Nukes: Who Will Have the Bomb in the Middle East?

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WCFIA/CMES Middle East Seminar
Harvard University
October 4, 2018

I'd like to thank Lenore Martin and the WCFIA/CMES Middle East Seminar for sponsoring this talk and my colleague Sahar Nowrouzzadeh for agreeing to appear as discussant.

The subject of my talk is nuclear weapons proliferation in the Middle East. I'd like to begin by reviewing the history of nuclear proliferation in the region. Then I will talk about the current situation with a focus on Iran. And, finally, I'd like to offer some speculation about the future - keeping in mind the warning of the famous American philosopher Yogi Berra "It is dangerous to make predictions, especially about the future."

So, starting with history – the Middle East provides a rich history of case studies. Since the Second World War, more countries in the Middle East have sought nuclear weapons than in another other region of the world. I count six – Israel, Egypt, Iraq, Libya, Syria and Iran – of which only Israel has succeeded so far. Overall, this score card reflects a high level of motivation to acquire nuclear weapons, which is embedded in the security and political dynamics of the region, including persistent interstate conflicts and threats (for example the Israeli-Arab conflict and tensions between Iran and Arab states), rivalries for leadership among Arab leaders, and external intervention by outside powers. At the same time, I think the high rate of failure reflects deep limits on capability – both in terms of technical capacity to acquire or develop the means to produce nuclear weapons (fissile material), but also vulnerability to external actions

intended to block nuclear proliferation through political and economic pressure and even military force.

So, looking at individual cases, Israel was the first country in the region to pursue nuclear weapons back in the mid-1950s at a time when Israel believed it was facing an existential threat from its more heavily armed and larger Arab neighbors. Israel's nuclear weapons program was heavily dependent on very substantial French assistance to build a heavy water research reactor and reprocessing facility to produce plutonium. After this reactor at Dimona was discovered by American intelligence around 1960, both President Kennedy and President Johnson tried to prevent Israel from acquiring nuclear weapons, including sales of advanced military aircraft in exchange for annual visits by American experts to Dimona to ensure that the facility was not used for weapons production. Around 1970, however, President Nixon agreed to suspend these annual visits in exchange for Prime Minister Golda Meir's promise that Israel would not openly declare on demonstrate its nuclear capacity. Most likely, Israel produced its first nuclear weapons before the 1973 Yom Kippur War, but Israel continues to adhere to a public posture that it will not be the first country to "introduce" nuclear weapons in the Middle East.

Following Israel, the next Middle East country to pursue nuclear weapons was Egypt under President Nasser, who was no doubt responding to the public revelation of the Dimona reactor in 1960 in the broader context of the conflict and arms race with Israel. Unlike Israel, however, Egypt was unable to find a willing foreign partner – though he approached both the Soviets and Chinese – and Egypt's scientific and industrial capabilities were relatively weak compared to Israel. Egypt's nuclear program languished after its defeat in the 1967 War, and Sadat made a political decision to end the program as part of his larger strategy to make peace with Israel in 1979 and shift his alliance to the United States. Egypt joined the Non Proliferation Treaty (NPT)

in December 1980 in exchange for U.S. offers of peaceful nuclear cooperation, but Egypt's nuclear power program never materialized due to lack of finances.

The next Arab country after Egypt in 1960s to make a run for nuclear weapons was Iraq in the 1970s under Saddam Hussein, who was motivated (like Nasser) to counter Israel and assert leadership of the Arab world. In addition, Saddam was countering a potential threat from the Shah of Iran, who also pursing an extensive civil nuclear program with potential military applications. Unlike Egypt, Iraq was able to obtain significant nuclear technology from European suppliers (mainly France and Italy) after the 1974 oil boom under the guise of a civil nuclear program. The program was dealt a serious blow in June 1981 when Israel destroyed the French-supplied Osirak reactor, but Saddam rebuild a nuclear weapons program during the Iran-Iran War (1980-1988) with a massive secret program based on Calutron enrichment technology - most of which required large scale procurements of equipment and components from Western companies. Remarkably, this secret program was missed by all of the major intelligence agencies, including the US and Israel. Ironically, Iraq might have acquired nuclear weapons if Saddam had not invaded Kuwait in August 1990, resulting in a disastrous war against the U.S. that severely damaged the major nuclear facilities program and led to seven years (1991-1998) of intrusive international inspections that virtually eradicated the program, as we now know, even before the United States invasion in March 2003.

The next Arab country to make a nuclear bid was Libya under Qaddafi, who I think was motivated by a desire to enhance his personal prestige and Libya's relative power and influence in the region. Around 1997, Libya obtained centrifuge technology and nuclear weapons designs from Pakistan's AQ Khan Network, but the program was thoroughly penetrated by the CIA and MI6 and severely handicapped by Libya's technical limitations. In December 2003 – in a deal

with the Bush administration - Qaddafi agreed to abandon his WMD programs in exchange for sanctions relief and political normalization with the United States, and most of Libya's nuclear assets were eliminated or dismantled and shipped to the US.

Syria – Like Nasser, Hafez al-Assad and his son Bashar (succeeded July 2000) pursued nuclear weapons mainly to counter the security threat from Israel. Like the other Arab states, Syria's nuclear weapons program was heavily dependent on foreign assistance. In this case, North Korea agreed to help build the Al Kibar plutonium production reactor and facilities to fabricate and reprocess fuel. As in the case of Iraq, the secret Syrian program was undetected for several years, but Israel discovered the reactor before it became operational and destroyed the facility in a bombing raid in September 2007.

Finally, let me turn to Iran, which represents the most serious near term threat of proliferation. As I've suggested, the roots of Iran's interest in acquiring nuclear weapons really dates back to the Shah, who definitely saw Iran's ambitious civilian nuclear program as a potential spring board to nuclear weapons, although the Nixon and Carter administrations persuaded European suppliers not to provide sensitive nuclear technology to Iran and the revolution in 1979 cut short Iran's nuclear program. Even so, Iran's interest in nuclear weapons never completely died. In the mid-1980s, Iran secretly acquired enrichment technology and nuclear weapons designs from Pakistan. In the 1990s, Iran decided to begin a covert nuclear weapons development program and build a secret enrichment plant at Natanz. But, following the U.S. invasion of Iraq in 2003, Iran was forced to suspend its nuclear weapons program and allow international inspections of the Natanz facility. A few years later, Iran began construction of another secret enrichment facility at Fordow, which was revealed in 2009, and once again, Iran was forced to put under international safeguards.

In my view, the Iranian leadership is strongly motivated to acquire nuclear weapons – or at least the option to produce nuclear weapons - because nuclear weapons are seen as essential to defend against external threats (mainly the United States) and to assert Iran's dominance in the region. And, over thirty years, Iran has gradually developed the basic technology for producing fissile material. At same time, U.S. efforts with its allies significantly slowed the program though export controls sanctions, covert actions, diplomacy, and threats to use force and prevented Iran from actually producing nuclear weapons. These efforts to contain Iran's program culminated in the 2015 Joint Comprehensive Plan of Action, which imposed physical limits on Iran's ability to produce fissile material for 10-15 years (limits on numbers and types of centrifuges, enrichment levels, stocks of low enriched uranium, etc.) as well as additional monitoring measures. The JCPOA didn't solve problem, but it certainly delayed it.

As you all know, in May, President Trump decided to withdrawn from the JCPOA, rather than accept an offer from the European parties to the agreement to work with the U.S. to strengthen the agreement. Instead, President Trump's strategy is to destroy the nuclear deal, impose crippling sanctions on Iran and force Tehran to accept a "bigger and better deal". Such a deal would include more extensive restrictions on Iran's nuclear program, more intrusive inspections, and limits on ballistic missile development and Iran's regional activities. In exchange, the Trump administration is offering to establish diplomatic relations with Iran and lift primary sanctions that prohibit U.S. companies from doing business in Iran.

Since the U.S. withdrew from the nuclear deal in May, Washington has succeeded in re-imposing significant economic sanctions against Iran using economic threats and political pressure, despite opposition from U.S. allies in Europe and Asia, Russia and China. A large number of European companies have closed down their business operations in Iran, and Iranian

oil exports have declined by over one-third. Already, several of Iran's most important Asian oil customers (Japan, South Korea, and India) have indicated they will completely end purchases of Iranian oil by early November when the oil sanctions formally take effect.

So far, however, this renewed economic pressure has not succeeded in forcing Iran to agree to negotiate a new deal. Instead, Iran has rejected U.S. offers to negotiate a new agreement, including a meeting between Trump and Rouhani. For the time being, Iran's strategy seems to be to continue to comply with the original agreement and work with the other parties to mitigate sanctions. Iran seems to calculate it can survive in the near term – working with the Europeans to establish a special mechanism for financing exports and imports beyond the reach of the dollar and U.S. financial sanctions and counting on the Chinese to continue to buy enough discounted Iranian oil to keep government revenues afloat. More fundamentally, Tehran doesn't believe that the Trump administration is serious about negotiating a new deal that Iran can accept. For Iran, Trump's offer of a "bigger and better deal" is simply a cover for regime change. So, Iran has basically decided to hunker down and hope that Trump is not re-elected in 2020 and then try to negotiate a deal with the new administration to preserve the JCPOA – probably with some modifications.

Now, I'm going to get into the dangerous business of predictions. Right now, the U.S. continues to benefit from the nuclear constraints imposed on Iran by the JCPOA while at the same time imposing economic sanctions. This is probably not sustainable for the long term. At some point, Tehran is likely to decide to abandon the agreement (perhaps with secret activities, which has been Iran's practice in the past) or try to come to terms with Washington, most likely after the 2020 U.S. elections or perhaps after Iran's presidential elections in mid-2021.

In any case, Iran does not have an easy or safe pathway to produce nuclear weapons – if it decided to do so – as long as U.S. and allied intelligence remains effective in detecting clandestine activities and as long as Iran remains vulnerable to international pressures, including economic sanctions and ultimately the threat of force. This doesn't mean that Iran will never acquire nuclear weapons only that it doesn't seem on the verge in the near future. Similarly, none of the Arab countries that have pursued nuclear weapons in the past – Egypt, Iraq, Libya, Syria - seem likely candidates. The Arab-Israeli conflict has faded as a motivation and the aftermath of the U.S. occupation of Iraq and the civil wars in Libya and Syria have severely limited their capacity to mobilize resources to pursue nuclear programs. Saudi Arabia and the UAE are pursuing civil nuclear power programs, - and Saudi Arabia has warned it will acquire nuclear weapons if Iran does - but the Arab Gulf countries do not have an indigenous capacity to produce nuclear weapons for the foreseeable future, unless they acquired foreign assistance.

The major nuclear suppliers – the U.S., France, Russia, China, and Korea – are happy to sell power reactors, but none are prepared to export sensitive nuclear cycle technology to the Middle East. Based on history, North Korea and Pakistan are the two most likely sources of covert nuclear assistance, but neither seems to be active since the dismantlement of the AQ Khan network in 2004 and the destruction of the North Korean reactor in Syria in 2007.

Conclusion – It's remarkable that additional countries in the Middle East beyond Israel have not acquired nuclear weapons since the Second World War, despite strong motivations and persistent attempts. In part, this is due to limits on technological and scientific capabilities in the region, in part due to reluctance or refusal of outside players to provide sensitive technology, in part due to actions by the U.S. and its allies (including the Israeli air force!) and in part just good luck. For the time being, I believe that further proliferation can be prevented, but as long as the Middle

East remains a region dominated by conflict and tension and security threats, the underlying rational for acquiring nuclear weapons will persist even if countries face serious obstacles in achieving that objective.