The Imagination of Genetics and Lysenkoism in Cold War Media: An Analysis of a Conflict Between Communist and Free Science

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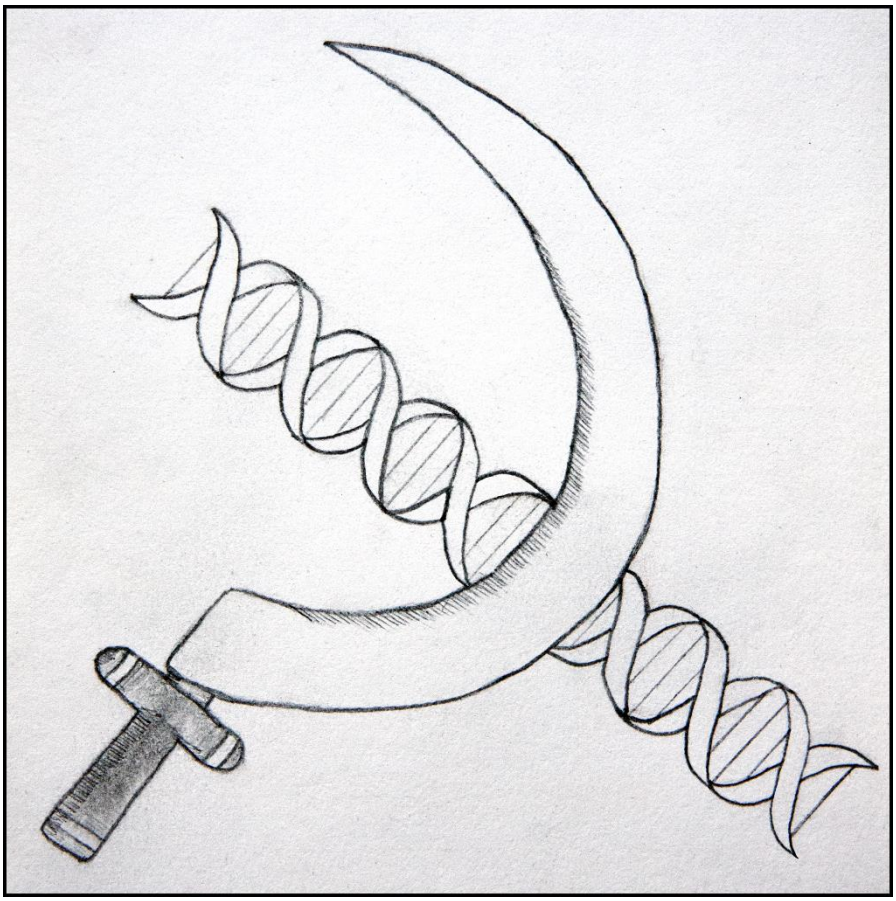

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Chapter 1. Introduction

Twentieth-century science produced results that significantly influenced the defining moments of the modern age. As the fruits of research, the atomic bomb's mushroom cloud and the moon landing have become icons that have indelibly affected the general understanding of science. Iconography, however, can be manipulated to fit a narrative: while the initial reaction of the American population after the destruction of Hiroshima and Nagasaki was a genuine fear for the newfound annihilating power itself, the terror would later be politicized.[1] Scientists themselves, some of whom had contributed to the Manhattan Project, had an important role in this politicization, as journalists from publications such as *The New York Times Magazine* and *LIFE Magazine* worked with and portrayed atomic scientists to convey the immediacy of the atomic threat.[2] Thus, the scientific community greatly contributed to the images and imaginations of the bomb at the beginning of the Atomic Age.

Yet the bomb was not the only topic where scientists saw their work overlap with politics, as geneticists found themselves to be a part of an ideological struggle between the United States and the Soviet Union too. Here, the relation between the Stalinist state and the scientific community was the focal point: the state had decreed a party line on science which contradicted genetics as practiced in the West, and scientists who did not align themselves with the doctrine faced the possibility of persecution. Soviet agronomist T.D. Lysenko, who spearheaded the doctrine, had been a major presence in the Soviet scientific landscape since the 1920s, but it was not until the 1948 meeting of the Lenin All-Union Academy of Agricultural Sciences

[1] Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill and London: The University of North Carolina Press, 1994), 65–66.

[2] Boyer, 67–68.

(VASKhNIL) that Lysenko achieved his ideological triumph. Here, Lysenko described a rift in biology: he contrasted a bourgeois, idealistic, and reactionary strain with a truly revolutionary science.[3] His speech not only distinguished between two groups within the Soviet scientific community but on the international scale as well. The growing tension between the West and the Soviet Union played an essential role in his rhetoric as he denounced the detrimental influence of the West on Soviet science.[4] While Lysenko named his scientific theory "Michurinist biology" after the Soviet plant breeder Ivan Michurin, the term "Lysenkoism" is also used in academic literature which refers to the scientific positions, the opposition towards other scientific perspectives, and Lysenko's relation to Soviet politics.[5]

This conflict in Soviet science, dubbed the Lysenko Affair, received international attention: the Western world regarded the condition of Soviet science as emblematic of Stalinist ideology.[6] At the dawn of the Cold War, coverage of Lysenkoism aligned itself with the growing antagonism between the United States and the Soviet Union similarly to how Lysenko

[3] Zhores A. Medvedev, *The Rise and Fall of T.D. Lysenko* (New York and London: Columbia University Press, 1969), 118.

[4] Nikolai Krementsov, *Stalinist Science* (Princeton, New Jersey: Princeton University Press, 1997), 170.

[5] William deJong-Lambert and Nikolai Krementsov, "'Lysenkoism' Redux: Introduction," in *The Lysenko Affair as a Global Phenomenon, Volume 1: Genetics and Agriculture in the Soviet Union and Beyond* (Cham, Switzerland: Springer International Publishing, 2017), 1–4; "Lysenkoism" however is applied as a polemic to immediately discredit the doctrine and its adherents as "unscientific." As such, Lysenkoism is defined by the Cold War antagonism between the USSR and the US thereby being reduced to the ideological antithesis of proper science. This, in turn, hinders the evaluation of Lysenkoism as a genuine scientific phenomenon, argues John Marks, thus parallels with other histories become difficult to draw. To avoid the possibility of conflating the academic and the polemic use of "Lysenkoism" as much as possible, "Michurinist biology" will instead be used wherever applicable. John Marks, "Lessons from Lysenko," in *The Lysenko Controversy as a Global Phenomenon, Volume 2: Genetics and Agriculture in the Soviet Union and Beyond* (New York: Springer, 2017), 185–202.

[6] deJong-Lambert and Krementsov, 13–14.

had framed the scientific conflict at the 1948 VASKhNIL meeting.[7] American geneticists in the 1950s supported their Soviet colleagues in opposition of Lysenkoism in various ways, but Lysenko was inseparably connected to the Cold War struggle.[8] As they lent their voices to media coverage on the state of Soviet science, they contributed the esteem of their field and profession to the cultural campaign against Communism.

Narratives that claim proximity to scientific truths can appropriate the perceived objectivity of scientists and their work. For example, the popularization of laissez-faire economic theory benefited from Milton Friedman's "aura of scientific impartiality," argues Naomi Klein, in the effort to counter Keynesianism: without Friedman those views might have been disregarded as mere corporate interests.[9] While the public perception of scientists in general, or geneticists in particular, is not solely determined by themselves, the journalists, or the science-fiction writers that present them to the world, all contribute to it. Indeed, the public images of a science and its practitioners are determined by a diverse range of interest groups with complex relations binding them together.[10]

This thesis aims to provide a critical reading of the representation of genetics during the Cold War and particularly during the Lysenko Affair. While the popular conception of genetics has received some academic attention, others have analyzed the representation of the field in

[7] William deJong-Lambert and Nikolai Krementsov, "On Labels and Issues: The Lysenko Controversy and the Cold War," *Journal of the History of Biology* 45, no. 3 (2012): 376–377.

[8] Audra Wolfe, "Western Science vs. Marxist Science" in *Freedom's Laboratory: The Cold War Struggle for the Soul of Science* (Baltimore: Johns Hopkins University Press, 2018).

[9] Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Metropolitan Books, 2008): 56.

[10] José van Dijck, *Imagenation: Popular Images of Genetics* (Basingstoke and London: MacMillan Press, 1998): 16–17.

more recent times.[11] Because such scholarship will provide the baseline for the methodology, I must remain mindful of possible anachronisms that might stem from this discrepancy. Furthermore, while the historiography of Lysenkoism does include the discussion of the American response to the state of Soviet science, it lacks the sociological perspective on the relation between science and the general public. As such, this thesis will combine multiple academic perspectives for its literature review: the history of Lysenkoism in the Soviet Union, the Cold War and its sociopolitical and cultural implications for the US scientific community, and the presentation of the scientist in popular media. Situated between these academic traditions, this thesis will aim to answer the following question: *What was the significance of genetics for Cold War ideology during the five-year period following Lysenko's 1948 victory over Soviet genetics?*

To answer this question, I will rely on the archives of two major US newspapers—*The New York Times* and *The Washington Post*—in the *ProQuest* historical newspapers database accessed through the Leiden university library and *LIFE Magazine* digitally archived by and freely accessible on *Google Books*. The sources for this research will span a period of five years: from the 1948 August VASKhNIL meeting to 1953. While the coverage of Lysenkoism extended well beyond this time frame, I chose a five-year period so that the total number of articles was limited to what I could practically analyze. Furthermore, articles must discuss genetics and geneticists either in the context of Lysenkoism or in a general context to be relevant. While the latter category seemingly exceeds the scope of this thesis, such articles did contribute to the image building of genetics as well. Furthermore, they allow for a comparison between the Lysenkoist and the general presentation of geneticists. To belong to the second

[11] See for example Dorothy Nelkin and M. Susan Lindee, *The DNA Mystique: The Gene as a Cultural Icon* (Ann Arbor: The University of Michigan Press, 2004); Van Dijck, *Imagenation*; and Peter Conrad, "Genetics and Behavior in the News: Dilemmas of a Rising Paradigm," in *The Double-Edged Helix: Social Implications of Genetics in a Diverse Society* (Baltimore and London: Johns Hopkins University Press, 2002), 58–79.

category, articles must focus on genetics; different topics that only briefly mention genetics would provide insight into how a science (and its images) can be appropriated by a narrative, but they would thereby not be suitable for the analysis of the general presentation of genetics.

Because this research is limited to newspaper articles, it will not be able to capture the complete imagination of genetics as a cultural phenomenon. As such, this thesis might overstate certain aspects of image building present in the analyzed source material while ignoring the influence of other media. The secondary source material used to review the history of Lysenkoism bears a similar defect: while most of the major Soviet scholarship on Lysenkoism has been translated, sources that are not available in English will not be consulted.

As the journalists who contribute to the theatre of genetics are not monolithic, their articles must not be treated as though they stem from a single overarching narrative. Still, coverage of genetics is not wholly independent, and individual articles can fit into so-called "media frameworks" which are not manifest in the texts themselves and require context to be distinguished.[12] The framing for modern genetics, writes José van Dijck, relies on the use of characters, emplotment, and metaphors.[13] Therefore to understand genetics' imagination as constructed in newspapers requires the close reading of such literary devices in the primary source material, which will be discussed in the literature review. Because the "scripting" of genetic narratives often casts its actors as either protagonists or antagonists, I suspect that this typology will also be evident in the characterization of the Lysenko Affair.[14]

This thesis is constructed as follows: The first chapter will discuss the historical context of Lysenkoism and provide an overview of the history of science shared between the United

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[12] Peter Conrad, "Constructing the 'Gay Gene' in the News: Optimism and Skepticism in the US and British Press," *Health* 5, no. 3 (2001): 375–376.

[13] Van Dijck, 17.

[14] Van Dijck, 20–21.

States and the Soviet Union. The second chapter will consist of the literature review combining scholarship from history of science, Cold War studies, and media analysis. The third chapter will introduce the primary source material. Here, I will discuss the articles on genetics in general which will be followed by the analysis of the articles on Lysenkoism. The final chapter will summarize the findings of this research and draw conclusions.

Chapter 2. Historical Context

In this chapter, I will provide an overview of Lysenkoism's history which discusses Lysenko's rise to prominence and the consequences for Soviet science. Furthermore, I will argue that this history is intertwined with the scientific relations between the Soviet Union and the United States, which were prone to many changes from the 1930s onwards. To accurately describe Lysenkoism as an international phenomenon, I will discuss the consequences for scientific exchange between the two nations contextualized by a brief discussion on the state of US science and its community. These multiple perspectives will provide the cultural and historical background to the American imagination regarding the Soviet history central to this thesis.

While the West perceived and portrayed Lysenkoism as a purely malign scientific doctrine during the Cold War, Lysenko had enjoyed positive American media attention in the 1930s.[15] In fact, the theories of Trofim D. Lysenko had initially found fertile soil in the scientific climate of the 1920s and 1930s—in the Soviet Union as well as internationally—for plant development as a field of study was still largely uncharted territory.[16] True to his given name, which stems from the ancient Greek word for food or nourishment, Lysenko first entered the limelight due to his proposed solution to improve the harvest of winter crops in 1927. The growth of crops, he argued, requires a certain amount of heat to properly reach the next stage of physiological development, thus controlling the temperature to which seedlings were

[15] William DeJong-Lambert and Nikolai Krementsov, "On Labels and Issues: The Lysenko Controversy and the Cold War." *Journal of the History of Biology* 45, no. 3 (2012): 376–377.

[16] Nils Roll-Hansen, "Wishful Science: The Persistence of T.D. Lysenko's Agrobiology in the Politics of Science," *Osiris* 23, no. 1 (2008), 173.

exposed would result in control over the progression of growth stages.[17] Lysenko applied this principle to obtain a harvest from winter wheat sown in spring: the seeds would be frozen by soaking and consequently burying them in the snow to then be planted in the next season. While the theoretical basis for his claims had not been established with scientific rigor, vernalization, the name for Lysenko's cold treatment of seedlings, was broadcast in *Pravda* and even adopted by agricultural officials.[18] In the decades following his first appearance in Pravda, Lysenko gained political momentum, even though his agricultural technique would not yield what he had promised. Yet despite the disappointing results, Lysenko proved to be able to further his political-scientific career, which had a lasting effect on Soviet science up to the 1960s: he suggested new practical techniques before his previous ones had been discarded thereby continuously enticing agricultural officials with new promises. He further reinforced the support of such officials by garnering praise of scientific critics, and he managed to avoid criticism by not limiting himself to the "sphere of agricultural techniques" instead mobilizing the support for his practices as opposition to scientific fields such as genetics.[19]

The interaction between the scientific community and the state is of particular importance to Lysenko's success. Historian Nikolai Krementsov argues that the workings of the party-state (as a centralized, hierarchical bureaucratic structure) were implemented in Soviet science. At the higher echelons of this hierarchy, scientific questions were not resolved with scientific methodology. Because of the authoritarian nature inherent in this structure, people were concerned with fulfilling the demands from above. Competition between various scientific

[17] Zhores A. Medvedev, *The Rise and Fall of T.D. Lysenko* (New York and London: Columbia University Press, 1969), 12–15.

[18] David Joravsky, *The Lysenko Affair* (Chicago & London: The University of Chicago Press, 1986), 59–61; Roll-Hansen, 172–173; Medvedev, 12–15.

[19] Joravsky, 82–83.

groups for Party patronage was an important feature of the symbiosis, and because the Party was the only possible patron, it was beneficial for a given interest group to align itself with Party ideology.[20]

Indeed, Lysenko, as one in competition for patronage, embodied several characteristics that aligned him with Party thought: he was born in a peasant family, he had received no formal scientific training, and he refused to conform his research to academic standards emphasizing practice over theory instead. The latter two underline the negative connotations associated with formal academic institutions, which received criticism for their bourgeois origins and the supposed tendency of academics to occupy themselves with theory rather than the practical problems facing the Soviet Union.[21]

1948 is often regarded as the year when Lysenko was the most influential in Soviet politics; particularly the meeting of the Lenin All-Union Academy of Agricultural Sciences (VASKhNIL) in August, where Lysenko addressed his constituents as their president, marked the high point of his standing with the Communist Party.[22] Here, he described a rift in biology, writes Medvedev. He contrasted a bourgeois, idealistic, and reactionary strain with true

[20] Nikolai Krementsov, *Stalinist Science* (Princeton, New Jersey: Princeton University Press, 1997), 80–83.

[21] Lysenko's success can not only be attributed to the ideological approval of the Communist Party, Krementsov argues, the consequences of the Great Terror, the period of purges from 1936 to 1938, must be accounted for too: the political support system upholding the status quo of the scientific community was strongly damaged, which consequently resulted in the weakening of genetics as well. In effect, Lysenko and those who favoured his scientific interpretations were able to fill a power vacuum. While the purges did not have an explicit directive regarding Soviet biology, they disproportionately targeted those who supported conventional genetics rather than Lysenkoism. Joravsky contends that these numbers do not attest to an ideological significance. Krementsov, 58–64; Joravsky, 116–117.

[22] Krementsov, for example, maintains that the VASKhNIL session is the most characterizing event in the latter years of Stalin's reign. Krementsov, 158; Joravsky too marks 1948 and, more specifically, Lysenko's VASKhNIL address as "the climactic triumph of agrobiology [i.e., Lysenko's Michurinist biology]" and the beginning of the three "worst years" for Soviet biology. 137–142.

science, which was of course embodied by Lysenko's own school of thought.[23] Furthermore, Lysenko's rhetoric was a continuation of the developing tension between the Soviet Union and the west: he championed a "truly Soviet" science in opposition to the supposedly attempted infiltration of the west via genetics. His remarks towards genetics received the support of Stalin himself, and Lysenkoism was adopted as the official party line towards biology.[24]

Following the August VASKhNIL meeting, Lysenkoism was institutionally adopted throughout the Soviet Union. Krementsov argues that the Party's embrace of Lysenko signalled a new relation between science in general—indeed not limited to the life sciences—and the state: Party officials could define the goals of research as well as judge the validity of its results.[25] However, while Lysenkoism and state control over the scientific community presented themselves and were perceived as an all-encompassing paradigm and political force regarding scientific practice, this view exaggerates its actual power over scientists, who circumvented and rejected the authority of the doctrine in many ways while upholding the appearance of complying to *partiinost'*, or the adherence to Party ideology: Scientists who were marked to be dismissed for ideological deviancy were often not dismissed at all, transferred to other institutions, or even promoted to new positions, scientific publications feigned conformity by adopting the language of correct propaganda whilst publishing non-Lysenkoist writings, and research directions which had to be reconsidered to be aligned with Lysenkoist doctrine conformed mostly rhetorically. As such, Lysenkoism affected ideological

[23] Medvedev, 118.

[24] Krementsov, 170–174; Roll-Hansen, 182–183.

[25] Krementsov quotes Stalin to accentuate the developing encroachment of scientific autonomy: "The Central Committee can have its own position on scientific questions," which means that the Central Committee need not consult scientific expertise on scientific matters. Krementsov, 179–183.

performance more than actually restructuring academic work that was seen as contradictory to Lysenkoism.[26]

The official status of Lysenkoism with the Party was maintained up until the early 1960s, yet it was not left unchallenged during its time. Indeed, the grip of Lysenkoism over science weakened in 1950 when Stalin published an article condemning the "monopolistic ambitions of certain schools" allowing for a degree of criticism, and upon Stalin's death in 1953 opposition grew more fierce.[27] Still, Lysenkoism was officially maintained for another decade, but in the scientific community it quickly lost its political strength.[28] Indeed, since Stalin's article, *nauchnost'* more so than *partiinost'*—scientific truth over Party adherence—took precedence in guiding scientific policy. Nonetheless, both *nauchnost'* and *partiinost'* were a "pillar of Soviet ideology" during Khrushchev's rule, writes historian Ethan Pollock, and so Lysenko's persistence remained in Soviet science throughout the 1950s. After Khrushchev, who had selectively disregarded *nauchnost'* in biology, the scientists' formerly under Lysenko's yoke could deliver the final blow to the decades-long reign of the doctrine.[29]

Although the relations between the scientific communities of the Soviet Union and the United States would be affected by the Cold War, international cooperation and exchange had been common in the first half of the twentieth century. Krementsov argues that international cooperation was crucial for the establishment of genetics in the Soviet Union which had had no precedent before the Revolution: western scientists, including Americans, offered both the

[26] Krementsov, 239–248.

[27] Roll-Hansen, 186–187; Only "a degree of criticism" was possible as some things were still prohibited. Joravsky, 156.

[28] Joravsky, 157–161.

[29] Ethan Pollock, "From Partiinost' to Nauchnost' and Not Quite Back Again: Revisiting the Lessons of the Lysenko Affair," *Slavic Review* 68, no. 1 (2009), 95–115.

means and knowledge during the Russian Civil War to sprout the young discipline.[30] Soviet agriculture too benefited from international exchange of knowledge and technology as the USSR imported farm equipment and methods from the United States.[31]

The 1930s marked a drastic change in the relationship between the two nations. The Soviet imagination regarding the state of American technology had lost the enthusiasm of the previous decade. Historian Kendall E. Bailes points to the Great Depression as well as the growth of the Soviet "research and development network" as reasons for the waning appreciation and international exchange.[32] Furthermore, he continues, these factors contributed to the belief in Soviet technological superiority and independence.[33] Because the Soviet science network became increasingly incorporated in and controlled by the Stalinist state, the technological and scientific international connections mirrored the overall Soviet foreign policy, thus Soviet science became increasingly isolationist.[34]

[30] Krementsov, 56.

[31] Aaron Hale-Dorrell, "The Soviet Union, the United States, and Industrial Agriculture," *Journal of World History* 26, no. 2 (2015): 300–301.

[32] Kendall E. Bailes discusses how the number of American specialists working in the Soviet Union dwindled after 1928 during the First Five-Year Plan. Both Bailes and Krementsov point to the increase in the number of Soviet scientific institutions of the same period. Kendall E. Bailes, "The American Connection: Ideology and the Transfer of American Technology to the Soviet Union, 1917–1941," *Comparative Studies in Society and History* 23, no. 3 (1981): 428; Krementsov, 36.

[33] On the one hand the Great Depression exemplified the limits of the "American way." On the other hand, it affected the Soviet Union's international trade thereby inhibiting the import of foreign technology. Bailes, 442–444.

[34] Krementsov, 31–32. Krementsov, however, argues that geneticists maintained their international contacts with their American colleagues for most of the 1930s, and it was not until 1939 that official Soviet-American exchange completely ceased. Still, communication gradually worsened during the 1930s, writes Roll-Hansen, as international scientists struggled to acquire reliable information on the state of Soviet genetics during the Great Terror. Krementsov, 118; Roll-Hansen, 176–178.

During the Second World War, however, the relation between the scientific community and the Soviet state changed once again, and the international relations of scientists were reinvigorated. In the Soviet Union, science was recognized as an essential tool in the war against fascism. As such, scientists were able to get into positions previously only occupied by party officials. Whereas in the previous decades, the autonomy of scientific communities had been continuously eroded, now scientific specialists had become more actively involved in the decision-making of their fields.[35] The position of genetics in particular changed as well. While most major genetics institutes had been under the control of Lysenko and other Lysenkoites, the academic reach of Lysenkoism would significantly decrease during the war and its direct aftermath as geneticists increasingly occupied positions of power related to education and research. Furthermore, because the relations with western scientists from allied nations had been rekindled, international cooperation could flourish again, which resulted in the mutual exchange of scientific resources and visits from and to the scientific institutions of the Soviet Union. The connections fostered between west and east mobilized the western geneticists to support their Soviet colleagues in opposition to Lysenkoism. The way in which American scientists engaged with Lysenkoism, however, was almost exclusively focused on its scientific basis rather than its political background in an attempt to refrain from instigating political conflict with the Soviet Union.[36]

However, scientific internationalism would not persist after the war had ended. The early Cold War's deterioration of international relations manifested itself in *zhdanovshchina*, or the Zhdanov Doctrine, which stressed the need to shed the influence of bourgeois culture on the Soviet Union. Furthermore, Party officials were reinstated as authorities over the Stalinist

[35] Krementsov, 96–98.

[36] Krementsov, 105–122.

science system.[37] Consequently, the international relations fostered between scientists during the war were criticized as being detrimental to the interests of the Soviet Union, and thus contact with western scientists was restricted, mirroring the situation of the 1930s. Despite the growing influence of the state over scientific affairs, Krementsov writes, scientists were able to maintain control of scientific practice and the subjects of research within their institutions.[38]

American science, like its Soviet counterpart, changed dramatically during the Second World War, and the science-state alliance of the war provided a clear example of Big Science for the rest of the twentieth century. Indeed, the Manhattan Project was often romantically lauded as a model which harmoniously unified labor and capital.[39] Scientists, who had been the project's administrators, came in close proximity with "the top ranks of the policymaking hierarchy," writes historian Jessica Wang, and strengthened their bond with the US government; thus they, who had had little to no public engagement prior to the war, had become prominent in the public sphere.[40] Scientists' involvement with the public reached beyond the newfound associations with highest circles of government: the atomic scientists' movement, which advocated for international and civilian control of atomic weaponry, aimed to combine citizens' involvement and high politics in their effort to reasonable (albeit temporary) success.[41]

[37] Krementsov, 129–131.

[38] Krementsov, 156.

[39] Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill and London: The University of North Carolina Press, 1994), 138–140.

[40] Jessica Wang, *American Science in an Age of Anxiety: Scientists, Anticommunism, and the Cold War* (Chapel Hill and London: University of North Carolina Press, 1999), 6–7; Jessica Wang, "Scientists and the Problem of the Public in Cold War America, 1945–1960," *Osiris* 17 (2002): 325.

[41] Wang, "Scientists and the Problem of the Public," 328–332.

As the goal of the atomic scientists' movement was explicitly political, it was at odds with the apolitical ideal of American science. In this particular view, scientists themselves were idealized as independent from outside influence, and their labor was supposedly apolitical. Furthermore, political interference was regarded as a detrimental force to the production of an "objective" source of knowledge. A point that was often argued with a comparison to the antithesis of the American way: Soviet science, where state intervention and ideology took precedence over scientists' independence.[42] This dissonance had been expressed by scientists from within and without the movement since its inception,[43] but the emerging Cold War political climate pressurized the scientific communities involved with activism for a resolution. Wang details how the state shaped the outward character of the movement through surveillance and discipline: organizations such as the Federation of American Scientists practiced self-policing to avoid allegations of being ideologically suspect.[44] Here, the aspired apolitical nature of American scientists was the result of defanging critical opinion, which was effectively acquiescence to the political status quo rather than devoid of politics.

The spectre of the bomb had become an important theme in post-war American culture, and fear for potential obliteration had become central to the cultural mood.[45] The atomic scientists' movement used the fear for its perceived activating potential as a means to convey the immediacy of their political goal. But as American anticommunism intensified in the late

[42] Audra J. Wolfe, *Freedom's Laboratory: The Cold War Struggle for the Soul of Science* (Baltimore: Johns Hopkins University Press, 2018), 2–3.

[43] Some had regarded the atomic issue so pressing that the distinction between the supposedly independent realms of human activity (science and politics) was suspended. As such, scientists' involvement was merely a continuation of their work rather than politically motivated. Boyer, 50–51.

[44] Wang, 333-338; Wang, *American Science in an Age of Anxiety*, 217–218.

[45] Boyer, 3–26. Boyer acknowledges that fear was not the only emotion that held America's psyche, but it proved to be a long-lasting undercurrent.

1940s, the potential of a strong relation between science and the public was significantly inhibited: It limited the public activity of the organizations associated with the scientists' movement and individual scientists, who in their public discussions had to move within "the boundaries of cold war orthodoxy."[46]

Furthermore, genetics in particular was associated with the atom bomb as well. While physics had been synonymous with the bomb, genetics was associated with eugenics and Nazism. In an effort to cleanse itself from these negative connotations, genetics tried to present itself as an entirely new field of research, and the biological determinism of eugenics lost public favor during the 1950s. One justification for the creation of a "new" field originated from the cultural immediacy of nuclear physics: genetics would offer the antidote against the destruction of the bomb.[47]

With the onset of the Cold War, a positive image of atomic technology was constructed and enforced by various actors, among them the US government, and the dangers and fears Americans had associated with the atomic bomb were systematically downplayed. Instead, the bomb came to be seen as a necessary defense against the Soviet Union, where nuclear weapons

[46] Wang, 332–338.

[47] However, José van Dijck, who discusses the constructed symbiosis of genetics and physics, maintains that the "reconstruction" of genetics was not well publicized in popular media until the mid-1960s. Nonetheless, she continues, the effort to rebrand genetics as a new discipline is evident even before then. José van Dijck, *Imagenation: Popular Images of Genetics* (Houndmills, Basingstoke, Hampshire & London: Macmillan Press Ltd, 1998), 33–35; Scientists had criticized eugenics long before the end of WWII. But while eugenics had lost its standing with the public after the war, "many scientists were still interested in the long-term steering of human evolution." Nils Roll-Hansen, "Eugenics and the Science of Genetics" in *The Oxford Handbook of the History of Eugenics*, ed. Alison Bashford and Philippa Levine (Oxford: Oxford University Press, 2010), 88–91; Dorothy Nelkin and M. Susan Lindee, *The DNA Mystique: The Gene as a Cultural Icon* (Ann Arbor: University of Michigan Press, 2004), 19–37.

had been successfully developed as well. Fear for the atom bomb was no longer fear for the bomb itself, Boyer writes, but fear for the Soviet Union.[48]

Given the effects of post-war anticommunism, it seems unsurprising that American scientists were hindered in contacting their Soviet colleagues. The US government regarded the international exchange of scientific knowledge as a potential risk to national security which limited the potential of scientific internationalism during the 1950s. Indeed, during this period travel restrictions were put on American citizens and internationals deemed politically subversive. Half of foreign scientists attempting to travel to the United States in 1952 were barred from entry.[49] Such restrictions targeting scientific mobility significantly affected the opinion of the international scientific community on the state of science in the US, argues Wang: on the one hand it dispelled the notion of American scientific freedom (thereby contradicting the purported ideological value of science) and on the other hand it limited the knowledge American scientists had of their foreign colleagues. Nonetheless, the severity and frequency of such travel restrictions were lessened in the latter half of the 1950s. Still, the retraction from international science by both superpowers was an extension of Cold War antagonism.[50]

While Lysenkoism was officially embraced by the Communist Party, its power over scientists was not as all-encompassing as suggested. Scientists continuously challenged the doctrine despite its institutional support, and in the years following Lysenko's crescendo (his 1948 VASKhNIL address) its strength slowly but steadily faded until it completely lost Party

[48] Boyer, 339.

[49] Wang, *American Science in an Age of Anxiety*, 278.

[50] Ronald E. Doel, "Scientists, Secrecy, and Scientific Intelligence: The Challenges of International Science in Cold War America," in *Cold War Science and the Transatlantic Circulation of Knowledge*, ed. Jeroen van Dongen (Leiden: Brill, 2015), 11–35; Wang, *American Science in an Age of Anxiety*, 253–288.

support in the early 1960s. After the Second World War, international scientific relations were limited by the growing Cold War antagonism as both the American and Soviet state curbed the mobility and freedom of scientists. From the Soviet side, apparatchiks replaced the scientists who had steered science during the war, and they severed the foreign ties of the Stalinist science system. Because Lysenkoism exhibited partiinost' and scorn for all western connections, it aligned with the post-war ideological climate of the Soviet Union. Meanwhile, Cold War orthodoxy in the United States limited the possibilities of strong international ties and the fruitful political life of scientists, and because of the latter, such limits reinforced the image of science as an apolitical activity and source of truth. Furthermore, it was precisely the apolitical objectivity that contrasted American science with its dogmatized Soviet counterpart. As such, a carefully created and maintained idea of what American science was and all science ought to became incorporated in the ideological Cold War struggle.

Chapter 3. Literature Review

In this chapter, I will present the academic discussion surrounding Lysenkoism and the ideological significance of science during the Cold War: its place in US culture after the Second World War going towards the Cold War and more generally science as a communicator to the public. This last category will be contextualized with historiographies of American journalism and the cultural representation of genetics in the post-war period. After engaging with these varied historiographies, this chapter will aim to combine the offered critiques as to apply them to this thesis.

The reason why Lysenko's thought had such a long-lasting grip on the Soviet bureaucracy has been the topic of international scholarly debate since the 1960s, where historians can be divided into two groups. The first historiographical narrative, stemming from the 1940s, explains Lysenkoism in simplistic Cold War rhetoric: it concludes that totalitarianism inherently resulted from the Soviet Union's ideological foundations. As such, the Lysenko Affair was characterized as a struggle between an oppressive state and oppressed scientists. The second major interpretation aims to challenge the perceived dichotomy in Soviet science.[51] Historian David Joravsky can be ascribed to the second tradition. In his book *The Lysenko Affair,* he problematizes the idea that the science-state relation was one-dimensional as the government's position on science changed continuously: following the Russian Revolution, natural scientists had initially enjoyed greater academic autonomy than during the

[51] William deJong-Lambert and Nikolai Krementsov, "'Lysenkoism' Redux: Introduction" in *The Lysenko Affair as a Global Phenomenon, Volume 1: Genetics and Agriculture in the Soviet Union and Beyond* (Cham, Switzerland: Springer International Publishing, 2017), 12–21; David Joravsky, *The Lysenko Affair* (Chicago & London: The University of Chicago Press, 1986), vii.

tsarist era, writes Joravsky.[52] Yet the newfound freedom was only temporary as from the mid-1930s to the early 1950s "cranks"—most prominently Lysenkoites—increasingly superseded "genuine scientists" in the eyes of the Stalinist state.[53]

While Joravsky dispels one dichotomy, he does so by characterizing the Lysenko Affair as another: scientists versus pseudoscientists. For one, this distinction does not hold because Lysenko's ideas had enjoyed acclaim from established Soviet scientists in the 1930s. As such, the cranks and the genuine scientists were not necessarily antagonists.[54] Historian Nikolai Krementsov further problematizes the scientist-crank dichotomy in *Stalinist Science*, where he argues that there existed a symbiotic relation between the state and the scientific community: while science was indeed reformed into a centralized and planned state organ, scientists as well as the system itself relied on the other to further their own interests. Therefore, scientists cannot be regarded as a monolithic interest group versus the coalition of cranks and the state.[55]

Krementsov benefited from the opening-up of Soviet archives during the 1990s for *Stalinist Science*, while Joravsky's *The Lysenko Affair* (first published in 1970) had no access to these sources. Still, both works are regarded as (English-language) landmarks in the history of Lysenkoism, which function as the starting point for academic explorations taking the topic

[52] Joravsky does not ascribe this increased freedom to Bolshevik ideology. Instead, he suggests that the upheaval of Russian society—"thanks to military defeat, political anarchy, and mounting crises in social and economic relations"—was the cause. Still, Lenin acknowledged natural scientists as fundamental for the growth of the Soviet Union regardless of their ideological disposition. Joravsky, 27; See also Loren R. Graham, *Science in Russia and the Soviet Union: A Short History* (Cambridge: Cambridge University Press, 1993), 96.

[53] Joravsky, 63.

[54] Roll-Hansen, 169.

[55] "The state provided scientists with funds, resources, and great public prestige; the scientific community gave the state expertise and legitimacy in industry, agriculture, and medicine." Nikolai Krementsov, *Stalinist Science* (Princeton, New Jersey: Princeton University Press, 1997), 4–5.

to new directions: since the 1990s, scholars have analyzed the particularities of Lysenkoism on all sides of the iron curtain.[56]

The various ways the west responded to the state of Soviet science is among this new wave of scholarship. As this topic is the intersection of (among others) the scientific cultures of the United States and the Soviet Union, the meaning of American science in Cold War ideology and culture at large provides insight into the American perspective on Lysenko. Historian David C. Engerman maintains that there were four central features of the Cold War as an ideological conflict. First, the attempt to gain new ideological compatriots against the other empire. Second, the location of the conflict changed continuously. "Third, economic production and technological advance would be key instruments in American-Soviet competition. Direct economic competition between the superpowers underwrote the expansion of influence around the world, but also demonstrated the superiority of an economic system." Fourth, Engerman maintains that "the Cold War revolved around understandings of the enemy […] that were deeply rooted in each ideology."[57] Historian Odd Arne Westad further expands on the role of science in the Cold War in three ways: First, like Engerman, Westad argues that science was a means to bolster industrial production. Second, science was significant for the military power of one nation vis-à-vis the other as with the atomic bomb. Finally, the improvement of the standard of living by science (and most prominently the life sciences) gave credibility to the economic system and ideology of one nation over the other.[58] As such, Westad

[56] DeJong-Lambert and Krementsov, 17–21.

[57] David C. Engerman, "Ideology and Origins of the Cold War, 1917–1962," in *The Cambridge History of the Cold War: Volume 1, Origins*, ed. Melvyn P. Leffler and Odd Arne Westad (Cambridge: Cambridge University Press, 2010), 33–34.

[58] Odd Arne Westad, "The Cold War and the international history of the twentieth century," in *The Cambridge History of the Cold War: Volume 1, Origins*, 11–13.

and Engerman suggest that the products as well as the production process of science are both relevant to the Cold War as an ideological conflict.

Furthermore, during the Cold War, American ideals were regarded as teleological, writes Westad: "what is America today will be the world tomorrow." The American teleology was rooted in the belief that science would bring forth *the* modern society, as such modernization demanded adherence to the American system. Central to its ideology were liberty and anticollectivism. Traditionally, individuals could achieve the former by acquiring property and proper education. While this was only available to a very marginable group initially, the range of the concept was extended to the Third World during the twentieth century, and particularly during the Cold War. As it developed into a global superpower, the Soviet Union posed a collectivist alternative to American modernization. As collectivism was the antithesis of American liberty, this difference was a key to the Cold War as an ideological conflict. Furthermore, Westad adds, science too was central to the teleology of the American system: "science as the progenitor of 'rational action' underpinned American faith in the new state's universal significance from the very beginning." Given that Lysenkoism was regarded as dogma-tainted science, I expect that liberty in opposition to collectivism was central to the portrayal of the Lysenko Affair.[59]

However, scientists themselves did not necessarily support these ideological features. According to historian Jessica Wang, scholarly attention given to Cold War scientists often portrays them as a group unanimously opposed to Cold War measures. In such accounts, the influence of military funding on American science is left unexamined thereby rendering science-as-practice unrelated to and independent of scientists' political agency. Wang argues

[59] Odd Arne Westad, "The empire of liberty: American ideology and foreign interventions," in *The Global Cold War: Third World Interventions and the Making of Our Times*, (New York: Cambridge University Press, 2005), 8–38.

that the political dimensions of scientific life are erased in two ways: On the one hand state influence on scientists is ignored even though patronage functioned as research directive. As such, the idea that science is inherently apolitical labor manifests itself in the historiography of science too. On the other hand, the politics of scientists were too diverse to be regarded as monolithically opposed to the Cold War consensus.[60] This last point in particular exemplifies the difficulty in unifying actions of the individual and a supposedly universal ideology.

Indeed, it is difficult to determine how Cold War policy—both domestic and foreign—relates to US culture. Some scholars aiming to relate the two have been criticized for regarding the conflict as all-encompassing.[61] Historian Laura McEnaney aims to unify institutional power with the cultural imagination of the Cold War while trying to "avoid imbuing the Cold War with an ideological and institutional solidity it did not have."[62] While McEnaney is mainly concerned with how the Cold War was manifest in the domestic sphere, she seems to suggest that it is impossible to capture every aspect of America's 1950s culture with a uniform analysis; especially for one stemming from high politics. The position of science distilled from a perceived "institutional solidity" is therefore not necessarily applicable to the analysis of newspapers. Furthermore, because most scholarship on wartime science is concerned with military and other war related research, discussing the general scientific environment of the US coming out of World War II risks generalizing the state of such research environments for all

[60] Jessica Wang, *American Science in an Age of Anxiety: Scientists, Anticommunism, and the Cold War* (Chapel Hill and London: University of North Carolina Press, 1999), 2–4.

[61] Laura McEnaney, "Cold War mobilization and domestic politics: the United States," in *The Cambridge History of the Cold War: Volume 1, Origins*, 422.

[62] McEnaney, 423. This thesis aims to circumvent such overstatements by reviewing the two distinct categories of articles. Cold War ideology will presumably be more prevalent and manifest in the articles on Lysenkoism than in the more general articles.

of American science.[63] However, institutional ideology cannot be disregarded either, because the state and American (Big) science had become increasingly intertwined.

How, then, are American newspapers situated between science, the state, and the public? The ties between media and the state tightened after the war as well. In his historiography of the post-war press, Oliver Elliott concludes that the American media and the state had forged close ties with one another, which resulted in "a decline in the range of stories and opinions that could be freely discussed by the media." Similarly, Walter Hixson details how the US government was active in the dissemination of anticommunist propaganda abroad through seemingly independent organizations such as Voice of America, Radio Free Europe, and Free Europe Press.[64]

However, Elliott and Hixson are mostly concerned with the press in relation to foreign affairs and American military operations. Because the Lysenko Affair and Soviet genetics were not directly related to US state or military activities, the journalistic practice concerning these topics might be unaffected by the two aforementioned political domains. Indeed, the persistence of the free marketplace of ideas trumped the insistence on state-run domestic broadcasting in the late 1940s.[65] Nonetheless, television broadcasting—as a small yet budding industry—became the site of an organized effort to influence the public flow of

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[63] Ronald E. Doel, "Scientists as Policymakers, Advisors, and Intelligence Agents: Linking Contemporary Diplomatic History with the History of Contemporary Science," in *The Historiography of Contemporary Science and Technology*, ed. Thomas Söderqvist (New York: Routledge, 2012), 215–222.

[64] Oliver Elliott, *The American Press and the Cold War: The Rise of Authoritarianism in South Korea, 1945–1954* (Cham, Switzerland: Springer International Publishing AG, 2018), 1–11; Walter Hixson, *Parting the Curtain: Propaganda, Culture, and the Cold War, 1945–1961* (London: Macmillan Press Ltd, 1997), 57–86.

[65] The ideological value of "free enterprise" is also exemplified in overseas propaganda efforts that enjoyed direct state funding such as Radio Free Europe. The CIA aimed to portray this organization as a private firm "to bolster the appearance of spontaneous anticommunism on the part of the U.S. public." Nancy E. Bernard, *U.S. Television News and Cold War Propaganda, 1947–1960* (Cambridge: Cambridge University Press, 1999), 43–45.

information.[66] Like in science, political independence was celebrated as a virtue in journalism even when it was not always upheld.

To summarize, the influence of Cold War propaganda advanced by State bureaus extended to the reporting of international affairs and television journalism. However, it is unclear if this also applies to the Lysenko Affair as there is little to no scholarship explicitly discussing the relation between news coverage of science and American Cold War culture. Thus, McEnaney's warning of perceived institutional solidity echoes here too, as one's relation to "official" ideology may vary from group to group, from person to person. Unfortunately, the academic effort to contextualize US journalism in the domestic Cold War climate seems to be rather limited.[67] Nonetheless, the literature on the persistence of Cold War ideology in American science and American journalism maintains that both areas of the public sphere were influenced to various degrees by anticommunism, which suggests that the coverage of the Lysenko Affair portrayed this topic in accordance with overall Cold War ideology.

Science's massive expansion during and after the Second World War went hand in hand with a change in its relation to the public. Physics, as the most prominent example of the military-science coalition during the war, entered the public eye like no discipline before it. The bomb provided the cultural backdrop for scientists to become icons in the Atomic Age. J. Robert Oppenheimer for example, who had contributed to the Manhattan Project, became a significant public figure in the post-war decades whose image acquired heroic and mythological characteristics through the framing of journalists.[68]

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[66] Bernard, 69–93.

[67] Elliott, 7.

[68] David K. Hecht, "The Atomic Hero: Robert Oppenheimer and the Making of Scientific Icons in the Early Cold War," *Technology and Culture* 49, no. 4 (2008), 943–966.

Indeed, journalists are often the bridge between scientists and the public.[69] Still, this gap is rarely crossed for fascination for scientific accomplishments alone: public interest is sparked by cultural and political relevance, while scientists "[used] the mass media for the promotion of sales," Marcel LaFollette writes, be it to garner research funds or in support of ideology, knowledge, or technology.[70] José van Dijck furthers LaFollette's market analogy and posits that the commodities relevant to this particular marketplace are the images that represent science related phenomena rather than the phenomena themselves. In this view, scientists and journalists—as well as other interest groups relevant to the mediation of images—form an interactive network that contributes to what Van Dijck calls the "imagination" of science: the public's appraisal of a field's significance and meaning, which simultaneously shapes and is shaped by the ideological values in a culture.[71]

The creation and dissemination processes of images and imaginations can be described through the "science as theatre" metaphor. Van Dijck employs this metaphor to analyze the performance, production, and context of the theatre of genetics. The performance consists of "characters, plots, and metaphors." These aspects enable the play to convey meaning to its public, and in doing so, they often borrow from the depiction of archetypal scientists and recognizable emplotment. "Production" entails the "scripting, staging, and setting" of the play, which are those activities concerning the assignment of roles and their placement within a

[69] Science and the public have not always been regarded as separate categories. For a discussion on the development of the boundary between the two, see Steven Shapin, "Science and the Public," in *Companion to the History of Modern Science*, ed. R.C. Olby, G.N. Castor, J.R.R. Christie, and M.J.S. Hodge (London: Routledge, 1990), 990–1006.

[70] Marcel Chotkowski LaFollette, *Making Science Our Own: Public Images of Science, 1910–1955* (Chicago and London: The University of Chicago Press, 1990), 45–65.

[71] José van Dijck, *Imagenation: Popular Images of Genetics* (Houndmills, Basingstoke, Hampshire & London: Macmillan Press Ltd, 1998), 12–15.

narrative as well as the stage decor (a laboratory, for example). Finally, "context" refers to how the theatre fits within a society: its history and its culture. Because of the diversity of its contributors, the theatre does not necessarily produce one cohesive meaning. Instead, multiple visions can simultaneously exist in competition.[72]

The scientific imagination is, as stated previously, dependent on all facets of culture, which are not necessarily contributing to the same images and can even be contradictory. Unfortunately, scholarship on the public image of genetics in the post-war decade has mostly been concerned with its eugenic past, but its proximity to the Cold War—via its connection with atomic bombs or Lysenkoism—has received less attention.[73]

Fictional portraits of scientists in the first half of the twentieth century ranged from heroes to villains, whose relation to technology and knowledge was as diverse. Haynes categorizes evil scientists as either "power maniacs" or "those whose basic philosophy is inherently evil in some more subtle way." Furthermore, she associates the former category with physicists aiming to apply their discovered technology to the fullest and the latter with biologists, who trespass in god's domain with their attempts to alter (human) life.[74] As heroes, on the other

[72] Van Dijck, 17–32.

[73] For a discussion on the persistence of eugenic thought in the United States see Alexandra Minna Stern, *Eugenic Nation: Faults & Frontiers of Better Breeding in Modern America* (Berkeley: University of California Press, 2005); Nancy Ordover, *American Eugenics: Race, Queer Anatomy, and the Science of Nationalism* (Minneapolis: University of Minnesota Press, 2003); On the way that scientists dealt with eugenics' stigma since the 1930s, see Edmund Ramsden, "Confronting the Stigma of Eugenics: Genetics, Demography and the Problems of Population," *Social Studies of Science* 39, no. 6 (2009): 853–884.

[74] Biologists' evil portrayal parallels Doctor Faustus, who found his doom in his attempt to transcend natural limitations. As such, Haynes concludes, "they are the fictional precursors of today's researchers into genetic engineering, in vitro fertilization, and ecological manipulation." Roslynn D. Haynes, *From Faust to Strangelove: Representations of the Scientist in Western Literature* (Baltimore and London: Johns Hopkins University Press, 1994), 192.

hand, scientists represented an optimistic view of historical progress which relied on scientists' objectivity and "the limitless power of science for good" to usher in a new age for humankind.[75]

Such optimism, however, was significantly affected by apparent destruction of the atom bombs. "Increasingly, though, after Hiroshima, heroism became associated with the suppression, rather than the use of new knowledge."[76] Furthermore, fictional accounts came to display scientists as amoral actors who pursued knowledge for its own sake rather than for the betterment of society. For one, the belief that a scientist can retreat from the moral landscape relies on the supposed value-free nature of scientific research; it is only its applications that have clear ethical nature. Thus, the amoral scientist can be construed as either wilfully retreating from an ethical stance or as a consequence of the profession's inherent amorality. Here, only the first interpretation implicates the scientist's own agency in their relation to society. The amoral scientist bears a strong similarity with the belief that science is apolitical: a characteristic historian Audra Wolfe recognizes in a particular Cold War understanding of science as discussed before. However, the "amoral scientist" is construed as negative only in fiction, while in Wolfe's analysis amorality was regarded as a positive trait.[77]

Wolfe's analysis is mostly concerned with the ways that scientists were incorporated into state projects—most prominently in foreign affairs. The scientists who lend themselves to such projects saw their contributions as apolitical activities. While Wolfe describes the various ways that the US promoted a particular vision abroad boasting science as the basis and prime indicator of a functioning democracy, she is more concerned with the material basis of such propaganda than the ideological meaning it promoted. Similarly, Jessica Wang analyzes how

[75] Haynes, 162–163.

[76] Haynes, 177.

[77] Haynes, 236–267.

the state shaped the scientific community during the Cold War, but she too discusses this interface by emphasizing the forces that created post-war science rather than its ideological meaning. As such, Engerman and Westad, who describe the ideological meaning of science in the Cold War more explicitly, will provide the basic framework with which this thesis will analyze the representation of science in American media.

The historian's tendency to portray factions as ideological monoliths within their historiographical framework has been addressed by multiple authors in three different subjects: Krementsov on Soviet scientists, McEnaney on Cold War ideology and culture, and Wang on American science. Interestingly, all critiques find the erected monoliths of their respective disciplines in relation to the state. It seems that everyone and everything that comes into contact with state power are forced to take a single position: behavior that aligns with the state casts its actor as either contributors to or extensions of the state, while actions that contradict it mark one as its opponents. These scholars suggest that in order to avoid generalizing events and experiences in support of an overarching narrative, internal contradictions must be highlighted as well, so that actors can become individuals while discussing the dynamics that bring them together.

In part, the generalization of concepts, institutions, and groups of people seems unavoidable. The usage of phrases such as "the State," "Big Science," or "the Media" seems to facilitate encapsulation of pluralities as single points thus implying a rigid conceptual demarcation. Marcel Lafollette writes that twentieth century Americans ascribed life to science as if it was an anthropomorphic and autonomic being that "could 'do' things, could 'act,' could even 'assert.'"[78] While this observation might seem pedantic and trite, John Dewey analyzed the idealization of maybe the biggest and most problematic conceptual fish of the three

[78] LaFollette, 5–6.

mentioned: the State. He writes: "Without our intention and without our notice, the notion of "The State" draws us imperceptibly into a consideration of the logical relationship of various ideas to one another, and away from facts of human activity." Nonetheless, idealizations such as the state are real and analyzable.[79]

Contemporary media representation of scientists might have significant parallels with the Lysenko Affair. Yet I must fret to see universality in my conclusion: given the aforementioned criticisms, the findings of this thesis will not yield an overarching narrative for either the history of science, the Cold War, or journalism: rather, a description of the historical moment where the three met. Science-as-theatre provides a conceptual approach to analyze the intersection of American science, Lysenkoism, and the Cold War while maintaining the individuality of those contributing to the scientific imagination. This theoretical framing, as proposed by Van Dijck, in combination with the other works discussed in this chapter should therefore be able to overcome the tendency to regard the scientific community as a monolith.

The relationship between the Soviet scientific community and the Communist state was not simply a dichotomy of suppressed and suppressor: even though Lysenkoism was an ideologically prominent doctrine, scientists attempted to continue their work as best as they could, which sometimes necessitated them to adopt Lysenkoist characteristics to obtain Party support for their work. Consequently, however, Soviet geneticists inadvertently helped create the image that Party ideology dominated every detail of scientific life. Moreover, scholarship suggests that the American media landscape unambiguously opposed the Soviet Union in part because of the influence of the state. It is therefore likely that the same ideological tenets appeared in the representation of genetics and Lysenkoism even if the American scientific community did not unanimously align itself with these principles. However, American

[79] John Dewey, *The Private and the Public: An Essay in Political Inquiry*, ed. Melvin L. Rogers (Athens, Ohio: Swallow Press, 2016), 63.

geneticists wanted to grab the public's attention: where Soviet scientists had to look to the Party for support, American geneticists took to mass media. While the representation of genetics has received academic attention, scholarship is more frequently engaged with later periods of the field. As such, this thesis will aim to fill the gap by analyzing the imagination of genetics from 1948 to 1953.

Chapter 4. Genetic Frameworks

During a post-war scientific congress in Moscow, a group of non-Soviet scientists wanted to visit Lysenko's laboratories. While this request was initially granted, the guests were later informed that it would be impossible because of the laboratories' secrecy: "so secret they were never, never, never visited by anyone at all." Instead, the foreigners attended one of Lysenko's lectures, where he repeated his usual anti-Western, pro-Soviet science speech. His guests were surprised: they had never imagined science could be "tinctured with politics" in direct opposition to "every established principle of biology." Soviet results were more so shocking as Lysenko flourished gigantic tomatoes in front of a roaring audience. While each tomato was "bigger than a cantaloupe," one foreign scientist was able to sneak one out in "his overcoat pocket." The tomato, it turned out, was made of wax. According to the journalists reporting on the cartoonish theft the fruit had a symbolic meaning. The story exemplified the Soviet state's encroachment upon science; how mandated dogma could promote an easily contradicted lie into a truth. Furthermore, the Soviet project would not be able to survive without genuine scientific inquiry, the authors predicted, and thus the tree from which the fruit had grown would wither.[80]

The aim of this chapter is not to scrutinize such events. Instead, I will interrogate the ideological significance of science in American media such as in the example above in three sections. First, I will discuss the representation of genetics outside of the Lysenkoist context. Here, I will argue that genetics, aligned with state ideology in two ways: the general optimism for the field legitimized the American way of modernization, and genetics was instrumental to reframing nuclear technology as a public good—in itself already a state endeavor—which

[80] Joseph and Steward Alsop, "Matter of Fact," *Washington Post*, Aug. 23, 1948.

helped cast the US as committed to be a global rolemodel in accordance with its universalist ambition. Second, I will discuss the representation of science in an explicit Cold War context: the portrayal of American science versus Soviet science. I argue that that the contrast between Soviet and American science endowed the latter with exemplary qualities of American ideology. American scientists embodied true liberty, and they freely associated with one another within the American science system, whereas Communists trapped in a collectivist network could never truly organize themselves in unison out of their own volition. The superiority of American science was further reinforced by comparisons to Nazi science. All together, these factors cemented American science (and America as concept) as the beacon of modernization. Finally, I will discuss the portrayal of Soviet media within American articles with respect to the representation of Soviet source material. I argue that the way papers engaged with genetics allowed the discipline to be adopted as a critical voice against the Soviet Union, even though scientists did not express themselves politically in such articles. Scientists as detached from political issues—either voluntarily or by journalistic omission—were portrayed without direct criticism of Soviet issues, because the professionalism of the disengaged scientist replaced the need for such an overt perspective. As such, genetics contributed rhetorical, technological, and ideological imaginations to the early Cold War.

a. Genetics: "A New Kind of Water"[81]

To form a more complete understanding of the imagination of Cold War genetics, this section will discuss the discipline's representation outside of the Lysenkoist context. In the previous chapter, I noted that one should beware of treating Cold War phenomena as ideologically

[81] In their song by this name, the English band This Heat articulates the stark contrast between nuclear annihilation and research guided by the atom that would improve life in the West. In this section, I will argue that genetics in 1948–1953 must be understood via this tension. This Heat, "A New Kind of Water," recorded 1981, track 10 on *Deceit*, Rough Trade, MP3.

monolithic. As such, the ideological value of science that other scholars have described does not necessarily apply to the imagination of Cold War genetics. This section will compare the portrayal of genetics to historian Odd Arne Westad's three traits of Cold War science: as a force improving productivity, the standard of living, and military might. To this end, genetics will be reviewed in the context of agriculture, health care, and the atom bomb respectively. I argue that the general representation of genetics was central to the rebranding of atomic technology as safe and beneficial to the public. In this particular representation, genetics would employ the atom to create a cornucopia and improve the public's health. Furthermore, the benefits of the field would minimize the danger usually associated with the nuclear threat while simultaneously shielding America from a looming fallout.

First, genetics was represented in newspapers as a discipline that would greatly enhance agricultural productivity and health care. In this context, the field justified its existence to the public. It did so by promising greater poultry production, more beef, and stronger crops.[82] The representation of genetics is unequivocally positive about the potential of science.

Similarly, genetics was celebrated for the potential benefit it would bring to health care. The discipline's contribution to cancer research, for example, was often discussed in relation to diagnosis, prognosis, or even prevention. Time and again, genetics was presented as a vital weapon in the fight against cancer.[83] One source however debated the published optimism

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[82] Charles W. Knox, "Early Feathering a Sign of Good Broilers," *Washington Post,* Aug. 22, 1948; William L. Laurence, "Scientists Promise More Food For All," *New York Times,* Dec. 28, 1949; John W. Ball, "Our Bumper Crops Had Odd Roots," *Washington Post,* Jan. 1, 1950; "Calf With Two Mothers," *LIFE,* Sep. 22, 1952: 102.

[83] William L. Laurence, "Parents' Age Cited As Clue in Cancer," *New York Times,* Dec. 18, 1948; Needs of Cancer Research," *New York Times,* Jan. 14, 1949; Waldemar Kaempffert, "What We Know About Cancer," *New York Times,* June 26, 1949; Waldemar Kaempffert, "Heredity Unknown Factor in Cancer," *New York Times,* Sep. 17, 1950; Pat McGrady, "Man Against Cancer," *New York Times,* Mar. 29, 1951; "Proteins' Growth and Use Measured," *New York Times,* May 15, 1951; William L. Laurence, "Cell Nucleus Sits For Self-Portrait," *New York Times,* Aug. 17, 1951.

related to science's oncological ability: Dr. Scheele argued that developments were "frequently exaggerated" because of "great public eagerness" for good news on cancer. Nonetheless, Scheele too claimed that "cancer can and will be beaten by science."[84]

Because genetics would be able to find their biochemical causes, "social" illnesses such as alcoholism and retardation would too be cured.[85] One article, for example, discussed the role of heredity in schizophrenia—here characterized as "the nation's most destructive illness in terms of social and economic loss"—which clearly posited genetics as beneficial to both the individual and society as a whole.[86] Similarly, it was reported that Dr. Torbjörn Caspersson had discovered that the nerve cells of "the insane" were defective because of a genetic lack of certain "components" which could be compensated for by feeding the patients what they were missing.[87]

Whereas the portrayal of genetics would later be more sceptical of the discipline,[88] it was wholeheartedly positive between 1948 and 1953. While the representation of this period can be construed as "ambitious attempts to establish a new image to a new field" on the one hand,[89] on the other hand it was a means to establish American science as an enterprise that was ever improving society. Furthermore, because the life sciences "contributed strongly to the Cold

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[84] N. S. Haseltine, "Scheele Advises More Study, Less Wishing in Cancer Fight," *Washington Post*, May 6, 1949.

[85] William L. Laurence, "Studies Hint Cause of Alcoholism May Lie in Inherited Food 'Block,'" *New York Times*, Apr. 28, 1949; "Vitamins Overcome Alcoholism in Rats," *Washington Post*, Apr. 28, 1949; Waldemar Kaempffert, "Science in Review," *New York Times*, May 1, 1949; "'Problem Child' May Be Product of Heredity Rather Than Environment, Writer Asserts," *New York Times*, Dec. 7, 1950.

[86] Lucy Freeman, "Genetics Role Seen in Schizophrenia," *New York Times*, Oct. 2, 1949.

[87] "Control of Cells Offers Hope to Ill," *New York Times*, Nov. 11, 1948.

[88] José van Dijck, *Imagenation: Popular Images of Genetics* (Houndmills, Basingstoke, Hampshire & London: Macmillan Press Ltd, 1998), 49–54.

[89] Van Dijck, 34.

War competition of social systems," the unequivocally optimistic portrayal of genetics was in this light a reminder of American supremacy over the Soviet system.[90]

As discussed in chapter two, genetics was often represented in relation to the atomic bomb and radiation. Here, the mutagenic potential of radiation was the subject of geneticists' research. Although José van Dijck writes that such public discussion of genetics in media was sparse until the mid-1960s, the relation between genetics and the bomb is observable from the late 1940s as well.[91] One aspect of the bomb tests conducted at Bikini Atoll, for example, was a study on how the radiation affected corn seeds. *The New York Times* reported that the chromosomes of seeds exposed to rays were "injured or destroyed" resulting in malformed plants. While this research concerns plant life, the researchers recognized the possible human implications: these results are not applicable to mankind, asserted *The New York Times*, as "the amount of radiation received by seeds would be lethal" to a human.[92]

However, while the atom bomb itself was a signifier of military strength, genetics was not: the discipline's foremost goal in this context was to assess the dangers of radiation to humans. The scientific results as represented in the papers were inconclusive. One *LIFE* article on the aftermath of the bombing of Hiroshima and Nagasaki discussed research on the genetic consequences for the victims and their children. A research institute had been created for the investigation of the hereditary "death and disfigurement" caused by the bomb's radiation. The article claimed that the geneticists did believe in radiation's mutagenic potential but that they were as of yet unsure of its exact consequences. Nonetheless, *LIFE* suggested that despite such

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[90] Odd Arne Westad, "The Cold War and the international history of the twentieth century," in *The Cambridge History of the Cold War: Volume 1, Origins*, 13.

[91] Van Dijck, 34–35.

[92] Waldemar Kaempffert, "Science in Review: Corn Seeds Exposed to Atomic Bomb Rays Produce Abnormal and Defective Plants," *New York Times*, July 11, 1948.

scientific reservation there was the possibility that "there *are* consequences, endless and uncontrollable, which will plague forever descendants of the people who survived the first atomic attacks." True knowledge of the bomb's lethality across multiple generations required years of further research.[93]

Furthermore, the very possibility that the genetic effects of an atomic bomb were harmful was disputed with scientific language. This position was often maintained on the basis of a lack of data on the effects on humans. Because most research had been done on model animals such as fruit flies and rats, it was "impossible as of yet to forecast" how mankind would be affected.[94] Dr. A.H. Holland ridiculed research on model animals which were seen as indicators for human consequences: "there are still a few of us left who don't believe man is exactly like a fruit fly."[95] The Atomic Energy Commission (AEC), a congressional committee dedicated to the promotion of peacetime application of nuclear technology, reported an increased incidence of leukemia among people exposed to radiation at Hiroshima also regarded this claim as insufficiently conclusive: "geneticists, particularly, believe much more data is needed."[96]

These comments exemplify how scientific methodology could be incorporated into a larger argument: in this case the disarmament of the nuclear bomb. While indeed model animals were not analogous to humans and the size of datasets could be increased, such results

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[93] "The A-Bomb's Children," *LIFE*, Dec. 12, 1949: 59–65; Marshall Andrews, "States Told How to Curb A-Bomb Toll," *Washington Post*, Mar. 5, 1950. For more articles covering scientists on nuclear mutagenesis, see Gladwin Hill, "Killing of Unborn By A-Bomb Is Seen," *New York Times*, Aug. 14, 1948; Waldemar Kaempffert, "Science in Review: Effects of X-Rays," *New York Times*, Nov. 14, 1948; Chalmers M. Roberts, "Scientist Tells Mayors Atom Could Blight Much of Earth," *Washington Post*, Mar. 23, 1949; "Radiation Damage," *New York Times*, Mar. 5, 1950; Waldemar Kaempffert, "A-Bomb Effect on Japanese Offspring," *New York Times*, Jul. 9, 1950.

[94] Harold B. Hinton, "Weapon Using Radioactive Poison Pushed By Atomic Energy Board," *New York Times*, Aug. 1, 1950.

[95] "Health Group Hits Atomic War Fears," *New York Times*, Jun. 8, 1950.

[96] Robert K. Plumb, "Close Study of Atom Bomb Victims," *New York Times*, Aug. 12, 1951.

nonetheless offered indications of possible future results. By disregarding predictive results, critics also disregarded their very possibility. Indeed, exploratory research was rarely heeded as a warning. From all articles claiming that basic data was still lacking, only one seemed to acknowledge the potential danger.[97] As such, scientific language was applied to put atomic fears to rest.

Likewise, an emphasis on peaceful applications of the atom replaced nuclear fears with an optimism for technological prospects. To historian Paul Boyer, this replacement is indicative of the "either/or" atomic imagination: "either civilization would vanish in a cataclysmic holocaust, or the atomic future would be unimaginably bright."[98] Such unimaginable brightness was clearly articulated in in articles discussing possible peaceful applications of nuclear technology such as in agriculture. In this field, genetics promised to provide better crops through radiation-induced mutations. Articles on agricultural genetics rarely portrayed radiation as possibly harmful. For example, one article presented ray-induced mutations which resulted in glowing corn as "perfectly normal" except for the unique fluorescent element that gave it its glow.[99] Or consider an article on a new tulip species created through irradiation: the Utopia. Although the plant was not named by the journalist, "Utopia" suggests a particularly optimistic view of the beneficial potential of irradiation in plant breeding.[100] Indeed, while some discussions of radiation's mutagenic potential were sceptical of its use or worried about

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[97] William L. Laurence. "Atom Effects: How Decontamination Works," *New York Times*, Aug. 21, 1950.

[98] Paul Boyer, *By the Bomb's Early Light, Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill and London: The University of North Carolina Press, 1994), 125.

[99] "A-Bomb's Rays Produce Glowing Corn," *LIFE*, Aug. 6, 1951: 65.

[100] "Atomic Tulips," *New York Times*, Jun. 18, 1950.

the implications for humans, others represented it as a beneficial tool which would help generate better crops.[101]

These optimistic perspectives are in line with an official stance on nuclear technology. As such, the representation of genetics aligns with the state effort to reimagine the bomb, which reports stemming from the AEC indicate.[102] Indeed, the AEC placed the "progress in peaceful applications" in stark contrast with the "necessary evil" of military use. One *Washington Post* article discussed the state of American atomic energy research as proclaimed by the AEC. Even if there would be no international control of atomic energy as a weapon, the AEC claimed, the US would maintain an international lead concerning nuclear technology (if the current research trends were maintained as well). Furthermore, the author added, peaceful applications of such technology might even overshadow the bomb's destructive potential: "history may well prove that the real significance of atomic energy is as a source of power that can help resolve some of the world conditions that lead to war." Genetics research is one of the benefits mentioned.[103] Another article stressed that "not all of these genetic efforts of radiation are harmful. Certain genetic changes […] may be used to improve the yield, food qualities and disease resistance."[104] Indeed, as reported by *New York Times* a later AEC statement claimed that using radiation on crops might speed up the rate at which new beneficial strains can be developed, which "provides an outstanding example of how atomic energy is already being harnessed for the beneficial uses of mankind."[105]

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[101] "Scientist Converts Tall Field Corn Into Short For Easier Harvesting," *New York Times,* Aug. 27, 1948.

[102] "Vast Atomic Energy Benefits to Farms Foreseen Next Year," *Washington Post,* Dec. 1, 1948.

[103] "Report on the Atom," *Washington Post,* Feb. 3, 1949.

[104] Frank Carey, "Bats and Bugs Play Atomic Role," *Washington Post,* Aug. 14, 1949.

[105] "Atom Study Points to Food Plenty By Fast Development of New Plants," *New York Times,* Jan. 31, 1952.

While the AEC was not unequivocally positive about the effects of radiation, its message was generally optimistic about nuclear technology. Dr. Warren, the director of the Division of Biology and Science at the AEC, recognized that the "treatment for radiation sickness" was insufficient and had to be improved "as a matter of preparedness against atomic warfare." Still, he claimed that the medical use of radioactive isotopes showed great promise.[106] Lewis L. Strauss, a former member of the AEC, dismissed the fallacy that "represents atomic energy as a modern version of the Fountain of Youth, providing a specific for every human ill." He gives cancer research as a specific example for this optimism. But despite his reservation about nuclear health care and other atomic fallacies, he affirmed that the bomb's destructive capabilities were not as bad as some imagined.[107] All in all, such articles align with historian Paul Boyer's analysis of a "sustained and wide-ranging governmental effort" to dispel the public's atomic fears—an effort of which the AEC was part and parcel. It aimed to do so in two ways: by claiming that the bomb's potential was exaggerated and by emphasizing nonmilitary applications of nuclear technology.[108]

The portrayal of genetics aligns with Boyer's analysis of atomic rebranding. Regardless of positive or negative appraisal of radiation-induced genetic effects, the study of genetics is posited as the counterpart of atomic warfare. Either as a way to showcase scientific and technological benefits of nuclear technology unrelated to weaponry, as an antidote to its destruction, or as the tools necessary to invalidate the perceived nuclear danger. Thus, genetics complemented nuclear physics. While genetics did not portray the Cold War science trait related to military might—as Westad describes—the discipline was still portrayed in close proximity to a field that did exhibit this characteristic.

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[106] "Treatment 'Lags' On Radiation Ills," *New York Times,* Aug. 5, 1949.

[107] Lewis L. Strauss, "Some A-Bomb Fallacies Are Exposed," *LIFE,* Jul. 24, 1950: 81–90.

[108] Paul Boyer, 303–318.

Genetics promised to be a great asset to American agriculture and health care—with or without the help of nuclear technology. Time and again, genetics was construed as a tool that would (and already did) yield great public benefit. Some of the fruits of genetics research were lauded as a positive by-product of nuclear technology that would outweigh its risks in the long run. As a discipline, then, genetics was relevant to the nuclear discourse in two ways. First, the science could function as a means to solidify the validity of a political argument: research could be cited in favor of a position, or methodology could be criticized to dispel another. Specifically, genetics was cited to counter nuclear fears and replace it with nuclear optimism. Second, the societal value of genetics functioned as a means of justification. For the discipline itself, developments in public health care and improved agricultural production justified genetics' very existence as a field. In the nuclear framing, these assets were presented as nullifying atomic destruction and its aftermath.

Genetics clearly embodied two of Westad's functions of science in the Cold War: its application in agriculture signified an improved productivity, and its use in health care promised an improved standard of living for the American people. However, Westad's third characteristic—science as a symbol of military might—does not directly apply to genetics. The field was nonetheless in close proximity to the military in the public eye because of radiation, and precisely because of this connection, it was always rooted in a Cold War framework. Genetics would shield against physics' double-edged sword: developments from this field would safeguard Americans from the radiation of atomic warfare by creating and sustaining life rather than destroying it.

The rebranding of the nuclear bomb went hand in hand with the solidification of genetics as a worthwhile field of research. These two movements contributed value to one another: the former acquired the scientific prestige of genetics to represent the atom as safe, and the latter established its legitimacy to the public by associating itself with the immediacy of the nuclear

threat. There is an ironic tension between the two. Indeed, how can genetics acquire legitimacy from a threat that is not dangerous? Such irony is indicative of the fact that multiple narratives by multiple interest groups were at play. Genetics could build on the genuine atomic fears of the public, whereas faith in the bright future of the atom had to be constructed *de novo.*

b. America and Lysenkoism

In this section, I will analyze the sources that addressed Lysenkoism. First, those articles in which journalists speculated on the ideological value of the doctrine for the Soviet regime will be discussed. While these sources tried to look at Soviet science by itself, many others compared Michurinist biology to the way science was practiced in the US. Here, the role of the state in science and the public function of science in both nations were contrasted. Furthermore, some compared US genetics to both Lysenkoism and Nazi biology: in this context, American genetics was painted as the synthesis of two ideological extremes, which had overcome the draconian consequences of both regimes. Scientists themselves were also a part of this conversation. On a professional level, their work was sometimes contrasted with Lysenkoist theory, and in such cases, geneticists refrained from being explicitly political in their publicized appearances. However, scientists did not always maintain an apolitical stance towards Soviet biology, and they voiced clear indictments of the Soviet state. Regardless of their personal beliefs, geneticists as well as their field were portrayed as the opposite of Michurinist biology and as an example of a properly organized science.

One narrative concerning Lysenko placed him as a centerpiece in a power struggle among the Soviet leadership. Georgy Malenkov supported Lysenkoism in opposition to fellow Central Committee member Andrei Zhdanov and his son Yuri Zhdanov, a scientist and science propagandist for the Party. One article posited that Zhdanov was confronted with Malenkov's power when his followers "rashly attacked" Lysenko. In reply to this attack, Malenkov forced

them and Zhdanov to recant and mend their ways.[109] Another article claimed that Lysenko's theories fit well within Soviet ideology. Malenkov, recognizing the political value of Lysenko, mobilized genetics against Zhdanov's son Yuri. This allowed him to "[re-emerge] as party secretary" enabling him to purge "all scientists and […] propagandists who had opposed Mr. Lysenko."[110]

What was the precise value of the scientific doctrine that was important in the Malenkov-Zhdanov feud? "By arguing that acquired characteristics can be handed on," one journalist claimed, "the Communists imply that they can more or less create a new type of human being by their educational processes and then automatically transmit such advantages to future generations."[111] Indeed, another article claimed that Lysenkoist theory supported the Party's effort of creating the *Homo Sovieticus* who was to emerge from the soil of a new improved society unfettered by the limits of other societies.[112] "Politicians who cannot tolerate a class that thinks for itself" had subordinated Soviet biology to the Soviet political project, another held, and pursuing "biological equality" in accordance with Lysenkoism was a means towards economic equality.[113] Lysenkoism, then, would control the population and intelligentsia in particular in two ways: acquiescence to its dogma was enforced, and the scientific successes of this doctrine would allow the State to shape citizens in accordance with its will. This episode

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[109] "Will Malenkov Succeed Stalin?" *LIFE*, Jul. 4, 1949: 24.

[110] C. L. Sulzberger, "Malenkov Policy Traced in Cabals," *New York Times,* Mar. 9, 1953; C.L. Sulzberger, "Quiet Soviet Purge Held Taking Place; Thousands Ousted," *New York Times,* Jun. 6, 1949.

[111] C. L. Sulzberger, "Malenkov Policy Traced in Cabals," *New York Times,* Mar. 9, 1953.

[112] Harrison Salisbury, "Lysenko's Biology—and How it Follows the Party Line," *New York Times,* Feb. 27, 1949.

[113] Waldemar Kaempffert, "Lysenko's Theory," *New York Times*, Nov. 29, 1949; C. L. Sulzberger, "Russia—A Land of Paradox," *New York Times,* Jan. 2, 1949.

made clear to American media that Soviet science was a pawn in a political game to concoct the collectivistically ideal citizen.

As discussed in chapters two and three, academics maintain that Soviet nationalism was an important trait of Stalinist science and Lysenkoism. The contemporary American media too recognized such nationalism. One author identified three reasons for the intelligentsia's castigation: being influenced by bourgeois ideas and techniques, not embodying nationalistic Russian values, and not applying Marx—all three, the author claimed, were united in a strong Russian nationalistic character in opposition to the West. These accusations, he concluded, affirmed the virility of Soviet intellectual life, otherwise it would not have had to be challenged.[114] Yet another author typified Lysenkoism as belonging to the Soviet strategy towards intelligentsia: "fight the West, stamp out foreign influence, cease being 'objective,' re-study Marxism-Leninism, stop collecting facts, work to whip up militant party spirit."[115] American discussions of science-related Soviet media confirm the analysis of these journalists: again and again, Western genetic theories were charged with counteracting Soviet scientific and agricultural productivity.[116]

However, the nationalism related to Lysenkoism was not only a Soviet product: American media too cast the Lysenko Affair along similar nationalist boundaries pitting western scientists—explicitly western—against Lysenkoism. William Laurence, for example, quoted "leading American and European scientists" to discredit the Lysenkoist idea that altering the environment affected heredity.[117] Indeed, Soviet science was contrasted with

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[114] Harison Salisbury, "Russia Tightens the Iron Curtain on Ideas," *New York Times*, Dec. 26, 1948.

[115] Walter Bedell Smith, "My Three Years in Moscow," *New York Times*, Nov. 25, 1949.

[116] "Pravda Hits Trends of Soviet Biologists," *New York Times*, Aug. 13, 1948.

[117] William L. Laurence, "Russia Recants Bourgeois Science; Accepts 'Party Line' on Genetics," *New York Times*, Aug. 25, 1948.

Western (particularly, American) science. The comparison posited that American science surpassed Soviet science because of the differences in the political climate for scientists in the two states. Scientists were put "in a political straitjacket," wrote C.L. Sulzberger on the aftermath of Lysenko's 1948 VASKhNIL address, which paradoxically stifled science from accomplishing what it was made to achieve; by forcing compliance to a doctrine, the Kremlin limited scientists' abilities to follow possibly worthwhile paths towards mandated goals. "In another country, the assembled scientists might have asked further proof of this theory [i.e. the Lysenkoist theory that the environment yields hereditary changes]," Sulzberger continued, "but the Russian scientists had all the proof they needed in the approval of the central committee."[118] A *New York Times* reader proposed a similar argument: "Our healthy Western science differs most strikingly from that of the USSR in this very respect, that it does not submit to an authority which pronounces […] that certain conclusions are valid or invalid."[119] These sources maintained that American science did not have to yield to a central authority whereas Soviet science did.

From the Soviet perspective, Mendelian genetics was unproductive because it did not align with Party goals, yet to the American observer, the opposite was true: science was unproductive because it *must* align with what the state demanded for the national cause. Whereas the Cold War tension provided support for centralized planning in the Soviet Union, American media proposed that the state of Soviet science provided a case for undirected science. Eric Ashby, the president of Queen's University of Belfast, contrasted the role of the state in both Western and Soviet science. In the West, he wrote, the state did not intervene in science's direction "although many Western scientists nowadays depend upon the State for

[118] C.L. Sulzberger, "Russia—A Land of Paradox," *New York Times*, Jan. 2, 1949.

[119] B.W. Kunkel, "Letters to The Times: Science Here and in Russia," *New York Times,* Sep. 8, 1948.

their finance." Consequently, the Western scientist was able to "follow his work where it leads him." The Soviet Union, however, required that science was productive and had to follow state directive.[120]

However, laissez-faire science had its limits, and journalists articulated an exception: scientists "do not expect […] any interference from the state in their freedom to think what they like about science and to publish what they think—with the exception of certain developments of military significance."[121] Yet even when a scientific project was a state program, it was represented as if all individuals who contributed to it did so entirely of their own volition. In a *LIFE* editorial, the editors discussed the Manhattan Project in relation with Soviet "superplanning" while arguing that most important discoveries resulted from serendipity:

> It is often said that it took the government to create the atomic bomb. But the government merely paid for scientific brains that had already been trained under varied circumstances to think about the ultimate problems of physics. It may be that the current mania for endowing specific institutes to pursue specific lines of research will result in some useful work. But if Dr. Baker [a zoology professor who argued against planned science] is right a more fruitful approach would be to endow physicists, chemists, and biologists, and then turn them loose to do what they please with their time and their education.

This editorial showcases the belief that the production of science should be apolitical, while the prime American example of a centralized scientific effort is presented as if the central directive was actually irrelevant.[122] The American media seemed to realize a discrepancy in the ideal apolitical science, but they disregarded it as a fringe case. As such, Soviet science was the embodiment of State interference and American science was the epitome of liberty. Furthermore, the representation of the Manhattan Project as an amalgamation of free will is in

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[120] Eric Ashby, "Marxism vs. Science in Russia," *New York Times*, Jan. 6, 1952.

[121] Ashby, "Marxism vs. Science in Russia."

[122] "Russian Inventors: An Ironical Soviet Case For Undirected Science," *LIFE*, Jul. 19, 1948: 30.

contradiction with the post-war scientific movements that questioned the way the United States held a monopoly in nuclear arms. These articles, however, portray scientists as unanimously convinced of the American project.

Such voluntary commitment was simply inconceivable for Soviet scientists as they lacked the very liberty that enabled Americans to do so. American liberty, writes Odd Arne Westad, was rooted in "private property and the dedication to an ordered society that followed from that particular right." As Soviet scientists lived in a society opposed to the former, they could never truly incorporate the latter.[123]

Indeed, the very nature of science would favor the American way of organization. A scientist works for "the excitement, the sense of adventure that the exploration of the unknown always arouses," rather than for money. Thus, the American science persuasion—"when the scientific mind is given free play and management is reduced to such low terms that it looks like no management"—held the best interests of the scientist at heart, whereas in the Soviet Union science was organized "to reach a given goal," which disregarded the individual wants of the scientists thereby undermining science's potential. Indeed, Soviet science was relegated to a mere tool. Here, for instance, The Soviet Academy of Sciences was quoted as praising Stalin's contributions to science in a letter apologizing for its wrong opinion on biology: "Soviet science is obliged to you for its best attainments. You always directed the developments of science in the interests of the people…"[124] Lysenkoism, more so than Mendelian-Morganian genetics, would enable Soviet agriculture to manipulate nature to the needs of the state; it "transforms the selectionist from a servant who awaits nature's bounties into a master and

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[123] Odd Arne Westad, "The empire of liberty: American ideology and foreign interventions," in *The Global Cold War: Third World Interventions and the Making of Our Times*, (New York: Cambridge University Press, 2005), 10.

[124] "Soviet Biologists Ousted From Jobs," *New York Times*, Aug. 28, 1948; "Two Soviet Biologists Fired In Laboratory Liquidation," *Washington Post,* Aug. 28, 1948.

remaker," quoted *The New York Times* from Moscow radio, "who creates new types of plants and new breeds of animals in conformity with national economy."[125] The media critiqued that the justification for Soviet science was its contribution to achieving certain goals, while American science seemingly did not have to justify itself as such. Still, science's use value was prevalent in its public perception in the United States as discussed in the previous section. In the Soviet Union, however, science's utility was determined a priori by the state, while American science would have it an effect of its laissez-faire organization: a scientist's freedom to determine their own pursuit would stimulate their most creative, out-of-the-box thinking, which, in turn, would yield the greatest developments for the nation at large.[126]

While the aforementioned sources discussed the contrast between American and Soviet science without direct portrayal of scientists themselves, they were very much a part of the coverage on Lysenkoism. Some scientists discussed Soviet science in a purely technical manner. They attempted to recreate Lysenko's experiments, provided answers to the environment versus heredity debate, or offered their expert opinion on new Soviet scientific developments—all without directly commenting on Soviet politics. One study followed the growth of a culture placed within an environment lacking a vital amino acid, histidine. Despite histidine's absence, bacteria were still able to multiply. The researchers concluded that it might seem as if "an inherited change has been induced in a specific response to a change in the environment," they concluded however that a *de novo* mutation had not taken place: instead, the thriving culture resulted from a subset of bacteria that had already been able to synthesize histidine. As such, those without this ability died out while the others spread. The scientists concluded that their research was a step in the direction of understanding and controlling

[125] "Russia Hails Michurin," *New York Times*, Dec. 19, 1948.

[126] Waldemar Kaempffert, "The Atom and the Scientific Mind," *New York Times*, Oct. 9, 1949.

mutations through the environment. The scientists and their report as quoted in *The New York Times* discussed the research in scientific terms. The author of the article, however, contextualized the scientific publication with the Lysenko Affair. In the opening paragraph, the author claimed that the new results contradicted Lysenko's theory that "hereditary characteristics can be changed at will by changing the environment." As such, the author provided a political context where the scientist did not explicitly do so.[127]

Despite the effort to remain "neutral," proper science as contrasted with Soviet science could be portrayed as intrinsically political regardless of scientists' personal beliefs. The political nature of opposing Lysenkoism is exemplified by two cases where a scientist was accused of being pro-Communist. When the United States barred Dr. Mogens Westergaard from visiting a genetics conference under the Internal Security Act because of his former membership to the Communist Party, his hosts defended the invitee: "Dr. Westergaard was invited because of his reputation as a scientist. Communism and scientific genetics are incompatible, they pointed out."[128] The American scientist Dr. Linus Pauling found himself amidst a similar controversy. HUAC accused him of supporting the American Continental Congress for Peace and American Peace Crusade, which HUAC deemed Communist and "Moscow directed." Simultaneously, however, Pauling had been "under bitter fire in the Soviet Union and [had] been ejected from Soviet chemistry at a conference" because his work was supposedly anti-Marxist nonsense. The California Institute of Technology, Pauling's employer, compared the Soviet condemnation to the Lysenko Affair. In this comparison, Pauling's theory

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[127] William L. Laurence, "'Official' Soviet Heredity Theories Contradicted in Tests at Columbia," *New York Times*, Apr. 11, 1949; "Bacteria Research Refutes Red Theory," *Washington Post,* Apr. 11, 1949. For more articles addressing Michurinist biology from a purely scientific angle, see Waldemar Kaempffert, "Science in Review: Lysenko Unsupported," *New York Times,* Dec. 25, 1949; "Soviet Scientists Claim Discovery of Key to Life's Origin," *Washington Post,* Nov. 3, 1950.

[128] "Danish Scientist Barred as Ex-Red," *New York Times,* Mar. 6, 1951.

of resonance was, analogous to Mendelian genetics, a topic of state interference in science to be aligned with dogma. More importantly, the CIT discussed this controversy to discredit the HUAC claim that Pauling was a Communist. As such, Pauling's rejection by Soviet chemistry (and Soviet science in general) was a means of political reconfiguration in the US public eye. This argument presents one's scientific opinion as an indicator of one's political allegiance: because Pauling's theory was rejected in the Soviet Union, he simply could not be "pro-red." In these two examples, proper science was emblematic of one's opposition to Communism: both Westergaard and Pauling could not be Communists because of the value of their work in the West.[129] Furthermore, the two cases are examples of how soft forms of repression resulted in ideological acquiescence among US scientists. Instead of contradicting the "workings of the loyalty-security system," scientists opted to acknowledge the Soviet threat, historian Jessica Wang writes: "Whether or not they believed in the politics of anticommunism, they had to operate within its confines if they wanted to appeal an adverse decision."[130] The arguments made in support of Westergaard and Pauling answered HUAC's political demands in their own terms, but in doing so the scientific credibility of both scientists was incorporated into HUAC's anticommunist ideology.

So far, I have considered the public appearances of scientists who were only related and opposed to Lysenkoism by virtue of their work, other scientists, however, were more explicit in their criticism of Soviet science and voiced clear indictments of the regime that throttled their discipline and foreign colleagues. The accusations discussed the consequences for Soviet agriculture, the coming academic developments as well as the personal tragedies. For example, Dr. Theodosius Dobzhansky, a Russian geneticist who emigrated to the US, decried the Soviet

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[129] Harry Schwartz, "'Pro-Red' Scientist Scored By Soviet," *New York Times*, Sep. 2, 1951.

[130] Jessica Wang, "Scientists and the Problem of the Public in Cold War America, 1945–1960," *Osiris* 17 (2002): 341.

acceptance of Michurinist biology as a "monstrous error" that would likely result in disastrous consequences for Soviet agriculture.[131] Dr. H.J. Muller was outspoken about the Soviet Union. He resigned his Soviet Academy of Sciences membership following the science purges, ridiculed Lysenko, and compared the Communist Party to the Nazis.[132]

Some scientists discussed the state of Soviet science in light of growing Cold War tension. Dr. Vannevar Bush, now president of the Carnegie Institution of Washington, lamented the adverse effects to global science caused by the Soviet-induced rift during a meeting of his institute: "Competition between the two systems, Dr. Bush predicted, would eventually result in the free system going far ahead of the other."[133] In a later article, Dr. Conway Zirkle appraised all of Soviet science deeming genetics replaced by "archaic quackery." While military research was deemed "remarkably good," Zirkle argued that were the terrible state of some disciplines replicated in all of Soviet science, the Soviet Union would crumble: "Its internal weaknesses would soon reduce it to impotence."[134] Such voices argued that science was of paramount value to the longevity of a state, and because Soviet science was vastly inferior to its American counterpart, the Cold War would result in a similar victory for the US. To scientists commenting on the Soviet Union, the deterioration of their field was a sign of the decay of the political system that repressed their colleagues.

The two ways scientists responded to Soviet biology—either overtly critical or hiding intent behind the objectivity of research—both supported anticommunist sentiment. In

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[131] "Soviet Crop Losses Seen," *New York Times*, May 24, 1949; "Scientific 'Mania:' Red Harvests May Suffer From 'Purge,'" *Washington Post*, May 24, 1949.

[132] William L. Laurence, "U.S. Scientist Quits Moscow Academy," *New York Times*, Sep. 30, 1948; Howard W. Blakeslee, "7 Scientists Held Martyrs to Red Order," *Washington Post*, Dec. 23, 1948.

[133] Charles Hurd, "Bush Sees Soviets Crippling Science," *New York Times*, Dec. 11, 1948.

[134] Nate Haseltine, "Reds' Science Rated From Good to Bad," *Washington Post*, Jan. 1, 1953.

Freedom's Laboratory, historian Audra J. Wolfe discusses the effort of several scientists to challenge Lysenkoism. Some made explicitly ideological arguments, while others hoped that scientific objectivity by itself would suffice. Among the latter were Dobzhansky (mentioned above as politically outspoken) and Leslie Dunn, who wanted to publish an English translation of Lysenko's ideas with minimal commentary to let the work speak for itself. Wolfe, however, finds that despite their effort, journalist Waldemar Kaempffert (*New York Times* science writer frequently cited in this thesis) reported on the translation with clear political language. This exemplifies that regardless of their private opinions, scientists who chose to represent themselves as apolitical and objective could be incorporated in an ideological framing by those who cast them.[135] Likewise, the scientists who publicly spoke out against Soviet science easily fit the narrative that the US by virtue of its superior scientific freedom surpassed the Soviet Union both scientifically and democratically. Historian Jessica Wang argues that the historiography of science tends to portray scientists as unanimously in support of "the requirements of the national security state" even though they subscribed to a wide variety of political leanings.[136] The representation of scientists in the context of Soviet science suggests a similar tendency as scientists seemed unified in their opposition to and criticism of the Soviet system. However, this unity is likely the result of narrative framing as discussed by Wolfe rather than the amalgamation of many private opinions.

However, the suggestion that journalism is the sole controller of scientific images is a common trope for the popularization of science. In this view, there is a clear distinction between the disseminators and creators of scientific images: the media and scientists respectively. Furthermore, the disseminators are said to dilute and distort the meaning of

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[135] Audra J. Wolfe, "Western Science vs. Marxist Science" *in Freedom's Laboratory: The Cold War Struggle for the Soul of Science* (Baltimore: Johns Hopkins University Press, 2018).

[136] Jessica Wang, *American Science in an Age of Anxiety: Scientists, Anticommunism, and the Cold War* (Chapel Hill and London: University of North Carolina Press, 1999), 3–4.

science even though a wide variety of people are usually involved in the popularization process.[137] The conclusion that the American media fit the presentation of scientists to a framework seems contradictory to this claim. This can be partially explained by the limited range of opinions that could be discussed during the Cold War. Furthermore, an assessment of the degree to which scientists' opinions were shaped by the media would require a comparison between scientists' personal beliefs and the way these were expressed to the public. Nonetheless, because the plurality of opinion is limited in comparison to what the literature suggests, it is plausible that scientists' opinions were indeed made to fit the ideological framing of newspapers.

Furthermore, in opposition to totalitarian science, American science alone could prosper and contribute to America's universalist aspirations. While the scientific case for the American system has been discussed before in this section, the comparison between the Soviet Union and Nazi Germany suggested furthermore that the American way would be victorious. The yet to be achieved victory over the Communists would, like the victory over the Nazis, demonstrate America's global viability: "now the time had come to transform both enemies and friends in one's own image."[138] During a rally for Americans for Intellectual Freedom, speakers discussed the parallels between Soviet and Nazi science proclaiming that "the color of the intellectual strait-jacket has changed, but not its cut." In such a political environment, scientific objectivity was rendered impossible, Dr. Sidney Hook said, and without a mutual dedication to and acceptance of an objective standard the Soviet Union had dealt "a fatal blow at the prospects of international peace and understanding." Finally, Dr. Muller discussed genetics in the Nazi-Soviet comparison: in biology, both ideologies maintained the existence of "innate master and subject"—the former in race, the latter in class. "A political democracy," Muller

[137] José van Dijck, 9–11.

[138] Westad, 21.

concluded, would alone be able to sprout viable science. These speakers proclaimed that objectivity was both aligned with US interest as well as a consequence of its political organization, while the opposite was true for the Soviet Union.[139]

In this teleological view, Nazi biology which maintained that hereditary traits were the biological essence resulted in the Holocaust, while the purge of geneticists was a consequence of Michurinist biology, which held that the environment trumped heredity. The moderate position, as held in the US, overcame the ideological shortcomings associated with biology in the two regimes. American genetics, then, was at the middle ground between these two ideological extremes. Discussions within the "purely" scientific domain also alluded to the shortcomings of Nazi and Soviet genetics, which would be overcome by American science. Two articles wrote that "recent scientific evidence indicates that there is no clear division between heredity and environment in the shaping of human qualities." This statement was backed up by Dr. Theodore Ingalls who—expanding upon the aforementioned experiments—contrasted the scientific developments with Nazi and Soviet genetics: "the Soviet belief that the environment shapes most human qualities appears to be just as ridiculous as the old Nazi theory of inherited racial supremacy," quoted *The New York Times*, "the truth may lie somewhere in the middle." Yet the precise location of this "somewhere" was still to be found, and American scientists—unaffected by an ideological extreme—would not shy away from pushing genetics towards this objective.[140]

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[139] William B. Conklin, "Soviet Is Attacked at Counter Rally," *New York Times*, Mar. 27, 1949; Marquis Childs, "Calling Washington: Enemies of Truth," *Washington Post*, Mar. 30, 1949. See also "M'Mahon Demands U.S. Stays Strong," *New York Times*, Oct. 11, 1948.

[140] "Environment Tied to Heredity Factor," *New York Times*, Dec. 20, 1951; Waldemar Kaempffert, "Science in Review: Heredity and Environment Interact, It Is Held, To Shape the Destiny of the Offspring," *New York Times*, Dec. 23, 1951.

Indeed, American genetics was portrayed as a boundary-pushing discipline that investigated the faults of other belief systems. On the one hand, this can be compared to genetics' effort to reinvent and represent itself as an imagined new field (as briefly discussed in chapter one) to distance itself from an eugenicist past it did no longer belong to. A *New York Times* article on geneticist Prof. L.C. Dunn succinctly exemplified this as follows:

> Changes in biological outlook resulting from developments of the relatively new science of genetics not only have destroyed the old "blood theory" of race, but have tended to restore the picture of man's unity found in ancient religions and mythologies.[141]

Here, genetics was presented as a direct antidote to the racism of eugenics; as a discipline that would unite mankind.

On the other hand, the ability of reinvention itself relied on the fact that genetics was closely familiar with the ideas it tried to retract itself from. While José van Dijck writes that in the 1950s and onwards genetics attempted to distance itself from its eugenic roots,[142] here the ideological proximity of the old to the "new" science could be construed as a positive: the willingness to look at scientific dogma of adversarial ideologies was emblematic of American science's devotion to objectivity. For example, discussing the 50th birthday[143] of genetics, *The New York Times* argued against Lysenkoist criticism on the basis of western genetics' ability to evolve. According to the newspaper, Lysenkoists claimed that genetics with only eyes for heredity and none for the supposed mutagenic potential of the environment "[perpetuated] bourgeois ancestor worship and class snobbery." This critique was no longer true, *The New York Times* wrote, as genetics no longer researched heredity alone. The article conceded that it

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[141] "Genetics Gains Held Altering Race Views," *New York Times,* Dec. 20, 1951.

[142] Van Dijck, 33–34.

[143] The article claimed that 50 years prior Mendel's theories on heredity had been rediscovered: 1900 thus became the year "in which genetics as a science was founded." "Jubilee of Genetics," *New York Times*, Sep. 16, 1950.

was indeed wrong to disregard environment and that such thinking was eugenicist: "Western geneticists no longer hold with eugenicists that we are rattling the physical and psychical chains imposed by our ancestors and that Congo savages will always be what they are." The author concluded that the interplay between heredity and environment—eugenics and Lysenkoism—should be researched more thoroughly before "we can undertake to improve social man with the aid of biology alone." An endeavour that is made possible because geneticists were willing to contradict "their old cocksureness" and investigate the unknown.[144]

American media discussed Lysenkoism and Soviet science from different angles. While some articles challenged Lysenkoist biology only in the laboratory, most articulated the Affair in an explicitly political context. The doctrine was painted as both a consequence of Stalinist ideology as well as a political tool for the Party elite. Furthermore, proper science was seen (and represented) as anticommunist: articles could fit scientific objectivity (as embodied by scientists addressing Michurinist biology on purely scientific terms) in an explicitly political argument. Western genetics could venture where the Soviets were not allowed, thus freedom would surpass the efforts of dogmatism. As such, genetics was a microcosm of the Cold War where the US' organization of society would eventually be heralded as the victor over Communism.

[144] "Jubilee of Genetics," *New York Times*, Sep. 16, 1950.

c. Reliance on Soviet Media

In their articles on Soviet science, journalists directly relied on Soviet media as their source. In many cases, the American articles seem to be translated quotations from the source material.[145] For example, the repentance of scientists and institutions were often published in major Soviet newspapers such as *Pravda* and *Izvestia*. Such articles provided an overview of how Lysenkoism affected scientific life. However, the American papers also broadcasted new scientific developments in the Soviet Union which were not explicitly linked to the Soviet state encroachment onto science. What these articles have in common is that the authors seldom explicitly deconstructed the claims made in their Soviet sources. If these Soviet sources were (regarded as) state mouthpieces, American papers, therefore, reprinted Soviet propaganda in translation even when one considers the relative difficulty to obtain information on the Soviet Union via other means. However, American and Soviet ideology are *obviously* at odds with one another. How did journalists resolve this ideological tension when copying Soviet propaganda?

For example, *The New York Times* reported that prominent Soviet papers published "front-page displays" of an apology letter from the Academy of Sciences addressed to Stalin, which expressed the institute's regret regarding its faulty stance in the genetics row. To prove its sincerity, the institute disbanded a disputed laboratory and removed two biologists from their positions. The article offered no direct critique or commentary on the political demand for such a response from a scientific institute, instead *The New York Times* relied on the quoted material from the Soviet sources.[146] Similarly, in another report on *Pravda*—where Prof. I.

[145] "Seem" because I cannot verify the translation.

[146] "Soviet Biologists Ousted From Jobs," *New York Times*, Aug. 28, 1948; "Two Soviet Biologists Fired In Laboratory Liquidation," *Washington Post,* Aug. 28, 1948.

Gluschenko called US genetics acquiescent to eugenical politics and imperialism—the author, Harrison E. Salisbury, offered no explicit comment on Gluschenko's accusations. Instead, Salisbury relied almost solely on direct quotations.[147]

While the aforementioned articles discussed political topics (i.e. the purge of scientists and anti-American polemics), some reported on the developments of Soviet science with little to no reference to its political nature. One *NYT* article discussed a Lysenko-proposed afforestation method by explaining its practice and the purported benefits. Lysenko's controversial standing in science-politics is only barely referred to: the paper announced the method as "a new victory of Michurin science," eponymously referring to a scientist whose "chief contention was that the hereditary characteristics of plants could be changed by altering the environment" an editorial note explained. While this contention was central to the Lysenkoist antagonism towards genetics, the author provided no retort in defense of American genetics. As such, this discussion of Lysenko's technique seems supportive or at the very least impartial.[148]

However, the negative ideological implications such articles posed for the Soviet system would be self-evident to an American audience. "We are made aware from time to time that Soviet scientists are excoriated in Pravda for reaching un-Marxian conclusions," wrote Waldemar Kaempffert for *The New York Times*, "the case of genetics, the science of heredity, has given ample proof of that, and some of the leading Soviet geneticists have disappeared from the scene because of their nonconformity." Here, Kaempffert suggested that the State-broadcasted denunciations and apologies functioned as the ideological obverse in the United States: whereas in the Soviet Union such articles articulated a clear ideological imperative, to

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[147] Harrison E. Salisbury, "Genetics Is Linked to U.S. Imperialism," *New York Times,* Apr. 6, 1949.

[148] Harrison E. Salisbury, "Forestation Plan Hailed By Soviet," *New York Times,* Oct. 23, 1949.

American eyes they provided clear proof of the ideological antonym. The *Pravda* articles discussed above thus provided an implicit indictment of the Soviet state.[149]

Furthermore, while in some articles authors withheld commentary or left judgement to the reader, others relied on the opinion of scientific experts, which took the place of a manifest critique. A report on the Soviet paper *Izvestia* that criticized S.D. Antipin who held that many of mankind's ills stemmed from walking upright rather than on all fours. The paper describes Antipin as "an ignoramus, slavishly addicted to idiotic Morganistic … ravings, having nothing to do with science." The *New York Times* author did not explicitly criticize *Izvestia* themself, but an American professor, Dr. J.L. Lindquist, expressed his opinion on Antipin in an editorial note. As Lindquist agreed with Antipin's thesis, *Times* opposed *Izvestia* on the basis of science.[150] An editor's note is used similarly against Lysenko's claim that he can transmute "one biological genus into another … wheat into rye." A paragraph in brackets explains that according to "hundreds of thousands of carefully checked experiments" this is impossible: it would be "analogous to transforming a dog into a cat." Here then, the author refers to the authority of the scientific community to counter Lysenko's argument.[151] In the previous section, I discussed how apolitical (or at least politically reserved) scientists were incorporated into an argument against the Soviet Union. In articles where science provided an objective analysis of a Communist claim, the same thing occurred: when Western science contradicted Soviet media, the Soviet science system was portrayed as backwards and dominated by dogma.

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[149] Waldemar Kaempffert, "The Atom and the Scientific Mind," *New York Times,* Oct. 9, 1949.

[150] "Soviet Organ Lashes Biologist for Ascribing Man's Ills to Practice of Walking Upright," *New York Times,* May 16, 1949; "Izvestia Slaps at Biologist Who Deplores Vertical Man," *Washington Post,* May 16, 1949.

[151] Harrison E. Salisbury, "Soviet Soviet Agronomists Turn Wheat Into Rye In Harvest of Stalin Wisdom, Says Lysenko," *New York Times,* Dec. 16, 1949.

All in all, journalists' portrayal and discussion of Soviet source material was not always manifestly critical. Instead, American papers relied on the reader's own judgement, which was sometimes supplemented with the scientific opinion of an authority in the relevant field. When an opinion was clearly formulated however, the American press unequivocally opposed Lysenkoism and the Soviet media.

d. Science and Ideology

The story of the wax tomato exemplifies several of genetics' ideological qualities. First of all, it clearly showed the consequences of State control in science. On the one hand, the loud applause for the too-good-to-be-true-sized tomato was proof of the uncritical complaisance in the Soviet scientific community. On the other hand, the products of such fraudulent science were the manifestation of what the state demanded biological sciences to be: a means to bolster agricultural productivity. Yet proper science was needed to expose the barely disguised falsehoods of state-mandated experimentation as only an outside observer willing to ask critical questions was able to see past the Lysenkoist facade, and because the scientist remained impartial, it was up to the journalist to articulate the implications of this story.

Indeed, American science provided the media with the apolitical lense with which an objective image of the Soviet Union could be formed. American genetics contributed to such imagination in multiple ways. By itself, genetics provided legitimacy to the American organization of society. It did because of the universally optimistic portrayal of the field's limitless potential—especially in unison with nuclear technology. Like in the tomato example, science could take apart Soviet falsehoods, which when scientifically deconstructed were indicative of the many defects that plagued the Soviet Union. In contrast with Soviet science, American science was a shining example of what true liberty could bring forth. Soviet research could never yield true sustained innovation because its reach was limited by what the Party

envisioned, while American scientists could conduct research about whatever they pleased. Furthermore, this liberty supposedly stimulated all scientific workers to apply themselves voluntarily in support of the system that made their freedom possible. Because Soviet scientists lacked such American liberty, they could never truly apply themselves as such for the Soviet Union. As with the atomic bomb, scientific legitimacy supported the case against the Soviet science system by supplying newspaper articles with scientific retorts against Soviet research and scientific expertise to contextualize claims made by the Soviet press. Another similarity between nuclear genetics and genetics in the Lysenkoist context is that in both genetics is cast as something new. With the atom, genetics promised new technological advances, and when put in contrast with Nazi and Michurinist biology, genetics was represented as having overcome the shortcomings of totalitarian science, which in turn supported the case for the American system as universally viable.

The state, as the prime organism of American ideology, seldom manifested itself in newspaper articles in the five-year period following Lysenko's 1948 victory over Soviet genetics. However, it did so clearly in two contexts. First, as the Atomic Energy Commission, the state argued in favor of nuclear technology as a non-military scientific asset aided by the promising visions of bright genetic future. Second, as the House Un-American Activities Committee, it challenged scientists to defend themselves in accordance with the ideological hegemony. In both situations, science followed suit albeit in completely different ways. In the former case, genetics acquired a new image in exchange for its service: something the discipline would continuously strive towards in the decades to come. The latter situation, however, was not necessarily mutually beneficial. As individual scientists had to adapt to HUAC's ideological demands. Nonetheless, in both situations science confirmed the ideological superiority of the United States over its most threatening competitor: the Soviet Union.

Chapter 5. Conclusion

The aim of this thesis was to evaluate the ideological meaning of genetics during the Cold War. While science, particularly physics and the atom bomb, has already received significant academic attention on this topic, genetics has been largely overlooked. Yet, this discipline was also a battleground for an ideological conflict between the United States and the Soviet Union. As the tension between the two superpowers grew at the dawn of the Atomic Age, a scientific movement which promised to extinguish all bourgeois and western influence from Soviet science reached its climax in the Communist world. T.D. Lysenko, the movement's leading figure, was particularly opposed to Mendelian genetics. He believed that the environment rather than heredity mainly determined which characteristics would be passed on to the next generation. As the Communist Party embraced Lysenko's doctrine as official dogma and Soviet scientists who refused to acquiesce were purged, American geneticists and media spoke out. While it is disputed whether scientists were purged explicitly because of their opposition to Lysenkoism, the official science-dogma, the correlation was clear to the contemporary scientist. With a scientific field in the limelight of a Cold War controversy, this thesis set out to answer the following question: *What was the significance of genetics for Cold War ideology during the five-year period following Lysenko's 1948 victory over Soviet genetics?*

To this end, I analyzed two representational contexts of the field: genetics related to Lysenkoism and Soviet science, and the general representation of genetics. In the latter context, the discipline largely aligned with two key characteristics ascribed to Cold War science in general: it promised to bolster productivity as well as the American standard of living. Indeed, genetics was portrayed as a science that would greatly contribute to the public good. Productivity enhancement was most frequently presented in relation to agriculture, where genetics promised stronger crops and fatter cattle, and in relation to the living standard, genetics

would cure cancer and a wide range of other societal diseases. However, genetics did not directly embody a third key characteristic: science as a signifier of military strength. Still, the field was in close proximity to the military in the public eye. Genetics was central in contestations of radiation's destructive potential and the technology usually associated with nuclear weapons was recontextualized to genetic applications. Here, the aforementioned promises of genetics were contrasted with nuclear weaponry to disarm any possibility of radioactive harm done to the American people. As such, genetics was aligned with the governmental effort to portray nuclear technology in a new light; a light that was beneficial rather than harmful and dangerous.

Genetics as a field was also justified via this reconfiguration: the nuclear portrayal inspired genetics with significant use value for America. In the 1950s, Van Dijck argues, genetics achieved this by juxtaposition with nuclear physics; or more specifically, the atomic bomb. The harmful aftereffects of the bomb would be solved by genetics, the promise went; radiation caused mutations would and could be healed through genetic understanding. This proximity to nuclear weapons went hand in hand with a proximity to the Cold War. Thus, as much as nuclear physics was perceived as fundamental for surviving the Cold War, genetics too "is constructed as an essential weapon in the Cold War political paranoia."[152]

In relation to Lysenkoism, however, the purported benefits of genetics were seldom compared to the fruits of Soviet science. Instead, the Lysenko Affair was regarded as the battle site for the very essence of science: Lysenkoism exemplified how Communist totalitarianism stifled scientific progress. The media argued that because the goals of Soviet science were predetermined and non-negotiable, scientists could no longer apply their minds to what they wanted themselves, and they were unable to critically assess their own field from within the

[152] José van Dijck, 33–35.

dogmatic framework. Self-interestedness was central to the American understanding of science. As such, the Affair supported a case for a laissez-faire approach to science.

On the one hand, people argued that the viability of science was threatened because the Soviet state sought to apply science to reach its goals. This use value, however, is only real—rather than merely ideological—insofar it was achieved through the free scientific practice that enabled scientists to choose their own pursuits. Still, to be deemed a "good scientist" one must uphold certain obligations to society: "… his sense of duty to the world and to his work."[153] An American scientist would therefore only be good if their research aligned with the needs of society, and the two ideals of the Good Scientist across the iron curtain both pursued similar (albeit still ideologically conflicting) versions of the Common Good even if the State did not articulate its meaning as aggressively in the United States as in the Soviet Union.

Meanwhile, geneticists attempted to address the scientific claims of Michurinist biology from a purely scientific perspective. Such an objective posture, however, became a political indictment of the Soviet Union even in cases where the article that portrayed science was not manifestly critical of the Communists: the contrast between factually correct science and the abhorred enemy was presented without comment, and the reader could draw their own conclusions.

Other scholars have been critical in their historiographies of the tendency to portray a given community, such as the scientific community, as ideologically monolithic. Therefore, it is vital to acknowledge the true breadth and diversity of opinion among the studied subjects. Even though this thesis endeavoured to do so, American science vis-à-vis Soviet science appears unequivocally opposed to the Soviet state. I suspect that the Cold War political climate limited the range of stories that could be told by and about scientists as others have also

[153] Waldemar Kaempffert, "The Atom and the Scientific Mind," *New York Times*, Oct. 9, 1949.

noted.[154] Further research on the many voices among US scientists must therefore verify this conclusion.

Post-war genetics reinforced America's position as a global superpower superior to the Soviet Union. Its close relation to nuclear weaponry solidified the field as a publicly significant defence mechanism against atomic terror. Furthermore, it provided an objective critique of the Lysenko Affair, which was effectively a critique of the ideological basis for the Soviet Union itself, or as Waldemar Kaempffert succinctly put it for *The New York Times*: "the struggle waged in the political arena is carried into the laboratory."[155] I add that this was also the other way around. There was no doubt that the United States would become the victor of the global struggle with science squarely behind the nation.

[154] Oliver Elliott, *The American Press and the Cold War: The Rise of Authoritarianism in South Korea, 1945–1954* (Cham, Switzerland: Springer International Publishing AG, 2018), 1–11.
[155] Waldemar Kaempffert, "Lysenko's Theory," *New York Times,* Nov. 29, 1949.

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