

HUMAN PERFORMANCE OPTIMIZATION

An Ongoing Series

Cognitive Agility as a Factor in Human Performance Optimization

Jared Ross, BS, MBA¹; Lucas Miller, BS²; Patricia A. Deuster, PhD, MPH^{3*}

ABSTRACT

Cognitive agility reflects the capacity of an individual to easily move back and forth between openness and focus. The concept is being translated into a tool to help train leaders to perform well in the “dynamic decision-making context.” Cognitive agility training (CAT) has the potential to increase emotional intelligence by improving an individual’s ability to toggle between highly focused states to levels of broad, outward awareness, which should enable dynamic decision-making and enhance personal communication skills. Special Operations Forces (SOF) Operators must work in rapidly evolving, complex environments embedded with multiple high-risk factors. Generally, success in these operational environments requires the ability to maintain highly focused states. However, SOF Operators must also be able to transition rapidly back to their roles within their families, where a more outwardly aware state is needed to allow flexibility in emotional responses. CAT addresses these seemingly conflicting requirements. Successful CAT must reflect the methodologies and culture already familiar within the SOF community (i.e., “live” scenario-based activities) to replicate challenges they may encounter when operationally deployed and when at home. This article provides an overview of cognitive agility, the potential benefits, applications that could be used for training SOF Operators to improve their cognitive agility to optimize performance, and sample training scenarios. The issue of what metrics to use is also discussed.

KEYWORDS: *cognitive flexibility; emotional intelligence; successful intelligence; total force fitness*

Introduction

In our opening article for JSOM’s Human Performance Optimization Series, we outlined a model identifying various resources that could or should be mobilized very quickly to support a multitude of cognitive factors.¹ Examples of these

cognitive factors include adaptability, creativity, reasoning, judgment, decision-making, problem solving, attention, and appraisal, among others. Overall, human performance outcomes will be the summation of dynamic decision-making: how rapidly we are able to cognitively process our knowledge and experiences, be they perceived or learned²; maintain awareness; and then execute critical actions. Dynamic decision-making (DDM) is characterized by making a series of choices in environments of high uncertainty and likely information overload, all of which are sequentially linked and can change as a function of earlier choices.³⁻⁵ Importantly, our own beliefs regarding how effectively and efficiently we think we are able to mobilize our cognitive resources and successfully make decisions dynamically as part of our mission tasks will help determine how we subsequently perform and our degree of satisfaction with mission execution.⁶ Cognitive intelligence, or intelligence quotient (a combination of verbal, reasoning, numeric, and spatial abilities),⁷ was long thought to be the primary driver in terms of performance outcomes.⁸⁻¹⁰ However, emerging data suggest that emotional intelligence (EI) and cognitive agility are drivers for successful performance outcomes and support cognitive intelligence.

What is EI? Salovey and Mayer¹¹ defined EI as the “ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions.” The concept of EI has become very popular and various frameworks have emerged. Figure 1 provides an overview of the four domains of EI, but the general idea is that those with high EI are better able to recognize and control their emotions (and help others manage theirs), which would then enhance their ability to successfully negotiate the multiple demands and pressures in the surrounding environments.¹² Clearly, SOF Operators must be able to manage the multiple demands and pressures of missions and family life and thus would require high EI, along with effective communication capabilities and high cognitive intelligence.

*Correspondence to Consortium for Health and Military Performance, Department of Defense Center of Excellence, Department of Military and Emergency Medicine, Uniformed Services University, 4301 Jones Bridge Rd, Bethesda, MD; or patricia.deuster@usuhs.edu

¹Mr Ross is a retired US Army Sergeant Major, US Special Operations Command, who is helping apply concepts of the Human Performance Optimization (HPO) within the Special Operations Forces community. He is developing training in cognitive agility for US Special Operations Command in collaboration with others. ²LT Miller is a fourth-year medical student at the Uniformed Services University, Bethesda, MD, and a former US Army Special Forces Medical Sergeant. Dr Deuster is a professor and director of the Consortium for Health and Military Performance, a Defense Center of Excellence, Department of Military and Emergency Medicine, Uniformed Services University, Bethesda, MD.

FIGURE 1 The primary components of emotional intelligence. Based on data from Goleman and Boyatzis.²³



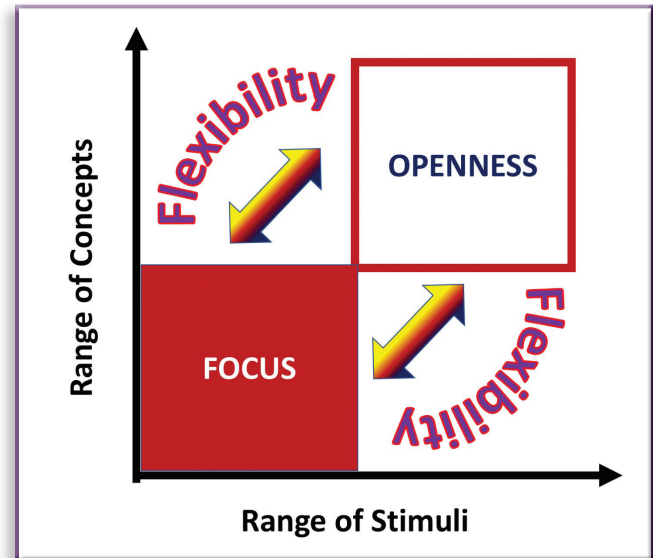
Development of greater EI and effective communication capabilities can generally be considered advantageous life skills and, together with cognitive intelligence, work together to blend into the concept of cognitive agility. In the context of human performance optimization, development of greater cognitive agility should positively influence the domains defined by total force fitness (TFF) and the four put forward by US Special Operations Command (USSOCOM)'s Preservation of the Force and Family (POTFF): human, psychological, spiritual, and social/family performance. In this article, we discuss the concept of cognitive agility and why it may be important, and we describe scenarios where it could be useful and needed.

Overview

Cognitive agility is a concept being formulated as and translated into a tool to help train leaders to perform well in the DDM context. Cognitive agility “represents an individual’s capacity to flexibly operate with openness and focused attention.”¹³ The more easily (flexibly) one can move between states of complete attention is described as cognitive flexibility. Fluid movement between focus and openness allows for a greater capacity to make decisions dynamically and effectively communicate. Figure 2 presents an overview of the concept of cognitive agility in terms of focus, openness, and flexibility. The potential impact of cognitive agility training (CAT) on performance seems intuitive: Being cognitively agile could result in marked improvements in performance across all TFF and POTFF domains. If so, a deliberate effort to provide CAT for USSOCOM Operators and enablers may be important.

Cognitive agility requires high levels of functioning in states of focus and openness. In the context of cognitive agility, focus or focused attention is “the capacity to oppose incoming distraction.”¹³ In contrast, “openness” is a broader state of awareness in which the capacity to notice and search for new information in the environment grows as the capability improves.¹³ SOF Operators and direct support enablers, by nature of their job requirements and personality traits identified as positive attributes during the initial selection process, are very capable of operating within the focus state. However, moving to a state of openness, where being inwardly self-aware emotionally and outwardly aware of the emotions of those around you (i.e., EI), is generally foreign to SOF. Therefore, developing greater capacities to operate in a state of openness (i.e., EI) and improving cognitive flexibility should provide greater DDM capabilities and reduce the unintended consequences of operating primarily in a focused state of being.

FIGURE 2 A depiction of cognitive agility denoting the differences between focus and openness and the role of flexibility. Based on data from Good and Yeganeh.¹³



As cognitive agility improves, the ability to choose emotional responses, communication methods, and value-connected decisions will also improve. In this context, the connection to improving performance within the POTFF domains now comes into focus. The physical domain may not immediately appear to be directly affected by improved cognitive agility, but physical performance is generally influenced significantly once the mind is clear of distracting thoughts. At this time, positive impacts on performance, spiritual fitness, and other domains are anticipated. Before providing applications and training scenarios, we discuss the potential impact of cognitive agility.

Successful Intelligence

Robert J. Sternberg, a leader in cognitive psychology, defined “successful intelligence” as “an ability to balance the needs to adapt to, shape and select environments in order to attain success, however one defines it, within one’s sociocultural context.”¹⁴ “Successful intelligence” can be viewed as a combination of EI and cognitive awareness. Because of the vast array of environments in which SOF personnel can find themselves working, having an abundance of “successful intelligence” would be key to mission success. Being able to internally analyze cultural differences, body language, and the tone of voice are tasks frequently encountered in missions undertaken by SOF communities, with limited training prior to arriving in such situations; they learn it over time, but directed CAT within the context of scenario-based exercises could be very useful for improving “successful intelligence” or integrating EI with cognitive awareness.

Cognitive Agility and Spiritual Fitness

It is likely that CAT could also significantly influence the domain of spiritual fitness. In the Spring 2018 issue of JSOM, we discussed spirituality and its relevance to TFF and POTFF from individual and group perspectives.¹⁵ We explained how spiritual fitness ultimately defines the ways in which individuals function within the group and the manner in which the group is able to perform and accomplish the mission and task set before them. Spiritual fitness reflects the ability of SOF

Operators to build and maintain a set of beliefs, principles, and values during times of stress. As discussed, the development of these beliefs, principles, and values allows individuals to establish a unique identity that guides their character, disposition, decision-making, and integrity.¹⁵ From an individual perspective, an SOF Operator is likely to have developed a set of personal qualities (derived from religious, philosophical, and/or human values and experiences) that sustain them in times of hardship. These may include the concepts of transcendence and ultimate meaning, but a broader, nonreligious definition is particularly appropriate for the SOF community, because the range of beliefs within the community will span the entire spectrum of spirituality, from religious to secular. The ultimate purpose is, itself, transcendence across the diversity of beliefs.

Many areas of spiritual fitness overlap with one of the oldest warrior codes, bushido. Bushido is the code that defined eight different tenets to which a samurai must adhere. The bushido values-based prescription for life implied a warrior must seek opportunities for growth that also provide meaning, purpose, and mission in life. Table 1 presents the eight virtues of the samurai as put forward by Inazo Nitobé.¹⁶ Although Nitobé's work is generally considered a romanticized view of the samurai culture, it is generally accepted as an excellent summary of the Samurai code. This warrior ethos resonates deeply within the SOF community and the samurai code of bushido, although not broadly well known to SOF, does provide an easily understood context for communicating the importance of spirituality and cognitive agility. During an informal interview on the topic of optimizing Operator performance, a Special Forces Battalion Command Sergeant Major stated, "Every pursuit of excellence has a spiritual component."¹⁶

TABLE 1 *The Eight Virtues of the Samurai*¹⁶

Rectitude or Justice	Courage	Politeness or Respect	Benevolence or Compassion
Loyalty	Honor	Honesty or Sincerity	Character or Self Control

Application of Concept

The challenges for introducing CAT are twofold. First, how can one be trained to be more cognitively agile? What does the training look like and how can it be effectively scaled to improve performance in the SOF population? Second, what are the best metrics by which to measure the hypothesized impact? Acknowledging these challenges, we discuss a model for training cognitive agility and then explore the challenge of appropriate metrics. Ultimately, the potential for becoming cognitively agile may be foundational for optimizing performance of SOF Operators in their work and family lives.

Improving Cognitive Agility

Good and Yeganeh¹³ provided a detailed model for improving cognitive agility. They described parameters that create a DDM environment as one in which operating solely from a state of focus or openness would likely lead to less than optimal results. Furthermore, they suggested that being cognitively agile would enable the individual to more quickly gather information, reorient to the environment, and choose more functional approaches to decision-making in the face of changing situations and competing factors.¹³ They also proposed that CAT would consist of selecting a DDM context from the

environment in question and evaluating how this context or environment would challenge the abilities of focus, openness, and cognitive flexibility. The evaluation would consist of looking at how to adjust each of these capabilities in the future to respond more effectively. Upon completing the evaluation, the individual would practice the future model, presumably with role players involved.

In terms of how CAT might be effectively applied to SOF Operators and enablers, it is helpful to first look at how they conduct training for other complex skills and tasks. Effective training in SOF requires development of a complex skill set first by focusing on mastering each of the basic skills and then integrating and coordinating the knowledge and qualitatively different basic skills into the complex task through increasingly difficult training iterations. The result is a full mission profile training scenario that most closely replicates the environment they expect to encounter. Once DDM environments have been identified within the context of the SOF Operator's daily life at work and home, practice would include developing scenarios that most closely replicate their lives and in which they would encounter role players presenting specific challenges to remaining in singular states of either focus or openness.

Training Scenarios

One possible military example could entail placing SOF Operators in a training scenario where they are patrolling to an objective and must maintain an open mind set is imperative. The ability to maintain openness by being acutely aware of the situation in its entirety to identify potential sources of cover in the event of fire fights, chokepoints, improvised explosive devices, enemy fighting positions, and so forth would help prevent the Operator from becoming too focused on any one piece of information, which could inadvertently lead to a possible negative outcome for the mission. Once the objective was reached, it would be imperative to switch to a more focused mind set as the team, for example, begins clearing room to room and looking at hands to ensure that none of the combatants is a threat. The team would continue with subsequent scanning for any additional threats until the mission was over.

A family-based scenario could include the following. The SOF Operator returns home from a deployment and his wife requests that he hang cabinets in the garage and simultaneously care for his three children while she has a much-needed weekend away with her friends. The objective for the Operator centers on the ability to multitask as effectively in the home scenario as he does in the training scenarios. The Operator's ability to keep an open mind set would ensure his children are not (1) wandering off into the road, (2) playing with potentially dangerous power tools, or (3) fighting among themselves. This is necessary to avoid becoming too focused on one aspect of hanging cabinets and neglecting the children. However, the SOF Operator will need to focus as he hangs the cabinets to ensure proper measurements and correct anchoring to a secure platform (e.g., 2 x 4 studs and not dry wall). Being able to toggle between an open and focused mental process is critical for a positive and successful outcome of this family scenario and allows for crucial multitasking: The SOF Operator must flexibly shift between the different processing strategies of two parallel tasks.

To further improve adoption of the techniques related to cognitive agility, applying SOF-specific language and making analogies

to familiar skills and tasks will aid in improving training effectiveness. Good and Yeganeh¹³ discussed the use of mindfulness in practicing cognitive agility in this way: “most helpful to start with a mindfulness practice of anchoring in the moment through calm intentional breathing and engaging the five senses in order to disrupt an automatic routine.” Directing SOF Operators to practice mindfulness in this way would be foreign to them and would likely alienate them from the training and its principles. A more effective approach would be to instruct the Operator to conduct stop, look, listen, smell (SLLS) upon entering his house after a challenging day at work or engage in a tactical pause after several challenging interactions with a spouse and children. This approach should elicit a more positive response to each situation. Techniques already known to the SOF Operators such as conducting SLLS or taking a tactical pause (a technique used during continuous combat operations to reassess the situation) are examples of toggling between focus and openness, an activity already familiar to the Operator. Once the context is established, a discussion of tactical breathing (a.k.a., practiced mindfulness) becomes completely familiar.

Additional useful scenarios, with known and highly effective training modalities used by USSOCOM, are the live-fire ranges or “shoot houses.” These are used for training close-quarter combat and serve as one example of potentially high stress, realistic training. In addition, significant resources have focused on improving cross-cultural capability through the creation of realistic environments with role players who engage in a broad range of actions and behaviors with which the Operators must contend to achieve objectives in operational activity other than combat. Furthermore, USSOCOM conducts realistic military training at times in urban areas outside of military installations to more finely hone techniques, tactics, and procedures necessary for conducting sensitive, surgical strike-type operations. All these training modalities are used so the Operators confront realistic environments with high degrees of uncertainty and ambiguity and then perform a wide range of difficult tasks and operations. These training scenarios are intended to provide stress inoculation and a greater understanding of how to best apply skills, techniques, tactics, and procedures. The introduction of various types of emotional “shoot house” situations would provide the best context for conducting CAT and simulate a broad range of DDM environments. This type of training would allow the Operator to practice and thereby improve cognitive agility.

Frequently, SOF teams deploy for long periods in austere environments and live among local nationals to build rapport and shape the environment in key areas of influence. Not using the concept of “successful intelligence” could result in a catastrophic loss of rapport and mission failure, which would negatively affect strategic objectives. Above all, transitioning from operating in environments (like the ones described previously in this article) to home life in the United States with all the complexities associated with family life is a time when “successful intelligence” and cognitive agility are most vital. Strategies that work in the deployed environment frequently are not conducive to functional orienting to life at home. Therefore, CAT scenarios must cover a range of possibilities and environments. Tables 2 and 3 describe possible training scenarios that could provide useful context for improving cognitive agility for the SOF Operator.

SOF Operators and enablers must be able to perform effectively in the deployed environment, in garrison, and in their personal

TABLE 2 Possible Cognitive Agility Training Scenario 1: At Home

Environment: Operator will be briefed that he or she is at home with spouse and two kids. The Operator has a short time (approximately 15 minutes) in which to complete a much-needed task, such as repairing a hole in drywall. However, the spouse is engaged in another task and responsibility for keeping an eye on the kids is on the Operator.
Operator task:
1. Repair a hole in drywall.
2. Drywall repair: provide Operator with a small stud wall with drywall affixed and a large hole. The Operator will be provided with the appropriate tools and materials for repairing the hole in the wall.
Role player actions:
1. Children will be playing together but require attention and continually interrupt the Operator.
2. Spouse will enter after approximately 5–7 minutes and complain that the task the Operator really should be working on is related to reviewing a health insurance policy and express serious disappointment in the Operator’s prioritization.
Learning objective: Develop greater cognitive flexibility and openness. The ability to abandon a planned activity/requirement/chore when what first appear to be distractions materialize into requirements of potentially higher priority speaks to the need to develop.
Actions on debrief: At the completion of the 15-minute window, the instructor/facilitators will first ask the Operator how he or she thought it went. Then the facilitator will ask the Operator if abandoning the drywall project to focus on the kids and/or the spouse’s request would have been a better use of the time. Then the facilitator will open up the discussion to the rest of the class for a group discussion about the complications of meeting personal requirements and deadlines in the face of conflicting responsibilities.

lives. The demand for DDM ability is high and calls for developing “successful intelligence,” which can be achieved through CAT. The scenarios in Tables 2 and 3 are just two examples of an endless array that would offer the opportunity to improve cognitive agility and the capacity for this population to make better decisions and maintain better family relationships.

Metrics

Providing a useful toolkit for measuring the impact of CAT will depend on the outcome(s) of interest. If changes in spiritual fitness are the focus, no accepted metric is yet widely available. However, one is being developed for SOCOM. Many other metrics have been and are being used to assess resilience, but many have been criticized and none has been validated in SOF populations. For example, the Response to Stressful Experiences Scale (RSES) was designed to measure how an individual characteristically responds during and immediately after life’s stressful events. It was proposed to measure active coping, self-confidence, learning, meaning-making, recharging, cognitive flexibility, and spirituality,¹⁷ but recently, a simplified RSES—RSES-4—was proposed with items from the spirituality domain removed because the items did not distinguish between those with high and low resilience.¹⁸ Other metrics that have been used include the Dispositional Resilience Scale¹⁹ and Connor Davidson’s Resilience Scale.^{20,21}

In addition to spiritual fitness and resilience, metrics for the effectiveness of CAT should also include a method for assessing the impact on the Operators’ commitment to self-mastery and excellence. Samurai were deeply committed to mastering their warrior skills, which inevitably became a spiritual journey. The SOF community, although not as homogenous as the samurai, has a long-standing commitment to developing the highest levels of performance possible. Therefore, measuring

TABLE 3 Possible Cognitive Agility Training Scenario 2: Deployed, Indigenous Challenges

Environment: Operator is in a deployed location with the potential for combat action in the region; however, all indicators are that the village the Operator is in is secure. She or he is involved in a key leader engagement in which there is discord between the indigenous leadership present. The Operator's purpose for this engagement is to gain the support of both tribal leaders who are present. The underlying tension between the two leaders is an unresolved issues regarding water rights, which could be solved easily by a US engineer unit nearby, if brought to light. In addition, the Operator's team is supported by a conventional unit led by a prior enlisted O3 with significant combat experience.
Operator tasks:
1. Gain support of the both leaders.
2. Address the concerns of the 1st Lieutenant (CPT) to avoid an inappropriate, overreaction to the situation in the village.
Role player actions:
Older leader: Attempts to monopolize the situation and dominate the conversation. He is clearly attempting to prevent the younger leader from speaking.
Younger leader: Is clearly more thoughtful and articulate, and is respectful of the older leader's status but is showing frustration by the constant interruptions.
CPT: Continues to interrupt the meeting with concerns regarding the security situation in the village. However, there are no signs of any groups gathering with weapons and the people in the street appear to be engaged in activities of daily life.
Learning objective: In this scenario, it is critical to have a high degree of cognitive flexibility to manage the relationship dynamics in an open attention state but toggle to a focused state to fully understand the situation with the CPT and make an appropriate decision regarding the security situation. To spend the appropriate amount of time to uncover the real reason for the discord between the two leaders and resolve it, it will be necessary for the Operator to switch back and forth between these competing concerns.
Actions on Debrief: The Operator will discuss their perspective on how things went. Facilitator will address whether the Operator was able to resolve the issue and how it felt to move between the two competing situations. Ultimately, how did the Operator regulate their approach to each?

resilience and the capacity to grow as a result of highly stressful experiences will be important outcomes from CAT. SOF's commitment to excellence and values associated with the warrior ethos, on the battlefield and at home, are equally important. Miyamoto Musashi, the most notable samurai warrior and who is credited with being a skilled painter, philosopher, and writer, summarized the warrior path thusly: "There are many ways: Confucianism, Buddhism, the ways of elegance, rice-planting, or dance; these things are not to be found in the way of the warrior."²² This elegant distillation of the spiritual journey of the warrior mirrors the current culture in SOF in that the warrior path is not rooted in religion nor is it an art but is a comparable journey underwritten by a values-based life.

Conclusion

Cognitive agility shows great promise for improving EI, cognitive awareness, and communications skills critical to success for the SOF mission sets. Being able to toggle between open and focused mental processes across different life domains with ease is essential for the SOF Operator. Improving cognitive agility in the context of a SOF warrior's personal life will improve relationship dynamics and potentially increase resilience after extremely stressful experiences. Although SOF Operators have received training in skills related to the concepts of cognitive agility (i.e., the need to change attention

states from focus to openness), no previous efforts, to our knowledge, have attempted to apply these concepts to human relationships, emotionally charged situations, and their often challenging dynamics. It will be necessary to develop the same or similar types of robust training scenarios to develop cognitive agility, cognitive flexibility, EI, and "successful intelligence" for SOF Operators as have been used previously in preparation for complex combat operations. The positive outcomes from such a training regimen should allow the Operator to navigate between times of stress followed by a period of recharging to recover, and hopefully with a resulting endurance that will allow the SOF Operator to successfully optimize performance across the important everyday life domains of psychological, social/family, and spiritual fitness.

Disclaimer

The opinions or assertions contained herein are the collective views of the authors and are not to be construed as official or as reflecting the views of the Uniformed Services University, the US Special Operations Command, or the Department of Defense.

Disclosure

The authors have indicated they have no financial relationships relevant to this article to disclose.

Author Contributions

JR served as lead author on this article. LM helped with the literature review, prepared the scenarios, and contributed to the writing of this article. PAD participated in all aspects of the study and preparing the article. All authors approved the final version.

References

1. Deuster PA, Grunberg NE, O'Connor FG. An integrated approach for Special Operations. *J Spec Oper Med*. 2014;14(2):86–90.
2. Bandura A, Cervone D. Differential engagement of self-reactive influences in cognitive motivation. *Organ Behav Hum Decis Process*. 1986;38(1):92–113.
3. Brehmer B. Dynamic decision making: human control of complex systems. *Acta Psychol (Amst)*. 1992;81(3):211–241.
4. Gonzalez C, Fakhari P, Busemeyer J. Dynamic decision making: learning processes and new research directions. *Hum Factors*. 2017;59(5):713–721.
5. Hotelling J, Fakhari P, Busemeyer J. Dynamic decision making. In: Wright J, ed. *International Encyclopedia of the Social & Behavioral Sciences*. Vol 6. 2nd ed. Amsterdam, Netherlands; Elsevier Ltd; 2015:709–714.
6. Bandura A. *Self-Efficacy: The Exercise of Control*. New York, NY: WH Freeman/Times Books/ Henry Holt & Co; 1997.
7. Coetzer GH. Emotional versus cognitive intelligence: which is the better predictor of efficacy for working in teams? *J Behav Appl Manag*. 2015;16(2):116–133.
8. Côté S, Miners CTH. Emotional intelligence, cognitive intelligence, and job performance. *Adm Sci Q*. 2006;51(1):1–28.
9. Bertua C, Anderson N, Salgado JF. The predictive validity of cognitive ability tests: a UK meta-analysis. *J Occup Organ Psychol*. 2005;78(3):387–409.
10. Furnham A, Dissou G, Sloan P, et al. Personality and intelligence in business people: a study of two personality and two intelligence measures. *J Bus Psychol*. 2007;22(1):99–109.
11. Salovey P, Mayer JD. Emotional intelligence. *Imagin Cogn Pers*. 1990;9(3):185–211.
12. Dulewicz V, Higgs M. Emotional intelligence: a review and evaluation study. *J Manag Psychol*. 2000;15(4):341–372.
13. Good D, Yeganeh B. Cognitive agility: adapting to real-time decision making at work. *OD Practitioner*. 2012;44(2):13–17.
14. Sternberg RJ. Successful intelligence: finding a balance. *Trends Cogn Sci*. 1999;3(11):436–442.

15. Worthington D, Deuster PA. Spiritual fitness: an essential component of human performance optimization. *J Spec Oper Med*. 2018;18(1):100–105.
16. Nitobé I. *Bushido: The Soul of Japan*. 10th ed. Scottsdale, AZ: Grindle Press; 2017.
17. Johnson DC, Polusny MA, Erbes CR, et al. Development and initial validation of the Response to Stressful Experiences Scale. *Mil Med*. 2011;176(2):161–169.
18. De La Rosa GM, Webb-Murphy JA, Johnston SL. Development and validation of a brief measure of psychological resilience: an adaptation of the Response to Stressful Experiences Scale. *Mil Med*. 2016;181(3):202–208.
19. Bartone PT. Test-retest reliability of the dispositional resilience scale-15, a brief hardiness scale. *Psychol Rep*. 2007;101(3 Pt 1): 943–944.
20. Arias Gonzalez VB, Crespo Sierra MT, Arias Martinez B, et al. An in-depth psychometric analysis of the Connor-Davidson Resilience Scale: calibration with Rasch-Andrich model. *Health Qual Life Outcomes*. 2015;13:154.
21. Ehrich J, Mornane A, Powern T. Psychometric validation of the 10-item Connor-Davidson Resilience Scale. *J Appl Meas*. 2017;18(2):122–136.
22. Sommer D, Demian K. *Security Awareness in Close Protection*. Lulu.com: Global Outreach Executive, Ltd; 2010.
23. Goleman D, Boyatzis RE. Emotional intelligence has 12 elements. Which do you need to work on? *Harv Bus Rev*. February 2017. <https://hbr.org/2017/02/emotional-intelligence-has-12-elements-which-do-you-need-to-work-on>.

The Special Operations Medical Association's Official Journal



Fall 2018
Volume 18, Edition 3

JSOM

JOURNAL of SPECIAL OPERATIONS MEDICINE™



THE JOURNAL FOR OPERATIONAL MEDICINE AND TACTICAL CASUALTY CARE

Inside this Issue:

- Judgment in Tourniquet Use
- Your Metric Matters!
- Mechanical Forces During Movement in Mountainous Terrain
- Shoulder Reduction Techniques Comparison
- iTClamp for External Hemorrhage Control
- Swedish Specialized Boarding Element Members' Experiences of Naval Hostile Duty
- Four Intraosseous Blood Transfusion Strategies
- First-Responder Bleeding-Control Training Program
- Facial Trauma Care in the Austere Environment
- Chemical Contamination Transfer During Casualty Care
- Role of Pain in Tourniquet Training
- Self-Application of C-A-T Versus TMT
- 2018 SOMSA Research Abstracts
- Ongoing Series: Human Performance Optimization, Infectious Diseases, Injury Prevention, NSOCM Course, Prolonged Field Care, SOFsono Ultrasound, Unconventional Medicine, Book Review, TCCC Updates, and more!

*Dedicated to the
Indomitable Spirit
and Sacrifices of
the SOF Medic*

A Peer-Reviewed Journal That Brings Together the Global Interests of Special Operations' First Responders