Missiles, Drones, and the Houthis in Yemen

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ABSTRACT: In response to the Saudi-led intervention in Yemen in 2015, the Houthis transformed quickly from a local insurgent group to a nonstate actor able to defy regional powers. The Houthis' ability to lay the foundation for a nascent strategy of compellence provides important lessons on the growing accessibility and affordability of sophisticated weapons' systems and the likelihood future violent extremist groups will opt for this military posture as well.

Since the beginning of the war in Yemen in March 2015, Ansar Allah (commonly known as the Houthis) have been using missiles and drones against military targets belonging to the Saudi-led coalition. The Houthis have also attacked civilian targets deep inside Saudi Arabia and possibly inside the United Arab Emirates (UAE). The frequency of these attacks has become a common feature of the conflict—in 2018, the Houthis reportedly launched one missile attack nearly every week.[1] In this context, this article considers the evolution of the Houthi way of war from its first insurgency campaigns in 2004–11 to the ongoing conflict. It then assesses how the Houthis have built an effective strategy of compellence against conventional armed forces using missiles and drones, one explicitly inspired by Hezbollah's strategy in south Lebanon during the 1992–2000 period. This article concludes with some implications of this emerging pattern of nonstate actor warfare.

Missile attacks are obviously not the only tactics employed by the Houthis. Since the war started in 2015, the group has launched numerous ground offensives and, in particular, raids at the Saudi Arabia border that sometimes led to spectacular results.[2] Moreover, it can be argued the use of missiles and drones is nothing new and neither is its strategic significance, especially in the Middle East.[3] During the Second Lebanon War (July 2006) Hezbollah in Lebanon was able to fire missiles at Israel for 34 days despite a massive air campaign conducted by the Israeli Air Force.[4] Likewise, Hamas and other Palestinian groups have, over the

1 "Houthis," Missile Threat and Proliferation: Today's Missile Threat: Non-State Actors, Missile Defense Advocacy Alliance, accessed January 7, 2020.

2 See as a recent illustration, Patrick Wintour, "Houthis Claim to Have Killed 500 Saudi Soldiers in Major Attack," *Guardian*, September 29, 2019.

3 Aaron Karp, *Ballistic Missile Proliferation: The Politics and Technics* (Oxford: Oxford University Press, 1996).

4 Stephen D. Biddle and Jeffrey Allan Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy* (Carlisle, PA: Strategic Studies Institute, US Army War College, 2008).

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past decade, moved away from suicide bombings and now use rockets as their primary means of attacking southern Israeli cities.

At the same time, the damages suffered by Saudi forces and some of the country's critical infrastructures (airports, oil fields) highlight the difficulties of defending civilian and military targets against these systematic attacks, leading to the question of the ability of missile defense systems to secure troops on the battlefield as well as civilians and infrastructures far away from the conflict.

The Yemeni case provides striking lessons for military planners. The evolution of the conflict reflects a fast-paced escalation of missile and drone attacks, underlining the gradual centrality of missile warfare for the Houthis. Compared to Hezbollah or Hamas, the ability of the Houthis to store a robust inventory of weapons and train their combatants to use them effectively suggests significant acceleration in the strategic and operational learning process of nonstate actors. Therefore, it is very likely other groups will be tempted to emulate this strategy in the future.

While partly the creation of the Houthis, this nascent strategy was made possible through the support of ex-officers from the Saleh regime and the deployment of advisers and capabilities from Hezbollah and the Islamic Revolutionary Guard Corps (IRGC). But these factors do not render irrelevant the Houthis' demonstrated ability to adapt.

A strategy of compellence is more than mere harassment and differs from deterrence. In the words of Thomas Schelling, "There is typically a difference between a threat intended to make an adversary *do* something (or cease doing something) and a threat intended to keep him from starting something."[5] Schelling adds, "The threat that compels rather than deters, therefore, often takes the form of administering the punishment *until* the other acts, rather than *if* he acts."[6] In this context, the Houthis use missiles to hold their power and to force the Saudi coalition into accepting the territorial status quo. As of this writing, it remains to be seen if this strategy will be successful. Nonetheless, the ability of the movement to prolong the war and deny the coalition any breakthrough has been significant enough to consider its implications for future warfare.

Houthi Military Education

The Houthis are not a new phenomenon in Yemen: the group emerged in 1992, only two years after the unification of Yemen, in Sa'dah governorate, one of the poorest northern areas of the country. A Zaydi Shiite revivalist political movement under the leadership of the Houthi family, the Houthis were part of the parliamentary system in the country from 1993 to 1997.[7] In the following years, the relationship

5 Thomas Schelling, *The Strategy of Conflict* (Cambridge MA: Harvard University Press, 1960), 195 (italics in the original).

6 Schelling, *Strategy of Conflict*, 196 (italics in the original).

7 Helen Lackner, *Yemen in Crisis: Autocracy, Neo-liberalism and the Disintegration of a State* (London: Saqi Books, 2017), 147–67.

between the Houthi leadership and the regime of Ali Abdullah Saleh steadily deteriorated. Saleh proved unable to administer much-needed governance for the Sa'dah region in terms of infrastructure, social welfare, education, and security. This lack of governance exacerbated local feelings of marginalization and fueled the rising anti-regime rhetoric of the Houthis that paved the way for open confrontation.[8]

Between 2004 and 2010, the Houthis fought no less than six wars against the regime of Saleh. These conflicts were short—usually a few months—and ended with inconclusive military wins by the government that temporarily ceased hostilities.[9] At the outset, the Houthi mobilization looked like a mere revolt designed to challenge the local authorities in Sa'dah. The Saleh regime dismissed giving any social legitimacy to insurgent demands, portraying the insurgents as mere proxies of Iran and Lebanese Hezbollah. But the movement was able to gather forces rapidly and expand to adjacent regions: by 2008, the revolt was already getting close to the capital, Sanaa.

Throughout these conflicts, the Houthis morphed into an insurgency that launched surprise attacks, used hit-and-run tactics, and conducted ambushes against the Yemeni army. They used local connections and illicit trafficking to wage a protracted war against state authorities.[10] The first rounds of the conflict involved demonstrations and close fighting between Houthi combatants and government forces in the Marran Mountains. Overall, the early Houthi way of war was rudimentary. A RAND report published in 2010 described the Houthis as a loose organization that relied on "unconnected fighting groups."[11]

In response, the armed forces of the Saleh regime conducted indiscriminate air strikes and shelling in the Sa'dah region, especially at rebel camps and villages supporting the movement, and tried to change local power plays by supporting its own proxies against the Houthis.[12] Author Uzi Rabi described the evolution of the rebellion as one moving from a "consistent nuisance" to an "existential threat" for the regime.[13]

The conflict between Saleh and the Houthis quickly became part of the regional rivalry between Saudi Arabia and Iran. From 2004 onward, Saudi Arabia supported the Yemeni state apparatus against the Houthi insurgency.[14] By 2009, as the latter started extending its operations into southern Saudi Arabia, Saudi air and ground forces were deployed to the

8 Ginny Hill, *Yemen Endures: Civil War, Saudi Adventurism and the Future of Arabia* (New York: Oxford University Press, 2017), chap. 10.

9 For a detailed examination of the 2004–10 wars, see Marieke Brandt, *Tribes and Politics in Yemen: A History of the Houthi Conflict* (New York: Oxford University Press, 2017).

10 Michael Knights, "The Houthi War Machine: From Guerrilla War to State Capture," *CTC Sentinel* 11, no. 8, (September 2018): 16; and International Crisis Group, *Yemen: Defusing the Saada Time Bomb*, Middle East Report 86 (Brussels: International Crisis Group, May 27, 2009).

11 Barak A. Salmoni, Bryce Loidolt, and Madeleine Wells, *Regime and Periphery in Northern Yemen: The Huthi Phenomenon* (Santa Monica, CA: RAND Corporation, 2010), 238.

12 Salmoni, Loidolt, and Wells, *Regime and Periphery*, 9–10; Brandt, *Tribes and Politics*, 154.

13 Uzi Rabi, *Yemen: Revolution, Civil War and Unification* (London: I. B. Tauris, 2015), 159.

14 Jeremy M. Sharp, *Yemen: Civil War and Regional Intervention*, Congressional Research Service (CRS) Report R43960 (Washington, DC: CRS, September 17, 2019), 2.

border, threatening to "clean out" the rebel camps.[15] Meanwhile, despite persistent claims from Saleh and his Saudi allies, the relations between the Houthis and Iran were rather limited despite several visits to Tehran between 1994 and 2011 by Badr al Din al Houthi, the founder of the group, and his son Hussein. Likewise, Hezbollah military operatives such as Khalil Yusif Harb and Abu Ali Tabatabai reportedly traveled inside Yemen to meet Houthi leaders before the 2015 conflict started.[16]

The strategic environment changed dramatically after the Arab Spring of 2011. Saleh left power in February 2012, replaced by his vice president Abdrabuh Mansour Hadi who was backed by Saudi Arabia. It is believed protests leading to the fall of Saleh triggered Iran's provision of military and financial assistance to the Houthis, and the shipping of small arms grew in earnest.[17] Meanwhile Saleh, no longer Saudi Arabia's partner inside Yemen, soon found common cause with the Houthis—despite the fact the two fought six wars against each other—against the Hadi government. This odd alliance would prove decisive in September 2014, enabling the Houthi takeover of Sanaa.

In retrospect, the fall of Sanaa can be read as the culmination of this decade-long series of conflicts. It highlighted the disintegration of the Yemeni state, both under Saleh and his successor Hadi, as well as the growing ability of the Houthis to conquer and seize control of territories beyond the initial stronghold in Sa'dah.

From 2004 to 2015, there was no record of the Houthis using missiles against their opponents. In previous conflicts, Houthi combatants fought in the mountains (in the Haydan district) or in urban areas (Sa'dah, Kitaf). They used small-to-medium arms such as hand grenades and usually ambushed or openly attacked government forces.[18]

The date of the first use of a missile by the Houthis in the conflict is disputed. According to official Saudi sources, a Scud missile was intercepted on June 6, 2015, on its way to Abha. But UN experts mention another strike on June 29, 2015. In either case, the missile attack occurred between two and three months after Saudi Arabia's decision to set up a military coalition to restore the Hadi government.[19] In the following weeks, Houthi attacks inside Saudi Arabia steadily increased and focused on border areas. Cities including Jizan, Najran, and Khamis Mushayt were repeatedly targeted.

The focus on border areas occurred simultaneously with the evolving battle inside Yemen. After the initial conquest of Sanaa in 2014, the Houthis expanded southward to Aden and westward to Al

15 Hill, *Yemen Endures*, 194.

16 Matthew Levitt, "Hezbollah's Pivot toward the Gulf," *CTC Sentinel* 9, no. 8 (August 2016).

17 International Institute for Strategic Studies (IISS), *Iran's Networks of Influence in the Middle East*, Strategic Dossier, (London: IISS, 2019), 162.

18 Salmoni, Loidolt, and Wells, *Regime and Periphery*, 137–39.

19 UN Security Council, 2140 Sanctions Committee Yemen, Final Report of the Panel of Experts on Yemen, S/2018/594 (January 26, 2018), 29; and Jean Masson, *Les missiles des Houthis: Prolifération balistique et groupes armés non-étatiques*, no. 11/2018 (Paris: Fondation pour la Recherche Stratégique), December 2018.

Hudaydah. But by the summer of 2015, this momentum was curbed by the intervention of the coalition and its local partners. A war of static positions unfolded and coincided with the Houthis increasing reliance on missile attacks targeting Saudi territory.

In 2016, the Houthis increased the frequency and extended the range of missile attacks. The attacks in 2015 were conducted using Scud-B and Scud-C missiles. Starting in February 2016, the Burkan-1 and Burkan-2H were reportedly introduced on the Yemeni battleground allowing the Houthis to reach more distant targets.[20] Moreover, the missiles did not just target the forces of the coalition; they were also aimed at Saudi territory and at ships crossing the Red Sea. By mid-October 2016, the Houthis started engaging targets further north in Saudi Arabia: a ballistic missile was fired at the Taif military base and later that month, the Saudi forces reported the interception of a missile near Mecca.[21] During that same period, the group also used an anti-ship missile in the Red Sea to strike a UAE vessel.

The series of attacks in late 2016 clearly signaled the Houthis' improvement in employment of missiles. Saudi military sites were the initial priorities. But civilian infrastructures were soon in the line of sight: in July 2017, oil facilities near the city of Yanbu were targeted. In November of that same year, King Khaled International Airport in Riyadh came under attack. Noticeably in this last case, the missile had to travel about 900 km to reach the Saudi capital—a range clearly beyond that of the missiles stored by the Saleh regime.

Soon the UAE, Saudi Arabia's closest ally and biggest contributor to the war, also became a target. In December 2017, the Houthis declared they had launched a cruise missile at the Barakah nuclear reactor in the emirate of Abu Dhabi. But no signs of destruction were visible or reported, and Emirati authorities subsequently denied the claim. On July 26, 2018, the Houthis announced they had attacked Abu Dhabi International Airport with a drone named the Samad-3. The Emirati government again denied the attack. It acknowledged an incident had occurred at the airport but said there was no evidence the facilities had suffered any damage. Moreover, air traffic management was operating at a normal pace after the supposed attack. A month later, a similar claim was made regarding a drone attack against the Dubai International Airport, the third busiest airport in the world. But once again, no sign of any destruction was visible.[22]

In addition to firing ballistic missiles, the Houthis have recently employed other tactics. In January 2017, the Saudi frigate Al Madinah was attacked by "suicide boats" near the Al Hudaydah port in the Red

20 Jean Masson, *Les missiles des Houthis*, 8.

21 US Institute of Peace, "Timeline of Houthi Attacks on Saudi Arabia," *Iran Primer* (blog), September 16, 2019.

22 "UAE Denies Report of Houthi Drone Attack on Dubai Airport," Reuters, August 27, 2018; and Khalil Dewan, "Investigating Houthi Claims of Drone Attacks on UAE Airports," Bellingcat, November 7, 2018.

Sea.[23] In June 2019, a cruise missile was launched against Abha Airport in southern Saudi Arabia. And in early 2019, the Houthis began to employ drones more frequently as part of their military strategy.

In the fall of 2016, the UAE Presidential Guard reportedly intercepted unmanned aerial vehicles in the area of Aden International Airport. A few months later, on February 26, 2017, the Houthis claimed to have manufactured their own system, the Qasef-1, although independent researchers strongly suspected the drone was in fact Iranian in origin, given the similarities with the Iranian Ababil-2 drone.[24] But in January 2019, Houthi fighters used a bomb-laden drone to attack Yemeni military officials during a military parade at the Al Anad Air Base, near Aden. The attack killed at least six people, including the head of military intelligence, Major General Mohammad Saleh Tamah.[25] In May, two oil pumping stations in the province of Riyadh were damaged by a drone attack. In the following weeks, drones were sent against airports in Najran and Jizan and against urban areas in Khamis Mushait and Asir.

Most recently on September 14, 2019, Houthis claimed responsibility for a drone attack on oil fields in Abqaiq. The effectiveness of the strike and the distance between the target and Houthi-controlled territories in Yemen would have made such an attack a major technological leap forward. The US government expressed doubts, however, about the Houthi claim and instead blamed the Iranian regime for the strike.[26]

A Strategy of Compellence

Although it may be tempting to dismiss Houthi tactics as mere harassment, several interrelated indicators (selection of targets, organizational changes, use of attacks in propaganda) suggest a strategy of compellence. The timeline presented above reveals specifically how missiles and drones have taken center stage in the conflict in Yemen. It confirms these arsenals were integrated to the Houthi military posture in a remarkably short period of time. This impressive pace of learning has nurtured suspicions regarding external support the group has received. Indeed, if the Houthis had no track record of previous use of such arsenals, how could one explain the sudden extensive employment of such weaponry?

Prior to the conflict, Saleh's regime had no indigenous program of missiles. It did, however, store a small amount of Scud-B missiles and Hwasong-6 missiles purchased in the eighties and nineties from the

23 Ahmed Al Omran and Asa Fitch, "Yemen's Houthi Rebels Launch Rare Suicide Attack on Saudi Frigate: The Red Sea Attack Killed Two Crew Members, According to a Saudi Arabia-led Military Coalition," *Wall Street Journal*, January 30, 2017.

24 Conflict Armament Research, *Iranian Technology Transfers to Yemen: "Kamikaze" Drones Used by Houthi Forces to Attack Coalition Missile Defence Systems*, Frontline Perspectives (London: Conflict Armament Research, March 2017).

25 Ahmed Al-Haj, "Yemen Military Intel Chief Dies of Wounds From Drone Attack," Associated Press, January 13, 2019.

26 Summer Said, Jared Malsin, and Jessica Donati, "U.S. Blames Iran for Attack on Saudi Oil Facilities; Saudi Arabia Shuts Down About Half Its Oil Output After Strikes," *Wall Street Journal*, September 15, 2019.

Soviet Union and North Korea.[27] It appears the first wave of missile attacks in the summer of 2015 relied on this specific inventory. Given the alliance between the Houthis and Saleh at that time, it is likely the Houthis drew from the know-how of loyalist officers from the Saleh regime to launch these missiles. Still, these first attacks were perceived as ineffective by the Houthi leadership.[28]

The Burkan-1 and Burkan-2H missiles that appeared later—in early 2016 and 2017 respectively—were not stored by the former regime and were in all likelihood obtained in the first months of the conflict. The Burkan-1 may have been Scud missiles modified with external technical support. But the similarity of the design of the Burkan-2H with Iranian Qiam-1 missiles quickly led the international community to accuse Iran of supplying them to the Houthis.[29] Suspicions grew in earnest for most of 2016 and 2017. Noticeably, experts determined the missile that targeted the UAE ship in October 2016 was a Chinese-made C-802 supplied by Iran.[30] It was the same type of missile Hezbollah used against the Israeli Navy during the 2006 conflict.

As the UN Panel of Experts on Yemen noted, by May 2017, the Houthis were firing extended-range ballistic missiles, demonstrating both Iran's decision to deepen its support of the Houthis and the maturation of Houthi training. Hence, a few months later in December 2017, the US ambassador to the UN, Nikki Haley, issued a strong statement condemning Iran for transferring these weapons to the Houthis.[31] This statement was followed by several public assessments from US intelligence agencies supporting the claim.[32]

In January 2018, the UN Panel of Experts on Yemen recognized that Iran, "failed to take the necessary measures to prevent the direct or indirect supply, sale or transfer" of such technology to the Houthi-Saleh forces.[33] The UN Panel of Experts also confirmed the drones the Houthis had been using, such as the Qasef-1 UAVs, were similar "in design, dimensions and capability" to the Iranian-made Ababil-T.[34]

But the most important component of the military evolution of the Houthis was not Iran's supply of weapons systems—overall very modest in comparison to support provided by Tehran to Iraqi and Lebanese partners. Rather, guidance provided by Iranian and Hezbollah

27 Noah Browning, "Houthi Missile Arsenal Holds a Key to Future Yemen Peace," Reuters, November 22, 2016.

28 UN Security Council, 2140 Sanctions Committee Yemen, Final Report of the Panel of Experts on Yemen, S/2018/193 (January 31, 2017), 143.

29 UN Security Council, 2140 Sanctions Committee Yemen, Final Report (January 31, 2017), 28; Jean Masson, *Les missiles des Houthis*, 18; and Jeremy Binnie, "Yemeni Rebels Enhance Ballistic Missile Campaign," *Jane's Intelligence Review*, July 7, 2017.

30 Jeremy Binnie, "UAE's Swift Hit by Anti-ship Missile," *Jane's Defence Weekly*, October 4, 2016.

31 John Ismay and Helene Cooper, "U.S. Accuses Iran of U.N. Violation, but Evidence Falls Short," *New York Times*, December 14, 2017.

32 *Worldwide Threat Assessment of the US Intelligence Community: Hearings before the Select Committee on Intelligence of the United States Senate*, 115th Cong. (2018) (statement of Daniel R. Coats, Director of National Intelligence).

33 UN Security Council, 2140 Sanctions Committee Yemen, Final Report (January 26, 2018), 32.

34 UN Security Council, Yemen, Final Report (2018), 32.

advisers on the use of this technology played a key role in the Houthis' military strategy designed to compel the Saudi-led coalition to accept the territorial status quo.

In short, Iran helped the Houthis reinforce the arsenal they took from the Yemeni government. More importantly, Iran may have helped the Houthis make systematic use of it in order to move from a local insurgency to a nonstate actor able to defy regional powers. The size of that inventory matters less than the ways in which the Houthis have been using it. This resonates with the classic debate on the role of technology in warfare: as Michael Horowitz emphasizes, "it is the employment of technologies by organizations, rather than the technologies themselves, that most often makes the difference."[35]

The strategic influence of Iran and Hezbollah is evident in the evolving military structure of the Houthis. A key challenge seems to have been organizational change required by the deployment of this arsenal. During the 2004–14 conflicts, the Houthis largely remained a militia based on tribal ties. But there are indications the movement is developing into a more organized force. It now commands three missile brigades under the leadership of Major-General Muhammad Nasser Ahmed al-Atifi, the former commander of the missile brigades of the Hadi regime who defected and joined the Houthis to become their defense minister.[36] The group also took control of the Yemeni military's Missile Research and Development Center, which the Houthis claimed was developing missiles such as the Burkan.[37]

In the past five years, missiles and drones have been used by the Houthis on the battlefield and in propaganda campaigns, with the media outlets linked to the group issuing numerous threats against targets in Saudi or Emirati territories and releasing video footage of past attacks.[38] In January 2018, the Houthis publicly declared their goal to block Red Sea shipping lanes by using anti-ship cruise missiles.[39] In May 2019, Yemen News Agency, the official news agency of the Yemeni government seized by the Houthis in January 2015, quoted a rebel military source saying they planned to strike 300 Saudi and UAE targets, including military headquarters and bases in both countries and their bases in Yemen.[40]

Following the attack on the Saudi Aramco oil fields on September 14, 2019, missile threats were even more frequent. On September 26, Houthi-affiliated Lieutenant-General Abed Al-Thour asserted on

35 Michael C. Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics* (Princeton: Princeton University Press, 2010), 2.

36 IISS, *Iran's Networks of Influence*, 165.

37 Tom Cooper, "How Did the Houthis Manage to Lob a Ballistic Missile at Mecca?," War is Boring, January 2, 2017.

38 For detailed coverage of the Houthi media campaign, see the clips made available by the Middle East Media Research Institute TV Monitor Project.

39 UN Security Council, 2140 Sanctions Committee Yemen, Final Report of the Panel of Experts on Yemen, S/2019/83 (January 25, 2019), 83.

40 "Yemen's Houthi Group Says Will Target UAE, Saudi Vital Military Facilities," Reuters, May 19, 2019.

Al-Masirah television that "with its aerial strikes and missile force, Yemen will send the UAE back to a time before its foundation."[41]

An examination of this media rhetoric shows how the arsenal became an instrument of pride for the Houthis. It also illustrates how it is conceived as a means to compel the coalition, and in particular Saudi Arabia, to remove their forces from disputed territories in Yemen.[42] For instance during an interview with the media website Al-Monitor, Abdul Ghani al-Zubeidi, the editor in chief of the Houthi-affiliated *Al-Jaish* magazine asserted: "the [Houthi] army command is adopting a strategy of crippling movement in Jizan and Abha airports. . . . If strikes in Yemen persist, we will move to the next stage, which is targeting more distant airports in Riyadh and Jeddah."[43]

This statement is striking as it shares rhetorical similarities with a major speech given in 2010 by Hassan Nasrallah, the secretary-general of Lebanese Hezbollah. This famous speech of Nasrallah, called "Khitaab al radaa"' (Speech of deterrence) posited: "You destroy a Dahiya building and we will destroy buildings in Tel Aviv. . . . If you target Beirut's Rafik Hariri International Airport, we will strike Tel Aviv's Ben Gurion International Airport. If you target our electricity stations, we will target yours. If you target our plants, we will target yours."[44]

The two quotes have a similar reasoning and show that, overall, the Houthi message resonates with the Hezbollah posture against Israel. The difference is that al-Zubeidi calls for the cessation of coalition strikes on Yemen while Nasrallah threatens the Israel Defense Forces (IDF) not to attack Lebanon. Using Schelling's definition, the former is a case of compellence while the latter is one of deterrence. This distinction between compellence and deterrence explains why most comparisons of the Houthis with Hezbollah are misleading: arguably, the Houthi way of war mirrors the strategy of Hezbollah not as it is known today, but rather as it was between 1992 and 2000.

In 1992, Hezbollah first used Katyusha rockets against the IDF in south Lebanon and by June 2000, the last Israeli soldiers departed the occupied area. During this period, Hezbollah revised its military strategy toward the IDF by decreasing its reliance on suicide attacks and training its combatants to employ rockets on the battlefield in a systematic way.[45] Following his nomination as secretary-general of the Lebanese movement in February 1992, Nasrallah explained to the

41 "Houthi Military Expert Lieutenant-General Abed Al-Thour: UAE Like a Cave Full of Bats; We Can Destroy It; UAE Soldiers Will Have No Place to Return to," Middle East Media Research Institute TV Monitor Project, clip no. 7524, September 26, 2019, accessed 30 November 2019.

42 For a discussion of compellence as a type of coercion, see Thomas Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966), 70–71.

43 Ammar al-Ashwal, "Houthis Taking Battle to Saudis with Upgraded Weapons Cache," Al-Monitor, July 8, 2019.

44 Hassan Nasrallah, "Khitaab al radaa'," (speech) Beirut, Dar Al-Manar TV broadcast, 2010, DVD copy.

45 Nicholas Blanford, *Warriors of God: Inside Hezbollah's Thirty-Year Struggle Against Israel* (New York: Random House, 2011).

newspaper *As Safir* that rockets were helping Hezbollah "work toward creating a situation in which the enemy is subject to our conditions."[46]

For Nasrallah, the architect of that revision, the logic was to compel Israel to remove its forces from occupied Lebanon. While the causal link between Hezbollah's strategy and the IDF withdrawal of 2000 has been contested, it definitely fueled Hezbollah's narrative in the aftermath.[47] This also explains why the Houthis have followed the same objective in their current missile campaign against Saudi Arabia.

Concretely, the influence of Hezbollah has taken the form of training of Yemeni fighters even before the takeover of Sanaa in 2014.[48] Since then, there have also been reports of Hezbollah operatives on the ground. (In September 2018, the Saudi coalition claimed it killed Tariq Haydrah, a Hezbollah commander, in an airstrike.[49]) An analysis of Houthi practices, such as concealing launchers, targeting locations in Saudi Arabia, planning anti-shipping attacks, and designing influence strategies through the use of media campaigns, suggests Hezbollah cadres in Yemen have shared the lessons of their missile campaigns against Israel.[50] The Houthis have thus compelled the Saudi-led coalition into withdrawing its forces from its controlled territories.

Today this posture aims to consolidate the Houthi foothold inside northern Yemen and force countries belonging to the Gulf Cooperation Council into accepting the status quo. The similarities between the military postures of the Houthis and Hezbollah are noteworthy: both nonstate actors defend an enclave with a vast arsenal of missiles and drones, posing a direct threat to neighboring countries—in the case of Hezbollah, the security predicament Israeli military commanders have been facing since their withdrawal from southern Lebanon two decades ago.

The difference, however, is the distinctly compressed timeframe in which the Houthis achieved this position. This fact underlines not only the accelerating diffusion of military technology to nonstate actors but also, and more importantly, the ability of these groups to rapidly reorganize and train their combatants. If this evolution is a prologue to future conflicts involving nonstate actors, the Houthi military strategy throughout the war in Yemen presents challenges worth exploring.

Future Houthi-Type Campaigns

From the outset, the Houthi missile campaign against Saudi Arabia posed a fundamental conundrum—how to protect troops and civilians in the midst of a military intervention. The gradual ability of the Houthis to reach targets deep inside Saudi territory is a cautionary

46 Quoted in Nicholas Noe, ed., *Voice of Hezbollah: The Statements of Sayyed Hassan Nasrallah* (London: Verso 2007), 62.

47 Dalia Dassa Kaye, "The Israeli Decision to Withdraw from Southern Lebanon: Political Leadership and Security Policy," *Political Science Quarterly* 117, no. 4 (Winter 2002–3): 561–85.

48 IISS, *Iran's Networks of Influence*, 171.

49 IISS, *Iran's Networks of Influence.*

50 IISS, *Iran's Networks of Influence*; and Knights, "Houthi War Machine."

tale on what missile defense can do and cannot do, given the fact Saudi Arabia and the UAE are among the biggest purchasers of missile defense systems in the world. Both countries operate Patriot missile batteries. The UAE also bought two terminal high altitude area defense missile (THAAD) systems in 2012. Saudi Arabia is in the process of acquiring the THAAD system as well. Both nations benefit from the deployment of US capabilities under the umbrella of US Central Command.

According to authorities in Riyadh, since 2015 Saudia Arabia has intercepted a large number of Houthi missiles, preventing heavy casualties. The public domain lacks precise information regarding the interception rate making it hard to assess the operational effectiveness of the systems. But Saudi official statements have sometimes been questioned by independent experts. When examining the missile attacks of November and December 2017 against King Khaled Airport and Al Yamamah Palace—both in the Riyadh area—Jeffrey Lewis, a research director at the James Martin Center for Nonproliferation Studies, said it was "very unlikely the missiles were shot down, despite officials' statements to the contrary. . . . There is no evidence Saudi Arabia has intercepted any Houthi missiles during the Yemen conflict."[51]

Lewis's suspicions follow a long list of critical studies challenging the effectiveness of missile defense, and of Patriot missile batteries in particular, in the aftermath of the Persian Gulf War (1990–91).[52] In substance, the discussion over the Patriots' performance against Houthi attacks is similar to traditional controversies over missile defense: it emphasizes limitations regarding the territorial coverage, the difficulties of early warning systems to detect incoming projectiles—particularly cruise missiles and drones—and finally, the interception rate of batteries deemed too low to truly rely on missile defense.

The Israeli experience may inform current predicaments of Saudi Arabia and possibly other countries in the future. Like Saudi Arabia, Israel faces a similar challenge with Hezbollah on its northern front and has heavily invested in missile defense through weapon systems such as Iron Dome, David's Sling, and Arrow. In fact, Israeli military officials have long warned against the illusion of considering missile defense systems as a comprehensive shield against any foreign threat.

In 2010, then Major General Gadi Eisenkot, head of the IDF Northern Command, stated: "the residents of Israel shouldn't be under the illusion that someone will open an umbrella over their heads. . . . The systems are designed to protect military bases, even if this means that citizens suffer discomfort during the first days of battle."[53] Eisenkot's statement remains valid today. Even in the case of Israel, approximately 98 times smaller than Saudi Arabia, the effectiveness of missile defense

51 Jeffrey Lewis, "Patriot Missiles Are Made in America and Fail Everywhere," *Foreign Policy*, March 28, 2018.

52 Theodore A. Postol, "Lessons of the Gulf War Experience with Patriot," *International Security* 16, no. 3 (Winter 1991–92): 119–71.

53 "Eizenkot: Rocket Defenses Designed for IDF, Not Citizens," *Jerusalem Post*, December 1, 2010.

is admittedly limited. That fact calls for modest expectations regarding territorial coverage of these systems.

Additionally, the proliferation of advanced military technologies to nonstate actors means ballistic missiles and drones are increasingly accessible and affordable. On the other side, missile defense systems still demand substantial funding and advanced training for their operators. The comparative investment costs between missiles and missile defense still favors the former over the latter, and is likely to do so even more in the future. Such a trend obviously reduces the deterrent value of missile defense, though it does not eliminate it entirely.[54]

These issues do not call for a complete dismissal of missile defense systems but rather a more balanced military strategy. In 2011, the IDF created a new special military unit named the Depth Corps Force to coordinate and conduct clandestine operations in enemy territory against missile and rocket launcher sites. Tellingly, despite the deployment of Iron Dome batteries across Israel during that period, the IDF retained the option of preemptive strikes.[55]

The activities of Depth Corps Force also echoed efforts of US and British Special Forces to locate Scud missiles inside western Iraq during Operation Desert Storm in 1991—a mission with only modest successes.[56] The Israeli experience vis-à-vis Hezbollah or the American experience with the regime of Saddam Hussein may provide important lessons for Persian Gulf countries, such as strengthening intelligence collection on rocket, drone, and missile locations and preparing forces for preemptive operations.

At the same time, as the case of the Houthis demonstrates, nonstate actors still rely heavily on the support of external powers to achieve significant results in missile warfare and in compelling conventional armed forces. In short, without the Iranian supply of missiles and drones and without the training provided either by the IRGC or Hezbollah, the Houthis would very likely have been unable to adapt the way they did. At the regional level, preventing state sponsorship is essential to curbing ongoing proliferation of these technologies to militias.

Unfortunately, arms control mechanisms in the Middle East and the Persian Gulf have traditionally failed: no country in the region is a member of the Missile Technology Control Regime and only three—Iraq, Jordan, and Libya—adhere to the Hague Code of Conduct against Ballistic Missile Proliferation. Moreover, the Missile Technology Control Regime was originally designed to prevent the proliferation of

54 Joshua R. Itzkowitz Shifrinson and Miranda Priebe, "A Crude Threat: The Limits of an Iranian Missile Campaign against Saudi Arabian Oil," *International Security* 36, no.1 (Summer 2011): 167–201.

55 Anshel Pfeffer, "Israel Announces New 'Depth' Command for Long-Range Military Operations," *Haaretz*, December 15, 2011.

56 See William Rosenau, *Special Operations Forces and Elusive Enemy Ground Targets: Lessons from Vietnam and the Persian Gulf War* (Santa Monica: RAND Corporation, 2002), 29–43.

nuclear-capable missiles and therefore it only covers systems traveling at least 300 kilometers.

Consequently, even if regional actors were to comply with the current regime, they could technically still transfer to nonstate actors a large portion of the low-range inventories similar to those the Houthis use in Yemen. Given the limitations of diplomatic initiatives, the definition of a tailored code of conduct calling on all Middle Eastern states to refrain from transferring missiles and drones to nonstate actors is a modest but critical step to mitigate risks associated with this new pattern of warfare.

Implications for Policymakers

Revising existing international frameworks to prevent further missile and drone proliferation to nonstate actors may degrade the firepower of groups like Hezbollah and the Houthis. But it will not entirely destroy them. Given long-term trends in the diffusion of military power—such as the exponential progress in missile technologies, the expansion of proliferation networks, and the capacity of armed groups to assemble indigenous arsenals—these movements will eventually find ways to acquire weapons systems, enabling them to maintain their grip of conquered territories and heightening the risks of external interventions. Under these circumstances, Saudi Arabia may well have to cope with a Houthi threat on its southern flank for the time being, accepting a certain amount of vulnerability at its borders in the same way Israel persistently contends with the Hezbollah threat from the north.

This trend—nonstate actors emulating the posture of Hezbollah and the Houthis—may adversely affect the ability of US forces to intervene in regional crises. Conventional armed forces such as the United States military may increasingly face entities using missiles and drones as a rudimentary and low-cost means of an emerging anti-access strategy. Practically, it may increase casualties and could constitute a kind of insurance policy for those terrorist organizations.

For US partners in the region, this phenomenon may call for a redefinition of military options vis-à-vis nonstate actors. If the complete destruction of these organizations becomes an unrealistic end state, designing a posture of conventional deterrence against nonstate actors like the Houthis may need to be considered.

Such a discussion is unlikely to please decisionmakers in the Middle East who might read it as a show of weakness. But given the evolving security environment, it may be necessary to rethink strategies. In particular, it may be necessary to question the relevance of counterinsurgency campaigns toward groups seeking, through this process of fait accompli, to secure a new status quo. All in all, the case study of the Houthis allows us to comprehend brewing trends in nonstate actors' tactics. In the future, a broader examination comparing different trajectories (such as that of Hezbollah or Hamas) and identifying key parameters would allow us to deepen our understanding and contemplate

future military scenarios that may unfold for the United States and its allies.[57]

57 Jean-Loup Samaan, *Nonstate Actors and Anti-Access/Area Denial Strategies: The Coming Challenge*, (Carlisle, PA: US Army War College Press, February 2020).