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Uri Sadot. "Osirak and the Counter-Proliferation Puzzle." *Security Studies* 25:4: 646-676.
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Review by **Målfrid Braut-Hegghammer**, University of Oslo

This article revisits the longstanding question whether Israel's attacks on Iraq's nuclear program, culminating in the bombing of the French-supplied Osirak nuclear research reactor in June 1981, prevented Iraq's President Saddam Hussein from acquiring nuclear weapons before the 1991 Gulf War. The scholarly debate about the role of military force to prevent states from acquiring nuclear weapons largely hinges on this incident, as it is one of very few cases, and by far the best documented. This article brings important new perspectives into this discussion, and seeks to broaden it by arguing that the attack is best understood as part of a clandestine Israeli campaign against the Iraqi nuclear program, and not as an isolated incident.

Since the toppling of the Iraqi regime in 2003, new evidence has surfaced shedding more light on different perspectives inside the Iraqi regime and nuclear establishment on the impact of the Israeli attack. Even more recently, archives have opened in Israel and France. This article incorporates new sources into the analysis, including new Israeli perspectives.

What is the counter-proliferation puzzle explored in this article? In a narrow sense, the puzzle is whether or not the 1981 strike delayed or accelerated the Iraqi nuclear program toward a weapons option. The academic debate remains sharply divided on this question. In Israel, the Osirak attack is widely considered to have been a successful operation. Nonetheless, Israel has only used force against a nuclear site on one other occasion, against Syria in 2007. Israeli officials have frequently hinted at a possible strike against the Iranian program, but have not carried out such an attack to date. In fact, the Israeli security establishment appears to have been divided on the issue of attacking the Iranian nuclear program.¹ These observations point to another puzzle: why is military force so rarely used to curb nuclear weapons programs? If many Israelis believe that Osirak was a success, why have we not seen subsequent attacks on nuclear facilities in Libya and Iran?

¹ See, for example, Dalia Dassa Kaye, "Israel's Iran Policies After the Nuclear Deal," http://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE207/RAND_PE207.pdf.

Although numerous articles discuss the attack and its lessons, there is still much that we do not know about the Israeli decision and how other key states (notably France and Italy, two key suppliers to the Iraqi program) perceived the attack and its consequences. This article explores the clandestine campaign Israel launched against the Iraqi nuclear program in 1974. Aspects of this campaign have been mentioned in other accounts, but this article goes further in describing these activities and attributing responsibility for them. Notably, Uri Sadot argues that slowing down the Iraqi program became a key objective for Israel in the mid-1970s, and that the clandestine operation targeting the Iraqi program at that time was designed to slow down the Iraqi efforts.

While the Israelis defined slowing down the Iraqi program as a key priority from 1975, they considered the Iraqi program as “embryonic” during Yitzhak Rabin’s premiership, from 1974 to 1977 (656). As a result, their main effort to slow the program was by diplomatic means, making it more difficult for the Iraqis to secure access to foreign technology. These efforts do not appear to have posed a major obstacle for the Iraqis, who found willing suppliers in Italy and France. In 1979, an Israeli inter-agency assessment concluded that the Iraqi program posed a threat, and prepared new measures to target the program – apparently with a preference for resorting to non-military measures before using military force (657). Subsequently, Sadot argues, the Israelis used sabotage and other clandestine means, allegedly including killing scientists, in order to slow and derail the Iraqi nuclear program.

The author could have delved deeper into the actual consequences of the clandestine campaign leading up to the Osirak strike. For example, how important were the assassinations of scientists in the eyes of Israeli decision-makers? Were these targets of opportunity, or selected strategically? Was there any discussion about whether these activities were necessary, and how were they justified? Judging by the evidence Sadot presents, aspects of the clandestine campaign appear to have been poorly planned and executed. For example, one of the failed plots targeted the wrong individual (657). It is not entirely clear what the effects of these acts were, despite the author’s claim that they delayed the Iraqi program, or how we can distinguish these effects from other problems that this program faced.

This clandestine campaign was not the first of its kind. Israel carried out similar acts against foreign scientists based in Egypt during the 1960s, and is widely suspected of similar attacks against the Iranian nuclear program more recently. For example, Israel and the United States are widely believed to have carried out the so-called Stuxnet operation in 2009-2010, where malware reportedly led to the destruction of one thousand centrifuges.² It remains unclear who is responsible for other actions, such as the murders of Iranian engineers and scientists and explosions targeting Iranian nuclear sites.³ We still know relatively little about what Israeli officials have concluded about the effects and consequences of these other campaigns. A notable scholarly

² David Albright, Paul Brannan, and Christina Walrond, “Did Stuxnet Take Out 1,000 Centrifuges at the Natanz Enrichment Plant?” 22 December 2010, Preliminary Assessment, *Isis Report*. Accessed at http://isis-online.org/uploads/isis-reports/documents/stuxnet_FEP_22Dec2010.pdf.

³ Prof. Shai Feldman, Brig. Gen. (ret.) Shlomo Brom, and Amb. Shimon Stein, “What to Do about Nuclearizing Iran? The Israeli Debate,” *Middle East Brief*, Brandeis University, February 2012 No. 59, <https://www.brandeis.edu/crown/publications/meb/MEB59.pdf>.

criticism of the earlier Egyptian operation is that it was perhaps unnecessary, as the Egyptian program suffered from numerous problems and was unlikely to succeed.⁴

Several analysts argue that the Iraqi program was also dysfunctional.⁵ Even if we accept this argument, this does not preclude the possibility that the Israeli clandestine efforts had independent negative consequences. But more research is necessary to untangle these different effects. Hopefully, French and Italian archives can help shed more light on how the Israeli efforts affected the willingness of France and Italy to assist the Iraqi program prior to the 1981 attack. According to Iraqi accounts, these actions required additional security measures by the Iraqi nuclear establishment, making their dealings with foreign scientists and suppliers more cumbersome and time-consuming. While Iraqi accounts tend to vigorously deny that the Israeli clandestine campaign was effective, they do note that the added security measures that were put in place during the 1980s were an obstacle to their work.⁶

When it comes to the military attack on Osirak, this article highlights two important effects: the suspicion cast upon the program by other states, and delays in Iraq's nuclear weapons program. Sadot argues convincingly that the attack led to increased reluctance by French suppliers to help Iraq with its nuclear program. At the same time, Iraq found numerous small-scale suppliers from other European states that were willing to step in when the Iraqis lost access to their former suppliers.

The article is weaker when discussing how the bombing caused delays in Iraq's subsequent nuclear weapons program. To some extent, this reflects a broader issue with the debate on Osirak, which is that proponents and opponents tend to cite different kinds of effects. Critics⁷ of the strike argue its main effect was to strengthen Saddam's commitment to acquiring nuclear weapons, while proponents⁸ argue its main effect was to force Iraq to pursue a different and more difficult path to nuclear weapons (with the added constraint of international suspicion). Clearly, both things can be true at the same time.

This article argues that the strike ultimately did not intensify Saddam's commitment to acquiring nuclear weapons, and that it caused delays in the Iraqi nuclear weapons program after 1981, calculated as a 5-10 year delay (674). Sadot cites Saddam's ambition to acquire nuclear weapons prior to the Israeli attack as evidence

⁴ See review by David Rodman, Operation Damocles: Israel's Secret War against Hitler's Scientists, 1951-1967, *Israel Affairs* 20:3 (2014).

⁵ Jacques E.C. Hymans, *Achieving Nuclear Ambitions: Scientists, Politicians, and Proliferation* (Cambridge: Cambridge University Press, 2012); Malfrid Braut-Hegghammer. *Unclear Physics: Why Iraq and Libya Failed to Build Nuclear Weapons* (Ithaca: Cornell University Press, 2016).

⁶ See Jafar D. Jafar, Numan Saadaldin al-Niaimi, and Lars Sigurd Sunnanå, *Oppdraget: Innsidehistorien om Saddams atomvåpen* [The Mission: The Inside Story of Saddam's Nuclear Weapons] (Oslo: Spartacus, 2005).

⁷ Dan Reiter, "Preventive Attacks against Nuclear Programs and the "Success" at Osiraq, *The Nonproliferation Review* 12:2 (2005); Malfrid Braut-Hegghammer, "Revisiting Osirak: Preventive Attacks and Nuclear Proliferation Risks," *International Security* 36.1 (2011): 101-132.

⁸ Jeremy Tamsett, "The Israeli Bombing of Osiraq Reconsidered: Successful Counterproliferation?" *The Nonproliferation Review* 11.3 (2004): 70-85.

that the attack delayed Iraq's program (651). But it is one thing to want nuclear weapons, and another to set up a successful program. The weight of the evidence from Iraq arguably shows that the Iraqis were exploring the option of a weapons option before 1981, but that the strike was the trigger of a focused, determined program to acquire them.

Sadot also argues that Saddam Hussein preferred to continue on the plutonium path to nuclear weapons after the 1981 attack (663), and that he considered uranium enrichment a suboptimal path. Having to opt for enrichment after the Osirak strike is therefore cited as evidence for a delay (664). But it is not at all clear that Saddam had specific technical preferences for the weapons program. There are several reasons why Saddam wanted to replace the lost reactor, including his stated intention to not allow Israel's attack to prevent Iraq from building its nuclear program. Opting for simpler technologies with a smaller signature was in many ways a reasonable move by the Iraqis after the 1981 attack.

Ultimately, the article concludes that if Israel had not interfered, Iraq would have had "at minimum, a highly advanced and fully independent capacity to produce a plutonium based nuclear weapon" by 1990 (674). Recent analyses, drawing on Iraqi sources, are very skeptical of this argument. Some argue that Iraq would never have succeeded, due to the dysfunctional nature of the program,⁹ others argue that the Iraqi program faced numerous problems but nonetheless came close to success by 1990.¹⁰

The Osirak debate remains divided, but far from settled. As this article demonstrates, new sources from Israel can shed important new light on the causes and consequences of this attack, and the clandestine campaign that preceded it. An important insight from this article is that attacks on a suspected proliferator's nuclear program can cause compounding problems, notably by raising unwanted attention to these activities. Still, military force is a blunt instrument for states seeking to ensure that their rivals do not acquire nuclear weapons.

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⁹ Hymans, *Achieving Nuclear Ambitions*.

¹⁰ Braut-Hegghammer, *Unclear Physics*.