

*A “Truly International” Discipline:  
Adverbs, ideals, and the reinvention of international mathematics, 1920-1950*

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*Abstract*

Examining how, and to what effect, the phrase “truly international” became central to the rhetoric and organization of the American-hosted 1950 International Congress of Mathematicians, I trace the negotiation of a “truly international” discipline from mathematicians’ first international congresses around the turn of the century across two world wars and their divisive interlude. Two failed attempts to host International Congresses of Mathematicians in the United States, for 1924 and 1940, defined the stakes for those who became the principal organizers for 1950. Combining American organizational records with contexts and sources that extend across and beyond traditional mathematical centers in Europe and North America, I show how a small cohort of American mathematicians marshalled an emphatic but ambiguous “international” rhetoric to guide policies and command cooperation and support while responding to persistent challenges. Their adaptations and compromises left a lasting mark on the terms and achievements of international inclusion, cooperation, and hegemony in mathematics.

*Introduction: An empty word*

There is nothing inherently international about mathematics. As a field of knowledge and a community of scholars, mathematics is both too small and too big. Oswald Veblen, presiding over the opening ceremony of the 1950 International Congress of Mathematicians, remarked that “Mathematics is terribly individual,” a science at the scale of “the individual mind” whose “ideal communication is to a very few other individuals.” At the same time, claimed Veblen, mathematics “cuts across all sorts of political, racial, and social differences and focuses on a universal human interest.”<sup>1</sup> The scale of nations and of the relations between them sat awkwardly between such diminutive human practices and universal human ideals.

Yet mathematicians have imagined their discipline to be international all the same. The 1950 congress’s Secretary, John Robert Kline, reported that the guiding principle for the meeting’s timing and organization was the insistence “that the gathering could be truly international.”<sup>2</sup> That phrase, “truly international,” featured prominently in rhetoric linked to preparations for the congress. Politically and ideologically, the phrase tied organizers’ efforts to their retrospective judgements of the tumultuous interwar period of international mathematics. Practically, it offered an emphatic but ambiguous guide for navigating significant obstacles to their efforts to host an international congress and, in the process, establish an institutional basis for postwar cooperation.

Their practical obstacles were manifold: gaps in funding and information, visas denied and boycotts threatened, stubborn bureaucracies and contentious claims about politics past and

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<sup>1</sup> Oswald Veblen, “Opening Address of Professor Oswald Veblen,” in Graves *et al.* (ed.), *Proceedings of the International Congress of Mathematicians, Cambridge, Massachusetts, U.S.A. 1950* (American Mathematical Society, 1952), 124-125, on 125.

<sup>2</sup> John Robert Kline, “Secretary’s Report,” in Graves *et al.* (ed.), *Proceedings*, 121-145, on 121.

present. As one crisis over refused visas loomed, Henri Cartan, soon to be president of the Société Mathématique de France, wrote to his Zürich-based German colleague Heinz Hopf to encourage fellow European mathematicians to share their concerns about “the universality of the congress.”<sup>3</sup> Cartan affirmed that “I believe that all mathematicians desire that the congress should be truly international,” but this would not be possible if “non-scientific” (indeed “absurd”) criteria such as obtaining a visa should dictate who could participate. To Cartan, “international scientific collaboration” risked becoming “a word empty of meaning.”

How mathematicians filled the word “international” with meanings, how they marshalled and contested those meanings, indexes a crucial transformation in the lived and imagined scales of mathematical scholarship in the twentieth century. The 1950 meeting that Veblen so ambivalently inaugurated brought some closure to two abortive prior efforts beginning in 1920 to host an international congress of mathematicians in the United States. This article traces the American organizers’ and their interlocutors’ “truly international” rhetoric during a pivotal period for international values and institutions in and beyond science. That rhetoric proved significant for what it declared directly, but mattered just as often for what it allowed its users to leave implicit, ambiguous, and undecided. Incorporating archival sources from the unstable centers and peripheries of mathematical scholarship, I identify the pliable assumptions, uneven effects, and lasting consequences of international values loudly proclaimed while at the same time left unsaid.

I begin by situating mathematicians’ international endeavors in the wider historiography of internationalism. I then examine the aspects of the prewar and interwar history of mathematicians’ international congresses that would become most salient for the 1950 congress. The remaining sections detail the organizational and rhetorical maneuvers leading to the 1950 congress and a parallel effort to re-establish an International Mathematical Union, focusing on the role of partial information, ambiguity, projection, and their consequences for these undertakings’ logistical and ideological realization. I close with a consideration of the compromises and accommodations evident in the “truly international” discipline trumpeted by Veblen, Kline, and their compatriots in 1950.

### *The grammar and ideology of internationalism*

Since its advent in the late eighteenth century, the adjective “international” has been an especially capacious political signifier. The corresponding noun, “internationalism,” dates to the mid-nineteenth century and, accompanied by a litany of adjectives, would become a defining watchword of the twentieth century, associated with many of its most significant tensions, triumphs, and calamities. The Cold War’s end brought new historiographical attention to the promises, limitations, and ambiguities of more than a century of internationalisms, their relationships with war, colonialism, and globalization, and the complex foundations and effects of inter-governmental and non-governmental international organizations.<sup>4</sup>

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<sup>3</sup> Cartan to Hopf, 8 Aug 1949, ETH Zürich University Archives, ETH Library, Heinz Hopf papers, shared with the author by Reinhard Siegmund-Schultze.

<sup>4</sup> E.g. Glenda Sluga, *Internationalism in the Age of Nationalism* (University of Pennsylvania Press, 2013); Glenda Sluga and Patricia Clavin (eds.), *Internationalisms: A Twentieth-Century History* (Cambridge University Press, 2016); Mark Mazower, “An International Civilization? Empire, internationalism and the crisis of the mid-twentieth century,” *International Affairs* 82, no. 3 (2006): 533-566; Manu Goswami, “Imaginary Futures and Colonial Internationalisms,” *American Historical Review* 117, no. 5 (2012): 1461-1485; Akira Iriye, *Global Community: The Role of International Organizations in the Making of the Contemporary World* (University of California Press, 2002); Jessica Reinisch (ed.) “Agents of Internationalism,” *Contemporary European History* 25, no. 2 (2016): 195-

These organizations frequently traded in scientific ideals and interacted with scientific institutions, including new international ones. The purported (in-principle) universalism of science became a model and a means for transcending national particularity.<sup>5</sup> International, transnational, imperial, and global configurations of power and knowledge have defined how science has been pursued and what it has meant.<sup>6</sup> Scientists in national contexts have claimed and contested internationalism alongside values like neutrality in contexts that have been anything but neutral.<sup>7</sup> By the same token, science has been central to the international and global history of national and racial difference and inequality.<sup>8</sup>

Across these histories, internationalism (the noun) and international (the adjective) have often been most compelling at their most ambiguous, speaking volumes in broad terms while entailing little in details. Asking both what past figures meant when invoking these terms and what they could get away with not saying gives complementary approaches to the plurality of internationalism. This double semiotics—of meaning and its avoidance—becomes all the more evident at one degree’s grammatical remove from the international’s nouns and adjectives: in its adverbs. “Truly” is an intensifying adverb, signaling extreme authenticity without specifying its

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371; Eva-Maria Muschik (ed.) “Towards a global history of international organizations and decolonization,” *Journal of Global History* 17 no. 2 (2022): 173-352; Paul Thomas Chamberlain *et al.* “On transnational and international history,” *American Historical Review* 128 (2023): 255-332; Jessica Wang, “The United States, the United Nations, and the Other Post-Cold War World Order: Internationalism and Unilateralism in the American Century,” in E.W. Schrecker (ed.) *Cold War Triumphalism: The Politics of American History After the Fall of Communism* (New Press, 2004), 201-234; Martin H. Geyer and Johannes Paulmann (eds.), *The Mechanics of Internationalism: Culture, Society, and Politics from the 1840s to the First World War* (Oxford, 2001); Susan Pedersen, *The Guardians: The League of Nations and the Crisis of Empire* (Oxford, 2015); Cogan *et al.* (eds.), *The Oxford Handbook of International Organizations* (Oxford, 2016).

<sup>5</sup> Geert Somsen, “A History of Universalism: Conceptions of the Internationality of Science from the Enlightenment to the Cold War,” *Minerva* 46 (2008): 361-379; Jessica Wang, “Knowledge, State Power, and the Invention of International Science,” in John Krige (ed.), *Knowledge Flows in a Global Age: A Transnational Approach* (Chicago, 2022), 31-73; Elisabeth Crawford, *Nationalism and internationalism in science, 1880-1939: four studies of the Nobel population* (Cambridge University Press, 1992); Mark Walker, “The ‘national’ in international and transnational science,” *British Journal for the History of Science* 45 (2012): 359-376; Robert Fox, *Science Without Frontiers: Cosmopolitanism and National Interests in the World of Learning, 1870-1940* (Oregon State University Press, 2016); Alexander Mitterle, “Making the global big: The academic roots of global size building,” *Globalisation, Societies and Education* 20 (2022): 463-478; Julian Hamann and Lena Zimmer, “The internationality imperative in academia: The ascent of internationality as an academic virtue,” *Higher Education Research and Development* 36 (2017): 1418-1432.

<sup>6</sup> Simone Turchetti, Néstor Herran and Soraya Boudia, “Introduction: have we ever been ‘transnational’? Towards a history of science across and beyond borders,” *British Journal for the History of Science* 45 (2012): 319-336; John Krige and Kai-Henrik Barth (eds.) *Global Power Knowledge: Science and Technology in International Affairs*, *Osiris* 21 (2006); Gabrielle Hecht (ed.) *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (MIT, 2011); John Krige (ed.) *How Knowledge Moves: Writing the Transnational History of Science and Technology* (Chicago, 2019).

<sup>7</sup> Rebecka Lettevall, Geert Somsen, and Sven Widmalm (eds.), *Neutrality in Twentieth-Century Europe: Intersections of Science, Culture, and Politics after the First World War* (Routledge, 2012); Paul Forman, “Scientific Internationalism and the Weimar Physicists: The Ideology and Its Manipulation in Germany after World War I,” *Isis* 64 (1973): 150-180; Ronald E. Doel, Dieter Hoffmann, and Nikolai Kremmentsov, “National States and International Science: A Comparative History of International Congresses in Hitler’s Germany, Stalin’s Russia, and Cold War United States,” *Osiris* 20 (2005): 49-76, esp. 66-76; Bruno J. Strasser, “The Coproduction of Neutral Science and Neutral State in Cold War Europe: Switzerland and International Scientific Cooperation, 1951-69,” *Osiris* 24 (2009): 165-187.

<sup>8</sup> E.g. Suman Seth (ed.) “Focus: Relocating Race,” *Isis* 105, no. 4 (2014): 759-814; Michelle Brattain, “Race, Racism, and Antiracism: UNESCO and the Politics of Presenting Science to the Postwar Public,” *American Historical Review* 112, no. 5 (2007): 1386-1413.

warrant, often implied to be self-evident. Approximately coeval with the ideological formulation of internationalism as a noun, the phrase “truly international” began in the mid-nineteenth century to pepper discussions of law, commerce, sports, and the arts, most often as a boast or an aspiration. By the century’s end, the phrase appeared in writings about the policies, projects, and membership of international organizations, including those devoted to science and medicine.

If the sciences were a pivotal locus of the universal ideal in international discourses, mathematics stood out for some as especially universal, even placeless. Though this image has not been without contestation, as mathematicians joined in international enterprises the presumptive universality of their quarry and its constituency was rarely in question. Despite this (and in some ways because of it), those who aspired to create durable international connections struggled mightily to do so.<sup>9</sup> Mathematical research does not travel nearly so well as its discipline’s internationalizers tended to imagine, nor does it provide so ready a basis of solidarity as they tended to assume.<sup>10</sup> Patching many local communities of scholars into an international discipline was hard, precarious, uncertain work.

At each critical juncture, the narrow mathematical elite that sought to consolidate international mathematics turned to the “truly international” to navigate the twin prerogatives of inclusion and non-exclusion.<sup>11</sup> Inclusion meant the participation of a multiplicity of nations. Non-exclusion, conversely, meant not barring individuals or organizations due to national criteria, though such criteria frequently blurred into others. The truth of mathematicians’ internationalism hinged on how they reckoned with the highly variable practical and ideological ramifications of these two broad conceptions of the national in international mathematics.

### *A series interrupted*

Mathematicians began holding congresses termed “international” around the turn of the twentieth century, somewhat later than several scientific cousins and in tow with a wave of international movements in sport, industry, and culture.<sup>12</sup> The meager scale of these early endeavors reflected the dimensions of the world of professional mathematics. Four visiting Europeans sufficed for American mathematicians at the 1893 World’s Columbian Exposition in Chicago to declare an “International Mathematical Congress,” which also included some

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<sup>9</sup> Karen Parshall and Adrian Rice (eds.) *Mathematics Unbound: The Evolution of an International Mathematical Research Community, 1800-1945* (American Mathematical Society, 2002); Olli Lehto, *Mathematics Without Borders: A History of the International Mathematical Union* (Springer, 1998); Norbert Schappacher, *Framing Global Mathematics: The International Mathematical Union between Theorems and Politics* (Springer, 2022); Karen Parshall, *The New Era in American Mathematics, 1920-1950* (Princeton, 2022); David Rowe, “On Franco-German Relations in Mathematics, 1870-1920,” in Sirakov *et al.* (eds.) *Proceedings of the International Congress of Mathematicians – Rio de Janeiro 2018* (Sociedade Brasileira de Matemática and International Mathematical Union, 2018), vol. 3, 4081-4096; Herbert Mehrrens, “Modernism vs. counter-modernism, nationalism vs. internationalism: style and politics in mathematics 1900-1950,” in Catherine Goldstein, Jeremy Gray and Jim Ritter (eds.) *Mathematical Europe: History, Myth, Identity / L’Europe Mathématique: Histoires, Mythes, Identités* (Éditions de la Maison des sciences de l’homme, 1996), 517-529.

<sup>10</sup> See Michael J. Barany, “Integration by Parts: Wordplay, abuses of language, and modern mathematical theory on the move,” *Historical Studies in the Natural Sciences* 38 (2018): 259-299.

<sup>11</sup> Compare esp. Richard Beyler, Alexei Kojevnikov, and Jessica Wang, “Purges in Comparative Perspective: Rules for Exclusion and Inclusion in the Scientific Community under Political Pressure.” *Osiris* 20 (2005): 23-48.

<sup>12</sup> See Brigitte Schroeder-Gudehus, “Les congrès scientifiques et la politique de coopération internationale des académies des sciences,” *Relations internationales* 62 (1990): 135-148; Mary Jo Nye (ed.) *The Question of the Atom: From the Karlsruhe Congress to the First Solvay Conference. 1860-1911* (American Institute of Physics, 1984); Geert Somsen, “The princess at the conference: Science, pacifism, and Habsburg society,” *History of Science* 59 (2021): 434-460.

contributions from foreign mathematicians read *in absentia*.<sup>13</sup> The designation appears to have gone largely unnoticed, and would not be connected to the regular series of International Congresses of Mathematicians inaugurated shortly thereafter until the American hosts of the 1950 ICM excavated the meeting as a forerunner to their own.<sup>14</sup>

By comparison, the 1897 “First International Congress of Mathematicians” in Zürich, Switzerland, would seem a grand affair. Adopting a custom from non-mathematical international gatherings, the Zürich ICM’s proceedings identified each of the 242 officially enumerated participants with a nation—16 in total—and included national tallies of men and women after the list of names.<sup>15</sup> Proceedings of the subsequent congress in Paris included national identifications but not a table of totals. Ensuing proceedings divided totals by regular versus associate or family registration rather than gender, whereas the “Damen” column of the Zürich proceedings had combined professional mathematicians with female non-mathematician accompanying family members. Each Congress took its own approach to naming and aggregating national groups and attributing participants to them, with token travelers and expatriates sometimes inflating the appearance of national diversity, and the lists and totals are not reliable indicators of actual attendance.<sup>16</sup>

With those provisos, proceedings data tend to underscore the limits of what counted as international for turn-of-the-century mathematicians (table 1). In Zürich in 1897, two in seven enumerated participants came from Switzerland, and most of the rest came from neighboring states: hardly “the mathematicians of every country of the world,” as the hosts put it.<sup>17</sup> Total participation grew in Paris in 1900, Heidelberg in 1904, and Rome in 1908, but the same pinwheel of Western European countries continued to dominate attendance, led by the host.<sup>18</sup> The 1912 Congress in Cambridge, England, broke the pattern to some extent: British and American participation unsurprisingly surged, Canadians quintupled their usual number (with five), and for the first time more than ten nations had more than five attributed participants each. But an overwhelming majority continued to come from the host and nearby countries.<sup>19</sup>

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<sup>13</sup> E.H. Moore *et al.* (eds.) *Mathematical Papers read at the International Mathematical Congress held in connection with the World’s Columbian Exposition Chicago 1893* (MacMillan and Co., 1896), ix-xii. On the small community of internationally-corresponding mathematicians in this period, see Anne-Marie Décaillot, *Cantor et la France: Correspondance du mathématicien allemande avec les français à la fin du XIXe siècle* (Éditions Kimé, 2008).

<sup>14</sup> Kline, “Secretary’s Report,” 121.

<sup>15</sup> Ferdinand Rudio (ed.), *Verhandlungen des ersten internationalen Mathematiker-Kongresses in Zürich vom 9 bis 11 August 1897* (B.G. Teubner, 1898), 78.

<sup>16</sup> See Christopher Hollings and Reinhard Siegmund-Schultze, *Meeting under the integral sign? The Oslo Congress of Mathematicians on the eve of the Second World War* (American Mathematical Society, 2020), 16.

<sup>17</sup> Ferdinand Rudio, “Über die Aufgaben und die Organisation internationaler mathematischer Kongresse / Sur le but et l’organisation des congrès internationaux des mathématiciens,” in Rudio, *Verhandlungen*, 31-42, on 32-33, 39.

<sup>18</sup> “Liste Générale des Membres,” E. Duporcq (ed.), *Compte Rendu du Deuxième Congrès International des Mathématiciens, tenu à Paris du 6 au 12 août 1900. Procès-Verbaux et Communications* (Paris: Gauthier-Villars, 1902), 3-10; “Verzeichnis der Kongreßmitglieder,” A. Krazer (ed.), *Verhandlungen des dritten internationalen Mathematiker-Kongress in Heidelberg vom 8. bis 13. August 1904* (B.G. Teubner, 1905), 11-23; “Elenco dei Delegati e dei Congressisti,” G. Castelnuovo (ed.), *Atti del IV Congresso Internazionale dei Matematici (Roma, 6-11 Aprile 1908)*, vol. I. *Relazione sul Congresso – Discorsi e Conferenze* (R. Accademia dei Lincei, 1909), 7-20.

<sup>19</sup> “Part I. Report of the Congress,” in E.W. Hobson and A.E.H. Love (eds.), *Proceedings of the Fifth International Congress of Mathematicians (Cambridge, 22-28 August 1912)* (Cambridge University Press, 1913), vol. I, 7-66, on 10-28.

Host Year	Zürich 1897	Paris 1900	Heidelberg 1904	Rome 1908	Cambridge 1912
Host nation	60 (8)	89	173 (31)	190 (23)	221 (49)
Switzerland and neighbors, excluding host nation	101 (26)	63	73 (11)	250 (108)	171 (37)
Britain	3	12	7 (1)	22 (11)	221 (49)
Scandinavia	13 (1)	11	21 (9)	10 (5)	19 (5)
Russia	12 (1)	14	30 (4)	19 (6)	30 (10)
Rest of Europe	9 (1)	27	13	23 (1)	51 (6)
United States	6 (1)	19	15 (4)	16 (11)	60 (27)
Rest of World	0	9	4	5	22
<b>Total</b>	<b>204 (38)</b>	<b>244</b>	<b>336 (60)</b>	<b>535 (165)</b>	<b>574 (134)</b>
<i>Total nations</i>	<i>16</i>	<i>29</i>	<i>19</i>	<i>22</i>	<i>28</i>
<i>Nations larger than 5</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>10</i>	<i>13</i>

Table 1. Enumerations of participants by nation in ICM proceedings, from summary tables except for Paris, with proceedings' distinguished categories (e.g. associate members) in parentheses. Further details and notes are in Michael J. Barany, *Distributions in Postwar Mathematics* (PhD dissertation, Princeton University, 2016), 83-86.

The participatory fringes of these congresses reflect a variety of connections and itineraries deserving of further study. Those enumerated as non-European were often (but not always) European émigrés. Colonial networks appear to have played a small role in shaping participation from the discipline's peripheries. Much of the apparent national variation likely reflects more personal and circumstantial considerations. Counts alone do not account for the significance of attributed national cohorts, and a few individuals could mean a lot for congress participants' international aims and ideals. But the tradition of identifying and quantifying nations, meant to demonstrate internationalism, rather suggests that geography and language continued to divide the discipline more than common inquiry or universal values united it.

Swedish mathematician Gösta Mittag-Leffler offered a more substantial break with his bid to hold the 1916 Congress in Stockholm, the hub of a Scandinavian mathematics community he had assiduously cultivated.<sup>20</sup> To close the 1912 Cambridge meeting, Mittag-Leffler declared his hope that the just-concluded Congress “would be none other than a term in a never-interrupted series of like congresses, renewed every four years.”<sup>21</sup> When the Great War interrupted Mittag-Leffler's plans, he persisted in hosting a rump Congress with only the barest of non-Swedish participation.<sup>22</sup> As with his counterparts in science and politics, Mittag-Leffler hoped that a precarious wartime neutrality would allow Swedish institutions to maintain ties to those on both sides of the conflict when the fighting ceased.<sup>23</sup>

<sup>20</sup> Laura Turner and Henrik Kragh Sørensen, “Cultivating the Herb Garden of Scandinavian Mathematics: The Congresses of Scandinavian Mathematicians, 1909-1925,” *Centaurus* 55 (2013): 385-411.

<sup>21</sup> “Report of the [1912] Congress,” 45.

<sup>22</sup> Turner and Sørensen, “Scandinavian Mathematics,” 397.

<sup>23</sup> E.g., Mittag-Leffler to Fejér, 29 Nov 1917, Mittag-Leffler *Letterbook* (1915-1918), No. 6279, quoted in Joseph W. Dauben, “Mathematicians and World War I: The International Diplomacy of G. H. Hardy and Gösta Mittag-Leffler as Reflected in their Personal Correspondence,” *Historia Mathematica* 7 (1980): 261-288, on 263; see Sven Widmalm, “‘A superior type of universal civilisation’: Science as Politics in Sweden, 1917-1926,” 65-89 and Robert

With the war's end, the recently belligerent mathematicians faced a crossroads: to attempt to resume prewar international mathematics where they had left off, or to build a new system from the very different international configurations of wartime mobilization.<sup>24</sup> Mittag-Leffler became a leading advocate of the former way forward. Already on Armistice Day, he began asserting Stockholm's incumbency from the prewar series of Congresses that, if interrupted, might yet be resumed.<sup>25</sup> The rival camp was captained by French mathematician Émile Picard, who had lost his son at the front and, as Permanent Secretary of the Académie des Sciences, argued for a new international scientific order that rejected "German barbarity, however scholarly," and limited the influence of those from neutral nations that abetted the Central Powers.<sup>26</sup>

Picard's approach became the foundation for a new International Research Council, through which he joined with sympathetic French and Belgian mathematicians to wrest the mandate the next ICM, in 1920 in the newly repatriated city of Strasbourg.<sup>27</sup> Following IRC protocol, the French hosts banned participants from the former Central Powers and issued only personal invitations to "allies and friends."<sup>28</sup> Mittag-Leffler fumed at this circumvention of Stockholm's incumbency, maintaining even after the 1920 meeting that Picard's gathering might be disqualified and Stockholm continue where Cambridge left off.<sup>29</sup> The Swede was not alone in thinking a congress without German participation did not merit the adjective international.<sup>30</sup>

For Picard, Mittag-Leffler's preoccupation with incumbency and with past German ties missed the point entirely. The war's "nameless crimes will leave a stain on culpable nations," he opined at the Strasbourg closing ceremony, "So we must abandon old associations and create new ones."<sup>31</sup> He secured the link between the congresses and the IRC's regime of exclusion by

Marc Friedman, "Has the Swedish Academy of Sciences ... seen nothing, heard nothing, and understood nothing?" *The First World War, Biased Neutrality, and the Nobel Prizes in Science*, 90-114, in Lettevall *et al.*, *Neutrality*.

<sup>24</sup> On mathematicians' mobilization, see David Aubin and Catherine Goldstein (eds.), *The War of Guns and Mathematics: Mathematical Practices and Communities in France and Its Western Allies around World War I* (American Mathematical Society, 2014). On this crossroads, see Emily Kern and Michael J. Barany, "Natural Sciences," in Denning and Tworek (eds.) *The Interwar World* (Routledge, 2023), ch. 25.

<sup>25</sup> Mittag-Leffler to Nørlund, 11 Nov 1918, Institut Mittag-Leffler, referenced in Lehto, *Borders*, 14.

<sup>26</sup> Quotation from Picard to Mittag-Leffler, 22 Feb 1915, Institut Mittag-Leffler, Picard, Brev. 38, quoted in E.M. Riehm and F. Hoffman, *Turbulent Times in Mathematics: The Life of J.C. Fields and the History of the Fields Medal* (American Mathematical Society, 2011), 109, translation modified. See David Aubin, Hélène Gispert, and Catherine Goldstein, "The Total War of Paris Mathematicians," in Aubin and Goldstein, *Guns and Mathematics*, 125-177, on 143-144; Lehto, *Borders*, 16; Daniel J. Kevles, "'Into Hostile Political Camps': The Reorganization of International Science in World War I," *Isis* 62, no. 1 (1971): 47-60, on 49, 57-60; Riehm and Hoffman, *Turbulent Times*, 116-120 *et seq.*

<sup>27</sup> Lehto, *Borders*, 15-33. See Nikolai Kremontsov, *International Science between the World Wars: The Case of Genetics* (Routledge, 2005); Brigitte Schroeder-Gudenus, *Les Scientifiques et la Paix: La communauté scientifique internationale au cours des années 20* (Montreal: Les Presses de l'Université de Montréal, 1978); A.G. Cock, "Chauvinism and Internationalism in Science: The International Research Council, 1919-1926," *Notes and Records of the Royal Society of London* 37, no. 2 (1983): 249-288.

<sup>28</sup> Picard, "Le Congrès international de Mathématiques de Strasbourg," *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences* 171 (1920): 589-591, quoted in Lehto, *Borders*, 33.

<sup>29</sup> E.g. Mittag-Leffler to L. Königsberger, 20 Dec 1920, Mittag-Leffler *Letterbook* (1918-1921), No. 6861, quoted in Dauben, "Mathematicians and World War I," 274-275.

<sup>30</sup> See esp. Hardy to Mittag-Leffler, 7 Jan 1919, quoted in Dauben, "Mathematicians and World War I," 264; G.H. Hardy, "The International Research Council," *Nature* 107, no. 2682 (24 Mar 1921): 107-108.

<sup>31</sup> Émile Picard, "Séance de Cloture du Congrès: Allocution de M. Émile Picard," in Henri Villat (ed.), *Comptes Rendus du Congrès International des Mathématiciens (Strasbourg, 22-30 Septembre 1920)* (Toulouse: Édouard Privat, 1921), xxxi-xxxiii, on xxxi-xxxii.

founding, in conjunction with the 1920 Congress, a new International Mathematical Union (IMU). Picard's internationalism was defined by the *inclusion* of allies and friends joining in new organizations to advance the cause of civilization. By contrast, Mittag-Leffler made formal *non-exclusion* his international standard. These competing visions delineated the fundamental conflict of interwar international mathematics.

### *A bid deferred*

Founded in 1888, the American Mathematical Society (AMS) was from its inception oriented toward Europe, especially Germany.<sup>32</sup> Politically opportunistic and confident of the United States' growing role on the international stage (mathematically and otherwise), the University of Chicago's L.E. Dickson and Princeton University's Luther Eisenhart seized a moment of controversy and indecision at the 1920 congress with a bid to host the 1924 ICM in New York, apparently without having first secured the support of their colleagues back home.<sup>33</sup> Their bid, accepted in Strasbourg, drew the Americans to the center of the controversy over the IRC's exclusion policies, with the added financial, logistical, and political difficulties of hosting a congress an ocean away from the discipline's European centers.

The tension came out in their adverbs. Following the Strasbourg Congress, G.H. Hardy reported to Mittag-Leffler that, according to Dickson, the Americans expected the hard French line would soften by 1924 so that they could host a "genuinely international" Congress without German exclusion.<sup>34</sup> Dickson continued to assert in 1922 that "it is desirable to have a truly international congress," and AMS Secretary R.G.D. Richardson avowed that the Americans "should hope later on to have a congress really international in character."<sup>35</sup> But the prospective hosts found that IRC and IMU policies were less pliable than hoped, and blamed those restrictions for their inability to place the Congress on a firm financial footing by 1922.<sup>36</sup>

Canadian mathematician John Charles Fields, lacking Dickson's compunctions over German exclusion and eager to capitalize on French solidarity with a one-third francophone country, stepped into the fray and by the end of 1922 had secured the requisite financial and institutional commitments to move the 1924 Congress to Toronto.<sup>37</sup> Fields's Congress finished with a financial surplus, but by most other measures it fell flat, drawing limited transatlantic participation supplemented by *in absentia* contributions.<sup>38</sup> The Toronto Congress concluded without deciding between Stockholm and Bologna for 1928, and Bologna's champions ultimately prevailed. As consolation, the Bologna hosts offered Mittag-Leffler the distinction of

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<sup>32</sup> Karen Hunger Parshall and David E. Rowe, *The Emergence of the American Mathematical Community 1876-1900: J.J. Sylvester, Felix Klein, and E.H. Moore* (American Mathematical Society, 1994).

<sup>33</sup> Gabriel Koenigs, "Rapport de M. G. Koenigs, Secrétaire Général du Congrès," *1920 ICM Proceedings*, xxxiv-xxxix, on xxxv. See Raymond C. Archibald, *A Semicentennial History of the American Mathematical Society, 1888-1938* (American Mathematical Society, 1938), 19; Lehto, *Borders*, 33-34. On Dickson, see Della Dumbaugh Fenster, "American Initiatives Toward Internationalization: The Case of Leonard Dickson," in Parshall and Rice, *Unbound*, 311-334.

<sup>34</sup> Hardy to Mittag-Leffler, 30 Sep 1921, excerpted in Dauben, "Mathematicians and World War I," 276.

<sup>35</sup> W.E. Tisdale (attributing quotation to Dickson) to R.G.D. Richardson, 24 Nov 1922, and R.G.D. Richardson to O. Veblen, 8 Nov 1922, AMS Records, box 21, folder 83, in Riehm and Hoffman, *Turbulent Times*, 131, 133-134.

<sup>36</sup> Archibald, *Semicentennial History*, 19.

<sup>37</sup> Lehto, *Borders*, 34-37; Riehm and Hoffman, *Turbulent Times*, 129-161.

<sup>38</sup> J.C. Fields (ed.), *Proceedings of the International Mathematical Congress held in Toronto, August 11-16, 1924* (University of Toronto Press, 1928), esp. "Geographical Distribution," vol. 1, 48.



presiding over “the first truly international congress of mathematicians” since the war, but the latter died before he could take up the honor.<sup>39</sup>

The IRC exclusion policy, meanwhile, had narrowly avoided repeal in 1925, and support for Central Powers exclusion appeared to be crumbling in and beyond science. At the start of 1926, the AMS joined renewed calls to end the ban “so that membership in the Union may be entirely international.”<sup>40</sup> “Entirely” here joined “genuinely” and “truly” among the Americans’ emphatic adverbs for an internationalism compatible with German participation. The IRC officially repealed the exclusion policy later that year, coinciding with Germany’s admission to the League of Nations, but German scientists did not rush to join the organization that once spurned them.<sup>41</sup> German mathematicians were not party to the IRC or IMU by 1928, and their participation as the largest foreign delegation in Bologna defied an IMU rule against inviting non-IRC members.<sup>42</sup>

Participation in interwar congresses continued many of the patterns of their prewar counterparts (table 2). Hosts and their neighbors continued to make up significant majorities of those present, except in Oslo.<sup>43</sup> Dividing the national tallies by cohort size shows a relatively even mixture of smaller and larger cohorts from Europe and a preponderance of smaller cohorts from elsewhere, except that everything was a little smaller in Strasbourg and the Toronto congress made Europe look a lot more like the rest of the world. Some of the apparently greater national diversity in 1928 and 1932 owed to the greater number of nations that could be counted in Europe after Versailles.

Host Year	Strasbourg 1920		Toronto 1924		Bologna 1928		Zürich 1932		Oslo 1936	
Host	80 (32)		107 (7) {4}		336 (76)		144 (41)		59 (25)	
Neighbors	48 (11)		191 (64) {15}		182 (88)		261 (61)		105 (34)	
<b>Total</b>	<b>200 (57)</b>		<b>444 (100) {82}</b>		<b>836 (280)</b>		<b>667 (186)</b>		<b>487 (182)</b>	
<i>Nations</i>	27		27 [33]		36		35		36	
<i>Cohort size</i>	<i>Eur.</i>	<i>Non-</i>	<i>Eur.</i>	<i>Non-</i>	<i>Eur.</i>	<i>Non-</i>	<i>Eur.</i>	<i>Non-</i>	<i>Eur.</i>	<i>Non-</i>
1-5	5	8	15 [14]	5 [10]	7	4	6	8	6	8
6-10	7	1	2 [3]	0 [0]	3	4	6	2	5	1
11-20	4	1	1 [2]	0 [0]	7	1	6	0	6	1
21+	1	0	2 [2]	2 [2]	9	1	6	1	8	1

Table 2. Enumerations of participants from host nations and their respective geographic neighbors in ICM proceedings summary tables, distinguished categories (e.g. associate members) in parentheses, Toronto corresponding members in curly brackets. Beneath the total is a division of the number of identified European and non-European nations by cohort size, with bracketed numbers under Toronto including corresponding members. See Barany, *Distributions*, 83-86.

<sup>39</sup> Pincherle to Mittag-Leffler, 20 Jul 1926, Institut Mittag-Leffler Archives, quoted in Lehto, *Borders*, 44. See Hollings and Siegmund-Schultze, *Meeting*, 25-26.

<sup>40</sup> American Mathematical Society resolution of 1 Jan 1926, quoted in Lehto, *Borders*, 39.

<sup>41</sup> See Brigitte Schroeder-Gudehus, “Challenge to Transnational Loyalties: International Scientific Organizations after the First World War,” *Science Studies* 3, no. 2 (1973): 93-118.

<sup>42</sup> Lehto, *Borders*, 44-50. “Distribuzione dei Congressisti per Nazioni,” Nicola Zanichelli (ed.), *Atti del Congresso Internazionale dei Matematici, Bologna 3-10 Settembre 1928* (Società Tipografica già Compositori, 1929), I: 63.

<sup>43</sup> Participation in Oslo was exceptional in many respects, and reported figures especially unreliable. Hollings and Siegmund-Schultze, *Meeting*, 59-60 *et passim*.

American mathematicians came to the 1936 Oslo Congress determined not to repeat the mistakes of their previous bid. Absent delegations from Italy and the Soviet Union, with German participation sharply curtailed by currency shortages, and with other European delegations similarly reflecting a continent in crisis, the Americans had the largest national contingent in Oslo.<sup>44</sup> Boasting new sponsors, publishing infrastructure, and research centers including the new Institute for Advanced Study in Princeton, they felt their footing was well earned to try again to host a congress.<sup>45</sup> Having learned his lesson from Strasbourg, Eisenhart came this time with an officially ratified AMS proposal to host in 1940, presenting it shortly after the assembled mathematicians effectively dissolved the embattled IMU, whose exclusion policy had been blamed in part for the 1924 failure.<sup>46</sup>

As the situation in Europe continued to deteriorate, the American organizers focused primarily on the logistical challenges of international participation.<sup>47</sup> European conflict gave the chair of the Congress's Financial Committee, the Institute for Advanced Study's Marston Morse, an extra impetus when soliciting philanthropic support for "a wholly non-contentious discipline" (even while acknowledging mathematicians' "recent political difficulties").<sup>48</sup> Morse and colleagues' vision of peaceful cooperation effectively wrote Picard's side out of the story. Thus, Marshall Stone, who would lead the postwar American effort to found a new International Mathematical Union, opined in 1941 that Picard's IMU had dissolved because mathematicians opposed its "political origins and development," while their "informal but close cooperation" apart from the Union gave them "every reason to be pleased."<sup>49</sup>

Developments in Germany severely tested the American leadership's posture of non-contentiousness.<sup>50</sup> At least one German mathematician, Helmut Hasse, turned their favored

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<sup>44</sup> Hollings and Siegmund-Schultze, *Meeting*, 127-128; Lehto, *Borders*, 69-71; *Comptes Rendus du Congrès International des Mathématiciens, Oslo 1936*. A.W. Brøgger, 1937, I: 39.

<sup>45</sup> Loren Butler Feffer, "Oswald Veblen and the Capitalization of American Mathematics: Raising Money for Research, 1923-1928," *Isis* 89 (1998): 474-497; Karen Hunger Parshall, "'A New Era in the Development of Our Science': The American Mathematical Research Community, 1920-1950," in David E. Rowe and Wann-Sheng Horng (eds.), *A Delicate Balance: Global Perspectives on Innovation and Tradition in the History of Mathematics* (Birkhäuser, 2015), 275-308, on 275-284; Parshall, *New Era*, 145-231; Reinhard Siegmund-Schultze, "The Emancipation of Mathematical Research Publishing in the United States from German Dominance (1878-1945)," *Historia Mathematica* 24 (1997): 135-166; William Aspray, "The Emergence of Princeton as a World Center for Mathematical Research, 1896-1939," in William Aspray and Philip Kitcher (eds.), *History and Philosophy of Modern Mathematics* (Minnesota, 1988), 346-366; Parshall and Rowe, *Emergence*, ch. 4, 5, 10.

<sup>46</sup> *Comptes Rendus [1936]*, I: 46-47, 49. See Hollings and Siegmund-Schultze, *Meeting*, 13-15, 85, on some ambiguities surrounding the IMU's dissolution.

<sup>47</sup> See especially Eisenhart's Committee on the International Congress of Mathematicians: report as amended by the American Mathematical Society in Papers of Marston Morse, Harvard Depository HUGFP 106.10, Harvard University Archives, Cambridge, MA (hereafter "Morse Papers"), box 7, "ICM – Analysis" folder; annotated versions from March are in American Mathematical Society Records, Ms. 75, John Hay Library, Brown University, Providence, RI (hereafter "AMS Records"), box 26, folder 71. See also Parshall, *New Era*, 287-297.

<sup>48</sup> Warren Weaver officer diary, excerpted in Rockefeller Foundation Archives, Rockefeller Archive Center, Sleepy Hollow, NY (hereafter "Rockefeller Foundation Archives"), Record Group 1.1, Series 200D (hereafter "Rockefeller Projects: U.S."), box 125, folder 1545. See Michael J. Barany, "Remunerative Combinatorics: Mathematicians and their Sponsors in the Mid-Twentieth Century," in Brendan Larvor, ed., *Mathematical Cultures: The London Meetings 2012-2014* (Birkhäuser, 2016), 329-346, on 329-330.

<sup>49</sup> Marshall H. Stone, "International Cooperation," *Science* 94, no. 2432 (August 8, 1941): 137-138.

<sup>50</sup> E.g. Gill to Richardson, 9 Apr 1937, AMS Records, box 26, folder 48; Weyl to Richardson, 12 Apr 1937, AMS Records, box 26, folder 50; R.G.D. Richardson, "Memorandum on the Göttingen Invitation," Weyl to Richardson, 10 May 1937, and Richardson to Weyl, 9 Jun 1937, AMS Records, box 26, folder 55.

formulation back at them, imploring an American counterpart to be “truly impartial and hence genuinely international” rather than one-sidedly support dismissed Jewish mathematicians.<sup>51</sup> The German invasion of Poland finally convinced AMS officers that their hoped-for Congress was untenable, and Morse became chairman of an Emergency Committee for the Congress to steward the suspended endeavor “until a more favorable time.”<sup>52</sup>

### *The closed circuit of open ideals*

Just two months after the end of hostilities in the Pacific Theater in 1945, Marston Morse wrote to the Emergency Committee to reopen planning for the suspended 1940 congress. From the conflict over Stockholm and Strasbourg, Morse’s committee knew they would not be universally presumed to retain the right to host the next ICM. American incumbency would depend on a great many questions about timing and organization, and Morse set the committee to answering as many of these as expeditiously as possible to clear the path for an invitation to the first postwar congress.

One question stood out. The bitter lesson from the Americans’ 1924 bid was that the matter of German inclusion could spell the life or death of an international congress. Hence Morse’s fundamental question: “should the policy of an open Congress be adopted?”<sup>53</sup> The question was so delicate that Morse worried whether foreign colleagues should even know that it had been asked, so he set about discreetly soliciting the views of a few distinguished men.

Reflecting the American Mathematical Society’s operational reliance on its officers’ personal networks, its national leaders formed a decidedly narrow group. Most committee members for the 1950 Congress worked within a tight geographic radius of Princeton or Harvard, and most of the rest had other direct ties in work or training to those institutions.<sup>54</sup> While mostly American-born, members of the AMS inner circle typically boasted European travel or training, and its ranks also included interwar and wartime European émigrés.<sup>55</sup> The recent war effort had drawn this tight circle even tighter.<sup>56</sup>

Morse’s correspondents expressed unanimous support for an open Congress of one form or another, but supposed their view might not be shared abroad. AMS President Theophil Hildebrandt was emphatic that the Congress should be “completely international,” with mathematicians invited from every country “irrespective of their political affiliations.” By affirming “that science is not a political affair, but international in character,” he wrote, “we

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<sup>51</sup> Hasse to Stone, 15 Mar 1939, quoted in Siegmund-Schultze, “Nazi Rule,” 341.

<sup>52</sup> Minutes of 6 Sep 1939, AMS Records, box 15, folder 17.

<sup>53</sup> Morse to Emergency Committee, October 17, 1945, Morse Papers, box 7, “ICM – Emergency Committee” folder (hereafter “Morse Emergency Committee”). See also Karen Parshall, “Marshall Stone and the Internationalization of the American Mathematical Research Community,” *Bulletin of the American Mathematical Society* 46, no. 3 (2009): 459-482, on 470-473.

<sup>54</sup> For committee membership, see Graves et al., *Proceedings*, 1-4.

<sup>55</sup> See Nathan Reingold, “Refugee Mathematicians in the United States of America, 1933-1941: Reception and Reaction,” *Annals of Science* 38 (1981): 313-338, esp. 316-319; Reinhard Siegmund-Schultze, *Rockefeller and the Internationalization of Mathematics Between the Two World Wars: Documents and Studies for the Social History of Mathematics in the 20th Century* (Birkhäuser, 2001); Siegmund-Schultze, *Mathematicians fleeing from Nazi Germany: individual fates and global impact* (Princeton, 2008); Sanford Segal, “War, Refugees, and the Creation of an International Mathematical Community,” in Parshall and Rice, *Unbound*, 359-380.

<sup>56</sup> See Alma Steingart, *Conditional Inequalities: American Pure and Applied Mathematics, 1940-1975* (PhD Dissertation, Massachusetts Institute of Technology, 2013), ch. 1; Barany, “Remunerative Combinatorics”; Parshall, *New Era*, 339-396.

make a contribution towards possible permanent peace.”<sup>57</sup> Here, Hildebrandt’s opposition of the “political” to the “international” reflected a slippage that joined the “national” and the “political” by identifying one’s national identity with one’s membership in a national polity. Conflating “political” considerations (in the sense of national polities) with “political” considerations (in the sense of one’s personal and implicitly non-scientific viewpoints), Hildebrandt marked any national considerations as “political” and thus separate from science.

With precisely these semantically ambiguous terms, the leaders of American mathematics regularly denounced or dismissed others’ “political” motivations, presenting their own versions of internationalism as science’s inevitable corollaries. Avoiding national-political identifications frequently meant eschewing personal-political ones as well. Accordingly, Marshall Stone lent his support for an open Congress with the proviso that the AMS should issue only general invitations to “an open gathering of mathematicians,” in contrast to Picard’s personal “allies and friends” approach of 1920.<sup>58</sup> The Congress’s organizers ultimately made an official policy of using general rather than targeted invitations, largely to avoid the problem of how best to invite German delegates.<sup>59</sup>

To their own confident consensus regarding an open Congress, Morse’s correspondents gradually added affirmations from their European contacts—who, by virtue of their ties to these Americans, were already likely to support their view. Jean Dieudonné, a prominent French mathematician from the generation that emerged in the 1930s, avowed a non-specific opposition to Nazis without enmity toward German or Japanese mathematicians, agreeing “that there should be no exclusion on political grounds.”<sup>60</sup> The London Mathematical Society’s Council replied in the negative to “An enquiry from the American Math. Soc. as to whether there would be objections to the presence of German mathematicians at the proposed International Congress of 1948.”<sup>61</sup> A Swedish mathematician, Torsten Carleman, supposed that his Swedish and Norwegian counterparts would approve of an open gathering and promised to test the waters at the next Scandinavian Congress.<sup>62</sup> By the summer of 1946 Morse could put to paper his hope that an open Congress would be possible in 1949 or 1950.<sup>63</sup>

### *Auxiliary questions*

Morse’s aspiration for a congress by 1950 became a firm deadline with news from the Rockefeller Foundation that it could not extend its prewar pledge of \$7,500 past the end of that year.<sup>64</sup> With the Congress’s financial basis still uncertain, Morse could not afford to let such a major share of the committed funds lapse. He had aimed to resolve matters including Soviet cooperation, support from UNESCO and the U.S. State Department, and the desirability of a new

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<sup>57</sup> Hildebrandt to Morse, 21 Nov 1945, Morse Emergency Committee.

<sup>58</sup> Stone to Morse, 23 Oct 1945, Morse Emergency Committee.

<sup>59</sup> ICM Organizing Committee 8 Sep 1948 minutes, Morse Papers, box 7, “ICM 1950 – Organizing Committee” folder.

<sup>60</sup> Hille to the Emergency Committee, 19 Oct 1945, quoting Jean Dieudonné, Morse Emergency Committee. On French generational dynamics, see David Aubin, *L’élite sous la mitraille: Les normaliens, les mathématiciens et la Grande Guerre 1900-1925* (Éditions Rue d’Ulm, 2018).

<sup>61</sup> 13 Dec 1945 Council minutes, Minutes of Council and Meetings, London Mathematical Society Archive, De Morgan House, London, United Kingdom (hereafter “LMS Minutes”).

<sup>62</sup> Carleman to Morse, 13 Jun 1946, Morse Emergency Committee.

<sup>63</sup> Morse to Belgodère, 25 Jun 1946, Morse Emergency Committee.

<sup>64</sup> AMS records, box 15 folders 11 and 17, Organizing Committee minutes of 28 Dec 1938 and 6 Sep 1939, respectively; Weaver to Hildebrandt, 22 Oct 1946, and Morse to Emergency Committee, undated, Morse Emergency Committee.

IMU, all before setting a date. Several of these questions had occupied a meeting that September at the U.S. State Department between Morse, Kline, Detlev Bronk (National Research Council chair and Foreign Secretary of the National Academy of Sciences), and State Department figures including the head of its Division of International Conferences.<sup>65</sup> But now Morse could only hope “that a definitive announcement with regard to the Congress might help in clarifying these auxiliary questions.”<sup>66</sup>

Hildebrandt assured the responsible Rockefeller officer, Warren Weaver, on October 28, 1946, that the extended grant would be a great help in supporting “a congress of real international character,” a congress he could now tentatively call “the International Mathematical Congress of 1950.”<sup>67</sup> The Emergency Committee arranged the formal renewal of Harvard University’s invitation from the suspended 1940 meeting to the now-planned 1950 version.<sup>68</sup> This cleared the AMS Council to approve the date (August 30 through September 6, 1950) and site (Cambridge, Massachusetts) in April, 1947, and to endorse the Emergency Committee’s dissolution the following December.<sup>69</sup>

The same day Weaver wrote regarding the Rockefeller grant, Morse and AMS Secretary (and eventual ICM Secretary) Kline were attending a Symposium on International Relations hosted by the National Academy of Sciences that brought to light new complications for the auxiliary questions the Emergency Committee had been attempting to resolve.<sup>70</sup> Desiring to hold “a truly international Congress” that avoided the “political character” of the interwar union and congresses, Morse queried the symposium’s other delegates about incorporating former adversary countries. He learned, for instance, that the International Union of Chemistry had a Russian Vice-President, but did not admit German or Japanese participants.

French mathematician Gaston Julia worried that 1950 would be too late for Morse’s congress, while his Czech counterpart Václav Hlavatý worried it might be too soon to ensure broad participation. (Other transatlantic correspondence from 1946 confirms this latter concern was shared, with a British mathematician doubting, for instance, “whether it will be possible to get an adequately international attendance of mathematicians at a congress held as early as 1948.”<sup>71</sup>) Julia explained that a transatlantic voyage could now consume more than three months’ wages, a cost European governments were unable to subsidize. Americans, on the other hand, could not come to Europe instead because conditions would not support an open congress there. Russians, Hlavatý noted, could hardly be convinced to come to Czechoslovakia, much less to a congress further afield. All hoped that German and Japanese mathematicians would be represented, and that “decent” ones would receive needed subsidies for travel. The requirement

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<sup>65</sup> “Conference on plans for International Congress of Mathematicians, State Department, September 20, 1946” memorandum, Harvard Emergency Committee.

<sup>66</sup> Morse to Emergency Committee, undated, Morse Emergency Committee.

<sup>67</sup> Hildebrandt to Weaver, 28 Oct 1946, Rockefeller Projects: U.S., box 125, folder 1546.

<sup>68</sup> Correspondence of Widder, Conant, Baum, Hildebrandt, Kline, and Buck, Oct 1946 – Feb 1947, Harvard University Archives, UAV 561.8, Records of the Department of Mathematics: Correspondence and papers, box 16, folder “International Congress Emergency Committee,” (hereafter “Harvard Emergency Committee”).

<sup>69</sup> Everett Pitcher, *A History of the Second Fifty Years: American Mathematical Society, 1939-1988* (Providence: American Mathematical Society, 1988), 148; Kline, “Secretary’s Report,” 121.

<sup>70</sup> Kline memo enclosed in JR Kline to Warren Weaver, October 29, 1946, Rockefeller Projects: U.S., box 125, folder 1546. Quotations and attributions for this meeting are from Kline’s memo.

<sup>71</sup> Smithies to Boas, 16 Apr 1946, Papers of Frank Smithies, St. John’s College Library, University of Cambridge, quotation by permission of the Master and Fellows of St. John’s College, folder A10.

for permission to enter the United States made them confident, meanwhile, that “notorious Nazis who attempt to attend the Congress” would be unable to do so.<sup>72</sup>

Morse traveled to France shortly thereafter, meeting with French mathematicians and with Joseph Needham, who was then in the process of articulating UNESCO’s program for postwar international science. In a prior exchange of letters, Needham praised the Emergency Committee’s consensus “in favour of an open congress.” That approach, in Needham’s view, was realistic for 1949 or 1950, but should account for recent experiences of international congress organizers facing “the unwillingness of scientists from the devastated countries to associate with scientists from countries formerly of the Axis Powers, unless the anti-fascist record of the individual is well-established.”<sup>73</sup> Over a meal with Needham, Morse discussed the challenges of Russian and German participation and the possibility of UNESCO support for travel expenses for officers and invited speakers.<sup>74</sup> A separate meeting with Émile Borel impressed upon Morse the hardship his French counterparts had experienced during the war, their in-principle openness to the participation of individual former-adversary mathematicians, and their active interest in rapidly forming a new IMU. His Paris intelligencing suggested to Morse that French interest in UNESCO and an IMU was not a threat to American incumbency for the 1950 Congress, and he reported agreement “that a Union which is not truly international is not worth much.”<sup>75</sup>

Up to October, 1946, Morse’s correspondents based their discussions more on extrapolations from their interwar experience than on the scant available information about postwar conditions in and beyond Europe. Thus, they debated the question of international inclusion as though it were interchangeable with that of the non-exclusion of mathematicians from the defeated side of the latest World War. Here, however, Morse and Kline encountered European informants who suggested that both inclusion and non-exclusion would be more complicated than they had supposed, and strongly dependent on fast-moving considerations of European reconstruction.<sup>76</sup> The goal of inclusion might falter through non-cooperation, interference by foreign governments, or financial constraints. Non-exclusion, meanwhile, began to refer to whom the U.S. State Department might deny entry, rather than whom the mathematicians themselves might bar.

The ramifications for Soviet participation came out in a letter Morse drafted on his return from the Symposium (but does not appear to have sent) to Sergey Vavilov, President of the Soviet Academy of Sciences, elaborating a litany of concerns including travel, housing shortages, and “Nazi or Fascist” would-be delegates.<sup>77</sup> After committee discussions, Morse

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<sup>72</sup> It is unclear whether they had specific “notorious Nazis” in mind. The assumption that Nazi academics would be unable to obtain passports or visas was shared, e.g., by organizers of the Tenth International Congress of Philosophy in the Netherlands, whose views the mathematicians solicited. See Beth to Morse, 7 Feb 1947, Harvard Emergency Committee. As late as April 1950 at least one mathematician hesitated over attending because of the risk of “embarrassing moments” involving specific “active Nazis” expected to attend the 1950 Congress; Hollings and Siegmund-Schultze, *Meeting*, 137-138.

<sup>73</sup> Needham to Morse, 13 Nov 1946, Harvard Emergency Committee.

<sup>74</sup> Morse memorandum, 8 Dec 1946, enclosed in Kline to Emergency Committee, 19 Dec 1946, Harvard Emergency Committee.

<sup>75</sup> Morse to Kline, 6 Dec 1946, Harvard Emergency Committee.

<sup>76</sup> See John Krige, *American Hegemony and the Postwar Reconstruction of Science in Europe* (MIT Press, 2006).

<sup>77</sup> Morse to Vavilov (draft), 24 Oct 1946, and Kline to Emergency Committee, 29 Oct 1946, Harvard Emergency Committee; Morse to Vavilov (drafts), 24 Oct 1946 and 5 Feb 1947, Morse Emergency Committee. Both folders contain Emergency Committee discussions of the planned letter. On Vavilov, see Alexei Kojevnikov, “President of Stalin’s Academy: The Mask and Responsibility of Sergei Vavilov,” *Isis* 87, no. 1 (1996): 18-50.

revised the letter to assert the principle of openness in terms of not excluding participants based on national criteria, and focused as well on the converse challenge including of as many desirable delegates as possible. As 1946 drew to a close, the latter challenge was freshly illustrated by the failure of Morse's Princeton colleagues, with State Department support, to make contact with prospective Soviet delegates to a star-studded conference in honor of the university's bicentennial.<sup>78</sup> Russian was formally added to the Congress's official languages in 1948, but by then the organizers mostly took for granted that Soviet participation was both desirable and unlikely.<sup>79</sup>

Accessing Russian writings and mathematicians was thus near the front of Marshall Stone's rationale for reconstituting an IMU as quickly as possible, an effort he pursued through the AMS's Policy Committee.<sup>80</sup> Beyond an IMU's promise for infrastructure and diplomacy, Stone insisted on a higher purpose "of a psychological rather than a practical order." Namely, a new Union "would give concrete expression to the deep-felt desire for international scientific cooperation and would be a step of incalculable importance in restoring to mathematics the international character it enjoyed before the war."<sup>81</sup> With this, Stone did not of course have in mind the factious interwar patchwork that had failed to sustain the previous IMU. Rather, the "international character" Stone and his committee sought to "restore" was a fiction vigorously touted by Stone and his American colleagues after the Americans took the International Congress's mantle in 1936.<sup>82</sup> The Americans, in turn, adapted their fiction from the efforts of Mittag-Leffler and his allies to delegitimize Picard and the Strasbourg Congress by claiming that mathematicians' genuine internationalism lay elsewhere. The fiction survives in large measure to this day in a "golden age" historiography of the early twentieth century.<sup>83</sup>

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<sup>78</sup> Rockefeller Foundation Archives, Record Group 1.1, Series 785, box 1, folder 9. See also Siegmund-Schultze, *Rockefeller*, 133.

<sup>79</sup> Minutes of the Organizing Committee of 16 Apr 1948, 29 Apr 1949, and 29 Oct 1949, AMS Records, box 37, folder 56. On Russian nonparticipation worries from the 1940 effort, see Hollings and Siegmund-Schultze, *Meeting*, 129. Due to a combination of ignorance and indifference, accentuated by Soviet migration and linguistic policies that collapsed relevant distinctions, American mathematicians tended to use the national moniker "Russian" for anyone from the Soviet Union, regardless of their residency, ethnicity, or language. See Michael Gordin, *Scientific Babel: How Science Was Done Before and After Global English* (Chicago, 2015), ch. 8-9, esp. p. 220. For American mathematicians' recognition of and adaptations to Soviet language policy, see, e.g., Hille and Kline to Office of Naval Research, 19 Mar 1948, AMS Records, box 34, folder 1. On rapidly-escalating American anticommunism in 1947-1949, see Jessica Wang, "Science, Security, and the Cold War: The Case of E. U. Condon," *Isis* 83, no. 2 (1992): 238-269.

<sup>80</sup> AMS records, box 15, folder 112, report of the Policy Committee to the AMS Council, May 5, 1947 (hereafter "AMS Policy Committee 1947 report"). AMS records, box 32, folder 62, extract of April 19, 1947, NRC-CISU minutes enclosed in Fleming to Dresden, August 27, 1947. See also Parshall, "Marshall Stone," 471-477; Rockefeller Foundation Archives, Rockefeller Projects: U.S., box 127, folder 1561; M.H. Stone, "American Mathematics in the Present War," *Science* 100, no. 2607 (1944): 529-535; Michael J. Barany, "The World War II Origins of Mathematics Awareness," *Notices of the American Mathematical Society* 64, no. 4 (2017), 363-367.

<sup>81</sup> AMS Policy Committee 1947 report. This "psychological" characterization did not sit well with every member of the AMS Council, e.g. JR Kline to RH Cameron, 29 May 1947, AMS records, box 32, folder 61.

<sup>82</sup> See Parshall, "Marshall Stone," 472-473 on related AMS correspondence. Schappacher, *Framing*, 225-226, while endorsing much of my analysis here, misconstrues me to be claiming that Stone was not himself deeply invested in his own international experiences; indeed, as I discuss here and elsewhere, Stone's heartfelt exuberance (and corresponding misappreciation of international situations) frequently backfired, a phenomenon I have called "headlong internationalism."

<sup>83</sup> "The Golden Years" is the subtitle of chapter 6, treating this period, in Riehm and Hoffman, *Turbulent Times*. See also Lehto, *Borders*, 7-14; Guillermo P. Curbera, *Mathematicians of the World, Unite! The International Congress of Mathematicians: A Human Endeavor* (Wellesley, MA: A.K. Peters, 2009), 9-54. On "golden years"

AMS elites' preoccupation with the politics of the 1920s and early 1930s helped them propound a picture of international mathematics favorable to their postwar aims. Thus, when the American president of the International Council of Scientific Unions (the post-1931 successor to the IRC), suggested that the first IMU had been disbanded because it seemed unnecessary, Morse was quick to correct him that it was abolished mainly because of its "political character."<sup>84</sup> Kline insisted to an AMS Council member the imperative of American leadership in re-forming the Union so as to avoid "the difficulty with the old Mathematical Union formed after the First World War," that "It was used as the 'football' of politics" and excluded the former Central Powers.<sup>85</sup> In a grant report, Kline twinned the inclusive internationalisms of the planned Congress and proposed Union, affirming in words paraphrased from Stone that both "should be truly international, representing all national and geographical groups."<sup>86</sup> Here was another crucial slippage: if the old Union failed to include all nations because its members adopted political criteria of exclusion, then, conversely, the new Union's advocates could claim the virtues of universal inclusion by focusing instead on a comparatively narrow goal of political non-exclusion. This substitution became especially important as barriers to widespread adherence continued to mount.

### *Political and cultural domination*

When the Société Mathématique de France announced plans for an informal meeting in Paris on the topic of a revived union in June, 1947, Stone viewed it as a direct threat to the American hegemony he considered essential in the shadow of 1920.<sup>87</sup> Here, Stone participated in a broad consensus that American leadership was politically and economically vital for postwar Europe and for the wider world for which Europe was still a presumptive center.<sup>88</sup> That spring, Stone claimed that he was "fearful that the motive back of the great activity of the French toward the formation of a Union is political" and aimed at "French cultural domination." Conversely, he estimated, the non-exclusive American attitude was broadly shared by the British and Dutch.<sup>89</sup>

The SMF had a clear geographic advantage, conducive to organizing through *ad hoc* and informal meetings connecting European mathematical societies. To counter the SMF, Stone initially attempted to engineer a more formalized organizing process through the International Council of Scientific Unions. Beyond keeping the French out of the helm, this would position Stone to hold the new union's principal organizational meeting nearer to home, at the next UNESCO General Assembly in Mexico City in November, 1947. As a first step, however, Stone needed ICSU's endorsement at its next Executive Committee meeting, in Paris on July 1-2, just a week after the SMF meeting. All roads to an IMU would run through Paris, after all.

Held on 24 June at UNESCO House, the SMF meeting capitalized on an influx of foreign mathematicians under a Rockefeller Foundation-sponsored program to renew international

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historiography, see Brigitte Schroeder-Gudehus, "Probing the Master Narrative of Scientific Internationalism: Nationals and Neutrals in the 1920s," in Lettevall et al., *Neutrality*, 19-42.

<sup>84</sup> Kline memo enclosed in Kline to Weaver, 29 Oct 1946, Rockefeller Projects: U.S., box 125, folder 1546.

<sup>85</sup> Kline to Cameron, 29 May 1947, AMS Records, box 32, folder 61.

<sup>86</sup> J.R. Kline report on Policy Committee to Rockefeller Foundation, 8 Jul 1947, AMS Records, box 15, folder 112.

<sup>87</sup> Report of the Policy Committee to the AMS Council, 5 May 1947, AMS Records, box 15, folder 112.

<sup>88</sup> See Krige, *American Hegemony*; J. van den Berk and F. Mehring, "Forging the American Century: World War II and the Transformation of US Internationalism," *International Journal for History, Culture and Modernity* 7 (2019): 1038-1048.

<sup>89</sup> Stone testimony to NRC-CISU on April 19, 1947, enclosed in Fleming to Dresden, August 27, 1947, AMS records, box 32, folder 62.



science in France.<sup>90</sup> Harvard topologist Hassler Whitney, a participant in the Rockefeller endeavor, found himself anointed the Americans' "unofficial representative" at the SMF meeting, where he worried that the AMS Council's position on universal membership would meet with "divergent views" from the French hosts.<sup>91</sup> Stone, who would be in Rio de Janeiro while his counterparts gathered in Paris, briefed Whitney extensively and later distributed a letter to other Americans who might influence the Paris discussions, making the case for ICSU sponsorship and a "truly international Union representing all national and geographical groups."<sup>92</sup> Stone continued, at the same time, to lobby ICSU directly.<sup>93</sup>

As it happened, the French meeting's Rockefeller connection meant that Americans formed the largest non-French delegation at UNESCO House.<sup>94</sup> Other foreign participants hailed from Argentina, Belgium, Denmark, Netherlands, Poland, Portugal, Romania, Sweden, and Switzerland. UNESCO Deputy Director General Walter Laves welcomed the group by describing "Unesco's two principal aims: to promote international understanding and the common welfare of mankind." Noting "the long tradition of co-operation among mathematicians," Laves "congratulated them on having never lost sight of this second principle." The first principle of international understanding, all could acknowledge, had a somewhat rockier history among mathematicians.

The meeting's five hours of business then opened with letters in support of a new union from the Romanian Academy of Sciences, a Bulgarian representative, the Finnish Academy of Sciences, a professor from Vienna, and the Italian National Academy. A last letter from Stone designated Whitney as the Americans' observer while underscoring "that there had not been time to send an official delegate." The French chair, Albert Châtelet, announced that notices were sent to Moscow, Belgrade, and London, and "mentioned that a Mathematical Congress would probably be held in 1950 in the United States." He then listed the goals for a new Union in terms consistent with Stone's vision: arranging symposia and collaborations, aiding "the reorganization of research in war-devastated countries," help to develop mathematics "in those countries where this was necessary," strengthening links to other scientific unions, promoting travel, and publishing mathematical abstracts.

Whitney toed Stone's party line, presenting the AMS's relevant resolutions and expressing his personal support for an organization with "no bar to membership for any national groups." Others were more combative. A letter read aloud "on behalf of British mathematicians" opposed "the immediate re-establishment of a mathematical union." American Norbert Wiener "was opposed to such a union, on the ground that mathematicians preferred personal and

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<sup>90</sup> AMS Records, box 32 folder 61, Albert Chatelet to the President of the AMS, 2 June, 1947. See also "International Meeting of Mathematicians Convened by the Société Mathématique de France" (hereafter "SMF Meeting report"), 4 Aug 1947, Børge Jessen Papers, Institute for Mathematical Sciences, University of Copenhagen, Denmark, box 60, "IMU: Genetabling" folder. On the Rockefeller program, see Krige, *American Hegemony*, 95-96, 110; Doris Zallen, "The Rockefeller Foundation and French Research," *Cahiers pour l'histoire du CNRS* 5, 1989; Zallen, "Louis Rapkine and the Restoration of French Science after the War," *French Historical Studies* 17, no. 1 (1991): 6-37.

<sup>91</sup> Whitney to Stone, May 7, 1947, AMS Records, box 32, folder 61.

<sup>92</sup> Stone to Whitney, May 9, 1947, and Stone "Dear Colleague" letter, June 11, 1947, AMS Records, box 32 folder 61. The "Dear Colleague" letter was distributed (according to Kline to Stone, June 11, 1947) to Whitney, MIT's Norbert Wiener and Rafaël Salem, and the Institute for Advanced Study's Hermann Weyl.

<sup>93</sup> Fleming to Kline, June 24, 1947, AMS Records, box 32, folder 61. Fleming Remarks and Memoranda enclosed in Fleming to Dresden, August 27, 1947, AMS Records, box 32 folder 62. In the latter, ICSU president Fleming borrowed Stone's "principle of representation for all national and geographical groups."

<sup>94</sup> SMF Meeting report. Subsequent descriptions of the meeting are from this UNESCO report.

informal contacts to official relations between societies,” adding that “the Strasbourg Congress of 1920 had done more harm than good” and it would be necessary to wait until “a few years hence” when “people would be able once more to think calmly” and permit “general participation [...] without any discrimination.”

Danish elder statesman Harald Bohr was skeptical of the timing and warned that without the U.S.S.R. and Great Britain a union “could not, from the start, be truly international.” Two Swiss participants, Michel Plancherel and Georges de Rham, then advised waiting until the 1950 Congress. A third Swiss delegate, Ukrainian-born Alexander Ostrowski, predicted (it would turn out, quite accurately) “that a Congress held in America would consist of 80% of Americans and 20% of Europeans” while “If it were held in Europe, the proportions would be 25% and 75% respectively,” and then suggested election and policy rules to mitigate that bias. Other participants offered potential projects for a union, and Bohr spoke again to underscore “the necessity for a truly international union, to ensure that no restricted group should speak and take decisions in the name of all mathematicians.” The Argentine delegate—Spanish-born and, at the time, Paris-based Manuel Balanzat—added that a union could help those “at a distance from the main scientific centres” to publish books.

Participants then heard a letter “indicating Czechoslovakia’s support, provided representatives of Germany were not included.” French mathematician Jacques Chapelon averred that British and Soviet participation was essential, and that Germans should not be excluded “except in certain individual cases” as “it would be extremely unpleasant to sit in an assembly where anyone was likely to state that ‘space is Aryan and number of [sic] Jewish.’” Discussion continued over what intermediate steps could be taken, at the UNESCO assembly in Mexico and elsewhere. The mathematicians then voted “unanimously, with one abstention” to express “that the formation of an international mathematical union is desirable,” though only after Whitney insisted they be clear that they were voting “in their private capacity” rather than as representatives of national societies.

### *The road from Paris*

The UNESCO report of the Paris meeting had plenty of dissent and ambivalence, and areas of consensus largely accorded with Stone’s and colleagues’ ambitions, but that was not the view available to the American organizers absent from UNESCO House. SMF President Châtelet wrote triumphantly to Kline to trumpet the unanimity of favorable opinion toward a revived Union and to suggest a meeting (implicitly under French leadership) in October to advance that objective further.<sup>95</sup> Absent an official record or a preliminary account from an American participant, Châtelet’s news appeared as a threat to American leadership. “Reading between the lines,” Kline averred to Stone when transmitting the letter later that month, “I would expect that the French hope that the European delegates will present a solid bloc at our meeting in November” in Mexico City.<sup>96</sup> Kline was unaware that two days earlier the ICSU president had written to Stone with news that put the Mexico City meeting in doubt.<sup>97</sup> Stone’s remonstrations on the importance of ICSU sponsorship, it seemed, had backfired.

The ICSU General Secretary, Cambridge astrophysicist F.J.M. “Chubby” Stratton, took umbrage at Stone’s account of the former Union and interpretation of French interest in the new one. Having participated as Secretary of the “Mechanics, Mathematical Physics, [and]

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<sup>95</sup> Châtelet to Kline, 7 Jul 1947, AMS Records, box 32, folder 61.

<sup>96</sup> Kline to Stone, 18 Jul 1947, AMS Records, box 32, folder 61.

<sup>97</sup> Fleming to Kline, 25 Jul 1947, AMS Records, box 32, folder 61.

Astronomy” section of the 1912 ICM at his home university and having served as General Secretary of the International Astronomical Union from 1925-1935, Stratton had a deep well of direct experience with both international mathematics and interwar scientific unions. His direct involvement in the International Research Council’s turn away from German exclusion and its reconstitution as the International Council of Scientific Unions, for which he became General Secretary in 1937, gave Stratton a particular skepticism for Stone and Kline’s postwar revisionism that cast the interwar period as an aberrant break with an earlier era of international cooperation.<sup>98</sup> Thus, in response to Stone’s effort to blame German exclusion on French intransigence, Stratton was adamant that the IRC’s short-lived policy was instead to blame—conveniently eliding Picard and his allies’ roles in bringing about the IRC policy.

Stratton gave little credit to Stone’s attempt to distance the Americans from the period’s political conflicts. Rather, he suggested that the same “bitter memories” that consigned the first IMU to failure had lingered in Stone’s blighted view of recent French efforts. Allowing that only “countries such as the United States with no axe to grind” can check domination by any one party, Stratton doubted the “fear of French political motives” and placed a greater concern on the difficulty of enrolling the Soviets.<sup>99</sup> John Fleming, Stone’s American ally in the ICSU leadership, remained optimistic that a Mexico meeting could be salvaged, but agreed with Stratton’s assessment that the mathematicians had best sort out their own conflicts before ICSU took any action.<sup>100</sup> Where the prospect of mathematicians’ infighting had been a primary rationale for Stone to attempt to proceed through ICSU, from ICSU’s perspective it was precisely that patina of mutual suspicion that proved the mathematicians to be unready for ICSU sponsorship.

This turn of events led Stone to doubt the viability of re-establishing the Union in advance of the 1950 Congress.<sup>101</sup> As far as he knew that summer, both meetings in Paris had been disastrous for his own designs to lead the world’s mathematicians into a new union before 1950. He wrote nearly identical letters to Harald Bohr and W.V.D. Hodge, the respective heads of the Danish Mathematical Society and London Mathematical Society, to reiterate his inclusive international goals and the importance of UNESCO.<sup>102</sup> A third letter penned on the same day to their French counterpart Châtelet suggested “the time is not quite ripe for the formation of an International Mathematical Union.”<sup>103</sup> Another AMS official, Arnold Dresden, meanwhile, scurried to tamp down interest resulting from an optimistic UNESCO press release that had followed the UNESCO House meeting.<sup>104</sup>

Absent an end-run around his perceived rivals, Stone moved between 1948 and 1950 to shore up support among those he thought most sympathetic.<sup>105</sup> If the IMU were to be revived

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<sup>98</sup> “Proceedings of the Sections,” in Hobson and Love, *Proceedings*, 46-63, on 51. James Chadwick, “Frederick John Marrian Stratton, 1881-1960,” *Biographical Memoirs of Fellows of the Royal Society* 17 (1961): 280-293.

<sup>99</sup> Stratton to Fleming, 2 Jul 1947, enclosed in Fleming to Kline, 21 Aug 1947, AMS Records, box 32, folder 62.

<sup>100</sup> Fleming to Stone, 16 Jul 1947, copied to Policy Committee members, AMS Records, box 32, folder 61.

<sup>101</sup> Stone to Hille, 26 Aug 1947, and Stone to Kline, 4 Aug 1947, AMS Records, box 32, folder 61. Stone continued, however, to lobby ICSU: Stone to Fleming, 13 Oct 1947; Fleming to Stone, 6 Oct and 16 Oct 1947, AMS Records, box 32, folder 63.

<sup>102</sup> Stone to Bohr and Stone to Hodge, 26 Aug 1947, AMS Records, box 32, folder 63. Bohr replied on 17 September and Hodge on 2 October, both in general agreement.

<sup>103</sup> Stone to Châtelet, 26 Aug 1947, AMS Records, box 32, folder 63.

<sup>104</sup> Wood to Dresden, 23 Sep 1947, AMS Records, box 32, folder 63. Stone wrote in a similar vein to the NRC Committee on UNESCO’s Bart Bok on 18 Dec 1947 to minimize expectations implied in a recent Bulletin.

<sup>105</sup> E.g. 18 Nov 1948 Council Minutes, LMS Minutes, recording a letter from Stone “suggesting that a representative committee of British mathematicians be formed to keep in touch with his American Committee.”

under American leadership, it began to look as though it would have to happen as an outgrowth, not in advance, of the 1950 Congress. This change of approach meant a new role for UNESCO, which ultimately provided most of the funding for an IMU organizational meeting in New York immediately prior to the ICM, as well as further travel funding for foreign mathematicians attending the congress.<sup>106</sup> Letters sent to potential union conference delegates stressed this purpose for the UNESCO funding, in support of “our sincere hope that as a result of this Conference there will be established a Union which is truly international and which will make possible real cooperation on certain mathematical projects which can best be handled on an international basis.”<sup>107</sup> The American organizers would ultimately report to UNESCO that the grant “went far towards giving the Congress a truly international character.”<sup>108</sup>

Both UNESCO and Rockefeller money and infrastructures also proved critical for one of the least recognized but most enduring legacies of the Congress and of Stone’s approach to forming a Union, the integration of Latin America into mathematicians’ international networks.<sup>109</sup> During and immediately following the Second World War, American mathematicians and funding bodies redirected resources that had been concentrated on Europe toward the Americans’ southern neighbors, turning piecemeal contacts into robust pipelines and exchanges. Stone was an early and avid participant in this project, undertaking numerous extended tours of Latin America, including the 1947 one that brought him to Rio de Janeiro while the IMU’s course was being altered in Paris.<sup>110</sup> His personal and professional ties to the region are evident in the roster for his IMU conference in New York, which included official delegations from Argentina, Brazil, Cuba, and Uruguay, with a further six Latin American countries sending official delegations to the Congress. A related pattern helps account for South Asian representation, drawing from Stone’s wartime and early postwar contacts in the subcontinent.<sup>111</sup> These participants gave Stone a ready answer to European holdouts who might insist on waiting for assurances of universal adherence from traditional centers of mathematics before launching a new union: the world of mathematics was growing, and European adherence could not be the only priority. Extrapolating from Americans’ earlier relationship to German mathematics, Stone and his counterparts expected that their new hegemonic interest in the Western Hemisphere would help them cement a powerful cultural and institutional role in the postwar international discipline.

### *Diplomatic preparations*

The American organizers’ case for their own hegemony and against SMF leadership hinged on the idea that only they could achieve a non-exclusive ideal of internationalism, permitting any

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<sup>106</sup> UNESCO 51 A06 (73) “50,” Birkhoff to Wang, November 10, 1948; Wang to Birkhoff, 18 Oct and 19 Dec 1949. See also Torres Bodet to Kline, 26 Mar 1949, Wang to Birkhoff, 23 Feb 1950.

<sup>107</sup> Morse and Kline to Siddiqi, 26 May 1950, resp. Kosambi, 1 June 1950, Tata Institute of Fundamental Research archives, Mumbai, India, personnel files, folder D-2004-00389, “Kosambi, DD 3 – 26/4/1950 to 6/12/1951” (hereafter “TIFR Kosambi file”) items 2 and 4.

<sup>108</sup> UNESCO NS/84 (Unesdoc 126553eb), p. 73.

<sup>109</sup> Michael J. Barany, “Fellow Travelers and Traveling Fellows: The intercontinental shaping of modern mathematics in mid-twentieth century Latin America,” *Historical Studies in the Natural Sciences* 46, no. 5 (2016), 669-709, esp. 674-681; Barany, “The Officer’s Three Names: The formal, familiar, and bureaucratic in the transnational history of scientific fellowships,” in John Krige (ed.), *How Knowledge Moves*, 254-280.

<sup>110</sup> Barany, “Traveling Fellows,” and Parshall, “Marshall Stone.”

<sup>111</sup> See Michael J. Barany, “What is Internationalism for? Notes from the archives of Damodar D. Kosambi,” *Bhāvanā* 6 (2022).

mathematician to attend regardless of nation or politics. The organizers expected entry visas to be a concern for all foreign delegates, especially those from Germany and Japan subject to complicated postwar diplomatic regimes. They also expected trouble for those whose past political activity might rouse suspicions. Those with ties to Communist politics, in particular, fell in 1949-50 in an awkward limbo between the surge in official American anticommunism and the advent of routine protocols for scientific and cultural exchanges that circumvented political tests for short-term visitors.<sup>112</sup>

To Norbert Wiener, the idea that the congress organizers might need to work with the State Department at all was proof that the United States was unfit to host. In a letter to Kline dated 5 October, 1948, Wiener argued that “If the personnel of the Congress has to be sieved by an organization which is not only political by its make-up, but is at present engaged in an intense policy of world politics which extends to all cultural matters it regulates, it is not, and cannot be, international in any true sense.” Wiener was “thoroughly against holding a Congress under any such circumstances,” lest it become “a menace to international good-will.” His letter officially and preemptively resigned “from any and all connection with the Congress” and reiterated “that the Congress had better not be held.”<sup>113</sup> Instead of that letter, Wiener appears to have ultimately sent Kline a more measured note on 11 October protesting that he expected to be fully committed with other projects, which Kline acknowledged with regret on 14 October.<sup>114</sup>

An 18 October reply by Wiener (without further reply in evidence, so perhaps also unsent) recounted Wiener’s participation in the Strasbourg Congress of 1920, his retrospective regret at having participated, his diagnosis of the “political act of the French Government ... to obtain a permanent political command of science through the formation of an international mathematical union,” and his concern that his American colleagues were closely repeating the sins of Strasbourg “in most of its evil associations.”<sup>115</sup> Though unrepresentative of the views of his colleagues at the apex of American mathematics, Wiener’s missives articulated a set of parallels and concerns that weighed in one form or another on the diplomatic initiatives and compromises of the remaining two years before the 1950 Congress. Wiener underscored, in particular, the endemic tensions and contradictions confronting international projects that had always relied on the funding, participation, and legitimation of national governments and their official scientific organs.

Confident that Dewey would defeat Truman in the 1948 U.S. Presidential election, Kline and Veblen had been quietly laying the groundwork for negotiations with the State Department, whose top officials they thought likely to change with the new presidential administration.<sup>116</sup> Truman retained the presidency in a surprise victory on November 2, 1948, and promoted Dean Acheson to Secretary of State at the start of his new term in January.<sup>117</sup> Kline and Veblen wrote that February to Acheson’s office to press their case for a “truly international” Congress in the non-exclusive sense of admitting any “professionally qualified” mathematician “irrespective of nationality” (including those “whose governments may be regarded as inimical”) and to solicit State Department advice to “help us to take the necessary steps to insure the international

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<sup>112</sup> See e.g. AMS Records, box 35, folder 83.

<sup>113</sup> Wiener to Kline, 5 Oct 1948, Norbert Wiener Papers, MC 22, Institute Archives and Special Collections, MIT Libraries, box 6, folder 85, hereafter “Wiener Papers.”

<sup>114</sup> Wiener to Kline, 11 Oct 1948, and Kline to Wiener 14 Oct 1948, Wiener Papers.

<sup>115</sup> Wiener to Kline 18 Oct 1948, Wiener Papers.

<sup>116</sup> Kline to Morse, Oct 25, 1948, Morse Papers, box 7, “ICM – Analysis” folder.

<sup>117</sup> Acheson had already left a mark in nuclear policy, and would soon lead the European Recovery Program (Marshall Plan). See Krige, *American Hegemony*.

character of the forthcoming Congress.”<sup>118</sup> This non-exclusive formulation of “truly international” was tailor-made for the challenge of securing official support in controversial visa cases, though an inclusive ideal remained a crucial implicit justification for their demands. Acheson referred their letter to an official from the State Department’s Division of International Conferences already known to Kline and Morse from their 1946 Emergency Committee work.<sup>119</sup>

While early diplomatic preparations focused on subjects of governments in conflict with the United States, the organizers soon found that individuals’ politics—irrespective of their nationality—could be at least as troublesome. José Luis Massera, for instance, was a leader of both Uruguay’s mathematicians and its Communist party.<sup>120</sup> A 1947-1948 Rockefeller fellow, he intended to participate in both the ICM and Stone’s IMU meeting but was thwarted for financial and diplomatic reasons. Massera’s political activity affected how consular officials viewed his colleague Rafael Laguardia, who ultimately made the trip after securing a last-minute reversal on a negative visa decision. The reversal required Kline to coordinate with the AMS’s Washington attorney (who advocated before the State Department), the Guggenheim Foundation, and the U.S. Consul in Montevideo.<sup>121</sup>

The Uruguayan mathematicians’ troubles transpired mostly behind the scenes in letters and cables between a small cadre of mathematicians, diplomats, and officials. A parallel episode involving two French mathematicians, by contrast, drew much wider discussion in both the United States and France, including talk of a boycott as the Congress approached with their visas still unsecured. The mathematicians in question were Laurent Schwartz, a rising star of the discipline and recent Trotskyist legislative candidate, and Jacques Hadamard, an elder statesman with a long involvement on the French Left.<sup>122</sup> Making matters worse, Schwartz was to be a distinguished speaker and prize recipient, while Hadamard had been appointed an honorary president for the Congress.

As early as December, 1948, Morse, chair of the committee that ultimately extended Schwartz’s speaking invitation, anticipated that the young French mathematician “would have difficulty in getting a visa.”<sup>123</sup> Schwartz had recently been invited as a keynote speaker at the 1949 Canadian Mathematical Congress, and by the time of Morse’s speculation was beginning to receive invitations from elite American institutions (including Morse’s Institute for Advanced Study and Stone’s University of Chicago) in conjunction with his transatlantic trip.<sup>124</sup>

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<sup>118</sup> Veblen and Kline to Acheson, February 19, 1949, Morse papers, box 7, “ICM 1950 – Organizing Committee.”

<sup>119</sup> Kline to Veblen, 8 Mar 1949, AMS Records, box 35, folder 83, with attached excerpt describing discretionary authority to admit scholars granted passports by “Communist-dominated governments” for temporary visits for “bona fide educational, cultural, and scientific purposes.”

<sup>120</sup> See Barany, “Traveling Fellows,” 681-688; Barany, “Three Names.”

<sup>121</sup> Courant, 8 Mar 1950, Massera to Stone, 22 Jul 1950, Massera to Kline, 4 Aug 1950, Kline to Massera, 15 Oct 1950, Archivo Privado José Luis Massera, Archivo General de la Universidad de la República, Montevideo, Uruguay, folder 5A; Laguardia to Stone, 3 Mar 1950 and 4 and 15 Aug 1950, Stone to Laguardia, 4 and 14 Aug 1950, Archivo Privado Rafael Laguardia, Archivo General de la Universidad de la República, Montevideo, Uruguay (hereafter, “Laguardia Papers”), box 18, folder 9; Laguardia to Kline, 4, 8, and 16 Aug 1950, Kline to Laguardia, 8 Aug 1950, Laguardia Papers, box 17, folder 9.

<sup>122</sup> See Michael J. Barany, Anne-Sandrine Paumier, and Jesper Lützen, “From Nancy to Copenhagen to the World: The internationalization of Laurent Schwartz and his theory of distributions,” *Historia Mathematica* 44 (2017), 367-394. Schwartz’s invitation and high-profile visa case are the subject of a separate work in progress by the author.

<sup>123</sup> Morse to Ahlfors, Bochner, Evans, Hildebrandt, Hille, von Neumann, Rademacher, Stone, December 21, 1948, Morse Papers, box 8, “ICM – Select Speakers” folder.

<sup>124</sup> E.g. Von Neumann to Schwartz, 8 Dec 1948, Director’s Office: Member Files, The Shelby White and Leon Levy Archives Center of the Institute for Advanced Study, Princeton, NJ, box 125, “Schwartz, Laurent” folder; Schwartz to Courant, 27 Dec 1948, The Richard Courant Papers, MC 150, New York University Archives, New York, box 79,

Representatives of the Congress had left a May, 1949, meeting with their State Department counterparts encouraged by their liberal attitude and by indications of a general policy in the works with respect to international congresses.<sup>125</sup> In early August 1949, however, Schwartz's effort to secure a visa for the American part of his itinerary resulted in an official denial, with Stone's clumsy attempt to expedite the decision in the intervening months a likely factor.<sup>126</sup>

Consequently, Schwartz confined his trip to Canada while his prospective American hosts began to worry about the implications of this turn of events for his participation in the ICM.<sup>127</sup> Cartan's letter to Hopf, quoted in the introduction, followed closely on the news of the visa denial and included an early suggestion of a boycott if the visa situation could not be resolved or the congress could not be moved to another host country.<sup>128</sup> By late August, Schwartz's troubles had become "a pretty plain indication" to the Congress organizers of the urgency of securing an affirmation that no foreign mathematician would be kept out, as one committee member stressed parenthetically, "by our State Dept." on the basis of their politics.<sup>129</sup>

Schwartz's visa difficulties led Stone to doubt the viability of an American-hosted Congress and to dissociate himself from its official organization while continuing to work toward an IMU. Recounting the episode to Laguardia as the latter faced his own visa difficulties, Stone related "how ashamed and angry this makes me" and continued: "Since a year ago I have believed that the Congress should not be held in the U.S. on account of the attitude of the government towards liberal and radical scientists from other countries. Unfortunately I have had no influence on the Congress and have been forced to watch one disgraceful incident after another."<sup>130</sup> Stone urged Schwartz's countrymen to challenge the Congress's organizers directly, and they joined his calls for relocation "by reason of the fact that it becomes more and more evident that a Congress held in America would not have the international character that one desires to give it."<sup>131</sup>

At their October meeting, the Congress's Organizing Committee recorded receiving a formal inquiry from the SMF Council whether "qualified scholars, without political discrimination," would be admitted if they could assure that such scholars "would abstain from political activity" during their visits—a thinly-veiled reference to the Schwartz case.<sup>132</sup> That meeting included a vote to retain legal counsel for visa negotiations and discussed Schwartz's case at length. By December, Kline began to make allowances for the chance of failure: if "for reasons beyond our control or power, we cannot secure the admission of a few individuals," he wrote to a trusted colleague, then this should not upset the "hope and promise for future international cooperation among mathematicians," and his Congress, specifically.<sup>133</sup>

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folder 18.

<sup>125</sup> ICM Organizing Committee minutes 29 Oct 1949, AMS Records, box 37, folder 56.

<sup>126</sup> Stone to Oppenheimer, 22 Jul and 19 Aug 1949, IAS Member Files, box 125, "Schwartz, Laurent" folder.

<sup>127</sup> E.g. von Neumann to Schwartz, 10 Oct 1949, IAS Member Files, box 125, "Schwartz, Laurent" folder.

<sup>128</sup> Cartan to Hopf, 8 Aug 1949, op. cit. See also Weil to Cartan, 3 Jul 1950; Cartan to Weil, 11 Jul 1950, Audin, *Henri Cartan et André Weil*, 298-302, and Audin's note 304.2 on 602.

<sup>129</sup> Wilder to Kline, 25 Aug 1949, AMS Records, box 35, folder 48. Wilder's underline in original.

<sup>130</sup> Stone to Laguardia, 4 Aug 1950, Laguardia Papers, box 18, folder 9.

<sup>131</sup> Weil to Cartan, 15 Jul 1949, Michèle Audin, *Correspondance entre Henri Cartan et André Weil (1928-1991)* (Paris: Société Mathématique de France, 2011), 263-264. See also Weil to Cartan, 15 Jul 1949, 25 Jul 1949, 31 July 1949, Audin, *Henri Cartan et André Weil*, 263-264, 267-272.

<sup>132</sup> ICM Organizing Committee minutes, 29 Oct 1949, AMS Records, box 37, folder 56.

<sup>133</sup> AMS records, box 35, folder 48, Wilder to Kline, 2 Dec 1949, and Kline to Wilder, December 16, 1949; see also AMS records, box 35, folder 48, Kline to Wilder, 16 Dec 1949; box 36, folder 4, Wilder to Kline, 19 Dec 1949.

In late March, 1950, the U.S. Immigration and Naturalization Service cleared Schwartz for a visa, and the most interested Americans learned the news by late April.<sup>134</sup> There is considerably less documentation available for Hadamard's case, but by early 1950 his had become linked to Schwartz's and the threatened boycott. Near the end of July, he received a negative decision from the Department of Justice, prompting Kline (who was in Washington at the time) to walk to the State Department to seek a reversal, which he secured with little time to spare.<sup>135</sup>

### *Conclusion: Valiant efforts*

Without any mathematicians from the Eastern Bloc in Cambridge, Massachusetts, that summer, the American organizers' diplomatic exertions let them assert nonetheless that no labor had been spared to allow all the world's mathematicians to come together. In the presidential address with which he opened the Congress, Veblen acknowledged "that many of our most valued colleagues have been kept away by political obstacles and that it has taken valiant efforts by the Organizing Committee to make it possible for others to come."<sup>136</sup> Kline's report at the start of the Congress's *Proceedings* stressed at length the organizers' efforts to facilitate the entry of foreign nationals, underscoring that the "non-attendance" of mathematicians from across the Iron Curtain "was not due to any action of the United States Government," which had ultimately been "most sympathetic and helpful" toward the organizers' attempts "to maintain the non-political nature of the Congress."<sup>137</sup> But as the Uruguayan and French difficulties make clear, notwithstanding Kline's official accounting of mathematicians' obstacles to attendance, there is no way to know with certainty how many would have made the trip under different political circumstances but were dissuaded at one point or another.

The organizers' "valiant efforts" stood as proof of the exceptional American commitment to hold a "truly international" congress, in spite of those "kept away" by others. Kline made this a theme in his reports to the Congress's sponsors. For the Rockefeller Foundation, he wrote "that the gathering could be truly international in the sense that mathematicians could be invited irrespective of national or geographic origins"—celebrating a non-exclusive internationalism that jettisoned the inclusive ideal the organizers had manifestly failed to achieve.<sup>138</sup> Here, in full force, was the dual character of claims to be "truly international": *emphatically*, Kline's loudly trumpeted internationalism let him stake significant moral, political, and financial claims; *ambiguously*, the implications and execution of his internationalism could shift in the face of the many insuperable barriers that stymied his ambitions.

Both Kline and Veblen lauded the Congress's scale. Kline called it "the largest gathering of persons ever assembled in the history of the world for the discussion of mathematical

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<sup>134</sup> Miller to Herter, 28 Mar 1950, copy (with a cover note from Schwartz to Oppenheimer, 13 Apr 1950) in IAS Member Files, box 125, "Schwartz, Laurent" folder; Nicholson to Hoover, 4 Apr 1950, FBI Schwartz File; Morse to von Neumann, Weyl, Veblen, and Oppenheimer, 26 Apr 1950, IAS Member Files, box 125, "Schwartz, Laurent" folder.

<sup>135</sup> Weil to Cartan, 27 Jul 1950; Cartan to Weil, 31 Jul 1950; Cartan to Weil, 4 Aug 1950, Audin, *Henri Cartan et André Weil*, 306-309, 313. See also Stone to Kosambi, 10 Jul 1950, TIFR Kosambi file, describing the situation as still unresolved.

<sup>136</sup> Veblen, "Opening Address," 124.

<sup>137</sup> Kline, "Secretary's Report," 122.

<sup>138</sup> Enclosed in Kline to Weaver, 22 Feb, 1951, Rockefeller Projects: U.S., box 125, folder 1546. Kline used nearly identical language already in a 19 Apr 1950 letter to Weaver (in the same folder), by which time the Congress's forthcoming gaps in participation were largely apparent.



research” while Veblen more modestly called it representative of “a very large part of the mathematical world” including “most of the currents of mathematical thought that are discernible in the world today.”<sup>139</sup> By their own accounting, the American hosts recorded official delegations from forty-five nations (not all actually in attendance) and counted individual members representing thirty-nine countries outside the United States and Canada, including 57 members and 3 associate members unable to attend, and counting two countries (Iran and Nigeria) without official delegations.<sup>140</sup> National attributions could be somewhat idiosyncratic: England, Scotland, and Northern Ireland counted separately, as did some British colonies. “Germany” was listed as a single entity composed of institutions and mathematicians associated with the Federal Republic of Germany.

Africa’s representation in the member and delegate lists further illustrates the complexity behind the headline national figures. The members attributed respectively to Nigeria and Egypt were an Englishman who had been a lecturer at Oxford the previous year and a Norwegian UNESCO science liaison officer. The three members with South African addresses were of Scottish, Romanian, and German origin; two had joined the University of Witwatersrand in 1947 and one of those would leave for Berkeley in 1950. Of the three African delegates in official delegations, two do not appear in the member roster and the third was a German-born English mathematician who had left South Africa in 1948 to continue his career in the United States, and appears in the member roster with a Wisconsin address. Africa’s standing in Kline’s and Veblen’s “mathematical world” was based on an extraordinary extrapolation, predominantly from a small cohort of recent European migrants. Their status as individuals and national representatives in a “truly international” congress and discipline was profoundly contingent, based on a historically specific regime of visibility, mobility, representation, and participation in a discipline whose dimensions were being intensively renegotiated.

The 1950 ICM decisively shaped the discipline’s postwar international order, both in the personal and intellectual connections it created and reshaped and in the institutional arrangements (foremost the IMU) forged around it. It represented mathematicians’ most prominent early postwar effort to grapple with the entirety of their discipline: its theories, people, institutions, nations, politics, and practicalities. Its universalism, such as it was, was necessarily that of non-exclusion. For those same practicalities, politics, nations, institutions, people, and even theories made universal inclusion impossible.

Internationalist projects never turn out exactly as their projectors imagine, and it matters both how the results differ and how their imagined alternatives guide (or fail to guide) what comes to pass. Getting internationalism right or “true,” for the Americans behind the 1950 ICM and postwar IMU, often meant aggressively pursuing national politics and prerogatives that fell short as often as they succeeded. It meant emphatically defending grand ideals while maneuvering opportunistically through their manifold ambiguities. From postwar worries extrapolated from interwar politics to new irruptions of American anticommunism and the emerging competition of postwar superpowers, internationally-minded mathematicians found that the truths of their internationalisms were imperfect guides to the politics and practicalities of a putatively non-political discipline. From its inception, postwar mathematical internationalism was a compromise born of many forces—an unruly guide for a discipline whose leaders’ ideals routinely outran their practices.

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<sup>139</sup> Enclosed in Kline to Weaver, February 22, 1951, Rockefeller Projects: U.S., box 125, folder 1546; Veblen, “Opening Address,” 124.

<sup>140</sup> Graves et al., *Proceedings*, 7-20; Kline, “Secretary’s Report,” 135.

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