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ARTICLE



How long until midnight? Intelligence-policy relations and the United States response to the Israeli nuclear program, 1959–1985

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ABSTRACT

Why did the United States fail to stop Israeli acquisition of nuclear weapons? Existing research argues that patrons such as the U.S. should have an easy time halting proliferation by militarily and economically vulnerable clients. Nevertheless, Israel acquired nuclear weapons with relatively little American opposition. Utilizing extensive primary source research, we argue that problematic intelligence-policy relations hindered U.S. efforts to arrest Israeli proliferation as (1) policymakers often gave mixed guidance to the intelligence community, resulting in (2) limited information on Israeli efforts that reinforced policy ambiguity. The results carry implications for understanding the dynamics of nuclear proliferation and intelligence-policy relations.

KEYWORDS Israel; nuclear weapons; proliferation; intelligence; U.S. foreign policy

Introduction

From the beginning of the nuclear era, American policymakers frequently sought to limit the spread of nuclear weapons. Although varying in intensity over time – reaching a high-water mark in the 1960s – policy efforts against proliferation have been widespread, ranging from steps to limit transfers of nuclear technology, to more coercive efforts such as covert action and consideration of preventive military action. Indeed, major studies of U.S. diplomatic history see the United States' efforts to limit proliferation as constituting perhaps the core element of post-war American grand strategy, enjoying both bipartisan support within the U.S. and – often – backing from other major states.¹ Meanwhile, even studies that reject the primacy of nonproliferation in U.S. grand strategy acknowledge the United States' interest in impeding

¹See, for instance, Francis J. Gavin, 'Strategies of Inhibition: U.S. Grand Strategy, the Nuclear Revolution, and Nonproliferation', *International Security* 40/1 (Summer 2015), 9–46; James Cameron and Or Rabinowitz, 'Eight Lost Years? Nixon, Ford, Kissinger, and the Non-Proliferation Regime, 1969–1977', *Journal of Strategic Studies* 40/6 (January 2016), 839–66.

the spread of nuclear weapons and supporting programs.² In short, hindering or stopping other states' nuclear proliferation has been a consistent U.S. goal since 1945.

What, then, explains the limited American success in arresting Israel's nuclear weapons program? As other scholars note, the United States tried but ultimately failed to rein in the Israeli nuclear program.³ This outcome is, in many ways, surprising. Unlike states such as Britain, France, or the USSR/Russia, Israel was both economically weak and strategically vulnerable during the approximately two decades – from the late 1950s through late 1970s – that witnessed the development and maturation of the Israeli program. This should have allowed U.S. policymakers significant leverage to rein in Israeli nuclear ambitions.⁴ Nevertheless, and distinct from later nuclear developers such as Pakistan, India, or North Korea, a review of a broad array of declassified American archival materials shows that American policymakers generally declined to penalize Israel for its nuclear ambitions, instead adopting an attitude of benevolent ambivalence toward the Israeli nuclear program. Indeed, if anything, American economic and military assistance to Israel increased after the Israeli nuclear program reached maturity. This belies prevailing claims that the United States treated Israel much like other states by continuing to 'pursue nonproliferation objectives' even after the Israeli program was fully developed.⁵

In this paper, we do not claim to offer a complete analysis of either the U.S.-Israel nuclear relationship or the often-widespread reluctance among American policymakers (detailed later) to directly confront Israel's nuclear ambitions. Still, we argue that mutually reinforcing intelligence-policy dynamics – themselves heavily influenced by oscillations in the emphasis placed by the United States on non- and counter-proliferation relative to other foreign policy objectives – played a substantial role in shaping the American response to Israeli nuclear proliferation.⁶ By definition, reining in another country's nuclear ambitions requires the United States to (1) collect intelligence and produce assessments sufficient to keep policymakers informed on others' nuclear ambitions, and (2) act on the basis

²Thomas P. Cavanna, 'Geopolitics over Proliferation: The Origins of US Grand Strategy and Their Implications for the Spread of Nuclear Weapons in South Asia', *Journal of Strategic Studies* (June 2016), 1–28.

³See Or Rabinowitz and Nicholas Miller, 'Keeping the Bombs in the Basement: U.S. Nonproliferation Policy toward Israel, South Africa, and Pakistan', *International Security* 40/1 (Summer 2015), 47–86. Rabinowitz and Miller code the case as a success for U.S. nonproliferation efforts, yet underscore that the U.S. preference was for a non-nuclear Israel in the first place.

⁴Nicholas Miller, 'The Secret Success of Nonproliferation Sanctions', *International Organization* 58/4 (Fall 2014), 913–44.

⁵Rabinowitz and Miller, 'Keeping the Bomb in the Basement'.

⁶For related discussion of U.S. policy toward the Israeli nuclear program, see Galen Jackson, 'Nonproliferation Above All? The United States and the Israeli Nuclear Question, 1961–1974', unpublished manuscript.

of this information. These are both high bars given the myriad tasks required of the intelligence community (IC) and State Department, alongside competing American interests that may conflict with and distract policymakers from counter-proliferation efforts.⁷ This paper helps illuminate the sources of the U.S. failure to constrain the Israeli program by examining the crucial interaction of policymakers' focus on Israeli nuclear developments, and intelligence on the Israeli nuclear program.

In particular, we highlight that shifting American strategic interests vis-à-vis Israel (1) both caused and reinforced the often-significant ambivalence among U.S. leaders for moving against the Israeli program, and (2) raised the bar to American action against Israel at times when American policymakers were motivated to challenge Israeli nuclear efforts. In fact, a review of U.S. intelligence-policy relations toward the Israeli nuclear program highlights three broad phases in the U.S.-Israeli nuclear relationship. In the first phase – which lasted until the 1960 realization that the Israeli program was significantly more advanced than previously believed – policymaker interest in other strategic issues (e.g., the U.S.-Soviet competition in Europe and Asia; managing Arab-Israeli relations) led the IC to direct its limited resources toward other targets. In contrast, the second phase – lasting until 1968–1969 – saw U.S. policymakers newly attuned to the dangers of proliferation devote substantial efforts to arresting Israel's nuclear efforts without overtly sanctioning the state; intelligence collection and analysis correspondingly increased as policymaker attention pushed the IC to adapt to the new tasks. However, with an escalating rivalry with the Soviets in the Middle East and the continued growth of the Israeli program, American attention gradually shifted away from limiting Israel's nuclear options, and IC attention to the Israeli mission stagnated. Thus, the third phase – running until the end of the 1970s – was characterized by a stable but stagnating intelligence-policy relationship: policymakers focused on simply managing the political and diplomatic fallout from Israeli nuclear efforts, and the IC emphasized maintaining sufficient coverage for these limited goals.

In short, when American strategists prioritized non- and counter-proliferation over other strategic interests involving Israel, intelligence on the Israeli nuclear program helped abet this objective. Conversely, when competing interests received priority, intelligence on Israel's nuclear efforts waned and so reinforced policymaker ambivalence. Combined, this analysis

⁷On the problems of dividing IC attention, see Richard K. Betts, 'Fixing Intelligence', *Foreign Affairs* 81 (January 2002), 45; on the challenge of strategy and competing interests, see Barry R. Posen and Andrew L. Ross, 'Competing Visions for U.S. Grand Strategy', *International Security* 21/3 (Winter 1996–1997), 42–49, and Richard K. Betts, 'Is Strategy an Illusion?' *International Security* 25/2 (Fall 2000), 5–50. For specific limits on the influence of intelligence on strategy, see Stephen Marrin, 'Why Strategic Intelligence Analysis Has Limited Influence on American Foreign Policy', *Intelligence and National Security* 32/6 (January 2017), 725–42.

therefore contributes to a burgeoning literature examining the evolution of the Israeli nuclear program and the origin of U.S. counter-proliferation efforts more generally, while underscoring the interlocking bureaucratic trends and strategic developments that limited American action to halt Israel's nuclear activities.⁸

The remainder of this article proceeds in five sections. First, we outline a simple model of intelligence-policymaker relations as it relates to the counter-proliferation mission, and highlight conditions under which this relationship is likely to operate more or less effectively.⁹ Next, we use this model along with a range of primary and secondary sources to analyze three phases in the evolution of U.S. policy and intelligence on the Israeli nuclear program in the critical period, roughly 1955–1985. Finally, we conclude by briefly discussing implications of this study for the history of U.S.-Israeli nuclear relations, the study of intelligence and policy, and for the future of American counter-proliferation efforts.

The intelligence-policy nexus and nuclear monitoring

Our argument starts from the observation that states are not black boxes that simply march forward pursuing an unambiguous national interest. Instead, states are political spaces composed of competing organizations and individuals charged with shaping and executing a state's foreign policy. In theory, this system has a nominal division of labor. Bureaucracies execute decisions, while senior policymakers – the president and his or her closest advisors in the U.S. case – set policy. In practice, however, foreign policy may not work in such linear fashion. Organizations and individuals often compete when shaping U.S. foreign policy because (1) resources – including policymaker time, money, and political capital – are finite, (2) individuals can disagree over the goals a state should pursue and the means to obtain those ends, and (3) certain ends and/or means can threaten bureaucratic interests.

Three trends are notable. The first concerns the coherence of policy. Here, senior policymakers may disagree over what goals and/or tools U.S. policy should encompass, not consider an issue strategically important, or simply fail to clearly communicate or enforce priorities to bureaucratic actors.¹⁰ In turn, the absence of clear policy guidance from the senior levels of the executive branch creates room for bureaucratic actors to shirk or skirt the policy. As principal-agent theories suggest, conflicting or unclear inputs

⁸See Cavanna, and Cameron and Rabinowitz.

⁹See Joshua Rovner, *Fixing the Facts: National Security and the Politics of Intelligence* (Ithaca: Cornell University Press, 2011).

¹⁰For an example of such disagreements and ambiguity in the Obama administration see Jeffrey Goldberg, 'The Obama Doctrine', *The Atlantic*, April 2016.

from those charged with formulating policy allows bureaucratic agents to operate in accordance with existing standard operating procedures and within existing bureaucratic structures, rather than devoting time and resources to changing existing patterns of behavior.¹¹ Thus, uncertainty in the early Obama administration over whether to escalate the conflict in Afghanistan enabled senior military leaders to pursue a counter insurgency-focused strategy in accordance with existing military doctrine.¹²

Second, even when senior policymakers agree on policy, priorities may not remain fixed. In this situation, bureaucratic actors are prone to invest some effort into changing bureaucratic procedures and devoting resources to address problems identified by senior leaders. However, the level and consistency of these efforts will be proportional to the attention paid by senior officials. As attention declines, bureaucratic effort will either wane, or become routinized, stagnant, and fail to adapt to changing conditions.¹³ In context, the central bureaucratic functions for intelligence organizations are intelligence collection and analysis. When policymakers express consistent and clear interest in a given issue, intelligence organizations will devote more resources to the issue. This often (though not always) produces more and better intelligence. Yet, when interest in an issue is absent, unclear, and/or inconsistent, intelligence organizations will prioritize collecting information on and analyzing other issues in accordance with other organizational and bureaucratic concerns.

These scenarios raise the possibility that the information flowing to policymakers may be insufficient to craft an adequate strategic response. Even if senior officials are agnostic with respect to a given international issue (e.g., nuclear proliferation) with the information at hand, additional information might lead them to change their positions and support a different course of action. *In other words, policymaker interest might be greater if intelligence were better – but intelligence is unlikely to improve absent that interest.*¹⁴ Meanwhile, senior leaders seeking to pursue a certain course in world politics may be stymied in executing the policy, or fail to realize the severity of a given issue, in the absence of useful intelligence. The net result is a vicious cycle: absent reliable and significant intelligence, policymakers

¹¹Kenneth J. Meier and John Bohte, 'Inside the Bureaucracy: Principals, Agents, and Bureaucratic Strategy', N.D. unpublished manuscript, Texas A&M University Department of Political Science; Daniel L. Nielson and Michael J. Tierney, 'Delegation to International Organizations: Agency Theory and World Bank Environmental Reform', *International Organization* 57/2 (Spring 2003), 247–49.

¹²Bob Woodward, *Obama's Wars* (New York: Simon & Schuster, 2011).

¹³See John Brehm and Scott Gates, *Working, Shirking, and Sabotage: Bureaucratic Responses to a Democratic Public* (Ann Arbor: University of Michigan Press, 1997), chapter 2.

¹⁴Thus, as the IC concluded in a self-assessment after failing to predict India's 1974 nuclear test, its inability to forecast Indian actions stemmed heavily from 'inadequate priority against an admittedly difficult target'; Director of Central Intelligence, 'Post-Mortem Report: An Examination of the Intelligence Community's Performance Before the Indian Nuclear Test of May 1974', July 1974, i, online at <<https://nsarchive2.gwu.edu/NSAEBB/NSAEBB187/IN22.pdf>>.

are unlikely to mobilize in support of a given policy or focus their attention on a particular issue, while bureaucratic agents without clear and consistent policy guidance fail to supply the needed information for policymakers to act.¹⁵ Combined, these processes are likely to result in an ambivalent and irresolute foreign policy.

Instead – third – foreign policy is only likely to see senior policymakers and bureaucratic actors pursuing the same policy with the same degree of effort over a politically significant period of time if senior officials mobilize around a given course of action and sustain pressure on bureaucratic actors to support this agenda.¹⁶ In foreign affairs, the most likely sources of such a mobilization are large domestic or international costs of failure.¹⁷ Under such conditions, the clear signals and attention paid by senior policymakers reduces opportunities for bureaucracies to ignore policymaker preferences, while bureaucratic actors are likely to innovate by devoting the requisite time and attention to meeting policymaker demands. Thus, as attention on the Iranian nuclear program increased in the mid-2000s, the IC – seeking to assist policymakers in arresting potential Iranian nuclear ambitions – shifted resources to understanding Iran’s nuclear ambitions. By 2007, as former National Intelligence Council chair Thomas Fingar recalled, ‘the years-long effort to acquire additional intelligence began to produce significant new streams of information’, helping the IC conclude Iran had terminated its nuclear weapons program circa 2003.¹⁸ In short, this situation creates the possibility for a virtuous cycle whereby policymaker attention focuses bureaucratic priorities, and bureaucratic support ensures policymakers have the requisite information to pursue the intended policy.

Implications for American counter-proliferation policy

What does this mean for American counter-proliferation policy? Halting or limiting the spread of nuclear weapons is difficult. Because states seeking a nuclear weapon are vulnerable to efforts to disrupt their nuclear development, they often pursue nuclear programs in secret or

¹⁵For illustration of this problem, see the useful discussion of the U.S. response to the Indian nuclear program in Richard W. Shryock, ‘The Intelligence Community Post-Mortem Program, 1973–1975’, *Studies in Intelligence* 21/1 (Fall 1977), 18–19, <<https://www.cia.gov/library/readingroom/document/51112a4a993247d4d839446b>>.

¹⁶This is a main point of Barry R. Posen, *The Sources of Military Doctrine* (Ithaca: Cornell University Press, 1984), chapter 2.

¹⁷James D. Fearon, ‘Domestic Political Audiences and the Escalation of International Disputes’, *The American Political Science Review* 88/3 (September 1994), 577–92; Randall L. Schweller, *Unanswered Threats: Political Constraints on the Balance of Power* (Princeton: Princeton University, 2006).

¹⁸Gregory F. Treverton, *The 2007 National Intelligence Estimate on Iran’s Nuclear Intentions and Capabilities* (Washington: CIA Center for the Study of Intelligence, 2013), 4.

ambiguous fashion.¹⁹ They can do this in a variety of ways.²⁰ Nuclear facilities may be concealed, disguised, or hidden. Scientists working on nuclear programs may be given cover stories to explain their activities or abet plausible deniability; tellingly, A.Q. Khan – the head of Pakistan’s nuclear effort, who drew upon and aided an international nuclear proliferation network – was officially head of a research institute as Pakistan’s nuclear program matured.²¹

Meanwhile, the technology and fissile material needed to create and sustain a nuclear weapons program may be acquired through grey and black-market channels. As we discuss in the following, for instance, Israel worked to obtain heavy water that could be used to facilitate plutonium production by setting up a shell company in Europe and contracting with a Norwegian firm; similarly, Pakistan’s Khan traded Pakistani gas centrifuge technology to North Korea for ballistic missile technology outside of international safeguards.²² Above all, even peaceful nuclear facilities under international safeguards can potentially have nuclear material diverted to military programs.

The tendency of nuclear programs to develop in secret or ambiguous form creates problems in limiting others’ nuclear ambitions. The United States has many agencies whose missions include collecting intelligence on potential proliferators, monitoring suspected nuclear programs, and analyzing the requisite information. Nevertheless, the secretive nature of other states’ nuclear efforts, combined with the fact that no single bureaucratic actor is responsible for assessing foreign nuclear programs, creates problems for bureaucratic actors and the policymakers they support.²³

First, the tendency of states to pursue nuclear weapons in secret means intelligence is likely to be missing or limited in quantity and quality for a meaningful period of a program’s lifespan. Second, even if some intelligence is available, actors attempting to assess a state’s nuclear intentions are unlikely to be able to construct a full picture. Indeed, analysts often seem primed to underestimate a state’s nuclear ambitions due to missing or ambiguous information on the scope of a state’s nuclear program.²⁴ In turn, analysts lacking full information

¹⁹Gene Gerzhoy, ‘Alliance Coercion and Nuclear Restraint: How the United States Thwarted West Germany’s Nuclear Ambitions’, *International Security* 39/4 (Spring 2015), 101–2.

²⁰Vipin Narang, ‘Strategies of Nuclear Proliferation: How States Pursue the Bomb’, *International Security* 41/3 (February 2017), 110–50.

²¹Robert Windrem, ‘Pakistan’s Nuclear Father, Master Spy’, *NBC News*. <http://www.nbcnews.com/id/3340760/ns/world_news-south_and_central_asia/t/pakistans-nuclear-father-master-spy/#.WMFrBxLyRs>.

²²Chaim Braun and Christopher F. Chyba, ‘Nuclear Proliferation Rings: New Challenges to the Nuclear Nonproliferation Regime’, *International Security* 29/2 (Fall 2004), 5–49.

²³See the appraisal of U.S. agencies in Defense Science Board, *Assessment of Nuclear Monitoring and Verification Technologies* (Washington DC: Department of Defense, January 2014), 3.

²⁴Making similar points on underestimation are Peter R. Lavoy, ‘Predicting Nuclear Proliferation: A Declassified Documentary Record’, *Strategic Insights* 3/1 (January 2004), 1–6; Alexander K. Bollfrass, ‘The Half-Lives of Others: The Democratic Advantage in Nuclear Intelligence Assessment’ (Ph.D. diss, Princeton University, 2017), chap. 3.

on a proliferator's activities may end up downplaying its nuclear ambitions.²⁵ As a result, IC bureaucracies are unlikely to commit additional resources to assessing a potential proliferator. The net result is a status quo bias in the intelligence process.

This process is likely to reinforce difficulties among U.S. policymakers in making counter-proliferation a priority at any given point. While American policymakers have long expressed interest in limiting the spread of nuclear weapons, counter-proliferation has been just one element of American grand strategy – in fact, U.S. leaders have often sacrificed counter-proliferation when doing so conflicts with other, more pressing elements of U.S. grand strategy. In the 1940s, for instance, the desire to avoid war with the USSR led American policymakers to accept Soviet acquisition of a nuclear bomb rather than engage in a preventive strike.²⁶ Likewise, U.S. leaders in the 2000s removed sanctions imposed on both Pakistan and India for their respective nuclear ambitions to obtain Pakistani cooperation in the U.S. fight in Afghanistan, and to garner Indian support in ensuring stability in Asia.²⁷

The U.S. and Israel's nuclear program, phase one: the early days, 1959–1963

Background: early U.S. nuclear strategy and Israel's road to a nuclear program

These dynamics affected U.S. monitoring of and policy toward Israeli nuclear activities during the early days of the Israeli nuclear program. Despite its later interest in restraining others' nuclear programs, the United States held

²⁵Conversely, there also seems to be a trend toward worst-casing once nuclear programs are detected. Many analysts in the early Cold War, for instance, worried the Soviet Union would begin a war once it acquired a robust nuclear arsenal; a similar trend obtained in the 1980s, when members of the Reagan administration feared that the growth of the Soviet nuclear force would encourage Soviet aggrandizement by threatening American nuclear assets and/or coercing the United States' European allies. Likewise, detection of foreign nuclear programs has regularly triggered concerns of nuclear cascades that might imperil regional stability and harm U.S. interests. In short, if analysts and policymakers are often sanguine before a nuclear program is detected, there is an inverse trend toward excessive concern after detection. On these responses, see David Holloway, 'Nuclear Weapons and the Escalation of the Cold War, 1945–1962' in *Cambridge History of the Cold War, Volume 1* (New York: Cambridge University Press, 2010), ed. Melvyn Leffler and Odd Arne Westad, 378–89; James Graham Wilson, *The Triumph of Improvisation* (Ithaca: Cornell University Press, 2014), chap. 1; Gavin, 'Strategies of Inhibition', 40n114. For related discussion, see Alexander H. Montgomery and Adam Mount, 'Misestimation: Explaining US Failures to Predict Nuclear Weapons Programs', *Intelligence and National Security* 29/3 (2014), 357–86.

²⁶Russell Buhite and Christopher Hamel, 'War for Peace: The Question of an American Preventive War against the Soviet Union, 1945–1955', *Diplomatic History* 14/3 (July 1990), 367–84.

²⁷Luke Harding and Rory McCarthy, 'Sanctions Lifted as US Rewards Pakistan', *The Guardian*, 23 September 2001, <<https://www.theguardian.com/world/2001/sep/24/pakistan.afghanistan>>; Ashley Tellis, 'U.S.-India Atomic Energy Cooperation: Strategic and Nonproliferation Issues', Testimony before Senate Foreign Relations Committee, 26 April 2006, online at <<https://www.foreign.senate.gov/imo/media/doc/TellisTestimony060426.pdf>>; Evan Feigenbaum, 'India's Rise, America's Interest', *Foreign Affairs* 89/2 (March/April 2010), 76–91.

a more permissive attitude toward nuclear proliferation in the early Cold War. Seeking to limit its overseas commitments and cap the defense budget in the face of a Soviet military threat, the Truman and, especially, Eisenhower administrations predicated U.S. foreign and security policy on building a large nuclear arsenal with which to deter and coerce the USSR. Concurrently, U.S. leaders hoped that allied access to nuclear weapons – either of their own design or those forward deployed by the U.S. – would abet this objective by providing partners with low-cost ways of obtaining security in the face of a growing Soviet nuclear arsenal that threatened to render U.S. nuclear guarantees non-credible.²⁸ As a corollary, reflecting both the focus on the USSR and the ambivalent attitude toward others' nuclear acquisition, the bulk of the nascent U.S. intelligence community was focused on assessing the military threat from the Soviet bloc. This left little coverage for the rest of the world.²⁹

Against this backdrop, Israel began developing a nuclear program shortly after its independence. Israeli leaders had strong incentives to find tools that would both ensure the security of the Jewish state independent of external backing and, given Israeli resource constraints, do so as cheaply and as efficiently as possible. Although the start-up costs were large, nuclear weapons would be one way of fulfilling this need, and it appears Israeli leader David Ben-Gurion was interested in pursuing a nuclear program of some kind even before Israel's independence.³⁰ By the early 1950s, this effort had evolved to the point where the Israeli government authorized basic scientific research into producing fissile material and developing nuclear reactors.³¹

However, the Israeli program began to grow in earnest only in the mid-late 1950s. At that time, Ben-Gurion returned to office as Prime Minister after a brief retirement concurrent with growing U.S. efforts to encourage the spread of peaceful nuclear technology.³² Israel, as other analysts note, was interested in the U.S. 'Atoms for Peace' initiative and Israeli officials were not shy about approaching U.S. diplomats to solidify a basis of U.S.-Israel nuclear cooperation. The United States agreed in 1955–1957 to supply Israel with a small research reactor, and negotiations were underway for the U.S. to supply a larger (10 MW) reactor and the associated heavy water. The latter would allow Israel to produce both electricity and, pending modifications,

²⁸See Marc Trachtenberg, *History and Strategy* (Princeton: Princeton University Press, 1991), chap. 3–4; Robert Wampler, 'Ambiguous Legacy: The United States, Great Britain, and the Foundation of NATO Strategy, 1948–1957' (Ph.D. diss., Harvard University, 1991), chap. 5; Brendan R. Green, 'Two Concepts of Liberty: U.S. Cold War Grand Strategies and the Liberal Tradition', *International Security* 37/2 (Fall 2012), 26–30; Jan Melissen, 'Nuclearizing NATO, 1957–1959: The "Anglo-Saxons", Nuclear Sharing and the Fourth Country Problem', *Review of International Studies* 20/3 (1994), 271–72.

²⁹See note 49.

³⁰Michael Karpin, *The Bomb in the Basement* (New York: Simon & Schuster, 2006), 27–28.

³¹Karpin, *Bomb*, 37–38, 46–47.

³²Avner Cohen, *Israel and the Bomb* (New York: Columbia, 1999), 41–43.

small amounts of plutonium for research en route to mastering the fuel cycle and creating a self-sustaining program.³³

The U.S. desire to sustain safeguards over the reactor and heavy water slowed the negotiations and ultimately led to their collapse.³⁴ In the interim, however, Israeli scientists and diplomats developed relationships with French and Norwegian officials to obtain a reactor, on-site reprocessing facilities, research laboratories (from France), and heavy water (from Norway).³⁵ Given the extent of the intended cooperation, the French connection was the critical one, as French officials – stinging over U.S. diplomatic pressure during the 1956 Suez crisis – turned to a more independent foreign and security policy that included cooperation with Israel. In conjunction with Norwegian heavy water, Israeli leaders looked forward to a windfall; French assistance would allow construction of reprocessing facilities alongside a large-scale heavy-water uranium reactor that would also produce weapons-grade plutonium. Using this assistance, construction of the Dimona facility – where Israel would eventually produce fissile material and develop nuclear weapons – began in secret by 1958. This secret, however, did not last long. Following revelations in Western media outlets throughout 1960, Israeli Prime Minister David Ben-Gurion publicly announced in December 1960 a large-scale Israeli nuclear program was underway.³⁶

The U.S. position: policy breakdown, intelligence let-down

As Israeli plans went forward in the 1950s, U.S. policy at the highest levels toward nuclear proliferation – in Israel and beyond – was disjointed. On one level, and beyond its aforementioned lax attitude toward nuclear weapons proliferation, the Eisenhower Administration arrived in office believing that sharing nuclear technology for peaceful purposes such as energy production would be a boon to U.S. global influence and offer a propaganda victory in the Cold War.³⁷ Indeed, Israel was the second state to sign up for Eisenhower's 'Atoms for Peace' program, and the United States provided

³³Cohen, *Israel and the Bomb*, 41–61.

³⁴See Avner Cohen and William Burr, 'The Eisenhower Administration and the Discovery of Dimona: March 1958-January 1961', analysis accompanying National Security Archive electronic briefing book no. 510, 15 April 2015, online at <<http://nsarchive.gwu.edu/nukevault/ebb510/>>.

³⁵Jeffrey Richelson, *Spying on the Bomb: American Nuclear Intelligence from Nazi Germany to Iran and North Korea* (New York: Norton & Company, 2007), 238–39.

³⁶Richelson, *Spying on the Bomb*, 241; also Matteo Gerlini, 'Waiting for Dimona: The United States and Israel's Development of Nuclear Capability', *Cold War History* 10/2 (Winter 2010), 143–61.

³⁷Peter Lavoy, 'The Enduring Effects of Atoms for Peace', *Arms Control Today*, December 2003; Matthew Fuhrmann, *Atomic Assistance: How 'Atoms for Peace' Programs Cause Nuclear Insecurity* (Ithaca: Cornell, 2012), 6–7. For origins of the program, see 'Letter from Eisenhower to Swede Hazlett', 24 December 1953, DDE's Papers as President, Name Series, Box 18, Swede Hazlett 1953 (1), Dwight D. Eisenhower Presidential Library, online at <https://www.eisenhower.archives.gov/research/online_documents/atoms_for_peace.html>.

Israel with a small research reactor under the program's auspices.³⁸ These dynamics created a permissive environment in which the proliferation of nuclear technology for both peaceful and – in some cases – military purposes occupied a comfortable place in U.S. grand strategic thought.³⁹

Still, this cautious optimism about nuclear proliferation waned as the 1950s wore on. Two factors drove this reconsideration. First, it became increasingly difficult to ensure programs were for peaceful purposes and that no nuclear diversion occurred. This was particularly problematic as the safeguards intended to prevent misuse of U.S. nuclear assistance proved both technologically inadequate and poorly enforced in practice.⁴⁰ Second, the security risks associated with nuclear proliferation gradually became clearer. Indeed, by the late 1950s, officials such as Secretaries of State John Foster Dulles and Christian Herter, as well as then-Senator John F. Kennedy, were coming to recognize the risks for the United States and problems involved as more countries came closer to acquiring technology that could facilitate a nuclear weapons program.⁴¹ The effect was a fragmented policy whereby top-level policy was muddled and wrapped up in broader debates over the United States' Cold War strategy.⁴² This ambiguity shaped the background against which the Israeli program developed.

While U.S. nonproliferation policy remained ambiguous, domestic politics reinforced the ambivalent American attitude toward Israel. During his first term, Eisenhower enjoyed an amicable but distant relationship with American Jewish organizations and voters. Nevertheless, the 1956 Suez Crisis altered this situation as Eisenhower pushed a hardline response to the joint Israeli-French-British operation. Ben-Gurion, Eisenhower remarked, may have counted on the president's 'desire to avoid offending the many voters who might have either sentimental or blood relations with Israel', but Eisenhower 'emphatically corrected any misapprehension of this kind he might have': despite opposition from the American Jewish community, the

³⁸GWU National Security Archive, 'Before Dimona', no date, accessed November 2016, <<http://nsarc.hive.gwu.edu/israel/documents/before/>>; Warner D. Farr, *The Third Temple of the Holy of Holies: Israel's Nuclear Weapons*, Counterproliferation Paper No. 2 (Maxwell Air Force Base: Air University, 1999), 5.

³⁹For elaboration on U.S. policy, see 'Report to the National Security Council by the Executive Secretary (Lay)', 4 December 1953, *Foreign Relations of the United States, 1952–1954: National Security Affairs*, Vol. II, No. 2 (Washington: GPO, 1984), 1256–85. Hereafter, publications from the Foreign Relations of the United States series will be given as *FRUS*.

⁴⁰Leonard Weiss, 'Atoms for Peace', *Bulletin of the Atomic Scientists* 59/6 (11 December 2003), 34–44; Lavoy, 'Enduring Effects'. In fact, framers of Eisenhower's nuclear initiatives recognized the problem even as the programs took shape; see 'Memorandum for the File by the Secretary of State's Special Assistant for Atomic Energy Affairs', 4 September 1955, *FRUS 1955–1957: Regulation of Armaments and Atomic Energy*, Vol. XX (Washington: GPO, 1990), 198.

⁴¹See, e.g., State Department Memorandum of Conversation, 'Safeguards for Reactors', 25 November 1960; online at <<http://nsarchive.gwu.edu/nukevault/ebb510/docs/doc%205.pdf>>.

⁴²Cohen and Burr, 'Eisenhower Administration and the Discovery of Dimona'; Avner Cohen and William Burr, 'How Israel Hid Its Secret Nuclear Weapons Program', *Politico Magazine* (online), April 2015, <<http://www.politico.com/magazine/story/2015/04/israel-nuclear-weapons-117014?o=2>>.

United States pressured Israel (alongside Britain, and France) to settle the conflict by withdrawing from Egyptian territory.⁴³ Still, opposition from American Jewish organizations and voters made it increasingly difficult to sustain a foreign policy devoid of domestic calculations. The United States continued to reject Israeli calls for military assistance and security guarantees, but Congressional and public opinion limited the degree to which the United States could pressure Israel or act contrary to Israeli interests.⁴⁴ As Secretary of State John Foster Dulles explained in early 1958, the Eisenhower administration, 'had gone further in trying to moderate the policy and position of Israel, and to show sympathy for the Arabs, than any previous U.S. administration. On the other hand, there were certain courses of action which simply could not be followed, from the domestic political point of view'.⁴⁵

In an environment where policy guidance on nuclear issues was mixed and U.S. leaders faced domestic incentives not to unnecessarily antagonize Israel, intelligence on the Israeli program was limited. On one level, analysis of Israeli developments suffered from simple lack of resources. Indeed, at the time, collection and analysis of nuclear developments in non-Soviet Bloc countries was considered a distant second-order priority; tellingly, analysis of Israeli nuclear developments was the purview of one CIA officer who was also responsible for over 40 other countries.⁴⁶ Without analysts focused on and familiar with Israel, analytic missteps accumulated. In fact, as late as 1957 – that is, after France had begun intensive nuclear cooperation with Israel – an intelligence assessment discounted the risk of an Israeli nuclear weapon within a decade, noting that it 'would require major foreign assistance'.⁴⁷

Policy ambiguity also left intelligence analysts and diplomats with little incentive to probe other evidence of Israeli nuclear activities and prioritize collection on the program. As early as 1958, for instance, diplomatic and press rumors of a Franco-Israeli nuclear deal led the State Department to seek further information from Israeli officials. Faced with a blanket denial

⁴³Quote from Isaac Alteras, 'Eisenhower, American Jewry, and Israel', *American Jewish Archives* 37/2 (November 1985), 264. On U.S. pressure, see Isaac Alteras, *Eisenhower and Israel: U.S.-Israeli Relations, 1953–1960* (Gainesville: University Press of Florida, 1993), 259–98.

⁴⁴Yaacov Bar-Siman-Tov, 'The United States and Israel since 1948: A "Special Relationship"?' *Diplomatic History* 22/2 (Spring 1998), 235–36. In a notable incident, for example, the Eisenhower administration was hamstrung in imposing sanctions on Israel to expedite resolution of the Suez Crisis, hindered by popular opinion, lobbying by American Jewish organizations, and Congressional opposition; see Alteras, *Eisenhower and Israel*, 289–303.

⁴⁵Comments in 'Memorandum of Discussion at the 352d Meeting of the National Security Council', 22 January 1958, *FRUS 1958–1960: Near East Region; Iraq; Iran; Arabian Peninsula* (Department of State, e-book, 2013), doc. 4; also Alteras, *Eisenhower and Israel*, 269.

⁴⁶CIA, 'Post-Mortem on SNIE 100–8–60: Implications of the Acquisition by Israel of a Nuclear Weapons Capability', 31 January 1961, 5, online at <<http://nsarchive.gwu.edu/nukevault/ebb510/docs/doc%2027A.pdf>>.

⁴⁷Quoted in Richelson, *Spying on the Bomb*, 247.

from the head of Israel's atomic energy commission, however, the State Department let the matter drop.⁴⁸ Likewise, U-2 photographs of the Dimona site indicating a 'probable' nuclear-related site went uninvestigated.⁴⁹

Nor was this just a temporary issue. Notably, when U.S. Ambassador Ogden Reid and his aides flew by the Dimona facility in mid-1960 and inquired as to the site's nature, the diplomats seem to have accepted without further question Israeli accounts that it was a 'textile' factory.⁵⁰ Meanwhile, repeated conversations with Israeli officials who expressed interest in nuclear technology and hints from human intelligence sources that the Franco-Israeli relationship was maturing, do not seem to have triggered concerns of Israel's growing program. Indeed, even when the CIA and State Department agreed to query Israeli officials in September 1960 on the Israeli nuclear program, the questions meant to structure the inquiry were sent with a 'Routine' label rather than a priority warning.⁵¹

Yet the U.S. intelligence failure was only partly one of limited intelligence collection – lack of analytic attention and intelligence integration was also important. Although the United States missed some key developments surrounding the Israeli program, U.S. officials had substantial raw intelligence indicating that Israeli nuclear ambitions extended beyond a research reactor. Nevertheless, it seems that the information was neither drawn together nor disseminated in a timely manner. Beyond accepting Israeli cover stories at first glance, for instance, reports that a senior Israeli military officer had resigned in mid-1959 over Israel's nuclear program were met with what the U.S. government later termed 'no action'.⁵² Likewise, a CIA report from early 1960 that Israeli observers would be in attendance at France's first nuclear weapons test 'was never disseminated' because the information could not be verified.⁵³ Above all, a diplomatic coup in the form of a report from a Norwegian foreign ministry official indicating a Norwegian sale to Israel of heavy water went uncirculated. Only after Israel went public

⁴⁸Department of State, 'Atomic Energy Developments', 7 March 1958, online at <<http://nsarchive.gwu.edu/nukevault/ebb510/docs/doc%201A.pdf>>; AmEmbassy Tel Aviv, 'Israeli Exchanges with Other Countries Relating to Atomic Energy', 16 April 1958, online at <<http://nsarchive.gwu.edu/nukevault/ebb510/docs/doc%201B.pdf>>; Avner Cohen and William Burr, 'The U.S. Discovery of Israel's Secret Nuclear Project', analysis accompanying National Security Archive electronic briefing book no. 510, 15 April 2015, online at <http://nsarchive.gwu.edu/nukevault/ebb510/#_ednref8>.

⁴⁹Cohen and Burr, 'Discovery', n5; also Avner Cohen, 'Most Favored Nation', *Bulletin of the Atomic Scientists* 51 (January/February 1995).

⁵⁰Richelson, *Spying on the Bomb*, 248–49; Association for Diplomatic Studies and Training interview with former U.S. Ambassador Murat Williams, 5 December 1990, <<http://www.adst.org/OH%20TOCS/Williams%20Murat.toc.pdf>>, 32. That said, Israeli official Addy Cohen – who served as a point of contact for U.S. diplomats in 1960 – has retrospectively claimed that he believes Americans understood that Israel was constructing a reactor at Dimona; Or Rabinowitz, 'Interview with Addy Cohen', April 2015, online at <<http://nsarchive.gwu.edu/nukevault/ebb510/>>.

⁵¹See the discussion of Documents 3 and 4 via Cohen and Burr, 'Discovery'.

⁵²CIA, 'Post-Mortem on SNIE 100–8-60', 10–11.

⁵³CIA, 'Post-Mortem on SNIE 100–8-60', 11.

with its nuclear facility at Dimona in December 1960 was information on the Norwegian heavy water disseminated.⁵⁴

Ultimately, intelligence and analysis on the Israeli program was limited and ambiguous until near the end of 1960. Instead, it took a lucky break – a private report by Professor Henry Gomberg of the University of Michigan’s Nuclear Engineering Department – to galvanize change in U.S. policy. Gomberg returned from a trip to Israel in late 1960 convinced from interactions with Israeli scientists that the Israelis were building a facility at Dimona that could produce plutonium and alerted U.S. officials to his suspicions. Gomberg’s reports on Israeli nuclear activities provided independent confirmation to an increasingly-worried IC.⁵⁵

In response, the IC issued a revised intelligence estimate in early December 1960, warning that ‘Israel is engaged in construction of a nuclear reactor complex in the Negev [i.e., Dimona]’, one purpose of which was believed to be ‘plutonium production for weapons’.⁵⁶ The results were briefed to Eisenhower and the rest of the National Security Council (NSC) on December 8.⁵⁷ Within a few days, U.S. officials alerted Israeli diplomats that the U.S. knew of the Israeli program, and media reports began to appear of a previously-undisclosed Israeli nuclear reactor. The resulting pressure culminated in Ben-Gurion’s public announcement on December 21 that Israel was indeed building a reactor at Dimona.⁵⁸

To be sure, Ben-Gurion and other Israeli officials pledged publicly and privately that the Israeli program was intended for peaceful purposes. Given the secrecy surrounding prior Israeli actions, however, American doubts remained. Ambassador Reid was dispatched in late December to warn Ben-Gurion that the U.S. remained ‘firmly opposed to proliferation of nuclear weapons capabilities’.⁵⁹ Meanwhile, Secretary Herter directly warned the incoming President Kennedy and his foreign policy team that ‘Israel and India’ were the most likely states to pursue a nuclear weapon in the coming years.⁶⁰

⁵⁴CIA, ‘Post-Mortem on SNIE 100–8–60’, 11.

⁵⁵Cohen, *Israel and the Bomb*, 86–88.

⁵⁶CIA, ‘Special National Intelligence Estimate 100–8–60: Implications of the Acquisition by Israel of a Nuclear Weapons Capability’, 8 December 1960, online at <<http://nsarchive.gwu.edu/nukevault/ebb510/docs/doc%208.pdf>>.

⁵⁷8 December 1960 meeting of the National Security Council (470th Meeting), *FRUS 1958–1960: Arab-Israeli Dispute, United Arab Republic; North Africa*, Vol. XIII (Department of State, e-book, 2013), doc. 177.

⁵⁸Cohen, *Israel and the Bomb*, 88–91.

⁵⁹Quoted in Cohen, *Israel and the Bomb*, 92.

⁶⁰Richard Reeves, *President Kennedy: Profile of Power* (New York: Touchstone, 1994), 32–33; see also Avner Cohen and William Burr, ‘Kennedy, Dimona, and the Nuclear Proliferation Problem’, analysis accompanying National Security Archive electronic briefing book no. 547, 21 April 2016, online at <http://nsarchive.gwu.edu/nukevault/ebb547-Kennedy-Dimona-and-the-Nuclear-Proliferation-Problem-1961-1962/#_ednref1>.

The U.S. and Israel's nuclear program, phase two: policy and intelligence adjustments, 1961–1969

Distinct from Eisenhower, the Kennedy administration arrived in office with significantly greater interest in nonproliferation. Kennedy himself had worried since the mid-1950s that nuclear proliferation could harm U.S. and international security, and made nonproliferation a centerpiece of his 1960 presidential campaign.⁶¹ Once in office, he staffed the administration with officials sharing similar views.⁶² The December 1960 realization that the Israeli program was further developed than expected reinforced these concerns and triggered an immediate policy response. In short order, Kennedy and his advisors mounted an aggressive campaign to address Israeli activities and forestall the introduction of nuclear weapons to the Middle East.

Kennedy's efforts proceeded along three inter-related tracks. First, and like the preceding Eisenhower administration, U.S. officials pressured Israeli leaders to (1) clarify the scope, nature, and purpose of Israel's program, and (2) forgo a weapons capability. The day before Kennedy's inauguration, for instance, Assistant Secretary of State William Macomber informed the Joint Congressional Committee on Atomic Energy that U.S. diplomatic 'inquiries' on Israel's nuclear intentions had been 'pressed' since Dimona was discovered, asserting that 'persistent but quiet diplomatic approaches' would continue.⁶³ Within two weeks of taking office, Secretary of State Dean Rusk similarly apprised Kennedy that U.S. diplomats had undertaken 'a number of exchanges' with the Israeli government over the Israeli program, and still considered Israel's nuclear activities 'a continuing subject' for investigation.

Of course, Israeli leaders up to and including Ben-Gurion offered what Rusk termed 'categorical assurances [*sic* ...] to the effect that Israel does not have plans for developing nuclear weaponry'.⁶⁴ Nevertheless, as one State Department official put it to the Israeli ambassador in February 1961, 'suspicion of obtaining [a weapons] capability had fallen on Israel', and – as another diplomat offered British officials later that month – 'We intend to keep an eye on the situation'.⁶⁵ Indeed, into the mid-1960s, U.S. policy-makers remained fixated on the Israeli program and were willing to bring

⁶¹Shane Joseph Maddock, 'The Nth Country Conundrum: The American and Soviet Quest for Nuclear Nonproliferation, 1945–1970', (Ph.D. dissertation, University of Connecticut, 1997), 299–300.

⁶²J. Peter Scoblic, 'Robert McNamara's Logical Legacy', *Arms Control Association*, 4 September 2009, <https://www.armscontrol.org/act/2009_09/lookingback_McNamara>.

⁶³'Letter from the Assistant Secretary of State for Congressional Relations (Macomber) to the Executive Director of the Joint Congressional Committee on Atomic Energy (Ramey)', 19 January 1961, *FRUS 1961–1963: Near East, 1961–1962*, Vol. XVII (Department of State, e-book, 2013), doc. 3.

⁶⁴'Memorandum from Secretary of State Rusk to President Kennedy', 30 January 1961, *FRUS 1961–1963*, Vol. XVII, doc. 5.

⁶⁵Quotes are respectively from 'Memorandum of Conversation', 3 February 1961, doc. 7, and 'Memorandum of Conversation', 13 February 1961, doc. 10, both in *FRUS 1961–1963*, Vol. XVII.

substantial pressure to bear on Israeli leaders to meet American demands. As Rusk himself put it to the Israeli Foreign Minister even in February 1966, Israel could 'expect the U.S. to be extremely clear and utterly harsh on the matter of non-proliferation. He urged the Foreign Minister not to underestimate the total involvement of U.S.-Israel relations in the matter'.⁶⁶ He was even blunter in July 1966, telling the Israeli ambassador that 'if Israel is holding open the nuclear option, it should forget [about] U.S. support'.⁶⁷

Second, U.S. officials regularly pressed Israel to allow the U.S. to monitor the Dimona facility. This effort began shortly after Kennedy arrived in office, with Rusk alerting Kennedy that 'we are encouraging the Israelis to permit a qualified scientist [...] to visit the Dimona installation', and continued throughout the 1960s.⁶⁸ Recognition that a reactor of Dimona's scale could produce significant quantities of weapons-grade material led Kennedy to press for inspections every six months, rather than the annual inspections initially offered by Israeli leaders.⁶⁹ The subsequent Johnson administration, increasingly concerned about proliferation after China developed nuclear weapons, continued and amplified the Kennedy policy.⁷⁰ Despite continued Israeli intransigence, this effort slowly bore fruit as Israel and the United States reached an agreement that would permit inspectors regular and more extensive access to Dimona than Israel's initial position allowed.⁷¹

Finally, policymakers pushed intelligence analysts to determine the nature of Israeli activities at Dimona and the risks of a maturing Israeli nuclear weapons program. Again, this effort began in the closing days of the Eisenhower administration but continued thereafter. Thus, just as then Vice President Richard Nixon remarked at a December 1960 NSC meeting that 'the construction of nuclear facilities by "fourth countries" [i.e., not the U.S., USSR, or U.K.] should be a major intelligence target since such facilities posed a danger even in friendly countries',⁷² so did Rusk advise Kennedy in

⁶⁶'Memorandum of Conversation', 9 February 1966 in *FRUS 1964–1968: Arab-Israeli Dispute, 1964–1967*, Vol. XVIII (Department of State, e-book, 2013), doc. 269.

⁶⁷Telegram from the Department of State to the Embassy in Israel', 28 July 1966, in *FRUS 1964–1968*, Vol. XVIII, doc. 312.

⁶⁸'Memorandum from Rusk to Kennedy', 30 January 1961. For illustrative results of the inspections, see Armin Meyer, 'Visit to the Israeli Reactor', 1 May 1961; online at <<http://nsarchive.gwu.edu/israel/documents/first/08-01.htm>>.

⁶⁹See, for example, 'Telegram from the Department of State to the Embassy in Israel', 15 June 1963, *FRUS 1961–1963*, Vol. XVII, doc. 274; also 'Memorandum from the State Department Executive Secretary to the President's Special Assistant for National Security Affairs', 12 June 1963, *FRUS 1961–1963*, Vol. XVII, doc. 267.

⁷⁰Francis Gavin, 'Blasts From the Past: Proliferation Lessons of the 1960s', *International Security* 29/3 (Winter 2004/2005), 100–35.

⁷¹See, e.g., 'Memorandum from Acting Secretary of State Ball to President Kennedy', 23 August 1963, *FRUS 1961–1963*, Vol. XVII, doc. 317; 'Memorandum from Secretary of State Rusk to President Kennedy', 10 September 1963, in *ibid.*, doc. 323; see also note 2 to 'Memorandum for the Record', 27 December 1963, *FRUS 1961–1963*, Vol. XVII, doc. 394.

⁷²470th Meeting of the National Security Council, 8 December 1960.

early 1961 that 'it is the intention of our intelligence agencies to maintain a continuing watch on Israel [...] to assure that nuclear weapons capabilities are not being proliferated'.⁷³

Moreover, Kennedy remained interested in Israeli nuclear developments even after the shock of Dimona's revelation wore off, writing in March 1963 that the heads of the State Department, CIA, and Atomic Energy Commission should 'undertake every feasible measure to improve our intelligence on the Israeli nuclear program'.⁷⁴ Senior officials in the Johnson administration shared this focus. Rusk, National Security Advisor McGeorge Bundy, and CIA Director John McCone, for example, all agreed in mid-1964 that the core issues impeding U.S.-Israeli relations were – in Rusk's words – 'whether Israel was going for a nuclear capability' and the need to rely on intelligence reports to calibrate the American response.⁷⁵ Indicating the attention Johnson paid to intelligence coordination, the president did not respond to an Israeli request to delay a late 1964 U.S. visit to Dimona until checking with the State Department and CIA on the possible consequences of an 'inspection gap' and – afterwards – insisting that Israel allow inspections that were sufficiently 'comprehensive to meet our needs'.⁷⁶

The heyday of intelligence-policy integration

Given these efforts, the IC and policymakers enjoyed a brief period of mutual collaboration in the years immediately following Dimona's disclosure.⁷⁷ Particularly important were on-site inspections of the Dimona facility. As noted, policymakers in the Kennedy and Johnson administrations consistently pressed the Ben-Gurion and Eshkol governments to permit U.S. scientists to inspect Dimona. These efforts were encouraged and praised by the intelligence community.⁷⁸ After all, as the IC emphasized, only by doing so could the scope and purpose of the Israeli program be determined with any degree of certainty; since much of the facility was buried and otherwise shielded from the outside, overhead imagery was of limited use in determining if Israel was developing nuclear weapons.

Combined with regular intelligence collection and analysis, these efforts gradually offered evidence that Dimona involved more than just a reactor

⁷³Memorandum from Rusk to Kennedy, 30 January 1961.

⁷⁴'National Security Action Memorandum No. 231', 26 March 1963, *FRUS 1961–1963*, Vol. XVII, doc. 199.

⁷⁵'Memorandum for the Record', 16 May 1964, *FRUS 1964–1968*, Vol. XVIII, doc. 57.

⁷⁶See 'Memorandum from the President's Special Assistant for National Security Affairs to Secretary of State Rusk', 23 October 1964, *FRUS 1964–1968*, Vol. XVIII, doc. 101; 'Telegram from the Department of State to the Embassy in Israel', 14 December 1964, *FRUS 1964–1968*, Vol. XVIII, doc. 113.

⁷⁷See Cable Embassy Tel Aviv to Secretary of State, 29 December 1960; online at <<http://nsarchive.gwu.edu/nukevault/ebb510/docs/doc%2017.pdf>>; Dean Rusk to the President, 'Israel's Atomic Energy Activities', 30 January 1961, online at <<http://nsarchive.gwu.edu/israel/documents/first/01-01.htm>>.

⁷⁸For the CIA's reaction to these efforts, see note 5 to 'Telegram from the Department of State to the Embassy in Israel', 4 July 1963.

for peaceful purposes. To be clear, and as discussed below, the United States never gained total insight into Israeli nuclear developments as Israel was able to obscure the full scale and scope of its moves toward a nuclear weapon. Nevertheless, American suspicions grew over time, based on (1) the reactor's ability to produce plutonium, (2) Israeli efforts to acquire unsecured uranium that could be processed and enriched between inspection visits, and (3) the sheer scale of the Israeli operation, which seemed far in excess of Israeli research needs.⁷⁹ To this, U.S. diplomats added that the costs associated with the Dimona facility only made sense given the condition of Israel's economy and society if Israel were interested in acquiring a nuclear weapon.⁸⁰

Although inspections in 1961 and 1962 led U.S. analysts to argue that 'the reactor [was] intended for peaceful purposes only',⁸¹ concerns over Israel's future intentions grew, augmented by lingering Israeli opposition to the inspections and reticence to allow IAEA safeguards on the Dimona program.⁸² By the spring of 1965, these concerns had coalesced into a warning that the scale of the Israeli program made little sense 'if military considerations are entirely omitted from the equation of motivation'.⁸³ Instead, by the mid-1960s, U.S. discussions shifted from deliberation over whether the Israeli program was intended for military purposes, to evaluating how close to a nuclear weapon Israel might be. The picture was not auspicious: as a March 1965 intelligence estimate offered, 'the Israelis could probably develop nuclear weapons by 1968–1969 and/or nuclear warheads by about 1971 without outside assistance, if a decision to go ahead were given at this time'.⁸⁴

As further elaborated in the following, whether the Israelis had authorized this step remained opaque at the time, and has remained a subject of debate in both the analytic and policymaking realms. Still, the debate itself narrowed the range of analytic and policymaking uncertainty by directing attention to investigating how far from a nuclear weapons capability Israel might be given that, as Rusk informed Johnson in May 1965, 'Israel intends

⁷⁹Although the reasons remain unclear, U.S. inspectors allegedly did not detect a secret reprocessing facility under Dimona where fissile material was refined to weapons-grade specifications; see, for example, discussion in Interview with Edwin Kintner, 20 January 1994, online at <http://digitalarchive.wilsoncenter.org/document/116880#_ftn0>. Still, the overall picture became clearer.

⁸⁰Cable from Embassy Tel Aviv, 'Current Status of the Dimona Reactor', 9 April 1965, Declassified Document Reference System.

⁸¹'Circular Airgram from the Department of State to Certain Posts', 31 October 1962, in *FRUS 1961–1963*, Vol. XVII, doc. 87; 'Memorandum from the Department of State's Executive Secretary to the President's Special Assistant for National Security Affairs', 11 February 1964 *FRUS 1964–1968*, vol. XVIII, doc. 12; .

⁸²'Memorandum from Secretary of State Rusk to President Johnson', 10 May 1965, *FRUS 1964–1968*, Vol. XVIII, doc. 214.

⁸³Quoted in Cable from Embassy Tel Aviv, 'Current Status of the Dimona Reactor', 9 April 1965, Declassified Document Reference System.

⁸⁴'National Intelligence Estimate, NIE 30–65', 10 March 1965, *FRUS 1964–1968*, Vol. XVIII, doc. 187.

to make its decisions on whether to produce nuclear weapons without consulting us'.⁸⁵ Particularly important in this regard was whether Israel had (1) run unsecured uranium through the Dimona reactor between inspections, (2) constructed the plutonium reprocessing facilities needed to develop a nuclear weapon from the resulting fissile material, and (3) made progress in nuclear delivery systems.⁸⁶ The net effect was to convince policymakers that Israel minimally sought the ability to break out of its nuclear latency and quickly use the material produced at Dimona to construct a nuclear weapon; at worst, the Israeli program was optimized to give Israel a nuclear weapons capability in short order regardless of American concerns.⁸⁷

This is not to say all intelligence problems vanished. First, and as the preceding suggests, technical intelligence on the Israeli program remained limited. Between on-site inspections, U.S. insight into Israeli nuclear operations was constrained. Furthermore, since the inspections were subject to Israeli whims, Israeli leaders could stymie U.S. collection efforts. Indeed, contemporary U.S. analysts worried that Israel would simply obtain fissile material by running fuel through the reactor between U.S. visits. Second, the IC continued to play catch up with the Israeli program and often missed or only belatedly recognized subsequent developments that might have provided further warning that a nuclear weapon stockpile – more than just a breakout capacity – had become the Israeli objective. Most analysts, for instance, seemingly discounted rumors into 1966–1967 that Israel had fashioned plutonium separation facilities that would facilitate weapons acquisition.⁸⁸ Furthermore, some sources suggest that the IC missed an

⁸⁵'Memorandum from Rusk to Johnson', 10 May 1965.

⁸⁶See, for instance, 'Memorandum from the President's Special Assistant for National Security Affairs to the President', 8 March 1964, *FRUS 1964–1968*, Vol. XVIII, doc. 27.

⁸⁷In a telling statement, Undersecretary of State George Ball noted in December 1964 that U.S. analysts concluded that 'if Israel decided to produce [a] weapon following [the] January 1964 [U.S.] inspection, it could produce enough plutonium for one or two nuclear devices by the end of 1965,' see 'Telegram from the Department of State to the Embassy in Israel', 14 December 1964 *FRUS 1964–1968*, Vol. XVIII, doc. 113.

⁸⁸Notably, the science attaché at the U.S. embassy in Israel reported in 1965 that 'Israel has already acquired the know-how for Plutonium metal production', further warning 'the target date for acquisition of a nuclear weapons capability by Israel is 1968–1969'; Memorandum from the Director of the Office of Near Eastern Affairs, 5 March 1965. Nevertheless, U.S. inspectors noted in May 1966 that 'it is the unanimous conclusion of the three-man [inspection] team that there is no evidence that Israel is producing or intends to produce nuclear weapons material', going on to add 'there is no chemical processing facility at Dimona for extraction of plutonium from irradiated fuel'; see 'Memorandum from the Director of the Defense Intelligence Agency to Secretary of Defense McNamara', 4 May 1966, *FRUS 1964–1968*, Vol. XVIII, doc. 289. Likewise, State Department analysts in February 1967 voiced reservations about 'intelligence reports' suggesting 'Israel may be constructing a chemical separation plant and proceeding so far in the production of bomb components that assembly of a nuclear weapon could be completed in 6–8 weeks'; see n2 to 'Telegram from the Department of State to the Embassy in Israel', 23 February 1967, *FRUS 1964–1968*, Vol. XVIII, doc. 391. Only in May 1967 does it seem that investigation of an Israeli 'nuclear chemical separation plant' began in earnest; Memorandum from the Under Secretary of State to Johnson, 1 May 1967, *FRUS 1964–1968*, Vol. XVIII, doc. 415.

Israeli sub-critical nuclear test in November 1966 that, had it been detected, would have provided strong evidence of Israel's growing nuclear ambitions.⁸⁹

Nor were lingering intelligence failures just those of foreign developments, as there were also problems monitoring Israeli nuclear activities inside the United States that carried implications for Israel's nuclear ambitions. The most notable lapse was the 1965 Apollo Affair. Here, approximately 200 kg of highly-enriched uranium that could be used to fashion fission-type nuclear weapons⁹⁰ went missing from a Pennsylvania reprocessing plant whose owner, Zalman Shapiro, had close ties to the Israeli government.⁹¹ Despite 1950s-era Israeli interest in gaining access to U.S. nuclear facilities, the connections of the plant head, and lax safeguards at the plant itself, the probable diversion of the material went undiscovered until an audit of nuclear materials uncovered the loss.⁹²

Even then, the loss and possible diversion was barely analyzed by the Federal Bureau of Investigation (FBI) at the time. Meanwhile, a 1968 CIA warning that the material was likely in Israeli hands triggered an incomplete follow-up investigation,⁹³ with the FBI concluding in 1969 that Shapiro was connected to the Israeli government while remaining silent on the question of material diversion.⁹⁴ As the General Accounting Office bluntly noted a decade later in its own assessment of the Apollo affair: 'The failure of DOE, the FBI, and the CIA to coordinate their efforts on the suspected diversion when it occurred and as new information developed and the limitation in the scope and timeliness of the FBI efforts, lead GAO

⁸⁹Ephraim Kahana, *Historical Dictionary of Israeli Intelligence* (Lanham, MD: Scarecrow Press, 2006), 219; Alexandre Debs and Nuno Monteiro, *Nuclear Politics: The Strategic Causes of Proliferation* (New York: Cambridge, 2017), 226.

⁹⁰Given that we now know that Dimona runs on natural uranium and produces plutonium, there is a good question of why Israel sought to acquire HEU in the early-mid 1960s. Any answer is necessarily speculative. That said, given ongoing American efforts at the time to limit Israel's indigenous nuclear activities and the reality that HEU would allow Israel to produce nuclear weapons regardless of what occurred at Dimona, it seems reasonable that Israel saw HEU acquisition as a hedge against the failure of its indigenous efforts.

⁹¹Victor Gilinsky and Roger J. Mattson, 'Revisiting the NUMEC Affair', *Bulletin of the Atomic Scientists* 66/2 (March 2010), 61–75; Victor Gilinsky and Roger J. Mattson, 'Did Israel Steal Bomb-Grade Uranium from the United States?' *Bulletin of the Atomic Scientists*, 17 April 2014, <<http://thebulletin.org/did-israel-steal-bomb-grade-uranium-united-states7056>>.

⁹²Atomic Energy Commission, 'Report of Survey: Control Over Enriched Uranium, Nuclear Materials Equipment Corp., Apollo, Pennsylvania', 6 April 1966, online at <<http://nsarchive2.gwu.edu/nukevault/ebb565-Was-U.S.-Nuclear-Weapons-Fuel-Diverted-to-Israel/>>.

⁹³See FBI memorandum 'Dr. Zalman Mordecai Shapiro, Possible Atomic Energy Act Violation', 6 May 1968, online at <<http://nsarchive2.gwu.edu/nukevault/ebb565-Was-U.S.-Nuclear-Weapons-Fuel-Diverted-to-Israel/>>. Hoover's handwritten note at the bottom is 'OK, but I doubt advisability of getting into this. . . ' with the remainder of the note redacted.

⁹⁴Letter from J. Edgar Hoover, to Richard Helms, 3 September 1969, online at <<http://nsarchive2.gwu.edu/nukevault/ebb565-Was-U.S.-Nuclear-Weapons-Fuel-Diverted-to-Israel/>>. The ambivalent reporting seems in part due to the tendency of the FBI – charged with investigating foreign intelligence activities on U.S. soil – to focus on other issues (e.g., Soviet counterintelligence), as well as its lack of technical competence on nuclear issues.

to conclude that the Federal efforts to resolve the matter were less than adequate'.⁹⁵

Still, U.S. analysts and policymakers were certain by the late 1960s that the Israeli program was (a) not for peaceful purposes, and (b) far along in mastering the steps needed to provide Israel an autonomous nuclear weapons-producing capability.⁹⁶ Where the CIA predicted even in mid-1966 that 'neither Egypt nor Israel is likely to have nuclear weapons by 1970',⁹⁷ by April 1967 National Security Advisor Walt Rostow could write Johnson that:

Israel has never leveled with us on its nuclear intent. Our intelligence people have scattered – but as yet unconfirmed – evidence that Israel is quietly but steadily placing itself in a position to produce nuclear weapons on short notice. We also know that Israel is investing large sums in a French built surface-to-surface missile designed to carry a nuclear warhead. I must emphasize that we do not know exactly what Israel is doing or what its position on the [Non-Proliferation Treaty] will be. But we know enough to be seriously concerned.⁹⁸

Other officials echoed these concerns with, for instance, U.S. nuclear weapons pioneer Edward Teller warning in 1968 that contacts in Israel were reporting that the country had started producing nuclear weapons.⁹⁹ In fact, Israel may have assembled a nuclear weapon shortly before the 1967 Six Day War.¹⁰⁰ Of course, still other policymakers remained uncertain whether Israel was actively producing nuclear weapons, but it was clear by the close of 1968 that Israel had reached the nuclear threshold.¹⁰¹ Ultimately, matters came to a head when the IC and members of the Johnson administration alike informed the incoming Nixon administration

⁹⁵General Accounting Office, 'Nuclear Diversion In The U.S.? 13 Years Of Contradiction And Confusion', (18 December 1978), ix, online at <<https://www.archives.gov/files/declassification/isicap/pdf/2013-078-doc1.pdf>>.

⁹⁶By 1966, the State Department was apparently issuing independent warnings that Israel was pursuing a nuclear weapon; see the description in The Association for Diplomatic Studies and Training interview with Ambassador William Dale, 19 September 1988, online at <<http://www.adst.org/OH%20TOCs/Dale,%20William%20N.toc.pdf>>, 16.

⁹⁷'Study Prepared in the Central Intelligence Agency', 1 September 1966, *FRUS 1964–1968*, Vol. XVIII, doc. 319. For contemporary appreciation, see The Association for Diplomatic Studies and Training interview with former air attaché Colonel William Perna, August 1992, online at <http://www.adst.org/OH%20TOCs/Perna,%20Anthony%20J.toc.pdf>>, 23–24.

⁹⁸Memorandum from the President's Special Assistant to President Johnson', 20 April 1967, *FRUS 1964–1968*, Vol. XVIII, doc. 407.

⁹⁹Kahana, *Historical Dictionary of Israeli Intelligence*, 219. Mike Feldman, one of Johnson's senior policy advisors, may have been the first to realize Israel had a nuclear weapons capacity when he learned from Israeli sources in 'in 1966 or even early 1967' that Israel had two nuclear weapons; see Interview with Myer 'Mike' Feldman, 'Interview notes by Avner Cohen', online at <<https://www.wilsoncenter.org/myer-feldman#notes>>.

¹⁰⁰Miller and Rabinowitz, 'Keeping the Bomb in the Basement', 55–56.

¹⁰¹There is some evidence – as yet unconfirmed in U.S. archives – that CIA Director Richard Helms informed Johnson in 1967 or 1968 that Israel had a nuclear weapon, only to have Johnson order the matter classified and for Helms not to disclose the information to other U.S. officials; see Feldman interview notes by Cohen.

that Israel had, for all intents and purposes, acquired the ability to produce nuclear weapons.¹⁰²

Declining policymaker will

Paradoxically, evidence that the Israeli program was not for peaceful purposes did not trigger a reciprocal effort to rein in Israeli ambitions. Instead, American arms sales to Israel, including potential nuclear delivery platforms, went forward. The United States succumbed to Israeli pressure to allow Israel to forgo signing the Non-Proliferation Treaty, and the U.S. offered increasingly firm security assurances on Israel's behalf. This culminated in the U.S. placing its own nuclear forces on alert when it looked like the USSR might intervene in the 1973 Yom Kippur War. This growing U.S.-Israel bonhomie is all the more surprising given that Israel's pursuit of a nuclear weapon contravened U.S. counter-proliferation policy at the very moment when counter-proliferation – epitomized by the 1968 signing of the Non-Proliferation Treaty (NPT)– was becoming increasingly central to U.S. grand strategy.¹⁰³

Policymakers were initially willing to threaten and tacitly coerce the Israeli government over its nuclear program. Kennedy, for instance, warned the Eshkol government that access to Dimona was a top priority for the United States, and did so over the opposition of the U.S. Jewish community.¹⁰⁴ This high-level focus carried into the field, where the U.S. ambassador was willing to be what one diplomat termed 'very rough' in warning the Israeli government on the problems that would follow a nuclear breakout.¹⁰⁵ Indeed, no less an official than Rostow argued in mid-1967 that the United States would need to 'develop a much deeper understanding with [Israel] on the nuclear question if we are to proceed with a policy of being, quite openly and without apology, their friends'. The intended implication was clear – if Israel failed to meet American demands and forgo nuclear weapons, the U.S.-Israeli relationship would suffer.¹⁰⁶

Nevertheless, the U.S. government's willingness to act on its threats declined over the 1960s. In successive rounds of negotiations over U.S. arms sales to Israel from 1962 to 1968, the Kennedy and Johnson

¹⁰²Avner Cohen and William Burr, 'Israel Crosses the Threshold', *Bulletin of the Atomic Scientists* 62/3 (June 2006), 23–25; National Security Council, 'National Security Study Memorandum No. 40', 11 April 1969, online at <<http://nsarchive.gwu.edu/nukevault/ebb485/>> (hereafter NSSM 40).

¹⁰³Francis Gavin, *Nuclear Statecraft* (Ithaca: Cornell University Press, 2012).

¹⁰⁴Rabinowitz and Miller, 'Keeping the Bombs in the Basement', 51–52. Also The Association for Diplomatic Studies and Training interview with former State Department Director of Intelligence and Research Thomas Hughes, 7 July 1999, online at <<http://www.adst.org/OH%20TOCs/Hughes,%20Thomas%20L.toc.pdf>>, 89–90.

¹⁰⁵The Association for Diplomatic Studies and Training interview with Stephen Palmer, June 1995, online at <http://adst.org/wp-content/uploads/2013/12/PALMER-Stephen-E.toc_.pdf>, 27.

¹⁰⁶Memorandum from Rostow to Johnson, 20 April 1967.

administrations attempted to link U.S. military assistance to a firm Israeli commitment not to develop nuclear weapons, yet backed down in the face of Israeli obstinance. In 1962, for instance, Kennedy explicitly tied the sale of surface-to-air missiles to a regular U.S. inspection program of the Dimona facility. Israel, however, refused to accept the U.S. demand, opting for a more general pledge not to acquire nuclear weapons – the arms sale went forward regardless.¹⁰⁷ Similar developments occurred in 1964 and 1965 as the Johnson administration again sought to tie arms sales to Israeli pledges not to pursue a nuclear weapon, but settled for a less-explicit understanding that ‘Israel will not be the first to introduce weapons onto the Israel-Arab area’.¹⁰⁸ Nor did U.S. efforts to craft what became the NPT and creation of a global anti-proliferation regime help. Although the United States still tried to arrest Israeli nuclear efforts by pushing Israel into acceding to the NPT, it concurrently sold Israel airplanes that could be used to deliver a nuclear payload.¹⁰⁹ This translated into a feeling outside the highest levels of government itself that the United States was willing to let the nuclear issue slide.¹¹⁰ Collectively, the United States repeatedly refused to use arms as leverage.

Driving this behavior was a tension between long-term ambitions and short-term exigencies.¹¹¹ In the long-term, American leaders sought to prevent Israeli acquisition of a nuclear weapon and, more broadly, keep the Israeli nuclear program as small and containable as possible. As the Cold War in the Middle East advanced throughout the 1960s, however, this objective ran against U.S. efforts to contain regional security competition. Arms sales and military assistance, in particular, went forward despite ambiguous Israeli pledges precisely because Israel was still seen as a reliable partner that could help combat Soviet ambitions in the region;¹¹² moreover, some policymakers felt that conventional arms sales could help moderate Israeli pursuit of nuclear weapons.¹¹³ Conversely, as Soviet involvement in the region escalated after the 1967 Six Day War, policymakers feared that failure to deepen U.S. assistance would encourage – rather than discourage – Israeli

¹⁰⁷Douglas Little, ‘The Making of a Special Relationship: The United States and Israel, 1957–68’, *International Journal of Middle East Studies* 25/4 (November 1993), 569.

¹⁰⁸Quoted in Rabinowitz and Miller, ‘Keeping the Bombs in the Basement’, 53. See also Abraham Ben-Zvi, ‘Influence and Arms: John F. Kennedy, Lyndon B. Johnson, and the Politics of Arms Sales to Israel, 1962–1966’, *Israel Affairs* 10/1–2 (Autumn-Winter 2004), 29–59.

¹⁰⁹Rabinowitz and Miller, ‘Keeping the Bombs in the Basement’, 56.

¹¹⁰See Interview with Anthony Perna, 23. This perspective was confirmed in a conversation with former State Department Executive Secretary – and later Ambassador to Israel – Thomas Pickering in March 2017; Author Interview with Ambassador Thomas C. Pickering, 25 March 2017.

¹¹¹Making a similar point is Zach Levey, ‘The United States’ Skyhawk Sale to Israel, 1966: Strategic Exigencies of a Deal’, *Diplomatic History* 28/2 (April 2014), 255–76.

¹¹²For the importance of this perspective, see ‘Memorandum for Robert W. Komer of the National Security Council Staff’, 10 February 1965 *FRUS 1964–1968*, Vol. XVIII, doc. 146.

¹¹³David Rodman, ‘Phantom Fracas: The 1968 American Sale of F-4 Aircraft to Israel’, *Middle Eastern Studies* 40/6 (November 2004), 130–44.

nuclear ambitions by appearing to leave Israel strategically isolated.¹¹⁴ Thus, not only did competitive Cold War pressures drive the United States to overlook Israeli actions but, in such an environment, the logic of nuclear counter-proliferation could spur efforts that seemed to reward rather than penalize Israeli proliferation.

U.S. domestic politics remained in the background of foreign policy. This was particularly true of the Johnson administration, with Johnson himself a longtime supporter of the Jewish community.¹¹⁵ Yet even the Johnson administration prioritized U.S. foreign interests over any domestic concerns, with one scholar arguing that the administration used domestic politics as ‘a useful pretext to justify the sale [of F-4 jets to Israel] to an angry Arab world. Rusk even instructed American embassies [...] to employ the domestic politics card at their discretion to defuse hostile Arab reactions to the sale’.¹¹⁶

The U.S. and Israel’s nuclear program, phase three: hear no evil, see no evil, 1969–1979

Faced with these countervailing tendencies and the IC’s finding that Israel had a mature nuclear program, the incoming Nixon administration had few choices but to try to contain the fallout.¹¹⁷ Beginning in 1969, Nixon worked to strike a deal with the Israeli government, now headed by Golda Meir following Eshkol’s 1969 death: the United States would end efforts to contain the Israeli program and cease demands for inspections of Dimona so long as the Israeli government continued to keep the program under wraps by neither publicly acknowledging its nuclear capabilities nor testing a nuclear device.¹¹⁸ Internally, senior U.S. policymakers were explicit on the matter, with National Security Advisor Henry Kissinger writing Nixon that ‘while we might ideally like to halt actual Israeli possession, what we really want at a minimum may be just to keep Israeli possession from becoming an established international fact’. That is, Israel’s nuclear capability should not be made public or discussed.¹¹⁹ An informal agreement to these ends was likely reached in September 1969, after which the United States stopped pressuring Israel on the NPT, ended efforts to link nuclear matters

¹¹⁴William B. Quandt, *Decade of Decisions: American Policy Toward the Arab-Israeli Conflict, 1967–1976* (University of California Press, 1977), 80n10.

¹¹⁵See Lenny Ben-David, ‘Lyndon Johnson – A Friend in Deed’, *Jerusalem Post*, 9 September 2008.

¹¹⁶Rodman, ‘Phantom Effects’, 140.

¹¹⁷NSSM 40.

¹¹⁸William Burr and Avner Cohen, ‘Israel Crosses the Threshold II: The Nixon Administration Debates the Emergence of the Israeli Nuclear Program’, National Security Archive Electronic Briefing Book No. 485 (September 2014), <<http://nsarchive.gwu.edu/nukevault/ebb485/>>; Cameron and Rabinowitz, ‘Eight Lost Years’, 845.

¹¹⁹Henry A. Kissinger to The President, ‘Israeli Nuclear Program’, 19 July 1969, Nixon Presidential Library, supplied to authors via Or Rabinowitz.

to U.S. arms sales, and ceased demands to inspect Dimona.¹²⁰ Simply put, once the United States concluded that Israel was over the nuclear threshold, U.S. counter-proliferation efforts moved to a political damage limitation strategy.

Waning intelligence

With the 1969 decision to de facto accept Israel's nuclear capabilities, the incentive for the IC to devote the same attention to the Israeli program as it had in the 1960s decreased. Combined with the truncation of inspections, the quality and quantity of intelligence diminished. Although never reaching the depths of the 1950s lapses, the 1970s were marked by the United States' declining ability to monitor Israel's nuclear program.

Even so, there were some successes in this period. As noted, U.S. officials concluded by the close of the 1960s that Israel likely had the ability to produce a nuclear weapon – indeed, one high-level assessment at the time concluded that Israeli policymakers had likely given the 'green light' to develop a nuclear weapon as expeditiously as possible.¹²¹ Bringing this effort forward, the IC reviewed the Israeli nuclear program in the wake of India's 1974 nuclear test. The resulting report (which remains heavily redacted) omits mention of Israel's probable assembly of weapons during the 1973 Yom Kippur War. It does, however, reference both Israel's heavy investment in nuclear delivery systems and its acquisition of large quantities of uranium through clandestine means before concluding 'we believe that Israel has already produced and stockpiled a small number of fission weapons'.¹²² This basic assessment continued in subsequent years, with analysts repeating in 1975 and 1976 that Israel likely had a small number of deliverable nuclear devices.¹²³

Nevertheless, given the end of inspections and lack of policymaker enthusiasm for addressing Israeli nuclear developments following the Nixon-Meir agreement, the IC also acknowledged it lacked the ability to verify Israel's nuclear capacity. As one 1974 report noted, 'we do not expect

¹²⁰Cohen and Burr, 'Israel Crosses the Threshold', 27–28.

¹²¹Cohen and Burr, 'Israel Crosses the Threshold', 25.

¹²²Special National Intelligence Estimate, 'Prospects for Further Proliferation of Nuclear Weapons', 23 August 1974, online at <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB240/snie.pdf>>.

¹²³Richelson *Spying on the Bomb*, chap 6. Along similar lines, a U.S. diplomat stationed in Israel before and after the 1973 war described the 'folk wisdom' inside the U.S. embassy that 'the Israelis were within one to four weeks of assembling a weapon'; The Association for Diplomatic Studies and Training interview with Walter Smith, 17 May 1993, online at <<http://www.adst.org/OH%20TOCs/Smith,%20Walter%20B.%20II%20.toc.pdf>>, 34. Others, however, reached a different conclusion, arguing that 'the Israelis had a nuclear device [...] but it was a rather crude one; it would probably have to be dropped out of a C-130'; The Association for Diplomatic Studies and Training interview with former Ambassador Nicholas Veliotes, online at <http://www.adst.org/OH%20TOCs/Veliotes,%20Nicholas%20A.toc.pdf>>, 63.

the Israelis to provide confirmation of widespread suspicions of their capability either by nuclear testing or by threats of use, short of a grave threat to the nation's existence'.¹²⁴ These problems monitoring and assessing the Israeli nuclear program only mounted as the 1970s wore on.

Two issues epitomize the trend. First, despite burgeoning nuclear cooperation between Israel and South Africa in the mid-1970s, the IC largely remained in the dark about the relationship. Of course, there was some policymaker and IC interest in the matter as senior members of the Carter administration sought information by August 1977 on 'possible relationships' between South Africa and Israel. Yet while CIA noted in 1979 that Israelis had 'participated in certain South African nuclear research activities over the last several years', intelligence appears to have been fairly limited.¹²⁵ For example, a senior Arms Control and Disarmament Agency official retrospectively noted that discussion of an Israel-South Africa connection remained 'speculation' into the late 1970s.¹²⁶ Likewise, even after the September 1979 Vela incident (discussed later in this article), the IC discounted possible Israeli-South African collusion, seeing large political and strategic barriers to a joint test.¹²⁷ Indeed, encapsulating the IC's failure to recognize the high degree of Israel-South African collusion, an IC report noted that the South African nuclear program depended on foreign assistance, yet left Israel off the list of potential nuclear patrons.¹²⁸ In actuality, Israeli-South African cooperation began in the mid-1970s with a 1975 agreement to share nuclear technology and culminating in a 1977 deal to trade Israeli tritium for South African uranium.¹²⁹

Second, U.S. intelligence missed the growing scale and sophistication of the Israeli program, developments that only came to light with disclosures by former Israeli nuclear technician Mordechai Vanunu in 1986. Vanunu revealed that Israel had not only modified Dimona to produce dozens of kilograms of plutonium each year – enough for several nuclear devices – but that it was also producing fuel which that could be used for boosted fission or fusion weapons.¹³⁰ All told,

¹²⁴Quoted in Richelson, *Spying on the Bomb*, 270. See also Atomic Energy Commission, Memorandum of Key Judgments from Special National Intelligence Estimate 'Prospects for Further Proliferation of Nuclear Weapons', 2 October 1974, online at <<https://www.documentcloud.org/documents/1283751-1974-cia-assessment-that-israel-had-nuclear.html>>.

¹²⁵For the 1977 interest, see Paul Walsh to Rick Inderfurth, 'Memorandum for Dr. Brzezinski', 16 August 1977, <<https://www.cia.gov/library/readingroom/docs/CIA-RDP80M00165A000400310006-1.pdf>>. For 1979, see CIA, 'The 22 September 1979 Event', December 1979, <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB190/03.pdf>>.

¹²⁶For lingering ambivalence, see The Association for Diplomatic Studies and Training interview with Dean Rust, 6 December 2006, online at <<http://www.adst.org/OH%20TOCs/Rust,%20Dean.toc.pdf,31>>.

¹²⁷Interagency Intelligence Memorandum, 'The 22 September 1979 Event', n.d., online at <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB181/sa23.pdf>>.

¹²⁸CIA Intelligence Memorandum, 'The South African Peaceful Nuclear Program: Its Dependence on Foreign Assistance', November 1979, online at <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB181/sa22.pdf>>.

¹²⁹Richelson. Chap. 7; Or Rabinowitz, *Bargaining on Nuclear Tests: Washington and Its Cold War Deals* (New York: Oxford University Press, 2014), 112–13.

this meant the Israeli arsenal was somewhere between 100 and 200 weapons – several multiples more than the 25–30 weapons estimated from the 1970s onward.¹³¹ For roughly ten years, therefore, the U.S. intelligence community underestimated the size and scope of Israel's nuclear weapons program. As in the late 1950s, it took an unexpected intelligence coup to reshape U.S. assessments.

Policymaker ambivalence

Driving this intelligence process was an ambivalent policy scene and limited input from policymakers. Starting in the 1970s, U.S. policy on the Israeli program, as one diplomat termed it, 'was subsumed'.¹³² At root, United States policymakers were unwilling to challenge a mature Israeli program at a time when counter-proliferation officially remained a cornerstone of U.S. foreign policy, and revelations that an American partner had bucked U.S. pressure could only hinder these broader efforts.¹³³ Ironically, the policy vacuum obtained while the U.S.-Israeli relationship matured to include growing U.S. economic aid, military assistance, and diplomatic patronage.¹³⁴

Breaking from prior policy, this decade saw the Nixon, Ford, and Carter administrations cease trying to gain access to or oversight of the Israel program in the course of providing this aid. In effect, the United States acceded to Israeli aid requests and dropped the nuclear issue, signing up for what U.S. policymakers saw as Israel's Middle East agenda rather than sustaining the United States' nonproliferation interests.¹³⁵ This effort was sufficiently advanced that ambassadors moving to Middle Eastern posts were not even briefed on Israeli nuclear developments.¹³⁶ Logically, this approach also mandated efforts to minimize discussion of an Israeli nuclear program to forestall a rupture with Israel, acknowledging the tension in U.S. counter-proliferation policy, or spurring other states' efforts to acquire nuclear technologies.

By the mid-1970s, this policy was so well-established that new reports of the Apollo incident were downplayed by policymakers. In 1976, the CIA informed the

¹³⁰Richelson, *Spying on the Bomb*, chap. 11; also Avner Cohen and Benjamin Frankel, 'Israel's Nuclear Ambiguity', *Bulletin of the Atomic Scientist* 43/2 (1987), 15–19.

¹³¹Rabinowitz and Miller, 'Keeping the Bombs in the Basement', 56.

¹³²Interview with Veliotis, 74.

¹³³For U.S. non- and counter-proliferation policy in the Middle East at this time, see 'Memorandum from Secretary of State Vance to President Carter', 19 April 1979, *FRUS 1977–1980: Arab-Israeli Dispute, August 1978–December 1980*, vol. IX (Washington: GPO, 2014), doc. 239; 'Memorandum of Conversation: Summary of the President's Meeting with Israeli Prime Minister Menachim Begin', 13 November 1989, *FRUS 1977–1980*, vol. IX, doc. 405.

¹³⁴For crystallization, see 'Memorandum for the Record: Meeting of Special NSC Review Group on Israel Assistance Requests', 26 January 1970, *FRUS 1969–1976: Arab-Israeli Dispute, 1969–1972*, Vol. XXIII (Department of State, e-book, 2015), doc. 86.

¹³⁵See 'Memorandum of Conversation', 16 October 1975, *FRUS 1969–1976: Arab-Israeli Dispute, 1974–1976*, Vol. XXVI (Department of State, e-book, 2016), doc. 245.

¹³⁶Author Interview with Pickering.

U.S. Nuclear Regulatory Commission of the incident and the FBI began another investigation.¹³⁷ Nevertheless, although President-elect Carter was briefed on the issue by Director of Central Intelligence George H. W. Bush in December 1976, the Carter administration sought to avoid bringing attention to the problem.¹³⁸ Although NSC nuclear expert John Marcum wrote to another NSC staffer in July 1977, 'I do not think the President has plausible deniability [on the Apollo diversion]. The CIA case is persuasive, though not conclusive', his superiors were more equivocal.¹³⁹ Tellingly, National Security Adviser Zbigniew Brzezinski explained to President Carter that 'while a diversion might have occurred, there is no evidence – despite an intensive search for some – to prove that one did. For every piece of evidence that implies one conclusion, there is another piece that argues the opposite'.¹⁴⁰ Reflecting this ambivalence, charges were never filed against U.S. citizens who may have been involved in the incident as the Carter administration let the investigation lapse. As importantly, there is no evidence that the United States confronted Israel with even hints of these charges.¹⁴¹ After all, if Israel were presented with any evidence of the stolen material, the live and let live policy established in 1969 might come undone.

The Carter administration was soon confronted with an even blunter potential indicator of Israel's nuclear capability. On 22 September 1979, a U.S. 'Vela' satellite intended to detect nuclear detonations observed a flash of light seemingly originating in the South Atlantic. The flash appeared to match the distinctive pattern of a nuclear detonation, leading some analysts to initially conclude it could have been a nuclear test.¹⁴² An independent analysis by a panel of distinguished scientists led by Dr. Jack Ruina, however, subsequently concluded that the 'Vela Incident' was not a nuclear test but rather an anomaly of some other origin.¹⁴³ Still, amidst accusations that the Ruina Panel's conclusions were politically motivated,¹⁴⁴ concerns lingered in the policy community that Israel – perhaps in collusion with South Africa – had exploded a nuclear device.¹⁴⁵

¹³⁷Memorandum for Director of Central Intelligence, from Carl E. Duckett, Deputy Director for Science and Technology, 'Nuclear Materials and Equipment Corporation (NUMEC)', 11 March 1976 and FBI Memorandum, Washington Field Office, 'Zalman Mordecai Shapiro, Atomic Energy Act: Obstruction of Justice', 21 July 1977, both online at <<http://nsarchive.gwu.edu/nukevault/ebb565-Was-U.S.-Nuclear-Weapons-Fuel-Diverted-to-Israel/>>.

¹³⁸On the Carter briefing see Memorandum from John Marcum to Jessica Tuchman, 'Israel and MUF', 28 July 1977, online at <<http://nsarchive.gwu.edu/nukevault/ebb565-Was-U.S.-Nuclear-Weapons-Fuel-Diverted-to-Israel/>>. MUF is an acronym for 'material unaccounted for'.

¹³⁹Memorandum from Marcum to Tuchman, 3.

¹⁴⁰Memorandum for the President from Zbigniew Brzezinski, 'Nuclear MUF', 2 August 1977, 3, online at <<http://nsarchive.gwu.edu/nukevault/ebb565-Was-U.S.-Nuclear-Weapons-Fuel-Diverted-to-Israel/>>.

¹⁴¹Gilinsky and Mattson, 'Revisiting the NUMEC Affair'.

¹⁴²Weiss, 'Israel's 1979 Nuclear Test and the U.S. Cover-Up'. See also Office of Science and Technology Policy, Ad Hoc Panel Report on the September 22 Event," 23 May 1980 (the Ruina Panel), online at <http://nsarchive.gwu.edu/NSAEBB/NSAEBB190/09.pdf>.

¹⁴³For an overview of the Vela deliberations, see Jeffrey Richelson, 'The Vela Incident', National Security Archive Electronic Briefing Book No. 190, May 2006, <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB190/>>. In an interview with the authors, Ruina panel member Richard Muller noted the importance of very careful review of the data to avoid spurious correlation. The central debates on Vela all turned on interpretation of potentially corroborating data, such as ionospheric disturbance. Muller, and most of the Ruina panel, were

Nevertheless, the controversy did not trigger significant White House efforts beyond the Ruina Panel report; the Carter administration was willing to let the matter drop, and the subsequent Reagan administration did not revisit the issue.¹⁴⁶

Ultimately, the decision to avoid confronting Israel on nuclear matters progressed to the point where even dispositive evidence of the failure of U.S. counter-proliferation efforts did not cause U.S. policy to change. Thus, when the Vanunu disclosure revealed the advanced nature of the Israeli nuclear program and, by extension, highlighted the failures of U.S. nuclear intelligence, U.S. policymakers remained firm in their apathy. Not only was the American ambassador to Israel given no instructions to discuss nuclear developments with Israeli leaders, but nuclear matters were not even part of the embassy's portfolio at the time. As a senior U.S. diplomat later recalled, the unstated policy was to avoid bringing up nuclear matters that could complicate efforts to manage Arab-Israeli tensions and maintain the regional status quo.¹⁴⁷ In short, by the time the Israeli program was fully mature, American policy was in stasis.

Conclusion and implications

In sum, the approximately three decades during which Israel's nuclear program matured saw three distinct phrases in the U.S. approach toward Israeli nuclear developments. Throughout, U.S. policy simultaneously defined and was reinforced by intelligence-policy relations. During periods when policymaker attention to counter-proliferation – in Israel or more generally – waned, intelligence on the Israeli program was limited or imprecise; this reinforced policymakers' tendency to ignore Israeli nuclear efforts. Conversely, periods when policymakers expressed a clear interest in counter-proliferation – as occurred from the early to mid-1960s with Israel –

experienced with the vagaries of experimental physics and found this data more likely than not to be spurious. Interview with Richard Muller, 15 March 2017.

¹⁴⁴Thanks go to Leonard Weiss for comments and discussion on the Ruina Panel's suspect motivations. That said, the team included scientists known for their unwillingness to bend to political whim. Richard Garwin was perhaps most notable in this regard as his vocal insistence on maintaining scientific integrity while serving on the President's Science Advisory Council (PSAC) under President Richard Nixon was a major contribution to Nixon's decision to disband PSAC in 1972.

¹⁴⁵For initial suspicions that South Africa was culpable, see National Security Council, 'South Atlantic Nuclear Event', 22 October 1979, <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB190/01.pdf>>. For growing attention to Israel, see CIA, '22 September 1979 Event'. For lingering concerns, see Weiss, 'Israel's 1979 Nuclear Test and the U.S. Cover-Up'; 'The South Atlantic Mystery Flash: Nuclear or Not?' Defense Technical Intelligence Report, 26 June 1980. <<http://nsarchive.gwu.edu/NSAEBB/NSAEBB190/10.pdf>>.

¹⁴⁶Domestic politics may have played a role in the 1980 ambivalence. With Carter in a re-election fight against Ronald Reagan, he may not have wanted to antagonize the U.S. Jewish community by challenging Israeli actions; see Weiss, 'Israel's 1979 Nuclear Test and the U.S. Cover Up', 86. As Rabinowitz details, the Reagan administration also declined to investigate a second Vela-type incident that occurred in the South Atlantic in December 1980; Rabinowitz, *Bargaining*, 96–97.

¹⁴⁷Interview with Pickering. Pickering was U.S. ambassador to Israel at the time of Vanunu's disclosures.

encouraged the provision of higher-quality intelligence as the IC responded to policymaker input, thus helping strategists in their counter-proliferation efforts.

The results of this study carry implications for scholarship and policy on both counter-proliferation strategy and intelligence-policy relations. On one level, our results challenge a recent spate of studies arguing for the centrality of counter-proliferation to U.S. grand strategy during the Cold War. Not only did Israel successfully acquire nuclear weapons, but it did so due largely to variable American counter-proliferation attitudes. At minimum, this means that halting the spread of nuclear weapons was less of a lodestone in the United States' Cold War strategy than recent studies suggest. At maximum, our finding raises the possibility that counter-proliferation, far from being a key objective in U.S. Cold War strategy, was significantly more constrained by variety of internal (e.g., intelligence-policy relations) and external (e.g., non-nuclear strategic interests) factors. Regardless, the fact that Israel acquired a robust nuclear arsenal with only intermittent American opposition at a time when Israel was heavily dependent upon the United States calls for re-evaluating the course of American counter-proliferation efforts during the Cold War in general, and the sources of state counter-proliferation efforts in particular. Ultimately, in showing that American counter-proliferation efforts toward Israel varied over time, this project joins a nascent literature highlighting that additional research is needed to explain when, why, and how counter-proliferation becomes salient to a state's foreign policy as compared with other strategic objectives.¹⁴⁸

Relatedly, this project directs attention to additional avenues for research on intelligence-policy relations. As noted, intelligence-policymaker relations in the Israeli case varied over time, with notable intelligence lapses (e.g., Dimona's existence) and successes (e.g., the scale of Israeli nuclear efforts in the early-mid 1960s) that reflected and reinforced policymaker interest in Israel's nuclear program. Put simply, intelligence followed policymaker signals of interest. Perversely, this record suggests a potential pathology in intelligence-policymaker relations that has heretofore been understudied, namely: intelligence is most likely to be of high quality only after policymakers are already invested in an issue, yet missing or nebulous in periods when policymakers are underinvested in an issue (but therefore most vulnerable to strategic surprises and potentially receptive to new information).¹⁴⁹ Had, for instance, the IC recognized Dimona's existence before 1960 or been better attuned to advances in the Israeli program from the late 1960s, it is possible

¹⁴⁸Cavanna, 'Geopolitics over Proliferation'. Thanks also go to Galen Jackson for help on this point.

¹⁴⁹For similar work on the importance of calibrating intelligence to the policy cycle, see Gregory F. Treverton, *Reshaping National Intelligence for an Age of Information* (New York: Cambridge University Press, 2001).

that U.S. leaders would have devoted greater attention to resisting Israeli efforts. In context, information in the former period might have accelerated Eisenhower's disenchantment with his administration's counter-proliferation ambivalence; later, it may have pushed the United States to pressure Israel to limit the size and scope of the latter's nuclear arsenal.¹⁵⁰ Intelligence-policy-maker relations, in short, may be characterized by a dangerous harmony that creates room for strategic surprises by fostering a relationship that reinforces prior attitudes, beliefs and operating procedures.¹⁵¹ Additional work is needed to more fully examine this pathology, and to evaluate whether and how the IC can overcome the understandable tendency to respond to policy-maker signals of interest rather than supplying intelligence before an issue becomes politically relevant.

Finally, our findings suggest that strategists engaged in counter-proliferation efforts face a more difficult task than often recognized. At the end of the day, not only may it be difficult to develop tools to stop or slow proliferation, but detecting and prioritizing proliferation can itself be challenging. Intelligence agencies may lack the incentive or resources to focus on detecting proliferation, strategists may offer bureaucratic agents conflicting instructions, policymakers may not be receptive to information on others' proliferation steps, and leaders may be unwilling to sacrifice other foreign objectives to challenge others' nuclear gambits. The risk of failed counter-proliferation efforts, in sum, may be more susceptible to political and bureaucratic vicissitudes than widely appreciated. Overcoming this problem is not easy. Still, if policymakers wish to monitor and contain others' nuclear efforts, then the takeaway is clear – policymakers must give clear marching orders and adequate backing to facilitate robust intelligence collection efforts, while they themselves need to be receptive to this information.

Disclosure statement

No potential conflict of interest was reported by the authors.

¹⁵⁰Given the political context and U.S. strategy concerns, greater intelligence during the late Eisenhower years would have been particularly likely to catalyze a firmer American response to Israeli nuclear efforts.

¹⁵¹For similar work on overly harmonious intelligence-policy-maker relations, see Rovner, *Fixing*, 25–26. However, where Rovner emphasizes that excessive harmony can result from deferential intelligence and policy actors, the argument here underscores the problems that can result from mutually reinforcing attitudes and behaviors, and the problem this can pose to acquiring information that might change these attitudes.

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