

Creating Cognitive Warriors

By Robert Kozloski **

In the mid-1990s, Commandant of the Marine Corps General Charles Krulak, recognized the changing nature of modern conflict and introduced the concepts of the “Three Block War” and the “Strategic Corporal.” Both ideas stressed the dynamic challenges of the new battlefield, where leaders across the military rank structure would have to make diametrically different decisions often within moments of one another during a single operation.

Krulak’s view of the future operating environment demanded mental agility. Centrally, he recognized that poor tactical decisions would quickly turn into an adversary’s advantage, particularly in a globally connected environment. The Commandant’s prescient vision became reality only a few years later in Iraq and Afghanistan.

To prepare the Marines of that era for this challenging new environment, Krulak provided the following guidance:

“There is a critical need for all Marines to prepare themselves mentally and physically for the rigors of combat. Physical preparation has long been ingrained in our culture and Marines are well known for their physical conditioning. Mental preparation needs to receive the same emphasis.”

He stressed the need for Marines to take time to improve tactical decision-making and ordered a two-pronged approach – make wider use of tactical decision games and have regular discussions on warfighting. Krulak also challenged traditional views of training by encouraging the use of commercial video games to improve tactical decision-making when live training opportunities were limited.

Today, Marines still emphasize the need to hone decision-making skills in officer development programs. Successfully completing the leadership reaction course is part of Officer Candidate School while land navigation, where individual decision-making is as important as military orienteering, is still a significant part of The Basic School curriculum at Quantico.



The Marines are not the only service members to recognize the need to continually sharpen mental acuity to prepare for the complex battlefield. Navy SEALs are widely recognized as world-class athletes but they are also some of the most intelligent members of the US military. For years the SEALs have used Keep In Mind exercises to improve an operator’s powers of

observation and recall. A decade ago, the SEALs faced the challenge of growing their numbers while not compromising their high standards. Rather than having candidates do more push-ups or flutter kicks, they enlisted the help of top neuroscientists to help improve the cognitive conditioning of future warriors. These scientists found four cognitive pillars which help ensure success: setting goals, mental visualization, positive self-talk and stress control.

The Secretary of the Navy has also recognized the need to improve the cognitive skills of naval officers. Specifically, he tasked the services to [improve problem-solving skills](#) of naval officers, to make wider use of [wargames](#) and to increase the use of [virtual training and simulation systems](#). All of these actions are to help prepare Navy and Marine Corps leadership for a complex and uncertain future, saving time and lives on a future battlefield.

Despite top leadership's guidance not all naval officers believe cognitive skills are valued in the fleet. During Task Force Innovation we found that many junior officers, fighter pilots being an exception, were discouraged from developing critical thinking and problem solving skills in the operational environment. Instead, the emphasis was placed on enforcing established practices and following check-lists. In the private sector, workers performing such repetitive functions have been replaced by robots.

Such devaluation demoralizes our junior leaders, and risks worsening their response time in combat. In a future foreshadowed by swarms of micro UAVs, cyber attacks, and even the proliferation of intelligent robots on the battlefield, decentralization of decision-making will be critical for success.

As an institution we must recognize this problem - the navy attracts some of the best young minds our nation has to offer. This is a success, yet their cognitive skills are not valued or developed in the operating forces. Simply sending officers periodically to graduate schools is an insufficient remedy either to encourage the best to stay or to develop needed problem-solving, and life-saving, skills.

As a Marine Officer, I designed several squadron, group/regiment and wing-level exercises. The guidance I received was usually the same – make the exercise challenging and force leaders to make decisions in a stressful, realistic environment. General Al Gray, Krulak's Cold War predecessor, was an advocate for “free play” and risk-taking in field training, influencing the Marines of that generation.

“Hot washes” after the exercises were an essential part of the learning environment. Exercise participants were usually advised of the “Rhino-Rules”, that is, have a thick skin and let the spears thrown by others bounce off, in other words, have candid discussions about what worked and more importantly what didn't work during the exercise; that's what great organizations do.

In contrast, my first fleet-wide Anti-Terrorism/Force Protection exercise as a navy civilian was just the opposite of my Marine Corps experience: we were advised to follow a script and make sure there were no surprises! My observation was that large naval exercises were more of a demonstration to prove training had finished. Although history has shown these may reassure allies and capture an adversary's attention, they are not true learning exercises.

Some may argue that the missions of the navy, focused on commanding ships, submarines and aircraft, are significantly different than those of the Marines or SEALs, which are focused on leading people and operating in a human-centric battle space. Therefore, training the former should also be different. But the future battle space for all naval officers will change significantly over the next few decades and officer development must adapt as well. Just as Commandant Krulak was able to look into the future and urge his Marines to adapt, we should be scanning the horizon today for similar changes and a recent US Army study should provide us with some interesting food for thought.

According to the [report](#), major changes are coming with respect to our ability to see, communicate, think, and decide on the tactical battlefield of 2050. These changes draw upon a shared view that this battlefield will be characterized by the vastly increased presence and reliance on automated processes and decision making; humans with augmented sensing; and information-related and cognitive capabilities.

The study's authors identified the following 7 interrelated future capabilities that they believe differentiate the battlefield of the future from current capabilities and engagements:

- Augmented humans
- Automated decision-making and autonomous processes
- Misinformation as a weapon
- Micro-targeting
- Large-scale self-organization and collective decision-making
- Cognitive modeling of the opponent
- Ability to understand and cope in a contested, imperfect, information environment

For the naval services to contend with these new realities, we must prepare our future leaders to thrive in this new information- cognitive-centric environment. The first step is to follow the advice of General Krulak and place cognitive fitness on a par with physical fitness.

To improve cognitive fitness we should follow the same structure as physical conditioning programs. We must create local experts to offer cognitive instruction and provide ample opportunities to allow junior officers to exercise decision-making ability; the latter can occur in a virtual environment if needed. Fitness equipment is widely available to condition physical systems; so, too, should simulation or networked gaming to develop cognitive skills. Finally, the naval services include the results of physical fitness tests on officer performance evaluations. We must develop an accurate standard of cognitive development and include those scores on performance evaluations as well.

The information age battle space will be much different from that of the industrial age. We must recognize the need to develop the next generation of warriors with the cognitive skills to dominate the data rich environment of the future. The cognitive warriors of the naval services must be able to apply mental and physical skills with equal acumen. Simply developing and promoting leaders who can follow a checklist will leave us ill-prepared for future challenges.

** = The opinions expressed here are solely those of the author, and do not necessarily reflect those of the Department of the Navy, Department of Defense or the United States government.