

Science Diplomacy in the Twentieth Century: Introduction

Journal of Contemporary History

2021, Vol. 56(3) 473–484

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DOI: 10.1177/00220094211006762

journals.sagepub.com/home/jch**Sönke Kunkel** History Department, John F. Kennedy Institute for North
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Abstract

Setting the stage for the special forum, this introduction points to the centrality of science diplomacy activities within many current foreign policy concepts around the world. It also points to the lack of historical perspective within many current academic debates about science diplomacy. Suggesting the value of such a perspective, the introduction then draws attention to a number of fruitful contributions that histories of science diplomacy may make to contemporary history. These include: a better understanding of how entanglements between science, foreign policy, and international relations evolved over the twentieth century; a refined understanding of the workings of foreign relations and diplomacy that sheds light on the role of science as an arena of foreign relations; new insights into the Cold War; a globalizing of perspectives in the writing of contemporary history; a new international focus on widely under-researched actors like universities, science movements, science organizations, and science academies; a focus on new themes that range from global environmental problems to issues like cultural heritage. The remainder of the introduction then delineates some of the shared assumptions and findings of the essays and then briefly introduces each contribution to the special section.

Keywords

Cold War, global science, international contemporary history, new diplomatic history, science diplomacy

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Whether it is climate change, genome editing, future technologies, or the global competition around artificial intelligence – political efforts to employ and promote science across borders are omnipresent in the current international arena. Science diplomacy, explains an influential report authored by the Royal Society and the American Association for the Advancement of Science (AAAS), ‘has never been more important’ to address the ‘defining challenges of the twenty-first century’ and opens ways to adapt the ‘tools, techniques and tactics of foreign policy’ to ‘a world of increasing scientific and technical complexity’.¹ Similar views are voiced within the European Union (EU), which, under previous Science Commissioner Carlos Moedas and President of the Commission Jean-Claude Juncker, has begun to make the promotion of global scientific collaborations a new priority of EU foreign policy.² Governments around the world pursue the same agenda, ranging from Japan’s program in ‘Science and Technology Diplomacy’ (set up in 2007)³ to Germany’s ‘Außenwissenschaftspolitik’ (2008)⁴ to Denmark’s more recent ‘Techplomacy’ (2017).⁵ Universities and research institutions, too, aim to go international and actively participate in global policymaking, as do science organizations, science academies, and transnational foundations. Recently, talk of science diplomacy has even reached the city of Barcelona, where a public–private non-profit association seeks to position the city as the ‘first to implement a comprehensive science and technology diplomacy strategy’.⁶

Providing a new framework for thinking about international relations, the concept of science diplomacy has led to a rush of new policy papers⁷ and now

1 Royal Society/American Association for the Advancement of Science. *New Frontiers in Science Diplomacy. Navigating the Changing Balance of Power*. RS Policy Document 01/10, January 2010, quote on pg. 5.

2 See Carlos Moedas, ‘Science diplomacy in the European Union’, *Science & Diplomacy* (March 2016). Available at: <https://www.sciencediplomacy.org/perspective/2016/science-diplomacy-in-european-union> (accessed 11 May 2020).

3 Atsushi Sunami, Tomoko Hamachi and Shigeru Kitaba, ‘The rise of science and technology diplomacy in Japan’, *Science & Diplomacy* (March 2013). Available at: <http://www.sciencediplomacy.org/article/2013/rise-science-and-technology-diplomacy-in-japan> (accessed 5 May 2020).

4 Bundesministerium für Bildung und Forschung. *Deutschlands Rolle in der globalen Wissensgesellschaft stärken. Strategie der Bundesregierung zur Internationalisierung von Wissenschaft und Forschung*, 2008.

5 Under the program, the Office of Denmark’s Tech Ambassador places representatives in Silicon Valley, Beijing, and Copenhagen who monitor, engage with, and harness recent developments in digital technology, projects, and markets. Available at: <https://techamb.um.dk/en/techplomacy/abouttechplomacy/> (accessed 15 May 2020).

6 Quoted on the website of ScitechDiploHub. Available at: <http://www.scitechdiplohub.org/#main> (accessed 15 May 2020). The initiative itself is also quoted in Stasis Arapostathis and Léonard Laborie, ‘Governing technosciences in the age of grand challenges. A European historical perspective on the entanglement of science, technology, diplomacy, and democracy’, *Technology and Culture*, 61, 1 (January 2020), 318–32, quoted on pg. 319.

7 See for example the set of shorter papers put out by the Institute for European Studies since 2017, including Riccardo Trobbiano and Constant Hatenoer, *The Future of EU Science Diplomacy: Conceptual and Strategic Reflections* (December 2018). Available at: https://www.ies.be/files/ELCSID_Policy_Paper_14.pdf (accessed 15 July 2020). Much of the current discussion between policy-makers and practitioners of science diplomacy also takes place in the pages of *Science & Diplomacy*, an open access online journal housed and published by AAAS’s Center for Science Diplomacy. On the

increasingly shapes new research in fields like political science, International Relations, communication science, and science and technology studies.⁸ However, a look at current debates also reveals a glaring absence of informed historical inquiries that put programs and practices into historical perspective. Policymakers and social scientists typically work out models and develop typologies that sort and categorize the multitude of national approaches;⁹ yet, they have relatively little to say about the historical motives, contexts, and experiences which shaped ideas and practices of science diplomacy over the course of the twentieth century.

This special forum seeks to bring contemporary historians into the current conversation about science diplomacy. Ideas and practices of science diplomacy, the essays assembled here show, are not a new invention but have a longer history that dates back at least to what some historians now call the ‘long turn of the century’,¹⁰ the period between the 1890s to 1920s. As research and science systems began to expand in this period, many states, such as Germany or Japan, increasingly turned their attention to science as a way to promote the reputation and global influence of the ‘nation’. During the Cold War, states like the United States and Great Britain, as well as international institutions such as the International Atomic Energy Agency (IAEA) and the North Atlantic Treaty Organization (NATO), continued to use science diplomacy not only as a crucial asset to rebalance diplomatic relationships but also as a way to extend specific norms, ideas, interests, and technologies into the decolonizing world. Focusing on national ambitions (Japan and Great Britain) as well as on international institutions

German debate, see for an early example Stiftung Wissenschaft und Politik and Alexander von Humboldt Stiftung (eds) *Außenwissenschaftspolitik-Wissenschaftspolitik*. Arbeits- und Diskussionspapier 7/2007. Available at: <http://www.humboldt-foundation.de/pls/web/docs/F921/ausenwissenschaftspolitik.pdf> (accessed 20 July 2020).

8 See for example: Carolyn Kaltofen, Michele Acuto and Jason Blackstock (eds), ‘Special issue: Science diplomacy’, *Global Policy*, 9, 3 (2018); Pierre-Bruno Ruffini, *Science and Diplomacy: A New Dimension of International Relations* (Cham 2017); Charles Weiss, ‘How do science and technology affect international affairs?’ *Minerva*, 53, 4 (2015), 411–30; Birte Fähnrich, ‘Science diplomacy: Investigating the perspective of scholars on politics-science collaboration in international affairs’, *Public Understanding of Science*, 26, 6 (2017), 688–703; Lloyd Davis and Robert Patman (eds), *Science Diplomacy. New Day or False Dawn* (Singapore 2015); Maximilian Mayer, Mariana Carpes and Ruth Knoblich (eds), *The Global Politics of Science and Technology. An Introduction*, 2 volumes (Wiesbaden 2014); Birte Fähnrich, *Science Diplomacy. Strategische Kommunikation in der Auswärtigen Wissenschaftspolitik* (Wiesbaden 2013); Georg Schütte (ed.), *Wettlauf ums Wissen. Außenwissenschaftspolitik im Zeitalter der Wissensrevolution* (Berlin 2008). An important older reference point is also Eugene Skolnikoff, *The Elusive Transformation: Science, Technology, and the Evolution of International Politics* (Princeton, NJ 1993). For a useful overview of more recent works, see Charlotte Rungius, *Using Science for/in Diplomacy, for Addressing Global Challenges*. State-of-the-Art Report, June 2018. Available at: https://www.s4d4c.eu/wp-content/uploads/2018/08/S4D4C_State-of-the-Art_Report_DZHW.pdf (accessed 21 May 2020).

9 Two typical examples are: Olga Krasnyak, *National Styles in Science, Diplomacy, and Science Diplomacy* (Leiden 2019); Tim Flink and Ulrich Schreiterer, ‘Science diplomacy at the intersection of S&T policies and foreign affairs. Toward a typology of national approaches’, *Science and Public Policy*, 37, 9 (2010), 665–77.

10 Paul Nolte, *Transatlantische Ambivalenzen. Studien zur Sozial- und Ideengeschichte des 18. bis 20. Jahrhunderts* (München 2014).

UNESCO, IAEA, NATO, the essays address three critical historical junctures: the 1890s–1920s era, the years of decolonization, and the late Cold War. Contributions discuss why states and international institutions began to promote science across borders, what role scientists played in the conduct of international relations, and how science programs became tools of diplomacy in their own right. The section therewith provides new insights into the rising importance of science as a field of foreign policy, its relevance as an instrument of cultural and public diplomacy, the role of science in the workings of international and transnational institutions across the globe, and the changing significance of scientific knowledge as a source of global power.

By contributing a critical historical reflection to current debates, histories of science diplomacy open several new and promising lines of research for contemporary historians themselves. One of these lines highlights the evolving entanglements between science, foreign policy, and international relations in the twentieth century world. Historical scholarship addressing those entanglements has long occupied only a small niche at the intersection of international history and the history of science, but is now becoming more central to both fields. One of the pioneers, John Krige, in his 2006 book on *American Hegemony and the Postwar Reconstruction of Science in Europe* showed how U.S. administrations employed the preeminence of U.S. science and technology to integrate Western Europe into the U.S. empire and to shape and control the research agendas of European science.¹¹ Krige also published or co-edited several volumes that opened new windows into various aspects of the interrelations between science and international affairs, among them *Science and Technology in International Affairs* (2006), *Science, Technology, and Nation-Building* (2015), *Sharing Knowledge, Shaping Europe* (2016), as well as a volume on the transnational history of science and technology.¹² Further leading the way were works by Ronald Doel, Joseph Manzione, Jacob Hamblin, Clark Miller, and Kristine Harper whose research spotlighted the early years of U.S. science diplomacy and long stood out as the few reference points for international historians.¹³ Lately, the picture has started to

11 John Krige, *American Hegemony and the Postwar Reconstruction of Science in Europe* (Cambridge, MA 2006).

12 John Krige and Kai-Henrik Barth (eds), 'Global power knowledge. Science and technology in international affairs', *OSIRIS*, 21, 1 (2006); John Krige and Jessica Wang (eds), 'Nation, knowledge and imagined futures: Science, technology and nation-building, post-1945', *History and Technology*, 31, 3 (2015), 171–340; John Krige, *Sharing Knowledge Shaping Europe. US Technological Collaboration and Nonproliferation* (Cambridge, MA 2016); John Krige (ed.), *How Knowledge Moves. Writing the Transnational History of Science and Technology* (Chicago, IL 2019).

13 Ronald Doel, 'Scientists as policymakers, advisors and intelligence agents: Linking contemporary diplomatic history of contemporary science', in Thomas Söderquist (ed.), *The Historiography of Contemporary Science and Technology* (Amsterdam 1997), 215–44; Joseph Manzione, "'Amusing and amazing and practical and military": The legacy of scientific internationalism in American Foreign Policy, 1945–1963', *Diplomatic History*, 24, 1 (Winter 2000), 21–56; Jacob Darwin Hamblin, 'Visions of International Scientific Cooperation: The case of oceanic science, 1920–1955', *Minerva*, 38, 4 (December 2000), 393–423; Jacob Hamblin, *Oceanographers and the Cold War: Disciples of Marine Science* (Seattle, WA 2005); Clark A. Miller, 'An effective instrument of peace: Scientific cooperation as an instrument of U.S. Foreign Policy, 1938–1950,' in Krige and Barth (eds), *Global Power Knowledge*, 133–60; Ronald

change, however. New work by Greg Whitesides follows the trajectories of U.S. science diplomacy well into the 1980s, Jeroen van Dongen integrates Dutch and Western European perspectives in a newer volume, Simone Turchetti foregrounds the importance of science diplomacy within NATO, and Maria Rentetzi now explores the role of the IAEA in promoting ‘nuclear diplomacies’.¹⁴ Meanwhile, historians of ‘scientific internationalism’,¹⁵ too, have begun to make new inroads into the history of science diplomacy, highlighting how universities, academics, foreign policymakers, and cultural diplomats began to form close relationships between the 1890s and the late 1930s.

The new scholarship now emerging under the rubric of science diplomacy refines our understanding of the workings of foreign relations and diplomacy. Historians of cultural diplomacy have already shown in much detail how the opera, the concert hall, the museum, and the cinema became crucial conduits of international diplomacy over the twentieth century.¹⁶ Histories of science diplomacy now add the campus, the research lab, and the scientific exhibit to this list.¹⁷ Exchange programs, too, are a new promising theme.¹⁸ The Fulbright program, surprisingly under-researched until a few years ago, is now the object of a number

Doel and Kristine Harper, ‘Prometheus unleashed: Science as a diplomatic weapon in the Lyndon B. Johnson administration’, in Krige and Barth (eds), *Global Power Knowledge*, 66–85.

14 Greg Whitesides, *Science and American Foreign Relations since World War II* (Cambridge, MA 2019); Jeroen Van Dongen (ed.), *Cold War Science and the Transatlantic Circulation of Knowledge* (Leiden 2016); Simone Turchetti, *Greening the Alliance: The Diplomacy of NATO’s Science and Environmental Initiatives* (Chicago, IL 2018). See the EU-funded research project by Maria Rentetzi on ‘nuclear diplomacies’: Kenji Ito and Maria Rentetzi, ‘Nuclear diplomacies: Their past, present and future,’ *History and Technology*, Special issue, forthcoming 2020.

15 Paul Forman, ‘Scientific internationalism and the Weimar physicists: The ideology and its manipulation in Germany after World War I’, *Isis*, 64 (1973), 151–80. See on international science up to the Interwar years Charlotte Lerg: *Universitätsdiplomatie. Wissenschaft und Prestige in den transatlantischen Beziehungen 1890–1920* (Göttingen 2019); Marie-Eve Chagnon and Tomás Irish (eds), *The Academic World in the Era of the Great War* (London 2017); Susan Solomon, *Doing Medicine Together: Germany and Russia between the Wars* (Toronto 2016); Rebecka Lettevall (ed.), *Neutrality in Twentieth-Century Europe: Intersections of Science, Culture, and Politics after the First World War* (New York, NY 2012). For two useful older studies, out of many, see Gabriele Metzler, *Internationale Wissenschaft und nationale Kultur: Deutsche Physiker in der internationalen Community, 1900–1960* (Göttingen 2000); Elisabeth Crawford, *Nationalism and Internationalism in Science, 1880–1939, Four Studies of the Nobel Population* (Cambridge, MA 1992).

16 For a concise overview, see Michael Krenn, *The History of United States Cultural Diplomacy: 1770 to the Present Day* (London 2017). See also Jessica Gienow-Hecht and Mark Donfried (eds), *Searching for a Cultural Diplomacy* (New York, NY 2013) for a discussion of international approaches and the foundational study by Frank Ninkovich, *The Diplomacy of Ideas: U.S. Foreign Policy and Cultural Relations, 1938–1950* (Cambridge, MA 1981).

17 See most recently Arthur Molella and Scott Gabriel Knowles (eds), *World’s Fairs in the Cold War: Science, Technology, and the Culture of Progress* (Pittsburgh, PA 2019); Thomas Adam and Charlotte Lerg (eds), ‘Diplomacy on campus. The political dimensions of academic exchange in the North Atlantic’, *Journal of Transatlantic Studies*, 13, 4 (2015), 299–310; Gert Somsen, ‘Science, fascism, and foreign policy. The exhibition “Scienza Universale” at the 1942 Rome World’s Fair’, *Isis*, 108, 4 (2018), 769–91.

18 See for broader background, in a U.S. perspective, Paul A. Kramer, ‘Bernath lecture: Is the world our campus? International students and U.S. global power in the long twentieth century’, *Diplomatic History*, 33, 5 (2009), 775–806.

of newer studies that show how the program utilized university studies and academic exchange to integrate elites, both young and old, into a U.S.-led order.¹⁹ Similar work has been done on the Colombo plan.²⁰ New research also comes from historians Ludovic Tournès and Giles Scott-Smith, who offer an inspiring global view on the long history of academic scholarships.²¹

With the growing interest in academic exchanges come works that shed new light on scientific interactions, exchanges, and cooperation across the Cold War blocs, reflected best by the science agreements signed by the United States with China and the Soviet Union in 1972 and 1973. Under those agreements, researchers like Zuoyue Wang and Kathlin Smith show, scientists not only rebuilt connections with their Chinese counterparts. Their efforts also wielded considerable influence over the developing diplomatic ties between both countries and contributed to the normalization of U.S.–Chinese relations.²²

Histories of science diplomacy, as those examples show, often build on previous scholarship about Cold War science, but also transcend some of its limits. Their object is not the domestic scene or the Cold War's impact on the inner workings and epistemologies of scientific disciplines;²³ nor do they inquire into the

19 Alice Garner and Diane Kirkby, *Academic Ambassadors, Pacific Allies: Australia, America and the Fulbright Program* (Manchester 2019); Giles Scott-Smith, 'The Fulbright Program in the Netherlands: An example of science diplomacy', in Jeroen Van Dongen (ed.), *Cold War Science and the Transatlantic Circulation of Knowledge* (Leiden 2016), 136–64; Molly Bettie, 'Ambassadors inaware: The Fulbright Program and American Public Diplomacy', *Journal of Transatlantic Studies*, 13, 4 (2015), 358–72; Thomas König, *Die Frühgeschichte des Fulbright-Programms in Österreich: Transatlantische Führungsnahme auf dem Gebiete der Erziehung* (Innsbruck 2012). Those works are replacing the much outdated account of Walter Johnson and Francis J. Colligan, *The Fulbright Program: A History* (Chicago, IL 1965).

20 Christoph Ellßel, *Das Bildungsimperium. Zur Geschichte des amerikanisch-australischen Stipendienprogramms im Colombo-Plan, 1949–1960* (Bielefeld 2017).

21 Ludovic Tournès and Giles Scott-Smith (eds), *Global Exchanges: Scholarships and Transnational Circulations in the Modern World* (New York, NY 2017). Two chapters also address the Fulbright Program.

22 Zuoyue Wang, 'US-China scientific exchange: A case study of State-sponsored scientific internationalism during the Cold War and beyond', *Historical Studies in the Physical and Biological Sciences*, 30, 1 (1999), 249–77; Kathlin Smith, 'The role of scientists in formalizing US-China relations: 1965–1979', *Annals of the New York Academy of Sciences*, 866 (1998), 114–36. On British-Chinese science relations, see Jon Agar, 'It's springtime for science': Renewing China-UK scientific relations in the 1970s', *Notes and Records of the Royal Society*, 67, 1 (2012), 7–24. For works on scientific exchanges between Eastern Europe and the West, see Gerson S. Sher, *From Pugwash to Putin: A Critical History of U.S.-Soviet Scientific Cooperation* (Bloomington 2019); Jens Niederhut, *Wissenschaftsaustausch im Kalten Krieg: Die ostdeutschen Naturwissenschaftler und der Westen* (Cologne 2007); Jürgen Nötzold, 'Die deutsch-sowjetischen Wissenschaftsbeziehungen', in Rudolf Vierhaus and Bernhard vom Brocke (eds) *Forschung im Spannungsfeld von Politik und Gesellschaft. Geschichte und Struktur der Kaiser-Wilhelm-/Max-Planck-Gesellschaft* (Stuttgart 1990), 778–801.

23 Some works that focus mainly on the ways the Cold War shaped the evolution of scientific fields and their epistemologies are: Elena Aronova and Simone Turchetti (eds) *Science Studies in the Cold War: Paradigms Defected* (New York, NY 2016); Naomi Oreskes and John Krige (eds) *Science and Technology in the Global Cold War* (Cambridge, MA 2014); Simone Turchetti and Peder Roberts (eds) *The Surveillance Imperative: Geosciences during the Cold War and Beyond* (New York, NY 2014). See also the contributions by Ronald Doel, Kristine Harper, Naomi Oreskes, Kai-Henrik Bart, and Allison MacFarlane in the 2003 special issue in *Social Studies in Science: Special Issue: Earth Sciences in the Cold War*, *Social Studies of Science*, 35, 5 (2003), 629–825. Somewhat moving between the lines is the

emergence of the military–industrial–scientific complex or the client–patron relationships that began to integrate the Cold War University into the national security state.²⁴ Histories of science diplomacy instead make the study of international interactions their central frame of reference.²⁵ They explore how states, science institutions, international organizations, or individual scientists used science to shape and influence relations across borders for political purposes – and how those relations, in turn, reflected back onto science programs and projects. Writing the history of science *diplomacy*, therefore, typically implies studying political goals and contexts. What historians of science diplomacy are interested in is understanding whether and how international science programs were embedded in political relationships, how they served foreign policy objectives or the political goals of institutions, and in what ways they brokered interactions between scientists and foreign policymakers. It is not international scientific cooperation or the pure science as such what historians of science diplomacy are after, but the international political dealings and dependencies that accompanied, shaped, and pervaded the workings of science in the twentieth century.

One upside of the emerging scholarship is that it contributes to globalizing the writing of contemporary history. By following the movements of science across borders, many newer studies have begun to leave the familiar frame of transatlantic relations behind and now make the whole world their focus of study. It is places like Greenland and Antarctica or regions like Latin America that now frequently feature in studies of U.S. or European science diplomacy.²⁶ Much attention has also shifted towards North–South relations, where histories of science diplomacy offer new lenses on themes like decolonization, postcolonial nation-building, and resource

volume by Bernd Greiner, Tim B. Müller, Claudia Weber (eds), *Macht und Geist im Kalten Krieg* (Hamburg 2011) which partly covers histories of science fields, but partly also studies that explore international connections.

24 Classic examples for this kind of research perspective are: Paul Forman, ‘Behind Quantum Electronics. National Security as Basis for Physical Research in the United States, 1940–1960’, *Historical Studies in the Physical and Biological Sciences*, 18, 1 (1987), 149–229; Christopher Simpson (ed.), *Universities and Empire: Money and Politics in the Social Sciences during the Cold War* (New York, NY 1998); Rebecca Lowen, *Creating the Cold War University: The Transformation of Stanford* (Berkeley, CA 1997); Noam Chomsky (ed.), *The Cold War and the University: Toward an Intellectual History of the Postwar Years* (New York, NY 1997). See also Donald M. Blackmer, *The MIT Center For International Studies: The Founding Years, 1951–1969* (Cambridge, MA 2002). For a newer study on the domestic contexts of Cold War science, see for example Samuel Robinson, *Ocean Science and the British Cold War State* (Cham 2018).

25 See for first efforts in the field of Cold War science: Hunter Heyck and David Kaiser, ‘Focus: New perspectives on science and the Cold War: Introduction’, *Isis*, 101, 2 (June 2010), 362–66.

26 Ronald Doel, Kristine Harper and Matthias Heymann (eds), *Exploring Greenland: Cold War Science and Technology on Ice* (New York, NY 2016); Christian Kehrt, ‘Dem Krill auf der Spur: Antarktisches Wissensregime und globale Ressourcenkonflikte in den 1970er Jahren’, *Geschichte und Gesellschaft*, 40, 3 (2014), 403–36; Roger D. Launius, James Fleming and David H. DeVorki (eds), *Globalizing Polar Science: Reconsidering the International Polar and Geophysical Years* (New York, NY 2010); Andra Chastain and Timothy Lorek (eds), *Itineraries of Expertise. Science, Technology, and the Environment in Latin America* (Pittsburgh, PA 2020).

exploitation.²⁷ As Mariko Jacoby reminds us in this special section, those histories may also open a research perspective that includes non-Western histories and experiences.

Histories of science diplomacy also put new actors into the spotlight of contemporary historians: fisheries experts and earthquake researchers, archaeologists and climate change researchers, science advisors and information officials. Going beyond the standard cast of characters, some of those histories offer new views on familiar institutions like NATO or U.S. foundations.²⁸ Others offer new perspectives on less familiar actors. Science organizations like the European Science Foundation may come to mind here,²⁹ so do transnational institutions like the Pugwash conferences or organizations like the International Federation of University Women.³⁰

Remarkably little work has been done on the international relations of universities. Newer studies on ‘university diplomacy’ offer promising conceptual approaches for an international contemporary history of universities, but focus mainly on the 1890s to 1920s.³¹ Contemporary histories of the university, by contrast, typically remain focused on its domestic entanglements and histories.³² As a result, we know comparatively little about the international activities of universities in the post-1945 era. Fleshing out the ways in which universities from Chicago to Oxford to the Freie Universität Berlin to Moscow’s Lumumba University have cast an active role in international relations will therefore be an important future task for contemporary historians.³³

27 See, for example, the contributions in Gabrielle Hecht (ed.), *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge, MA 2011). See also Krige and Wang (eds), ‘Nation, knowledge and imagined futures; Franziska Torma, *Lebende Ressourcen und symbolisches Kapital: Westdeutsche Fischereiexperten am Golf von Thailand (1959–1974)*’, *Geschichte und Gesellschaft*, 40 (2014), 354–81.

28 Turchetti, *Greening the Alliance*; Perrin Selcer, *The Postwar Origins of the Global Environment: How the United Nations built Spaceship Earth* (New York, NY 2018); John Krige and Helke Rausch (eds), *American Foundations and the Coproduction of World Order in the Twentieth Century* (Göttingen 2012).

29 See for example the project by Corinna Unger on ‘Science in Europe – European science? A study of European Integration and Europeanization through the lens of the European Science Foundation,’ based at the European University Institute in Florence. <https://www.eui.eu/DepartmentsAndCentres/HistoryAndCivilization/ResearchAndTeaching/ResearchProjects/Science-in-Europe> (accessed April 06, 2021).

30 On Pugwash, see Alison Kraft and Carola Sachse (eds), *Science, (Anti-)Communism and Diplomacy: The Pugwash Conferences on Science and World Affairs in the Early Cold War* (Leiden 2020); Alison Kraft, Holger Nehring and Carola Sachse (eds), *Special Issue. The Pugwash Conferences and the Global Cold War. Scientists, Transnational Networks, and the Complexity of Nuclear Histories*, *Journal of Cold War Studies*, 20, 1 (2018). See also Matthew Evangelista, *Unarmed Forces: The Transnational Movement to End the Cold War* (Ithaca, NY 1999). On the IFUW, see Christine von Oertzen, *Science, Gender, and Internationalism: Women’s Academic Networks, 1917–1955* (New York, NY 2014).

31 Lerg, *Universitätsdiplomatie*; Heike Bungert and Charlotte Lerg (eds), ‘Themenschwerpunkt Transnationale Universitätsgeschichte’, *Jahrbuch für Universitätsgeschichte* 18 (2015), 35–247; Chagnon and Irish (eds), *The Academic World*.

32 See on the domestic focus of German university history for example: Livia Prüll, *Universitätsgeschichte schreiben: Inhalte, Methoden, Fallbeispiele* (Göttingen 2019); see also Simpson (ed.), *Universities and Empire*; Lowen, *Creating the Cold War University*; Chomsky (ed.), *The Cold War and the University*.

33 See on the latter: Constantin Katsakioris, ‘The Lumumba University in Moscow: Higher education for a Soviet–Third World Alliance, 1960–91’, *Journal of Global History*, 14 (2019), 281–300.

Much of the same holds true for science organizations and science academies. In the UK, the U.S. and West Germany, institutions like the Royal Society, the National Science Foundation, the AAAS, the German Research Foundation or the Max Planck Society were often vital in opening channels of communication where official diplomacy lagged behind or remained silent. In the late 1950s, for example, it was the Max Planck Society which broke new ground for German–Israeli relations. Meanwhile, the German Research Foundation ran a special exchange program with the Soviet Union that attempted to promote trust between elites in both political systems.³⁴ There are only a handful of studies, however, that explore the impacts and implications of such programs. Except for a few general accounts, we also know little about the international work of the academies and science organizations behind those programs.³⁵

With the focus on new actors also come new themes. Works on nuclear physics, big science, and institutions like CERN – long the focus of international histories of science – are now increasingly supplemented by studies that center on global environmental issues such as climate change, marine resources, or sustainable development.³⁶ Other works integrate themes like solar energy research, biotechnology, patent rights protection, or natural disasters.³⁷ Readers of this special forum, meanwhile, will find that histories of science diplomacy also open new vistas on themes such as cultural heritage or technical assistance. Not least, they also enrich ongoing research on topics like transnationalism, global circulations of knowledge, the role of experts, or development.³⁸

34 See on the broader context of such efforts: Klaus Gestwa and Stefan Rohdewald, 'Verflechtungsstudien. Naturwissenschaft und Technik im Kalten Krieg', *Osteuropa*, 59, 10 (2009) 10, 5–14.

35 Some exceptions are Peter Collins, *The Royal Society and the Promotion of Science since 1960* (Cambridge, MA 2015); Johannes Feichtinger and Heidemarie Uhl, *Die Akademien der Wissenschaften in Zentraleuropa im Kalten Krieg. Transformationsprozesse im Spannungsfeld von Abgrenzung und Annäherung* (Wien 2018). See also Audra Wolfe, *Freedom's Laboratory: The Cold War Struggle for the Soul of Science* (Baltimore 2018) which sheds light on the National Academy of Science and the Asia Foundation. Little research has been done on the international programs of German science organizations.

36 For a good example that reflects well such change of focus, see Naomi Oreskes, 'Changing the mission: From the Cold War to climate change', in Oreskes and Krige (eds) *Science and Technology in the Global Cold War*, 141–88. On climate change and environmental governance, see Sverker Sörlin's project on 'The Rise of Global Environmental Governance,' based at the KTH Royal Institute of Technology in Stockholm. On science diplomacy and marine resources, see Nadin Heé, 'Negotiating migratory Tuna. Territorialization of the oceans, trans-war knowledge and fisheries diplomacy', *Diplomatic History*, 44, 3 (2020), 413–27. On sustainable development Selcer, Postwar Origins. For an older, but still influential study of science diplomacy and global environmentalism, see Richard Benedick, *Ozone Diplomacy: New Directions in Safeguarding the Planet* (Cambridge, MA 1998).

37 See Whitesides, Science and American Foreign Relations; Lukas Schemper, 'Science diplomacy and the making of the United Nations International Decade for Natural Disaster Reduction', *Diplomatica: A Journal of Diplomacy and Society*, 1, 2 (2019) 243–67; Sönke Kunkel, Globales Umweltwissen, Naturgefahren, und Wissenschaftsdiplomatie. Katastrophenhilfe in den Nord-Süd-Beziehungen, in Jürgen Dinkel, Steffen Fiebrig and Frank Reichherzer (eds) *Nord/Süd: Perspektiven auf eine globale Konstellation* (München 2020), 357–78.

38 See Simone Turchetti, Néstor Herran and Soraya Boudia, 'Have we ever been 'transnational'? Towards a history of science across and beyond borders', *The British Journal for the History of*

The essays that follow can only speak to some of the themes, approaches, and perspectives guiding the new research into the history of science diplomacy. But they do introduce readers of this journal to some of the core goals and ambitions behind the writing of such history. One such ambition is to illuminate the concrete historical contexts, expectations, and actual workings behind science diplomacy: In what contexts did science diplomacy activities originate? Who promoted them? What did states and international institutions expect to gain from them? What reservations did they have? How did science diplomacy work in practice? Together, the essays point to a wide variety of historical goals and motives behind such programs. Often, they show, science diplomacy was used as a catalyst to build up soft power, reputation, or social and cultural influence. In other instances, it kept open channels of communication or built relations of trust between opposing political systems. Sometimes it also served direct foreign policy interests, for instance, when NATO used research projects to address its integration problems or when the IEAE promoted isotope hydrology to chart out a new diplomatic role within international relations.

Another shared motivation of all four essays is to understand the role, the responsibility, and the agency of scientists and researchers within international affairs: Can they make a difference? What did they change? And what was political about their efforts to promote foreign relations across borders? As the essays by Mariko Jacoby and Adam Hill show, scientists in some cases had considerable leeway in shaping the foreign relations of their countries and acted as their quasi-official representatives. The contributions by Matthew Adamson and Simone Turchetti, by contrast, point to limits, delineating some of the obstacles and drawbacks that scientists ran up against in trying to shape international political agendas. The essays assembled here therewith offer new historical detail on the ambivalences of political advocacy. They also have the common goal to build awareness for the vexing complexities laying beneath the surface of science diplomacy.

Third, the essays share an interest in offering alternative narratives that integrate historical analysis of the Cold War and its two superpowers, but do not make those their exclusive focus. In three of the essays, international organizations and institutions take center stage. The fourth one by Mariko Jacoby adds a welcome and much-needed look at the experiences of a non-European and non-Western country. Individually and collectively, the essays therewith offer new insight into the globalization of science and the workings of global science. They also show how such science transformed into a defining background structure of international relations that provided the tools, technologies, and knowledge that enabled states, institutions, and individuals to act politically across borders.

Science, 45, 3 (2012), 319–36; David Engerman, ‘American knowledge and global power’, *Diplomatic History*, 31, 4 (September 2007), 599–622; Stephen Macekura and Erez Manela (eds), *The Development Century: A Global History* (Cambridge, MA 2018).

Leading off the special section, Mariko Jacoby's essay examines the longer historical trajectories of Japanese science diplomacy from the turn of the century into the 1960s. Focused on seismology, her account points to the central role and authority of individual scientists who often acted as spokesmen of the Japanese nation abroad. In the Interwar years, Japanese governments changed strategies and began to use state visits and international science congresses to fashion images of Japan as a modern scientific nation. At the same time, scientific exchanges also served to maintain transnational communication channels between Japan and the United States. Building on those legacies, after 1945 Japanese scientists and the state used the discipline of seismology to redefine Japan into a global provider of earthquake knowledge, particularly vis-a-vis the developing world.

Shifting focus to the troubled British–Egyptian relationship in the 1950s, Adam Hill explores how British archaeologists sought to maintain a British presence within the region after the Suez crisis and the resulting decision to construct the Aswan High Dam. Drawing on a wide set of historical sources, the essay stresses the importance of British scientific expertise in UNESCO's 'Campaign for Nubia', launched to save the numerous archaeological sites along the Nile River threatened by the dam. British participation in UNESCO's campaign, the essay shows, was not only critical to the success of the program but also opened a crucial channel for Anglo-Egyptian rapprochement during the 1960s and 1970s.

Matthew Adamson's essay addresses the IAEA's efforts in promoting the entry of isotope hydrology into the developing world. Taking us right into the scientific debates raging within the IAEA's scientific bodies, the essay provides a fascinating window into the rise of the knowledge techniques that enabled the IAEA's technical assistance programs. It also shows how IAEA officials and policymakers, over time, began to realize the possibilities isotope hydrology provided to promote a new international role for the IAEA. Through funding studies, research networks, and technical assistance missions, the IAEA therefore began to build up a leading presence in the field of isotope hydrology, opening the organization up for new entries into the developing world.

Finally, Simone Turchetti's essay draws attention to the potential dependencies and troubles waiting for scientists when they participate in science diplomacy programs. Pointing to NATO's long policy of using science to maintain stable diplomatic relations between alliance partners, the essay first demonstrates how such efforts backfired when scientists began to formulate and publicize the nuclear winter hypothesis. Then, however, NATO struck back by openly downplaying the hypothesis, stalling further research funding for scientists, shifting research priorities, and organizing counter-expertise and scientific counter-conferences. The essay therewith offers an important reminder of how much the political contexts embedded in science diplomacy may shape the frameworks and possibilities under which scientists work and act.

Today, the practice of science diplomacy is nevertheless often framed as the central promise that offers ways out of the global climate crisis and the grand challenges of our times. Offering views on some historical examples of science

diplomacy across the twentieth century, the essays assembled in this special section warn against such easy-sounding solutions. Science diplomacy, they show, was rarely a smooth or straightforward process. Often, it was fraught with tensions and difficulties that complicated its conduct; in other cases, it failed to achieve its objectives. It is by pointing to those historical tensions, experiences, and legacies that the historical research presented here wants to invite to a critical discussion of science diplomacy that connects historians with political scientists and current practitioners in the field.

Acknowledgments

I would like to thank Nadin Heé for many joyful conversations around this special issue, the reviewers for their encouraging feedback, Jeremy Toynbee for his most diligent support in bringing this issue into publication, and Connor Ruby and Yulia Maximenkova for their assistance in copy-editing contributions to this volume.

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