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in Context

The U.S. government has convicted scores of individuals who participated in the Chinese Thousand Talents Program. I try to place these convictions in a historical and political context.

onsiderable press coverage has been given to the efforts by China to appropriate selective U.S. science and technology advances for commercial advantage without the benefit of either commercial license or official permission. An overview of this issue may be found in a U.S. Senate 2019 report. The authors of this Senate report claim that China uses more than 200 talent recruitment plans, most notably the Thousand Talents Plan, to illegally transmit information about U.S. research and technology advantages in exchange for "salaries, research

it is, has been to prosecute purported violators under whatever existing statutes seem to apply. A selective sample of these successful prosecutions is discussed here.

funding, lab space, and other incentives." The report concludes that, "While China has a strategic

plan to acquire knowledge and intellectual property from research-

ers, scientists, and the U.S. private sector, the U.S. government does

not have a comprehensive strategy to combat this threat." For the past

decade or so, the de facto U.S. government tactical plan, such that

ROB-AND-REPLICATE TECHNOLOGY TRANSFER

The Thousand Talents Plan-like strategy to obtain unlicensed technology may be informally described as a "rob-and-replicate" model of technology transfer. Of course, under the table technology transfer has been a staple of international commerce throughout history. Ironically, the strategy that the United States used so successfully against European countries during the industrial revolution is now being turned against it by the Chinese. Historian Doron Ben-Atar offers this perspective:

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"Smuggling technology [by the U.S.] from Europe and claiming the privileges of invention was quite common and most of the political and intellectual elite of the revolutionary and early national generation were directly or indirectly involved in technology piracy. And they were following in the footsteps of their ancestors. Americans had welcomed such practices since the early days of European colonization.... The embrace of smuggled technology, however, transcended political and diplomatic distinctions."2

Ben-Atar claims that hundreds of billions of dollars of annual economic losses are a result of such infringements. "Unlike physical property," Ben-Atar writes, "intellectual property has no 'natural' manifestation. to help achieve global economic hegemony in their times.

It is also useful to compare China's "rob-and-replicate" approach with that of postwar Japan. Pat Choate describes the four elements of the Japanese economic development strategy that began under the U.S. occupation after World War II: 1) government control of limited development capital, 2) denial of access of foreign business to domestic markets, 3) centralized government planning for economic development, and 4) technology acquisition at any cost and under any circumstances.3 Japan's postwar aggressive extralegal mining of intellectual property and trade secrets, pirating and counterfeiting of technology, ineffective protection of foreign patents, overly narrow scope of domestic patent protections, and selective and limited recognition of international protections of patents, copyrights,

Japan's parasitic strategy. These Japanese trade practices were known to all informed observers at the time and had been tacitly approved by the U.S. government for many decades and by many presidents. Choate specifically mentions the Eisenhower and Reagan administrations as sympathetic to this unusual and nonreciprocal economic arrangement. Historically, the occasional initiatives by the U.S. government to encourage consistent, reciprocal intellectual property (IP) policies seem to have been politically manipulated, partisan, minimally effective, and sporadic.

The point of this discussion is to place China's current parasitic trade practices in a reasonable and historically accurate context. The historical record reveals that 1) China's parasitic trade practices are not unique but rather are historically grounded; 2) China's nonreciprocal trade practices are done more or less in plain sight and, as with Japan, recognized by the affected governments; 3) China, like Japan, does not interpret intellectual property interests in the same way as European and North American nations; and 4) China, like Japan, the United States, and other countries over time that have pursued aggressive economic development at all costs, has relegated moral sensitivities over the ownership of all property, intellectual or otherwise, to inconsequential. An understanding of trade piracy requires an appreciation that expropriation of intellectual property has historically accompanied aggressive nation-building, pure and simple. Were we to contrast Japan's expropriation of U.S. intellectual property with China's, we can see that China's strategy is distinctive primarily in that 1) it has not been done with as much tacit consent of the U.S. government; 2) it is stealthier; and 3) it is more broad based, including manipulation of the institutions that generate marketable intellectual property. The Thousand Talents Plan and The Confucius Institutes program illustrate this difference. But

In a very real sense, the difference between the current Chinese efforts to purloin the intellectual property of the West and the U.S. efforts a few centuries earlier is not motive but rather timing and the presence of international regulations and trade organizations.

It is a perceptual fiction that depends exclusively on the authority of the state." What is more, such technology piracy in centuries past violated no international laws as there were none at the time. The concern over the protection of intellectual property worldwide began in earnest only in the 20th century. In a very real sense, the difference between the current Chinese efforts to purloin the intellectual property of the West and the U.S. efforts a few centuries earlier is not motive but rather timing and the presence of international regulations and trade organizations. Both modern China and 18th century America share the aspirations of using technology piracy

and trademarks have been well documented.4 I note that this was never much of a secret. As a consequence of such abuses, Japan was placed on a U.S. Trade Representative watch list in 1989. The U.S. General Accounting Office specifically listed Japanese tactics such as patent flooding (the practice of filing many patent applications claiming minor and incremental improvements to weaken the protection of the original patent) and patent dilution (surrounding core patents with domestic patents that contain no substantive improvements to force foreign patent holders into negotiating unfavorable cross-licensing or patent exchange agreements) as parts of all attempts to undermine IP protections are ultimately just variations on a theme.

Be that as it may, the questions I address here are independent of these broader geopolitical issues. What I seek to understand are answers to these two questions: First, what were the specific charges behind the successful prosecutions? Second, what are the likely effects of these convictions?

DONATIONS WITH STRINGS ATTACHED

As the court decisions discussed below make clear, China's talent recruitment plans are clearly intended to further its national economic, political, and security interests by, among other things, suborning U.S. educators, researchers, and technologists. This last goal also deserves a somewhat measured reaction, for the practice of undercutting or bypassing the historical independence and academic integrity of educational institutions is shared by other interests as well (for example, corporations, partisan groups, etc.). To illustrate, according to a 2023 report by the American Association of University Professors, Charles Koch has "overseen more than US\$458 million in grants to over 550 universities and higher education-adjacent nonprofits since 2005 [for the purpose of] influencing curricula (including textbooks chosen and courses offered) to faculty appointment and dismissal, selection of research fellows, and more, Koch has been able to realign academic departments and centers at campuses across the country to serve his group's ideological and economic interests."5,6 It should be emphasized that focusing on the source of such manipulation distracts from a complete understanding of the real problem. Rather, the proper focus should be placed on any effort by external interests to coopt the integrity and scholarly independence of educational institutions, independent of who did it or why it was done. Circumvention of institutional

conflict-of-interest (CoI) policies may provide a useful legal framework in which to ensconce this manipulation, but the larger issue relates to the integrity and independence issues, which are independent of motives: geopolitical, ideological, economic, or personal. China's approach is but one manifestation among many, each one of which presents an identifiable threat vector in the assault on the concept of an autonomous, diversified, and well-rounded education.

One common theme behind this core problem is the institutional pressures for external funding in academia. As state and local government funding of education has decreased, institutions have looked to non-state-funded revenues such as tuition increases, donations, national laboratories, and other federal and privately sponsored research funding to make up the difference. All too often, the most important qualification for such sought after external funding is neither that the work will attract prestige to the institution nor that it will enhance its academic image but rather that the sponsored work will not be a drain on the host institution's budget, will generate indirect revenue to supplement the administration's prerogatives, and will at least not be palpably illegal. This has led some institutions to accept funding offers that come with proverbial "strings attached." This might amount to external controls over textbook selection,^{7,8} faculty hiring, 9,10 the creation of agenda-oriented group-think tanks, 11,12 or creating settings that involved direct institutional CoI policies such as the Thousand Talents Plan under discussion here. It must be understood that the genesis of all of these problems is the political retreat from the principle that education and scholarship should be treated as a public good and be funded as such. As long as politicians consider public universities to be glorified job training programs and potential profit centers, these sorts of abuses are inevitable, and the

tolerance for pay-for-play donations from special interest influencers will continue, ¹³ even if this means undermining the competitive advantages of host nations and industries.

While support for the Department of Justice (DoJ) prosecutions relating to the Thousand Talents Plan is understandable, any complete understanding must be placed within an international and historical context like that above. The motives are neither new to the Chinese nor new to our time.

PARTIAL LIST OF CONVICTIONS

What follows is a partial summary of the convictions as of the time of this publication, as confirmed by the official government press releases (PRs) referenced in the analysis. A few caveats are in order. First, this summary is based only upon convictions. Arrests, acquittals, allegations, dismissals, detention hearings, reports of successful flights to avoid arrest and prosecution, and charges that were dropped as a result of plea deals, are not included. While remaining faithful to the principle that individuals must be considered innocent until proven guilty, this summary likely underrepresents the extent of the problem. But while it may underrepresent the extent of the problem, it is unlikely to underrepresent the scope.

Second, I only deal with prosecutions regarding the theft of technology and IP/trade secrets through universities, research organizations, and businesses. The DoJ reports several convictions of members of Chinese spy networks that are excluded here because they signify different categories of crimes (for example, spying and sabotage).

Third, my goal was to gather enough information to circumscribe the specific allegations that were proved in court. Toward that end, I only require a representative sample and not an exhaustive listing. I only analyzed enough data to enable me to create the list of legal and ethical issues below in

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Table 1. Once I was comfortable that this summary list was not growing appreciably, I stopped collecting data. I am comfortable that any lapses in coverage will be minimal and random.

With these cautions in mind, this is my representative list of twelve convictions resulting from the Chinese Thousand Talents Plan, organized by the date of convicting agency PR (and the PR number if available, as of this writing). Additional detail may be obtained from the linked PRs found in the list of references.

- U.S. Attorney's Office PR (dated 9 September 2019)¹⁴
 - Affiliation: biological systems engineering professor at Virginia Tech
 - Charge: "one count of conspiracy to defraud the United States, three counts of making false statements, and

- one count of obstruction by falsification"
- Sentence: time served (three months) and home incarceration for approximately two years
- DoJ PR 20-438 (dated 11 May 2020)¹⁵
 - Affiliation: former neuroscientist at Emory University
 - Indictment: "filing a false tax return"
 - Sentence: one-year probation on a felony charge and restitution of over \$35,000 to the Internal Revenue Service (IRS)
- DoJ PR 20-933 (15 September 2020)¹⁶
 - Affiliation: former scientist at Los Alamos National Laboratory
 - Charge: "charge of making a false statement to a

- government investigator about his involvement in the Thousand Talents Program"
- Sentence: five-year probation and a \$75,000 fine
- 4. DoJ PR 21-439 (14 May 2021)¹⁷
 - Affiliation: rheumatology professor/researcher at The Ohio State and Pennsylvania State Universities
 - Indictment: "making false statements to federal authorities as part of an immunology research fraud scheme" relating to the People's Republic of China (PRC) Thousand Talents Program
 - Sentence: 37 months imprisonment and restitutions of US\$3.4 million to the National Institute of Health and US\$413,000 to Ohio State University
- 5. DoJ PR 21-145 (16 June 2021)¹⁸
 - Affiliation: former chief scientist, exploration technology at the Center for Nanotechnology, at NASA's Ames Research Center at Moffett Field (1996–2021)
 - Indictment: for "making false statements to the Federal Bureau of Investigation...regarding his employment by a Chinese government-funded program that recruited individuals with access to foreign technologies and intellectual property"
 - Sentence: 30 days imprisonment and a US\$100,000 fine
- 6. DOJ PR 21-689 (22 July 2021)¹⁹
 - Affiliation: unnamed U.S. corporation
 - Pharge: "one count of conspiracy to violate the International Emergency Economic Powers Act (IEEPA), and the Export Administration Regulations (EAR), four counts of mail fraud, two counts of wire fraud, one count of conspiracy to gain unauthorized access to a protected

TABLE 1. Legal and ethical issues implied by the Thousand Talents prosecutions.

Legal issues	Ethical issues
Wire fraud	Lack of transparency with employers
Filing false tax returns	CoI regarding employment
Tax fraud	Violation of trust
Failing to report foreign bank accounts	
Making false statements to federal authorities	
Theft of trade secrets	
Unauthorized access to computer system	
Destruction of evidence	
Visa fraud	
Research grant fraud	
Acting as an unregistered agent of a foreign government	
Smuggling	
Commodities fraud	
Violating international laws (IEEPA)	

IEEPA: International Emergency Economic Powers Act.

- computer to obtain information, one count of making false statements to an FBI agent, three counts of subscribing to a false tax return, and four counts of making false statements to the IRS about his foreign assets"
- Sentence: 63 months in federal prison, US\$362,698 in restitution to the IRS, and a US\$300,000 fine
- 7. DoJ PR 22-348 (8 April 22)²⁰
 - Affiliation: former professor at the University of Kansas
 - Charge: "three counts of wire fraud and one count of false statements after he deliberately concealed that he was also employed by a government-affiliated university in the PRC, while working on U.S. government funded research at KU"
 - > Sentence: pending
- 8. DoJ PR 22-487 (10 May 2022)²¹
 - Affiliation: served as principal engineer for global research at Coca-Cola (2012-2017) and packaging application development manager for Eastman Chemical Company (2017-2018)
 - Indictment: "conspiracy to commit trade secret theft, conspiracy to commit economic espionage, possession of stolen trade secrets, economic espionage and wire fraud" on behalf of the PRC Thousand Talents Program
 - Sentence: 14-year prison term, three-year supervised release, and a US\$200,000 fine
- 9. DoJ PR 22-645 (16 June 2022)²²
 - Affiliation: former engineering professor at the University of Arkansas
 - indictment: "making a false statement to the FBI about the existence of patents for his inventions in the People's Republic of China (PRC)"

- relating to involvement in PRC Thousand Talents Program
- Sentence: 12 months and one day imprisonment and one year of supervised release.
- 10. DoJ PR 23-2 (3 January 2023)²³
 - Affiliation: turbine sealing technology engineer, General Electric Power (2008–2018)
 - Indictment: "conspired to steal GE's trade secrets surrounding GE's ground-based and aviation-based turbine technologies" on behalf of the PRC Thousand Talents Program
 - Sentence: 24-month prison term, one year supervised release, and a US\$7,500 fine
- 11. IRS PR (dated 27 April 2023)²⁴
 - Affiliation: former chair of chemistry/chemical biology at Harvard
 - Indictment: "lying to federal authorities about his affiliation with the PRC's Thousand Talents Program and the Wuhan University of Technology (WUT) in Wuhan, China, as well as failing to report income he received from WUT" related to his involvement in the PRC Thousand Talents Program
 - Sentence: time served (two days), two years of supervised release with six months of home confinement, a US\$50,000 fine, and US\$33,600 in restitution to the IRS
- 12. DoJ PR 23-96 (25 January 2023)²⁵
 - Affiliation: former research oceanographer at the National Oceanic and Atmospheric Administration
 - Charge: "knowingly and willfully received a salary for his services as an employee of NOAA/AOML, from the People's Republic of China"
 - Sentence: sentenced to time served

CONVICTION SUMMARY

I return to my original question: what were the specific charges behind the successful prosecutions? In Table 1, I summarize what appear to be both the core legal and ethical issues in the twelve cases listed in the section "Partial List of Convictions."

I observe that from the point of view of the most pressing sociopolitical crises of our time, the legal issues seem to be mostly unremarkable, mundane, and pedestrian and not uncharacteristic of what one would find in the recent convictions of contemporary politicians, heads of state, business executives, and corporations. ^{26,27} The absence of existential crises and international intrigue on this list is noteworthy.

The list of ethical issues is particularly interesting because it betrays personnel rather than economic and political issues, which we might subsume under the rubric of employees' "lack of personal integrity." A careful reading of the plea deals, sentencing documents, and public statements from the courts and prosecutors reveals a common motif: the convicted individuals collectively exhibited a dishonesty and lack of transparency with their employers, especially with respect to compliance with existing institutional CoI policies. Modern universities have recently implemented more robust CoI reporting standards to a large degree due to the moral shortcomings uncovered by these investigations. That is one effect worth noting. Another deals with the formalization of the federal approach to the identification of perpetrators. On 16 February 2023, the U.S. DoJ and Department of Commerce announced the creation of their Disruptive Technology Strike Force to "target illicit actors, strengthen supply chains and protect critical technological assets from being acquired or used by nation-state adversaries."28 These two outcomes are traceable to the Thousand Talents Plan prosecutions.

SOFT ESPIONAGE

The Thousand Talents initiatives must be viewed as one component of China's broader effort to advance their global influence, economically and politically. This is what putative hegemons do. The United States did it in its early history. Japan did it after World War II. China is doing it now. It seems appropriate to think of such initiatives as a less violent, softer path toward global dominance. While I am disinclined to endorse this strategy, I will offer that it seems preferable to nuclear conflict. China is no different in that regard than other national players in history. And in typical Hegelian fashion, counterhegemons will correspondingly react with their own suite of counterinitiatives, with varying degrees of success.

Frequently mentioned as the ideological sibling to China's Thousand Talents Program is their Confucius Institutes program, which has relationships with many Western universities. Supported by China's Office of Chinese Languages Council International (aka Hanban), Confucius Institutes offer courses and collaborate in university activities while promoting China's interests.²⁹ According to the U.S. Department of State, both are part of China's military-civil fusion strategy that seeks to "develop the most technologically advanced military in the world."30 And the details of these relationships are not made public. No news there. We might label this as an example of "posttruth hegemony." This variation on the theme shares ancestry with culture wars and strings-attached philanthropy as well as IP theft and is, as I mentioned earlier, one distinguishing feature that distinguishes China from Japan.

It must be emphasized that the manipulation of universities by ideology-biased, agenda-oriented organizations is nothing new. Educational institutions have always been the targets of ideologues and zealots who seek to insert their provincial or

parochial interests into the educational experience. The difference between the Confucius Institutes and the University of Texas' Civitas Institute, 11,12 for example, is not so much motive but rather the nature of the sponsorship. The underlying motivation of using ideological manipulation as an effective agent of social change was clearly articulated by Edward Bernays a century ago. 31 The American Association of University Professors provides this context for the Confucius Institute threat in a recent report.

"Globalization has also meant that university administrators have welcomed involvement of foreign governments, corporations, foundations, and donors on campuses in North America. These relationships have often been beneficial. But occasionally university administrations have entered into partnerships that sacrificed the integrity of the university and its academic staff. Exemplifying the latter are Confucius Institutes, now established at some ninety colleges and universities in the United States and Canada... Allowing any third-party control of academic matters is inconsistent with principles of academic freedom, shared governance, and the institutional autonomy of colleges and universities. [underscore added]"32

t is critical to place the Thousand Talents Plan prosecutions in both a historical and a political context. Decontextualization is a constant companion of misdirected moral outrage. Severing political agendas from facts is guaranteed to produce bad policy and misguided legislation. Few of us in the West would disagree that a capitalist economic framework requires that the protection of intellectual

property be assured. If we can agree that this protection is necessary, the next question is, How do we achieve it? No measured response to this question is complete without context, up to and including the analysis of the root causes. As mentioned above, the absence of such a measured response by the U.S. government has thus far produced polemics over analyses and ineffective partisan reactions over sound proactive policies. A genuine concern over this issue demands a more thoughtful approach. In keeping with this concern, I offer the following observations.

First, no easy solution is likely to be equally appealing to all nations and across all cultures. Definitions and protections of intellectual property, as Ben-Atar observed, derive from the authority of a state. They are an expression of national interests and cultural norms, and not all states and cultures share the same interests and norms. A nation's willingness to accept global recognition of intellectual property rights will always reflect their national self-interest and belief systems. The protection of technology patents is just as parochial as that of copyright, and piracy in both cases is rampant. Pirated DVD sales in developing nations bear witness to this fact. But to attempt to protect any form of IP without an adequate understanding of the underlying cultural context is fruitless. And it is especially pointless for nations to seek to individually impose their understanding of intellectual property on the world. If protections are to be achieved, they will be a product of global accommodations in full recognition of the aforementioned cultural and ideological differences.

Second, the historical record reveals a political ambivalence on the part of politicians and world leaders regarding the importance of protecting IP, even in those nations where the concept is codified in law and defended. All too often, U.S. administrations in particular have viewed

IP protection through a geopolitical lens, championing tough enforcement when politically convenient and otherwise ignoring the issue in deference to other state interests. The mixed message that this sends to world leaders and businesses is that the U.S. commitment to the protection of intellectual property is transactional, temporal, and ad hoc and certainly not a core component of any successful, long-term strategic policy. This undermines any attempt to achieve global agreement on how to prevent piratocracies from blunting our economic future.

In retrospect, the prosecutions under review, no matter how well intended, seem feckless. If there is a common theme to the convictions described here, it seems to be that those convicted might have been morally challenged to begin with and not likely ideal employees and colleagues. Perhaps the Thousand Talents Plan prosecutions say as much about deficiencies in institutional employment standards as they do about deficiencies in federal policies to combat industrial espionage. Such is the history of "soft espionage," and crony capitalism, partisan politics, and other myopic endeavors of sundry stripe, for that matter. Could it be that when it comes to countenancing vice, the Zhao family is not so different than the rest of us after all?

So, what will be the overall effect of the Thousand Talents Plan prosecutions? This remains an intoxicating question, to be sure.

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