

Creating Common Ground With Chinese Researchers

Amid rising political tensions, a group of Western and Chinese scientists interested in biogovernance began meeting regularly to better understand each other and their shared scientific future.

In 2006, China's biomedical sector was the ninth largest in the world. By 2021, it had become the second largest, after the United States. In the context of the increasing global importance of scientific collaboration, China's rapid advance—the nation is now the world's second largest investor in science—provides good reason to engage with Chinese scientists. But growing political tensions and censorship since the COVID-19 pandemic have made it increasingly difficult for Western scientists to engage with their counterparts in China—and have all but brought in-person meetings to a standstill.

We argue that it is precisely because of these circumstances that a concerted effort must be made to engage in sustained dialogue with Chinese scientists. Such initiatives can promote mutual understanding and the development of shared scientific values, an outcome that would be beneficial to all parties, as it can raise awareness and understanding of scientific norms—as well as what constitutes misbehavior—in China and in the West. Furthermore, these conversations can serve as foundations for developing mutually fruitful, cooperative scientific projects when political tensions die down.

As three social scientists with expertise on life science governance in the United States, United Kingdom, and China, we came together with strong support from Chinese colleagues—in particular Ruipeng Lei, executive director of the Center for Bioethics at Huazhong University of Science and Technology—to do an experiment in engagement in the late summer of 2021. Our aim was to host a trusted forum where researchers inside and outside China could meet regularly, under the motto “sharing perspectives on shared challenges.”

We named our initiative BioGovernance Commons, following political economist Elinor Ostrom's reasoning

for using “commons” as a verb. That is, we take the view that community-building and dialogue-sharing are achieved through continuous practices of “commoning”: acts of support, conflict negotiation, and experimentation that shape a transnational knowledge system through ongoing relations among individuals.

In practice, due to COVID-19 travel restrictions, the BioGovernance Commons opted for monthly online meetings focusing on ethical and regulatory issues in the biosciences. Each meeting consisted of 15 to 20 participants from Europe, Asia, and North America with related social science or natural science backgrounds. We organized discussions around specific readings and presentations by experts, and the participants kept in touch outside of the meetings via social media (WeChat) groups and email.

Through discussions with Chinese scientists, we identified key issues to improve comprehension of and engagement with China. There are several areas that both non-Chinese and Chinese practitioners should pay close attention to as they work to build more productive international exchanges. These observations are also informed by our experiences working with researchers in China and other communist or post-communist states on environmental science, clinical science, synthetic biology, genomics research, and biosecurity issues over the past two decades.

Imagining “Chinese science” as one behemoth operating under a uniform political directive may be conceptually convenient, but it is counterproductive when addressing practical questions that plague research collaborations with China. Collaborators must take deliberate steps to confront problematic stereotypes, obtain a deeper understanding of the geographic and historical realities of research in China, and provide Chinese scientists the opportunity to establish a meaningful voice amid political tensions.

Bringing nuance and context to conversation

During the first few BioGovernance Commons sessions, we received valuable reminders that stereotypes and overgeneralizations go both ways. At the outset, Chinese participants were keen to correct what they imagined were non-Chinese participants' shared prejudices about China. This revealed how some Chinese scientists may feel a sense of insecurity and distrust about their reception at transnational research exchanges—feelings exacerbated by the Western media's tendency to overgeneralize about China's advances and the threats posed by scientific developments. At the same time, the Chinese participants' corrections betrayed their own generalizations about the West as being arrogant and discriminatory, particularly in how it views "Chinese science" and the rise of the Global South. It became clear that beginning these conversations with such corrections, which establishes a defensive posture, is counterproductive to building trust. As moderators, we realized how important it is to maintain a nuanced and contextualized view of both Chinese and Western science and scientific practitioners.

Another set of challenges involves the process of "commoning" when engaging with Chinese scientific communities. Few academics would assume that providing a space to exchange views could be enough to create meaningful dialogue. But respecting cultural diversity may not bring cohesion either, because it can be used to legitimize group division and mutual indifference. During an exercise aimed at "making common," we urged participants to actively address areas where they may lack crucial details about each other. Thus, commoning includes not only sharing lofty views of how emerging technology should be regulated, but also understanding and accommodating the nitty-gritty of everyday research practice. For example, we learned that Chinese academics find it more convenient to use VooV, a Chinese videoconferencing service, than Zoom. Many also rely on commercial email addresses rather than institutional ones. And weekends may paradoxically be the busiest time for Chinese researchers, as it is customary to schedule academic conferences in China over the weekend.

Finally, it is important to acknowledge that Chinese and Western scientists cannot engage with each other without a proper understanding of who each is engaging with, and what the multiple realities and worldviews of Chinese scientists may be. If Western collaborators rely on old impressions, their judgment will be impaired, particularly when Chinese scientists react in ways that counter those old stereotypes. Of course, we are not suggesting that every scientific dialogue or research collaboration with Chinese researchers needs to go through the commoning process as we organized it; that would be impractical and unrealistic. But we consider it important to alert scientific practitioners of the need for a systematic approach to better comprehend China, particularly in light of the diversity and evolving history of China's science establishment.

One China, four worlds of science?

Even before attempting to establish productive common ground with researchers in China, it's vital to recognize the multiple "worlds" of China's science enterprise. In 2001, economist Hu Angang famously described China's uneven socioeconomic development with the phrase "one China, four worlds." A similar stratification can also be observed in Chinese academia. Generally, China's first world of science lies along its east coast in the cities of Beijing, Shanghai, Guangzhou, and Shenzhen—cities globally recognized for science. China's second world consists of a small number of inland cities, such as Wuhan, Chengdu, Chongqing, Kunming, and Hefei—regional innovation hubs with ambitions and capacities that are pushing Chinese science forward. These regional hubs have a radiative effect that is seeding research and innovation belts in nearby regions, which can be described as China's third world of science. These places are still struggling for domestic and global visibility. Finally, there are vast areas of the country, particularly in the west, where infrastructures for research and development remain underdeveloped. Since 2006, China has been reforming this scientific system through its Whole Nation Approach (*juguo tizhi*). Although the approach has been highlighted at the international level by UNESCO, it has left the country's highly stratified system intact because it follows an elitist investment logic where resources are channeled through a handful of ministerial-level organizations toward specific priority areas and selected research institutions.

Consequently, China's research culture, far from being a uniform monolith, is highly heterogeneous. Understanding this variation is essential to effectively engage with Chinese researchers. Not only do norms diverge from discipline to discipline, but for a country that has a university system as large as all of Europe's, there are naturally divisions and subdivisions within specific research areas. These barriers, combined with domestic rivalries among Chinese scientists and a culture that does not prioritize open communication, sometimes mean that scientists in one city may be unaware of what their peers are doing in another.

Additionally, depending on the specific research field, the actual topology of Chinese science may vary significantly from our general portrayal above; there is a tremendous diversity of experience. When Western individuals and institutions consider potential partners, they should be aware that these domestic disparities exist. Practically, transnational collaboration calls not only for realistic and differentiated expectations, but also for a firm awareness of local contexts to avoid overgeneralization of either China's research capacity or its controversies. The impact of domestic differences in science may be lost on Western academics, who focus on the country's one-party state system. However, to establish a more nuanced understanding of research partners in China, it's necessary to have a fair assessment of the conflicting, if not contradictory, narratives about Chinese research norms and capacities.

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Who are Chinese scientists?

The question of who Chinese scientists are was an area of deliberate exploration for our group. Through further commoning exercises, participants came to understand the profound significance of the generational changing of the guard now underway in China. Like other developing countries, Chinese science suffered a brain drain in the second half of the twentieth century. For early generations of Chinese scientists trained overseas—those who were educated during the 1980s and 1990s—working in the West was key to a successful career, and many chose to stay in the countries where they studied. At this time, the symbolic power of Western standards also created an implicit division of labor between the developed and developing worlds' sciences, where developed-world scientists led with ideas, while developing-world scientists were considered reliable “lab labor,” delivering research and solving problems.

Today, however, China's economic and scientific rise has transformed brain drain into “brain circulation.” According to China's Ministry of Education's 2019 statistics, the number of Chinese students seeking education abroad increased by 6.25%, but the annual number of overseas Chinese students choosing to return after graduating increased by 11.73% compared to the previous year. Having grown up with China's steady climb in global influence and under a system of patriotic education, those born in the 1990s represent the bulk of China's overseas returns, and are mostly employed in finance and science and innovation.

This generational change has important implications for constructively engaging with Chinese scientists. Previous discussions in the United States have highlighted the teacher-student ties that American scientific communities have forged with Chinese scholars since the 1970s as a substantial asset in promoting scientific cooperation. However, we recommend caution in assuming that this model is desirable to a new generation of Chinese scientists. The persistence of this stereotype also highlights a new knowledge asymmetry: while an increasingly large percentage of Chinese scientists are trained in the West and know how Western labs operate, most non-Chinese scientists have limited opportunity or interest in learning about research cultures in China. More importantly, this asymmetry has created an acute awareness of the outdated image of “Third World scientists”—once a common perception of Chinese scientists by Western academics—among the younger generation of Chinese scientists. Quite rightly, these scientists have a higher expectation of being respected

and treated as equals in both research settings and in the formulation of professional norms.

One further effect of China's rapid scientific advances is that the question of who Chinese scientists are can be perplexing even to Chinese researchers themselves. Previous empirical studies on life science research culture in China that one of us (Zhang) conducted in Beijing, Changsha, Guangzhou, Shanghai, Tianjin, Wuhan, and Xi'an before the pandemic revealed that this was especially true for young scientists. These researchers were just launching their careers in China and expressed the tensions of being caught between the uncompromising demands of their global peers and those of their home institutions. Although the young scientists Zhang interviewed were frustrated with old stereotypes of the Third World scientist, their leverage and resources are still limited. They spoke of wondering whether they can forge a third way beyond following either the party line or the Western lead, and pondered how they might reform the innovation system—both domestically and globally—while working their way up within it. Arguably, for this new cosmopolitan generation, “Chinese scientist” is an identity they simultaneously want to break away from and are keen to reestablish. How this identity evolves requires serious and collective reflections as well as tactical deliberations—both of which can be aided by Western colleagues who take a sophisticated and nuanced approach to collaboration.

Can the Chinese scientist speak?

The layers of effort required to establish candid dialogues will be spent poorly if the process fails to assure that the voices of Chinese scientists are heard and valued. To this point, we want to invoke distinguished scholar Gayatri Chakravorty Spivak's famous question posed in her interrogation of the possibility for those who exist on the periphery to be heard: “Can the subaltern speak?” On one level, the question, “Can the Chinese scientist speak?” is an appeal for reflection and actions on some of the deeply embedded racial and sociopolitical prejudices that habitually discredit or underplay the contributions made by Chinese individuals and institutions. An equally challenging aspect of this question is how scientific communities in emerging powers such as China can establish their genuine and meaningful voice amid internal and external political tensions. Censorship by the Chinese government undoubtedly adds further barriers to this.

But this question reflects a further truth, which is obvious but still warrants emphasis: that Chinese scientists are

individuals. Assuming that every (China-based) Chinese academic is a “government scientist” or has uniform political views is not helpful and simply untrue. In our BioGovernance Commons meetings, after the initial overcorrection phase mentioned above, we had frank and critical discussions on thorny issues, including biosecurity governance and the commercialization of gene-editing CRISPR technologies. However, our Chinese peers also acknowledged that their arguments on regulatory issues were sometimes “thin”—premised on principles and speculations of what should be done, with little empirical knowledge of what the wider Chinese society wants.

A previous study by one of us (Zhang) has identified that an underdeveloped institutional culture for science communication and public engagement, as well as the absence of a robust social research tradition, have curtailed the ability of Chinese scientific communities to contribute to policy debates and ethical considerations. Recently, this lopsided development between research capacity and communicative capacity has received increasing attention from Chinese scientific communities. At the end of 2021, a professor from southern China suggested that our BioGovernance Commons meetings should also incorporate discussions on how to build capacity for policy deliberation and public outreach. When two of us (Vogel and Ben Ouagrham-Gormley) shared our biosecurity research in one of the BioGovernance Commons meetings, Chinese participants were keen to learn the findings—but they were equally interested in learning how research findings in general can be turned into education and capacity-building programs.

Western academics often reduce the complexity of the agency of Chinese scientists to the singular constraint of navigating government censorship. This overlooks the limited training resources available to Chinese academics who wish to articulate the full details and social context of their work. In fact, even if censorship ended tomorrow, many Chinese academics would still have difficulty engaging wider social and scientific communities or creating a coherent narrative of their scientific vision. International exchanges can do much to support Chinese academics in developing and amplifying their independent and substantiated voices.

Furthermore, many Chinese universities still struggle with providing social science training (including ethics training) within science, engineering, and related degree programs. And until very recently, the field of science and technology studies in China mostly consisted of philosophers and statisticians who have limited experience with the kind of qualitative research that is key to providing a “thick” account of the hows and whys of research practice in China.

Our Chinese colleagues are eager to overcome this chronic issue, and in our meetings they were as interested in new regulatory visions and ideas as in the social research methods

that helped develop these views. Engaging with Chinese academics and asking for clarification about their thinking is one way to help them present their work in context. This simple point cannot be taken for granted, as it requires Western academics to get beyond the habitual mindset of seeing China as homogenous and encourages and enables context-specific dialogues.

Misconceptions about Chinese science and scientists today are eerily similar to those once held about Soviet science and scientists, particularly in the weapons field during the Cold War. It was only through sustained cooperation and communications, enabled in part by reciprocal programs such as the US Cooperative Threat Reduction Program, that Western observers acquired a textured view of the variegated landscape of science and scientists in the Soviet and post-Soviet world. At the same time, these post-Soviet scientists also gained a better understanding of the strengths and limitations of their Western counterparts. In spite of the regular emergence of political tensions, particularly with Russia, this mutual understanding has led to a sustained dialogue, allowing for continued engagement during tensions and renewed cooperation after tensions died down.

While cooperative dialogue with China can achieve lofty geopolitical goals, it's important to also pay attention to the individuals involved. This is to say, instead of denigrating China's scientific rise as an achievement of an autocratic machine, scientists need to recognize the human story in the organization and delivery of these advancements, grasping both the societal reasoning and social ambivalences involved. Only through this recognition can researchers anticipate what changes could be on the horizon.

We started the BioGovernance Commons as a small endeavor to understand and bring together people from China and the West who are critical to the future of science. Although Western discourse is often preoccupied with whether Chinese scientists are sufficiently independent from the government, we believe a more fundamental question is how to nurture a shared culture and willingness for conversation. How do we make sure that different scientific communities can speak—and that we can hear each other when we do? For the three of us, the BioGovernance Commons is one way to create such a sustainable and meaningful dialogue.

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