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Last November, the league of six worlds powers formed by China, France, Germany, Russia, the United Kingdom, and the United States and known as the P5+1 came to an agreement with Iran to prolong negotiations over the Islamic Republic’s suspect nuclear program. U.S. Senators Lindsey Graham (R-SC), Kelly Ayotte (R-NH), and John McCain (R-AZ) issued a statement criticizing the agreement, in particular “Iranian insistence on having an enrichment problem.” They warned that concessions such as these would lead to “a repeat of the mistakes we made with North Korea,” when “the international community allowed North Korea a small nuclear program which was to be controlled and monitored by the International Atomic Energy Agency (IAEA)” only to have Pyongyang eject the inspectors en route to a small nuclear arsenal.¹

Nowhere in their statement was an admission that the United States and its European partners were the first contractors of Iran’s nuclear program. Jacob Darwin Hamblin’s article on Iran’s nuclear origins is an exemplary case of a scholar finding inspiration rather than predestination in the cause *du jour*. Hamblin’s research and analysis provide numerous insights into why the United States and its industrial allies in Western Europe chose to accommodate Shah Reza Pahlavi’s nuclear ambitions. Their policies of supplying Iran with the brainpower and infrastructure needed to build, run, and maintain a civilian nuclear program, he contends, resulted from a blend of economic and strategic motivations, as nuclear exports became a main pillar of a pan-Western Nixon Doctrine. Industrial states with expanding nuclear-energy sectors sought to revive stalling economies and win financial and commercial leverage on producers after the oil crisis of

1973 caused oil prices to skyrocket, knocking the central plank of cheap energy that had upheld the international economic order since the D’Arcy Oil Concession in 1901. His interpretation raises new questions about how Western policymakers reconciled economics, foreign policy, and national security in late-Cold War grand strategy and how nuclear suppliers collaborated and competed alike in managing the global nuclear market by means of exports cartels, state-led negotiations, and international regulation.

The archipelago of nuclear facilities and the intellectual and human resources needed to run them in Iran predated Ayatollah Ruhollah Khomeini’s 1979 Islamic Revolution by more than a decade. Previous works, including David Patrikarakos’s indispensable Nuclear Iran: The Birth of an Atomic State, have explored the strategic, political, and psychological rationales behind the Shah’s massive investments in nuclear technology and training in the 1970s. Why individual states choose to pursue civilian or military nuclear technology is notoriously hard to pin down, but the motivations behind the supply of advanced nuclear technologies and training to consumer states seem clearer—economic benefits and bilateral relations—at least at first glance. Hamblin, a historian of science, technology, and the environment, who recently published a prize-winning study on the efforts to militarize the natural environment during the Cold War, asks why states with nuclear-export industries elected in the 1970s to supply Iran with advanced, dual-use nuclear technologies and train cadres of scientists and technicians in how to use them. Whereas William Burr has asserted that “from the very beginning, the U.S. negotiations were complicated by proliferation concerns,” presenting an initially skeptical President Richard Nixon and Secretary of State Henry Kissinger as converts to nuclear nonproliferation, Hamblin takes a different view. He maintains that American and European nuclear policies were decisively altered by the 1973 oil crisis, when the Organization of Petroleum Exporting Countries responded to Washington’s re-supply of military arms to Israel amid the Yom Kippur War with a global petroleum embargo, causing the price of a barrel of oil to quadruple and Western economies to stumble and stagnate. Western scientists and officials would henceforth act as nuclear salesmen, foisting on the Shah and his underlings multi-billion-dollar capital investments in reactors and foreign plutonium reprocessing plants with the aims of balancing their

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governments’ books and gaining leverage over Iran on matters of trade, finance, and geopolitics.

Hamblin’s British sources, in particular the notes and correspondence of English physicist Walter Marshall, director of the British Atomic Energy Research Establishment at Harwell, testify to the irrational exuberance and allied jockeying for nuclear-export agreements that broke out among France, Germany, Britain, and the United States. Pahlavi dreamt of adding 24,000 megawatts of nuclear power to Iran’s electric grid by 1994 in hopes of accelerating his country’s modernization. The oil crisis led Nixon and Kissinger, and the leaders of other net oil consumers, to entice Persian Gulf nations to spend newly gotten gains on big-ticket items provided by Western industrial champions such as Bechtel and private research institutions such as MIT. Western officials and scientists, often one-and-the-same, worked as consultants and middlemen. The ‘peaceful' Indian nuclear test in May 1974 galvanized fears in Western capitals about a cascade of state acquiring nuclear weapons, prompting them to seek greater restrictions on the export of uranium-enrichment and plutonium-reprocessing technologies that produce the fissile materials needed to build nuclear explosives. These controls were eventually institutionalized in the Zangger Committee and the Nuclear Suppliers Group.

The results were lengthy negotiations as each government maneuvered to persuade the Iranians that their contracts came with the fewest strings. But the differences were more superficial than real. Although the French appeared the least committed to agreements that went beyond the IAEA safeguards to which Iran was subject as a signatory of the Treaty on the Non-Proliferation of Nuclear Weapon (NPT), they convinced the Shah and officials of the Atomic Energy Organization of Iran to finance a plutonium-reprocessing plant in Pierrelatte, France. The percentage of the facility’s fissile-material production to which Iran had a right was meager to begin with, and non-existent after the Islamic Revolution (in fact France still owes Teheran considerable restitution). The Pierrelatte plant was symptomatic of “a series of costly investments that turned out to be blunders for Iran, but that ultimately laid the foundation of Iran’s controversial nuclear community” (1116), for example, the notorious light-water reactors (chosen for their relatively low fissile-material production) at Bushehr that German firms left undone only for Russian crews to finish the work 25 years later.

There are two remarkable innovations and three outstanding historical questions raised by this interpretation. Hamblin’s most compelling insight is that nuclear exports, like the sale of military equipment, served dual functions under the Nixon Doctrine. First, they rewarded faithful allies in strategic regions and, second, helped lower the price of oil by encouraging producers to increase production so as to pay for them, bringing in large amounts of credit and currency (mainly in petrodollars which never left the U.S.), and lessening budgetary shortfalls due to mounting trade deficits and balance-of-payments imbalances. It was also significant that the U.S. government coordinated with industrial allies in the doctrine’s ulterior “cartel-breaking strategy” (1116), although this does not
necessarily explain why Western allies competed so vigorously for the contracts in the same period that they formed the Nuclear Suppliers Group.

Second, it is refreshing to read scholarship on nuclear proliferation that treats other dimensions of international relations seriously, and a work of international history that accounts for the inherent realities and contested framings of scientific, technological, and economic artifacts. Political scientists have recently employed large-N statistical analyses of the ‘supply-side’ of nuclear proliferation to argue that Atoms-for-Peace programs hastened the spread of nuclear weapons, or that states exported sensitive nuclear technologies for narrow strategic reasons. Eliza Gheorghe has pointed out how thoroughly politics pervaded the Cold War nuclear-export market, at least in the case of Romania’s dealings with Western nuclear suppliers. The detail with which Hamblin chronicles this case indicates two more conditions that political scientists tend to downplay and one conclusion that all scholars of nuclear subjects ought to bear in mind. First, basic nuclear infrastructure is necessary whether a state wants a civilian or a military nuclear program. Second, the global nuclear market is a competitive place. The key to the nuclear regime’s success has been its evolving regulations and the frequency with which nuclear exporters have adopted and abided by them. Finally, it is extremely difficult, if not specious, to divorce economic from strategic interests, as exemplified by the Nixon Doctrine’s two-pronged design and its effect of initiating Iran’s nuclearization.

Hamblin’s interpretation raises a few questions that illuminate where future inquiries might look. First, how significant was the oil crisis to the marked increase in nuclear exports? Assurances of a relatively fair and free global nuclear market was a leitmotif throughout the NPT’s negotiation from 1958 to 1968. It seems clear that the oil crisis heightened the perceived necessity of international contracts to build nuclear reactors and train scientists and engineers in the developing world, but to what extent? Major industrial groups whose shares were mainly in government hands, such as Cogema, which would become Areva, Siemens, and Bechtel, among others, would have probably have pursued similar opportunities regardless of how much a barrel of oil cost. Furthermore, at least in the Middle East, the pace of nuclear-power reactors going on line was glacial: after all, the Bushehr reactors became the first operating power plants in the region outside of Israel in 2007.


Second, what accounts for this inertia? It is difficult not to conclude that it was the effect of the ‘peaceful’ Indian nuclear test, known as Smiling Buddha, on Western and world opinion. Hamblin convincingly shows that Kissinger, who himself later characterized the agreement’s motivations as purely commercial, consistently resisted the inclusion of tough bilateral safeguards. Instead, he subordinated proliferation concerns to economic stimulus and financial leverage, pace Burr whose documentation originates in lower levels of the Department of State. Yet, whereas Kissinger departed the scene in early 1977, many of those functionaries likely stayed on to carry out the re-prioritization of nuclear nonproliferation by President Jimmy Carter and the U.S. Congress culminating in the passage of the Nuclear Non-Proliferation Act in 1978. In addition, the formation of the Nuclear Suppliers Group in 1975 institutionalized the practice of curbing transfers of technology essential to uranium enrichment or plutonium reprocessing. Emma Belcher and Jayita Sarkar have begun looking into how Western suppliers built and maintained a quasi-cartel as a supplement to the NPT, which had proved more favorable to international nuclear sales and more vulnerable to evasion than had been hoped. Hamblin himself shows how assiduously the Britain, France, and the United States worked to arrange contracts for their national champions, all the while conspiring to enforce rules and norms of nuclear commerce. How was this achieved in light of the role played by nuclear agencies and industries in each country? More fundamentally, why did they alight on this course of competitive collaboration. Was it for the sake of shared interests or common values, or some combination thereof. Or was it instead the hegemonic influence that Washington was capable of bringing to bear?

Lastly, how does the story of nuclear globalization and nonproliferation fit with other narratives about the international history of the 1970s, in keeping with what Daniel Sargent calls “the remaking of American foreign policy”? Without losing track of the vital antecedents and consequential afterlives of this transitional period, how were nuclear weapons and the techno-political regimes that enabled them and nuclear energy alike treated in American grand strategy at a moment when the economic tide was battering the industrial West and the discourse and praxis of human rights was overhauling the ethical foundations of its soft power? Nuclear nonproliferation was a moral stance as

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well, in its case the secular and religious moral absolutes of managing nuclear vulnerability and the ethical problematic of disarming the disarmed via the NPT and the regime of global nuclear governance that it authorized. Hamblin has elucidated how, for a moment at least, economic and strategic imperatives overrode fears that proliferation would jeopardize national and global security, or subvert American power. His article also suggests that much work remains to be done in order to weave the global history of nuclear power and security into our accounts of the mid-to-late Cold War, from the cradle of uranium mining to the grave of nuclear Armageddon.10

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An instructive analysis of the myriad way in which technology and politics were fused in the French nuclear program is Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II* (Cambridge, Mass: MIT Press, 1998).