

**Army Alpha: The Unintended Consequences of the Implementation of
Intelligence Testing in the United States Military**

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Historical Paper

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Process Paper

As a student interested in psychology, I wanted to find a way to combine both history and neurosciences into a single topic. Through my research, I happened to learn about Army Alpha and Beta. These interesting tests proved to be exactly what I had been looking for, both in terms of how they impacted the understanding of intelligence and the importance of the tests on American history. The history of these tests relates to the annual theme as a topic of intense criticism and debate on the tests' usefulness and validity, making it a subject worthy of investigation and analysis.

I conducted my research in a relatively simple way. I firstly ran through all the typical sites I could find through the Google search engine to do some preliminary research beforehand on the tests themselves. Once I completely understood the Army Alpha and Beta and how they worked, I moved on to the strengths and weaknesses inherent in both tests, with the research here mainly focused on critiques and scholarly works written about these military testing methods. Finally, I used primary sources from when these tests were first implemented to supplement further my understanding of these tests and the intense debate that occurred immediately after implementing this test.

Over the course of a few months, I started with my research and then moved on to outlining and structuring the essay. Once I was confident with the level of my understanding on this topic through the research method described above, I began constructing a historical paper that would show in detail not only what the Army Alpha and Beta were but the debate surrounding these tests and the impact they had on American culture and history. As I knew this project would be an essay before even starting the research process, I started building each section from there.

My historical argument is that through the Army Alpha and Beta, the workings of an inherently biased nation like the United States were exposed, as the debate concerning the validity of these military tests influenced the wide-reaching legislation that was passed as a consequence of the findings of these tests. While the Army Alpha and Beta might only have been a simple method of testing used by the military to place people into appropriate positions, they had various flaws that would lead to devastating consequences.

These tests are still important topics in history to discuss as they showcase the problems that could occur when assessing and categorizing a person based on some test. While not entirely on a level as the Army Alpha and Beta, various tests with scores categorize people based on how well they had done on these tests (i.e., the SATs). It is important to remember that one of the first intelligence-based tests, while being an administrative success, failed spectacularly by helping promote racist agendas within the country.

Introduction and Background Information

Most students applying to college know about the Scholastic Aptitude Test (commonly known as the SATs), one of the more well-known college admissions tests. However, most people likely do not know that the foundations for the test were established back in World War I, and the prototype of this test was used in preparation for war.¹

In 1917, 3 years after World War I had started, the United States joined the colossal dispute raging throughout Europe. As tens of thousands of American volunteers poured into recruiting offices, the military and government soon found limits to how effectively and efficiently people could be placed into appropriate posts. Robert Yerkes and other psychologists from the American Psychological Association (APA) offered to help the Army with this problem. These psychologists hoped to prove the usefulness of psychological testing through the war effort. Understanding the need to quickly profile the intelligence of men from different age groups through standardization, Yerkes and his colleagues put together the Army Alpha, a test to evaluate the emotional and mental functioning of military recruits, and the Army Beta, the test used for recruits who were illiterate or who had already failed the Army Alpha.² All of the eight subtests within the Army Alpha involved numerical and verbal ability as the basis for grading one's intelligence.³ The Army Beta was in seven parts and was primarily made up of visual completion tasks.⁴

The testing took place in group examinations, with set examiners marking and scoring each examinee's testing forms.⁵ The results of the Army Alpha were divided into letter grades like in most American schools today and were used to determine the capability of a soldier in specific jobs,

¹ Tim Walker and John Rosales. "The Racist Beginnings of Standardized Testing." NEA. Accessed March 10, 2022. <https://www.nea.org/advocating-for-change/new-from-nea/racist-beginnings-standardized-testing>.

² "Gould (1982)." tutor2u. Accessed March 10, 2022. <https://www.tutor2u.net/psychology/reference/gould-1982>.

³ Alan S. Kaufman and Elizabeth O. Lichtenberger. *Assessing Adolescent and Adult Intelligence*. Hoboken, NY: Wiley, 2006.

⁴ John Carson. "Army Alpha, Army Brass, and the Search for Army Intelligence." 1993

⁵ Joe Edwards. "Figure 8." Army Alpha Group Examination. Accessed March 11, 2022. https://www.researchgate.net/publication/300024738_The_Army.

classification of positions, and potential to serve as leaders.⁶ This method of dividing troops by intelligence, as determined by the Army Alpha test, faced heavy criticism. These findings would eventually even lead to the implementation of immigration quotas and restrictions.

Additionally, the Army Alpha and Beta findings were used as evidence to support the eugenics movement, proliferating the spread of sterilization and segregation policies.⁷ The flawed and incomplete results of the tests led to incorrect individual and national intelligence findings. In turn, the erroneous conclusions led to extreme racial ideologies, triggering controversies and debates about the Army Alpha. This essay explores these controversies and how they instigated national debates on the validity of the tests' findings.

Debate Surrounding the Implementation of Army Alpha

One of the biggest contestations surrounding the Army Alpha and intelligence testing during World War I was the tests' usefulness. Critics were doubtful about the utility and validity of the tests, especially psychologists that criticized Yerkes and his group. The denigrators argued that a soldier could not be placed in the optimal position purely based on intelligence testing.⁸ Psychological examiners could not evaluate how capable a man was without considering his temperament, ability to lead, conduct under fire, etc.⁹ These critics, both military and civilian psychologists who were against intelligence testing, primarily argued against the accuracy of the tests to gauge a soldier's full ability. High-ranking military officers were so divided on the veracity of intelligence testing that Army officials launched investigations against Yerkes on three occasions.¹⁰

⁶ Russell T. Warne, Jared Z. Burton, Aisa Gibbons, and Daniel A. Melendez. "Stephen Jay Gould's Analysis of the Army Beta Test in the Mismeasure of Man: Distortions and Misconceptions Regarding a Pioneering Mental Test." *Journal of Intelligence* 7, no. 1 (2019): 6. <https://doi.org/10.3390/jintelligence7010006>.

⁷ John Greenwood. "Psychologists Go to War." *Behavioral Scientist*, November 1, 2021. <https://behavioralscientist.org/psychologists-go-war/>.

⁸ Appendix D

⁹ Clarence Stone Yoakum and Robert Mearns Yerkes. *Army Mental Tests*. New York: Holt, 1929.

¹⁰ Joseph Zeidner and Arthur J. Drucker. "Behavioral Science in the Army: A Corporate History of the Army Research Institute," 1988. <https://doi.org/10.21236/ad1012467>.

Another argument raised against the Army Alpha and Beta was the inherent cultural biases evident in the tests. For example, one of the questions goes as follows: "Washington is to Adams as first is to...."¹¹ Without the knowledge that Washington was the first President of the United States and Adams the second, this question would have been impossible for those unknowledgeable of American culture, particularly immigrants. Questions involving American pop culture at the time (i.e., Marguerite Clark, Velvet Joe, etc.; figures not well known even in America) were used to assess recruits' intelligence.¹² Another example of bias was the culturally specific pictures used in the Army Beta. One of the testing methods used in the Army Beta was identifying a missing part of several pictures given to the testers. These pictures included an American letter with a missing return address and a revolver without a trigger.¹³ Without knowing the system of writing letters and what a revolver in the United States looks like, these questions would have been difficult. Critics like historians Stephen Jay Gould and Edwin Black argued that without the appropriate cultural knowledge necessary to complete these biased tests, most recruits would test at a lower level of intelligence. The Army Alpha/Beta testing system also reflected Jim Crow laws, automatically classifying Black recruits as illiterate, and forcing them to take the Army Beta as the only option. Horace Mann Bond, an African American, was a social scientist who critiqued the inherent racism of the Army Alpha. By cross-referencing the performance of only white recruits in the test, Bond showed that white draftees from northern states in the United States regularly scored higher than white draftees from the South. This result meant that defenders of the Army Alpha had to concede that the intelligence level of the so-called 'racially pure' states was lower than states with a higher number of south-eastern European immigrants or acknowledge that test performance was dependent upon cultural knowledge and environmental conditions, not race.¹⁴ This evidence illuminates

¹¹ Stephen Jay Gould. *The Mismeasure of Man*. Brantford, Ontario: W. Ross MacDonald School Research Services Library, 2016.

¹² Edwin Black. *War against the Weak: Eugenics and America's Campaign to Create a Master Race*. Washington, DC: Dialog Press, 2012.

¹³ Appendix A

¹⁴ Thomas, William B. "Black Intellectuals' Critique of Early Mental Testing: A Little-Known Saga of the 1920s." *American Journal of Education* 90, no. 3 (1982): 258–92. <https://doi.org/10.1086/443644>.

the tests not as a measure of innate intelligence but one that defined intelligence as a political construct based heavily on the biased presumption that only Americans of Nordic descent would know information about American culture.^{15 16} The debate between Yerkes and his group versus the army officials and psychologists who were staunchly against intelligence testing was only beginning.

For Yerkes and his committee to prove the usefulness and validity of the Army Alpha and Beta against all the criticism they faced during the implementation of the tests, they needed to confirm the test could properly categorize recruits by showcasing success on the battlefield and inherently change military culture into one that accepted "intelligence" as a variable that must be considered in war.

The Success and Failures of Army Alpha

When looking at this history objectively, there was one major success of the Army Alpha and Beta. The speed at which men were sorted into positions within the military dramatically increased. This test allowed military administrations to bypass the previously used wide range of selections and decisions necessary when recruiting men. The sheer administrative success of this test is evident in the close to 2 million recruits who took the Army Alpha and Beta and were promptly sorted into positions supposedly befitting their score.¹⁷ The relationship between errors made and the score of an examinee was relatively well-measured, indicating the supposed "accuracy" of the scoring system, which considered the correlation between a recruit's test and the number of errors they had made in a period of time.¹⁸

And yet, critically, actual evidence that this intelligence testing contributed to the success of the United States military in efficiently integrating and training men is insubstantial. The reason for this lack of data is because of how late the United States entered the war. Given how little time the recruits tested through the Army Alpha and Beta had to train and their immediate departure after World War I, it was

¹⁵ Stephen Jay Gould. *The Mismeasure of Man*.

¹⁶ Edwin Black. *War against the Weak: Eugenics and America's Campaign to Create a Master Race*.

¹⁷ Kendra Cherry. "Robert Yerkes' Life and Contributions to Psychology." *Verywell Mind*. Verywell Mind, April 13, 2020. <https://www.verywellmind.com/robert-yerkes-biography-2795531>.

¹⁸ C. R. Atwell. "Relationship of Scores and Errors on the Army Alpha Test." *Journal of Applied Psychology* 21, no. 4 (1937): 451–55. <https://doi.org/10.1037/h0059639>.

impossible to test how practical this classification method was on the battlefield as data on the Army Alpha's effectiveness was never collected. The lack of evidence surrounding the usefulness of the Army Alpha during the war showcases the nonexistent impact the test had at the time.¹⁹

The Wide-Reaching Consequences of the Tests

There were various significant consequences of utilizing the Army Alpha and Beta. One of the most concerning findings of the Army Alpha was that around half of the recruits tested at around or below the level of "moron".²⁰ The term *moron*, coined by Henry Goddard, a member of Yerkes' Committee on Methods of Psychological Examination for Recruits, was used to describe adults who had tested at a mental age between 10 and 12 years of age; the recruits who scored around the D- and E range.²¹ Goddard and Lewis Terman, another psychologist and a member of Yerkes' committee, utilized an intelligence scale they had devised, known as the Stanford-Binet test, to rate the intelligence of these recruits.²² These findings led Yerkes to conclude that "feeble-mindedness" (the word used to describe the intellectually challenged at that time) was more widespread than had been initially thought, leading to panic amongst the public. Two significant conclusions were made based on these findings.

Firstly, many scholarly works described in detail how allowing immigrants from East and South Europe to "contaminate" the original North and West European immigrants of the U.S. led to a decrease in average national intelligence.²³ Carl Brigham (an advisor of Yerkes who had helped develop the Army Alpha intelligence test) stated in his 1923 book *A Study of American Intelligence* that immigrants who had recently entered the United States had a lesser average intelligence than native-born citizens. In correlation with this inaccurate finding, Brigham declared that the average intelligence of U.S. citizens

¹⁹ "Army Alpha and Army Beta - Iresearchnet." Psychology, January 25, 2016. <http://psychology.iresearchnet.com/industrial-organizational-psychology/i-o-psychology-history/army-alpha-and-army-beta/>.

²⁰ John Greenwood. "Psychologists Go to War." 2021.

²¹ Yoakum & Yerkes 1920, pp. 22–23.

²² Joel H Spring. "Psychologists and the War: The Meaning of Intelligence in the Alpha and Beta Tests." *History of Education Quarterly* 12, no. 1 (1972): 3. <https://doi.org/10.2307/367145>.

²³ "Gould (1982)." <https://www.tutor2u.net/psychology/reference/gould-1982>.

had been decreasing since 1900.²⁴ While these arguments are absurd, it is important to note that at the time, many of the psychologists involved in developing the Army Alpha and Beta were supporters of the eugenics movement and held hereditarian views. Through these findings, psychologists like Brigham and Yerkes claimed that "intellectually-inferior" races entering the United States were responsible for the declining levels of intelligence in the general populace.

Critics of the hereditarian viewpoint, like anthropologist Franz Boas and behaviorist John B. Watson, were skeptical of these racist views. In fact, social experiments by Dr. Rudolph Pintner, which compared Jewish students to white students, showed insignificant differences between the two, further showcasing the flaws of the findings of the Army Alpha.²⁵ However, these protests soon came to be for naught as Congress passed the 1924 National Origins Act on the "evidence" presented from the findings of the Army Alpha test coupled with the long-standing nativist sentiment against immigrants (evident with examples like the pre-existing Dillingham Commission, established in 1911 to research how South-Eastern Europeans were supposedly unable to assimilate and degraded the quality of U.S. society).²⁶ This act restricted immigration to quotas based on a census taken in 1890, a period before the sudden influx of eastern and southern immigrants into the United States.²⁷ The National Origins Act negatively impacted America for decades. The debate between critics of the National Origins Act and proponents of racial marginalization would rage until the abolishment of the policy in 1965.²⁸

Secondly, Yerkes and Goddard were staunch believers in the negative eugenics movement proposed by British hereditarian Francis Galton. Galton believed that humankind would eventually degrade if left unchecked. He accordingly suggested programs that would institutionalize and sterilize those who had been marked as not at a level of intelligence deemed sufficient for society. Yerkes and

²⁴ Carl C Brigham. *A Study of American Intelligence*. Millwood, N.Y: Kraus Reprint, 1975.

²⁵ G. A. Feingold. "Intelligence of the First Generation of Immigrant Groups (a Study and a Critique)." *Journal of Educational Psychology* 15, no. 2 (1924): 65–82. <https://doi.org/10.1037/h0073889>.

²⁶ "Dillingham Commission Reports (1911)." *Immigration History*, August 20, 2019. <https://immigrationhistory.org/item/dillingham-commission-reports/>.

²⁷ John Greenwood. "Psychologists Go to War." 2021.

²⁸ Appendix B/C

Goddard consequently suggested sterilization and separation to keep the rest of humanity isolated from the so-called "mentally defective" and raise the average intelligence level of the nation. Even before these findings on the nation's average intelligence levels were revealed, it is essential to note that America had already started down the dark path of eugenics. In 1896, evidence of the eugenics movement was seen when the state of Connecticut made it illegal for those with epilepsy or who were considered "feeble-minded" to marry.²⁹ The already-widely supported sterilization movement, coupled with the recent findings of the Army testing system, led to sterilization legislation in the United States. Harry Laughlin, the same person who would push for the National Origins Act in 1924, proposed a Model Eugenical Sterilization Law in 1922 that became the basis of all laws focused on bolstering the average intelligence level of the country by sterilizing those deemed mentally deficient. Once again, critics of the eugenics movement proved to be no match for the supporters of this movement, even internationally. Astoundingly, only the horrendous crimes of Nazi Germany led to much of the world eliminating eugenics programs in their own countries. By the start of World War II, many psychologists, including Brigham, had retracted their claims on the effects of inheritance on the degeneration of average national intelligence.³⁰

Leaving Army Alpha Behind

Army Alpha and Beta paved the way for more modern testing methods to further increase military categorization efficiency. During World War II, the Army used the Army General Classification Test (AGCT) and the Navy General Classification Test (NGCT) to test the Army and Navy, respectively.³¹ Bingham served as a supervisor for the Army General Classification Test development,

²⁹ History.com Editors. "Eugenics." History.com. A&E Television Networks, November 15, 2017. <https://www.history.com/topics/germany/eugenics>.

³⁰ John Greenwood. "Psychologists Go to War." 2021.

³¹ "History of Military Testing." ASVAB, August 12, 2020. <https://www.officialasvab.com/researchers/history-of-military-testing/>.

building on the mistakes and successes of the Army Alpha and Beta.³² Other classification tests were created during this time to supplement these tests, further increasing the range in which testing occurred for the nearly 15 million applicants of the Army and Navy tested. In 1950, the testing returned to a single test in the form of the Armed Forces Qualification Test (AFQT). Unlike the Army Alpha and Beta, this test was explicitly used as a screening device to provide the examinee's general ability to absorb military information and a uniform measure of their potential utility in the military, further showcasing the improvements made from the days of the Army Alpha and Beta.³³

Conclusion

The Army Alpha and Beta were the first of their kind, providing an efficient way to categorize potential recruits into positions that would benefit the Army the most. While this was a significant improvement in how effective registration for the U.S. Army occurred, these tests inadvertently contributed to the creation of inhumane laws like the National Origins Act and the widespread support of the negative eugenics movement. Along with these consequences, the debate surrounding the usefulness of these tests and their effectiveness on the battlefield proved to ultimately outweigh the boons the Army Alpha and Beta brought for military strategy and tactics.

Psychologists learned from their successes and mistakes and created increasingly more accurate and wider-ranging testing methods that incorporate intelligence and other aspects important to a soldier, such as context-specific military knowledge that does not rely on cultural knowledge. However, tests today continue to be influenced by cultural bias. In 2019, a lawsuit was filed against the University of California's requirement for students to take the SAT or ACT to be considered for admission, stating that racial, economic, and gender biases make it an unreliable indicator of a student's potential. In 2018, Asians and White students averaged over 1100 on SATs, and all other groups averaged below 1000.

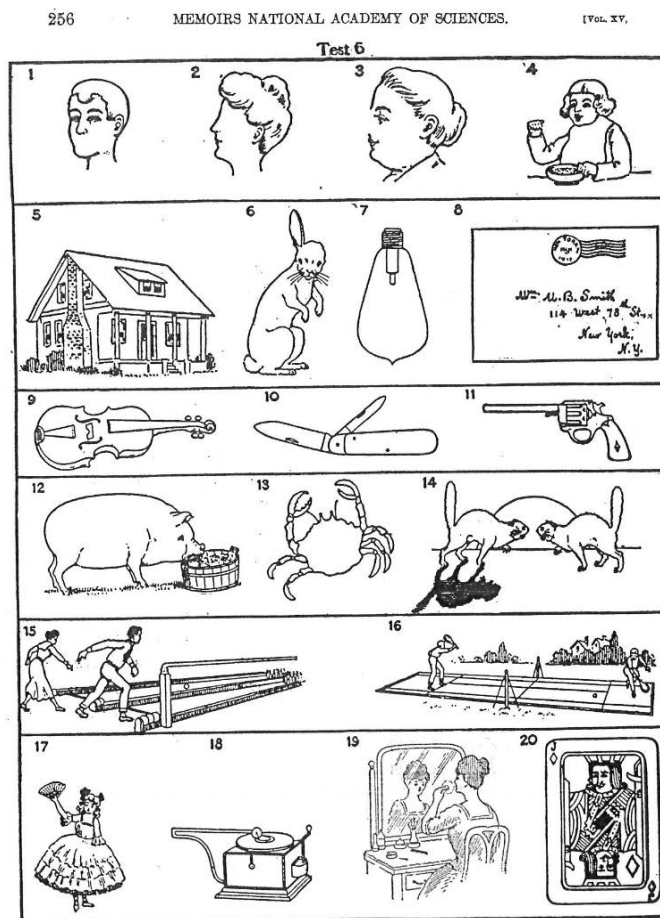
³² Leslie A. Miller and Sandra A. McIntire. *Foundations of Psychological Testing: A Practical Approach*. Los Angeles: SAGE, 2020.

³³ "History of Military Testing." 2020.

These scores indicate that more work must be done to ensure standardized tests are unbiased.³⁴ While a controversial topic of debate and discussion, the Army Alpha prompted the rapid development of intelligence testing and military efficiency. This history of these tests teaches us the important lesson that flawed scientific understanding can have devastating effects on society and ultimately inhibit civil progress. The far-reaching consequences of these tests should guide policymakers and scientists on how not to act, especially when new laws will be passed based on biased and limited evidence.

³⁴ Kim Elsesser. "Lawsuit Claims Sat and Act Are Biased-Here's What Research Says." Forbes. Forbes Magazine, December 11, 2019. <https://www.forbes.com/sites/kimelsesser/2019/12/11/lawsuit-claims-sat-and-act-are-biased-heres-what-research-says/?sh=2c9c72aa3c42>.

Appendix A



Citation

"Test Administration Stimuli." OSF. OSF, December 13, 2017. <https://osf.io/7xdy6/>.

Appendix B



Citation

National Endowment for the Humanities. "Evening Star. [Volume] (Washington, DC)

1854-1972, June 03, 1934, Page 4, Image 78." News about Chronicling America RSS.

W.D. Wallach & Hope, June 3, 1934.

<https://chroniclingamerica.loc.gov/lccn/sn83045462/1934-06-03/ed-1/seq-78/#date1=1777&index=7&rows=20&words=Alpha+Army&searchType=basic&sequence=0&state=&date2=1963&proxtext=Army+Alpha&y=0&x=0&dateFilterType=yearRange&page=1>

Appendix C



Citation

National Endowment for the Humanities. "The New York Herald. [Volume] (New York, N.Y.) 1920-1924, June 19, 1921, Section Seven, Page 8, Image 82." News about Chronicling America RSS. Sun-Herald, June 19, 1921.

<https://chroniclingamerica.loc.gov/lccn/sn83045774/1921-06-19/ed-1/seq-82/#date1=1777&sort=relevance&rows=20&words=Alpha+army&searchType=basic&sequence=0&index=1&state=&date2=1963&proxtext=Army+Alpha&y=0&x=0&dateFilterType=yearRange&page=2>.

Appendix D



Citations

"111-SC-387 - Psychological Test for Recruits at Camp Lee, VA." National Archives and Records Administration. National Archives and Records Administration, November 1917. <https://catalog.archives.gov/id/55162121>.

Annotated Bibliography

Primary sources

"111-SC-387 - Psychological Test for Recruits at Camp Lee, VA." National Archives and Records Administration. National Archives and Records Administration, November 1917. <https://catalog.archives.gov/id/55162121>.

This photo taken during the immediate implementation of the Army Alpha and its prototype, Examination Alpha, serves as a prelude to the immense number of soldiers and recruits that would soon be tested in order to serve their country during World War I. This primary source helped me understand the immediate impact of the Army Alpha's presence in the Army and how soldiers took the test at the time.

Atwell, C. R. "Relationship of Scores and Errors on the Army Alpha Test." *Journal of Applied Psychology* 21, no. 4 (1937): 451–55. <https://doi.org/10.1037/h0059639>.

In this journal, C.R. Atwell conducted a study on the relationship between score results and the errors made based on the administration of the Army Alpha. This helped explain to me how the Army Alpha even took into consideration the number of errors made correlated to a recruit's score and whether anything other than the actual test affected the recruit's judgment during the test. It provided evidence to shore up my knowledge of the Army Alpha and provide important context to the successes of military intelligence testing.

Brigham, Carl C. *A Study of American Intelligence*. Millwood, N.Y: Kraus Reprint, 1975.

This book was Carl Brigham's argument against allowing immigrants into the United States based on his findings of lower average intelligence compared to American-born individuals and the subsequent decrease in national average intelligence correlating to the influx of immigrants from South-Eastern Europe. It was one of the most important primary sources I used, expanding my understanding of the arguments and evidence Brigham used to make these outlandish claims. The information from this book was used to explain the consequences of the Army Alpha on the United States.

Edwards, Joe. "Figure 8." Army Alpha Group Examination. Accessed March 11, 2022.

https://www.researchgate.net/publication/300024738_The_Army.

This primary source contained two photos of a group examination of the Army Alpha and examiners scoring the tests from the examinees respectively. This was an actual look at what the testing at the time looked like, especially the physical conditions and appearances of the recruits and the testing center. I used this information to further build my knowledge on what the Army Alpha was like when it was first implemented.

"Group Examination Alpha." National Museum of American History, 1918.

https://americanhistory.si.edu/collections/search/object/nmah_1213725.

This was an example of the Examination Alpha used to test recruits; an early form of the Army Alpha testing that would soon become widespread amongst military administrations. This primary source was mostly used to see what types of questions were used to test the recruits who were literate in English and whether the test was culturally biased in any way. It helped further my understanding of the Examination Alpha and what cultural biases were evident in the other intelligence tests like the Army Alpha and Beta.

National Endowment for the Humanities. "Evening Star. [Volume] (Washington, DC) 1854-

1972, June 03, 1934, Page 4, Image 78." News about Chronicling America RSS. W.D.

Wallach & Hope, June 3, 1934.

[https://chroniclingamerica.loc.gov/lccn/sn83045462/1934-06-03/ed-1/seq-](https://chroniclingamerica.loc.gov/lccn/sn83045462/1934-06-03/ed-1/seq-78/#date1=1777&index=7&rows=20&words=Alpha+Army&searchType=basic&sequence=0&state=&date2=1963&proxtext=Army+Alpha&y=0&x=0&dateFilterType=yearRange&page=1)

[78/#date1=1777&index=7&rows=20&words=Alpha+Army&searchType=basic&sequence=0&state=&date2=1963&proxtext=Army+Alpha&y=0&x=0&dateFilterType=yearRange&page=1](https://chroniclingamerica.loc.gov/lccn/sn83045462/1934-06-03/ed-1/seq-78/#date1=1777&index=7&rows=20&words=Alpha+Army&searchType=basic&sequence=0&state=&date2=1963&proxtext=Army+Alpha&y=0&x=0&dateFilterType=yearRange&page=1).

This was an interesting newspaper article talking about the mental age of the United States and how experts stated it was not as low as the members of the country had previously thought. Even though 10 years have passed after the passing of the National Origins Act, the general public of the United States are still enthralled with the idea of national average intelligence, showing how deep the findings of the Army Alpha have buried its way into the heart of the American System. I used this newspaper article as

further proof of the lasting effects of the Army Alpha on the people, using the evidence to further ground my points as close to home as possible for the people reading this essay.

National Endowment for the Humanities. "The New York Herald. [Volume] (New York, N.Y.)

1920-1924, June 19, 1921, Section Seven, Page 8, Image 82." News about Chronicling America RSS. Sun-Herald, June 19, 1921.

<https://chroniclingamerica.loc.gov/lccn/sn83045774/1921-06-19/ed-1/seq-82/#date1=1777&sort=relevance&rows=20&words=Alpha+army&searchType=basic&sequence=0&index=1&state=&date2=1963&proxtext=Army+Alpha&y=0&x=0&dateFilterType=yearRange&page=2>.

Another newspaper article, this one focused on a particular individual who's life was affected by their incredible score on the Army Alpha. This individual, a shell-shocked veteran called Michael J. Nolan, was the perfect example of a person who's life was changed from the emergence of the Army Alpha as a force governing people's lives. This provided great historical context on the aftereffects of the Army Alpha on the general public.

"Sample Army Alpha/Beta Questions." ASVAB, October 9, 2019.

<https://www.officialasvab.com/recruiters/army-samples/>.

Much like the previous pictures of the Examination Alpha, this site provided sample questions seen on the Army Alpha and Beta. I utilized this source to further examine how cultural and historical biases might have affected the creation of these tests. Using the

evidence I found in these ample questions, I built on the argument that intelligence testing was inherently biased.

"Test Administration Stimuli." OSF. OSF, December 13, 2017. <https://osf.io/7xdy6/>.

This was a sample of the Army Beta test given out to illiterate soldiers or those who had failed the Army Alpha. Much like the source above, I used it to cross-reference multiple examples of the Army intelligence tests and find further proof on the impact of cultural and historical biases on these tests.

Yoakum, Clarence Stone, and Robert Mearns Yerkes. *Army Mental Tests*. New York: Holt, 1929.

This book written by the head of the committee concerned with the creation of the Army Alpha and Beta, Robert Yerkes, discussed in detail the findings of the test and the application of the test at the time. This was another one of the most important primary sources I utilized, researching more on Yerkes point of view and what he made of the findings he discovered through the Army Alpha. The information from this book made up most of the introduction about the Army intelligence tests and the further failures and successes of these tests.

Secondary sources

"Army Alpha and Army Beta - Iresearchnet." Psychology, January 25, 2016.

<http://psychology.iresearchnet.com/industrial-organizational-psychology/i-o-psychology-history/army-alpha-and-army-beta/>.

This was a general, all-purpose website that talked about the Army Alpha and Beta and the flaws surrounding their creation. I used this website to supplement the information I already knew about the Army Alpha and Beta and provide an outsiders opinion of the flaws evident in these testing methods. The research from this site was used to further explain one of the debates surrounding the validity of the test and its actual effectiveness on the field of battle.

Black, Edwin. *War against the Weak: Eugenics and America's Campaign to Create a Master Race*. Washington, DC: Dialog Press, 2012.

Historian Edwin Black's book on the eugenics movement and the negative impact it has had on the world (including leading to Nazi Germany's eugenics programs and sterilization laws in various American states) is a gripping look at how the conclusions drawn from the Army Alpha have impacted the entire world. I used the examples of the Army Alpha written in this book to further justify the flaw of cultural bias evident in these military tests.

Carson, John. "Army Alpha, Army Brass, and the Search for Army Intelligence." *Isis* 84, no. 2 (1993): 278–309. <https://doi.org/10.1086/356463>.

This journal discussed the creation of the Army Alpha and Beta and the impact it had on the military as the testing progressed. The brunt of the research and everything I learned about the Army Alpha and Beta came from this journal, giving me an in-depth look at how this military testing became so widespread. I used the information in this journal to write as much about the tests as I could in the introduction.

Cherry, Kendra. "Robert Yerkes' Life and Contributions to Psychology." Verywell Mind. Verywell Mind, April 13, 2020. <https://www.verywellmind.com/robert-yerkes-biography-2795531>.

This source took a closer look at Robert Yerkes' personal life and his contributions to the field of psychology, including the impact he made on the world with the Army Alpha. In order to understand the Army Alpha and Beta, I needed to understand a little bit about the creator of these tests and the person who had drawn the conclusions about national intelligence that would so thoroughly reverberate throughout the nation. I used this information to further fill in gaps in my understanding of this topic.

Elsesser, Kim. "Lawsuit Claims Sat and Act Are Biased-Here's What Research Says." Forbes. Forbes Magazine, December 11, 2019.

<https://www.forbes.com/sites/kimelsesser/2019/12/11/lawsuit-claims-sat-and-act-are-biased-heres-what-research-says/?sh=2c9c72aa3c42>.

This article discussed the lawsuit against the necessity of the SATs in the University of California's application process. This was an interesting read, providing tangible evidence that even today, tests are still influenced by the culture and environment people grew up in and the difference between different groups of people. I used this information to showcase how that testing still has not truly improved to become a completely reliable source of standardization. The cultural biases of the flawed Army Alpha still haunt most tests today, no matter how hard we have tried to erase these cultural biases from these tests.

Eon, Victoria. "Army Alpha, Army Beta: Inherently Racist." Medium. Psyc 406–2016, March 22, 2016. <https://medium.com/psyc-406-2016/army-alpha-army-beta-inherently-racist-674b6b5e321f>.

This was an article discussing the inherent racism and bias evident in the Army Alpha and Beta. It drew on Gould and Black's book to further prove its point that the entire testing system was flawed and prioritized American values and culture over actual intelligence, defining intelligence as a political byproduct. I used this article to connect the dots in the argument being made, further elaborating on this argument about inherent bias in my own essay.

Feingold, G. A. "Intelligence of the First Generation of Immigrant Groups (a Study and a Critique)." *Journal of Educational Psychology* 15, no. 2 (1924): 65–82.

<https://doi.org/10.1037/h0073889>.

This source provided information on the experiments of Dr Rudolph Pintner, who tested the intelligence levels of Jewish immigrant students in comparison to American-born white students and found little to no difference. This provided more evidence against the findings of the Army Alpha but ended up being a futile effort as the National Origins Act was passed. The information from this source was used to further explain the criticism against the findings at the time.

"Gould (1982)." tutor2u. Accessed March 10, 2022.

<https://www.tutor2u.net/psychology/reference/gould-1982>.

This source provided a substantial amount of information from Gould's article, *A Nation of Morons*, and was a descriptive outline of the points Gould had made concerning the national average intelligence findings concluded through the findings of the Army Alpha and Beta. It further elaborated on the invalidity of these tests, providing more information and proof of why these tests were biased and not solely a measure of intelligence. The information in this source was used to, once again, shore up the argument on inherent cultural and historical biases in the Army Alpha and Beta.

Gould, Stephen Jay. *The Mismeasure of Man*. Brantford, Ontario: W. Ross MacDonald School Research Services Library, 2016.

This book by historian Stephen Jay Gould is a critique of the belief that society is an accurate belief of biology - the hereditarian view that our position in society is determined by our genes. In this book, Gould also talks about the inherent biases and flaws in the Army Alpha and Beta, pointing out specific examples in sample questions that would have been harder for a person without knowledge of American culture and history to solve than a person who has lived in America and been educated their whole life on the specific cultural context. I used the specific examples found in this book to further substantiate the point that these tests were biased in some way.

Greenwood, John. "Psychologists Go to War." *Behavioral Scientist*, November 1, 2021.

<https://behavioralscientist.org/psychologists-go-war/>.

This article on the process of psychologists helping with the World War I effort and the consequences that soon followed the implementation of the Army Alpha and Beta really helped me flesh out all the points on the immigration and eugenics policies that also soon followed. I used the information about the specific policies that were an aftereffect of the Army Alpha and Beta like the National Origins Act to provide specific evidence of these changes taking place in America.

Harrell, Thomas W. "Some History of the Army General Classification Test." *Journal of Applied Psychology* 77, no. 6 (1992): 875–78. <https://doi.org/10.1037/0021-9010.77.6.875>.

This was an article talking about how the Army General Classification Test, the successor of the Army Alpha and Beta, came to be and the history of the military screening test. It addressed some of the misgivings of the previous testing systems and talked about the changes implemented, raising the quality and effectiveness of people being placed in positions through these tests. It helped me understand more of what came after the Army Alpha, and expanded my knowledge on the Army General Classification Test specifically.

History.com Editors. "Eugenics." History.com. A&E Television Networks, November 15, 2017. <https://www.history.com/topics/germany/eugenics>.

This is a source that discussed the eugenics movement that was popularized during the early 20th century and the various effects it had on the country. This source was useful in providing information about the start of the eugenics movement, and I used this information to provide further context about the impact the Army Alpha/Beta test results had on the eugenics movement.

"History of Military Testing." ASVAB, August 12, 2020.

<https://www.officialasvab.com/researchers/history-of-military-testing/>.

This is another source that talks about the immediate successors of the Army Alpha and Beta in World War II (The Army General Classification Test and the Navy General Classification Test) and more on the Army General Classification Test. I learned more about the improvements made from the time of the Army Alpha and Beta, and used this research to talk more about these improvements in the last part of the essay.

Kaufman, Alan S., and Elizabeth O. Lichtenberger. *Assessing Adolescent and Adult Intelligence*. Hoboken, NY: Wiley, 2006.

While not directly related to the topic at hand, this book does mention the Army Alpha and describes it in apt detail. I mostly used this source to compare the information I had already gathered and cross-reference it (mostly the number of subtests and the like). I was able to gauge the accuracy of the primary and secondary sources I had used beforehand using this source.

Miller, Leslie A., and Sandra A. McIntire. *Foundations of Psychological Testing: A Practical Approach*. Los Angeles: SAGE, 2020.

This is a book concerned with psychological testing in general. This book has an extensive section on the Army Alpha and Beta, much like the source above this but in a lot more detail. This was one of the sources I also used to cross-reference my findings from the other primary and secondary sources, helping me verify the accuracy of the other research.

Spring, Joel H. "Psychologists and the War: The Meaning of Intelligence in the Alpha and Beta Tests." *History of Education Quarterly* 12, no. 1 (1972): 3.

<https://doi.org/10.2307/367145>.

This was one of the sources I used extensively to conduct my research on the Army Alpha and Beta. There was a lot of information on the history and the implementation of these military tests here, and it helped me a lot when sculpting the overall structure of my essay. I used specific information from this journal to shape the introduction and the information concerning the consequences of the application of the test in the military.

Thomas, William B. "Black Intellectuals' Critique of Early Mental Testing: A Little-Known Saga of the 1920s." *American Journal of Education* 90, no. 3 (1982): 258–92.

<https://doi.org/10.1086/443644>.

This is an article that illustrates the viewpoint of Black intellectuals on the topic of intelligence testing and the belief of racial disparities due to intelligence. I used the information in this document to illustrate the viewpoint of Black critics who were staunchly against the usage of the Army Alpha as justification of segregation and racial differences. It greatly helped with establishing an understanding of the concept of race within this debate, tied closely to the National Origins Act of 1924 further explained in this essay.

Walker, Tim, and John Rosales. "The Racist Beginnings of Standardized Testing." NEA.

Accessed March 10, 2022. <https://www.nea.org/advocating-for-change/new-from-nea/racist-beginnings-standardized-testing>.

This source was the introduction to this entire topic. When learning about the history of the SATs, I soon found Carl Brigham and the immense changes he had helped create in the structure of military recruiting and the subsequent consequences that occurred as a result of his research, including the implementation of the SATs. This information was primarily used in the beginning of this essay as an introduction to the wider history of the Army Alpha.

Warne, Russell T., Jared Z. Burton, Aisa Gibbons, and Daniel A. Melendez. "Stephen Jay Gould's Analysis of the Army Beta Test in the Mismeasure of Man: Distortions and Misconceptions Regarding a Pioneering Mental Test." *Journal of Intelligence* 7, no. 1 (2019): 6. <https://doi.org/10.3390/jintelligence7010006>.

This was an article with an in-depth analysis of Gould's argument in his book *Mismeasure of Man*, focusing on the strengths and weaknesses of Gould's opinion on the matter. I used this source as a means of finding out the counterarguments to the flaws that were being discussed in other sources, in order to see if any of them were valid and worth mentioning. It was a good way to make sure I knew what was historically accurate and correct with both Gould's findings and the arguments that were used against him.

Zeidner, Joseph, and Arthur J. Drucker. "Behavioral Science in the Army: A Corporate History of the Army Research Institute," 1988. <https://doi.org/10.21236/ad1012467>.

This was another journal that talked about the Army Alpha as one of the starting points of behavioral science in the United States military. It was one of the sources I used extensively to compile more information on the Army Alpha and Beta, focusing on the role these tests had on the progression and evolution of the military to where it is today. I used this information to further shore up my knowledge of the subject matter and write in better detail all the circumstances surrounding this test.