

Newly commissioned Navy ensigns and Marine Corps 2<sup>nd</sup> lieutenant from 2011 U.S. Naval Academy class celebrate graduation with traditional hat toss at Navy–Marine Corps Memorial Stadium (U.S. Navy/Kevin S. O'Brien)



# Officers Are Less Intelligent

## What Does It Mean?

By Matthew F. Cancian

*An online degree from the South Harmon Institute of Technology in Interdisciplinary Studies doesn't make you smart.*

—A SARCASTIC CAPTAIN

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The American military is not getting the leaders it needs for the complexities of 21<sup>st</sup>-century warfare. This refrain has been a centerpiece of the “Force for the Future” initiative, and now there is some hard evidence to support it. According to data obtained from a Freedom of

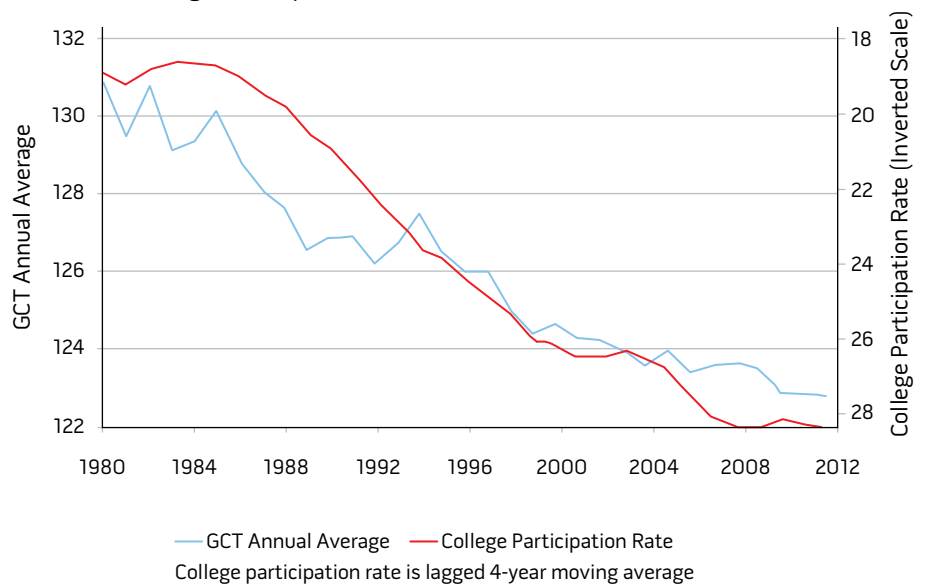
Information Act request, the intelligence of new Marine Corps officers has declined steadily since 1980. Two-thirds of the new officers commissioned in 2014 would be in the bottom one-third of the class of 1980; 41 percent of new officers in 2014 would not have qualified to be officers by the

standards held at the time of World War II. Similarly, at the top of the distribution, there are fewer of the very intelligent officers who will eventually become senior leaders.

This trend has not been caused by Marine Corps policies; it is a reflection of the expansion of higher education in America. In 1980, 18.6 percent of 18- to 24-year-olds were in college. Today, that number is close to 30 percent. The dramatic rise in college attendance has increased the pool of people eligible to become officers in the military (possession of a bachelor's degree being one of the chief requirements to be commissioned as an officer in all branches), but it also means that possession of a college degree is a less significant indicator of intelligence now than it once was.<sup>1</sup> Marine Corps officers have reflected this trend, declining in average intelligence along with the population of college graduates (see figure 1).

A similar decline in intelligence has likely occurred in the other Services' officer corps, as this is a trend in the pool of all college graduates and not something specific to the Marine Corps. For example, the average Scholastic Aptitude Test (SAT) score of a Navy Reserve Officer Training Corps graduate in 2014 was the same as that of a new Marine officer.<sup>2</sup> In the Army, the test scores of previously enlisted officer candidates have been declining since at least the mid-1990s (although the Army attributes this decline to changes in accession sources, unlike this article, which views the issue as more broadly based).<sup>3</sup> This article focuses on the Marine Corps because it has administered the same test, the General Classification Test (GCT), for decades and because of its responsiveness to the Freedom of Information Act process.<sup>4</sup> More study is needed to ascertain the degree to which this phenomenon presents across the Department of Defense. A good first step would be to administer the Armed Services Vocational Aptitude Battery (ASVAB) to all officer candidates in all Services, study what makes an effective officer, and implement long-term reforms to strengthen the officer corps of the 21<sup>st</sup> century.

**Figure 1. General Classification Test and College Participation**  
College Participation Rate Axis Is Inverted Scale



### How Higher Education Has Changed

The percentage of young Americans in college was relatively steady during the 1960s and 1970s, but this started to change in the early 1980s. Over the next three decades, the percentage of young Americans in college increased by over 50 percent—not just the number of Americans, but their share of the population. Contrary to the assumptions of many, students in 1980 were not accepted into college just because they came from a privileged background, but rather because of their intelligence; in fact, over 80 percent of Americans in the top quartile of intelligence went to college.<sup>5</sup> Before World War II, college attendance was based almost entirely on social status, but it had shifted toward merit with the introduction of the GI Bill and other factors. There were some people in 1980 who were intelligent but could not afford to go to college, and there still are in 2016. But overall, the expansion in college attendance since 1980 has been from students who are less intelligent on average than college students in 1980. This means that young people who possess a college degree in 2016 are, on average, less intelligent than those who possessed a college degree

in 1980. The private sector and civilian agencies of government have responded by demanding a postgraduate education for more jobs, but a comparable shift has not been made in the military. The result of this effect is that the pool of potential officer candidates has become less intelligent.

### Why It Matters

The link between intelligence and performance in the enlisted ranks has been well studied and found to be quite significant. In World War II, individuals who tested in the lowest mental categories (IV and V) had to be sent to special training units before they could go to boot camp. Now, by law, no more than 20 percent of any given year's enlistees may be Mental Category IV (the second lowest category), and they must possess a high school diploma. No Category Vs are allowed to enlist.<sup>6</sup> The aggressive recruiting of intelligent enlistees makes sense given the link between intelligence and enlisted job performance; studies show that more intelligent enlistees are more proficient at technical skills, make more lethal riflemen, and are more law abiding.<sup>7</sup> The most holistic studies are found in the congressionally mandated Job Performance Measurement project, a series



Marine supervises The Basic School permanent personnel battalion during 10-mile hike aboard west side of Marine Corps Base Quantico, Virginia, June 2013 (U.S. Marine Corps/Cuong Le)

of broad, multimillion-dollar studies assessing how accurately intelligence tests could predict on-the-job success for enlisted members in the military.<sup>8</sup> The Army's "Project A" was conducted in the 1980s as an extension of this effort.<sup>9</sup> The results are unambiguous: intelligence testing provides an excellent way to predict the job performance of enlistees. But what about officers?

The link between intelligence and performance in officers, while less thoroughly studied than the link in enlisted, is still clear. In World War II, there was no requirement that an officer have a college education, but possessing a 4-year degree allowed one to be commissioned without taking the GCT. Without a college degree, enlistees in the Army who scored above 110 on the GCT were considered for Officer Candidate School (OCS),<sup>10</sup> which was used to train and screen potential officers (the minimum score for

Marine officer candidates was 120).<sup>11</sup> The GCT score was found to be highly correlated with success there. In fact, it was so important that it was administered to all officers again at the beginning of infantry school to ensure that they were competent enough to be suitable combat leaders. Additionally, there was much debate about whether 110 was a sufficient minimum score, as most of the failures at Army OCS were by candidates who scored between 110 and 115.

Scores on the GCT have been found to be highly indicative of performance at The Basic School (TBS), the 6-month-long initial training for Marine officers. New officers at TBS are graded on a mix of military skills (such as running an obstacle course or orienteering), leadership evaluations (made by staff members and peers), and academics (technical knowledge). The GCT score was found to have a 0.75 correlation with academic

grade at TBS and a 0.65 correlation with total grade there.<sup>12</sup> This means that GCT scores have a 0.6 correlation with nonacademic events. It is likely, therefore, that not only does the GCT correlate strongly with academic ability, but that it also correlates to leadership grade at TBS. No pen and paper test can exactly predict leadership; these results, however, indicate that there is a relationship between GCT scores and the leadership potential of young officers.

It is impossible to link particular episodes in recent history to a decline in intelligence in the officer corps. However, one can point to incidents and note that they are what one would expect to see and that will be seen more often if current trends continue. For example, in May 2010, 13 junior Marine Corps officers were administratively discharged because they had cheated on a land navigation course at TBS. According to

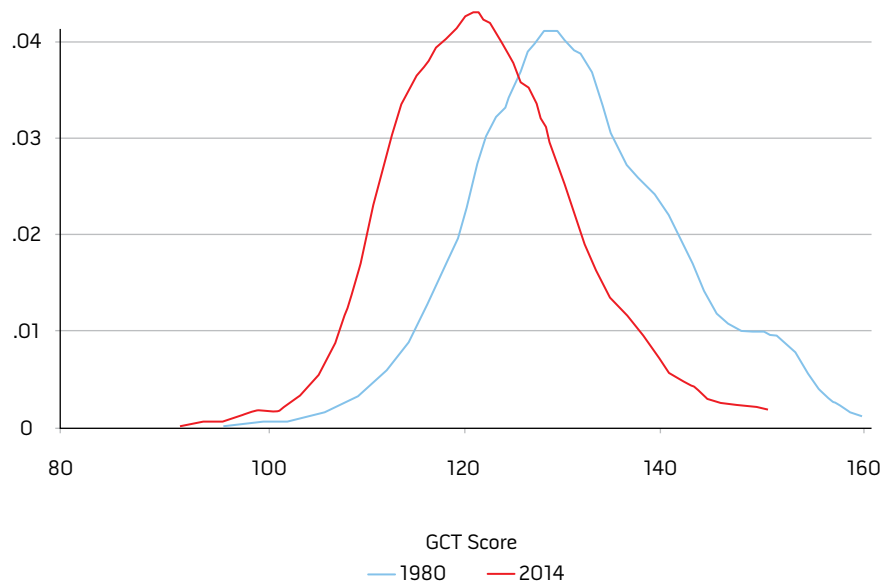
the *Marine Corps Times*, “At least one of the lieutenants investigated told officials he didn’t understand the need to learn land navigation skills when technology, such as GPS [global positioning system], could do the work for them.”<sup>13</sup> This incident is indicative of what we could expect from an officer corps of declining intelligence: officers who cannot meet the standards and who rely on technology to compensate. In a different Service, we might point to the 79 Air Force nuclear weapons officers at one base who faced disciplinary action for cheating on an exam.

In the field, the decline in intelligence might manifest itself in a focus on adherence to process output instead of achieving a desired outcome. Less intelligent officers need metrics that focus on how well they execute a process (output), rather than whether they accomplished the commander’s mission (outcome). In Afghanistan, many of the metrics focused on output instead of outcome: “*shuras* held versus local goodwill, number of partnered operations rather than real relationships built outside the wire, dollars spent versus actual popular commitment, IEDs [improvised explosive devices] found versus demonstrated local security forces readiness.”<sup>14</sup> The result was a campaign that was less effective than it might have been.

The decline in average intelligence manifests itself not just in the middle of the distribution, but also at the top. Figure 2 shows the distribution of intelligence scores for 1980 and 2014. Note how not only the average has declined, but also the number of officers who are achieving the highest scores.

There has been a lot of writing about how to promote “strategic” or “critical” thinking in the military.<sup>15</sup> The story told by GCT scores is especially worrisome in this regard. In 1980, there were 14 Marine officers entering who scored above 155 (on a test with a maximum score of 160). In 2004, the year of incoming officers who are now recently promoted majors, there were only two lieutenants who scored above 155. In 2014, there were none. The Acting Principal Deputy Under Secretary of

**Figure 2. GCT Score Kernel Distributions, 1980 and 2014**



Defense for Personnel and Readiness, Brad Carson, in presenting his “Force of the Future” initiative, asked, “Are we choosing from too narrow a pool our next Navy Admiral James Stavridis, Air Force General Norton Schwartz, or Army Lieutenant General H.R. McMaster?” The evidence suggests yes.

### A Modest Proposal

Some might argue that junior officers only need leadership and physical fitness. If so, we already have a cadre who fit that bill: our staff noncommissioned officers (SNCOs). Why not have them lead our platoons, companies, and battalions? While many might dismiss this idea outright, in the long view of history, it has been done before by successful armies. Take the Roman Legions, for instance, whose centurions rose through the ranks to lead all units up to the cohorts (battalion equivalents). Thus, centurions, proven enlisted leaders, held responsibility equivalent to that of a lieutenant colonel. A small group of educated aristocrats was needed only for the highest ranks.<sup>16</sup> That functioned very well—2,000 years ago. While the nature of warfare has not changed, its practice certainly has.

The complex nature of contemporary warfare puts great intellectual demands

on our mid- and upper-level leaders. The Roman Legions did not employ artillery, tanks, communications, or any number of technical branches that we have today. Consider the job of the contemporary infantry platoon commander, the least technical, most leadership-intensive position. In a conventional war, he must be a physically fit leader, but he must also know how to program a radio, accurately locate targets for airstrikes and artillery, and calculate geometries of fire, among many other intellectual demands. In an unconventional conflict, we also ask him to be a cultural expert, government builder, and humanitarian aid planner. This requires a high degree of intelligence. While contemporary enlistees are on average the brightest they have ever been, there is a wide variance in their quality that makes the “Roman solution” ill advised today.

Physical fitness does not have the correlation to military performance that general intelligence does. In an initial statement to the *Marine Corps Times* regarding this new data, Marine Corps Recruiting Command repeated a common rebuttal to these findings: new Marine officers are the most physically fit that they have ever been, achieving an average physical fitness test score of 279.<sup>17</sup> Our military leaders, however, need to

be more than just tough. While physical fitness is probably well correlated to success in some military skills events, such as the endurance course, it does not have the strong correlation to total TBS grade that intelligence does (0.65). There are numerous studies correlating intelligence to success in the military; there are none doing the same for physical fitness.

Finally, most members of the military would argue that having distance between commissioned officers and the enlisted is necessary for military effectiveness; the decline of officer intelligence and the rise in enlisted intelligence has blurred these lines. Given that the intelligence of entering enlisted has risen over time, and that more intelligent enlisted tend to be promoted, it is not unreasonable to guess that right now the average intelligence of SNCOs is close to that of our junior officers.<sup>18</sup> If officers are much like the troops they command, why have an officer corps at all? Raising average officer intelligence is necessary to maintain the utility and credibility of the officer corps.

### Possible Objections to the GCT

One objection to using the GCT to track intelligence is that the test is 75 years old and therefore contains a “cultural distance” that makes it invalid today. In this view, the vocabulary and phrasing of the questions would be clearer to someone from 1941 than to someone from 2015; the test-taker from 2015, therefore, might score lower than someone of the same intelligence from 1941. This is similar to the argument that the SAT is biased against non-whites because it contains cultural references that only white test-takers would understand.<sup>19</sup> The dynamics of the decline in the GCT score, however, disprove the applicability of this theory. In 1980, the average GCT score of Marine officers was 131, slightly higher than the average GCT score for college students during World War II.<sup>20</sup> The score began slowly and steadily declining in the early 1980s. For the cultural distance theory to be true, there has to have been no cultural distance between 1941 and 1983, at which point American culture began slowly and steadily

drifting in a way that made questions from 1941 less clear to test-takers. As this does not make much sense, we can reject this theory.

Another objection is that poor record-keeping for GCT scores invalidates any conclusions drawn from test scores. It is true that the number of scores in the data set represents about 85 percent of all the officers who joined the Marine Corps during this time period. Having 85 percent of the scores, however, still enables us to be extremely certain of the result; we can be 99 percent confident that the difference between the mean score in 2010 and 1980 is between 7.58 and 8.42 points. Either way, the decline is substantial. The only other way that missing records could affect the data is if high test scores were systematically removed starting in 1983 and removed in increasing numbers every year for the last 35 years. This is unlikely.

A final question is whether the GCT results are still valid given that the GCT no longer serves any administrative purpose. While the GCT was used in World War II to screen enlistees and officer candidates, after the war it shifted to influence only the Military Occupational Specialty (MOS) assignment of officers. At some unknown point, this function too was lost. Today, the GCT is only administered to “indicate the general health of the officer corps.”<sup>21</sup> Change in motivations, however, cannot explain the smooth downward trend that we see. If the change in the use of the GCT in determining MOS was made before 1980, the data would not be affected. If its use was changed during the time period studied and that change had a large impact, we would expect to see a large drop in scores during the year that the use of the GCT was changed. For motivation to have caused this trend, lieutenants at TBS would have to have become 0.5 percent less motivated about this test every year for the last 35 years. This defies belief. Anecdotally, I can also state that young lieutenants at TBS still took the GCT seriously in 2009. It is hard to find a group of young men and women as earnest and eager to excel as young Marine lieutenants.

### Why Are the SAT and GPA Insufficient?

In selecting candidates for OCS, the Services have relied on possession of a college degree, grade point average (GPA), and SAT score to judge the candidates’ intellectual abilities.<sup>22</sup> As discussed earlier, the primary qualification for officership, possession of a college degree, is not as discriminating as it used to be. SAT scores and GPAs are also unsatisfactory. The problems of relying on GPA, a rather slippery metric, were noted by John Jordan in an article in the *Marine Corps Gazette*.<sup>23</sup> GPA varies greatly by school, and grading standards have eased over time with rampant grade inflation.<sup>24</sup> A GPA of 4.0 from a community college might not indicate that one candidate is more intelligent than another with a GPA of 3.0 from an Ivy League school. The Services have tried to compensate for this effect, but with mixed success.

There is good reason to doubt the year-to-year comparability of the SAT: it seems incredible to claim that, since 1990, the number of Americans in college increased by over 50 percent, and the number taking the SAT has increased by 66 percent, but there has been no change in average SAT score.<sup>25</sup> America’s inability to detect the decline in intelligence of college graduates is similar to why the Flynn effect, the rise in intelligence in the Western world over the 20<sup>th</sup> century, was not noticed until the 1980s when James Flynn compared the scores of unnormalized IQ tests between years (just like the study of GCT score does). In fact, some of the strongest evidence for the Flynn effect comes from the results of military intelligence tests; using the GCT to inform our understanding of civilian trends, therefore, is very much in keeping with psychometric literature.<sup>26</sup>

The SAT can, however, tell us how incoming military officers compare to the average college-bound high school student in any given year. In 2014, the average SAT score of incoming Marine officers was 1198, compared to an average of 1010 for college-bound high school seniors.<sup>27</sup> The average SAT score of incoming Marine officers was not



Drill instructor with New Jersey Army National Guard corrects Albanian officer candidate during 12-week Officer Candidate School program modeled after Active-duty program at Fort Benning, Georgia (DOD/Mark C. Olsen)

maintained by Marine Corps Recruiting Command before 2005,<sup>28</sup> but the Center for Naval Analyses reported the average SAT score of incoming Marine officers in 1983 to be similarly higher than their nonmilitary peers.<sup>29</sup> Marine Corps officers therefore continue to be more intelligent than the average college student. The average college student today, however, is much less intelligent than they used to be because there are so many more of them. Insofar as we believe that the military should reflect society in general, the officer corps continues to accomplish that goal. But in absolute terms, our officer corps today is less intelligent than it was 35 years ago.

Consider if the military's physical fitness testing did not give out absolute scores (which the current Physical Fitness Test and GCT do) but rather just reported how the Servicemember stacked up against the average American (like the SAT). Say that in 1980, the average

Servicemember was in the 80<sup>th</sup> percentile of physical fitness of all Americans (to use an arbitrary number). In 2014, the average Servicemember was still in the 80<sup>th</sup> percentile of all Americans, but the average physical fitness of Americans had declined dramatically because of obesity. Being in the 80<sup>th</sup> percentile is now not as rigorous as it was in 1980. The average Servicemember from 1980 would run faster and be stronger than the average Servicemember of today, despite them both being in the 80<sup>th</sup> percentile of their peers. This absolute, not relative, decline is true for intelligence, too.

### What Is to Be Done?

How should we react to the results of the General Classification Test?

**Administer the ASVAB to Every Officer Candidate.** Officer candidates are almost all screened at a Military Entrance Processing Station prior to joining the force. There, the ASVAB is

administered to potential enlistees. It should also be administered to all officer candidates; this solution is a low-cost and simple way to measure the intelligence of all officer candidates on a scale that can be controlled by the military and easily compared to enlistees. With 1 year of ASVAB scores for all officers, the Services would have a good data set to analyze and determine follow-on policy.

**Incorporate ASVAB Scores into Accession Decisions.** The Army currently administers the ASVAB to officer candidates who go through OCS, and they have established a minimum score of 110. Applying a similar policy to candidates in all Services, therefore, is not a radical departure from the past. Simply cutting a number of the least intelligent candidates, however, is not a solution in itself; to make the average of 2014 equal to the average of 1980, the Marine Corps would have to cut the bottom 57.4 percent of second lieutenants. A minimum



Chief of Naval Operations Admiral Jonathan Greenert and Navy Master Chief Petty Officer Mike Stevens speak to Sailors assigned to Naval Education and Training Command and Training Support Center at Naval Station Great Lakes (U.S. Navy/Peter D. Lawlor)

score, furthermore, risks constraining the Services too much and shifting the balance between leadership, intelligence, and physical fitness too much toward the intelligence pole at the expense of less quantifiable leadership qualities. We must shift the accession balance away from physical fitness (which again has never been shown to have a correlation with officer success) toward intelligence, while keeping a similar weight on leadership.

**Study What Qualities an Officer Needs.** The military has made wide study of what qualities it needs in enlistees and how to identify and recruit enlistees with those qualities. Similar study should be made of officers. There has already been some recent movement on this front by the Services. For example, the College of Operational and Strategic Leadership at the Naval War College has made it a priority in recent years to study indicators of character and leadership. The Marine

Corps has recently discussed introducing “non-cognitive tests” to measure potential motivation or “grit.”<sup>30</sup> Measuring these factors has historically been difficult; efforts by the Israeli army to quantify personality traits, for instance, were only partially successful.<sup>31</sup> Determining what weight these factors should have in reference to physical fitness and intelligence is a difficult issue that will require detailed analysis. It may be cautioned in advance, however, that non-cognitive tests cannot simply replace cognitive tests. Ceasing to measure officer intelligence just because we do not like the results we get would be a dereliction of our moral duty.

**Study How to Attract Intelligent Officers.** Brad Carson, now the Undersecretary for Personnel and Readiness, has stated that the first lesson from Operations *Enduring Freedom* and *Iraqi Freedom* is that the “Army must continue to develop agile and

adaptive leaders capable of operating with disciplined initiative. This is especially important at the junior level.”<sup>32</sup> So far, however, the Force of the Future initiatives appear to be an increase in officer incentives with a vague goal of “competing with Google.” If we simply increase incentives without knowing what we want, we will end up with a more expensive version of the force we currently have. These initiatives need to be more focused based on what qualities we want, and general intelligence must be one of these qualities.

## Conclusion

According to Marine Corps Doctrinal Publication 1, *Warfighting*, “A leader without either interest in or knowledge of the history and theory of warfare—the intellectual content of the military profession—is a leader in appearance only. Self-directed study in the art and

science of war is at least equal in importance to maintaining physical condition and should receive at least equal time. This is particularly true among officers; after all, the mind is an officer's principal weapon."<sup>33</sup>

Many observers may recoil at the results of this study, arguing instead that our young officers today are superb: fit, disciplined, and enthusiastic. And they are. The problem is that these qualities, while sometimes a refreshing change from the civilian world, are not enough. The young officers also need to be highly intelligent to adapt to changing circumstances, learn to operate in a highly complex environment, and lead an increasingly sophisticated enlisted force. These qualities are often hard for decisionmakers to see in the large group interactions that senior officers and officials have with junior officers.

The sea change in American higher education has had a "freakonomics"-type effect on the quality of our military by lowering the average intelligence of officers. The decline of officer intelligence is dangerous for America on two levels—in the near term by providing less capable junior officers and over the long term by not generating the strategic thinkers that America needs. The instinctive reaction of many members of the military will be to circle the wagons and deny that there is a problem. We cannot allow this to happen, however, if we truly want an effective military. The arguments for reform gain a lot of weight from the revelation of the declining intelligence of our officer corps. This need not just be a crisis; it can be an opportunity, and one that we seize completely and decisively. JFQ

## Notes

<sup>1</sup> Matthew F. Cancian and Michael W. Klein, "Military Officer Quality in the All-Volunteer Force," National Bureau of Economic Research Working Paper Series, July 20, 2015.

<sup>2</sup> Freedom of Information Act (FOIA) DON-USMC-2014-009339, filed September 3, 2014, Marine Corps Recruiting Command; FOIA DON-NAVY-2015-004721, filed March 24, 2015, Naval Service Training Command.

<sup>3</sup> Casey Wardynski, David S. Lyle, and Michael Colarusso, *Towards a U.S. Army Officer*

*Corps Strategy for Success: A Proposed Human Capital Model Focused Upon Talent* (Carlisle Barracks, PA: Strategic Studies Institute, April 2009), 9.

<sup>4</sup> The information about incoming scores in the Navy was fragmented into several departments, making it harder to collate. The Army and Air Force FOIA responses denied having any information on average Scholastic Aptitude Test scores for officers.

<sup>5</sup> Richard J. Herrnstein and Charles A. Murray, *The Bell Curve: Intelligence and Class Structure in American Life* (New York: Free Press, 1994), 34–36.

<sup>6</sup> See 10 U.S. Code, Title 10, Subtitle A, Part II, Chapter 31 § 520 (1988).

<sup>7</sup> Patrick J. Whitmarsh and Robert H. Sulzen, "Prediction of Simulated Infantry-Combat Performance from a General Measure of Individual Aptitude," *Military Psychology* 1, no. 2 (1989), 111–116; Edmund F. Fuchs and Conrad Chyatte, "On the Intelligence of Soldier-Criminals," *Journal of Criminal Law and Criminology* 40, no. 6 (1950).

<sup>8</sup> Neil B. Carey and Janet L.E. Ramirez, "The Marine Corps Job Performance Measurement (JPM) Project: A Bibliography," Center for Naval Analyses, 1993.

<sup>9</sup> John R. Welsh, Susan K. Kucinkas, and Linda T. Curran, *Armed Services Vocational Aptitude Battery (ASVAB): Integrative Review of Validity Studies*, AFHRL-TR-90-22 (Brooks Air Force Base, TX: Air Force Systems Command, July 1990).

<sup>10</sup> R.R. Palmer, *The Procurement and Training of Ground Combat Troops* (Washington, DC: Historical Division, Headquarters Department of the Army, 1948), 328.

<sup>11</sup> Bernard C. Nalty and Ralph F. Moody, *A Brief History of U.S. Marine Corps Officer Procurement, 1775–1969* (Washington, DC: Historical Division, Headquarters U.S. Marine Corps, 1970), 17.

<sup>12</sup> Peter Stoloff, *Officer Selection Study* (Alexandria, VA: Center for Naval Analysis, January 1983).

<sup>13</sup> Amy McCullough, "13 Officers Fired in Cheating Scandal," *Marine Corps Times*, May 25, 2010.

<sup>14</sup> Matthew F. Cancian, "Counterinsurgency as a Cargo Cult," *Marine Corps Gazette*, January 2013.

<sup>15</sup> Mark Hooper and Tuan Pham, "More Maritime Strategists Now," United States Naval Institute *Proceedings* 140, no. 12 (December 2014).

<sup>16</sup> Michael Grant, *The Army of the Caesars* (New York: Scribner, 1974).

<sup>17</sup> Hope Hodge Seck, "Marines Rebut Study Showing Declining Officer Test Score," *Marine Corps Times*, July 22, 2015.

<sup>18</sup> Lauren R. Malone and Adam M. Clemens, *The Impacts of Budget Cuts on Recruit Quality and the United States Marine Corps: Executive Summary* (Alexandria, VA: Center for Naval Analyses, September 2013).

<sup>19</sup> Paul Pringle, "College Board Scores with Critics of SAT Analogies," *Los Angeles Times*, July 27, 2003.

<sup>20</sup> Walter V. Bingham, "Military Psychology in War and Peace," *Science*, August 22, 1947.

<sup>21</sup> Commandant of the Marine Corps, "Marine Corps Order 1230.5B: Classification Testing," September 11, 2009, 4, available at <www.marines.mil/Portals/59/Publications/MCO%201230.5B.pdf>.

<sup>22</sup> The Air Force has its own test for officers, as does the Navy, and the Army does require those officer candidates who go to Officer Candidate School to take the ASVAB.

<sup>23</sup> John D. Jordan, "Wanted: Critical Thinkers," *Marine Corps Gazette*, April 2014.

<sup>24</sup> Stuart Rojstaczer and Christopher Healy, "Grading in American Colleges and Universities," *Teachers College Record*, March 4, 2010.

<sup>25</sup> Tamar Lewin, "Testing, Testing: More Students Are Taking Both the ACT and SAT," *New York Times*, August 2, 2013.

<sup>26</sup> T.W. Teasdale and David R. Owen, "Continuing Secular Increases in Intelligence and a Stable Prevalence of High Intelligence Levels," *Intelligence* 13, no. 2 (July–September 1989), 255–262.

<sup>27</sup> The College Board, "2014 College-Bound Seniors Total Group Profile Report," 2014.

<sup>28</sup> FOIA DON-USMC-2014-009339, filed September 3, 2014, Marine Corps Recruiting Command.

<sup>29</sup> This is the case if the scores from 1983 are converted from old scale scores to post-1995 "New Scale" scores, using the charts from the College Board. See "SAT I Individual Score Equivalents," The College Board.

<sup>30</sup> Hope Hodge Seck, "Marines Look to Non-Cognitive Testing to Find Better Officers," *Marine Corps Times*, June 8, 2015.

<sup>31</sup> Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2013).

<sup>32</sup> "Advance Policy Questions for Brad R. Carson, Nominee for Under Secretary of the Army," January 16, 2014, available at <www.armed-services.senate.gov/imo/media/doc/Carson\_01-16-14.pdf>.

<sup>33</sup> Marine Corps Doctrinal Publication 1, *Warfighting* (Washington, DC: Department of the Navy, Headquarters United States Marine Corps, 1997), 64.