



‘Good soldiers are made, not born’[‡]: the dangers of medicalizing ability in the military use of genetics

Jessica L. Roberts

Assistant Professor of Law, University of Houston Law Center, Houston Texas, USA
Corresponding author. E-mail: jrobert6@central.uh.edu

ABSTRACT

Advances in genetic and genomic science are of particular interest to the United States military. Responding to Maxwell J. Mehlman’s and Tracy Yeheng Li’s article *Ethical, Legal, Social, and Policy Issues in the Use of Genomic Technology* by the U.S. Military, this Commentary explores the social consequences of medicalizing what it means to be a good soldier. It begins by reviewing the well-documented consequences of medicalization in the contexts of the eugenics movement and modern genetic and genomic science. It then applies that analysis to the military use of genetics and genomics, focusing on the ways in which genetic or genomic accounts of military ability could entrench existing gender and racial disparities.

KEYWORDS: genetics, military, eugenics, discrimination, race, sex

I. INTRODUCTION

In their thoughtful article *Ethical, Legal, Social, and Policy Issues in the Use of Genomic Technology by the US Military*, Maxwell J. Mehlman and Tracy Yeheng Li explore the potential military uses for burgeoning genomic technology and the shortcomings of civilian ELSI findings as applied to the military.¹ Mehlman and Li explain that the

[‡] See George White, Jr., “I Am Teaching Some of the Boys:” *Chaplain Robert Boston Dokes and Army Testing of Black Soldiers in World War II*, 81 J. NEGRO ED. 200, 209 (2008) (referring to the phrase ‘good soldiers are made, not born’ as a ‘mantra’).

¹ Maxwell J. Mehlman & Tracy Y. Li, *Ethical, Legal, Social, and Policy Issues in the Use of Genomic Technology by the U.S. Military*, 1 J.L. & BIOSCL. 1 (2014).

military might have interests in genetic and genomic information related to ability.² However, relying too heavily on genetic and genomic science could medicalize military ability, rendering assessments of leadership and fighting aptitude a matter of DNA and not actual ability, performance, or experience.

Drawing from the unfortunate legacy of eugenics, this commentary cautions against the medicalization of what it means to be a good soldier. It begins with a brief discussion of the eugenics movement of the late 19th and early 20th centuries and the similar dangers inherent in modern genetic and genomic science. It then explores how the use of genetic and genomic science might likewise provide a biological construction of military ability. It ends by advising that should the military adopt the kinds of technologies described by Mehlman and Li, it must be wary of the social consequences.

II. MEDICALIZATION OF HUMAN ABILITY

Heredity has previously coded for positive attributes such as strength, intelligence, and good moral character. Thus, it makes sense to begin with the American eugenics movement of the late 19th and early 20th centuries.

A. Medicalization of ability in the eugenics movement

Eugenics endorsed the notion that, such as farm animals, human beings could be from ‘good’ or ‘bad’ stock,³ treating socially valuable traits as the products of heredity.⁴ This construction of ability has certain meaningful implications. To start, it paints a black and white picture of the world: You either have the pedigree associated with socially desirable traits or you do not. Eugenic thinking, therefore, endorses a static view of the human condition by characterizing people as products of their heredity, not as individuals capable of meaningful adaption, self-betterment, or growth.⁵ Furthermore, this account of humanity medicalizes ability by treating individuals deemed socially unfit as in need of institutionalization and medical treatment.⁶ On a broader level, the eugenics movement provided a biological explanation for turn-of-the-century social problems such as overpopulation, poverty, and crime⁷ and in so doing both justified and perpetuated the

² *Id.* at 4, 5.

³ See Garland E. Allen, *Genetics, Eugenics and the Medicalization of Social Behavior: Lessons from the Past*, 23 *ENDEAVOUR* 10, 11 (1999).

⁴ See DANIEL J. KEVLES, *ENCYCLOPEDIA OF BIOETHICS* 848 (3d ed. 2003).

⁵ See Allen, *supra* note 3, at 12; See also *id.* at 10.

⁶ Lori B. Andrews, *Past as Prologue: Sobering Thoughts on Genetic Enthusiasm*, 27 *SETON HALL L. REV.* 893, 907 (1997).

⁷ Garland E. Allen, *The Social and Economic Origins of Genetic Determinism: A Case History of the American Eugenics Movement, 1900–1940 and Its Lessons for Today*, 99 *GENETICA* 77, 80 (1997).

subordinated social status of immigrants and people of color,⁸ women,⁹ and people with disabilities.¹⁰

B. Medicalization of ability in genetic and genomic science

Given its reliance on both the heritability of traits and the notion that undesirable characteristics can be predicted and eliminated, modern genetic and genomic science share certain central attributes with the eugenics movement.¹¹ Not surprisingly then, they have faced similar criticisms.

For example, genetic determinism is a risk associated with genetic science.¹² A genetically deterministic view holds that if you have a gene for X condition or trait, you will manifest that condition or trait. However, human beings are complex organisms and, even with a genetic proclivity, a variety of other factors affect whether an individual actually develops a particular attribute. Thus, genetic determinism reduces this complex reality to a simple conditional statement: If you have the genetic variation, then you will manifest the trait or condition.

Along similar lines, genetic and genomic science run the risk of genetic reductionism.¹³ A genetically reductionist view ignores the non-genetic causes for particular traits and conditions. For example, genetic reductionism in the context of public health law would ignore socioeconomic and environmental causes of disease and look only to the genetic variations of the population. Genetic reductionism, therefore, takes genetic and genomic science out of context and elevates them to the sole explanation for a trait or condition.

With relatively few exceptions, genetics demonstrate a probability not a certainty. Thus, because genetic and genomic science deal in terms of group chance,¹⁴ they can fall short with respect to individual prediction. While a genetic test might establish that a person has a genetic variation that conveys a 90 per cent probability of manifesting a particular trait or condition, a genetic test would be unable to determine whether that particular person will fall within the 90 per cent or the remaining 10 per cent. Thus, while genetics and genomics may be useful for determining probabilities on a group level, they are less valuable with respect to individuals.

⁸ Because the eugenic ideal was the purebred Nordic, individuals who were considered ethnically or racially different were labeled less socially desirable and became the objects of legal regulation. See Allen, *supra* note 3, at 12, 13; Andrews, *supra* note 6, at 907; Post *supra* note 4, at 849; Anne Stubblefield, "Beyond the Pale": Tainted Whiteness, Cognitive Disability, and Eugenic Sterilization, 22 *HYPATIA* 162 (2007).

⁹ Women also experienced truncated social status based on their biology pursuant to eugenics. Their role in reproduction usurped their personhood, rendering those women deemed unfit the disproportionate victims of sterilization and institutionalization and reducing those women deemed socially desirable to mere reproductive vessels to further positive eugenics. See Andrews, *supra* note 6, at 906; Stubblefield, *supra* note 8, at 176, 178.

¹⁰ Finally, people with disabilities were near universally devalued as draining the resources of the state, also making them a target for dehumanizing legal and social policies. JACQUELINE V. SWITZER, *DISABLED RIGHTS: AMERICAN DISABILITY POLICY AND THE FIGHT FOR EQUALITY* 36, 38 (2003).

¹¹ See Post *supra* note 4, at 10–11, 17–18; Ana Romero-Bosch, *Lessons in Legal History—Eugenics & Genetics*, 11 *J. MED & L.* 89, 107 (2008); See Allen, *supra* note 4, at 10–11, 17–18; Allen, *supra* note 7, at 77–78, 86–87.

¹² See Jane L. Halliday et al., *Genetics and Public Health—Evolution or Revolution*, 58 *J. EPIDEMIOLOG. COMM. HEALTH* 894, 895 (2004).

¹³ *Id.* at 895.

¹⁴ See Neil A. Holtzman, *Putting the Search for Genes in Perspective*, 31 *INT'L J. HEALTH SERVS.* 445, 457 (2001).

Additionally, genetic and genomic science can create false dichotomy of ‘good’ and ‘bad’ traits and conditions.¹⁵ While a particular variation may be harmful in one context, it may be helpful in others. The classic example is, of course, sickle-cell trait.¹⁶ While sickle-cell trait may carry some health risks, it also brings certain benefits, namely malaria resistance. A bifurcated construction (either ‘good’ or ‘bad’) fails to account for the positive aspects of human variation by adopting a uniform conception of the good.

Lastly, genetic and genomic science require the creation of reference text against which to evaluate variations.¹⁷ The content of that reference text depends upon which populations are sampled. For example, if men of western European descent are the primary sample group, then genetic variations associated with males from Western Europe will become the ‘normal’ genotype with all other genetic variations understood as deviations from that accepted norm. Hence, genetics and genomics can inadvertently build in bias depending on the populations used for the research.

Relying too heavily on genetic and genomic science may underestimate or devalue individual variation, as well as ignore the human abilities to grow and adapt. As the military increasingly incorporates genetic and genomic science into its practices, it likewise runs the risk of medicalizing those desirable attributes and using science to justify disparities.

III. THE DANGERS OF MEDICALIZING ABILITY IN THE MILITARY

As explained by Mehlman and Li, the military is interested in genetic and genomic science for a variety of reasons, including to predict ability and to enhance prowess. Yet as one author puts it ‘medicalization and geneticization go hand-in-hand’.¹⁸ If the military uses genetics or genomics in its assessments of fitness and potential, it runs the risk of medicalizing these attributes and causing the panoply of harms described in Part I.

A. Vulnerability of the Military to Medicalizing Ability

The military is particularly vulnerable to a eugenic renaissance. Eugenic-like policies require an authoritarian structure that does not acknowledge individual liberties.¹⁹ As Mehlman and Li explain, the governing norms of civilian society do not readily map onto the military context.²⁰ In fact, military and civilian concerns are so different that Mehlman has previously argued that the military requires a completely separate set of bioethical principles.²¹ While individual rights might safeguard society writ large, the military is without similar protections.

Moreover, the military has medicalized ability in the past and in a way that justified the social disparities of the day. Intelligence tests were one tool of the American

¹⁵ In fact, a key part of the eugenics movement was defining some traits as favorable and others as unfavorable. See Post *supra* note 4, at 849.

¹⁶ Sickle-cell screenings are a notorious example of the discriminatory use of genetic science. See Howard Markel, *The Stigma of Disease: Implications of Genetic Screening*, 93 AMER. J. MED. 209 (1992). Even now, sickle-cell screening is one of the current military uses of genetic science. Mehlman & Li, *supra* note 1, at 4.

¹⁷ See James C. Wilson, *Disability and the Human Genome*, in THE DISABILITY STUDIES READER 52, 62 (3d ed. 2010).

¹⁸ Allen, *supra* note 3, at 17.

¹⁹ Post, *supra* note 4, at 851.

²⁰ Mehlman & Li, *supra* note 1, at 8.

²¹ See *id.* at 8, footnote 36 [citing Maxwell J. Mehlman & Stephanie O. Corley, *A Framework for Military Bioethics*, J. MIL. ETHICS (forthcoming 2014)].

eugenics movement.²² The US Army adopted these tests to differentiate between recruits with low intelligence, considered expendable, and recruits of high intelligence, deemed worthy of officer status.²³ In keeping with their eugenic mission, those evaluations confirmed the preexisting notions of social desirability with 89 per cent of black people and 47 per cent of white people (most of whom hailed from Southern or Eastern Europe) deemed feeble-minded.²⁴ Ironically, however, the tests had very little practical value because they found a substantial majority of military recruits incapable of serving.²⁵

In World War II, military officials used the Army General Classification Test to determine which soldiers should serve in what capacity.²⁶ While not billed as an intelligence test per se, it had the effect of segregating individuals in a fashion that reflected social hierarchies and reinforced white privilege.²⁷ Based on its results, approximately 84 per cent of black soldiers were classified as unfit to become officers.²⁸ These tests, therefore, functioned as tools of racial hegemony within the military.²⁹

Just as the intelligence tests of the past justified social disparities while purporting to assess an individual's potential for military service, the genetic and genomic tests of the future could likewise perpetuate inequalities.

B. Potential Harms

The military use of genetics and genomics is susceptible to the dangers of medicalization described in Part I, including genetic determinism, genetic reductionism, the inability to predict individual ability, the good/bad dichotomy, and—most importantly with respect to the concerns articulated here—inadvertently building bias into the reference text.

For example, the military could administer tests designed to screen individuals for their fighting and leadership ability. While such measures might detect the presence of attributes associated with being a good soldier, they would only indicate the likelihood—not the reality—of exhibiting those qualities. Yet if the military used them in making key decisions, that use could conflate having a genetic proclivity for traits correlated with being a good soldier with actually being a good soldier. Adopting genetic and genomic technology may, therefore, lead to genetic determinism.

Genetic reductionism would also be a possibility. If genetic or genomic screening gains widespread use in the military, those evaluations could supplant other measures of ability and potential. Instead of evaluating individuals across a variety of metrics—physical strength, agility, problem-solving skills, maintaining calmness under pressure, etc.—relying too heavily on that technology could collapse assessment into a battery

²² Ajotha Reddy, *The Eugenic Origins of IQ Testing: Implications for Post-Atkins Litigation*, 57 DEPAUL L. REV. 667, 671 (2008); George White, Jr., "I Am Teaching Some of the Boys:" Chaplain Robert Boston Dokes and Army Testing of Black Soldiers in World War II, 81 J. NEGRO ED. 200, 203 (2008).

²³ Reddy, *supra* note 22, at 671, 672; White, *supra* note 22, at 203, 204. The Army's Alpha and Beta Tests were the result. Reddy, *supra* note 22, at 672; White, *supra* note 22, at 203, 204.

²⁴ Reddy, *supra* note 22, at 672; See also White, *supra* note 22, at 204.

²⁵ Reddy, *supra* note 22, at 672.

²⁶ White, *supra* note 22, at 200, 205.

²⁷ White, *supra* note 22, at 200, 205–206.

²⁸ White, *supra* note 22, at 203, 204.

²⁹ *Id.* at 212, 213.

of genetic or genomic tests. Although such an outcome might conserve time and resources, it would be to the detriment of other, more accurate measures of military performance and potential.

Along those lines, the failure to predict individual ability is, of course, another issue that comes along with genetic determinism and genetic reductionism. Like civilian genetic and genomic tests, military uses would predict probabilities not certainties of their associated outcomes. Thus, an individual with a high genetic or genomic likelihood of excelling in the military could fall into the minority and fail to perform. And likewise, a person with a low genetic or genomic likelihood of success could flourish and achieve if given the opportunity.

Moreover, as mentioned, genetics and genomics can create a dichotomy classifying traits and conditions as either desirable or undesirable. This understanding of human variation fails to acknowledge the potential positive side to traits and conditions construed as undesirable. Likewise, defining military ability in terms of genetics or genomics could screen out certain individuals who could have made contributions that run outside the scope of the previously defined desirable criteria. For example, a genetic screen for muscular strength might sort out people who, while having less of a tendency toward musculature, are especially agile and could use that characteristic to their advantage on the battlefield.

Finally, the notions of which genes are desirable for military service might in part be determined by who has been a successful soldier in the past. Genetic or genomic performance measures could well be based on the successes of past soldiers, creating a 'good soldier' genetic or genomic reference text.

Certain groups have been historically disadvantaged in the military, specifically women and people of color.³⁰ At present, women and non-whites make up 16 and 28.1 per cent, respectively, of the total military force—which includes active duty personnel, reservists, and civilian employees—and 14.6 and 30.3 per cent active duty (ie the people who are actively deployed in some branch of the military).³¹ Women are, therefore, grossly underrepresented in terms of their share of the total population. People of color are also underrepresented, as they comprise about 37 per cent of Americans.³² Because genes associated with whiteness or maleness would be overrepresented within the historical and current demographics of the military, racial or gender preferences could be inadvertently built into the genetic or genomic calculus of being a good soldier. Should the military adopt a medicalized understanding of ability, it runs the risk of entrenching existing disparities—or even slipping backward—by providing this underrepresentation with a scientific basis.

³⁰ People with disabilities are also likely underrepresented. However, given the lack of data, this point at present is difficult to document.

³¹ U.S. DEPARTMENT OF DEFENSE, DEMOGRAPHICS: PROFILE OF THE MILITARY COMMUNITY (2012).

³² See Michael Walsh, *US Percentage of Non-Hispanic Whites Hits All-Time Low of 63%*, N.Y. DAILY NEWS, Jun. 13, 2013. While the present percentage of non-whites is encouraging, non-whites faced serious discrimination in the past. For example, while people of color participated in wars from the American Revolution onward, they did so predominantly in segregated units led by white officers. Robert Knowles, *The Intertwined Fates of Affirmative Action and the Military*, 45 LOYOLA UNIV. CHI. L.J. 1027, 1059 (2014). That said, the racial integration of the military is ultimately regarded as a success story. See *id.* at 1055, 1059. Integration progressed slowly with non-white individuals encountering barriers to promotion and other opportunities along the way. See *id.* at 1047, 1059. <http://www.nydailynews.com/news/national/percentage-non-hispanic-whites-hits-all-time-63-article-1.1371772>

Incorporating genetic and genomic technology into the military carries with it the same risks in civilian contexts but with fewer safeguards. Thus, if the military widely adopts genetic or genomic testing for the purposes of assessing or predicting ability, it runs the risks of repeating some of the harms of the eugenics movement, including providing a scientific justification for the existing disparities on the basis of sex and race.

IV. CONCLUSION

The eugenics movement provides a cautionary tale of the harms made possible when human potential becomes reduced to a simple matter of heredity. As Mehlman and Li demonstrate in their article, the values in the military differ substantially from those in the civilian world. Yet despite these meaningful differences, the military is far from immune to social factors. Genetizing ability could devalue non-genetic or non-genomic attributes, as well as reify existing disparities. Thus, military officials should consider the social consequences of incorporating genetics and genomics. If the military adopts genetic or genomic measures of ability, it must not do so to the detriment of promoting inclusiveness or valuing individuality.