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# ‘The Danger Lies in the Future’: Student draft deferment and the atomic cloud over US higher education

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## ABSTRACT

*This article examines the impact of the postwar decision to defer college students from selective service. The understanding within both the US government and the general populace that the Second World War had been won with science spurred increased federal interest in the organisation and delivery of university-level education in the early years of the Cold War, alongside an acute need for scientific manpower. Patriotic duty was no longer measured only in terms of military service, but also in scientific advancement. This widespread acceptance that college students were central to the achievement of national goals paved the way for an increase in governmental involvement within the tertiary sector and, by the outbreak of the Korean War, came to impact the understanding of the national ‘value’ of a degree.*

## Introduction

On 6 August 1945 the Enola Gay dropped an atomic bomb on the Japanese city of Hiroshima, ending the War and ushering in a new age of science. No longer were soldiers the only people capable of protecting the USA; scientists, mathematicians and engineers suddenly found themselves as central to defence as the military. The contributions of the sciences to victory in the Second World War established the field as a national concern; military funding for defence related research became commonplace and the federal government began to shape scientific research on campuses across the nation.<sup>1</sup> Yet as Vannevar Bush, head of the Office of Scientific Research and Development (OSRD) recognised, just as the War had improved the status of science, it had also decimated the field. Bush informed US President Harry S. Truman in 1947 that American science was fragile not in spite of, but precisely because

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<sup>1</sup>Roger L. Geiger, ‘Science, Universities, and National Defense, 1945-1970’, *Osiris*, Vol. 7, (1992), pp.26-48, p.26.

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of US policy during the War.<sup>2</sup> Neither working scientists nor science students had been exempt from military service and America embarked upon its brave new world without a robust stockpile of scientific manpower.

American higher education faced a myriad of challenges in the years after the Second World War.<sup>3</sup> As the postwar period gave way to the early Cold War, however, anxiety over the state of scientific advancement in the USA – and the desire for a solution – contributed to these woes.<sup>4</sup> Nowhere is this situation more clearly portrayed than in *Science and Public Policy* (1947), a report written for President Truman by his trusted advisor, and the closest he had to a Chief of Staff, John R. Steelman. The ‘Steelman Report,’ as it is known, echoed Bush’s assessment from two years prior; scientific manpower was paramount to the long-term safety of the nation, and the war had seriously impacted the health of American science.<sup>5</sup> The Report noted a further problem, however: scientific research in the USA was suffering without an influx of basic research from Europe. Before the war, US labs had relied upon Europe to produce the type of research upon which America’s more profitable applied research was built. The destruction encountered by European laboratories in the decade prior to the war was comprehensive, however, and this pipeline had dried up. Without it, US science had no starting point. Foreshadowing the Marshall Plan, the Steelman Report called for US support for the re-establishment of the European laboratories, specifically noting the impact upon US national security. Yet another similarly timed report from the White House’s Program for Research and Development (1947) identified that the devastation in Europe was so complete that this effort would take decades. The authors warned that ‘if we want a stock of

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<sup>2</sup>Vannevar Bush, ‘Report to the President on the Office of Research and Development in the War,’ p.19. October 1945, VB, 3091: Report of the President, *quoted in* Jonathan Engel, *Transforming American Science: Universities, the Government, and the Cold War*, (New York: Routledge, 2023), pp.34-49.

<sup>3</sup>For a comprehensive overview of the postwar University, see Roger L. Geiger, *American Higher Education since World War II: A History*, (Princeton and Oxford: Princeton University Press, 2019).

<sup>4</sup>For more information on the significance of, and anxiety surrounding American ‘intelligence’ more generally in the postwar period, see Aaron Lecklider, *Inventing the Egghead: The Battle over Brainpower in American Culture*, (Philadelphia: University of Pennsylvania Press, 2013).

<sup>5</sup>John R. Steelman, *Science and Public Policy: A Report to the President*, vol. I, (Washington, DC: U.S. Government Printing Office, 1947), p.35; NB. The quote in the title of this article is taken from this report, p.4.

increasing knowledge about the nature of the physical world we'll have to build it ourselves.<sup>6</sup>

Once again, the issue identified was the availability of American-made scientists, and the country's ability to find, train and safeguard these men and women. Military initiatives such as Operation Paperclip sought to solve this pressing issue in the short term. Nazi scientists were recruited and brought to the USA, improving the USA's stockpile of scientists while simultaneously inhibiting post-war Germany and preventing vital knowledge from falling into the hands of the Soviet Union.<sup>7</sup> This measure, however, was a finite prospect and did little to address long-term concerns. Recruiting foreign scientists could not solve the USA's manpower issues; a long-term solution required a long-term plan. If the USA intended to be competitive in the burgeoning battle with the Soviet Union, and any other modern conflicts that presented themselves in the coming decades, then scientific research, and in turn a vast increase in the number of scientists, had to become a national priority. Achieving such a feat was easier said than done: government, industry and higher education institutions needed to work together to develop a robust and sustainable approach to postwar science. A nationally co-ordinated strategy was required, alongside a fundamental change in the relationship between the federal government and the Universities, and the public understanding of the status of science. The solution presented itself in the decision to defer college students from the USA's first peacetime military draft.

This article examines the impact that the college draft deferment programme had upon the study of science in the USA in the immediate aftermath of the Second World War. By bringing to light this often-understudied element of the federal government's wider response to the postwar atomic anxiety, this piece will demonstrate both the intended and unintended impacts wrought by this response. Exempting some, but not all, college students from the draft bolstered a valorisation of the 'science degree' that elevated it above its counterparts in the humanities and social sciences. This process exacerbated existing educational disadvantages, not only for those young men who were not able to attend university, but also poor and minority youths who did matriculate. The primary evidence examined demonstrates the influence wrought by

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<sup>6</sup>Robert Colborn, 'Double Industrial Research, Says White House: An Exclusive Preview of the Administration's Program for Research and Development', *Washington Report – Capitol Developments from the McGraw-Hill Bureau*, No. 88 (May 27 1947), p.2, File 192 (1945–1947) [Office of Scientific Research and Development], Box 818, Official File, Truman Papers, Harry S. Truman Presidential Library.

<sup>7</sup>For more information on Operation Paperclip, see Annie Jacobsen, *Operation Paperclip: The Secret Intelligence Program to bring Nazi Scientists to America*, (New York: Little, Brown and Co., 2014).

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the deferment programme itself. Ensuring a steady supply of science graduates took top priority in American universities during the postwar period long before the launch of Sputnik caused a public panic. In making science a priority, this programme of student deferment from selective service altered the course of countless students' lives and contributed to the remaking of the public understanding of the relative values of the disciplines.<sup>8</sup>

### The Science Pipeline

When the USA desperately needed scientific manpower, the system responsible for producing it revealed itself to be woefully lacking. The Engineering Manpower Commission of the Engineers Joint Council (1947) summed up the problem well:

The number of young engineering graduates who can reasonably be expected to be available for scientific employment over the next ten years will be far below the estimated annual need of 30,000 men. It may drop to as low as 12,000 by 1952. From 1954 until 1957 it will be about 17,000 per year. After 1957 it should start increasing, but will not equal the annual need until about 1965.<sup>9</sup>

This shortage was the result of a perfect storm; the Great Depression had affected the birth rate, which in turn affected the number of teenagers available to take up

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<sup>8</sup>This article is underpinned by, and seeks to contribute the excellent work already undertaken in this area, such as the histories of science during the postwar period, including Audra Wolfe's *Competing with the Soviets: Science, Technology and the State in Cold War America*, (Baltimore: Johns Hopkins University Press, 2013) and Paul Boyer's *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age*, (New York: Pantheon, 1985). The numerous, assessments of the postwar university conducted by Roger L. Geiger, especially *American Higher Education Since World War II*, (Princeton, NJ: Princeton University Press, 2019) and Herbert M. Kliebard's seminal study of the US education more broadly, *The Struggle for the American Curriculum*, (New York and London: Routledge and Kegan Paul, 1987), have proven invaluable when preparing this assessment. Federal science policy specifically has also been well documented by Bruce L. R. Smith in *American Science Policy since World War II*, (Washington DC: Brookings Institute, 1990). More recently both Jonathan Engel and Amy Rutenberg have furthered these initial assessments in, respectively *Transforming American Science: Universities, the Government, and the Cold War*, (New York: Routledge, 2023) and *Rough Draft: Cold War Military Manpower Policy and the Origins of Vietnam-Era Draft*, (Ithaca, NY: Cornell University Press, 2019).

<sup>9</sup>Conclusions of the Engineering Manpower Council quoted in Henry H. Armsby 'Young Engineers for Industry – How Many?' (4 June 1951) Circular No. 296, (US Department of Health Education and Welfare: Washington DC), p.6, File – Circular #207 – #299, Box 43 – Record Copies of Publications, 1875 – 1963, RG12, NACP.

university places in the late 1940s. The Depression also significantly impacted the number of men and women who could afford to attend college or university. Following this, thousands of capable young men were lost on the battlefield during the Second World War, with little heed paid to the postwar impact on science.<sup>10</sup> The war also directly affected the number of Americans who matriculated in college between 1942 and 1946, as so many college aged men and women chose to enlist instead of enrol. Steelman, identified that 'in the years from 1934 to 1938 about 1400 doctorates in science were awarded yearly and in 1941 nearly 1900 were conferred' but 'it is estimated that our manpower pool today is smaller by 90,000 bachelors and 5,000 doctors of science than it would have been if pre-war trends continued.'<sup>11</sup> The availability even of experienced scientists to train the next generation was seriously impeded. The men who had already undergone extensive training in Science, Technology, Engineering & Mathematics (STEM) subjects before the War had been indiscriminately called upon to fight.<sup>12</sup>

The Serviceman's Re-adjustment Act (1944), better known as the GI Bill, made a vast difference to the number of students matriculating in US universities after the war. Over the course of the programme, more than 2,232,000 veterans attended college.<sup>13</sup> Yet the GI Bill was not equipped to solve the manpower problem; it was a reconversion measure primarily intended to prevent returning veterans from re-entering the workforce *en masse*. Concerns were also voiced by leading commentators about the lack of entry requirements for returning veterans; an increase in numbers alone was not deemed sufficient to meet the national need.<sup>14</sup> Crucially, the tenets of the GI Bill exerted no influence over what returning veterans chose to study.<sup>15</sup> Education historian Herbert Kliebard noted a popular lament, that 'while American schoolchildren were learning how to get along with their peers or how to bake a cherry pie ... Soviet children were being steeped in the hard sciences and mathematics needed to win the technological race.'<sup>16</sup> The fashionable postwar philosophy of 'Life-adjustment Education' encouraged patriotism and citizenship education rather than

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<sup>10</sup>George F. Zook, *Higher Education for American Democracy: The Report of the President's Commission on Higher Education*, V.I, (New York: Harper, 1947), p.92.

<sup>11</sup>Steelman, *Science and Public Policy*, p.16.

<sup>12</sup>Engel, *Transforming American Science*, p.4.

<sup>13</sup>Keith W. Olson, 'The G. I. Bill and Higher Education: Success and Surprise', *American Quarterly*, Vol. 25, No. 5 (1973), pp.596–610, p.596.

<sup>14</sup>M. H. Trytten, 'Accrediting as a Means of Improving Undergraduate Training in Science', *Eos, Transactions American Geophysical Union* Vol. 27, No. 4 (1946), pp.556-558, p.558.

<sup>15</sup>Olson, 'The G. I. Bill and Higher Education,' p.597.

<sup>16</sup>Herbert M. Kliebard, *The Struggle for the American Curriculum*, (New York and London: Routledge and Kegan Paul, 1987), p.265.

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the study of science.<sup>17</sup> Science, in its many forms, was not everyone's first choice of major, nor did it have a good PR campaign behind it.

George F. Zook, educator and Chair of Truman's Presidential Commission on Higher Education, announced in the Commission's report *Higher Education for American Democracy* (1947) that 'we now do not have enough trained personnel to staff the research and development laboratories of industry, government and the universities,' noting specifically that this was in part due to the fact that 'the United States did not safeguard its scientific manpower during the recent war as other nations did.'<sup>18</sup> Alarmingly, Zook went on to suggest that this drastic post-war shortage of scientific manpower, and womanpower, could prove to be the foundation for the USA's downfall in the oncoming Cold War. By 1950, George F. Kennan, more famous as the author of the infamous 'X' article, remarked on behalf of the State Department that 'this need for a substantial and rapid increase in the number of people who go to colleges and universities is a national problem requiring national action.'<sup>19</sup> The Soviet Union's successful test of an atomic weapon in 1949, swiftly followed by the outbreak of the Korean War, had further intensified the national need for scientific graduates. A coherent message was being heard all around the Washington Beltway; America needed science, and science needed scientists.

### Student Deferment in Selective Service

Throughout this period, one voice had been unwavering in his belief that if the USA was serious about the defence of the nation, science must be seen as a key contributor. M. H. Trytten was the Director of the Office of Scientific Personnel of the National Research Council and the Chairman of the Advisory Committee on Scientific Personnel. Trytten had attempted to encourage the government to include scientists in its definition of essential personnel during the Second World War, but had encountered roadblocks such as defining a 'professional scientist' as separate from a graduate student was an anathema to the discipline.<sup>20</sup> Student deferment had also been

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<sup>17</sup>For an in-depth discussion of 'life-adjustment education' see Kliebard, *The Struggle for the American Curriculum*.

<sup>18</sup>Zook, *Higher Education for American Democracy*, p.92.

<sup>19</sup>George F. Kennan, 'Full Strength for the Long Pull', (1 December 1950), Washington DC, Federal Security Agency, Office of Education, File 7-C – United States Office of Education, Box 81, Official Files (OF), Truman Papers, Truman Library.

<sup>20</sup>Trytten commented in 1946 that 'Early in the War some attempt was made to defer persons in training in the colleges and universities in especially critical fields, and to defer highly-trained personnel. One serious obstacle leading to the breakdown of such a principle was the lack of a clear-cut differentiation between professionally-trained scientists and the graduate partially trained in science. As a result, procedures depending in part on qualifications were abandoned, and any attempt thereafter to

considered prior to the outbreak of the Second World War, but Roosevelt had opposed it, fearing it would become a way for young men to avoid the draft without good reason.<sup>21</sup> In the immediate aftermath of the war, Trytten continued to push for a greater focus on the development and protection of American scientific expertise. When President Truman called on Congress to pass a peacetime military draft called the Selective Service Act in 1948, Trytten implored lawmakers to include deferrals for scientists – and more radically, science students – from military service. As he later recounted, ‘it takes about twelve years, from beginning high school to emerging from graduate or professional school, to train a scientist, a medical doctor, an economist, and many other types of specialists.’<sup>22</sup> To interrupt or sever this process with conscription was unsustainable if the nation was to remain competitive, and well-defended. Deferment of useful personnel from conscription was of course not a new phenomenon in the USA. The deferment of men in professions such as farming, iron-working or medicine had been commonplace during earlier conflicts. The ability to avoid military service via financial means had also long been a feature of warfare.<sup>23</sup> Yet this was the first time that such an unorthodox demographic was recommended for deferment on such a scale, and with so few qualifying factors.<sup>24</sup>

Six committees were established under the general auspices of Trytten, to make recommendations on the issue of student deferment.<sup>25</sup> What resulted was *Student Deferment in Selective Service: A Vital Factor in National Security* – better known as the Trytten Report – and a radical new take on US defence policy. Trytten advised that indiscriminately drafting youths into the army falsely established the armed forces as the ‘absolute priority in the defence of the nation’ and presupposed that ‘every man can serve his country more effectively in uniform than in any other way.’<sup>26</sup> The rhetoric of the Trytten Report reflected the understanding that scientifically trained youth could, and should, be seen as equally as important to the security of the nation as

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speak in terms of a supply of scientists failed.’ Trytten, ‘Accrediting as a Means of Improving Undergraduate Training in Science’, p.557.

<sup>21</sup>George Q. Flynn, ‘The Draft and College Deferrals During the Korean War’, *The Historian* Vol. 50, No. 3 (1988), pp.369–85, p.370.

<sup>22</sup>M. H. Trytten, ‘Meeting Manpower Needs’, *The Annals of the American Academy of Political and Social Science*, Vol. 301, No. 1 (1955), pp. 17–21, p.18.

<sup>23</sup>Timothy J. Perri, ‘The Evolution of Military Conscription in the United States,’ *The Independent Review*, Vol. 17, No. 3 (2013), pp.429–39, p.31.

<sup>24</sup>George Q. Flynn, *Conscription and Democracy: France, Great Britain and the United States*, (Westport, Connecticut: Greenwood Publishing Group, 2002), p.131.

<sup>25</sup>For more information about the 1948 Selective Service Act, see James M. Gerhardt, *The Draft and Public Policy: Issues in Military Manpower Procurement, 1945–1970*, (Columbus: Ohio State University Press, 1971).

<sup>26</sup>Trytten, ‘Student Deferment in Selective Service,’ p.27.

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enlisted soldiers. Trytten asserted that 'the maximum strength of the nation can be achieved only if the individual serves where he can contribute most. Universality of service in uniform, on the other hand, necessarily results in reduced national strength.'<sup>27</sup> Trytten forcefully asserted that college students with the potential to perform nationally useful work on the home front should be permitted to remain in their classrooms. He recommended that President Truman approve the deferment of college students' military service, thus ensuring that the stockpile of scientifically trained Americans could continue to rise without interruption.<sup>28</sup>

Trytten's report was not the only recommendation made to the federal government on the subject of deferment. The two positions which garnered the most publicity and support were the Trytten Plan, and a recommendation made by Harvard president James Bryant Conant that suggested, in essence, the exact opposite solution.<sup>29</sup> Conant opposed Trytten's plan at its heart, noting that deferment for college students was elitist.<sup>30</sup> He suggested instead that *college* could be deferred for two years while youths first served their country in the military. Initially, the Senate Armed Services

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<sup>27</sup>Ibid., p.18. Trytten's plan was also well supported: Charles A. Thomas, whose work for the Scientific Manpower Advisory Committee had identified a similar path, noted that 'At present there are about 65,000 scientists and engineers of age 25 or less. They represent less than ONE PERCENT of the civilian male population in this draft age group. A large fraction of these young men are already employed in work of vital importance to the nation and more are needed. When the special skills which they possess are more urgently required by the armed forces, a more adequate number of them should be inducted and assigned to the military speciality which will make the best use of their capabilities. But it is most vital that these trained scientists and engineers are not removed from the defense activities for service in non-specialized military assignments.' [emphasis in original]. Charles A. Thomas 'Plans for the Development and Use of Scientific Manpower Recommended by the Scientific Manpower Advisory Committee of the National Security Resources Board', (12 January 1951) p. 10, File 1295 F – Scientific Advisory Committee, Box 1658, OF, Truman Papers, Truman Library.

<sup>28</sup>Gerhardt, *The Draft and Public Policy*, p.154.

<sup>29</sup>Henry A. Barton, Alexander C. Monteith, E. Lowell Kelly, and Charles E. Odegaard, 'Plan for Brainpower', *The Science News-Letter*, Vol. 58, No. 27 (1950), pp.421-26, p.421.

<sup>30</sup>Contemporary commentator Donald D. Stewart also noted that 'Although the logic of [the Trytten Plan] is, as has been noted, difficult to dispute, the reviewer must confess to a vague feeling of uneasiness concerning this whole matter... it does appear to the reviewer that the older idea had certain elements of fairness which are lacking in the new.' Donald D. Stewart, 'Of General and Specialized Interest', *The Journal of Higher Education* Volume, Vol. 24, No. 6, (1953), pp.330-31, (p. 331).

subcommittee planned to initiate a compromise between the two recommendations that drafted young men and sent them to college in uniform. This compromise never materialised, however, and soon after, the Trytten Plan was accepted almost without alteration. The need for trained scientific personnel superseded the need for an egalitarian draft process, and the Trytten plan was the only system that could swiftly deliver what the government perceived the nation to need.<sup>31</sup> After a review by Congressional Committee, the plan to amend the Selective Service Act of 1948 was effected by Executive Order of the President in March 1951, through the Universal Military Training and Selective Service Act.<sup>32</sup>

Through the adoption of the Trytten Plan, what were termed 'II-S deferments' were made available to any enrolled, full-time college, professional or graduate student on the basis of either 'qualifying test scores, or scholastic standing, or both.'<sup>33</sup> In order to qualify for such a deferment, students were expected to meet one or more criteria as defined by the 1951 Act. Deferment could be granted if a student scored above 70 on the newly established Selective Service College Qualification Test (SSCQT). The test was based upon the Armed Forces Qualification Test (AFQT), enabling both a speedy roll-out of the programme and strengthening the credibility of the deferment itself. This connection served to promote the appearance of a similarity between II-S deferments and military service. Students were also deemed eligible for deferment if their SSCQT score - no matter how high or low - placed them in the top half of their class (freshman), the top two thirds (sophomore) or the top three quarters (juniors). These two alternative methods of qualification were intended to ensure that elite, selective institutions with a high number of intelligent students would not be discriminated against by being forced to lose the bottom fifty percent of their student body even if the individual students scored highly. In turn, it also ensured that small, liberal arts schools with a low number of enrolled students would not face losing the majority of their student body as a minimum of fifty percent of the class would be deferred regardless of their score.<sup>34</sup>

The programme faced charges of being inequitable from the start, which its makers vehemently denied. The numbers, however, revealed a deeper truth: passing the SSCQT offered a pathway to safety that only those who could afford college could

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<sup>31</sup>Anon., 'Compromise Draft Plan', *The Science News-Letter*, Vol. 59, No. 2, (1951), p. 20.

<sup>32</sup>Henry Chauncey, 'The Use of the Selective Service College Qualification Test in the Deferment of College Students', *Science*, Vol. 116, No. 3004, (July 25 1952), pp.73-79, p.73.

<sup>33</sup>Trytten, *Student Deferment in Selective Service*, p.65.

<sup>34</sup>Stewart, 'The Dilemma of Deferment,' p.11.

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access.<sup>35</sup> In the spring of 1951, the first test was administered; it was not mandatory for matriculating students, but roughly 75% of those eligible to take it did so. Of those who sat the test, 80% were deferred; 213,000 achieved deferments through their test scores, more still through their class rank.<sup>36</sup> Of the first freshman class that were eligible for deferment in 1951, 68% were deferred. 35% achieved deferment on the grounds of both their test score and class standing, with 18% deferred due to their test score, and 15% more on their class standing.<sup>37</sup> The deferment policy achieved its central purpose and very few college students were removed into active service, a stark difference to the previous conflict just a few years earlier. As such, this resounding success did nothing to calm the criticisms that the policy was elitist, instead showing definitively that it was.

This was inevitable and, of course, was also the reason why such a programme had been avoided in previous conflicts. Trytten acknowledged these problems and even highlighted this potential issue to Truman, noting that,

the college student population does include a disproportionately large representation from the middle- and upper-income groups. Furthermore, members of some racial and ethnic groups and residents of some sections of the country, including rural residents, generally are disadvantaged in access to the opportunity for college education.<sup>38</sup>

Trytten also recommended that the President should make hardship loans available to poorer and marginalised students to promote greater equality of access, and thus a fairer deferments policy. No programme was ever established alongside this policy for student deferment, however, and Trytten sought to absolve the programme of responsibility by invoking the unimpeachable and intangible monolith of 'national security'.<sup>39</sup> He stated that 'we cannot afford, in order just to make a gesture toward

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<sup>35</sup>Most of the college population were not actually eligible for deferment, being too old, too young, already reserves or veterans, held IV-F deferments (not fit for service), and of course a percentage were women. This left around 450,000 students eligible to sit the SSCQT. Trytten, *Student Deferment in Selective Service*, p.68.

<sup>36</sup>Anon., 'Draft Boards Cooperate', *The Science News-Letter* Vol. 60, No. 16 (1951), p. 244.

<sup>37</sup>Educational Testing Service Report SR-52-1, *A Summary Statistics on Selective Service College Qualification Test of May 26, 1951, June 16, 1951, June 30, 1951, July 12, 1951* (Princeton, N. J., Educational Testing Service, 1952) in Gerhardt, *The Draft and Public Policy*, p.186.

<sup>38</sup>Stewart, 'The Dilemma of Deferment,' p.188.

<sup>39</sup>*Ibid.*; Anon., 'Draft Deferred Students Should Have Way Paid', *The Science News-Letter*, Vol. 59, No. 15, (1951), p.235.

surface equality, to sacrifice the future development of our society by an action which in the event of full scale war would be futile – or, worse, dangerously wasteful of much needed skills.<sup>40</sup>

The criteria for deferments heavily favoured wealthy, White men from northern states, reflecting as it must the exclusive nature of higher education in the USA at that time. While the GI Bill and the subsequent post war explosion in higher education had opened more university places than ever and made a college education a possibility for working class Americans, the simultaneous economic growth during the American Century ensured that these places were still overwhelmingly awarded to middle-class teenagers. That the test exacerbated inherent socio-economic inequalities is particularly clear to see when considering the geographical data from the SSCQT results. After the first SSCQT scores were collated, the National Manpower Council found that a far greater proportion of freshmen from colleges based in richer, Whiter northern states were deferred due to their test scores. Colleges who drew their populations from historically poorer and more racially diverse areas in the southern states saw fewer registered students deferred on the basis of 'merit.'<sup>41</sup>

The discrimination faced by White working-class boys paled in comparison to that experienced by Black communities. While, once again, Black teenagers were attending college in higher numbers than ever before in the years after the Second World War, discrimination in access and experience remained insidious. Both the comparable sizes of historically Black colleges and universities, and the presence of quota systems at integrated colleges ensured that there were proportionately far fewer college places available for Black teenagers. This coupled with the impacts of segregation in education, leaving Black institutions far less well-funded than many of their White counterparts and less able to prepare their students for the SSCQT. This status quo ensured that young men of colour faced a double barrier in accessing draft deferment even if they found themselves eligible.<sup>42</sup>

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<sup>40</sup>Trytten, *Student Deferment in Selective Service*, p.43.

<sup>41</sup>National Manpower Council, *Student Deferment and Manpower Policy* (New York, Columbia University Press, 1951), p. 62–63, quoted in Joel Spring, *The Sorting Machine Revisited: National Education Policy since 1945* (New York and London: Longman, 1989), p.55.

<sup>42</sup>The Selective Service Board had a policy not to keep statistics by race, thus there is no data available on the number of Black deferees. As Paul T. Murray has noted, however, 'The burden of the draft has fallen disproportionately on blacks, as it has on lower-class youth in general.' Paul T. Murray, 'Blacks and the Draft: A History of Institutional Racism', *Journal of Black Studies*, Vol. 2, No. 1, (1971), pp.57-76, p.68-71.

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Not only did these Americans find themselves left behind as the nation shifted its values and focus to the creation of a college-educated populace, they were also now *more* likely than before to be drafted into military service due to the shrinking pool of available servicemen. The acceleration of the desegregation of the military at the start of the Korean War further contributed to an inequitable disparity in service for Black soldiers, leading eventually to an overrepresentation in the enlisted ranks.<sup>43</sup> As James M. Gerhardt has explained, while equity, especially interracial equity and considerations across socioeconomic classes, were considered prior to the passage of the 1951 Act, national security concerns and manpower needs superseded any serious engagement with this concept.<sup>44</sup> The programme of student deferment created federally mandated protection for wealthy White youths at the expense of Black and poor youths and draft deferments magnified the disparities already present within the system. Dissent soon dissipated as the programme became entrenched.

### Science as Saviour

The postwar establishment of science as a vital pursuit, perceived to be nationally useful and thus federally protected, had an impact on US society broader than the growing stockpile of scientific manpower. The postwar/Cold War era engendered a nationwide shift in opinion on the place and purpose of higher education; no longer was attendance at university reserved for the growth and improvement of wealthy not-quite-adults, but rather a tool for meeting the needs of the nation. This, in turn, began to alter the relative reputations of the academic disciplines in the years after the war. The political endorsements endowed upon the sciences throughout the Truman administrations via the wider boons of funding, access and employment repeatedly signalled that the study of science was worthier, manlier and more lucrative than the study of more traditional university pursuits such as literature, history or classics. Crucially, with the addition of II-S deferments, opting to study for a degree in science and its related fields was also, now, the *safer* choice.<sup>45</sup> For some students, the choice to major in a scientific field rather than the humanities or social sciences was now, quite literally, a life or death decision.

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<sup>43</sup>Ibid., p.68.

<sup>44</sup>Gerhardt, p.360. For more information on the complicated relationship between civil rights with the early Cold War period, see Mary L. Dudziak, *Cold War Civil Rights: Race and the Image of American Democracy*, (Princeton: Princeton University Press, 2000).

<sup>45</sup>A preliminary evaluation, carried out by the Committee on Specialized Personnel of the Office of Defense Mobilization noted that 'in almost all the fields covered, it is definitely known that we do not have enough for the defense and progress of the nation' and thus 'the 26,000 [scientists] who will graduate in 1952 are already being offered relatively fabulous salaries for their services ... the figures in the preliminary survey show that, once they are out of college, they will be in great demand.' Anon., 'U. S. Short 130,000 Experts', *The Science News-Letter*, Vol. 60, No. 21, (1951), p.326.

This message was not overt. Nowhere in the Trytten Report does it state that II-S deferments should be made available exclusively to students of science over other degrees; students majoring in any and all disciplines were eligible to sit the SSCQT. The Selective Service Committee stated that it had chosen to defer all qualifying college students, regardless of major, specifically to ensure that the programme would not promote one discipline over another. To prioritize some subjects over others, the Report noted, would 'undoubtedly increase the flow of youth into some of these various fields of training and would decrease the flow into others.'<sup>46</sup> If deferment was subject specific, then the federal government's interference into affairs of higher education could skew the traditionally varied make-up of the student body. This in turn this could cause a major shift in the output of universities and have long lasting consequences for the nation as a whole. Trytten noted that even as scientists were the main safeguard of the national defence, many types of expertise and personnel were necessary to the smooth operation of any endeavour.<sup>47</sup> When read in isolation, the Report repeatedly reinforces the view that a pipeline for science alone could not ensure the safety and prosperity of postwar America.

Despite these fierce pronouncements, however, at all stages from the test to graduation, the scientific fields were favoured by the programme of student deferment. This is unsurprising, as the original motivation behind student deferment was, of course, to protect and grow the nation's stock of scientific manpower.<sup>48</sup> Amy J. Rutenberg characterises this effort as 'manpower channelling' and notes that, more broadly, 'deferments were used to support a permanently militarised peace instead of a temporary war effort,' continuing that 'within this context, meeting long-range defence goals and protecting national values were of greater consequence than during earlier wars.'<sup>49</sup> Rutenberg's wider message is underpinned by this study of the SSCQT: students from other disciplines were welcome to take the test, but science students were the prized target. The test was designed and deployed with the intention of safeguarding the future of American science, and it was science students who benefitted most. Indeed, in defending the programme against its critics, it is science students whom Trytten highlighted, lauded and heroised, betraying the true purpose of the programme:

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<sup>46</sup>Trytten, *Student Deferment in Selective Service*, p.33.

<sup>47</sup>*Ibid*, p.33.

<sup>48</sup>Hershey himself later extended the definitions of selective service to move beyond the confines of military personnel, defining nationally useful roles even for private citizens. By the end of the decade, as Rutenberg notes, 'the Selective Service had entered the role of social engineering.' Amy J. Rutenberg, 'Drafting for Domesticity: American Deferment Policy during the Cold War, 1948–1965', *Cold War History*, Vol. 13, No. 1, (2013), pp.1-20, p.15.

<sup>49</sup>Rutenberg, 'Drafting for Domesticity,' p.2.

## STUDENT DRAFT DEFERMENT AND US HIGHER EDUCATION

To defeat Russia, if that becomes necessary in a general war...we must place superior weapons in the hands of our soldiers. We cannot do this unless we have the scientists, technicians and engineers to think them up, design them and then get them produced. We will not have those scientists, technicians and engineers unless we send to college those most qualified to go.<sup>50</sup>

The Trytten Report acknowledged that,

it was unanimous and considered the opinion of these committees that the nation's immediate and long-range security urgently required an uninterrupted flow of sufficient numbers of scientific and specialized personnel into advanced training for subsequent utilization in either civilian or military occupations.<sup>51</sup>

Humanities and social science students were not excluded, but nor were they the focus or the priority. Their programmes now existed in the shadow of the valorised sciences.

Commissioner of Education Earl J. McGrath recognised that this shift was underway by 1953, noting,

... a growing concern among the nation's educators and statesmen over the possibility that government action in one narrowly defined area may lead to an undue emphasis on the natural sciences and result in an imbalance in education and in the national culture.<sup>52</sup>

Evidence of this imbalance is tangible. The first and strongest indication that the policy impacted disciplinary study on campus both directly and indirectly can be seen through the administration of the SSCQT. The main determining factor utilized by the draft boards when administering deferment was students' SSCQT score, and it is clear from the available data that the SSCQT favoured scientifically orientated students. The test was split into two parts, one verbal and one quantitative, with the expectation that this would allow students from both ends of the spectrum to shine. As Trytten later reported, however, 'in engineering, physical sciences and mathematics, the percentage of examinees passing the test was well above average throughout.'<sup>53</sup> Students from the

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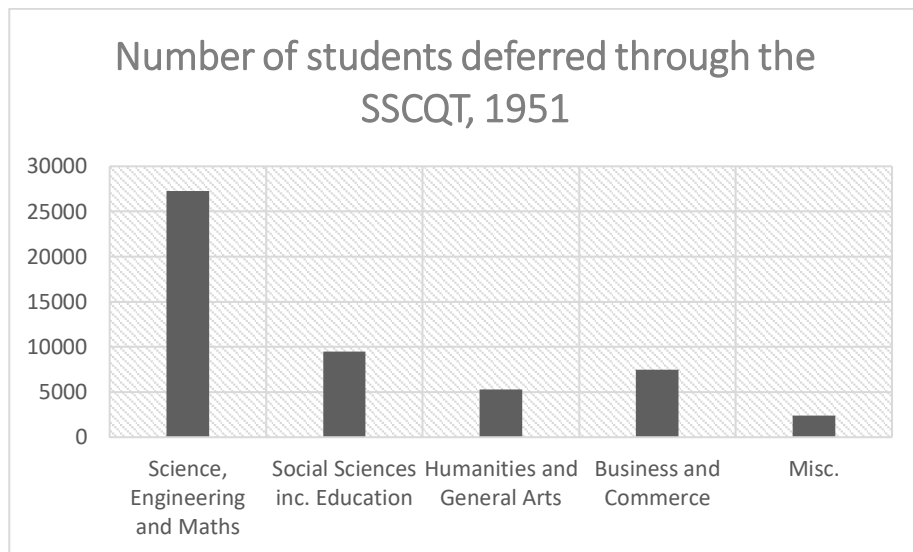
<sup>50</sup>Trytten quoted in Anon., 'Elite' Charges Are Wrong', *The Science News-Letter* Vol. 59, No. 23, (1951), pp.366-67, p.366.

<sup>51</sup>Trytten, *Student Deferment in Selective Service*, p.61.

<sup>52</sup>Earl J. McGrath quoted in Charles R. Howell, 'A National Arts Program', *Educational Theatre Journal*, Vol. 5, No. 3, (1953), pp.259-65, p.265.

<sup>53</sup> Trytten, *Student Deferment in Selective Service*, p. 73.

sciences dutifully outperformed humanists on the quantitative test, yet the scientists' results virtually equalled those of the humanists on the verbal portion of the test.<sup>54</sup> In the first round of testing, 68% of engineering freshman passed compared to 48% of 'general arts' students. This was even lower among Education students, who achieved only a 27% pass rate.<sup>55</sup>



**Figure 1: Student deferment data by subject area (1951).<sup>56</sup>**

Figure 1 above illustrates the disparity between deferments granted to students, with far more science students able to achieve the required mark than students from all other disciplines put together. As a result of the SSCQT, a greater number of students majoring in science were awarded deferments, making science appear to be a more attractive offer to future freshmen.<sup>57</sup>

<sup>54</sup>Trytten identified that 'Among students taking the SSCQT, those in physical sciences, mathematics and engineering virtually equalled the humanities and social science students on the verbal material, yet excelled them considerably on the quantitative material. Hence the science students would excel the others on any combination of both types of material,' *Ibid.*, p.74.

<sup>55</sup>Chauncey, 'The Use of the Selective Service College Qualification Test,' p.75.

<sup>56</sup>These statistics are based on a 10% sample of college freshmen who sat the SSCQT but the percentages remained 'remarkably similar' across all years of study. *Ibid.*

<sup>57</sup>Stewart, 'The Dilemma of Deferment,' p.187.

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Graduate school deferrals presented a higher bar than undergraduate. Students could access deferrals for graduate school only if they had scored highly on the SSCQT and graduated in the top 50% of their undergraduate class; no protection for smaller schools was built in at the graduate level. Graduate students were also expected to 'maintain satisfactory progress' to ensure their deferments remained active.<sup>58</sup> A further barrier to access beyond the test, however, was the ability to pay for graduate school, and far more funding for graduate work in science fields was available thanks to the postwar relationship between science and security. As historian David Kaiser recognised, in the postwar period 'the growth in graduate student enrolments took on an explicitly political formulation.' He asserts that 'for more than two decades after World War II, most physicists, government officials, and nationally syndicated journalists equated the nation's security with the production of young physicists.'<sup>59</sup>

The same is true of funding bodies. Bush had recommended the establishment of a National Science Foundation in 1945 – an organisation through which federal money could be allocated to scientific research as it had been during the Second World War – and the NSF was created quickly afterwards.<sup>60</sup> By the end of the 1950s 70% of university research funding came through the government. As Jonathan Engel has uncovered, the majority of this funding was dedicated to 'nationally useful' research.<sup>61</sup> With government research funding doubling almost every five years until 1960, this meant more spaces for graduate students and more scholarships to fund their studies.<sup>62</sup> Continuing a II-S deferment was more likely for students willing and able to study science due to this greater availability of both places and funding, making it a more attractive pathway than other degrees. Once again, student deferments for selective service allowed and encouraged an imbalance between the academic fields in the name of national security.

Finally, the deferment prioritised science students even after they left university. The policy of student deferment allowed students to defer military service only for the duration of their studies. The upper age limit for service in the armed forces was even raised from 26 to 35 to prevent graduates from aging out too quickly. Upon completion of a degree, however, students could remain deferred if 'it is subsequently decided by his local board that exceptional qualifications make him more valuable to

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<sup>58</sup>Gerhardt, *The Draft and Public Policy*, p.158.

<sup>59</sup>David Kaiser, 'Cold War Requisitions, Scientific Manpower, and the Production of American Physicists after World War II', *Historical Studies in the Physical and Biological Sciences*, Vol. 33, No. 1, (2002), pp.131-59, p.133.

<sup>60</sup>For more information on the importance of the National Science Foundation to the postwar university, see Engel, *Transforming American Science*.

<sup>61</sup>Engel, *Transforming American Science*, p.95.

<sup>62</sup>*Ibid.* p.2.

the nation through service in some other role.<sup>63</sup> Yet what was considered 'valuable' was more stringently defined in secondary deferments. Contemporary commentator Donald D. Stewart emphasised that humanities students were especially disadvantaged as 'the positions of most are not so likely to be considered "essential" by the local board as those available, for example, to graduates in engineering or the natural sciences,' regardless of Trytten's earlier protestations to the alternative.<sup>64</sup> Simply put, students who studied a 'nationally useful' undergraduate degree were more likely to be defined as a 'nationally useful' graduate. In the face of a perpetual war, the sciences were the safer choice of major as students were significantly more likely to be able to pyramid their deferments after graduation.

The valorisation ascribed to the study of the sciences during this period – with consideration of the field always circling ideas of 'service', 'need', and heroics – also served in itself to channel young people into the study of the sciences. Trytten notes within its pages of *Student Deferment* that,

any policy, no matter what it is, will work some change in the pattern of higher education and in the pattern of training that is formed by the selections of fields of study by the youth of today, who seek to adjust themselves to a new and different world... it will be of great significance in the future, not only to the colleges and universities, but to the civilization that is shaped by their graduates.<sup>65</sup>

The impression is best summed up by a question that was raised by a student in the *Phi Beta Kappan* in 1955: 'how can I feel a study of literature or philosophy or art is worth my time and energy when I realize that the society to which I belong doesn't value these things?'<sup>66</sup> The deferment policy guided students into choosing the study of science over the humanities and social sciences, decisions that were not, necessarily, either in their best interests or reflective of their own desires and interests. Yet this was the point; as Henry Chauncey, the President of the Educational Testing Service, identified in 1952: 'Students selected for deferment under the college qualification program are permitted to continue their training, not for their own benefit, and not for the benefit of the institutions they attend, but for the benefit of the country as a whole.'<sup>67</sup> The nation needed American youths to study science, and the deferment programme was designed explicitly to ensure that they did.

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<sup>63</sup>Trytten, *Student Deferment in Selective Service*, p.42.

<sup>64</sup>Stewart, 'The Dilemma of Deferment,' p.190.

<sup>65</sup>Trytten, *Student Deferment in Selective Service*, p.24.

<sup>66</sup>Cornelius B. Weber, 'Humanities in the Junior College', *The Phi Delta Kappan*, Vol. 36, No. 8, (1955), pp.313-314, p.313.

<sup>67</sup>Chauncey, 'The Use of the Selective Service College Qualification Test,' p.79.

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The decisions these youths made would shape the rest of their professional lives. Historian Joel Spring has written about his own educational choices in *The Sorting Machine Revisited*, reflecting that his decision to suppress a love of history in favour of the pursuit of a mathematics degree in the 1950s was motivated specifically by the federal government's shaping of the American education system. Spring was influenced firstly by the pressure he felt to contribute to the national interest, noting that 'Cold War policies and my personal interests clashed.' When expressing a passion for history, he was assured that 'it would be in my interest and the national interest to instead take the new honors college courses in mathematics and science,' also giving partial credit for his decision to the disparity in scholarship money.<sup>68</sup> Spring recognised that his 'life choices were being defined by government policies.'<sup>69</sup> When faced with a future that had been reduced to two options upon graduation – higher education or military service – his desire to avoid the latter led him to 'choose' a major in what he saw as a nationally useful discipline. Students understood that with science came safety and money, and that station brought valour from the shelter of the lab.

### Conclusion

When the Sputnik satellite was launched in 1957, just six short years after student deferments began, scientists were outraged to learn that the public's reaction was to assume that American science had fallen behind the Soviet Union. 'As for the supposed shortage,' historian Barbara Barksdale Clowse notes, 'they announced that the country already had enough students.'<sup>70</sup> The lessons of the Second World War – at least as pertained to university science – had been learned; the policy of student deferment in selective service ensured that young men were continually channelled into nationally useful study for the benefit of the nation rather than being indiscriminately lost on the battlefield, or to the pursuit of less useful knowledge. The following year the National Defense Education Act was passed, and the bulk of the money allocated for education was funnelled into science.<sup>71</sup> By placing science on a pedestal, and underpinning this valorisation with practical benefits such as money, access and a long-term alternative to military service, the US's scientific future was safeguarded and the national stockpile of scientific manpower grew exponentially. Enrolments were up, productivity was healthy and the USA was increasingly competitive on a global stage.

Military service during the Korean War was not perceived positively by American youths; a 1953 study demonstrated 'rather definitively that the college students

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<sup>68</sup>Joel Spring, *The Sorting Machine Revisited: National Education Policy since 1945*, (New York and London: Longman, 1989), pp.viii-ix.

<sup>69</sup>*Ibid.*, p. ix.

<sup>70</sup>Barbara Barksdale Clowse, *Brainpower for the Cold War: The Sputnik Crisis and the National Defense Education Act of 1958*, (Connecticut: Greenwood Press, 1981), p.85.

<sup>71</sup>Wolfe, *Freedom's Laboratory*, p.138.

studied express generally negative attitudes toward being called into the military forces.<sup>72</sup> Reflecting the broader national ambivalence to the Korean War, young men did not need much encouragement to avoid the horrors of the battlefield. During the First World War single men left better paid work to take up farming as it offered a stronger chance of acceptable occupational deferment.<sup>73</sup> Rutenberg identifies men who were willing even to have a baby just to access a III-A 'dependents' deferment.<sup>74</sup> If avoiding the draft was the goal, then the programme of student deferment for selective service made it clear that majoring in a scientific discipline was more likely to enable students to receive a II-S deferment, secure a graduate position that perpetuated their deferment status and later be able to pyramid their student deferments into occupational ones. More than this, these young men were likely to be lauded for doing so – so often an elusive element of deferment from military service. It is not surprising that young men were willing to change their major to avoid being drafted to fight in an unpopular, hot war, especially when their government was telling them to do so.

This trend was not without consequences, however, and the policy engendered an irrevocable impact upon American education. Student deferment for selective service served to unbalance the comparative perceived value of the disciplines, allowing for the engenderment of a long-term shift in the status of science in the USA. The programme created a dual draw of status and safety in science that could not be matched by the other disciplines, no matter how vehemently its creators insisted upon the programme's neutrality. More insidious were the inequalities baked into the programme from the outset. The privileging of certain communities both reflected and worsened the racial, geographical and economic disparities inherent in the American higher education system. The decision to defer college students from the draft underpinned an historic shift in the relative place and status of science degrees within the academy that would outlast the Cold War itself.

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<sup>72</sup>Edward A. Suchman, Robin M. Williams, and Rose K. Goldsen, 'Student Reaction to Impending Military Service', *American Sociological Review*, Vol. 18, No. 3, (1953), pp.293-304, p.302.

<sup>73</sup>George Q. Flynn, *The Draft, 1940–1973*, (Lawrence: University Press of Kansas, 1993), p.68.

<sup>74</sup>Rutenberg, 'Drafting for Domesticity,' p.13.