

*An “Exceedingly Delicate Undertaking”:
Sino-American Science Diplomacy, 1966–78*

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In the first half of the twentieth century, China sought to modernize through opening to the world. Decades of what would become a century of humiliation had disabused the country of its previous self-perceived technological superiority, as famously expressed by Emperor Qianlong to the British envoy George Macartney in 1793. The Chinese had instead become convinced that they needed knowledge from outside to become strong enough to resist imperial aggression. No country encouraged this opening more than the United States. Americans threw money and expertise at the training of Chinese students and intellectuals. The Rockefeller Foundation’s first major overseas project was the creation of China’s finest medical college and other US institutions followed Rockefeller’s lead by establishing dozens of Chinese universities and technical schools to train a new generation of Chinese scientists. Meanwhile, Chinese students were gaining more PhDs from US universities than institutions in all other foreign countries combined. This deep, fruitful exchange and cooperation ended abruptly with the Chinese communist revolution of 1949: the new ruling Chinese Communist Party (CCP) soon cut off relations with Western governments, and with them their scientific and educational establishments.¹

This article analyzes efforts by American scientists to resurrect their connection to Chinese science. It shows how, between 1966 and 1978, American scientists initially failed but ultimately

¹ Mary Brown Bullock, ‘American Exchanges with China, Revisited’, in *Educational Exchanges: Essays on the Sino-American Experience*, ed. Joyce K Kallgren and Denis Fred Simon (Berkeley, CA: University of California Press, 1987); John Pomfret, *The Beautiful Country and the Middle Kingdom: America and China, 1776 to the Present* (New York: Henry Holt and Company, 2016), 151. This is not to say that American participation in this cooperation was wholly altruistic: as Michael Hunt argued, the United States was motivated by an assumed cultural superiority and a dismal view of China and its values — not to mention a desire to increase US influence over China. Michael Hunt, ‘The American Remission of the Boxer Indemnity: A Reappraisal’, *Journal of Asian Studies* 31, no. 3 (1972): 539–59.

succeeded in restarting scientific exchange and cooperation with their Chinese counterparts. This article argues that the explanation for both the initial failure and the ultimate success of this initiative lies in the connection between science and diplomacy.² The argument of this piece is not, however, that the condition of ties between the two governments *determined* the prospects of scientific collaboration. Instead, this interconnection was more dynamic: the prospects for scientific cooperation were dictated by how effectively American scientists adapted their scholarly initiative to the rapidly changing condition of Sino-American diplomatic relations in the 1960s and 1970s. While at times the relationship between the two governments (or lack thereof) delineated the prospects for scientific cooperation, at others the initiative for developing both scientific cooperation *and* diplomatic ties lay with scientists. Indeed, scientific cooperation, this article shows, provided a catalyst for the two governments to establish formal relations nearly thirty years after the People's Republic of China (PRC) had been established.

No scholar has yet connected the histories of Sino-American scientific cooperation with histories of the developing diplomatic relationship between the two countries in this period. Although the last decade has seen much interest in science diplomacy, scientific cooperation remains conspicuously absent from the international history of the 1970s US-China rapprochement which has been focused on “triangular diplomacy” and Washington and Beijing’s shared competition with the Soviet Union.³ While historians of science such as Wang Zuoyue and Kathlin

² For a recent overview of the (contemporary) connections between science and diplomacy, with significant coverage of Chinese science diplomacy after the 1970s, see Pierre-Bruno Ruffini, *Science and Diplomacy: A New Dimension of International Relations* (Cham: Springer, 2017).

³ On science diplomacy, see The Royal Society, ‘New Frontiers in Science Diplomacy’, *RS Policy Document* 10, no. 1 (January 2010). Tellingly, there is no reference to science or to American or Chinese scientific institutions in the indexes of any of the following leading works on the rapprochement. This reflects an almost complete absence of reference in their texts. Evelyn Goh, *Constructing the US Rapprochement with China, 1961-1974: From ‘Red Menace’ to ‘Tacit Ally’* (Cambridge: Cambridge University Press, 2006); William Kirby, Robert Ross, and Gong Li, eds., *Normalization of US-China Relations: An International History* (Cambridge, MA: Harvard University Asia Center, 2007); Patrick Tyler, *A Great Wall: Six Presidents and China: An Investigative History* (New York: Public Affairs, 2007); James Mann, *About Face: A History of America’s Curious Relationship with China from Nixon to Clinton* (New York: Vintage Books, 2000); Margaret MacMillan, *Nixon and Mao: The Week That Changed the World* (New York: Random House, 2007). Works that offer at least some recognition of the role of science in the relationship include Harry Harding, *A Fragile Relationship: The United States and China since 1972* (Washington, DC: Brookings Institution, 1992); Enrico Fardella, ‘The Sino-American Normalization: A Reassessment’, *Diplomatic History* 33, no. 4 (September 2009): 545–578; Richard Madsen, *China and the American Dream: A Moral Inquiry* (Berkeley, CA: University of California Press, 1995).

Smith have recognized that cooperation in this period had a political importance, neither analyze how an awareness of the nexus between science and politics led the US scientific community to not only adjust their academic initiatives to suit the shifting diplomatic relationship but also to themselves become active contributors to the burgeoning rapprochement in order to realize their ambitions for knowledge exchange. This article reveals the political agency of American scientists and their influence on Sino-American high diplomacy.⁴ In documenting that connection, this article also revises our accounts of the Sino-American “normalization” agreement that saw the two governments officially recognize one-another in 1979: that diplomatic achievement was, this article argues, won by scientists as well as officials.⁵

The mutually interactive connection between Sino-American governmental diplomacy and scientific contacts is elucidated here with the benefit of previously unavailable sources. This is the first work to make a thorough use of records from the US scientific establishment from this period, gathered from institutional archives and from the personal papers of leading individuals in the US scientific community. This article interpolates these non-governmental sources among newly-available records from both the Chinese and US governments. Finally, this article draws on oral history interviews conducted with some of the most important surviving US scientists involved in this cooperation and with US officials who coordinated the government’s policy towards Sino-American scientific collaboration.

⁴ 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, no. 1 (January 1999): 249–277; Zuoyue Wang, ‘Transnational Science during the Cold War: The Case of Chinese/American Scientists’, *Isis* 101, no. 2 (2010): 367–377; Kathlin Smith, ‘The Role of Scientists in Normalizing US-China Relations: 1965-1979’, *Annals of the New York Academy of Sciences* 866 (1998): 114–36.

⁵ A number of other works on the development of the relationship between American and Chinese science briefly discuss this period. However, these works treat the 1970s as only prologue: a period of ‘scientific tourism’ preceding the more substantive cooperation of the 1980s and beyond (a periodization that the evidence in this article calls into question). David Lampton, Joyce Madancy, and Kristen Williams, *A Relationship Restored: Trends in US-China Educational Exchanges, 1978-1984* (Washington, DC: National Academy Press, 1986); Richard Suttmeier, ‘Scientific Cooperation and Conflict Management in US-China Relations from 1978 to the Present’, *Annals of the New York Academy of Sciences* 866, no. 1 (1998): 137–164; Richard Suttmeier and Denis Simon, ‘Conflict and Cooperation in the Development of US–China Relations in Science and Technology: Empirical Observations and Theoretical Implications’, in *The Global Politics of Science and Technology*, ed. Maxmillan Mayer, Mariana Carpes, and Ruth Knoblich, vol. 2 (Berlin: Springer, 2014), 143–59.

This article analyzes American scientific approaches to China over three chronological phases, arguing that, in each phase, the success of scientific co-operation was influenced by, but in turn itself influenced, fluctuations in the high-level diplomatic relationship.

Following the Communist revolution of 1949, the United States had gradually lost touch with Chinese scientists — but had not forgotten them. In the 1950s and 1960s, Chinese and American scientists occasionally met at international conferences, with Beijing even hoping that these conversations might defuse tensions with the US government.⁶ Scientific publications were also still exchanged between libraries in the two countries and—very occasionally—Chinese scientists would send in research articles to American scientific publications.⁷ China’s development of nuclear weapons in the 1960s terrified Presidents John F Kennedy and Lyndon Johnson into the first global efforts at nuclear nonproliferation but also excited American scientists, demonstrating that at least some areas of Chinese scientific research were active and advanced in Mao Zedong’s China.⁸

The decision to found an organization to seek to resume contact with Chinese science was taken in 1963 by America’s most illustrious scientific institution: the National Academy of Sciences (NAS). Three years later, the Committee on Scholarly Communication with Mainland China (CSCMC) was formally launched with sponsorship from the Social Science Research Council (SSRC) and the American Council of Learned Societies (ACLS), alongside the NAS, where the group would be housed.⁹ The housing of the CSCMC within the NAS placed it in

⁶ Gordon Barrett, ‘China’s “People’s Diplomacy” and the Pugwash Conferences, 1957–1964’, *Journal of Cold War Studies* 20, no. 1 (April 2018): 161–63.

⁷ The exchange of publications continued until 1967, when that final form of exchange was extinguished by the Cultural Revolution. ‘Science Contacts with All Favored’, *New York Times*, 27 January 1971. The submission of research articles before 1967 — one by the head of the Chinese Academy of Sciences, Guo Moruo — was revealed to me by Donald Munro. Oral history interview with Donald Munro, Ann Arbor, MI, 21 November 2017.

⁸ Matthew Evangelista, *Unarmed Forces: The Transnational Movement to End the Cold War* (Ithaca, NY: Cornell University Press, 1999), 194–200; oral history interview with Mary Brown Bullock, by telephone, 25 April 2018.

⁹ National Academy of Sciences paper, ‘Committee on Scholarly Communication with Mainland China’, June 1966, ‘1966’ folder, Committee on Scholarly Communication with the PRC papers (hereafter CSCPRCP), National Academy of Sciences archives, Washington, DC, United States (hereafter NAS); Paul J Braisted to John Coleman, 19 April 1966, ‘1966’ folder, CSCPRCP, NAS; Florence Anderson to Frederick Seitz, 19 April 1966, ‘1966’ folder, CSCPRCP, NAS.

proximity of the government. Indeed, from the very beginning, the group believed it should not only “serve the [US] scientific community” but also that “it is essential to maintain liaison with the Department of State”. Reflecting this, the group chose as its first chair Alan T Waterman. Waterman was a physicist who had led the field operations of the Office of Scientific Research and Development during the Second World War and thereafter had been appointed by President Harry Truman as the first head of the government-run National Science Foundation. Waterman died within two years of being appointed CSCMC chair but he was followed by a string of successors who likewise boasted exemplary scientific credentials — and deep ties to the government.¹⁰

The Committee on Scholarly Communication began with optimism and faith, drawing on the American belief in global missionary purpose that predated the Cold War but had been energized by that conflict.¹¹ Celebrating an (imagined) tradition in which “American social and natural scientists and scholars have long supported the principle of direct communication of ideas”, the founding documents of the group ambitiously stated that “scholarly communication will assist men and nations better to understand each other and to live in peace”, even if they also admitted that the group’s mission constituted “some exceedingly delicate and probably extraordinarily difficult undertakings”.¹² Many of those involved in the creation of the CSCMC were veterans of another initiative that had seemed improbable but had ultimately proven successful: the development of scientific cooperation with the Soviet Union.¹³

In spite of being housed in the government-backed NAS, the CSCMC initially sought to keep distance between its academic initiatives and the Sino-American diplomatic relationship. In

¹⁰ NAS paper, ‘Committee on Scholarly Communication with Mainland China’, June 1966, ‘1966’ folder, CSCPRCP, NAS.

¹¹ Patricia Neils, ed., *United States Attitudes and Policies toward China: The Impact of American Missionaries* (Armonk, NY: ME Sharpe, 1990); Michael Adas, *Dominance by Design: Technological Imperatives and America’s Civilizing Mission* (Cambridge, MA: Harvard University Press, 2009); David Ekbladh, *The Great American Mission: Modernization and the Construction of an American World Order* (Princeton, NJ: Princeton University Press, 2010); Odd Arne Westad, *The Global Cold War: Third World Interventions and the Making of Our Times* (Cambridge: Cambridge University Press, 2005).

¹² NAS paper, ‘Committee on Scholarly Communication with Mainland China’, June 1966, ‘1966’ folder, CSCPRCP, NAS.

¹³ Harrison Brown to Einar Lundsgaard, 17 July 1967, ‘1967’ folder, CSCPRCP, NAS; Evangelista, *Unarmed Forces*; Audra J Wolfe, *Freedom’s Laboratory: The Cold War Struggle for the Soul of Science* (Baltimore, MD: Johns Hopkins University Press, 2018).

the late 1960s, the US government had an active channel of communication with the PRC in Poland through which the two sides had discussed transnational exchange visits.¹⁴ Ignoring this option, the CSCMC chose to send its first overtures directly to Chinese scientists, encouraging individual American scientists to personally write to any Chinese scientist that cited their research.¹⁵ Such overtures avoided mention of politics and instead praised recent Chinese scientific achievements, such as the successful synthesis of insulin in 1965.¹⁶

Within a few years, the CSCMC's initial optimism had faded. Mao's Cultural Revolution began in 1966 and the extreme anti-intellectualism and rabid anti-Americanism of that movement hardly offered a propitious environment for cooperation with US scientists.¹⁷ By 1967 the CSCMC had already concluded that the best chance it had for immediate contact with China's scientists was an expected "exodus [of] scholars" rendered "refugees" by the political tumult.¹⁸ By 1969, the frustrated CSCMC had resorted to a "constant bombardment" of one-way communication with the Chinese.¹⁹ By 1971, the group had resigned itself to dormancy: Waterman's successor as CSCMC chair, the Columbia-based political scientist and China-born son of missionaries John Lindbeck, reluctantly reduced the Committee's staff to working just a quarter of their previous contracted hours.²⁰ Later that year, Lindbeck died and the CSCMC chose as his successor a natural scientist — the nuclear physicist John Wheeler — in case it had been Lindbeck's academic analysis of contemporary China that had deterred Chinese scientists from responding to the organization's overtures.²¹

By the end of that year, it was becoming clear that what Beijing was really looking for in American scientists was not a lack of politics — but the right politics. Certainly, that appeared to

¹⁴ Yafeng Xia, *Negotiating with the Enemy: US-China Talks during the Cold War, 1949-1972* (Bloomington, IN: Indiana University Press, 2006).

¹⁵ Harrison Brown to Senator Edward Kennedy, 29 August 1972, '1969' folder, CSCPRCP, NAS.

¹⁶ Harrison Brown to Einar Lundsgaard, 17 July 1967, '1967' folder, CSCPRCP, NAS.

¹⁷ Jin Ge, 'Zai Waijiaobu "duoquan" qianhou' [Before and After the Seizure of Power in the Foreign Ministry], in An Jianshe, *Zhou Enlai de Zuihou Suiyue, 1966-1976* [Zhou Enlai's Final Years] (Beijing, 2002), 237-77.

¹⁸ Alan T Waterman to Frederick Burkhardt, 11 April 1967, '1967' folder, CSCPRCP, NAS.

¹⁹ Minutes of Committee on Scholarly Communication with Mainland China committee meeting, 28-29 September 1969, '1969' folder, CSCPRCP, NAS.

²⁰ *Ibid.*

²¹ Harrison Brown to John A Wheeler, 1 March 1971, '1971' folder, CSCPRCP, NAS.

be the implication of the first PRC visas issued to American scientists. That first invitation was, in a way, one of Beijing's many protests against US intervention in Vietnam. The two visas were issued in Hanoi, with one being granted to Arthur Galston, who had been driven to make a penitent visit to North Vietnam after discovering that his doctoral research on soybean fertilizers had been manipulated by the US military to develop the fearsome defoliant, Agent Orange. Galston and his colleague Ethan Singer had been packing for that trip when China unexpectedly invited the US table tennis team to tour China in April 1971; the pair hurried to ask Beijing for permission to follow in the ping-pong players' footsteps.²² The success of Galston and Singer's request had been in part because of their association with the Federation of American Scientists (FAS), a group embraced by Beijing on account of its political pedigree: set up by scientists involved in the Manhattan Project in order to lobby for nuclear disarmament, the group's criticisms of US government policy had been praised by Chinese state media since the 1950s.²³

The invitation to Galston and Singer, followed by further Chinese contact with other FAS-affiliated scientists in 1971 and 1972 and an invitation for a delegation from the socialist Science for the People, finally began to disabuse the CSCMC of their belief that they should fight shy of politics.²⁴ In the wake of Galston and Singer's breakthrough visit, the recently-rebranded Committee on Scholarly Communication with the People's Republic of China (CSCPRC) changed tack and began to embrace its deep connections to government.²⁵ This new policy was first seen in

²² 'Liang wei Meiguo jiaoshou li Jing qianwang nanfang fangwen' [Two American professors leave Beijing to visit the South], *Renmin Ribao* [People's Daily], 21 May 1971; Arthur Galston and Jean Savage, *Daily Life in People's China* (New York: Crowell, 1973), 1; Qian Jiang, *Xiaoqiu zhuandong daqiu: 'Pingpang waijiao' muhou* [Little Ball Moves Big Ball: Behind the Scenes of Ping-Pong Diplomacy] (Dongfang Chubanshe: Beijing, 1997).

²³ 'Meiguo Kexuejia Lianhehui zai huikan shang fabiao shengming zhengshi Mei zhengfu changqi yilai zhunbei jinxing xijunzhan' [Federation of American Scientists issue statement offering proof that the US government has long been preparing for biological warfare], *Renmin Ribao*, 9 April 1952. Some Chinese sources, including official sources, referred to the FAS by the Chinese name, "美国科学工作者协会" (*Meiguo kexue gongzuozhe xiehui*), or the Federation of American Scientific Workers. This mistranslation of the organization's name may have led the Chinese government to mistakenly believe that the organization was affiliated with the World Federation of Scientific Workers, in which the Chinese had participated during the 1950s. This may further contextualize the Chinese decision to initially favour the FAS as a conduit of scientific exchange in the early 1970s.

²⁴ Jeremy Stone to Philip Handler, 19 November 1971, '1971' folder, CSCPRCP, NAS; 'Scientists Vie For Peking Trip', *Washington Post*, 18 November 1971; *China: Science Walks on Two Legs, a Report from Science for the People*. (New York: Avon Books, 1974).

²⁵ For the renaming, see Harrison Brown to John A Wheeler, 1 March 1971, '1971' folder, CSCPRCP, NAS.

the CSCPRC's request, sent through the chairs of the NAS, ACLS and SSRC, for Secretary of State William Rogers to recommend the organization to the Chinese.²⁶ An informal request was also sent from CSCPRC board member A Doak Barnett to his former colleague turned National Security Advisor, Henry Kissinger, who had concluded his famed secret trip to Beijing in July 1971. Barnett pushed his friend to assist the Committee on Scholarly Communication on account of their "responsible non-partisan" nature that, he implied, distinguished them from rabble-rousers such as the FAS.²⁷

A favorable hearing for the CSCPRC was ensured by the government's own concerns about transnational Sino-American contacts to date. Galston and his colleagues at the FAS were not the only left-wing groups to have been invited to the PRC in 1971: that year had also seen invitations for the Black Panthers and the Black Worker's Congress, the Puerto Rican nationalist group the Young Lords, and the anti-Vietnam War protestors the Committee of Concerned Asian Scholars.²⁸ In the face of the favor Beijing showed to critics of the US government, Kissinger told his aides that "an emphasis on those groups sympathetic to the new left" in Sino-American transnational contacts must be avoided and that the government should press Beijing to open links with politically centrist groups such as the CSCPRC.²⁹

The State Department did just that in June 1972 and Kissinger put further pressure on the Chinese by making both a State Department security detail and Rockefeller funding for the first delegation of Chinese scientists to the United States dependent on the CSCPRC being made co-hosts of the visit, alongside the FAS.³⁰ This was enough to convince Beijing to accede to the group

²⁶ Philip Handler, Henry Riecken and Frederick Burkhardt to William P Rogers, 20 April 1971, '1971 – General' folder, CSCPRCP, NAS.

²⁷ A Doak Barnett to Henry Kissinger, 21 August 1971, 'Kissinger, 1968-81' folder, box 106, A Doak Barnett papers (hereafter ADBP), Rare Book & Manuscript Library, Columbia University (hereafter RBMLCU).

²⁸ *Notes from the National Committee* [on US-China Relations] (*NFTNC*), vol. 2, no. 1, November 1971.

²⁹ Memorandum of conversation, Senior Review Group meeting on National Security Study Memorandum (NSSM) 148 and NSSM 149, 'China trade/exchanges – February 2, 1972–4 July 1973' folder, box 93, NSC files – Henry A Kissinger files – Country Files: Far East (hereafter HAKCFFE), Richard Nixon Presidential Library (hereafter RNL).

³⁰ *Foreign Relations of the United States* (hereafter *FRUS*), 1969-1976, vol. E-13, ed. Steven E Phillips (Washington, 2006), document 144; Winston Lord to Henry Kissinger, 29 June 1972, 'China trade/exchanges – February 2, 1972-4 July 1973' folder, box 93, HAKCFFE, RNL; *FRUS, 1969-1976*, volume XVII, China, 1969-1972, ed. Steven E Phillips (Washington, DC, 2010), document 248.

co-hosting not only that delegation, which arrived in November 1972, but also another, of Chinese physicians, that arrived the month prior.³¹ China's most senior diplomat, Huang Hua, explicitly told Kissinger that CSCPRC involvement in these first two scientific visits to the United States was because "the US side has recommended the US Committee on Scholarly Communication with the PRC". Kissinger quickly green-lighted the government making "maximum effort" to support the delegations, and Nixon agreed to personally receive the Chinese doctors, in order to "demonstrat[e] to the Chinese that such high-level treatment and interest in their visits here is possible, when they are willing to deal with our preferred institution for scientific-technical exchanges".³²

Beijing's decision to begin exchanges with the CSCPRC was, then, a consequence of government-to-government negotiation. But the PRC's shift away from people's diplomacy with radical US groups and towards the American scientific establishment also reflected a change in China's scientific priorities. In the same month that Kissinger and Huang were discussing the CSCPRC's role in receiving Chinese scientists, Premier Zhou Enlai made a major change in Chinese science policy, acceding to a petition from some of China's most prominent scientists to restart basic and theoretical research and end the Cultural Revolution's exclusive focus on developing practical applications for existing scientific knowledge. Renewed interest in developing new knowledge increased the value of exchange with the most elite scientists from outside of China. In the case of the United States, this meant those represented by the CSCPRC.³³

The CSCPRC had been astute, then, to (belatedly) embrace rather than eschew politics. The organization had tried to convince the Chinese to deal with them because they were apolitical. This had proven misguided: Chinese interest in scientific cooperation was always connected to its broader foreign policy. Initially, this had meant Beijing favoring radical organizations, a corollary

³¹ 'Wo kexuejia daibiaotuan fangwen Meiguo hou huiguo' [Our team of scientists visit the United States and return home], *Renmin Ribao*, 19 December 1972; *FRUS*, vol. XVII, document 248; *NFTNC*, vol. 3, no. 1, December 1972.

³² *FRUS*, vol. XVII, document 253; Edward E David Jr to Richard Nixon, 19 September 1972, 'China trade/exchanges – February 2, 1972–4 July 1973' folder, box 93, HAKCFE, RNL.

³³ Zhonggong zhongyang wenxian yanjiushi ([CCCPC Party Literature Research Office], hereafter ZGZYWXYJS), ed., *Zhou Enlai Xuanji* [Selected Works of Zhou Enlai], vol. 2 (Beijing: Renmin chubanshe, 1984), 473.

of the CCP's international party-to-party relations. This context shifted beginning in 1972, after which the importance of China's new diplomatic relationship with Washington trumped the Chinese preference for groups that shared their political ideology.³⁴ That change was the CSCPRC's chance. Not only did the organization's leadership enjoy personal influence with Kissinger and his colleagues, but the group's pedigree and political leanings convinced the White House that scientific exchanges under their management would buttress rather than undermine the government's foreign policy. With Washington's support, the CSCPRC had finally succeeded in its six-year campaign to be directly involved in scientific cooperation with China.

In spite of pledging to the US government that it would use its newfound influence in transnational scientific contacts to serve the Sino-American diplomatic rapprochement, the Committee on Scholarly Communication remained focused on its primary objective: expanding opportunities for productive cooperation between American and Chinese science. This section will show how, having won preeminence in US scientific cooperation with China, the Committee on Scholarly Communication used its newfound influence to push for greater access to China for US researchers — even if this brought tension into its relations with the US and Chinese governments.

The CSCPRC's dominance over scientific contacts had been hard won, but by the end of 1973 it was secure. In June 1973, the group had sent its first delegation — of physicians — to China and by the end of that year, the Committee had been involved in 14 delegations that had travelled back and forth to and from the PRC. Participants in these trips ranged from physicists, computer scientists, and biologists to librarians, archeologists, and child psychologists. Within little more than a year, the Committee had gone from being shut out of scientific contacts, to dominating them; the scope of their contacts far exceeded lingering Chinese relations with the FAS.³⁵

³⁴ Kuisong Yang and Yafeng Xia, 'Vacillating between Revolution and Détente: Mao's Changing Psyche and Policy toward the United States, 1969-1976', *Diplomatic History* 34, no. 2 (April 2010): 395–423.

³⁵ *China Exchange Newsletter (CEN)*, vol. 6, no. 2, December 1977.

The centrality of the CSCPRC's role in managing scientific exchanges emboldened the group to work to maximize the research value of these contacts. This soon brought the organization into conflict with both governments, a confrontation from which the Committee did not shy. The group's first battle was over the topics chosen to be the focus of each exchange delegation. To the CSCPRC, this was an issue of fundamental importance: some American scientists would gain a great deal from a visit to China while others would learn almost nothing. But from the White House's perspective, the scientific content of exchanges was unimportant. The government cared only about the political value of exchanges — the total number of exchanges mattered, then, but not their subject matter. Beijing *did* care about the scientific content of exchanges — but from a quite different perspective than the CSCPRC. The Chinese wanted, on the one hand, to send delegations that would bring back America's most cutting-edge knowledge and, on the other, to obviate receiving American delegations that might pry into Chinese society.

Initially, the compatible stances of the two governments had allowed them to fix the content of scientific exchanges without input from American scientists. However, by 1973 the CSCPRC had gained the confidence to demand the right to determine the focus of delegations sent to China. May of that year saw the first China trip of much of the top leadership of the organization, including CSCPRC chairman and biochemist Emil L Smith, the ACLS president and Charles Darwin specialist Frederick Burkhardt, SSRC president and noted sociologist Eleanor Sheldon, and Albert Feuerwerker, the Michigan-based economic historian of China. The composition of the group anticipated the focus of their lobbying: convincing Beijing to accept delegations of not only natural but also social scientists.

This was the one matter of substance that Premier Zhou himself weighed in on. Sheldon and Feuerwerker tried to tactfully point out that, while Chinese natural scientists would gain a great deal from visiting high-tech facilities in the United States, it was American anthropologists and sociologists that would gain most from conducting research in China. The premier, however, said

that the lingering disruption of the Cultural Revolution made impossible receiving American scientists looking to investigate Chinese society.³⁶

The CSCPRC's response to this rebuff demonstrated the group's temerity in challenging both Chinese and US governments, if that was what was required to forward the interests of the American scientists they represented: the Committee began smuggling social scientists into China. The American social scientists that wanted more than any other to be allowed into China were also those that Beijing most feared: China hands. Sinologists had been cut off from the country they studied for more than two decades, being restricted to conducting fieldwork only in Taiwan and Hong Kong.³⁷ For every one of them, a trip to the PRC would be inestimably valuable: the skills that they had spent years honing — not least mastery of the Chinese language — were wasted without access to China. But these skills were also the reason that Beijing refused their entry: Sinologists would quickly see through the choreography that Beijing arranged for exchange visits and would be able to directly listen to and speak with the Chinese population without party intermediaries. Beginning in 1973, the CSCPRC insisted, that, if Beijing would not allow delegations of Sinologists into the country, then Sinologists should travel on *all* exchange delegations sent to China. That is, that every delegation, whether it was primarily composed of mathematicians or paleoanthropologists, would bring with it two “scholar-escorts”, ostensibly to act as translators.³⁸

Beijing could not reject this initiative outright. Not only did the Chinese also send their own American watchers on scientific delegations, but they had earlier agreed that each side had the right to select its own participants in exchanges and valued this principle as a means to continue to send delegations targeted at America's most advanced scientific and industrial laboratories.

³⁶ Ann Keatley to CSCPRC members, 5 March 1973, ‘1973 – General’ folder, CSCPRCP, NAS; ‘Report on Exchange Discussions’, 15 May-15 June 1973, ‘1973 – International Relations – Visits: Com Visit on Scholarly Exchanges’ [*sic*] folder, CSCPRCP, NAS.

³⁷ In spite of these restrictions, some important works had been produced through this research. For example, Ezra Vogel, *Canton under Communism: Programs and Politics in a Provincial Capital, 1949-1968* (Cambridge, MA: Harvard University Press, 1969).

³⁸ *CEN*, vol. 4, no. 3, June 1976.

Instead, the Chinese looked for a more sensational pretext to undermine the CSCPRC's scholar-escort policy.

The first complaint came in 1974, at a time of renewed leftist political agitation in Beijing. In October of that year, the Chinese told the distinguished Princeton historian Frederick Mote that he was unwelcome in their country on account of his having "carried out illegal activities of gathering intelligence" while in China in the 1940s. Although it was true that Mote had worked for the Office of Strategic Services, the wartime precursor to the CIA, the CSCPRC denied the illegality of this and said that either Mote travelled, or none of the delegation would. Eventually, the Chinese relented.³⁹

Less than two years later, they tried the tactic again. In the unlikely context of a wheat studies delegation, Beijing claimed that two scholar-escorts — Lloyd Eastman of the University of Illinois, Urbana, and Ramon Myers of the Hoover Institution at Stanford — had asked a Chinese geneticist whether he was certain that Mao's anointed successor, Hua Guofeng, was not a rightist revisionist. Neither recalled such a precise question, but the Chinese again suggested that this was precisely the type of behavior that meant that American social scientists should not be accompanying natural science delegations.⁴⁰ Lambasted by the Chinese, the CSCPRC simultaneously found itself defending their scholar-escort initiative to their own government, which worried that the policy was jeopardizing the entire scientific exchange program.⁴¹ Nonetheless, the CSCPRC again held out — and again won: the Chinese expanded scientific exchanges the next year without comment on which Americans would translate the scientific dialogue.⁴²

³⁹ Ann Keatley to The Files, 15 October 1974, '1974 – General' folder, CSCPRCP, NAS.

⁴⁰ Lloyd Eastman and Ramon Myers to Anne Keatley, June 20, 1976, 'Eastman, Lloyd E', box 5, National Archive on Sino-American Relations, Bentley Historical Library, University of Michigan; John Israel to Arne J de Keijzer, 29 June 1976, folder 103, box 14, series 3, Record Group 4, National Committee on US-China Relations (NCUSCR) records, Rockefeller Archive Collection (hereafter RAC).

⁴¹ Richard Solomon, 'Evening Report – PRC', 16 June 1976, 'June 10-29, 1976' folder, box 42, National Security Council East Asia and Pacific Affairs Staff Files, Gerald Ford Presidential Library (GFL).

⁴² *CEN*, Vol. 5, No. 1, February 1977.

The CSCPRC had, then, successfully found a means to circumvent China's rebuffing of American social scientists. This was just one of the means by which the Committee worked to deepen the epistemic value of exchanges. The group also began to push for longer exchanges — trips had been capped at four weeks — that would allow scientists to together produce new knowledge, rather than just swap what they already knew.⁴³ The CSCPRC also lobbied the Chinese to lift the ban on Americans conducting fieldwork or gathering data while in China and, by 1975, had proposed new modes of scientific cooperation, including student exchanges and longitudinal collaboration between and beyond individual exchange visits.⁴⁴

However, the CSCPRC knew that the Chinese were disinclined to grant these requests — unless pushed to. The group therefore saved its more vociferous complaints for its own government. The organization believed that if Washington had the leverage to convince the Chinese to work with the CSCPRC, it also had the leverage to push Beijing to permit deeper cooperation between American and Chinese scientists.

As early as 1973, the US government had felt the pressure from the CSCPRC. In July of that year, Richard Solomon, one of Kissinger's point men on China, had told his boss that “American academics ... particularly those in the scientific community ... feel that the US Government has not pressed Peking sufficiently in terms of American interests in these exchanges”. Initially, the government had brushed off these concerns: Solomon had told the CSCPRC to remain focused on “the larger interest that is being served by exchange programs” — that is, their political

⁴³ ‘Scope analysis: Sustaining the momentum of US-PRC normalization’, 1 November 1973, NLC-26-16-2-7-7, Jimmy Carter Presidential Library (hereafter JCL).

⁴⁴ US suggestions for restarting student exchanges dated back at least as far as 1973. Beijing had refused on the grounds of the presence in the United States of students from their rival regime, the Taiwan-based Republic of China. In the CSCPRC's approach to data gathering in China, there is a trace of what George Basalla earlier identified as a ‘colonial science’ approach of conceiving of the non-Western world as (primarily) repositories of scientific data. For this discussion, see George Basalla, ‘The Spread of Western Science’, *Science* 156, no. 3775 (5 May 1967): 611–22. For the CSCPRC's lobbying, see CSCPRC paper, ‘The future of academic exchanges with the PRC’, June 1975, ‘1975 – Report for Secretary of State’ folder, CSCPRCP, NAS; Eleanor Bernert Sheldon, Robert M Lumiansky and Philip Handler to Henry Kissinger, 11 July 1975, ‘The future of academic exchanges with the PRC’, ‘1975 – Report for Secretary of State’ folder, CSCPRCP, NAS; Minutes of 28th meeting of NCUSCR executive committee, 29 May 1975, ‘Board of Directors Meeting, 10/28/75’ [*sic*] folder, box 131, ADBP, RBMLCU.

function in the burgeoning diplomatic relationship.⁴⁵ By 1975, however, Washington knew that ignoring tensions in scientific cooperation was storing up trouble: they agreed to raise the CSCPRC's proposals during President Gerald Ford's China summit of December 1975.⁴⁶

The CSCPRC focused on one particular grievance in their complaints to their government: the Chinese simply sent more scientific groups to the United States than they received. In 1973, the ratio between delegations sent and received by the Committee was seven to five. The year after had been an even five-five split, but in 1975, it was again seven to five and in 1976 five to four.⁴⁷ While the CSCPRC was losing patience with the Chinese, the group was also growing in confidence that the United States had a stronger hand than it was playing. As Ezra Vogel has observed, the period between 1974 and 1976, during which Vice Premier Deng Xiaoping drove policymaking while Chairman Mao struggled with motor neurone disease, acted as a dress-rehearsal for the rapid modernization and opening to the world for which Deng would become famous after his final ascent to power in 1978.⁴⁸ The CSCPRC immediately recognized the opportunity: in 1975, they told Kissinger that, since Deng's rehabilitation the year prior, the Chinese approach to scientific cooperation "indicates great interest in American advanced technology".⁴⁹ Indeed, by 1976, half of the delegations the PRC had sent to the United States had been concerned with advanced technology with direct, practical application to China's development: delegations focusing on telecommunications, petrochemicals, and mining were just three examples.⁵⁰

The CSCPRC now argued that the widening imbalance between Chinese and American gains from exchanges justified a fundamental reassessment of whether scientific cooperation with China was serving US interests. In terms that anticipated later controversies over China obtaining

⁴⁵ Emphasis added. *FRUS*, vol. XVII, document 45.

⁴⁶ *FRUS*, vol. XVIII, document 112.

⁴⁷ CSCPRC, 'Discussion of 1976 Exchange Negotiations', 30 January 1976, '1976 – Exchange Agreement – Negotiations' folder, CSCPRCP, NAS.

⁴⁸ Ezra Vogel, *Deng Xiaoping and the Transformation of China* (Cambridge, MA: Belknap Press of Harvard University Press, 2011), 120–58.

⁴⁹ CSCPRC paper, 'The future of academic exchanges with the PRC', June 1975, '1975 – Report for Secretary of State' folder, CSCPRCP, NAS.

⁵⁰ CSCPRC, 'Discussion of 1976 Exchange Negotiations', 30 January 1976, '1976 – Exchange Agreement – Negotiations' folder, CSCPRCP, NAS.

US technology on the cheap, the group recommended that the government contemplate “how ... exchanges affect immediate propriety [rights], as well as long-term economic interests; [and] in what areas would it be in our national interest to transfer technology to China, thus permitting China to accelerate development”.⁵¹ Both Washington and the CSCPRC particularly worried that the Chinese were mimicking industrial processes witnessed during exchanges — for example, American agricultural mechanization techniques.⁵²

After a lackluster and still-imbalanced exchange package for 1976 had been agreed at the Ford summit, the CSCPRC consciously moved to hurt Beijing by placing restrictions on Chinese visitors commensurate to those on American scientists visiting the PRC.⁵³ Following Ford’s summit, the CSCPRC chair, Massachusetts Institute of Technology (MIT) geophysicist Frank Press, told a senior Chinese official in Washington that “industrial organizations, universities, and individual scientists are reluctant to continue serving as hosts to visiting Chinese guests, frankly questioning a program in which they invest time and effort and see lessening opportunities for reciprocation”. Press argued that it was “imperative” that the Chinese at least equalize the number of scientific exchanges in each direction. For now, Press kept quiet the CSCPRC’s “back-up position”: “that we will allow in only as many groups as the Chinese allow to go to China”.⁵⁴

The CSCPRC’s relentless pressure won some concessions from the Chinese, just as their firm stance on scholar-escorts had forced Beijing to back down. The PRC government responded to the Committee’s complaints by agreeing that future delegations to China could be focused on

⁵¹ CSCPRC paper, ‘The future of academic exchanges with the PRC’, June 1975, ‘1975 – Report for Secretary of State’ folder, CSCPRCP, NAS.

⁵² For a report directly reporting on US agriculture, compiled in 1978, see ‘Guanyu Meiguo siliao de kaocha baogao’ [Investigative report regarding US agricultural feed], 28 September 1978, folder 119.4.13, Beijing Municipal Archive. ZGZYWXYJS, ed., *Deng Xiaoping Sixiang Nianbian* [Chronicle of Deng Xiaoping Thought] (Beijing: Zhongyang wenxian chubanshe, 1998), 97; United States Liaison Office (USLO), Beijing, to Henry Kissinger, 11 October 1975, [unmarked folder, likely ‘China Exchanges, July-Sept 1975’], Director’s Files of Winston Lord, Record Group 59: Records of the Department of State (hereafter RG59), US National Archives II, College Park (hereafter NACP); CSCPRC, ‘Discussion of 1976 Exchange Negotiations’, 30 January 1976, ‘1976 – Exchange Agreement – Negotiations’ folder, CSCPRCP, NAS.

⁵³ Alex DeAngelis to Philip Handler, 8 January 1976, ‘1976 – Exchange Agreement – Negotiations’ folder, CSCPRCP, NAS.

⁵⁴ Frank Press to Han Xu, 8 January 1976, ‘1976 – Exchange Agreement – Negotiations’ folder, CSCPRCP, NAS; Alex DeAngelis to Philip Handler, 8 January 1976, ‘1976 – Exchange Agreement – Negotiations’ folder, CSCPRCP, NAS.

intensive research, rather than being whisked around on a whistle-stop tour of the country's laboratories, and by endorsing the beginning of longitudinal scientific collaboration, such as swapping fish specimens.⁵⁵ But the most significant Chinese concession was a climbdown over the imbalance in delegations sent and received. Chinese vacillation on that issue had prompted the CSCPRC to carry through Press's plan to force an equalization of the number of delegations in each direction by postponing two of the PRC's seven planned visits until 1977.⁵⁶ By the end of the year the Chinese had conceded: Beijing agreed that the 1977 package should be a balanced program of six delegations in each direction.⁵⁷

These CSCPRC victories had significance beyond the immediate quality of the exchange program. By holding firm in negotiations over scholar-escorts, the research intensity of exchanges, and on the balance between delegations sent and received, the organization had successfully changed the terms on which the United States would assist in China's increasingly urgent drive towards modernization. The CSCPRC had read the writing on the wall in 1975 and was confident that Mao's impending death would be followed by unabashed Chinese interest in foreign knowledge and technology. The group's tough bargaining in 1975 and 1976 made clear that American provision of such expertise, while possible, would not be on the same charitable, lopsided terms as the scientific cooperation of the first half of the 1970s.

China's highest leaders had initially refused to indulge in political bartering over scientific cooperation. They knew that if their negotiations with the US government included discussions of a program of scientific cooperation that clearly favored Beijing, they risked being forced to offset this imbalance with concessions elsewhere.

⁵⁵ Alex DeAngelis to Philip Handler, 8 January 1976, '1976 – Exchange Agreement – Negotiations', CSCPRCP, NAS; *CEN*, vol. 5, no. 1, February 1977.

⁵⁶ Ann Keatley to Philip Handler, 23 January 1976, '1976 – Exchange Agreement – Negotiations' folder, CSCPRCP, NAS; Frank Press and Ann Keatley to Zhou Peiyuan, 23 January 1976, '1976 – Exchange Agreement – Negotiations', CSCPRCP, NAS.

⁵⁷ *CEN*, vol. 5, no. 1, February 1977.

That policy had ended on 2 December 1975, when Deng asked Ford whether there were not advanced supercomputers “of a speed of 10 million times” that the United States was refusing to supply to China.⁵⁸ Deng knew there were: the most recent Chinese request to purchase a top-end computer had been declined by the US government just two months prior on the grounds that the technology was too advanced for export to any communist country, including the Soviet Union.⁵⁹ Desperate to find something that the two sides could agree upon during a summit devoid of substance, Kissinger had promised to provide computers of “considerable quality” and Ford added that he was “very anxious to be helpful”.⁶⁰ In an extraordinary interaction, the two men invited Deng to circumvent US export controls by requesting the computers through political rather than trade channels.⁶¹

In the immediate term, Deng had gained far more from the exchange. Ford and Kissinger followed through on their promise: less than a year later, State Department pressure on other parts of the government forced through the sale of an advanced Control Data Corporation system to Beijing — violating US export law and Washington’s principle of extending equal favor to China and the Soviet Union in technology transfers.⁶² But, in another way, Deng had surrendered important ground. He had brought the discussion of Sino-American science and technology cooperation into political negotiations at the highest level. In doing so, he had advertised that he was prepared to expend political capital to obtain the most advanced products of US science.

That gave the United States leverage. Ford and Kissinger ignored this, but their successors did not. The final section of this article analyzes how the ever-greater Chinese appetite for science and technology assistance from the United States provided the means by which both the Committee

⁵⁸ *FRUS*, vol. XVIII, document 135.

⁵⁹ Department of State paper, ‘PRC Economics and Trade Relations’, undated, ‘19-23 October 1975 – PRC Briefing Book for China – Bilateral Issues (1)’ folder, box 21, Trip Briefing Books and Cables of Henry Kissinger 1974-77, GFL.

⁶⁰ *FRUS*, vol. XVIII, document 137.

⁶¹ *FRUS*, vol. XVIII, document 146.

⁶² Philip Habib and Jonathan Greenwald to Henry Kissinger, 10 May 1976, ‘1974-78 NSD 246 and 247’ folder, Subject Files, 1969–1978, RG59, NACP; Henry Kissinger to USLO, 21 October 1976, ‘China, unnumbered items (36) 12-29 October 1976’ folder, box 6, Kissinger-Scowcroft West Wing Office Files, 1974-77, GFL.

on Scholarly Communication and the US government would realize their ambition for deeper Sino-American cooperation, in both science and diplomacy. While the Committee had previously pursued scientific contacts in spite of politics, the group now adopted a completely contrary strategy. The CSCPRC concluded from the toils of 1975 and 1976 that efficacious scientific cooperation required the organization to work towards a political goal: the formal establishment of diplomatic relations between the United States and the PRC. This “normalization” of relations had been Washington’s objective since 1971. Now, with the CSCPRC and the White House working hand-in-glove, it would be achieved just two years after Deng had shown his hand in his talks with Ford.

New thinking about how to develop rapprochement was badly needed in 1977. Negotiations between the two governments had been frozen since 1973. Since then, the Chinese had not budged an inch on their terms, which included an insistence that Washington break off all but trade and cultural relations with their ally on Taiwan. Nixon, Ford and now Jimmy Carter all balked at such a complete break. The US needed an incentive that would tempt Beijing to dilute this position. The CSCPRC now proposed that science and technology could be that incentive.

This strategy was first fully articulated in June and July 1977, in preparation for a visit to China by the CSCPRC. This would be the highest-ranking delegation the group had ever dispatched. SSRC president Sheldon returned to China, alongside ACLS president Robert Lumiansky, together representing the most august American humanities and social sciences institutions. Most notably, Secretary of State Cyrus Vance personally asked National Academy of Sciences president Phillip Handler to head the trip, believing that Handler’s experience of pioneering high-level scientific cooperation with the Soviets would enable him to realize a breakthrough with Beijing, too.⁶³

⁶³ Ann Keatley to Philip Handler, 9 March 1977, and Ann Keatley to Philip Handler, 21 March 1977, ‘1977 – Visits – Committee Visit on Scholarly Exchanges’, CSCPRCP, NAS; Philip Handler to Frederick Seitz, 12 April 1977, ‘1977 – General’, CSCPRCP, NAS; Wolfe, *Freedom’s Laboratory*, 185–91.

The visit occurred at a moment that seemed propitious for upgrading the scientific relationship. Mao's death in September 1976 had been followed by the purge of the xenophobic Gang of Four and the return of Deng to active politics. Deng had wasted no time before outlining a radical policy platform of opening the country to the outside. Deng argued that self-isolation had left China lagging behind the West and that China should again seek to "make the foreign serve China", a 1956 Mao quote that had echoes of nineteenth-century Chinese reformers' call to "use Western learning for practical uses".⁶⁴ Soon, Deng would add that science did not have an inherent class element and could serve all classes, an important departure from Maoist diatribes against science that was more "expert" than "Red".⁶⁵

In many ways, the 1977 CSCPRC visit offered grounds for optimism. Handler had been told by Vice Premier Ji Dengkui of China's desire to import scientific expertise and the delegation witnessed a "renaissance" in China's universities.⁶⁶ However, the main objective of the visit had not been achieved: the Chinese had rejected CSCPRC proposals to lengthen scholarly visits and begin student exchanges. Negotiations had been "tense and strained".⁶⁷ Handler's talks had been "dominated by repeated reference to the failure of the United States to implement the Shanghai Communiqué" and Ji had "explicitly stated" that any expansion of scientific cooperation would

⁶⁴ ZGZYWXYJS, ed., *Deng Xiaoping Nianpu, 1975-1997* [Deng Xiaoping Chronicle], vol. 1 (Beijing: Zhongyang wenxian chubanshe, 2004), 157–59; ZGZYWXYJS, *Deng Xiaoping Sixiang Nianbian* [Chronicle of Deng Xiaoping Thought], 48–49, 56–57; Alexander Pantsov, *Deng Xiaoping: A Revolutionary Life* (New York: Oxford University Press, 2015), 327–28.

⁶⁵ ZGZYWXYJS, *Deng Xiaoping Nianpu* [Deng Xiaoping Chronicle], 1:164–65.

⁶⁶ 'Ji Dengkui fuzongli huijian Mei Zhong Xueshu Jiaoliu Weiyuanhui daibiaotuan' [Vice Premier Ji Dengkui Meets with CSCPRC Delegation], *Renmin Ribao*, 17 June 1977; Philip Handler and American Council of Learned Societies to Cyrus Vance, 5 August 1977, folder 6372, box 527, series 1, accession 2, Social Science Research Council (SSRC) records, RAC.

⁶⁷ 'Fang Yi fuyuanzhang zhuchi yi Guo Moruo yuanzhang mingyi juxing de yanhui huanying Mei Zhong Xueshu Jiaoliu Weiyuanhui daibiaotuan' [Vice President Fang Yi presides over banquet hosted by [Chinese Academy of Sciences] President Guo Moruo to welcome CSCPRC delegation], *Renmin Ribao*, 14 June 1977; Philip Handler to W K H Panofsky, 27 June 1977, '1977 – Visits – Committee Visit on Scholarly Exchanges' folder, CSCPRCP, NAS; Philip Handler and Eleanor Bernert Sheldon to Cyrus Vance, 5 August 1977, folder 6372, box 527, series 1, accession 2, SSRC records, RAC.

have to wait until normalization.⁶⁸ Handler was so frustrated at the lack of progress that he almost stormed out of Beijing before the scheduled end of the trip.⁶⁹

Handler had not taken this stonewalling lying down. From the start of his NAS presidency in 1969, Handler had been closely involved in CSCPRC negotiations with the Chinese — and had long favored a firm stance in such talks. Now, the Chinese “were informed firmly” that repeated fleeting visits to institutions such as MIT and AT&T’s Bell Laboratories “are becoming a burden”. Handler dismissed Beijing’s claims that such visits were to promote binational friendship: this was “fatuous when we receive delegations concerned specifically with ‘hematite ore dressing’ or ‘advanced drilling technology’”.⁷⁰ This was not idle talk: in the wake of the failed visit, Handler ordered that the focus of Chinese delegations be restricted to purely academic subjects, “avoiding any visits concerned with advanced technology”.⁷¹ Handler hoped this would act as a “nudge, to remind them of what it is they seek from this country and that they can be denying themselves while they deny us”.⁷²

Such nudges notwithstanding, the failed summer 1977 CSCPRC visit convinced the organization to again change its strategy towards deepening scientific cooperation. The group concluded from the visit that, in spite of the individual concessions previously won in direct negotiations with Beijing, any wholesale upgrading of scientific cooperation would require a

⁶⁸ Philip Handler to W K H Panofsky, 27 June 1977, ‘1977 – Visits – Committee Visit on Scholarly Exchanges’ folder, CSCPRCP, NAS; Philip Handler and Eleanor Bernert Sheldon to Cyrus Vance, 5 August 1977, folder 6372, box 527, series 1, accession 2, SSRC records, RAC; ‘Ji Dengkui fuzongli huijian Mei Zhong Xueshu Jiaoliu Weiyuanhui daibiaotuan’, *Renmin Ribao*.

⁶⁹ Correspondence with Mary Brown Bullock (one participant in the visit), by email, 9 January 2019.

⁷⁰ Philip Handler and Eleanor Bernert Sheldon to Cyrus Vance, 5 August 1977, folder 6372, box 527, series 1, accession 2, SSRC records, RAC. Bell Laboratories and other leading research and industrial laboratories had been on the itineraries of Chinese scientific delegations from the very beginning. The first Chinese scientists that visited in late 1972 and early 1973 had been welcomed at Bell Laboratories, Stanford’s industrial laboratory and the Department of Energy-run Stanford Linear Accelerator Center (SLAC). See ‘Youpeng zi yuanfang lai — Zhongguo kexuejia daibiaotuan fangwen Meiguo ceji’ [There are friends coming from afar — highlights from the visit by Chinese scientists to the United States], *Renmin Ribao*, 9 January 1973.

⁷¹ Philip Handler to Eleanor Bernert Sheldon and Robert M Lumiansky, 15 September 1977, folder 6372, box 527, series 1, accession 2, SSRC records, RAC.

⁷² Philip Handler to Lewis Branscomb, 22 November 1977, ‘1977 – Exchange Agreement – Negotiations’ folder, CSCPRCP, NAS.

change in the relationship between the two governments. The group now committed its energy to realizing that political goal.

With Lumiansky having publicly revealed to the *New York Times* Beijing's "tough" and "blunt" message to the CSCPRC, the group now informed Secretary Vance that that the changes in the scientific relationship demanded by the American scientific community were predicated on progress in normalization talks.⁷³ This lobbying was aimed at pressuring Vance to offer new proposals in those negotiations during his own visit to Beijing, which began on 22 August. Having met China's top scientists, including China's paramount scientist-diplomat, the former Boxer Indemnity student to the United States, Zhou Peiyuan, the Secretary of State came away as impressed as the CSCPRC with the country's modernization efforts. But he also came away without having realized any progress in negotiations towards normalization.⁷⁴

In the wake of Vance's failed visit, his rival within the Carter administration, National Security Advisor Zbigniew Brzezinski, was given a shot at improving relations with the Chinese. Brzezinski's normalization strategy constituted a tripartite emphasis on developing people-to-people relations, strategic cooperation, and normalization negotiations.⁷⁵ The most important of these people-to-people initiatives would concern science and technology cooperation: cultural relations did not offer Beijing the material incentive that closer ties to American science could; trade grew but the big-ticket sales were the result of technology sharing agreements.⁷⁶

Documentary evidence from both CSCPRC and government archives strongly suggests that Brzezinski's strategy for leveraging scientific cooperation to achieve normalization was inspired by the CSCPRC. A March 1977 working paper was subsequently heavily drawn upon by

⁷³ 'China Rebuffs US Bid to Widen Scholarly & Scientific Visits', *New York Times*, 29 June 1977; Philip Handler and Eleanor Bernert Sheldon to Cyrus Vance, 5 August 1977, folder 6372, box 527, series 1, accession 2, SSRC records, RAC.

⁷⁴ Cyrus Vance, *Hard Choices: Critical Years in America's Foreign Policy* (New York: Simon and Schuster, 1983), 79–82; ZGZYWXYJS, *Deng Xiaoping Sixiang Nianbian* [Chronicle of Deng Xiaoping Thought], 69.

⁷⁵ Zbigniew Brzezinski, *Power and Principle: Memoirs of the National Security Advisor 1977-1981* (London: Weidenfeld & Nicolson, 1985), 199.

⁷⁶ Central Intelligence Agency (CIA) report, 'US-China Trade Relations', 30 September 1977, NLC-6-8-4-4-9, JCL.

Michel Oksenberg, Brzezinski's lead China advisor and a political scientist who had been closely involved in the CSCPRC since 1972. The CSCPRC paper sent to Oksenberg argued that an enhancing of exchanges would "signify improvement" in the rapprochement, publicly advertise American interest in upgrading the diplomatic relationship, and act as a waystation to normalization. The CSCPRC had itself failed to turn this theory in practice during their 1977 trip, but their conception of the connection between scientific cooperation and normalization would have a consequential afterlife in government policy.⁷⁷

Underpinning the Carter administration's seamless adaptation of the CSCPRC's strategy was the second fundamental contribution the group made to the push towards normalization: donating its best talent to the government. As discussed in the previous sections, there had always been a close working relationship between the Committee and the government. But the two began to truly work hand-in-glove once the most important figures in the CSCPRC took over the leadership of Carter's science policy.

Frank Press was one of the brightest lights in American science. He had discovered how to measure earthquakes out at sea and designed the seismographs that American astronauts had placed on the moon. But his qualifications for his role leading, first, the CSCPRC and, then, the White House's Office of Science and Technology Policy went beyond his research: Press was also an effective political operator. Seismology was the key to monitoring underground nuclear tests — something that had led to a thirty-fold increase in official funding for the field between 1959 and 1961 — and this had won a 33-year-old Press pride of place in disarmament negotiations with Soviet nuclear specialists during a 1958 Geneva summit.⁷⁸ Press, whose mother had once lived in Harbin and who had first travelled to the PRC in 1974 when he led a CSCPRC seismology delegation there, became chair of the organization in 1975. He led the CSCPRC through two years

⁷⁷ CSCPRC paper, 'The importance of expanding US-China scientific and technical relations', 23 March 1977, '1977 – Exchange Agreement – Negotiations' folder, CSCPRCP, NAS.

⁷⁸ 'President's Science Adviser: Frank Press', *New York Times*, 19 May 1977; Kai-Henrik Barth, 'The Politics of Seismology: Nuclear Testing, Arms Control, and the Transformation of a Discipline', *Social Studies of Science* 33, no. 5 (October 2003): 744.

of strained but ultimately successful negotiations with Beijing over imbalances in the exchange program and left the group only when Carter came calling.⁷⁹ Press took with him into the White House his closest colleague at the CSCPRC, Ann Keatley, who Kissinger had earlier tried to recruit as his secretary on account of her Chinese-language abilities and who had first travelled to the PRC as early as 1971. By 1977, Keatley's longtime role as staff director of the CSCPRC meant she had more experience managing scientific cooperation with the PRC than any other American. Together, these two hires transferred much insight into successfully negotiating scientific cooperation with Beijing from the CSCPRC into the White House.⁸⁰

Through its own negotiations with Beijing, its planning for leveraging Chinese desire for US science and technology, and the transfer of its leadership into government service, the CSCPRC had already prefigured Brzezinski's use of science as a central plank in his strategy for achieving normalization. As that strategy kicked into gear in 1978, the organization made a final contribution to the success of this approach: facilitating the ever-greater provision of scientific assistance to the Chinese that Washington used to tempt Beijing to offer concessions in normalization talks.

Brzezinski accelerated his push for normalization with a trip to Beijing in May 1978. Scientific cooperation was central to this visit, as announced by his choice in gift for his hosts: a piece of the moon retrieved by American astronauts.⁸¹ Deng took up with Brzezinski where he had left off with Ford and Kissinger, pressing him to approve some of China's thirty different outstanding requests to buy US high-technology, including the brand-new IBM 370/138 computer.⁸²

Spotting an opportunity, Brzezinski sent Press to follow up on these discussions. Press would travel to China at a moment where the promise of Dengist reform was becoming reality: in March 1978, Deng had told the largest-ever gathering of Chinese scientists — some 6,000 — that

⁷⁹ Ann Keatley to Philip Handler, 14 January 1975, '1975 – General' folder, CSCPRCP, NAS.

⁸⁰ *CEN*, vol. 5, no. 1, February 1977; oral history interview with Ann Keatley (Anne Solomon), New York, 25 June 2018.

⁸¹ *FRUS*, vol. XIII, document 111.

⁸² *FRUS*, vol. XIII, documents 64 and 110; Brzezinski, *Power and Principle*, 200.

science and technology were the linchpins of the Four Modernization program that had been advocated by Zhou and that Deng had championed after the premier's death.⁸³

Press's trip was an unmitigated triumph. Carter's advisor offered to supplement unofficial transnational contacts with government-to-government exchanges that would give China access to state laboratories that researched secretive topics such as space technology. Chinese leaders were deeply impressed with what Press offered. A PRC embassy official abroad told an American colleague that Press's delegation had been considered a "major success", both towards further science and technology cooperation and normalization. Beijing realized, he said, that there was a "need to turn to the US, as the technological leader of the world".⁸⁴ China had also enjoyed the chance to "stick its finger in Moscow's eye" by hosting the largest-ever foreign delegation of American science personnel — just weeks before Press took a smaller contingent to the Soviet Union.⁸⁵ That same month, Vice Premier Gu Mu returned from a two-month tour of Western Europe and became another powerful voice arguing for utilizing foreign expertise to catch up with the West, strengthening the domestic coalition in favor of the scientific cooperation proposed by Press.⁸⁶

During Press's trip the Chinese also finally agreed to restart a student exchange program. In a moment that would come to occupy a place in the folklore of Sino-American transnational contacts, Press had called his president at 3am Washington time. "Frank, what's happened, [has] another Mount Etna ... exploded?" "No, I'm in China with Deng Xiaoping," Press responded, "Deng Xiaoping insisted I call you now to see if you would permit 5,000 Chinese students to come

⁸³ ZGZYWXYJS, *Deng Xiaoping Sixiang Nianbian* [Chronicle of Deng Xiaoping Thought], 54–56, 90, 110–13; ZGZYWXYJS, *Deng Xiaoping Nianpu* [Deng Xiaoping Chronicle], 1:438; ZGZYWXYJS, *Zhou Enlai Xuanji* [Selected Works of Zhou Enlai], 2:412–6; 479.

⁸⁴ The Situation Room to David Aaron, 28 July 1978, NLC-1-7-3-41-5, JCL.

⁸⁵ Michel Oksenberg to Zbigniew Brzezinski, 30 June 1978, 'China (PRC), 1978/6-8', box 8, National Security Affairs – Zbigniew Brzezinski material – Country Files, JCL.

⁸⁶ Gu Mu, *Huiyilu* [Memoirs] (Beijing, 2009), 276–90; ZGZYWXYJS, *Deng Xiaoping Nianpu* [Deng Xiaoping Chronicle], 1:168–69; Li Lanqing, *Breaking Through*, trans. Ling Yuan and Zhang Siying (Oxford: Oxford University Press, 2009), 52–55.

to American universities”. Before slamming the phone down, Carter barked: “Tell him to send 100,000”. Within five years, Deng had.⁸⁷

On Press’s plane back from China, Oksenberg made his own urgent call — to CSCPRC director Bullock, asking her to come to Andrews Air Force base to meet Press’s plane. Oksenberg knew the government needed the CSCPRC’s help to substantiate the bold proposals made during the visit — and was not going to waste a moment.⁸⁸ The beginning of government-to-government scientific cooperation did not diminish, then, the importance of the Committee. Indeed, the specific proposals made by Press were in the areas of agriculture, resource exploration, seismology, high-energy physics, public health, and space science — all but the last of which had been foci for the CSCPRC’s exchange program.⁸⁹

In the wake of the Press visit, the CSCPRC, working with the government, would realize the ambition they had nurtured since 1966: deep, productive collaboration with Chinese scientists. In the six months between Press’s visit and the final normalization agreement, the CSCPRC initiated new collaborative projects in agriculture and space technology and began student exchanges, with fifty Chinese students arriving before the year was out. This scientific exchange was administered by the CSCPRC but often structured through government-to-government agreements in the areas proposed during the Press visit.⁹⁰ Simultaneously, the Committee oversaw an explosion in exchange traffic: 1978 saw a year-on-year *tripling* in the number of exchanges.⁹¹ The CSCPRC was at the heart of the government’s plan for the United States to manage this vast increase in Chinese interaction with American science; the hand-in-glove public-private cooperation of 1978 would only deepen after the normalization deal that capped that year.⁹²

⁸⁷ Carter speech, ‘What Can the US and China Do Together?’, 10 November 2013, available at https://www.cartercenter.org/news/editorials_speeches/jc-what-us-china-can-do-together.html. Accessed 21 August 2019.

⁸⁸ Oral history interview with Mary Brown Bullock, by telephone, 25 April 2018.

⁸⁹ Michel Oksenberg to Zbigniew Brzezinski, 30 June 1978, ‘China (PRC), 1978/6-8’ folder, box 8, National Security Affairs – Zbigniew Brzezinski material – Country Files, JCL.

⁹⁰ *CEN*, vol. 6, no. 5; Smith, ‘Role of Scientists’, 128; Handler to Press, 18 September 1978, ‘1978 – Student Exchange Program – General’, CSCPRCP, NAS.

⁹¹ *CEN*, vol. 6, no. 5.

⁹² Lampton, Madancy, and Williams, *A Relationship Restored*; Suttmeier, ‘Scientific Cooperation and Conflict Management in US-China Relations from 1978 to the Present’.

Deng had given the game away in 1975: he saw American science and technology as critical to his dream of modernizing China — and was ready to cut a deal to get it. For the first half-decade of the rapprochement, the Chinese had claimed that their interest in scientific exchanges was exclusively the building of friendship. This was not true. The Chinese gained an enormous amount of knowledge and technology through cooperation with the United States, at almost no cost. The CSCPRC knew this and, unlike Ford and Kissinger, the Carter administration listened to the group's argument that scientific cooperation offered leverage in negotiations with Beijing — no doubt in part because CSCPRC alumni were crafting Carter's science policy. Brzezinski's success in using this leverage in his strategy to achieve a final normalization deal was attributable to the CSCPRC not only in conception, but also in execution: after the Press visit of July 1978, the group had provided the bandwidth for the US government to make good on its promises of rapidly expanding scientific assistance to China. Brzezinski's quid pro quo was an agreement on US terms: in December, Deng agreed to normalize relations even as the United States continued to sell arms to Beijing's rival on Taiwan.⁹³ He probably would not have done so without the CSCPRC's dedicated campaign to prove the value of American science to China.

Conclusion

Whether American scientists liked it or not, their attempts to restart cooperation with their Chinese colleagues were deeply connected to diplomacy and politics. Initially, the Committee on Scholarly Communication had resisted this (even if other American scientists had not). The scientists that founded the group believed in a global scientific community that presupposed that national borders were not (and certainly should not be) a barrier to scientific cooperation. In the China of the 1960s,

⁹³ Fardella, 'Sino-American Normalization'.

though, they were. The Chinese government exercised total control over its scientists and was determined to have science serve political objectives.⁹⁴

Having failed to reopen contacts by ignoring politics, the CSCPRC embraced a political role. The organization won their own government's favor by playing up its centrist political identity and, crucially, its willingness to support and not to criticize US foreign policy. Lobbying from the US government, as well as Beijing's changing priorities in its science policy and in its relations with the United States, convinced the Chinese to work with the Committee. The CSCPRC then sought to use their centrality in Sino-American scientific exchanges to pursue their mission of promoting meaningful research cooperation between American and Chinese scientists — but these efforts were only partially successful, and still blunted by political barriers. In response, in 1977, the group redoubled their political maneuvering, working with the Carter administration to achieve the upgrading of the diplomatic relationship that Beijing had made a condition for deep collaboration between American and Chinese science.

While the CSCPRC was prepared to play politics and to work with both governments to realize its scientific ambitions, the group never became a supplicant to either. Nor did the group ever lose sight of its primary goal of promoting scientific cooperation. When the Committee saw working with the two governments as the necessary means to forward their scientific agenda, they did so effectively and with alacrity. But when either government obstructed the scientific value of Sino-American cooperation, the CSCPRC showed itself able and willing to confront state power, whether that meant smuggling social scientists into China or lambasting the Ford administration for giving American technology away for free.

An adequate explanation for the CSCPRC's resolute commitment to scientific cooperation with China requires recognition of the power of American scientists' ideological belief in the value of globalizing scientific knowledge and their scientific community. As the organization repeatedly

⁹⁴ Although not on the scale of the political controls placed on Chinese scientists, American scientists, too, found themselves subject to politicised restrictions during the 1960s as in other periods of the Cold War. Wolfe, *Freedom's Laboratory*; Zuoyue Wang, *In Sputnik's Shadow: The President's Science Advisory Committee and Cold War America* (New Brunswick, NJ: Rutgers University Press, 2008).

made clear to the Chinese, the benefits to American research gleaned from the cooperation of the 1970s were strictly limited. While US social scientists were desperate to get (back) into China, its natural scientists were intrigued but hardly impressed by the highly applied science practiced in Cultural Revolution-era China.⁹⁵ Meanwhile, access to the most advanced scientific institutions in the world was allowing China to rapidly begin catching up with the United States — on the cheap. And yet, the US scientific establishment only slowly began to question whether such wholesale access should be offered to the PRC when Beijing did all it could to frustrate American ambitions for learning in China.

This was because American scientists did not see their cooperation with China as zero-sum. Although the CSCPRC often drew attention to disparities in the scientific exchange program, in fact, American scientists were largely comfortable with a transfer of knowledge that was primarily in one direction. As the Committee's important 1977 working paper put it, "helping China develop scientific and technical capabilities now ... will contribute to the solution of global problems — such as food production, energy need, and environmental concerns". This stance was patronizing, perhaps — but it was not parsimonious. More fundamentally, American scientists did not believe that knowledge belonged to a single state or its scientific community. They believed that the creation of scientific knowledge was for the betterment of all of humanity. The spread of that knowledge to China, then, was celebrated, not resented. "There is", the CSCPRC believed, "a faith that US science will benefit from progress anywhere in science" (after all, the superiority of American technology meant that the United States was best placed to subsequently exploit such progress).⁹⁶ That belief explains why the CSCPRC and American laboratories and scientific institutions only ever *threatened* to pull out of scientific cooperation with the PRC: had American

⁹⁵ For a more sympathetic examination of Cultural Revolution science, see Sigrid Schmalzer, 'Labor Created Humanity: Cultural Revolution Science on Its Own Terms', in *The Chinese Cultural Revolution as History*, ed. Joseph Esherick, Paul Pickowicz, and Andrew G. Walder (Stanford, CA: Stanford University Press, 2006).

⁹⁶ CSCPRC paper, 'The importance of expanding US-China scientific and technical relations', 23 March 1977, '1977 – Exchange Agreement – Negotiations' folder, CSCPRCP, NAS; Wang, *In Sputnik's Shadow*, 195.

scientists seen their contacts with China as transactional, they would have broken off what was a deeply unequal program many years before such threats were even made.

In the nineteenth and early twentieth century, some Chinese at the top and bottom of society had resisted the idea that scientific knowledge was universal and that China should accept a global/foreign standard of scientific knowledge (even as some of their compatriots embraced this idea).⁹⁷ The Cultural Revolution had seen a powerful resurrection of such views.⁹⁸ But as that championing of vernacular knowledge dampened in the early 1970s, the idea of a global epistemic community — subscribed to so vehemently by American scientists — also came to be championed by Chinese leaders, in particular (but not exclusively) Deng Xiaoping. Deng echoed American scientists when he said that “the advance products of scientific research are the product of humanity’s labor; what reason is there not to accept them? What shame is there in accepting them?”⁹⁹ The Sino-American scientific relationship had been partially restored before Deng’s return to Chinese politics. It was when Deng occupied the driving seat in Beijing, though, that the nexus between American scientists’ desire to restore connections to Chinese science and the Chinese government’s thirst for knowledge and technology from outside became profoundly productive.

The largely-overlooked history of how American and Chinese scientists became reacquainted between 1966 and 1978 is an important moment in the history of science and in the origin story of today’s global scientific community. It also adds a further important case study to the growing historiography that connects transnational scientific engagement with the diplomacy of governments. As historians have argued with reference to other Cold War relationships, the influence of scientists on diplomacy is particularly profound at times of flux in international relations. In the case of the United States and China, the rapidly evolving relationship of the late

⁹⁷ Frank Ninkovich, ‘The Rockefeller Foundation, China, and Cultural Change’, *The Journal of American History* 70, no. 4 (1984): 799–820; Bullock, ‘American Exchanges with China, Revisited’.

⁹⁸ Wang, ‘US-China Scientific Exchange’.

⁹⁹ Author’s translation. ZGZYWXYJS, *Deng Xiaoping Sixiang Nianbian* [Chronicle of Deng Xiaoping Thought], 48–49.

1960s and the 1970s afforded powerful agency to scientists who saw the opportunity for, first, diplomacy for science and, then, science for diplomacy.¹⁰⁰

This history is also deeply relevant to accounts of Sino-American diplomatic relations, helping to explain why Carter and Brzezinski were able to achieve the normalization deal that eluded Nixon, Kissinger and Ford — a critical change that cannot be accounted for by analyses of geostrategy and triangular diplomacy.¹⁰¹ This episode also connects to the longer history of the two country's relations. During the nineteenth and early twentieth centuries, Washington had built its China policy around the concept of the Open Door, whereby China should be kept open for unfettered trade. US designs for China went beyond commerce, however: Americans sought to convert Chinese, first, to Christianity and, then, to a modernity based on science and democracy.¹⁰² William Appleman Williams has shown how the Open Door foreign policy was powerfully extended into US global foreign policy during the Cold War. But it seemed to have been rebuffed from its original object: China's Communist revolution was followed by a purge of American influence in the country.¹⁰³ And yet, an American belief in the imperative of prizing open China survived beyond 1949 and shone through again in American scientists' efforts to open China to a scientific community that the United States imagined to be global (but in practice was US-centric).¹⁰⁴

Their success in doing so was ultimately of world historical consequence. By the 1980s, the United States was again China's most important scientific collaborator, reprising a role it had

¹⁰⁰ For a useful distinction between these differing forms of science diplomacy, see The Royal Society, 'New Frontiers in Science Diplomacy'. For other notable examples of Cold War science diplomacy, see Evangelista, *Unarmed Forces*; Joseph Manzione, "'Amusing and Amazing and Practical and Military": The Legacy of Scientific Internationalism in American Foreign Policy, 1945–1963', *Diplomatic History* 24, no. 1 (January 2000): 21–55; Wolfe, *Freedom's Laboratory*; '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, no. 1 (1 April 2018): 1–3.

¹⁰¹ A point not lost on historical actors. See oral history interview with Zbigniew Brzezinski, Washington, DC, 19 January 2010.

¹⁰² Pomfret, *The Beautiful Country and the Middle Kingdom*; Ninkovich, 'The Rockefeller Foundation, China, and Cultural Change'.

¹⁰³ William Appleman Williams, *The Tragedy of American Diplomacy* (Cleveland, OH: World Publishing Company, 1959), 34–49.

¹⁰⁴ Madsen, *China and the American Dream*; Robert A Bickers, *Out of China: How the Chinese Ended the Era of Western Domination* (Cambridge, MA: Harvard University Press, 2017).

enjoyed for decades in the early twentieth century.¹⁰⁵ The acquisition of expertise from the United States in the 1970s and thereafter was a critical tool in China's lifting of hundreds of millions of its people out of poverty in the most successful development effort in human history. This result was beyond the imagination or intention of American scientists in the 1960s and 1970s. Nonetheless, it may well not have been realized had they not anyway persevered in their efforts to rebuild Sino-American scientific cooperation.

¹⁰⁵ Lampton, Madancy, and Williams, *A Relationship Restored*.