weak and nonsignificant; the relationship between wisdom in the military context and openness to experience was slightly positive but nonsignificant, $r = .10$, $p = .410$. Thus, Hypothesis 3 was not supported.

Finally, Hypothesis 4 states that the relationships of extraversion, neuroticism, conscientiousness, and agreeableness with wisdom in the military context are weaker than relationships of the personality characteristics with general self-assessed wisdom. Table 1 shows that all but one of the correlations between general self-

Table 1
Means (M), Standard Deviations (SD), and Correlations of Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Wisdom in the military context	1.11	0.86	—											
2. General objective wisdom	0.79	0.80	.70**	—										
3. Self-assessed wisdom	3.88	0.42	.25*	.34**	(.89)									
4. Extraversion	3.55	0.78	.02	.04	.29*	(.88)								
5. Neuroticism	2.13	0.58	.04	-.02	-.32**	-.38**	(.81)							
6. Conscientiousness	4.26	0.51	-.02	.05	.21	.31**	-.40**	(.82)						
7. Agreeableness	3.97	0.52	.17	.05	.53**	.23*	-.44**	.34**	(.81)					
8. Openness to experience	3.69	0.50	.10	.03	.49**	.37**	-.32**	.37**	.55**	(.78)				
9. Age	46.31	5.25	-.11	-.05	-.03	.08	.03	-.12	-.15	.06	—			
10. Education	4.09	0.76	.09	-.04	.19	.29*	-.26*	.31**	.16	.22	-.01	—		
11. Military tenure	25.84	4.11	.00	.03	-.03	.16	-.05	-.04	-.14	.05	.81**	.04	—	
12. Number of deployments	4.03	2.70	-.14	-.23	.00	.03	-.25*	.19	.17	.15	-.04	-.07	-.09	—

Note. Because of missing values, N ranges between 72 and 74. Reliability estimates (α), where available, are displayed along the diagonal.
* $p < .05$. ** $p < .01$.

assessed wisdom and personality characteristics were significant. Moreover, there were significant or marginally significant differences between the correlations (cf. Steiger, 1980) of wisdom in the military context and general self-assessed wisdom with extraversion ($z = -1.89$, one-tailed $p = .030$), neuroticism ($z = 2.53$, one-tailed $p = .006$), conscientiousness ($z = 1.58$, one-tailed $p = .057$), agreeableness ($z = -2.76$, one-tailed $p = .003$), and openness to experience ($z = -2.91$, one-tailed $p = .002$). Thus, Hypothesis 4 was supported.

Additional Analyses

We conducted three additional analyses to further probe our findings. First, we examined relationships between the number of words in participants' responses to the two wisdom tasks and the respective two wisdom scores. The number of words in participants' responses to the wisdom in the military context task was strongly positively related to the respective wisdom score, $r = .76$, $p < .001$. Likewise, the number of words in participants' responses to the general wisdom task was strongly positively related to the respective wisdom score, $r = .85$, $p < .001$. Second, we repeated our correlational analyses while controlling for the number of words in participants' responses to the wisdom in the military context task (i.e., partial correlations). Results showed that, when controlling for the number of words in participants' responses, wisdom in the military context was still positively, albeit weaker, related to general objective wisdom, $r = .35$, $p = .003$. In contrast, wisdom in the military context was not significantly related to general self-assessed wisdom when controlling for number of words in responses, $r = .15$, $p = .198$. Moreover, the partial correlation results showed that wisdom in the military context correlated significantly with agreeableness, $r = .26$, $p = .029$, and openness to experience, $r = .25$, $p = .038$. We note that the latter finding is consistent with our Hypothesis 3, which proposed a positive relationship between wisdom in the military context and openness to experience. Third, our additional analyses showed that when the number of words in participants' responses to the general wisdom task were controlled, general objective wisdom was neither significantly related to wisdom in the military context, $r = .18$, $p = .128$,

and general self-assessed wisdom, $r = .20$, $p = .091$, nor to any other of the study variables.

Discussion

Researchers and practitioners in the field of military psychology are increasingly interested in positive forms of leadership in the defense forces (Matthews et al., 2006; Schaubroeck et al., 2012; Wong et al., 2003). Thus, the goal of this study was to introduce the concept of wisdom in the military context, which we defined as expert knowledge and judgment concerning in extremis military operations. We based our definition and operationalization of wisdom in the military context on the Berlin wisdom paradigm, which constitutes the most prominent and most widely researched approach to wisdom in the literature (Staudinger & Glück, 2011). Data collected from a sample of senior NCOs in the U.S. defense forces showed that high and very high levels of wisdom (i.e., scores of 2 and 3 on our 4-point scale) were less common than lower levels of wisdom (i.e., scores of 0 and 1). Given that wisdom is conceived as an ideal state that is extremely difficult to achieve (Baltes & Smith, 2008), the left-skewed distribution of scores in our sample is neither surprising nor does it reflect negatively on our participants. That is, leaders who score 0 or 1 in wisdom in the military context may still be able to adjust well to their environment and act according to established social norms (Staudinger & Kessler, 2009). For instance, these leaders may display hardiness to ensure that the military unit of which they are a part functions effectively in in extremis situations. Hardiness refers to "a pattern of attitudes and skills that provides the courage and strategies to turn stressful circumstances from potential disasters into growth opportunities" (Maddi, 2007, p. 61). In contrast, leaders scoring higher in wisdom in the military context possess exceptional insights in exceptionally difficult and ambiguous situations.

We found support for three of our four hypotheses, providing some initial support for the convergent and discriminant validity of our measure of wisdom in the military context. Specifically, wisdom in the military context was positively related to general objective wisdom and self-assessed wisdom. One possible explanation for the stronger positive relationship be-

tween wisdom in the military context and general objective wisdom compared with self-assessed wisdom is that we used the same measurement approach (i.e., global ratings of participants' written responses from two independent raters) for wisdom in the military context and general objective wisdom. However, the positive relationship between the two objective wisdom constructs was far from perfect, which suggests that wisdom in the military context is a distinct construct that represents a contextualized expression of participants' general wisdom. Thus, our findings indicate that expressions of wisdom can be specific to the domain. That is, a person may show a higher degree of wisdom in one domain of life (e.g., military operations, managing a company) than in others (e.g., effectively parenting teenagers, maintaining romantic relationships).

In contrast to general self-assessed wisdom, wisdom in the military context was not significantly related to the Big Five personality characteristics (although significant relationships emerged with agreeableness and openness to experience when controlling for the number of words in participants' responses). These findings are largely consistent with research conducted in the context of the Berlin wisdom paradigm and *Ardelt's* (2004) conceptualization of personal wisdom, which show stronger relationships between personality characteristics and general self-assessed wisdom compared with relationships between personality characteristics and general objective wisdom (*Ardelt, 2003; Mickler & Staudinger, 2008; Staudinger et al., 1997; Zacher et al., 2013*).

Finally, wisdom in the military context was also not significantly related to demographic variables, including age. These findings are not surprising given that previous research based on the Berlin wisdom paradigm did not find significant relationships between age and objective general wisdom (*Staudinger, 1999; Staudinger et al., 1992*). However, given that the average age in our sample was 46 years with a standard deviation of only 5.26, this finding does not preclude the possibility that wisdom in the military context could potentially increase as personnel move from lower ranks with age and military experience.

The negative (albeit not significant) relationship between the number of deployments and wisdom in the military context and general ob-

jective wisdom is worthy of note, although it should be interpreted with caution. At first, these findings may seem counterintuitive. However, early wisdom research suggested that the quality of occupational experiences are a stronger predictor of wisdom than the quantity of experiences (*Smith et al., 1994*). Thus, the mere number of deployments may be less important for (or even negatively related to) the development of general wisdom and wisdom in occupational contexts. Furthermore, a factor that may moderate the influence of experience on wisdom development is whether, and how, people reflect on those experiences. Future research is needed to examine the possibilities.

Limitations and Future Research

Although the objective assessments of wisdom in the military context and general wisdom constitute a strength, our study also has several limitations that need to be addressed in future research. First, our sample was relatively small, and participants may not be representative of all NCOs in the U.S. defense forces. Thus, future studies should collect larger and more heterogeneous samples of military leaders that allow the inclusion of additional predictor variables as well as generalizing the findings to the broader population.

Second, the operationalization of wisdom in the military context used in this study is rather time-consuming because it requires qualitative responses by participants and ratings by multiple researchers. Moreover, as was the case in the current study, participants may not comply with researchers' instructions and write relatively short responses to the wisdom tasks. However, performance-based objective measures of wisdom currently constitute the "gold standard" in empirical wisdom research whereas self-report scales are frequently criticized for introducing methodological biases (*Glück et al., 2013; Staudinger & Glück, 2011*). A possible avenue for future research may be to develop situational judgment tests that present participants with several scenarios (e.g., of in extremis military operations) and require participants to select their preferred responses to the scenarios (*Becker, 2005; Motowidlo, Crook, Kell, & Naemi, 2009*). Moreover, conducting personal interviews with participants allows researchers to ask follow-up questions; thus, it

should result in longer responses by participants that can be reliably rated (Staudinger et al., 1992).

Finally, we did not assess outcomes or consequences of wisdom in the military context in this study such as NCOs' leadership success on the job. Thus, the criterion-related validity of our measure requires further investigation. Previous research suggests that wisdom may predict authentic, ethical, and servant leadership behavior as well as follower satisfaction, development, and personal growth (McKenna et al., 2009; Zacher et al., 2014). Future research should examine how wisdom in the military context relates to different forms of leadership (e.g., ethical leadership) and how these associations may differ for wisdom in the military context and more general forms of objective and self-assessed wisdom.

Theoretical and Practical Implications

Our findings contribute to the literature on wisdom because they suggest that objective wisdom may take context-specific forms. With few exceptions in the adult development literature (Yang, 2008), wisdom researchers have distinguished only between general forms of wisdom, which involve more abstract advice giving, and personal wisdom, which focuses on the management of close interpersonal relationships (Mickler & Staudinger, 2008). Although researchers are beginning to investigate the role of leaders' wisdom in the work context (Greaves et al., 2014; Yang, 2011), the current study shows for the first time that leaders can provide others with wise advice in specific and difficult situations such as in extremis military operations (Hannah et al., 2009).

Our study also contributes to the military leadership literature, which has so far neglected the role of wisdom as an important virtue and character strength of military leaders (Matthews et al., 2006; Schaubroeck et al., 2012; Wong et al., 2003). Although wisdom is a well-established and increasingly popular construct in the developmental psychology and gerontology literatures (Staudinger & Glück, 2011), leadership researchers have only recently begun to integrate it into their theories (McKenna et al., 2009; Rooney et al., 2010).

Our findings allow only tentative practical implications. Specifically, one of our main find-

ings is that wisdom in the military context was positively related to more general forms of wisdom. On the one hand, this suggests that practitioners could increase leaders' wisdom in the military context by selecting applicants for leadership positions based on their performance in general wisdom tests and their self-assessed wisdom. On the other hand, if wisdom in the military context is an important criterion for selecting NCOs, then our findings suggest that the Big Five personality characteristics are unlikely to be useful predictors of success. Moreover, recent research suggests that wise decisions and behaviors can be trained through exercises involving self-distancing from events (Kross & Grossmann, 2012). Thus, practitioners could attempt to enhance leaders' general wisdom and wisdom in the military context through workshops that train self-distancing and related abilities such as self-reflection and empathy.

In conclusion, this initial study on wisdom in the military context contributes to the literature by defining and operationalizing wisdom in the military context based on the Berlin wisdom paradigm and by showing that NCOs' levels of wisdom in the military context are positively and moderately related to more general forms of objective and self-assessed wisdom. Future research is now needed that replicates our findings in larger and more diverse samples of military personnel and that further explores the antecedents and consequences of this important construct.

References

- Ardelt, M. (2000). Antecedents and effects of wisdom in old age: A longitudinal perspective on aging well. *Research on Aging*, 22, 360–394. <http://dx.doi.org/10.1177/0164027500224003>
- Ardelt, M. (2003). Empirical assessment of a three-dimensional wisdom scale. *Research on Aging*, 25, 275–324. <http://dx.doi.org/10.1177/0164027503025003004>
- Ardelt, M. (2004). Wisdom as expert knowledge system: A critical review of a contemporary operationalization of an ancient concept. *Human Development*, 47, 257–285. <http://dx.doi.org/10.1159/000079154>
- Baltes, P. B., & Smith, J. (2008). The fascination of wisdom: Its nature, ontogeny, and function. *Perspectives on Psychological Science*, 3, 56–64. <http://dx.doi.org/10.1111/j.1745-6916.2008.00062.x>

- Baltes, P. B., & Staudinger, U. M. (2000). Wisdom. A metaheuristic (pragmatic) to orchestrate mind and virtue toward excellence. *American Psychologist*, 55, 122–136. <http://dx.doi.org/10.1037/0003-066X.55.1.122>
- Becker, T. E. (2005). Development and validation of a situational judgment test of employee integrity. *International Journal of Selection and Assessment*, 13, 225–232. <http://dx.doi.org/10.1111/j.1468-2389.2005.00319.x>
- Chen, G., & Bliese, P. D. (2002). The role of different levels of leadership in predicting self- and collective efficacy: Evidence for discontinuity. *Journal of Applied Psychology*, 87, 549–556. <http://dx.doi.org/10.1037/0021-9010.87.3.549>
- Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, 41, 417–440. <http://dx.doi.org/10.1146/annurev.ps.41.020190.002221>
- Fallesen, J. J., Keller-Glaze, H., & Curnow, C. K. (2011). A selective review of leadership studies in the U.S. Army. *Military Psychology*, 23, 462–478. <http://dx.doi.org/10.1080/08995605.2011.600181>
- Fisher, K., Hutchings, K., & Sarros, J. C. (2010). The “bright” and “shadow” aspects of in extremis leadership. *Military Psychology*, 22(Suppl. 1), S89–S116. <http://dx.doi.org/10.1080/08995601003644346>
- Glück, J., König, S., Naschenweng, K., Redzanski, U., Dorner, L., Straßer, I., & Wiedermann, W. (2013). How to measure wisdom: Content, reliability, and validity of five measures. *Frontiers in Psychology*, 4, 405. <http://dx.doi.org/10.3389/fpsyg.2013.00405>
- Greaves, C. E., Zacher, H., McKenna, B., & Rooney, D. (2014). Wisdom and narcissism as predictors of transformational leadership. *Leadership & Organization Development Journal*, 35, 335–358. <http://dx.doi.org/10.1108/LODJ-07-2012-0092>
- Halpin, S. M. (2011). Historical influences on the changing nature of leadership within the military environment. *Military Psychology*, 23, 479–488. <http://dx.doi.org/10.1080/08995605.2011.600138>
- Hannah, S. T., Uhl-Bien, M., Avolio, B. J., & Cavarretta, F. L. (2009). A framework for examining leadership in extreme contexts. *The Leadership Quarterly*, 20, 897–919. <http://dx.doi.org/10.1016/j.leaqua.2009.09.006>
- Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures*, 1, 77–89. <http://dx.doi.org/10.1080/19312450709336664>
- Jennings, P. A., Aldwin, C. M., Levenson, M. R., Spiro, A., & Mroczek, D. K. (2006). Combat exposure, perceived benefits of military service, and wisdom in later life: Findings from the Normative Aging Study. *Research on Aging*, 28, 115–134. <http://dx.doi.org/10.1177/0164027505281549>
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory—Versions 4a and 5*. Berkeley, CA: University of California—Berkeley, Institute of Personality and Social Research.
- Karelitz, T. M., Jarvin, L., & Sternberg, R. J. (2010). The meaning of wisdom and its development throughout life. Part I. Cognition, biology, and methods. In R. M. Lerner & W. F. Overton (Eds.), *The handbook of life-span development* (pp. 781–387). Hoboken, NJ: Wiley. <http://dx.doi.org/10.1002/9780470880166.hlsd001023>
- Kolditz, T. A., & Brazil, D. M. (2005). Authentic leadership in *in extremis* settings: A concept for extraordinary leaders in exceptional situations. In W. L. Gardner, B. J. Avolio, & F. O. Walumbwa (Eds.), *Authentic leadership theory and practice: Origins, effects, and development* (pp. 345–356). Burlington, VT: Emerald.
- Kross, E., & Grossmann, I. (2012). Boosting wisdom: Distance from the self enhances wise reasoning, attitudes, and behavior. *Journal of Experimental Psychology: General*, 141, 43–48. <http://dx.doi.org/10.1037/a0024158>
- Larsson, G., Bartone, P. T., Bos-Bakx, M., Danielsson, E., Jelusic, L., Johansson, E., . . . Wachowicz, M. (2006). Leader development in natural context: A grounded theory approach to discovering how military leaders grow. *Military Psychology*, 18(Suppl.), S69–S81. http://dx.doi.org/10.1207/s15327876mp1803s_6
- Maddi, S. R. (2007). Relevance of hardiness assessment and training to the military context. *Military Psychology*, 19, 61–70.
- Matthews, M. D., Eid, J., Kelly, D., Bailey, J. K. S., & Peterson, C. (2006). Character strengths and virtues of developing military leaders: An international comparison. *Military Psychology*, 18(Suppl.), S57–S68. http://dx.doi.org/10.1207/s15327876mp1803s_5
- McKenna, B., Rooney, D., & Boal, K. B. (2009). Wisdom principles as a meta-theoretical basis for evaluating leadership. *The Leadership Quarterly*, 20, 177–190. <http://dx.doi.org/10.1016/j.leaqua.2009.01.013>
- Mickler, C., & Staudinger, U. M. (2008). Personal wisdom: Validation and age-related differences of a performance measure. *Psychology and Aging*, 23, 787–799. <http://dx.doi.org/10.1037/a0013928>
- Morath, R. A., Leonard, A. L., & Zaccaro, S. J. (2011). Military leadership: An overview and introduction to the special issue. *Military Psychology*, 23, 453–461. <http://dx.doi.org/10.1080/08995605.2011.600133>
- Motowidlo, S. J., Crook, A. E., Kell, H. J., & Naemi, B. (2009). Measuring procedural knowledge more simply with a single-response situational judgment test. *Journal of Business and Psychology*, 24, 281–288. <http://dx.doi.org/10.1007/s10869-009-9106-4>

- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC: American Psychological Association.
- Rooney, D., & McKenna, B. (2007). Wisdom in organizations: Whence and whither. *Social Epistemology*, 21, 113–138. <http://dx.doi.org/10.1080/02691720701393434>
- Rooney, D., & McKenna, B. (2008). Wisdom in public administration: Looking for a sociology of wise practice. *Public Administration Review*, 68, 709–721. <http://dx.doi.org/10.1111/j.1540-6210.2008.00909.x>
- Rooney, D., McKenna, B., & Liesch, P. (2010). *Wisdom and management in the knowledge economy*. New York, NY: Routledge.
- Schaubroeck, J., Hannah, S., Avolio, B., Kozlowski, S., Lord, R., Trevino, L., . . . Peng, A. (2012). Embedding ethical leadership within and across organization levels. *Academy of Management Journal*, 55, 1053–1078. <http://dx.doi.org/10.5465/amj.2011.0064>
- Smith, J., Staudinger, U. M., & Baltes, P. B. (1994). Occupational settings facilitating wisdom-related knowledge: The sample case of clinical psychologists. *Journal of Consulting and Clinical Psychology*, 62, 989–999. <http://dx.doi.org/10.1037/0022-006X.62.5.989>
- Staudinger, U. M. (1999). Older and wiser? Integrating results on the relationship between age and wisdom-related performance. *International Journal of Behavioral Development*, 23, 641–664. <http://dx.doi.org/10.1080/016502599383739>
- Staudinger, U. M., & Glück, J. (2011). Psychological wisdom research: Commonalities and differences in a growing field. *Annual Review of Psychology*, 62, 19.11.27641–19. <http://dx.doi.org/10.1146/annurev.psych.121208.131659>
- Staudinger, U. M., & Kessler, E. -M. (2009). Adjustment and growth: Two trajectories of positive personality development across adulthood. In M. C. Smith & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development* (pp. 241–268). New York, NY: Routledge.
- Staudinger, U. M., Lopez, D. F., & Baltes, P. B. (1997). The psychometric location of wisdom-related performance: Intelligence, personality, and more? *Personality and Social Psychology Bulletin*, 23, 1200–1214. <http://dx.doi.org/10.1177/01461672972311007>
- Staudinger, U. M., Maciel, A. G., Smith, J., & Baltes, P. B. (1998). What predicts wisdom-related performance? A first look at personality, intelligence, and facilitative experiential contexts. *European Journal of Personality*, 12, 1–17. [http://dx.doi.org/10.1002/\(SICI\)1099-0984\(199801/02\)12:1<1::AID-PER285>3.0.CO;2-9](http://dx.doi.org/10.1002/(SICI)1099-0984(199801/02)12:1<1::AID-PER285>3.0.CO;2-9)
- Staudinger, U. M., Smith, J., & Baltes, P. B. (1992). Wisdom-related knowledge in a life review task: Age differences and the role of professional specialization. *Psychology and Aging*, 7, 271–281. <http://dx.doi.org/10.1037/0882-7974.7.2.271>
- Staudinger, U. M., Smith, J., & Baltes, P. B. (1994). *Manual for the assessment of wisdom-related knowledge*. Berlin, Germany: Max Planck Institute for Human Development and Education.
- Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin*, 87, 245–251. <http://dx.doi.org/10.1037/0033-2909.87.2.245>
- Sternberg, R. J. (Ed.). (1990). *Wisdom: Its nature, origins, and development*. Cambridge, United Kingdom: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9781139173704>
- Sweeney, P. J. (2010). Do soldiers reevaluate trust in their leaders prior to combat operations? *Military Psychology*, 22(Suppl. 1), S70–S88. <http://dx.doi.org/10.1080/08995601003644312>
- Wong, L., Bliese, P., & McGurk, D. (2003). Military leadership: A context specific review. *The Leadership Quarterly*, 14, 657–692. <http://dx.doi.org/10.1016/j.leaqua.2003.08.001>
- Yang, S. Y. (2008). Real-life contextual manifestations of wisdom. *The International Journal of Aging & Human Development*, 67, 273–303. <http://dx.doi.org/10.2190/AG.67.4.a>
- Yang, S. Y. (2011). Wisdom displayed through leadership: Exploring leadership-related wisdom. *The Leadership Quarterly*, 22, 616–632. <http://dx.doi.org/10.1016/j.leaqua.2011.05.004>
- Zacher, H., McKenna, B., & Rooney, D. (2013). Effects of self-reported wisdom on happiness: Not much more than emotional intelligence? *Journal of Happiness Studies*, 14, 1697–1716. <http://dx.doi.org/10.1007/s10902-012-9404-9>
- Zacher, H., Pearce, L. K., Rooney, D., & McKenna, B. (2014). Leaders' personal wisdom and leader-member exchange quality: The role of individualized consideration. *Journal of Business Ethics*, 121, 171–187. <http://dx.doi.org/10.1007/s10551-013-1692-4>

(Appendix follows)

Appendix

Examples of Highly Rated Responses

Example of Participant Response Rated High on Wisdom in the Military Context

First, and this is time dependent, I would ask about his/her assessment of their soldiers as a team. I would ask about their weaknesses and strengths and about their cohesiveness. Given some time, this could open opportunities for the officer to become confident in their abilities. I would ask about the NCO leaders in the unit and my biggest advice there would be to trust them and not micromanage them. But at the same time, a leader must lead. Hopefully the young officer would have already developed open lines of communication within the unit, which would provide feedback for him/her as well as help the soldiers feel more trust in their leadership. Trust cannot be underestimated in the success of any dangerous operation. The lack of trust has brought down many great endeavors, so I would advise the officer to trust his/her subordinates, but to verify things are being done as he/she instructed. I would tell them that demonstrating confidence in the unit and trusting the junior leadership while providing a strong example can build the resilience within a unit to the point that they can accomplish the most amazing things. The hardest bit of advice is to acknowledge that as an officer, you bear the responsibility of everything that goes right or wrong in your command. This includes the burden of possibly making decisions that could end someone's life. Sometimes decisions must be made in a split second that have enduring consequences. That's a terrible responsibility to have. Therefore, a leader must master their craft; trust their subordinates and keep them

well informed; ask questions on ANYTHING that lacks clarity; and have faith in themselves, their soldiers, and whatever higher power they choose.

Example of Participant Response Rated High on General Wisdom

Typically plans don't survive first contact. This may sound cliché, but I've never seen a plan work out as designed. Plans change over time and changes occur because our plans involve variables including people and events. We can't predict the future. We should be grateful for what we accomplish and not dwell on the past. Consider past accomplishments and be proud of your life. We should do the best we can and try to execute the plans we create. We should continue to plan for the future and do our best. Plans change because the economy changes. Sometimes people select careers that aren't as promising as once thought. A career change causes many changes in someone's life. Career changes cause families to move, which creates much change in a family's life. People should carefully consider future career paths and have a broad background to enable easy transition from job to job. People who get stuck in one profession limit future opportunities or can be very successful. People in the medical field will always have a bright future, but not everyone is cut out to become a doctor. Consider your strengths and weaknesses and capitalize on strengths and work to improve weaknesses.

Received September 26, 2014

Revision received December 17, 2014

Accepted January 24, 2015 ■