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The Cold War Context of the Golden Jubilee, Or, Why We Think of Mendel as the Father of Genetics

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Abstract. In September 1950, the Genetics Society of America (GSA) dedicated its annual meeting to a "Golden Jubilee of Genetics" that celebrated the 50th anniversary of the rediscovery of Mendel's work. This program, originally intended as a small ceremony attached to the coattails of the American Institute of Biological Sciences (AIBS) meeting, turned into a publicity juggernaut that generated coverage on Mendel and the accomplishments of Western genetics in countless newspapers and radio broadcasts. The Golden Jubilee merits historical attention as both an intriguing instance of scientific commemoration and as an early example of Cold War political theatre. Instead of condemning either Lysenko or Soviet genetics, the Golden Jubilee would celebrate Mendel – and, not coincidentally, the practical achievements in plant and animal breeding his work had made possible. The American geneticists' focus on the achievements of Western genetics as both practical and theoretical, international, and, above all, non-ideological and non-controversial, was fully intended to demonstrate the success of the Western model of science to both the American public and scientists abroad at a key transition point in the Cold War. An implicit part of this article's argument, therefore, is the pervasive impact of the Cold War in unanticipated corners of postwar scientific culture.

Keywords: Cold War, genetics, Gregor Mendel, Trofim Lysenko, commemorations, science and politics, freedom, ideology, anti-Communism, Rockefeller Foundation

Twentieth-century biologists apparently loved a party. Beginning with the 100th anniversary of Darwin's birth in 1909, the American biological community has greeted the arrival of marquee anniversary dates of events deemed to be historically significant with elaborate cocktail parties, convocations, citations, and commemorative volumes. Of course, these events were more than just social occasions: like all commemorative scientific practices, the biologists' fetes have served multiple disciplinary purposes, including but not limited to resolving disagreements about concepts or practices, identifying a shared intellectual lineage or

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problem set, establishing the boundaries of the community, and distributing rewards. The Darwin centennial, for example, occurring as it did just a few years after the so-called rediscovery of Mendel's work challenged the Darwinian notion of natural selection, offered an opportunity for Darwin's remaining champions to stake their claims of allegiance. In 1959, the year of Darwin's sesquicentennial, by contrast, the newfound theoretical consensus of the evolutionary synthesis presented a chance for ambitious biologists to proclaim their agenda of biological unification both to themselves and to the world.[1]

There was another celebration that, while having received less scholarly attention than the Darwinian celebrations, was arguably just as important for the broader history of science. In September 1950, the Genetics Society of America (GSA) dedicated its annual meeting to a "Golden Jubilee of Genetics" that celebrated the 50th anniversary of the rediscovery of Mendel's work.[2] This program, originally intended as a small ceremony attached to the coattails of the American Institute of Biological Sciences (AIBS) meeting, turned into a publicity juggernaut that generated coverage on Mendel and the accomplishments of Western genetics in countless newspapers and radio broadcasts. With the help of a grant from the Rockefeller Foundation, the GSA took the unusual step of hiring a public relations firm to manage its publications and draw attention to its program. The commemorative efforts, crowned by a 4-day event attended by almost 2,500 biologists on the Ohio State University campus in Columbus, Ohio, included a scholarly book; a general-interest pamphlet with a print run of 100,000 copies; an attempt to establish a permanent Mendel Museum; and a Mendel citation ceremony featuring Latin American dignitaries.

The Golden Jubilee merits historical attention as both an intriguing instance of scientific commemoration and as an early example of Cold War political theatre. As suggested in the opening paragraph, scientific commemorations have, over the past two decades, become a topic of historical investigation in and of themselves. Following the research agenda outlined by Pnina Abir-Am in her analysis of the anniversary celebration of the first protein X-ray photograph, historians and science studies scholars have compared commemorative practices across nationalities, and time.[3] Perhaps because of their roots in historical

[1] For the Darwin centennial, see Richmond, 2006; for the sesquicentennial in the context of the evolutionary synthesis, see Smocovitis, 1999.

[2] The Golden Jubilee appears in few accounts of 20th-century biology. An exception is Smocovitis, 1996, which mentions the celebration as part of evolutionary biologists' efforts to articulate a narrative of unification.

[3] Abir-Am, 1992. See also the introduction to and case studies in Abir-Am and Elliot, 1999.

ethnography, these studies have primarily addressed the meaning of commemorative practices for members of the scientific community (however defined) rather than for the broader culture in which they have taken place. Given the centrality of science to social, political, and economic life, however, it is clear that high-profile scientific celebrations convey meaning well beyond the boundaries of their disciplines. Anthony Travis's rich account of how the sorry state of British industry played a large part in inspiring the British Chemical Society to celebrate the 50th anniversary of the discovery of mauve demonstrates the possibility of tracing the motivations for and impacts of scientific commemorations in the broader culture (Travis, 2006). Similarly, one imagines that the recent Year of Darwin celebration (2009) might have taken a rather different cast had it not been designed, in part, to blunt the appeal of the Intelligent Design movement in the United States.

Like the Year of Darwin and the Mauve Jubilee, the Golden Jubilee of Genetics must be understood as a commemorative event aimed at least as much at laymen as at scientists. It was proposed and enacted in the wake of a passionate debate within the GSA about the proper response to Trofim Lysenko's rise to power in the Soviet Union.[4] For a variety of different reasons ranging from anti-Communism to the genuine desire to help their colleagues in the Soviet Union, a few outspoken American geneticists had advocated that the organization take a public stance against what had become known in the United States as "Lysenkoism."[5] Despite the urging of the members of the hastily formed (and wonderfully named) Committee to Counteract Anti-Genetics Propaganda, the GSA's executive leadership declined to get involved in the Lysenko dispute, citing both the need to avoid the

[4] Scholars disagree as to the extent of Lysenko's power and the direness of the consequences for classical genetics. The more salient point here is that the American genetics community was under the impression that genetics had more or less been eliminated from the Soviet Union. The classic early accounts are Medvedev, 1971 and Joravsky, 1970. Although written after the end of the Cold War, Soyfer, 1994, shares their point of view that Lysenkoism was driven by ideology and politics. Adams, 1972; Graham, 1972; and Krementsov, 1997, offer more nuanced accounts that demonstrate the resiliency of genetics in the Soviet Union. Specific discussions of the American geneticists' campaign can be found in Krementsov, 1996; Sapp, 1987, pp. 168–180; Wolfe, 2010; and Selya, this volume. For the British response, see Harman, 2003 and Paul, 1983.

[5] Some scholars object to the use of the term "Lysenkoism," given that the term carries an air of propaganda (mirroring, as it does, the Soviet phrase "Mendelism–Morganism–Weismannism") and raises Lysenko's theories to a unified movement. Since this is precisely how the American geneticists viewed the issue, I will continue to use it throughout this article.

appearance of establishing a scientific dogma and the desire to protect the professional society from political disputes. The debate was contentious and ongoing, and it left many American geneticists questioning their role in the public sphere (Selya, this volume; Wolfe, 2010). Meanwhile, the Americans continued to receive a steady stream of grim reports on the state of Soviet genetics and saw evidence that Lysenkoism was gaining support on American shores. In the fall of 1949 a Communist chemistry teacher at Oregon State College was fired after reportedly teaching Lysenko's views in his classroom; earlier that same year, the Irish playwright George Bernard Shaw had defended Lysenkoism in the pages of the popular *Saturday Review of Literature*.[6]

This article begins where the GSA's debate left off. By December 1949, the faction of American geneticists most invested in issuing vocal condemnations of Lysenkoism – H. J. Muller, Robert Cook, and H. Bentley Glass – had been asked to refrain from speaking on behalf of the society while the organization determined what might constitute a polity. At the same time, the GSA's leadership saw an opportunity in the Mendel anniversary to present a positive, dignified, and powerful alternative to Lysenkoism, one that could combat Lysenko's criticisms of Western genetics without giving the appearance of conflict. Instead of condemning either Lysenko or Soviet genetics, the Golden Jubilee would celebrate Mendel – and, not coincidentally, the practical achievements in plant and animal breeding his work had made possible.

As with all commemorative events, the Golden Jubilee evinced a tension between celebrating events as they actually occurred and how the celebrants chose to remember them. Their construction of the past was inseparable from their experience of the present.[7] This article is therefore an attempt to grapple with the politics of collective memory. By "politics," I am referring to both the upper- and lower-case variety. Within the discipline of genetics, the Golden Jubilee celebrations certainly presented an opportunity for the American genetics community to resolve, or at least suppress, certain disagreements about the nature of the gene and the role of cytoplasmic inheritance – issues that had become increasingly important as the relationship between heredity and development took central stage in genetics research. The celebration moreover provided an opportunity for geneticists to reframe a new discipline of human genetics free from the racist and classist tones of

[6] For the chemistry teacher, see Sapp, 1987, p. 177; for Shaw's essay (an exchange with geneticist H. J. Muller), see Wolfe, 2010, p. 64. See also Shaw, 1949.

[7] Abir-Am, 1999 contains a particularly lucid discussion of the relationship between past and present, history and memory in scientific commemorations.

eugenics. But at its core, the Golden Jubilee was primarily intended as an intervention in the battle against Communism, both in the United States and abroad.[8] The Golden Jubilee may have primarily been "about" Mendel, but it was just as much about demonstrating the practical achievements of Western science as a proxy for the superiority of the American way of life at the dawn of the Cold War.

The 'Positive Achievements' of Western Genetics: The Golden Jubilee Takes Shape

The creation of a committee to celebrate the anniversary of the rediscovery of Mendel's work was one of Curt Stern's first acts upon assuming the presidency of the GSA in 1950. W. R. Singleton, the Society's new secretary-treasurer, welcomed him to the position with a letter in January that recommended that Stern appoint a committee of "grand old men" – possibly including William Castle, Albert Blakeslee, George Shull, and Richard Goldschmidt – to oversee a small celebration of a half-century of genetics at the September 1950 meeting.[9] Stern, fearing a meandering, nostalgic event, preferred to relegate these elderly champions of Mendelism to the speaker's podium rather than the organizing committee. For that, he looked to a younger – if still senior – generation. Leslie Clarence Dunn (Columbia University), I. Michael Lerner (University of California, Berkeley), Paul Mangelsdorf (Harvard University), and C. Leonard Huskins (University of Wisconsin) would fill out the committee; M. R. Irwin (University of Wisconsin) would chair it.

Both Dunn and Lerner had been outspoken advocates for an orchestrated yet cautious American response to Lysenko's power grab. Both men had close ties to scientists in the Soviet Union, and each had expressed concern that an attack directed at Communism, rather than the scientific errors of Lysenko's theories, might backfire (Wolfe, 2010; Krementsov, 1996). Mangelsdorf had not been particularly involved in the controversy over whether the GSA should issue a public statement. In contrast, both Huskins and Irwin had gone on record as opposing a formal response to Lysenkoism on the society's behalf. Huskins had run

[8] Surprisingly little of the scholarship on Lysenkoism takes seriously the issue of politics (as opposed to ideology). For exceptions, see Krementsov, 1996; Krige, 2006; Sapp, 1987; and deJong-Lambert and Krementsov, this volume.

[9] W. R. Singleton to Curt Stern, 3 January 1950, American Philosophical Society, Genetics Society of American papers [hereafter GSA], Box 7, Folder: Golden Jubilee of Genetics–Correspondence.

for GSA office on a platform that endorsed "stressing the achievements of genetics rather than the errors of its opponents."[10] As the GSA's outgoing secretary-treasurer, Irwin had watched, horrified, as Nobel laureate H. J. Muller and *Journal of Heredity* editor Robert Cook had attempted to use the organization as a base for waging a campaign against Lysenko in the popular press. It wasn't that Irwin, a practical-minded man who spent his entire career in the land-grant college system, embraced the tenets of either Lysenkoism or Communism; rather, he seemed to take personal offense both at the tenor of the debate and the idea of getting involved in what he considered to be a political, rather than a scientific, controversy.[11] Irwin maintained a strong belief that the GSA should only engage in practical, positive discussions in the popular press. With input from his committee members, he soon transformed the celebration into a major offensive in the battle against Lysenkoism on terms he found more palatable than Muller's venomous condemnations of Soviet science.

Stern's original instructions to Irwin had outlined an evening symposium featuring "as many of the great old names of genetics" as possible, followed by a reception.[12] Irwin's inaugural letter to his committee members, however, already contained traces of a grander plan. He suggested that the celebration should be a "historical program," focusing on the contributions of "persons living who have witnessed these developments." But it might also be possible, he wrote, to bring along Mendel biographer Hugo Iltis and his collection of Mendeliana. Or, the committee might lobby on behalf of a 3-cent stamp. Beyond this, he thought it would be preferable for the program to feature "the contribution of genetics to the improvement of plants and animals" as a central theme, with sessions on the contributions of genetics and gene mutation theory to animal and plant breeding.[13]

Given the committee members' different approaches to the Lysenko controversy, it should come as no surprise that their reactions to Irwin's upbeat plans were equally mixed. Dunn and Lerner sounded notes of

[10] "View of nominees on the work and function of the Public Education and Scientific Freedom Committee," GSA, Box 6, Folder: AIBS #1. The Public Education and Scientific Freedom Committee was intended to be a less controversial successor to the Committee to Counteract Anti-Genetics Propaganda. For more on this committee, see Wolfe, 2010 and Selya, this volume.

[11] For information on Irwin's scientific career, see Owen, 2007.

[12] Stern to M. R. Irwin, 1 February 1950, GSA, Box 7, Folder: Golden Jubilee M. R. Irwin Correspondence #7.

[13] Irwin to Dunn et al., 8 February 1950, GSA, Box 7, Folder: Golden Jubilee M. R. Irwin Correspondence #7.

caution, wondering whether the program was too focused on the past given the controversies of the present.[14] In contrast, Mangelsdorf, a corn geneticist, was enthusiastic and drew an explicit connection between celebrating the achievements of Western genetics and combating Communism:

> The trend which biology has taken in Russia disturbs me very deeply but I have never felt that very much could be done about it by simply deploring it in writing. The best answer to this trend, in my opinion, is to put on a program so magnificent in content and implication that it will speak for itself.... [W]e should use this occasion to answer the Russian arguments, not with idle words, but with accurate and adequate descriptions of the great deeds which have been done in this half century.[15]

The "Russian argument" that Mangelsdorf is referring to, as his specific suggestions make clear, is the idea that Western geneticists had abandoned their commitment to practical work that might improve the lives of the people. In particular, he suggested that the achievements be "dramatized" by awarding a series of gold medals to geneticists whose contributions had improved the lot of humanity, especially to George Shull for his contributions to the development of hybrid corn with which, he pointed out, the United States had "literally fed Europe" in the years after the war.[16]

This rah-rah program set off alarm bells with Dunn. A dedicated member of the progressive left,[17] Dunn had been waging a carefully calibrated fight against Lysenkoism since 1946. For Dunn, a proper assault on Lysenkoism would neither condemn the Soviet political system nor construct a dogma of its own. Moreover, it would be conducted in a way that would allow the participation of sympathetic Soviet geneticists

[14] Michael Lerner to M. R. Irwin, 13 February 1950, GSA, Box 7, Folder: Golden Jubilee M. R. Irwin Correspondence #7; Dunn to Irwin, 11 February 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #8.

[15] Paul Mangelsdorf to M. R. Irwin, 14 February 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #8.

[16] For basic biographical information on Mangelsdorf, see Fowler, 1989.

[17] For additional biographical information on Dunn, see Gormley, 2009. In the late 1930s, Dunn was a member of the Executive Committee of the American Committee for Democracy and Intellectual Freedom, an organization accused of being a Communist front by the prominent liberal anti-Communist Sidney Hook (Hook, 1987, p. 249). Gormley describes Dunn (using Dunn's own language) as a Fabian Socialist. His American contemporaries would have characterized him as a Popular Front liberal or liberal anti-Fascist.

without further endangering their careers or their lives. He shared his concerns in a letter sent to the other committee members:

> I think we should avoid giving the impression that the work most deserving of reward is that which leads most directly to practical application…. I believe also that we should be careful to give a positive character to the celebration and not merely to hold it out of opposition to the Russians. This merely means that we should keep it at a scientifically high level, celebrating only achievements of first-rate universal importance; and not permit it to take on the flavor, which the Russian Academy give to theirs, of serving a political propaganda purpose.[18]

He went on to stress the importance of devoting at least "half the program," in his words, to "problems that remained unsolved." He moreover suggested that the organizers expand their framework to include physics, chemistry, mathematics, medicine, sociology, and agricultural research.[19] Dunn, in other words, wanted a program that embraced the gray areas, that recognized that "Western genetics" did not necessary have all the answers, and that did not necessarily focus solely on practical applications. At the same time, Dunn's proposal was a remarkably expansive plan for what was supposed to be a celebration of the rediscovery of Mendel's laws.

Irwin, on the other hand, saw a dawning consensus. In what can only be interpreted as a willful misinterpretation of Dunn's letter, Irwin noted that he agreed with Dunn – indeed, he wrote, "I feel very strongly" that "the contributions of genetics, as a fundamental science and also in its applications, should be stressed so as to avoid even mention of the Russian proposals." This approach, he argued, would give the geneticists "the best possible solution to the proposal…. [for] a committee to combat anti-genetics propaganda."[20] Irwin's language is telling. Regardless of whether the Golden Jubilee would do much to combat Lysenkoism, it would doubtless be an effective way to shut down debate within the GSA as to the propriety of mounting an institutional response to Lysenkoism – something he had been resisting since 1946. Dunn replied with a feeble protest – "my reference to the

[18] L. C. Dunn to Paul Mandlesdorf et al., 17 February 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #8.

[19] This broad disciplinary mandate is best understood as part of what Smocovitis, 1996 has described as a "unifying impulse" in 20th-century biology.

[20] M. R. Irwin to Paul Mangelsdorf et al., 22 February 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #8.

Russian situation was merely to avoid having a meeting that was merely 'anti.' It seems to me that the best answer to the Russians is to point out the fundamental place that Mendelism occupies in biology and agriculture'' – but the die was cast.[21] The Golden Jubilee of Genetics, as it would soon be called, would relentlessly celebrate the positive, practical achievements of Western genetics as a direct response to Soviet claims that Mendelism–Morganism–Weismannism was merely a theoretical exercise. (Lacking conveniently timed anniversaries, the contributions of T. H. Morgan and August Weismann received little attention at the Golden Jubilee.)

It is worth pausing, for a moment, to consider what the Americans saw as the most important Soviet criticisms of Western genetics. In the American telling of events, Lysenkoism had to be understood primarily as an example of political oppression and the subjugation of science to ideology. Viewed through this particular Cold War filter, Lysenkoism was seen to be a criticism of decentralized American research practices that allowed researchers the freedom to pursue disciplinary questions rather than practical applications. Whether this is a realistic assessment of postwar American research practices is beside the point; what matters is that the American geneticists orchestrating this particular celebration understood it to be a compelling criticism of the American system of science and planned their response accordingly. They studiously ignored the Soviets' more damning claims that Western genetics offered intellectual support to Nazi eugenics, even when talking amongst themselves.

The ''positiveness'' of the celebration became something of an obsession for both Irwin and Singleton. Both men repeatedly used nearly identical language when explaining why the geneticists wanted to put on a ''grand show'' in the fall of 1950. When Irwin passed along the latest developments on his committee's thinking to Singleton in late February, he wrote that the occasion presented an ''excellent'' opportunity for geneticists ''to give a positive answer to the anti-genetics propaganda which disturbs some of our members very much, and which can best be answered, not by saying to the other person that his concept is wrong, but by showing what this science has accomplished, both in theory and in practice.''[22] When Irwin wrote to Warren Weaver at the Rockefeller Foundation two weeks later, requesting funding, he

[21] L. C. Dunn to M. R. Irwin, 1 March 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #8.

[22] M. R. Irwin to W. R. Singleton, 24 February 1950, GSA, Box 7, Folder: Golden Jubilee M. R. Irwin Correspondence #1.

similarly wrote, ''It is the definite feeling of this committee that the best answer to the anti-genetics propaganda is to make plans for a program at this Golden Jubilee which will put principal emphasis on the accomplishments of genetics in a very positive manner.''[23] Irwin emphasized the point in his introductory letter to D. C. Rife, the local arrangements chair at Ohio State University.[24] Singleton drove it home in a letter to his Congressman, W. Kingsley Macy, in his pitch for a Mendel postage stamp.[25] And in a letter to Irwin and geneticist H. Bentley Glass, a member of the GSA's Committee to Counteract Anti-Genetics Propaganda, Singleton blandly stated that ''any committee which works to publicize the science of genetics should have a positive rather than a negative name.''[26]

This emphasis on ''positive achievements'' turned out to be a compelling strategy. The Rockefeller Foundation granted the GSA $7,500 to be used for publications and travel costs for international participants – a massive sum compared to the $100 budget eventually (and with great reluctance) approved for the Committee to Counteract Anti-Genetics Propaganda.[27] With their combination of funds and a compelling mandate, the organizers assembled an impressive list of both ''grand old men'' and up-and-coming scientists, from Castle and Goldschmidt to George Beadle and Joshua Lederberg. Julian Huxley agreed to deliver a keynote address on the modest topic of ''Genetics, Evolution, and Human Destiny.''[28] And with the help of a rented

[23] M. R. Irwin to Warren Weaver, 8 March 1950, GSA, Box 7, Folder: Golden Jubilee M. R. Irwin Correspondence #2.

[24] M. R. Irwin to D. C. Rife, 6 April 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #10.

[25] W. R. Singleton to W. Kingsley Macy, 9 March 1950, GSA, Box 6, Folder: Golden Jubilee Correspondence #1.

[26] W. R. Singleton to M. R. Irwin, 2 March 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #8; W. R. Singleton to Bentley Glass, 5 May 1950, GSA, Box 7, Folder: Committee to Counteract Anti-Genetics Propaganda.

[27] For the Rockefeller grant, see M. R. Irwin to W. R. Singleton, 4 April 1950, GSA, Box 7, Folder: Golden Jubilee, M. R. Irwin Correspondence #2. For the committee's budget, see W. R. Singleton to H. Bentley Glass, 18 July 1950, GSA, Box 7, Folder: Committee to Counteract Anti-Genetics Propaganda. Glass's original request for $500 was declined.

[28] For the final program, see Pendray and Leibert, ''Publicity Material for Golden Jubilee of Genetics Meeting,'' 1 September 1950, GSA, Box 7, Folder: Golden Jubilee. The papers were published as Dunn, 1951.

station wagon, the organizers would manage to transport the ''Mendeliania'' collection of Mendel biographer Hugo Iltis from his home in Virginia to the festivities in Columbus.[29] The public relations firm Pendray and Leibert was hired to secure coverage of the event in most of the nation's leading newspapers, and Voice of America agreed to record the proceedings.[30] Clearly, the anniversary of the rediscovery of Mendel's science had much more riding on it than the reputation of a lonely Moravian monk.

Is All Genetics Mendelian Genetics? The Disciplinary Politics of Heredity, c. 1950

The Golden Jubilee's organizers were sure of what they were organizing against: Lysenko's (and the Soviets') accusations that Mendelian genetics had nothing to offer the people of the world. But what, exactly, were they celebrating? The so-called ''rediscovery'' of Mendel's laws is, after all, one of the more unstable events in the history of biology. Where scholars once asked how Mendel's contributions could have been overlooked for so long, they now ask why it was championed in 1900. Moreover, there are as many interpretations of Mendel's work as there are those who claim him as their champion.[31] Which Mendel did the GSA have in mind?

Answering this question requires a brief detour to the events of the early 20th century. The revival of Mendelism took place within the context of a priority dispute between Hugo DeVries, Carl Correns, and Erich von Tschermak. All three men had seemingly discovered a law of

[29] The ongoing saga of how to transport the elderly Iltis and his collection of Mendeliania to and from Columbus is a frequent theme in the Golden Jubilee Files. For a taste, see L. C. Dunn to M. R. Irwin, 14 April 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #6, and W. R. Singleton to D. C. Rife, 16 January 1951, GSA, Box 7, Folder: Golden Jubilee Local Representatives #3. The small display was left in Columbus through the end of the year, when it was finally returned to Iltis after the GSA's insurance on the collection had expired.

[30] ''Public Relations Report to the Genetics Society of America on Golden Jubilee Activities and the Public Affairs Pamphlet,'' attached to Robert McDevitt to L. C. Dunn, 16 Nov 1950, GSA, Box 7, Folder: Golden Jubilee, Publications #1. For the Voice of America recordings, see L. C. Dunn's thank-you note to Roger Lyons, 29 December 1950, GSA, Box 7, Folder: Golden Jubilee L. C. Dunn Correspondence #3.

[31] As Ronald Fisher aptly put it in 1936, ''Each generation, perhaps, found in Mendel's paper only what it expected to find'' (Fisher, 1936). For an excellent survey of the many meanings of Mendelism, see Sapp, 1990. The credit for shifting the historical questions asked of the rediscovery of Mendelism goes to Brannigan, 1979.

segregation of hybrids; assigning credit to the long-dead and obscure Mendel worked to diminish the original contributions of the competing claimants. As popularized by William Bateson in Great Britain and Thomas Hunt Morgan in the United States, Mendelism, with its emphasis on mutations, discontinuous evolution, and empirical research, came to be understood as an alternative to Darwinian evolution.[32] A major accomplishment of the evolutionary synthesis was to demonstrate the compatibility of Mendelian inheritance with Darwinian natural selection.[33] All of which is to say that Mendel, and all he was thought to represent, had been a lightning rod for conflict between geneticists and naturalists throughout the first third of the 20th century; but by the late 1940s, the evolutionary synthesis seemed to suggest a Mendel that all could embrace (Mayr and Provine, 1980).

By 1950, Mendel's most outspoken proponents – Bateson, Morgan, Wilhelm Johannsen – were dead. It would have been possible, therefore, for the organizers of the Golden Jubilee to assemble a panel of speakers that promoted an inherently unified biology radiating outward from genetics. And indeed, the commemorative volume that reproduced the speakers' presentations was bookended by references to the evolutionary synthesis, with additional mentions sprinkled throughout.[34] Dunn's introduction, for example, asserted that "genetics has fortunately retained the essential unity given to it by the discovery of a fundamental element of heredity, the gene, so that varied problems can be stated in a common language which is becoming more generally understood" (Dunn, 1951, p. x). Kenneth Mather, a biometrician at the University of Birmingham, boldly announced, "Biometrical genetics is founded on Mendelism" (Mather, 1951, p. 115). A penultimate chapter by Dobzhansky, originally delivered as his presidential address to the American Society of Naturalists (the ANS meeting was co-located with the GSA meeting under the AIBS umbrella), offered a concise statement of the power of Mendelian population genetics for explaining evolution (Dobzhansky, 1951). A concluding essay by Julian Huxley repeated the

[32] The literature on the rediscovery of Mendel is, of course, voluminous; I have found Branningan, 1979; Olby, 1979; Sapp, 1990; Henig, 2001; and Allen, 2003, particularly helpful.

[33] For an example, see Fisher, 1936.

[34] All of the presentations ended up in the volume, with one exception: L. J. Stadler's "Mutation after Fifty Years" is missing. In addition, the volume contains an essay by Lionel Penrose (1951), "Genetics of the Human Race," that did not appear on the conference program. For the volume, see Dunn, 1951. For the final program, see Robert McDevitt to W. R. Singleton, "Publicity Material for Golden Jubilee of Genetics Meetings," 1 September 1950, GSA, Box 7, Folder: Golden Jubilee.

theme of unity with a peon to genetics' "present position, both central and comprehensive, among the biological sciences" (Huxley, 1951, p. 951).

It would nevertheless be a mistake to regard the Golden Jubilee as primarily an exercise in promoting the ideals of the evolutionary synthesis. For most of the contributors, genetics and its relationship to evolution seem to have been a minor concern. Writing several decades later, William Provine captured this lack of anxiety surrounding the evolutionary synthesis well when he wrote that Dunn "thought that the evolutionary synthesis resulted from the exportation of developments within genetics to other fields of evolutionary biology" (Mayr and Provine, 1980, p. 51). Geneticists, in other words, were not much concerned with how their own findings did or did not support contemporary evolutionary theory. They had little to lose and much to gain from the evolutionary synthesis. For them, the most pressing disciplinary question as of 1949 was the nature of the gene and genic action. After years of disciplinary dominance, the straightforward hereditary mechanism of chromosomal *Drosophila* genetics was on the wane, challenged by biochemical genetics, bacterial genetics, plasmagenes, and developmental biology. The iconoclastic Richard Goldschmidt had, by this point, gone so far as to reject the notion of the particulate gene altogether.[35]

Therein lay the problem for the Golden Jubilee's organizers: to those unschooled in the nuances of contemporary genetics, the differences between Lysenko's theories, neo-Lamarkism, cytoplasmic inheritance, and control of genetic expression could be difficult to discern.[36] Tracy Sonneborn – hardly a Communist sympathizer – frequently found his work on plasmagenes invoked as evidence for the inheritance of acquired characteristics and therefore as support for Lysenko's theories (Sapp, 1987, pp. 168–80). How, then, to construct a narrative of genetic achievement expansive enough to embrace the heterodox views of Sonneborn, Goldschmidt, and Barbara McClintock, yet sufficiently strident to debunk Lysenko's claims? Dunn and the GSA as a whole had already rejected the obvious strategy of condemning Lysenkoism as a political, rather than a scientific, problem (Wolfe, 2010). Instead, the Golden Jubilee took a big tent approach that spanned a remarkable

[35] For Goldschmidt's views on heredity, see Dietrich, 2008; Harwood, 1993; and Sapp, 1987. Sapp, 1987, also contains an extensive discussion of the changing disciplinary fortunes of theories of cytoplasmic inheritance. See also Comfort, 2001, for the challenges that Barbara McClintock's theories of controlling elements posed to mainstream views of genes as "beads on a string."

[36] This was particularly an issue in France, where both conservative and communist academicians found Lysenkoism appealing (Krige, 2006).

expanse of scientific viewpoints, with a single condition: all in attendance claimed lineage from Mendel.

The insistence on consensus through diversity suffused the entire Golden Jubilee, from the selection of speakers and the content of their presentations to the explanations featured in the accompanying public information pamphlet. Both Goldschmidt and Muller, for instance, were given time on the program to speak about the nature of the gene (Goldschmidt, 1951; Muller, 1951). Papers by Sturtevant and Cyril Darlington on the importance of the chromosomes were accompanied by commentary by Sonneborn and Boris Ephrussi on cytoplasmic inheritance and "cell heredity" (Sturtevant, 1951; Darlington, 1951; Sonneborn, 1951; Ephrussi, 1951). George Beadle noted that while Mendel did not explicitly write about chemical genetics, he surely "must have reflected on the nature and physiological manner of action of his postulated factors" (Beadle, 1951, p. 221). Ephrussi acknowledged that traditional Mendelian genetics "indubitably overshadowed the recurrent claims of evidence for the occurrence of extranuclear heredity," but explained in a rather remarkable passage that this exclusion was, in fact, Mendel's contribution to recent advances in cytoplasmic inheritance:

> Only now that the limits of possibilities offered by Mendelian mechanisms are known to an appreciable extent, can their operation be effectively *excluded* [emphasis in original] in some cases. Thus we have the right to say that whatever progress has been made in the study of non-Mendelian inheritance, it is ultimately due to… Gregor Mendel![37]

Similarly, while much of the public affairs pamphlet focused on more conventional aspects of Mendelian genetics (sex-linked inheritance, mutations, hybrid corn, etc.), a section on "The Next Fifty Years" introduced lay readers to plasmagenes, immunogenetics, and the problems of enzymatic expression (Pfeiffer, 1950).

There was, however, one key figure missing from the celebration whose absence speaks volumes: Barbara McClintock. It was not that she had been overlooked or excluded; rather, she refused to come. Although she had published little of her findings, McClintock's interpretations of what she called "controlling elements" in maize had created something of a sensation among American geneticists in the late 1940s, and Dunn had hoped to have her on the program since the earliest stages

[37] Ephrussi, 1951. Both quotes from 242; ellipsis in original.

of planning.[38] But McClintock could not be convinced that the Golden Jubilee was anything other than a celebration of the triumph of classical genetics. Dunn's personal appeals for McClintock to join the festivities met only with her skepticism, as he explained to Irwin after spending a difficult afternoon with McClintock: "she's not in sympathy with what she is sure, in spite of all my statements to the contrary, will be a gloat over the successful accomplishments of genetics. She feels uncertain about the fundamentals and sees more ignorance and failure than accomplishment."[39] And she was not alone in her concerns – Ephrussi, too, at one point threatened to withdraw after seeing the proposed program and realizing the "character of the meeting," by which he presumably meant its insistence on a Mendelian consensus.[40]

The point of the Golden Jubilee symposium was not to actually *resolve* intellectual differences, but rather to demonstrate that the different subfields of genetics shared a disciplinary lineage.[41] It was clear to all who chose to participate that the Golden Jubilee was intended to offer the Mendelian project as an alternative to Lysenkoism. The irony, of course, is that in so doing the Americans accepted the Soviets' definition of Western genetics as "Mendelian genetics." For most of the participants, the benefits of responding to Lysenkoism more than outweighed any concerns about whether or not "non-Mendelian" genetics could plausibly be categorized as "Mendelian after all." Just as importantly, the celebration's collegial approach to handling intellectual disagreements was offered as an example of the American style of tolerating scientific dissent. In America, the speakers' program claimed, scientific disputes are not settled by political fiat. The corollary went unsaid.

A Practical Science for a Modern World

If the *content* of Mendelian genetics remained somewhat fraught, the Golden Jubilee's participants and organizers evinced broad agreement

[38] L. C. Dunn to M. R. Irwin, 11 February 1950. GSA, Box 7, Folder: Golden Jubilee M. R. Irwin Correspondence #8. For the reception of McClintock's work in the late 1940s, see Comfort, 2001. The commemorative volume is peppered with references to her findings – see, for instance, the essays by Sturtevant, Caspersson and Schultz, and Beadle, all in Dunn, 1951.

[39] L. C. Dunn to M. R. Irwin, 3 May 1950. GSA, Box 7, Folder: Golden Jubilee M. R. Irwin Correspondence #11.

[40] Boris Ephrussi to L. C. Dunn, 10 June 1950. GSA, Box 7, Folder: Golden Jubilee L. C. Dunn Correspondence #2.

[41] The need to demonstrate a shared past is, of course, a common characteristic of commemorative events (Abir-Am and Elliot, 1999; Gillis, 1994).

about its *purpose*. The presentations, press releases, and other public events unfailingly depicted genetics as practical, inevitable, and beneficial. No longer the province of eugenicists and pigeon fanciers, modern Mendelian genetics would "help solve world problems" in food supply, cancer, and infectious disease.[42] This portrayal served multiple agendas – some explicit, some not – at a moment when the social role of American genetics was being redefined.

Eugenics, for instance, held no place in the Golden Jubilee's official histories of genetics. Its leading proponent, Charles Davenport, once one of the most prominent geneticists in America, merited only a passing mention from William Castle, and that as an "inspiring influence" in plant breeding and the founder of the *Journal of Heredity* (Castle, 1951, p. 66). Yet the ghost of eugenics nevertheless hovered over the proceedings in its sanitized form, human genetics.[43] Papers by Laurence H. Snyder, Lionel Penrose, John W. Gowen, and Clarence Cook Little predicted that recent findings in genetics would soon have therapeutic applications relating to blood types, immunology, and cancer. In some cases, the process of reinvention was explicit, as when Snyder remarked on the "strong eugenics slant" and "non-scientific procedures" of work on human heredity in the United States in the early 20th century that had been recently case aside in favor of a "new" medical genetics community (Snyder, 1951, p. 371). For Snyder, the formation of the American Society for Human Genetics in 1948 was the "culmination" of this transformation. While Snyder's comments certainly make sense in the context of widespread disapproval for Nazi eugenics, they also resonate as a quiet rejoinder to Lysenkoist criticisms of Mendelian genetics. Many in the Marxist intelligentsia believed eugenics to be incompatible with socialism, and even those theoretically open to the concept found themselves forced to oppose it in the face of Nazi enthusiasm. Given eugenics' basis in classical Mendelian genetics, Lysenko's supporters listed connections to eugenics (and by extension,

[42] Robert McDevitt to W. R. Singleton et al., 1 September 1950, "Publicity Material for Golden Jubilee of Genetics Meetings," GSA, Box 7, Folder: Golden Jubilee.

[43] The question of just how much modern medical genetics owes to eugenics is a matter of much debate. For evidence of strong connections, see Kevles, 1985; Paul, 1996; Lindee, 2005; and Wailoo and Pemberton, 2006. For the alternative interpretation, see Cowan, 2008.

fascism) as yet another reason to reject classical genetics.[44] The subdued responses to these criticisms presented in the commemorative volume suggest that American geneticists were still struggling to square the Nazis' uses of genetics with their understanding of the science as a beacon for freedom.

Given the emphasis on practical achievement, it is perhaps not surprising that one of the meeting's most prominent themes was that of the contributions of Mendelian genetics to agriculture, from plant and animal breeding to an understanding of disease resistance and pandemics in domestic fowl. Consider, for example, the presentation of Iowa State College's Jay Lush, which included a series of tables showing dramatic agricultural gains during the Mendelian era. The lines depicting the average fleece weight for sheep in New South Wales, the production of butterfat in New Zealand cows, the daily gain of Danish pigs, and average egg production per hen in the United States all showed steep increases in the first two decades of the 20th century. The author himself recognized that it would be impossible to separate the environmental and genetic components of these advances, but the visual technology of starting his charts around 1890 certainly implied a correlation between Mendelian genetics and agricultural productivity. His conclusion expressed no reservations about the connection between the two: "it is my opinion that a large part of these truly astounding changes made in animal productivity over the last 20 to 50 years is genetic" (Lush, 1951, pp. 507–515, 518).

Paul Mangelsdorf's presentation on hybrid cord is perhaps the best example of this insistence on the contribution of Mendelian genetics to the needs of the people. Mangelsdorf extended the argument further, seeing Mendelian genetics as a key ideological tool in spreading support for American ideals of democracy and freedom. Hybrid corn, he claimed, allowed American farmers to increase their production by more than 800 million bushels, some of which was shipped overseas to feed starving Europeans still reeling from World War II. To Mangelsdorf, the connection between Western genetics and freedom was obvious:

> Western Europe became less receptive to communism because hybrid corn had made it possible for the New World to come to its aid in a time of great need. Thus the principles of heredity

[44] For the place of eugenics in Soviet genetic theories, see Joravsky, 1970, pp. 256–266 and Graham, 1972, pp. 236–237. Stalin's objection to H. J. Muller's theories of socialist eugenics was one of the primary reasons for Muller's departure from the country. See Carlson, 1981.

> discovered by Gregor Mendel in 1865 and rediscovered in 1900 came to play an important, if not immediately obvious, part in stemming the tide of communism in Europe. Perhaps Russian antipathy to Mendel's laws and to modern genetic theory is not unfounded (Mangelsdorf, 1951, p. 557).

Similarly, American efforts to export hybrid corn to Mexico were "a splendid example of exporting a technical skill for the benefit of a friendly neighbor without sacrifice to our own capital assets" (p. 567). Again, for Mangelsdorf the political consequences of this were obvious and desirable. "When corn is plentiful the Mexican is happy and relatively prosperous," he wrote, but "when it is scarce there is unrest and danger to stable government" (p. 568).

Mangelsdorf knew the effects of hybrid corn in Mexico firsthand. By the time of the Golden Jubilee, he had served as one of the key scientific advisors to the Rockefeller Foundation's Mexican Agricultural Project (MAP) for nearly a decade. While several scholars have explored the Rockefeller Foundation's Latin American agricultural projects, they have generally framed these efforts in terms of either a modernizing impulse or implicit foreign policy goals (Fitzgerald, 1994; Cotter, 1994; Shepherd, 2005; Matchett, 2006). What has not yet been appreciated is that by the late 1940s these efforts had become at least partly a movement against Lysenkoism. In the same way that a steady food supply would discourage Latin American citizens and governments from adopting Communism, agriculturalists' experiences with hybrid corn would dissuade them from adopting Lysenko's theories. And in the minds of many American geneticists, particularly Muller and Mangelsdorf, a belief in Lysenko's theories equated support for Communism, and vice versa.

Officials at the Rockefeller Foundation – the sponsoring organization for both the Golden Jubilee and the MAP – shared this logic, as John Krige's account of the Foundation's funding decisions in postwar France has made clear. Where once the Foundation had focused on funding the "best" work, regardless of the grantee's political views, by the late 1940s it had given up on even the pretense of eschewing politics. In the face of mounting pressure from the United States Congress and general anti-Communist sentiment, Foundation officials conducted elaborate inquiries into the political and intellectual views of the French scientists whose research programs they were considering funding, including Ephrussi. Rockefeller Foundation officials made clear their belief that an unwillingness to dismiss Lysenko's work as charlatanism indicated possible Communist sympathies; similarly, leftist political

beliefs might indicate that a scientist would toe the Lysenkoist line, to the detriment of his scientific reputation (Krige, 2006). This background is surely necessary to understand Ephrussi's ultimate decision to participate in the Golden Jubilee, given that Rockefeller Foundation officials had summoned him to New York to discuss his views on the topic in the spring of 1950.

Mangelsdorf's and the Rockefeller Foundation's shared belief in Lysenkoism as a wedge for Communism does much to explain one of the event's more peculiar moments – the "New World Honors Mendel" ceremony. Almost as soon as the Golden Jubilee's organizers received word that the Rockefeller Foundation was willing to fund their event (in part, and not coincidentally, to encourage the participation of international scientists), they began discussing ways to shape the program to stoke the Foundation's enthusiasm. Having recently heard that the Foundation was planning to expand its Mexican agricultural programs into Latin America, Singleton and Dunn saw an opportunity to cultivate their sponsor by publicizing the MAP's scientific accomplishments.[45]

The "New World Honors Mendel" ceremony was an elaborately staged set-piece intended to show Latin American enthusiasm for Mendelism. Dr. Manuel Elgueta of the Instituto Interamericano de Ciencias Agricolas (Costa Rica) presented Curt Stern, the GSA's president, with a commemorative scroll designed and produced by the GSA. The scroll itself was said to be "truly impressive" – the engraving alone cost $200.[46] The text showed none of the qualifications or hesitations that the geneticists had expressed in their talk amongst themselves: "[T]he universality of Mendel's principles among living things has been well established, the material basis of heredity has been determined, and new insights into the mechanisms of evolution have been won. The principles of heredity have been applied to the improvement of cultivated plants and domestic animals and to the benefit of mankind." The scroll went on to acknowledge "the debt of science and society of Gregor Johann Mendel."[47] Given that Mangelsdorf wrote the citation, the GSA paid for the engraving, and

[45] W. R. Singleton to Paul Mangelsdorf, 27 April 1950, GSA, Box 6, Folder: Golden Jubilee Correspondence #2.

[46] Paul Mangelsdorf to M. R. Irwin, 11 August 1950, GSA, Box 7, Folder: Golden Jubilee Irwin Correspondence #3.

[47] Mangelsdorf to Dunn, 8 August 1950, GSA, Box 7, Folder: Golden Jubilee Correspondence #7. The text was also reproduced in a press release circulated by Pendray and Leibert. See McDevitt to W. R. Singleton et al., 1 September 1950, GSA, Box 7, Folder: Golden Jubilee.

that the scroll was be to placed in the custody of Iltis's collection of Mendeliana, it is fair to ask in what respect this ceremony represented ''New World attitudes.'' While all commemorative events include some element of orchestrated interaction, this seems to have been a particularly ham-handed attempt to broadcast the support of developing nations for Western genetics – which, as we have seen, served as a proxy in some of the organizers' minds for ''Western democracy.'' It should not be forgotten, after all, that Voice of America – the United States' best tool for reaching beyond the Iron Curtain – recorded the entire Golden Jubilee, including this ceremony.[48] And just as Irwin and Singleton recommended, the ceremony advanced this goal without once mentioning its intended targets: Communist criticisms of Western genetics. The best propaganda does not announce itself as such.

Conclusion

The story of the GSA's Golden Jubilee celebrations points to the unavoidable presence of the Cold War in the culture of postwar science. Without Lysenkoism and the threat of Communism, the GSA might have held a routine lecture and small reception to celebrate the anniversary of the so-called rediscovery of Mendel's laws. With it, they held a four-day celebration, cloaked their disagreements in unity, hired a publicist, published a general-interest pamphlet, hosted Latin American scientists, and almost established a museum.

In some ways, such as the now-widespread assumption that Gregor Mendel is the ''father'' of genetics, the Golden Jubilee was undeniably successful. Historians recall the contributions of Weismann, Morgan, de Vries, and others, but members of the public, in general, do not. The event finally brought an end to the divisions within the GSA about the proper response to Lysenkoism, a debate that had absorbed a disproportionate amount of the society's attention for at least three years, and gave the participants a chance to respond to the accusations leveled against them on a highly public stage. Researchers whose slightly

[48] It is unclear how much of the event was broadcast, but a thank-you letter from Dunn confirms that the proceedings were recorded in their entirety. See L. C. Dunn to Roger Lyons, 29 December 1950, GSA, Box 7, Folder: Golden Jubilee L. C. Dunn Correspondence #3. The Voice of America had also recorded and broadcast a six-part series on Lysenko the previous year (Wolfe, 2010). A recent history of the United States Information Agency (Cull, 2008) has an excellent discussion of the Voice of America's role in broader propaganda efforts, but the discussion of scientific programming is unfortunately limited to the space race and Atoms for Peace.

unorthodox work had sometimes been represented as evidence for the validity of Lysenko's theories prior to the meeting – for instance, Tracy Sonneborn – found this to be less of a problem in its wake (though this may have had just as much to do with the rise of bacterial genetics as with the Golden Jubilee). As an effort to stem the tide of Communism both at home and abroad, however, the Golden Jubilee is more difficult to assess. Wishful thinking aside, it seems unlikely that the fate of individual Latin American countries vis-à-vis Communism had much to do with Lysenkoism, Mendelism, or the Golden Jubilee. Rather, the interesting historical point is that at least some of the protagonists seemed to have genuinely thought that attitudes about classical genetics might have affected the outcome.

Cold War biology is not just about Lysenko, or biological weaponry, or the biological effects of atomic radiation – it is just as much about such seemingly neutral acts as declaring Mendel to be the father of genetics. Yet, after nearly a quarter-century of scholarship on the Cold War, this remains a controversial interpretation.[49] Certainly it would be possible to interpret the Golden Jubilee as an exercise in building disciplinary unity. It is also not unreasonable to point to geneticists' desire to demonstrate the practical accomplishments of their science as a means to garner material support, especially in the face of the meteoritic rise in financial support for the physics community. But given the clear statements in the organizers' correspondence about the benefits of a celebration as a tool to combat "Russian arguments," it would be perverse to ignore the Golden Jubilee's political context. The lack of *public* statements decrying Lysenkoism does not minimize the point – if anything, it *is* the point. The postwar ideology of science in the United States stressed objectivity, disinterestedness, and a separation between scientists' political and professional activities.[50] Their focus on the achievements of Western genetics as both practical and theoretical, international, and, above all, non-ideological and non-controversial,

[49] I am referring here to comments at scholarly meetings and throughout the peer review process for a related paper. An emerging body of scholarship is beginning to trace the outlines of the Cold War's impact on topics as disparate as cancer research and urban planning. See, for example, Krementsov, 2007 and Light, 2003.

[50] The question of how to establish science's authority as an objective system, and the relationship of such a system to democracy, is a growing theme in the literature on Cold War science. For science and democracy, Hollinger, 1983. For the limits to scientific activism, see Wang, 1999, 2002; Moore, 2008; and Wolfe, 2010. For the notion of "open science" as itself a Cold War artifact, see McDougall, 1985. And for an enlightening, if contentious, exploration of the relationship of historians and philosophers of science to Cold War institutions and assumptions, see Fuller, 2000.

was fully intended to demonstrate the success of the Western model of science to both the American public and scientists abroad.

The story of the Golden Jubilee points to the broader interpretive difficulty facing historians' attempts to come to terms with the legacy of the Cold War in shaping the structure and content of postwar science. It is a rare historical actor who articulates his ideological assumptions, particularly in an era of broad political consensus such as the postwar United States.[51] Moreover, it was not uncommon for scientists at the receiving end of American intervention to welcome it, particularly when American ideology brought with it prestige, research funding, and expensive capital investments.[52] Cold War stories are never black and white, particularly in science. Understanding the gray areas will require that we shift our attention from such obvious aspects of Cold War science as weaponry, operations research, and secrecy to more mundane and anodyne moments in postwar scientific culture. Celebrations, with their relentless focus on consensus and public image, are a promising place to start.

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[51] For a useful discussion of this problem in terms of the Rockefeller Foundation, see Fitzgerald, 1994 and Shepherd, 2005.

[52] John Krige has termed this phenomenon in Europe "the co-production of American hegemony" (Krige, 2006).

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