

Proliferation Among Friends: **Taiwan's** Lessons from 1970s-80s

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Abstract

The U.S. achieved nonproliferation success against Taiwan in the 1970s and 1980s by forcing this highly dependent ally to accept intrusive on-site inspections that stopped its nuclear work. Taiwan depended on the U.S. for its very survival. Indeed, the Nationalists fled from China in 1949 before the Communists' final assault could devastate their forces. Henceforth, they would be protected from Beijing's attacks by the U.S. 7th Fleet. Repeated military punishment threats against Taiwan's security (threat to abandon) and civilian nuclear program failed to change this ally's determination to acquire nuclear weapons. Success was achieved thanks to coercion by denial and dismantlement that uncovered and stopped Taipei's nuclear work. The U.S. offered minimal technological rewards to Taiwan. In sum, the success with Taiwan was a clear case of coercion by denial success, demonstrating how inducements are unnecessary when confronting a highly-dependent ally. Taiwan's lessons ought to be revisited as the U.S. prepares to confront Japan's and Saudi Arabia's possible nuclear ambitions.

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The atomic bomb [...] scared its possessors more than those who did not have it. ~ Adam Ulam, *Stalin* (1973)

If Iran develops a nuclear weapon, that will be unacceptable to us and we will have to follow suit.
~ Senior Saudi official in 2011

What can the United States do to thwart the nuclear ambitions of its allies? Looking to the future, Iran's possible nuclear acquisition and China's military ascendancy may tempt key U.S. allies in the Middle East and East Asia to consider reducing their reliance on American security guarantees by acquiring independent nuclear deterrents. Saudi Arabia has stated publicly that it will acquire nuclear weapons if Iran goes nuclear. A major demonstration of Washington's hesitation or unwillingness to respond to China's growing military assertiveness can provide the necessary proof of America's unreliability to nuclear self-reliance advocates within Japan, as well. When planning a response to the nuclear pursuit by either of these friends, the U.S. can draw lessons from the successes of its nonproliferation efforts against its Cold War-era allies, such as Taiwan.

This paper proceeds in six steps. First, it describes the evolution of Taiwan's security relationship with the United States from 1950 to 1967, when the U.S. overtures to China began in earnest. Second, it details the first steps of the U.S.-China rapprochement from 1968 to 1972, during which time Taiwan made its initial nuclear step of acquiring a Canadian heavy-water nuclear plant. Third, it discusses Taiwan's efforts to acquire a German reprocessing plant and the first U.S. coercion efforts. Fourth, it delineates in detail the U.S. coercion by threat of punishment and denial efforts from 1973 to 1979. Fifth, it addresses the largely-classified Reagan Administration clamp-down on a Taiwanese attempt to indigenously build a plutonium reprocessing facility. Sixth, it presents a detailed analysis of three factors—allied dependence, pressure and inducement—that explain the outcome of this case.

1950 – 1967: Unreliable America, Nuclear China, and Increasing Abandonment Fears

From the very beginning, the U.S. adopted an ambivalent attitude towards Taiwan because the island held little military value for Washington's Cold War strategy. In the late 1940s, the State Department rejected Chiang Kai-shek's idea of a Pacific Pact (Tucker 1992: 111-2). By 1949, the Chinese communists routed the Nationalist forces, who fled to the island of Formosa (hereafter, Taiwan). Initially, in January 1950, President Harry Truman flatly ruled out defending Taiwan largely following the State Department's pessimistic (perhaps even disdainful) view of Taiwan's contribution to U.S. foreign policy (Harding 1992: 27). However, the onset of the Korean War several months later vividly demonstrated to Washington the belligerence of the communists and their Soviet masters, forcing the Truman Administration to reverse course by sending the Seventh Fleet to save Taiwan from a final assault by Mao Zedong's forces. The fleet served two purposes. First, it was the immediate deterrent to the communist move to take over Taiwan and to destroy Chiang's forces. Second, it became a long-term trip-wire that would involve the U.S. if China attempted a full-scale invasion of Taiwan in the future. The Seventh Fleet made the U.S. and Taiwan's security indivisible. The U.S. thus became Taiwan's unmistakably reluctant protector.

The Mutual Defense Treaty, signed in December 1954, sought to defend Taiwan, but also to restrain it from initiating independent action. Although called a Mutual Defense Treaty, the bilateral agreement was not a full-fledged military alliance. The U.S. did not commit to defend Taiwan if the latter suffered an attack. Article 5 of the Treaty stated somewhat circuitously that "Each Party recognizes that an armed attack in the West Pacific Area directed against the territories of either of the Parties would be dangerous to its own peace and safety and declares

that it would act to meet the common danger in accordance with its constitutional processes” (Taiwan Documents Project [A] 2012). Furthermore, in an exchange of notes, the U.S. made clear that the U.S. would not defend Taiwan or aid in its actions if it engaged in an unauthorized “offensive action” against mainland China (Ravenal 1971: 49). Taiwan would be safe, but its freedom of action would be significantly circumscribed. The U.S. wanted the Republic of China (ROC) to be a client state, but Taipei had a different idea.

Chiang Kai-shek wanted to have an independent foreign policy, which was bound to deepen the frictions between the U.S. and China. “In the Generalissimo’s eyes Formosa was merely a stepping stone, a brief halt on the journey which would once more bring him to Nanking” (Payne 1969: 308). Indeed, the altercations over the islands of Quemoy and Matsu in 1954-5 convinced Secretary of State John Foster Dulles that Chiang sought to manipulate the U.S. into a war with the People’s Republic of China (PRC) (Tucker 2005: 113). When failure of the commune movement and natural disasters led to mass starvation on the mainland in 1960-1961, Chiang made detailed preparations for an invasion, which was only averted by an emergency visit from Assistant Secretary of State Averell Harriman in 1962 (Tucker 1992: 95-96). The U.S. concerns about Chiang Kai-shek’s actions were well-justified.

If Chiang got his way, the U.S. would become embroiled in a confrontation with China—an adversarial, but strategically consequential state with which the U.S. would soon seek normalization. To the new Kennedy Administration, Chiang continued to make the case that the Nationalists had to exploit the opening created by the Sino-Soviet split, caused by ideological and political differences (Harding 1992: 31). According to the erstwhile Nationalist leader, “Only a small force of airdropped Nationalist guerrillas would be needed to ‘ignite an explosion’”

(Tucker 1992: 96). The U.S. administration continued to assess, however, that the Nationalists had neither the military strength to pull off the invasion on their own nor the mainland domestic support for their ideas. In any event, the strategic imperatives of U.S. foreign policy dictated against actions that would pit Washington against Beijing (Harding 1992). Indeed, now that China and the Soviet Union were adversaries, the old adage that “an enemy of my enemy is my friend” made more strategic sense than ever. Faced with a choice between a friendly, but useless client and a strategically important adversary, Washington chose the latter. Chiang was quickly learning Washington’s definition of a prudent foreign policy.

In 1964, Chiang’s first major fear materialized: China tested a nuclear device. He immediately asked that the U.S. bomb Beijing’s nuclear reactors only to be rebuffed by the U.S. embassy (Tucker 2005: 115). Chiang then asked for formation of a common defense force with the U.S. because, he told Washington, he feared Taiwan could be destroyed before the U.S. was able to come to its defense (Albright and Gay 1998: 55). The implication was unmistakable: Taiwan required a deterrent. The “free people of Asia [are] ‘uncertain and scared,’” the Nationalist leader told his U.S. interlocutors (Richelson 2006: 245). This short sentence fully communicated the range of Chiang’s strategic options. He was scared of China, and uncertain that the U.S. was fully committed to Taiwan’s defense.

To make matters worse, the U.S. continued to send signals that its support for Taiwan was far from permanent. On December 13, 1963, Assistant Secretary of State Roger Hilsman called for an opening to China (Tucker 1992: 101). In 1965, during a visit to Taipei, future President Richard Nixon told diplomat Arthur Hummel—both of them knowing full well that the room was bugged by the Taiwanese—that it would be impossible for the Nationalists to return to

the mainland, and that the U.S. would have to eventually normalize relations with PRC (Tucker 2005: 116). In 1967, as candidate for President, Nixon wrote a prominent *Foreign Affairs* article, claiming that “There is no place on this small planet for a billion of its potentially most able people to live in angry isolation” (Tucker 2005: 116). The trend was ominous. For Chiang, the message was clear: normalization with China meant a watering down of the U.S. security commitment for Taiwan.

As prospects of U.S.-China normalization became more concrete, Taiwan started considering launching a nuclear weapons program (NWP). Indeed, the CIA Special National Intelligence Estimate (SNIE) noted that in the years since 1964,

“Taipei’s concern over standing alone has grown. While the nuclear umbrella of the U.S. is still *implied* by the Mutual Defense Treaty, some on Taiwan may be questioning how long they can count on all-out U.S. support. In this perspective, a nuclear weapons *option* may be seen by the GR[O]C [Government of the Republic of China] as one of the few feasible deterrents to communist attack in an uncertain future. ...At this point, Taipei may see such a *capability* as a potentially useful hedge for the unknown exigencies of the future, when Taiwan may be alone and facing great risks” (Doc. 1, emphasis added; also Richelson 2006: 245; Albright and Gay 1998: 55).

Two points in this SNIE assessment deserve special attention. First, the document stated that the nuclear umbrella was implied, but it certainly was not ironclad. After all, the 1954 Defense Treaty stated that the U.S. and Taiwan “would act to meet the common danger *in accordance with its constitutional processes*” (emphasis added). This clause likely created doubt in Taipei that in case of an attack on the island the U.S. protection would be automatic. Second, the document discussed possible acquisition of a nuclear “option” or “capability”—notably, not an actual nuclear weapon—foreshadowing a campaign to stop the Taiwanese at the earliest possible point in the nuclear weapons process.

In summary, the 1950-67 period saw the U.S. waver in its commitment to Taiwan's security, with Truman initially rejecting the responsibility to defend Taiwan only to reverse himself when the Korean War began. The Mutual Defense Treaty provided less of a binding security commitment than the name suggested. From early on, the U.S. went out of its way to demonstrate to Taiwan that it was but a client state which could well be jettisoned if the strategic U.S. interests so demanded. Mid-1960s brought more concrete signals of the U.S. desire to "peel off" the Chinese communists from the Soviet sphere of influence. As China went nuclear and Taiwan's relationship with the U.S. became less stable, Taipei considered hedging its security bets through an independent nuclear deterrent.

1968 - 1972: U.S.-China Rapprochement

The year 1968 provided both international and domestic impetuses for the U.S. rapprochement with China. On the international front, the Soviet Union announced the Brezhnev Doctrine on August 20 to prevent threats to a socialist system through internal or external subversion. The policy was seen as directed *inter alia* against China and was put into effect when Soviet tanks brutally crushed the Prague Spring in Czechoslovakia (Harding 1992: 24). The Sino-Soviet relationship had continued to sour since the mid-1960s as the Soviets increased troop numbers from 12 to 40 divisions along the Sino-Soviet border and even moved nuclear-capable military units to the border (Tucker 1992: 98). On the domestic front, Nixon was elected President a year after the Tet Offensive by the North Vietnamese, which, while militarily unsuccessful, was a propaganda victory that further drained the U.S. public's support for the Vietnam War. Nixon thus searched for an exit plan from Vietnam. Wooing China made sense both tactically (because

it would undermine North Vietnam's strength) and strategically (by encircling the Soviet Union). China also offered a vast market for the U.S. goods when the U.S. economy was fighting high deficits and inflation (Tucker 1992: 98). As Harding aptly put it: "Shortly after Nixon's inauguration, the United States and China began the cautious minuet that ultimately led to the normalization of their relations" (1992: 37-8). Normalization with China made sense in terms of international security and domestic politics.

The year 1969 was a difficult year for Taiwan. From March to August, the Sino-Soviet relations reached a new low with military clashes along the border (Tucker 1992: 98). This presented an auspicious moment for U.S.-China rapprochement. In July 1969, Nixon lifted restrictions on trade and travel with China, and, in August, Secretary of State William Rogers made the first official public statement about the U.S. interest in initiating a dialogue with PRC. The U.S. also demonstratively rejected a Soviet proposal for an Asian collective security arrangement because it would have isolated China (Harding 1992: 37-8). The final step came in November 1969 when Nixon stopped operating the Seventh Fleet in the Taiwan Straits (Tucker 1992: 102). Taiwan was left with only the U.S. verbal security assurances to rely on. Washington appeared to be withdrawing its military protection of the island.

Chiang tried two strategies for dealing with Taiwan's deteriorating strategic position. First, he attempted to draw the U.S. into conflict with China by increasing guerrilla raids across the border in 1969 in order to increase tension between Washington and Beijing (Tucker 1992: 112). Second, that year, the ROC acquired from Canada a 40MW heavy-water reactor along with the natural uranium to operate it (Doc. 1; Burr 2007; Richelson 2006: 246; Albright and

Gay 1998: 56).² This reinforced the perception in the minds of U.S. observers that Taiwan was laying a foundation for a NWP.

There is little concrete evidence about why the U.S. did not engage in a strong coercion by denial effort to preclude Canada from selling the reactor to Taiwan. However, informed speculation is possible. One possibility is that this sale was taking place some five years before India's nuclear test, which galvanized the U.S. and international nonproliferation efforts (Miller 2012). Before India's 1974 nuclear explosion, Canada's attention to nonproliferation was not stringent either (Byrne and Hoffman 1996; Doern et al. 2001).

A second reason is that opposing the Canadian nuclear exports could deepen the perception that the U.S. was using the imprimatur of nonproliferation to protect domestic nuclear industries from the Canadian competition. The recently de-classified exchanges between the State Department and its foreign embassies includes a frank acknowledgment of this perception, accompanied by a warning that the U.S. commercial nuclear efforts should not take place at the same time as the U.S. nonproliferation campaign to stifle proliferation-prone exports by the Canadians and the Europeans (Docs. 66 and 73). A brief note on the U.S.-Canadian nuclear business competition can put this issue in context.

The competition between the Canadian nuclear industry (offering heavy-water reactors) and the American one (selling light-water reactors) was fierce. The Canadian industry representatives complained about the "unorthodox" methods—including "fires of misinformation"—their American counterparts employed in trying to win over the foreign markets (Morrison and Wonder 1978: 22, 25 fn53). Indeed, right during the coercion and inducements campaign—which, as will be discussed, sought to preclude the Taiwanese from

² This was the same type of reactor that India would use to produce plutonium for its 1974 nuclear test.

extracting weapons-grade plutonium from the Canadian reactor's spent fuel—the American Westinghouse and GE corporations were building light-water nuclear reactors in Taiwan.³ Much to the Canadians' chagrin, American business was booming. By 1996, the ROC had six reactors in total—all of them American—two built by Westinghouse and four made by GE (Byrne and Hoffman 1996: 276).

The Canadian reactors had two features that made them more proliferation-prone than the American reactors. First, the Canadian reactor produced substantially more plutonium in its spent fuel than the American reactor. Ironically, during the Second World War, Canada developed this reactor precisely in order to supply mass quantities of plutonium for the British and American nuclear bomb efforts. In 1965, the Canadian industry switched totally to peaceful uses, including exports to developing countries, such as Taiwan (Morrison 2001: 34). Second, unlike the American reactors, the Canadian reactors could be refueled without having to be shut down. This could allow the reactor user to remove the spent fuel rods for reprocessing (including, extraction of weapons-usable plutonium) without alerting the outside world.

Despite Chiang's attempts to display his displeasure with the U.S.-China rapprochement, the U.S. proceeded with its new policy in the 1970s. On April 6, 1970, the Chinese ping-pong team invited the American team to play in China, and just over a week later Premier Zhou Enlai symbolically welcomed the U.S. players to China. On April 16, 1970, Nixon publicly stated that he, too, soon hoped to travel to China (Tucker 2005: 120). In July 1971, Kissinger traveled to Beijing and Nixon announced that, next year, he would be visiting China, as well. After Nixon's

³ The U.S. light-water reactors only run on enriched nuclear fuel, and, in the 1970s, only the U.S. had the technology to produce enriched uranium, thus making the reactor users completely dependent on the U.S. willingness to supply such fuel (Yager 1984: 181). Thus, the building these reactors was a double whammy for the U.S.: it was bolstering its domestic nuclear industry, and building negotiation leverage by making Taiwan heavily reliant the U.S. provision of enriched fuel. The U.S. was acquiring bargaining power, which it would soon apply against Taipei.

announcement, Kissinger observed, referring to the U.S. abandonment of Taiwan: “It is a tragedy that it has to happen to Chiang at the end of his life.” A true Cold warrior, he added: “But we have to be cold about it” (Tucker 2005: 125). By the end of 1971, it was clear that the U.S. was moving forward with normalizing the relationship with China—equally unmistakably, at the expense of Taiwan’s security.

Taiwan’s NWP represented a significant threat to the new U.S.-China relationship. If the U.S. client state—and China’s enemy—went nuclear, it would have created a significant rift between Beijing and Washington. Indeed, a Chinese official went so far as to issue a thinly veiled threat, claiming the PRC would hold the U.S. responsible if Taipei acquired nuclear weapons (Doc. 91).⁴ A spoiled normalization with China would mean a significant lost opportunity to encircle and isolate the Soviet Union and thus set back America’s most important foreign policy goal of winning the Cold War. That was absolutely unacceptable to the U.S. Stopping Taiwan’s NWP was, thus, a high priority. No wonder that a senior U.S. official once told Taiwan’s Foreign Minister that “I cannot overemphasize the importance my government places upon this matter” (Doc. 15). The U.S. would have to force Taiwan to stop and reverse its nuclear policy.

In sum, as the U.S. plans for normalization with China became more concrete, Taiwan felt increasingly isolated. The removal of the Seventh Fleet from the Straits was a particularly significant blow to Taipei’s sense of security. On the other hand, the U.S. was encouraged as it was driving a wedge between Beijing and Moscow. Taiwan’s acquisition of a Canadian plutonium-producing nuclear plant, however, risked driving an unexpected wedge of a different

⁴ It is plausible that China could use Taiwanese NWP as a pretext for aggressive action against the island. This possibility probably factored into the U.S. calculations about how to respond to its ally’s nuclear work.

kind—this one between Washington and Beijing. The U.S. sprang promptly into (mostly) coercive action.

Taiwan Launches the NWP

Domestic changes in Taiwan did not shake its nuclear resolve, which was hardened by fact that the island's relationship with the United States was quickly deteriorating. In May 1972, Chiang Ching-kuo became Premier and, in July, assumed *de facto* control of the island after his father Chiang Kai-shek became ill.⁵ The younger Chiang aggressively pursued the nuclear capability.

Washington sought to preclude Taipei from acquiring a capability to build nuclear weapons. A November 16, 1972 SNIE on Taipei's nuclear intentions stated that "Taipei's present intention is to develop the capability to fabricate and test a nuclear device" (Doc. 1). Taiwan's nuclear intent became clear less than a week later. The coercion and inducements campaign against Taiwan began in earnest after the U.S. found out through a science attaché in Taiwan's West German embassy that Taipei was seeking to purchase from Germany parts as well as design and construction services for a plutonium reprocessing plant (Doc. 74). Such a facility, as Table 1 shows, would have allowed Taiwan to separate weapons-usable plutonium from the spent fuel produced by the heavy-water reactor that Canada earlier sold to it.

⁵ After the elder Chiang died in 1975, Vice President Yen Chia-kan served as president until his term expired in 1978 at which time Chiang Ching-kuo officially took over as President.

Table 1. Plutonium Production Process

Ally's goals	Produce Plutonium	Extract Plutonium	Use Plutonium
Equipment used	Heavy-water Plant	Reprocessing Plant	Equipment to mold plutonium into weapons cores
U.S. goals	Stop Production	Preclude Extraction	Take out of ally's control—i.e., repatriate out of the country
Extent of U.S. control	More	Less	Least (once plutonium is produced, the ally can do as it wishes)

The negotiating sides were setting out their terms. On the one hand, the Taiwanese would claim that they were not engaged in activities with direct or immediate nuclear weapons applications. Instead, the ROC claimed, the activities were educational and experimental, making Taiwan self-sufficient in the nuclear fuel cycle (e.g., production and recycling of plutonium) (Doc. 75). In fact, Taiwanese sources indicated to the CIA that Taiwan's strategy for acquiring nuclear weapons was to prevent a Chinese invasion of the island by stationing nuclear devices in the Straits of Taiwan and, if necessary, detonating them to stop an incursion (Simmons 2013)

Washington, on the other hand, aimed to stop the ROC's acquisition of the relevant precursors, such as the knowledge and technology, which would give Taipei the option and the ability to launch a dedicated bomb-making effort in the future. On January 16, 1973, the U.S. Ambassador Walter McConaughy made the first "formal representation" to the ROC Foreign Minister Shen Chang-huan regarding Taipei's reprocessing acquisition plans (Doc. 76, 77). With this diplomatic warning, the U.S. government laid the foundation for the nonproliferation campaign.

ROC misstatements regarding the intended reprocessing plant generated considerable concern in Washington, leading it to threaten coercion by punishment against Taiwan's civilian

nuclear program. The ROC claimed the reprocessing facility was just experimental, while the Germans said it would handle 50 tons of spent fuel per year (Doc. 78; Richelson 2006: 267). On January 31, 1973, Ambassador McConaughy again confronted Foreign Minister Shen “to renew and reinforce our representation against proposed ROC reprocessing plant.” Shen tried dismissing the issue as a technical, scientific concern, but the ambassador quickly retorted that, quite to the contrary, reprocessing was an issue of “high policy.” McConaughy proceeded to warn Shen that acquisition of such plant would stimulate suspicions of “third countries” regarding ROC intentions. After offering to provide for ROC reprocessing needs in the U.S. or abroad, the ambassador threatened that the purchase of reprocessing facility would jeopardize ROC’s plans to acquire four American nuclear power plants which were critical to the ROC economy (Doc. 79). While this time the pressure was couched in third party concerns, it would soon be replaced by stronger-worded demands. On February 8, 1973, Foreign Minister Shen told McConaughy that the ROC agreed not to acquire the reprocessing plant. Coercion by threat of punishment against Taipei’s energy interests, supplemented by a non-military inducement (offer to reprocess spent fuel in the U.S. or abroad), appeared to have worked. The U.S. got its way, but this success proved short-lived.

Intelligence indicating a continued ROC interest in reprocessing soon led the U.S. to engage in coercion by forceful persuasion, which involved sending inspection teams to Taipei, in addition to continuing to threaten coercion by energy and military punishment. To understand why these efforts were substantively different from the initial U.S. nonproliferation measures, it is important to review the goals of the preceding pressure. The initial instances of pressure focused on ROC’s attempts to acquire nuclear *facilities*. The coercion efforts focused on

preventing the ROC from acquiring a reprocessing plant which could allow it to extract the weapons-usable plutonium from the Canadian heavy-water plant's spent fuel. If Taiwan was allowed to have both the heavy-water plant and the reprocessing facility, it would be in a strong position to build nuclear bombs. In sum, in this initial stage—January to August 1973—the U.S. was highly resolved to deny Taiwan one of the two key facilities in the weapons-grade plutonium production process.

Once the Taiwanese officials understood that the U.S. was resolved to prevent their acquisition of actual reprocessing facilities, they decided to shift their attention to becoming self-sufficient in nuclear reprocessing technology and knowledge. Eventually, this would allow Taiwan to build indigenous facilities. Becoming self-sufficient in technology and know-how meant, in diplomatic parlance, building the nuclear “capability.” Taiwan, thus, switched from pursuit of facilities to the creation of precursor nuclear “capabilities.”⁶

Meanwhile, international events brought more trouble for Taiwan. The U.S. Congress forced the Nixon Administration to end military operations in Vietnam in August 1973, which was an ominous foreboding to the Taiwanese of what soon would happen to them. James Shen, ROC's blunt journalist-turned-Ambassador to the U.S., remarked with bitter sarcasm that this American decision gave Taiwan “a breathing space” because the U.S. understood that “selling one ally down the river was quite enough for one year” (Tucker 2005: 134). With the U.S.

⁶ An example of a “capability” is the training of nuclear scientific personnel who can be called into action if and when the decision is made to build a nuclear weapon. In the meantime, the scientists can very well be engaged in civilian research. Such dual-use capabilities are harder to prohibit on nonproliferation grounds because they depend critically on the political intent behind them. Capability, in other words, is self-sufficiency in a skill that may or may not be used in the future. Scott Sagan, for example, defines nuclear self-sufficiency as a country having everything that it needs to operate an NWP if the decision is made to do so (Sagan 2011: 230; also Jo and Gartzke 2007). The U.S. aimed to prevent Taiwan from achieving such self-sufficiency in anything that was even slightly applicable to an NWP.

continuing to disengage and the future uncertain, Taiwan continued in its efforts to build a nuclear capability.

To summarize, during this initial period from May 1972 to August 1973, the U.S. used diplomatic warnings and coercion by punishment threats to prevent ROC's acquisition of a plutonium reprocessing facility. The U.S. presciently assessed, however, that Taiwan would soon switch from trying to acquire nuclear facilities to seeking precursor capabilities, such as nuclear training and technology. To stop and reverse this new NWP effort, the U.S. would continue threatening coercion by punishment. In addition, it would engage in coercion by forceful persuasion to dissuade the ROC's scientific, political and military leadership, convincing them that their efforts were futile and reorienting their work to areas unrelated to nuclear weapons.

Demarches and Inspections

Taiwan's strategy was "trying to see what they could get away with" (Nye 2013). Seeing that Taiwan's interest in nuclear matters continued unabated, the U.S. decided to engage in coercion by forceful persuasion by sending an inspections team to the island in August 1973.⁷ Led by Abraham Friedman, Director of International Programs at the Atomic Energy Commission (AEC), this coercion by forceful persuasion aimed to stop and reverse Taiwan's NWP by impressing on the nuclear personnel the consequences of objectionable behavior. Such measures thus aimed to undermine the Taiwanese nuclear efforts from the inside. As a cable from the U.S.

⁷ The bilateral—as opposed to IAEA—nature of the teams stemmed in part from the fact that, since 1971, Taiwan was replaced in the UN by mainland China and, thus, lost its international legal recognition. The IAEA inspections continued on the island on an *ad hoc* basis, following the Taiwan-IAEA-U.S. trilateral nuclear agreement, which made the U.S. a key decision-maker in Taiwan's nuclear policy (notwithstanding, its general acute dependence on the U.S. military protection) (McGoldrick 2012).

Taipei embassy to Washington put it, “In the months ahead, visits of this sort...will be essential means of keeping us informed of ROC nuclear activities and developments, and will also help to guide ROC scientists and officials away from proscribed activities” (Doc. 40).

Another attempt to stifle Taiwan’s nuclear capabilities soon followed. On September 4, Assistant Secretary of State Arthur Hummel told a senior Taiwanese official Victor Cheng that ROC’s interest in reprocessing “could cause *some countries* to be concerned about applications to which ROC intends to put its nuclear program” (emphasis added). In the exchange that followed, Cheng claimed that Taiwan sought nuclear capabilities that were far removed from nuclear weapons. He perceptively clarified that “ROC [was] not considering purchase of any equipment at [the] moment, but was thinking only of acquiring knowledge which could be used later.” Hummel responded that there was no confusion on this matter, and clearly indicated that the U.S. was “concerned” about training in reprocessing—and was opposed the ROC’s acquisition of reprocessing technology (Doc. 3). The U.S. sought to prevent its ally from getting even the precursor capabilities that it might use for nuclear weapons production in the future.

The ROC was not deterred, and Washington soon found out that Taipei was making inquiries with the French firm Saint Gobain Nucleaires to build a reprocessing facility. The next disarmament team would threaten coercion by punishment against Taiwan’s key national goals, and its message would be more direct than that of the previous pressure attempts. Abraham Friedman, once more tasked with leading the team in November 1973, had “to demonstrate concretely our suspicions of ROC intentions and the seriousness with which we regard this matter” (Doc. 4). Specifically, Friedman was to tell Foreign Minister Shen and Victor Cheng that:

- “Should we have reason to believe that the ROC has moved from *consideration* of a nuclear weapons program to *actual implementation*, we would be forced to react. That reaction would be based upon the circumstances at the time” (emphasis in original).
- “For these reasons we strongly urge the ROC to use offshore reprocessing facilities” in the United Kingdom or in a future regional reprocessing center in East Asia. “It is equally important to us that plutonium derived from reprocessing be stored and fabricated into fuel elements outside [of] Taiwan to avoid raising any doubts about ROC intentions” (Doc. 4).

The U.S. threatened unspecified coercion by punishment. The message was clear: Taiwan had to stay away from an independent reprocessing capability in order to foreclose any possibility that it could gain access to weapons-grade plutonium. Once again, the emphasis was on Taiwan’s “intentions” and its “consideration” of nuclear capabilities. Washington aimed to prevent Taiwan from becoming self-sufficient in nuclear technology and know-how.

During the visit, in addition to threatening punishment, disarmament team leader Friedman offered some non-military inducements, such as the U.S. ensuring ROC fuel supply, doing “its best” to assist with reprocessing, and helping Taiwan’s “sensible program of nuclear research.” Friedman also promised that he would “expedite approval of amended U.S./ROC bilateral [nuclear cooperation] agreement” so that Taipower, Taiwan’s nuclear energy company, could get contracts to get more light-water nuclear reactors. Foreign Minister Shen responded that the “earlier plan for purchasing reprocessing plant had been definitely dropped and the ROC had no intention of proceeding in the face of U.S. opposition. The ROC knew its limits and would not be so foolish as to jeopardize U.S. nuclear cooperation without which they could not succeed” (Doc. 6). The Taiwanese sounded chastened.

“Worthwhile and successful.” Foggy Bottom no doubt welcomed Deputy Ambassador William Gleysteen’s upbeat assessment of the November 1973 visit to Taiwan. “While there

was no way to guarantee that no one in [the] ROC would harbor atomic ambitions,” Gleysteen wrote, “short of a flat statement to Premier Chiang I think we have done everything possible to underscore the firmness of our position” (Doc. 7). The U.S. appeared to have exhausted its options at this level of pressure.

Washington adopted a vigilant attitude. It realized that Taiwan’s abandonment fears would be exacerbated after March 1974 when the U.S. withdrew from the island the tactical nuclear weapons that America stationed there during the Vietnam War (Albright and Gay 1998: 55; also Richelson 2006: 274). The U.S. anti-proliferation stance was also no doubt strengthened by India’s May 1974 nuclear test, which New Delhi pulled off using the same Canadian heavy-water plant that started operating in Taiwan a year earlier (Hersman and Peters 2006). Soon, the U.S. again threatened energy punishment—and, additionally, military punishment—against its ally. This was after Washington found out that ROC again tried acquiring reprocessing technology and equipment from a Belgian firm, Belgo Nucleaire, which turned down Taiwan’s request (Doc. 12).

The increasing persistence of Washington’s nonproliferation demands and the gravity of its threats finally produced a higher-level response. In reply to the latest demarches by U.S. Ambassador Leonard Unger, Premier Chiang Ching-kuo called in Unger on September 14, 1976. “We do not deny that we have made some progress in nuclear research,” Premier stated, “but this progress is not towards weapons; it’s towards peace.” In a seemingly unguarded statement he said that ROC “*for the time being* decided not to expand [reprocessing facilities]” (emphasis added). Premier also pledged that “all reprocessing research, peaceful or otherwise, will be terminated,” and that Foreign Minister Shen would prepare a written memo “setting forth GROC

commitment not to manufacture nuclear weapons” (Doc. 18, 20). The U.S. now possessed an unequivocal assurance from Taiwan’s highest authority, and could hold Taiwan accountable based on this non-nuclear pledge. “We’ve ridden the ROC quite hard on this one” (Doc. 20). Senator Clifford Case tersely summed up Washington’s nonproliferation campaign against Taiwan.

The opportunity to hold Taiwan to task soon presented itself as the U.S. intelligence contradicted Chiang’s emphatic assurances. A December 30, 1976 U.S. Embassy cable to the State Department stated that “We have rather compelling evidence that in spite of solemn and public assurances given by the ROC and personally by Premier Chiang, the Chinese may not yet have given up their intentions of acquiring a capability for reprocessing nuclear fuels.” Specifically, Chiang had given authorization for continued negotiations with another Belgian firm, Comprimo, violating his own assurances, which he gave in September 1976. The U.S. decided to try to force Taiwan to abandon its nuclear activities by sending another inspections team, which would threaten “grave danger to their crucially important nuclear energy projects, among other things” (Doc. 24). Just as the Taiwanese doubted the U.S. verbal or written treaty commitments, so, too, did the Americans rightly come to distrust the non-nuclear assurances they received from Taipei. The U.S. again had to wield the stick of energy (and, possibly, military) punishment to get its way.

Taiwan’s statements and behavior convinced the U.S. that it had to take robust action against its ally’s NWP. In February 1977, Chiang Ching-kuo bluntly remarked that ROC had the “capability of developing nuclear weapons,” but “will never engage in the production of such weapons” (Doc. 30). This was equivalent to saying, a former CIA official remarked, “I’ve got

flower and other ingredients, and the oven is on, but I am not baking bread” (Simmons 2013). Furthering the U.S. concern, a March 8, 1977 U.S. Embassy Tokyo cable to the State Department stated that the ROC had not cooperated completely with IAEA, as the international inspectors found a secret gate in the cooling pond, where the spent fuel was stored after being removed from the heavy-water reactor. The gate was not shown on the facility plans that the ROC submitted to the IAEA and could have allowed the Taiwanese to secretly withdraw spent fuel rods for reprocessing (Doc. 33). Indeed, the reason the IAEA inspectors did not see the gate was because the Taiwanese stacked the fuel rods in such a way as to completely obstruct it (Simmons 2013). The gate was apparently part of the original Canadian design to allow transfer of fuel rods from the cooling pond into a reprocessing cell (Albright and Gay 1998: 58). The information about the gate came from a Taiwanese informant the CIA had been cultivating. Washington contacted Ottawa, and the Canadians were very cooperative in checking the design and confirming the existence of the gate (Simmons 2013).

The U.S. then engaged in coercion by disablement. In late March 1977, the U.S. confronted the ROC, forcing it to stop the prohibited activities (Doc. 34). National Security Advisor Zbigniew Brzezinski was optimistic in his memo to President Carter on April 29, 1977: “The American effort to crack down on this project clearly yielded its desired results” (Doc. 36). The next U.S. team made sure that the NWP was rendered inoperable.

In May 1977, a new disablement team met with ROC officials about reorienting their nuclear program to peaceful uses. The team covered two areas:

- *Spent fuel*: IAEA measured, transferred to dry storage and sealed 118 spent fuel rods (about 10lb of plutonium). ROC agreed to have the spent fuel transferred out of the country.

- *Safeguards:* existing safeguards did not provide the information on the number of fuel rods going into and out of the reactor; the U.S. would investigate the possibility of installing a rod counter; in the meantime, the Taiwanese agreed to re-load the reactor only when IAEA inspectors were present and to seal the refueling machine at other times to prevent unauthorized removal of the spent fuel rods (Doc. 39).

The disablement team confirmed “the actual termination of nuclear research and development activities which had previously involved weapons usable materials.” Coercion by disablement appeared to work, but intelligence kept coming in that “low level” work continued in potentially weapons-related areas, such as “laser isotope separation” that had clear use in uranium enrichment (Doc. 53).

In early 1978, Taiwan again produced conflicting signals. On March 10, 1978, Ambassador-at-Large for nonproliferation Gerard Smith wrote that “there is lingering suspicion, not entirely without foundation, that bomb-related work may be continuing on Taiwan (HE [high explosives] testing, laser isotope separation experiments [uranium enrichment], etc.)” The memo stated that “it seems clear that some of this work *could* be related to weapons efforts, but it is not clear that it is intended to be so related” (Doc. 45, emphasis in original). Its plutonium efforts having been stopped and reversed, could Taiwan be attempting a second route to the bomb through uranium enrichment?

The question of ROC’s intentions was difficult to put to rest, and the U.S. sent another inspections team to the island once again to engage in coercion by forceful persuasion. Having tried to bring both the political and military nuclear personnel into line by using threats of energy punishment, the U.S. decided to reinforce its message at the highest level. Secretary of State Cyrus Vance demanded that Taiwan end its nuclear work and received an assurance from Chiang Ching-kuo.

The U.S. was pleased with Chiang's response, but decided to remain alert. "The explicit and all-embracing quality of Chiang's statement is highly reassuring" (Doc. 53). However, a September 18, 1978 U.S. Embassy Taiwan cable to the State Department noted:

"Admittedly, he could be expected to do this, if he saw his country's essential interests as requiring the achievement of nuclear weapons capacity. Clearly, if the ROC were to move in this direction, they would have to conceal their effort from us at all costs. In any event CCK [Chiang Ching-kuo] is now even more painfully aware of our concerns and of the necessity of convincing us of the credibility of his assurances" (Doc. 52).

The last disarmament inspection by the Carter Administration took place in early May 1979 again engaged in coercion by disablement. Having again inspected Taiwan's nuclear facilities, the U.S. decided to convert the Canadian heavy-water reactor to a light-water reactor, which would use only 20% low-enriched uranium and produced less plutonium in its spent fuel. This conversion process would take place over the next five years (Doc. 57). Coercion by disablement helped discontinue Taipei's production of plutonium-rich spent fuel.

In sum, as of 1979, the U.S. was continuing the process of stopping and reversing Taiwan's attempts to build an NWP capability. The coercion by denial (forceful persuasion and disablement) was working. Research was being re-oriented to peaceful uses. The Canadian heavy-water reactor would be converted to low-enriched uranium use over the next several years. Very little information is available on the period between 1979 and 1987 when Taiwan's nuclear ambitions resurfaced in a major way.

Reagan: Still Largely Classified Epilogue

Taiwan continued its secret efforts to indigenously construct a plutonium reprocessing laboratory. A CIA spy, who was recruited as a military cadet and who rose to the rank of colonel and deputy

director of ROC's Institute for Nuclear Energy Research—one of Taiwan's two primary nuclear research establishments—defected to the United States in December 1987 with numerous documents, detailing the progress the ROC was making (Jahn 2004; Weiner 1997). The Taiwanese apparently never stopped seeking a capability to separate weapons-grade plutonium, calling into question the efficacy of the coercion by punishment threats the U.S. had made over the years. In response, the U.S. sent in a disablement team that dismantled the facility and, as the following analysis will discuss in more detail, completely reversed the NWP. At this writing, the U.S. appears to have succeeded in preventing the Taiwanese drive for the bomb as Taiwan remains a non-nuclear power.

Allied Dependence

Taiwan was highly dependent on the U.S. in the military and energy spheres, and Washington successfully executed its coercion and inducements campaign.

Military Dependence Taipei's military dependence on the U.S. was high. The Taiwan Nationalists' inability to win against the mainland China Communists was evidenced by the fact that Chiang Kai-shek and the remnants of his army fled the mainland before the Communists' final assault. They were protected from China by the U.S. 7th Fleet—a tripwire that virtually guaranteed the U.S. involvement if Taiwan was attacked. This U.S. naval deployment thus made Taiwanese and U.S. security indivisible. Taiwan's reliance on the U.S. military protection remained complete even after President Nixon withdrew the 7th Fleet from the Straits in November 1969.

As the U.S. normalized its relationship with Beijing, it politically abandoned its ally. Over the years, the reluctance by the successive U.S. administrations to support Nationalist incursions into the mainland clearly indicated that the Americans did not share the urgency of Nationalists' return to power. Now, the U.S. peremptorily withdrew the commitment to Taiwan's long-term political independence. Taipei now had no doubt that the U.S. no longer supported its objective of taking over the mainland—or, for that matter, becoming an independent state.⁸ Notwithstanding the political abandonment, Taiwan understood that its physical existence still depended on the U.S. implicit if not explicit nuclear deterrent posture (Scowcroft 2013). The U.S. remained Taiwan's ultimate military guarantor.

The 1979 Taiwan Relations Act—which replaced the 1954 Mutual Defense Treaty the U.S. abrogated—sought to demonstrate to Taiwan that the U.S. remained committed to Taiwan's survival (Clough 1993: 148-9). The new law stated that the U.S. expected “that the future of Taiwan will be determined by peaceful means,” and that it was resolved to maintain its ability “to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan.” It also pledged to “make available to Taiwan such defense articles and defense services in such quantity as may be necessary to enable Taiwan to maintain a sufficient self-defense capability” (Taiwan Documents Project [B] 2012). While *de jure* (politically) the U.S. would give away Taiwan, *de facto* the U.S. would be highly averse to having it annexed by force.⁹ Despite this attempt to convince Taiwan that the U.S. would continue to stand by it militarily the U.S. did nothing to overturn its political abandonment of the island. Symbolically, the U.S. ambassador informed Chiang Ching-kuo of Carter's 1979

⁸ President Bill Clinton finally publicly stated this in the aftermath of the 1995-6 Taiwan Straits crisis (Ross 2003).

⁹ The American forceful response to China's actions during the 1995-1996 Taiwan Straits crisis fully vindicated this view (Ross 2003).

decision to formally de-recognize Taiwan at 4 p.m. on the day of the announcement (Simmons 2013). Taipei was so shaken by the political abandonment that it might have even considered an overture towards Moscow.

Taipei's flirtation with Moscow, even if true, was short-lived. The evidence that Taipei tried to play the Soviet card is limited and, ultimately, unconvincing. Two Soviet warships did pass through the Taiwan Strait around mid-1979 and circled the island without being harassed by the Taiwanese, generating speculation that Taiwan was trying to cultivate a better relationship with the Soviets (Copper 1979: 288; Tucker 1992: 127). Taiwan's Foreign Minister Chow Shu-kai sought to play on this perception by suggesting to the press that Taipei might seek rapprochement with Moscow (Copper 1979: 289). Apparently, President Chiang Ching-kuo never sanctioned this statement, and Chow was soon fired (Clough 1993: 136). Quite to the contrary, Taiwan's leadership sought to make the best of its relationship with Washington. In this vein, having initially denounced the Carter Administration for its decision to de-recognize Taiwan in order to establish full diplomatic relations with China, Chiang quickly softened his tone. In a full-page "Message to the American People" in the *Washington Post* on December 29, 1978, the ROC leader declared that "the change in relations between our governments will make no difference in the friendship of our two peoples. In our hearts we still have confidence in Americans" (Clough 1993: 148). Taiwan wisely chose the unreliable ally over the much more unpredictable adversary.

Whatever misgivings Taipei had about the U.S. security commitment, it had no realignment alternatives, making its dependence on the U.S. protection complete.¹⁰ Taiwan was

¹⁰ The November 16, 1972 Special National Intelligence Estimate stated: "Almost certainly there is fear that exercising a nuclear weapons option might endanger the further support of the U.S. Taiwan's security is so heavily

the U.S. client state—and would have to behave like one. In sum, Taiwan was highly dependent on the U.S. military protection. It had no reliable alternative security patrons, and would not likely survive long without the U.S. security guarantee.

Energy Dependence In the energy field, Taiwan was also heavily-dependent on the U.S. supply of enriched fuel for the American-made light-water nuclear reactors (Yager 1984: 181). The November 16, 1972 Special National Intelligence Estimate stated that a restraint on Taiwan’s nuclear behavior would be: “world-wide pressure to cut off fuel supplies and technical support for its nuclear power program which, the GR[O]C [government of the Republic of China] is acutely aware, cannot be pursued with its own resources” (Doc. 1). Indeed, on a number of occasions, the Taiwanese clearly stated that their concern was the supply of enriched fuel to operate the U.S.-supplied nuclear power reactors (Doc. 79).

So dependent was Taiwan on the U.S. fuel supplies that it went out of its way to prevent disruptions. A telling episode took place in late August 1976 when Foreign Minister Shen Chang-huan confronted the U.S. Ambassador Leonard Unger about the high-profile reports in the *New York Times* and the *Washington Post* alleging that the ROC was secretly reprocessing spent uranium fuel. Shen emphasized that Premier Chiang Ching-kuo has affirmed in the past and sought to reaffirm that “the ROC is unchanging in its position not to make nuclear weapons,” and that the IAEA inspections were continuing to prove the peaceful nature of ROC’s nuclear work. Shen requested that Unger communicate these points to the State Department so that the “future cooperation in the nuclear field would not be affected” (Doc. 13). In sum, Taiwan’s

dependent on the continued adherence of the U.S. to the Mutual Defense Treaty, that any move on Taipei’s part which might imperil that relationship would not likely be taken without long and careful study” (Doc. 1).

dependence on the U.S. fuel supplies was so significant that the ROC officials clearly were jittery at the possibility of a nuclear fuel cut-off.

In summary, the success of the U.S. campaign to stop Taiwan's NWP was made more likely by Taiwan's vulnerabilities in the military and energy fields. In addition, Taiwan had neither the realignment alternatives nor did it possess any intrinsic strategic value that could have raised the costs of threat implementation for the U.S. (potentially reducing the credibility of these threats). These vulnerabilities enabled the U.S. to pursue a highly-intrusive coercion by denial campaign that stopped and reversed Taipei's NWP.

Pressure

Coercion by denial stopped Taiwan's NWP, while the highly credible threats of coercion by punishment failed on their own to change Taipei's calculations.

Coercion by Threat of Energy Punishment The U.S. was unambiguous in its threats against Taiwan's civilian nuclear energy program. On January 31, 1973, the U.S. Ambassador threatened energy punishment, warning Foreign Minister Shen that acquisition of reprocessing facility would jeopardize ROC's acquisition of four power plants "which are of overriding consequence to the future of the entire ROC economy" (Doc. 79). The U.S. sought to break Taiwan's resolve by threatening to impose unacceptable costs on its ally's key national priority—its nuclear energy program.

During the November 1973 inspection, the U.S. made the energy punishment threat more explicit. Deputy U.S. Ambassador William Gleysteen told the Taiwanese that "ROC was

developing a critical dependence on nuclear power reactors [and the] international events had left ROC with only U.S. as source of nuclear assistance.” If ROC persisted, Gleysteen continued bluntly, “*we could not...insure the kind of cooperation necessary for [Taipei’s] nuclear power program*” (emphasis added) (Doc. 6). Coercion by threat of punishment was not limited to Taiwan’s energy interests.

Likewise, on September 7, 1976, Ambassador Leonard Unger confronted Foreign Minister Shen. “Our opposition to the spread of national reprocessing facilities is a central element in our policy for preventing the proliferation of nuclear weapons,” the Ambassador declared. “We do not accept the argument that a reprocessing facility is required to support the ROC’s nuclear power program.” The Ambassador threatened cessation of the civilian nuclear cooperation if ROC continued trying to acquire reprocessing technology or equipment. The U.S. also used the possibility of military abandonment to threaten the island’s physical survival.

Coercion by Threat of Military Punishment The U.S. used Taiwan’s military vulnerability and its dependence on the U.S. protection to try to break its ally’s nuclear resolve. Presumably intimating a possible breach of the security relationship, Unger told Shen on September 7, 1976 that the ROC’s pursuit of reprocessing “would risk jeopardizing additional highly important relationships with the U.S.” (Doc. 15, 16; Hersman and Peters 2006: 544). Despite using the vague diplomatic lingo, the U.S. message was unmistakable: Washington would consider whether defending Taiwan was still in its interest. In January 1977, inspections team leader Burt Levin threatened that sanctions would be applied not only to “nuclear matters” but also “a wide range of relations, including military cooperation” (Doc. 28). This threat was

repeated in December 1977 (Doc. 43). Washington relentlessly threatened devastating consequences through energy and military punishment.

Why would this threat be credible from Taiwan's perspective? After all, it could be argued, the U.S. already had "abandoned" the island when it decided to normalize its relationship with Beijing. Put bluntly, what else could the U.S. have done to Taiwan? The answer lies in the distinction between political and security abandonment. The U.S. did politically abandon its ally, but it did not do so in the security sphere. That is, while Washington was not opposed to an eventual political unification (under China's leadership), the U.S. remained Taiwan's military guarantor by opposing a military takeover of the island by China.¹¹

The first reason why the prospect of military punishment was highly credible was that the U.S. had already taken actions during the U.S.-China normalization (e.g., withdrawal of the 7th Fleet and the tactical nuclear weapons) that demonstrated its willingness to sacrifice Taiwan if that served America's strategic interests. Indeed, in the aftermath of the U.S.-China normalization, the U.S. had little strategic interest in Taiwan beyond its reputational investment. Before Nixon's trip to China, the island's strategic importance was based almost singularly on the U.S. adversarial relationship with Beijing. "In the eyes of the American military strategists Formosa was a staging area for a war of nerves against the Chinese Communists. If the mainland could not be reconquered, at least it could be reminded that there were anti-Communists close to its shores" (Payne 1969: 308). Unfortunately for Taiwan, it had few other strategically important functions. As one author put it bluntly: "The alliance with the Republic of China shielded territory of arbitrary value with a minimal expenditure of American resources and an unidentifiable gain in American security" (Ravenal 1971: 55). Nixon and Kissinger

¹¹ This distinction draws on my conversation with Professor Graham Allison (Allison 2012).

clearly agreed. So did Zhou Enlai who once pointedly told Kissinger: “that is still your old saying—you don’t want to cast aside old friends. But you have already cast aside many old friends. Besides, Chiang Kai-shek...was even an older friend of ours than yours” (Tucker 2005: 132). The U.S. normalization with China left Washington with almost no residual interests in Taiwan, which lent credibility to its threat to completely military abandon its strategically- insignificant ally. Taiwan, thus, knew that actual military abandonment was not costly for Washington to carry out.¹²

The second reason the U.S. abandonment threat was credible was the uncertainty as to the U.S. intentions. Had Taipei called the U.S. bluff, and the U.S. carried out the threat, the costs would have been too high, putting Taiwan at China’s mercy. The U.S. might have been bluffing, but Taipei could never be sure. The costs of a mistaken assumption were much greater than the disadvantages of a continued uncertainty, implied by the need to live under the less-than-fully- reliable U.S. nuclear umbrella. Because of the U.S. strategy, Taiwan could not pursue the NWP (and the deterrent benefits it promised) without risking to incur prohibitive short-term costs. Persevering in the face of the U.S. opposition would have meant putting the country’s existence (and, less consequentially, its energy program) on the line.

Secretary of State Cyrus Vance’s letter to President Chiang drove this point home. On September 8, 1978, Ambassador Unger delivered a letter to President Chiang from Secretary Vance (Doc. 48). Under specific instructions from the State Department, the Ambassador clarified that the demands in the letter referred “among other things, to the ROC’s terminating all

¹² There would be costs to the U.S. reputation that would make other allies—notably, South Korea and Japan— uneasy. However, these costs were not prohibitive for the U.S. Indeed, it is likely that the reputational damage had already been done by the political abandonment of Taiwan.

activities leading to the development of uranium enrichment and heavy water production ‘capabilities’ rather than just to production activities per se” (Doc. 53).

The full text of Vance’s letter is unavailable, but other sources indicate that the Secretary of State made intrusive demands. In particular, Vance warned Chiang not to engage in any “grey area” work that “might create misunderstanding about the ROC’s strict avoidance of activities prescribed [sic.] by our agreements, particularly activities involving *or leading to* reprocessing, enrichment or heavy water production *capabilities*” (emphasis added in both instances). (It is unclear what threats, if any, Vance made against Taiwan.) As before, the purpose was to stop Taiwan’s capability to start building nuclear weapons in the future: “While acknowledging that certain laser isotope separation [LIS] work may fall in a grey area, the U.S. believed any LIS work can contribute to a uranium enrichment capability and, therefore, should not be undertaken” (Doc. 53).

Chiang would not keep the U.S. Secretary of State waiting long for a reply. In his response on September 14, 1978, Taiwan’s President stated that the concerns regarding sensitive nuclear activities “have been duly noted.” He continued:

“I wish to assure you that my government is not engaged in any research work in the sensitive fields of nuclear enrichment, reprocessing or heavy-water production. The [classified / redacted – presumably, laser isotope separation to enrich uranium (Doc. 53)¹³] research work currently conducted at the CIST (Chung Shan Institute of Science Technology) has never aimed at [classified / redacted]. While there was some research work on this subject at the INER (Institute of Nuclear Energy Research) in the past, this has long been stopped and will not be revived ... the Government of the Republic of China has no intention whatsoever to develop nuclear weapons or a nuclear device or to engage in any activity related to reprocessing purposes. Moreover, our scientists in the nuclear field or in any other related fields will continue to act in compliance with the agreements between our two governments” (Doc. 51).

¹³ This information was redacted in the current Doc. 51, but revealed in Doc. 53.

Yet even these highly credible and existential threats did not succeed in breaking Taipei's nuclear resolve. Indeed, Taiwan risked American abandonment by continuing its nuclear work, which only a full-scale coercion by denial campaign was able to stop.

Coercion by Denial The U.S. stopped Taiwan's NWP by pursuing coercion by forceful persuasion and disablement. Formally, the inspections were part of the trilateral Taiwan-U.S.-IAEA agreement under which the U.S. supplied enriched fuel for Taipei's civilian power reactors (Sessoms 2013). The point, Allen Sessoms observed, was "to view, to inspect, to get *our own* assurances, not *their* assurances" (Sessoms 2013). The reason the U.S. insisted on such strict inspections was that Washington's primary interest was in cultivating the relationship with China. As Sessoms put it: "if they [the Taiwanese] have a nuclear weapon and do something stupid, we are in a war with China!" The U.S. purpose was, thus, to "avoid confrontation with China over nothing." The message to the Taiwanese was simple: "Don't do it, so we don't have to explain it to the Chinese" (Sessoms 2013).

There are legitimate civilian reasons to engage in plutonium reprocessing—e.g., basic research on nuclear isotopes, study how fuel performs in a reactor (e.g., if it cracks). The Taiwanese were seeking plutonium reprocessing technology, which, *prima facie*, was legitimate, but, as Sessoms put it, "if you get into this business, it is hard to know where you are going [i.e., what your intentions are]." Thus, underlying the legal arrangement was Taiwan's high dependence, which made it impossible for Taipei to refuse such inspections. The U.S. protection was paramount for Taiwan: "everything else is trumped by that" (Burkart 2013). Premier Chiang Ching-kuo himself best expressed this on September 8, 1978, saying he believed "the

U.S. because of its unique relationship with the Republic of China and the latter's extreme vulnerability, given our China policy, is dealing with this government in a fashion which few other countries would tolerate" (Doc. 48).

Coercion by forceful persuasion would include pressure on the top political and scientific officials. A U.S. Embassy cable to the State Department stated: "we are seeking to bring them [ROC] to abandon their efforts by, among other means, having them conclude that they cannot proceed with their intentions without our being aware of it and that if they persist in their efforts they risk grave danger to their crucially important nuclear energy projects, among other things" (Doc. 24). Indeed, as the former CIA official, who was centrally involved in intelligence efforts on Taiwan, observed: "The U.S. had the assets and technology to keep up to date on what they [the Taiwanese] were doing secretly [and we were] sufficiently confident in this information to present our position to the Foreign Minister and the President." Indeed, when the U.S. inspectors confronted the Taiwanese officials with clear evidence that the latter violated their nonproliferation promises, the Taiwanese would initially ask how the U.S. acquired that information. The U.S. response was always firm: "we just know and you must stop." The Taiwanese politely backed down: "Ok, we'll take care of that" (Simmons 2013).

While I use the traditional "inspections / inspectors" terminology, these bilateral teams were empowered to make threats against the Taiwanese in case of noncompliance. On Taiwan, the bilateral teams were backed up by the political officials. Once, as the subsequent discussion will show, the Ambassador personally intervened to make sure that the inspectors had access to a facility the Taiwanese initially refused to open—and then participated in the denial effort by lecturing the senior military staff about the importance of keeping their nonproliferation

promises.¹⁴ It is clear that Ambassador Unger was personally and consistently involved in monitoring the denial effort against Taiwan (Simmons 2013). In several instances, the U.S. also sent disablement teams to physically reverse the Taiwanese NWP.

Such coercion by forceful persuasion was carried out by the U.S. bilateral inspections teams. Abraham Friedman, Director of International Programs at the Atomic Energy Commission (AEC), led the first disarmament team to Taiwan. According to Friedman, the State Department tasked the AEC to take the lead of disarmament teams because of AEC's expertise in nuclear matters. Friedman led the teams of 4-5 people for 7-10 days to Taiwan. The mission was to "understand what they were doing, and explain what they could and could not do." The Taiwanese were always "very friendly," Friedman observed, but persistently denied having engaged in prohibited activities. "We were not threatening to actively do something *against* the Taiwanese—[instead we were threatening] *not* to do something *for* them," he said. For example, the U.S. threatened withholding "the supply of enriched fuel" (Friedman 2013). To illustrate how coercion by forceful persuasion and disablement worked, let us consider several of the inspections team efforts.

August 1973 Coercion by forceful persuasion On August 29, 1973, Friedman led the first disarmament team to Taiwan. As the U.S. Embassy note-taker put it, "Dr. Friedman [told the Taiwanese] he felt it would be extremely imprudent for the ROC to *begin planning* for a reprocessing plant and that he wished to discourage the ROC from proceeding with any such plans. ... [this] included not being willing to accept people for training in reprocessing technology" (Doc. 89, emphasis added). The strong objections to the Taiwanese drawing up the plans for a reprocessing facility—let alone the building or acquisition of an actual plutonium

¹⁴ Robert Simmons confirmed this episode in an interview (Simmons 2013).

separation plant—clearly indicated the U.S. effort to stop Taipei’s nuclear capability dead in its tracks.

November 1973 Coercion by forceful persuasion During the November 1973 disarmament inspection visit, the U.S. demands became more direct. Team leader Friedman confronted Foreign Minister Shen at the conclusion of the visit. The ROC’s ambitious nuclear power program and its “avowed interest in an entire fuel cycle ... raised problems for us [USG],” Friedman said bluntly, because “though perhaps justifiable in terms of a large power reactor program, it could also be stage for a weapons program” (Doc. 6). It is notable that the U.S. stopped couching the nonproliferation concerns in a third-party-gets-wrong-impression garb. Instead, Friedman put Taiwan on notice that its NWP intentions directly conflicted with the interests of its superpower patron. Indeed, Deputy U.S. Ambassador to Taiwan William Gleysteen could not have been more explicit in his demands:

“We [U.S.] wished ROC to observe even stricter standards than other countries and to *go out of its way to remove any ambiguity* [about its nuclear intentions] ... We were asking not only that ROC desist from seeking reprocessing capability but also that it *cease minor activities which implied continuing interest* in this direction” (emphasis added).

ROC’s intentions had to be clear—and strictly non-nuclear.

January 1977 Coercion by forceful persuasion (and Eventual Disablement) The new disarmament team arrived in Taiwan in early January 1977. The new team leader Burt Levin, Director of the ROC desk at the State Department, told Vice Foreign Minister Fred Chien that some previously “unobjectionable” research activities, such as reprocessing “were no longer acceptable” because of the proliferation risk they posed because they “involved weapons-usable materials.” Levin’s message was clear:

Because the proliferation risks were overriding, we could no longer accept any arguments involving economic benefits, resource savings, etc. ... adherence to the NPT and the acceptance of IAEA safeguards were not absolute assurances against proliferation in view of the possibility that a sovereign nation might at some time abrogate its obligations under these arrangements.

IAEA safeguards might have been adequate against misuse of facilities for building nuclear weapons. But safeguards would not prevent the building of nuclear capabilities—twice removed from the actual weapons—which was the purpose of the U.S. coercion campaign (Doc. 28). Having pressured the diplomats, the team next confronted the scientists.

Three days later Levin delivered a similar message to the scientific cadre in charge of nuclear research, making an “obvious and profound impact” on them. According to the U.S. embassy notes, the dumbfounded researchers then asked careful questions “probing the limits of our revised nuclear policy” specifically inquiring if the U.S. would “help or hinder INER [Institute for Nuclear Energy Research] program for fabrication of low-enriched uranium fuel for [the several U.S.-supplied light-water nuclear] power reactors.” Levin pointedly responded that those countries that cooperated with the U.S. on nonproliferation were likely to have “continued U.S. acquiescence” in this area (Doc. 29). The inspections team made sure that everyone having to do with nuclear research was aware of Washington’s demands.

Such efforts to demoralize the nuclear staff from the inside was important because the Taiwanese engaged in efforts to reduce the effectiveness of the inspections. First, they moved / reassigned the English-speaking, U.S.-trained scientists who could be more cooperative with the U.S. inspectors. Second, they sought actively to cultivate the inspectors by treating them to lavish dinners and gifts. Third, they clearly engaged in counter-intelligence activity. For example, when the U.S. team arrived at a secret room where, intelligence indicated, the

Taiwanese were cutting up and reprocessing plutonium fuel, they found the room to have been recently scrubbed clean and freshly painted (Simmons 2013).

The January 1977 nuclear team confirmed Washington's suspicions. There had been an "apparent GROC decision to acquire the *capability* to produce a nuclear explosive device" (emphasis added). The only way to stop the ROC was to "take a very strong position," including shutting down the heavy-water reactor, terminating all plutonium handling activities, ending all activities having to do with nuclear spent fuel reprocessing research and "completely re-directing both funds and effort into areas where there are more practical 'peaceful uses' applications" (Doc. 30). Coercion by forceful persuasion would lead to coercion by disablement.

Washington was proposing far-reaching actions. Shutting down the heavy-water reactor meant stopping the plutonium process in its initial stage by preventing Taiwan from even producing dirty (unseparated) plutonium. Furthermore, the U.S. aimed to stop not just the acquisition of an actual reprocessing plant, but the research that might have enabled the Taiwanese to build and operate such a plant in the future. The proposed coercion by disablement would not only stop the nuclear program, but substantially reverse it.

July 1978 Coercion by forceful persuasion The possibility that Taiwan was seeking to enrich uranium prompted the U.S. to send another inspections team to the island in late July 1978. The team first impressed on ROC political officials "the importance of the ROC's scrupulously adhering to its agreements in the nuclear field." Specifically, the team stressed how the 1978 Nuclear Nonproliferation Act (NNPA) Section 307 would impose crippling sanctions on nuclear exports to the ROC if it violated its nonproliferation commitments. Next, the team sought access to the military officials in charge of nuclear research.

The intrusive inspections fully earned their name during this visit. The officials at the main military research facility—the Chungshan Institute of Science and Technology (CIST)—initially refused to accept the visit from the team, but Ambassador Unger personally intervened, forcing them to do so. Unger then accompanied the team and demonstratively lectured General Tang Chun-po—CIST director and the senior official in charge of military research and development work—in front of his staff, first presenting him with a paper copy of the NNPA and specifically warning of the imposition of sanctions in case the ROC violated its non-nuclear pledges. Unger stressed that during an earlier conversation with Chiang Ching-kuo, Taiwan’s leader reiterated his nonproliferation commitments.

Tang curtly reaffirmed that CIST would “honestly and strictly observe government policy.” The team’s scientific members proceeded to confront Tang on research activities (classified – presumably, laser isotope separation to enrich uranium [Doc. 53]) that might have application to uranium enrichment, forcing Tang to state that the CIST would discontinue this line of research (Doc. 46). “The team ... looked into research activities ... which *depending on their orientation offer the potential for violation* of our [classified; redacted] agreement with the ROC” (emphasis added). The main activity of concern was the ROC’s laser research program “which, although there are other legitimate applications, could be directed at uranium enrichment.” The team found no evidence of actual work “directed at isotope separation using uranium vapor.” Indeed, unlike Taiwan’s intentions, the team’s conclusions were unambiguous: “There is no evidence to indicate that there is a weapons development program or an attempt to obtain fissile material by any means now in Taiwan” (Doc. 53).

December 1979– January 1988 Coercion by Disablement When the Reagan Administration found out through a high-ranking defector that the Taiwanese continued their nuclear reprocessing work, Washington took drastic action. David Dean, the President of American Institute of Taiwan delivered a letter from President Reagan to Chiang Ching-kuo that, in John Negroponte's words, said "we know what you're doing and, if you value the defense relationship, you've got to stop it" (Negroponte 2013). The Taiwanese "capitulated pretty quickly" (Samore 2013). The reprocessing lab was nearing completion when the U.S. forced Taiwan to dismantle it and shut down the heavy-water reactor, which was being converted to low-enriched uranium since 1979 (Richelson 2006: 367).¹⁵

This time, the U.S. would not take any chances: it had to stop the Canadian plant from producing more plutonium-rich spent fuel. The U.S. suspended shipments of heavy water for the reactor and went as far as removing the existing heavy water from the reactor to make sure it could no longer operate (Albright and Gay 1998: 60). Even though Taiwan was not yet separating plutonium for a nuclear weapon, the aim of the U.S. campaign was, in the words of one U.S. official, to prevent it from "getting even close" (Albright and Gay 1998: 60). "They weren't doing it for the fun of it," confirmed another U.S. official who inspected the facilities, revealed by Colonel Chang Hsien-Yi (Engelberg and Gordon 1988). This was "arms control at its best" (Weiner 2007: 419).¹⁶

¹⁵ According to Gary Samore, the U.S. team also poured concrete over the facilities they discovered to disable them completely (Samore 2013).

¹⁶ Most information about this apparent intelligence success still remains classified due to the traditional 30-year rule for the declassification of sensitive documents.

In summary, the U.S. penetrated deeply into Taiwan's NWP in order to stop and reverse it.¹⁷ This was a case of intrusive denial by forceful persuasion and disablement with inspectors enjoying virtually unlimited access to the top political and scientific leadership.

Inducements

The U.S. offered the least enticing incentives to Taiwan, and still achieved success. The incentives played little role in this case, with Taiwan's nuclear efforts thwarted by a robust coercion by denial campaign. The main reason why the U.S. did not provide military reassurance to Taiwan was the same reason why the U.S. decided to abandon it, in the first place—cultivating a normalization with China.

One non-military reward the U.S. offered was alternative reprocessing facilities to those that Taiwan sought to build on the island. As early as January 16, 1973, the U.S. Ambassador talked with Foreign Minister Shen Chang-huan, and outlined the U.S. concerns about the ROC reprocessing plant plans. The Ambassador said ROC could use reprocessing facilities abroad which could fully meet its needs (Doc. 77). The U.S. Ambassador reaffirmed this offer two weeks later (Doc. 79). Another week later, the Ambassador backtracked, foreshadowing the inconsistent provision of incentives, telling the foreign minister that he made promises “in general sense and subject to commercial and technical arrangements” (Doc. 80). By November 1973, the U.S. offer included ensuring the supply of enriched fuel for ROC's U.S.-built civilian power reactors, encouraging ROC's research program and accepting visits to the U.S. of ROC

¹⁷ While it is clear that the U.S. denial actions stopped Taiwan's nuclear work, it is possible that Taipei never gave up its nuclear ambitions. The point of a nonproliferation campaign is not to stop aspirations, but to stop actual proliferation activities. By that standard, the coercion by denial against Taiwan was a complete success.

scientists and enabling ROC to get contracts for additional U.S. reactors (Doc. 6). The U.S. promised to provide technological inducements.

When the time came to provide incentives, however, Washington moved slowly. By May 1977, Carter Administration officials were urging their counterparts to follow through on the aforementioned plans for provision of rewards. Specifically, they asked the Administration to give an opportunity to a visiting ROC scientist to meet the relevant U.S. officials for a “face building” session “so appreciated by the Chinese,” to “respond sympathetically” to ROC requests for licensing of Taipower reactor and to “expedite the export licensing of the enriched uranium fuel” for Taiwan’s power reactors (Docs. 37 and 38). “We have an opportunity,” the internal logic went, “to provide the moderate ROC elements...with a few ‘carrots,’ as a signal they can use with their colleagues to argue that continued U.S./ROC cooperation in the peaceful uses of nuclear energy is demonstrably in their interest.” At the end of his visit to Washington, one ROC scientist was told that the Executive Branch recommended to the Nuclear Regulatory Commission that it approve the export of enriched fuel to Taiwan. As the Taiwanese would soon find out, their excitement was premature as the fuel would not be supplied. The U.S. was clearly late in providing rewards, adding to the resentment and distrust in Taipei.

Inducements were provided inconsistently. Convinced that Taiwan’s resolve was broken, the U.S. provided a unilateral inducement in December 1977 by agreeing to put the heavy-water reactor back to work, provided that the reprocessing of the resulting fuel would take place outside of the island and the fuel would be loaded in the presence of the IAEA inspectors (Doc. 43).¹⁸ Paradoxically, while putting the proliferation-prone reactor back to work, the U.S. was

¹⁸ This faith in the Taiwanese would come to haunt Washington because the ROC would use the reactor to re-start its NWP in the mid-1980s.

slow in providing the fuel for the more proliferation-resistant power reactors that it had built in Taiwan. Ambassador-at-Large for nonproliferation Gerard Smith wrote on March 10, 1978: “our performance on export licenses for Taiwan has been shameful...when I was in Taiwan, I was pressed repeatedly by INER authorities for action on a long-pending request for 18% enriched fuel for a new small research reactor. That was in January 1977. We still have not supplied the fuel” (Doc. 45, emphasis in original). Another cable from Taiwan, dated June 16, 1980, again urged the U.S. government to provide the technological rewards that it had promised, including the parts for power reactor coolant pumps. Taipower has been using these delays in deliveries as a vivid example of how the U.S. was an unreliable supplier and “quick action on this request may take some wind out of their sails” (Doc. 58).

The U.S. understood that military insecurity drove Taiwan’s development of nuclear weapons, but it did little to alleviate that insecurity.¹⁹ When James Shen, Taipei’s Ambassador to the U.S., tried to get a congressional resolution reaffirming the U.S.-Taiwan mutual defense treaty obligations before Nixon’s 1972 trip to China, he was rebuffed (Tucker 2005: 134). A June 6, 1977 Taipei Embassy cable to Foggy Bottom warned:

“we must avoid complacency. The underlying security fears of the ROC, whether militarily or politically concerned, will continue to exist as our own role and policies in Asia develop and change, and our ‘protection’ becomes increasingly less credible. These fears will continue to provide some elements of the ROC with an argument for nuclear weapons development. ... [while] a great deal of progress has been made to date, we are not assured by any means that the problem has been totally solved, or that it may not recur again in the future when the supervision and pressure of the USG is relaxed” (Doc. 40).

¹⁹ The 1979 Taiwan Relations Act was as poor a substitute for the 1954 Mutual Defense Treaty. In any case, President Ronald Reagan’s August 1982 decision to discontinue arms sales to Taiwan largely removed remaining doubts about the fact that America’s first priority was the relationship with China, not its slowly-atrophying connection with Taiwan.

A September 18, 1978 cable reaffirmed this view: “Given the ROC’s strategic / political vulnerability, the temptations to examine the possibility of acquiring a nuclear weapons capacity have to be assumed” (Doc. 52). Taiwan originally pursued nuclear weapons in order to reduce its insecurity. Making Taiwan more secure meant going against China’s wishes, jeopardizing an important strategic objective that the U.S. has been at pains to cultivate.

In summary, the U.S. offered mostly technological rewards to Taiwan, which, Washington realized, had little to do with Taipei’s fundamental nuclear rationale. ROC was hedging its security bets for the possibility that Washington completely abandoned it to China. The reasoning was strategically sound: if the U.S. deterrent was removed, Taipei sought to acquire an alternative means to defend itself against its much conventionally stronger and nuclear-armed mainland adversary. Providing Taiwan with scientific and technological inducements contributed little to the achievement of this goal.

Nuclear-armed allies can cause serious problems for the United States. (Kargil in 1999 immediately comes to mind.) During the Cold War, the U.S. was able to leverage its alliance commitments to stop some friendly states from going nuclear. These rare, but significant nonproliferation successes hold useful lessons for contemporary efforts against nuclear-minded allies. Saudi Arabia does not possess the level of technological capability—strong nuclear scientific expertise, technology or ready access to fissile materials—that Japan does. Coercion by technology denial, while almost impossible against Tokyo, is thus feasible against Riyadh. Strong security (re)assurances may be another way to persuade the Saudis and the Japanese to temper their atomic appetites. U.S. Cold War nonproliferation efforts hold valuable clues on how to confront our nuclear-minded friends.

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