

The impact of tunnels on conflicts in the Middle East

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Just as the world does not just exist as a surface, nor should our theorisations of it: security goes up and down; space is volumetric.¹

For eleven days in May 2021, the world watched as Israel's Iron Dome anti-missile defence intercepted rockets fired from Gaza into Israeli territory and Israeli jets bombed Gaza in return. As this most recent conflict between Israel and Gaza drew to a close, Israeli Prime Minister Benjamin Netanyahu emphasized that a major objective of the Israeli campaign was to destroy the Hamas 'metro'. This refers to the intricate labyrinth of tunnels that criss-cross Gaza beneath the surface and are used by Hamas to store weapons, move militants and enter into Israeli territory to launch attacks.² Israel claimed to have destroyed 100 kilometres of tunnels, but it is doubtful that it delivered a decisive blow to Hamas's military capacity.³

The real impact of the conflict (in which 256 Palestinians and 13 Israelis died) on Hamas's tunnel system may be contested, but the role of the subterranean in this conflict was undoubtedly significant—both in Hamas's offensive campaign, and also in the way it embodied a military challenge to Israel. The mainstream media have certainly noticed the presence of tunnels in the contemporary conflicts in the Middle East. The use of tunnels by

¹ Stuart Elden, 'Secure the volume: vertical geopolitics and the depth of power', *Political Geography* 34: 0{?}, 2013, p. 49.

² Adam Taylor, The Hamas "Metro" tunnel network: secret, sprawling and in Israeli crosshairs', *Washington Post*, 14 May 2021, <https://www.washingtonpost.com/world/2021/05/14/gaza-tunnels-hamas-israel/>. (Unless otherwise noted at point of citation, all URLs cited in this article were accessible on 22 Nov. 2021.)

³ Oliver Holmes, 'Both sides in Israel–Gaza conflict lay groundwork for victory narratives', *Guardian*, 20 May 2021, <https://www.theguardian.com/world/2021/may/20/both-sides-in-israel-gaza-conflict-lay-groundwork-for-victory-narratives>; Ahmad Abu Amer, 'Hamas downplays damage to tunnel network', *Al-Monitor*, 21 May 2021, <https://www.al-monitor.com/originals/2021/05/hamas-downplays-damage-tunnel-network>.

jihadist groups in Iraq and Syria, in particular, and in the Hindu Kush mountains between Pakistan and Afghanistan, have captured the imagination of the western media.⁴

Scholars have also started to examine the role of subterranean warfare in the Middle East since 2001,⁵ but this literature is largely dominated by single case-studies, with Hamas's use of tunnels in Gaza constituting a particular focal point.⁶ A comprehensive study of subterranean warfare (and the use of tunnels, in particular) in the Middle East, and how it shapes conflicts across the region, remains absent. The academic literature on tunnels spends a great deal of time considering ways in which states can respond to tunnels: anti-tunnel warfare includes, initially, measures to detect tunnels, followed by the decision what to do with them once detected. Many of these studies consider technological advances in the seismic methods that armed forces use in tunnel detection,⁷ or the implications of international humanitarian law for state responses to tunnels.⁸ However, this focus on the

⁴ 'The caves of Afghanistan', *The Week*, 8 Jan. 2015,

<https://theweek.com/articles/528956/caves-afghanistan>; 'Explore the ISIS tunnels', BBC, n.d., <https://www.bbc.co.uk/news/resources/idt-5c6bc253-d161-41f4-8501-4e7cacf047d5>.

⁵ Kenneth R. Olson and David R. Speidel, 'Review and analysis: successful use of soil tunnels in medieval and modern warfare and smuggling', *Open Journal of Soil Science* 10: 5, 2020, pp. 194–215.

⁶ Nicolas Pelham, 'Gaza's tunnel phenomenon: the unintended dynamics of Israel's siege', *Journal of Palestine Studies* 41: 4, 2012, pp. 6–31; Nicole J. Watkins and Alena M. James, 'Digging into Israel: the sophisticated tunneling network of Hamas', *Journal of Strategic Security* 9: 1, 2016, pp. 84–103; Terrance G. Lichtenwald and Frank S. Perri, 'Terrorist use of smuggling tunnels', *International Journal of Criminology and Sociology* 2: 0{?}, 2013, pp. 210–26; Toufic Haddad, 'Insurgent infrastructure: tunnels of the Gaza Strip', *Middle East—Topics and Arguments* 10: 0{?}, 2018, pp. 71–85.

⁷ Steven D. Sloan, Shelby L. Peterie, Richard D. Miller, Julian Ivanov, J. Tyler Schwenk and Jason R. McKenna, 'Detecting clandestine tunnels using near-surface seismic techniques', *Geophysics* 80: 5, 2015, pp. 127–35; Steven D. Sloan, Richard D. Miller and Don W. Steeples, 'A history of tunnels and using active seismic methods to find them', *Geophysics* 86: 3, 2021, pp. 49–57.

⁸ Alan Dershowitz, *Terror tunnels: the case for Israel's just war against Hamas* (London: Rosetta, 2014); Daphne Richemond-Barak, *Underground warfare* (Oxford: Oxford University Press, 2017).

policy implications of subterranean conflict does little to recognize the wider impact that tunnels can have on a conflict.⁹

This article analyses the use of tunnels in conflict, particularly in the Middle East. It asks three questions: who uses tunnels during conflict in the Middle East, for what purposes, and what impacts do tunnels have on these conflicts? The study will demonstrate that the use of tunnels in warfare is by no means unique to Gaza, but is common across the region, and that the impact of tunnels during conflict transcends military strategy. It will argue that a range of actors (including insurgent groups, states, organized crime groups and civilians) use tunnels to serve defensive, offensive and economic (smuggling) functions, or some combination of these. Lastly, the analysis will show the impact of tunnels on conflict in the Middle East, in four ways: they are central to the asymmetrical war strategies of weaker groups; they directly determine states' military strategies; they can provide armed groups with political legitimacy and delegitimize existing political authority; and they provide an invaluable economic lifeline to civilians in times of crisis. To fully appreciate the consequences of subterranean warfare, it is imperative to consider not just the military impact, but also the social and political consequences of this strategy. Overall, an examination of the subterranean dimension of warfare leads to a better understanding of the length, nature and impact of war.

The article begins with a brief conceptualization of 'tunnels', followed by an overview of the existing literature on tunnels and conflict. It identifies the 'volumetric turn' in political geography as a useful perspective through which to make sense of the use and consequences of tunnels in war. It argues that the study of international relations (IR) should take heed of political geography's appreciation of volume and verticality, and become more inclusive in its conceptualization of space during conflict. This will equip scholars and practitioners alike with a better understanding of *how* and *where* conflicts play out. In the second part of the article, the spotlight falls on the use of tunnels in conflicts in the Middle East, particularly since 2001. This part presents an analysis of the range of actors who use tunnels in the region and for what purposes. The remainder of the article examines the four ways in which tunnels exercise impacts on Middle Eastern conflicts.

⁹ The existing literature and sources on the use of tunnels in the Middle Eastern conflicts are produced overwhelmingly from the perspective of western states and media. Consequently, the voices of the marginalized populations and groups—often the ones who use tunnels and benefit from them—are not easily heard. This remains a significant weakness in the study of the subterranean space in conflict and should be an aim for future research on this topic.

Tunnels and armed conflict in the Middle East

The use of tunnels during conflict is as old as the story of war itself. Underground passages have been used strategically in war since the Assyrians dug tunnels to enter besieged cities. The Romans and ancient Greeks also used tunnels in siege warfare, and in China an extensive network of tunnels was found under the city of Yongqing in Hebei province, dating back to the Song dynasty (960–1127 CE), where soldiers were accommodated during wars. During siege warfare in the European Middle Ages, tunnels were frequently dug underneath the walls of motte-and-bailey castles to breach the defences.¹⁰

More recently, tunnels were used during the American Civil War, and extensively in the First World War's trench warfare, where opposing forces would dig tunnels under enemy trenches to plant explosives. During the Second World War, tunnels were also used as escape routes for prisoners of war. In the Korean War, Chinese and North Korean forces dug tunnels stretching for hundreds of miles to house large numbers of soldiers, weapons and artillery.¹¹ In the Vietnam War, the Viet Cong's extensive tunnel networks in Cu Chi provided 'an underground base for the Viet Cong and allowed them to continue fighting the American forces, despite the latter's superior air and land power'.¹² These historical examples show that subterranean warfare occurred in different settings and for a multitude of purposes over thousands of years.

This article focuses on the use of tunnels in conflicts in the Middle East since 2001. There are three compelling reasons for selecting this region and period in the study of subterranean warfare. First, over the past two decades, the Middle East has been politically highly volatile. The year 2001 was a significant catalyst for armed conflict in the Middle East: the attacks of 9/11 led directly to the 2001 NATO military campaign against the Taliban in Afghanistan and the US-led invasion of Iraq in 2003. These have been major destabilizing events in the region, and more intense and widespread levels of political violence, in places such as Syria and Yemen, followed the popular uprisings that swept the region as part of the 'Arab Spring' around 2011–12. Data from the Uppsala Conflict Data Program show a clear increase in

¹⁰ Arthur Herman, *Notes from the underground: the long history of tunnel warfare*, Hudson Institute, 26 Aug. 2014, <https://www.hudson.org/research/10570-notes-from-the-underground-the-long-history-of-tunnel-warfare>.

¹¹ ref. to come. {?}

¹² Joan C. Henderson, 'War as a tourist attraction: the case of Vietnam', *International Journal of Tourism Research* 2: 4, 2000, p. 277.

violence in Afghanistan since 2004, in Iraq since 2003, and in Israel/Palestine from 2000 to 2009. A significant spike in violence in the region is then discernible from 2011 onwards, particularly driven by events in Syria, Yemen and Iraq.¹³ These post-2001 conflicts will illustrate the arguments put forward in this article. They include the Taliban–NATO conflict in Afghanistan, the continuing post-2003 instability in Iraq, the 2006 war between Israel and Lebanon’s Hezbollah, the intensification of the conflict between Hamas and Israel since the former’s electoral victory in Gaza in 2006, and Syria’s descent into civil war since 2011. Second, most of these conflicts are asymmetrical in nature, for example the Taliban against the United States and its western allies, Hamas against Israel, and ISIS in Iraq and Syria against the existing states and their allies. Yet despite fighting against some of the most powerful armed forces on the planet, in each conflict the militarily weaker side often manages to avoid being overwhelmed and contrives to hold out for years against the superior firepower of their adversaries. The analysis here will argue that this is owing in no small part to the use of subterranean techniques.

Third, there is a long history of tunnels in the region. In most of the cases of conflict considered in this article, communities have used tunnels in their daily lives and during conflicts since before 2001. Indeed, a history of tunnel construction becomes an important explanation for why tunnels are used in some conflicts and not in others.¹⁴ In Gaza, for example, the first simple smuggling tunnels were uncovered in the early 1980s, since when they have changed and expanded dramatically in the frequency of their use. In Afghanistan, an ancient underground irrigation system called *karez* has long been central to agricultural production. Osama bin Laden used these tunnels and caves in the south of the country very effectively as a hiding place from US aerial attacks in the aftermath of 9/11—and before Al-Qaeda, the *mujahideen* had used them in their war against the USSR.¹⁵ This illustrates a

¹³ Uppsala Conflict Data Program, Department of Peace and Conflict Research, Uppsala University, <https://ucdp.uu.se/>.

¹⁴ Watkins and James, ‘Digging into Israel’, p. 98.

¹⁵ Mats Widgren, ‘Bin Laden and the irrigation tunnels—two perspectives on sustainable social development’, in Fredrik Lundmark, ed., *Culture, security and sustainable social development after September 11* (Hedemora: Gidlunds, 2004), pp. 207–19; Christian Parenti, ‘Flower of war: an environmental history of opium poppy in Afghanistan’, *SAIS Review of International Affairs* 35: 1, 2015, p. 192; J. Stephen Schindler, ‘Afghanistan: geology in a troubled land’, *Geotimes* 47: 2, 2002, pp. 14–15.

significant benefit to using tunnels in warfare: once they are there, they can relatively easily be repurposed, repaired and expanded to respond to changing circumstances.¹⁶ The historical presence of tunnels in a particular region suggests that the first hurdle for subterranean warfare has already been overcome: subterranean warfare is more likely to take place in a landscape where the geological composition makes tunnels viable. Certain geographical and geological conditions make an area highly amenable to tunnel construction: these include an arid climate, unconsolidated soil materials and a low permanent water table.¹⁷

The use of tunnels during conflict is not unique to the Middle East, but the area's history of tunnel use (and its favourable geological characteristics) and the high incidence of conflicts—especially asymmetrical conflicts—since 2001 make it a suitable site for enquiry into the role of tunnels in conflict.

Tunnels and conflict

Subterranean space can take many forms, including bunkers, mines, sewers, underground railway lines, burial sites and caves. Tunnels are only one of the shapes that the subterranean assumes. 'Tunnels may be . . . simple and opportunistic shallow scrapes below wire barriers or walls or may be highly orchestrated affairs requiring a great deal of technical expertise and practical know-how.'¹⁸ They can be manufactured or occur naturally—or a combination of both. They can be constructed by hand to lessen the risk of detection, or they can result from a sophisticated construction process involving heavy machinery and concrete casting.

Various actors may be involved in their construction, including both combatants and civilians. Tunnels vary significantly in their complexity: they may be large enough for trucks to move through, or so narrow as to allow only one person through at a time. They can stretch for hundreds of kilometres and consist of complex networks of underground cavities, often incorporating naturally occurring cave systems, connecting different parts of a city or rural area. Sometimes they bypass surface borders and provide informal and unregulated connections between different countries. Tunnels can take years, and great expenditure, to construct; or they may be dug in a matter of days—as was the 107-metre tunnel that was dug in 33 days by insurgents using hand tools, filled with 25 tons of explosives and detonated on

¹⁶ Olson and Speidel, 'Review and analysis', p. 197.

¹⁷ Olson and Speidel, 'Review and analysis'.

¹⁸ Peter Doyle, 'Geology of World War II allied prisoner of war escape tunnels', *International Handbook of Military Geography*, vol. 2, 2011, pp. 144–56.

8 May 2014 under the Carlton Citadel hotel in Aleppo, killing several dozen Syrian soldiers.¹⁹

Regardless of shape, size or method of construction, political geography recognizes the need to conceptualize territory *vertically* as a site for conflict and politics (what Stephen Graham refers to as ‘vertical geopolitics’).²⁰ Over the past 25 years or so, there has been an increasing incorporation of height as a dimension in warfare. The use of war-planes in Libya or Syria, or Hezbollah’s use of Katyusha rockets against Israel in 2006, are examples of how protagonists in a conflict use ‘the vertical dimension to assert domination, they use aerial supremacy to terrify the civilian population on the ground’.²¹ There is a growing interest, reflected in IR, in the role of height in warfare and security; but much of this has focused on looking up to examine how the skies are used to gain control—often with the aim of controlling what is happening on the ground.²² One example of this literature on vertical geopolitics is the burgeoning research on drone warfare.²³

In contrast to IR’s growing recognition of height in the spatiality of conflict, there is much less focus on what happens below the surface.²⁴ IR largely ignores the role of the subterranean in conflict, whereas political geography has witnessed a recent ‘volumetric turn’, which advocates the need to adopt a three-dimensional approach to territory by

¹⁹ Martin Chulov, ‘Aleppo’s most wanted man—the rebel leader behind tunnel bombs’, *Guardian*, 20 May 2014, <https://www.theguardian.com/world/2014/may/20/aleppos-most-wanted-man-rebel-leader-tunnel-bombs>.

²⁰ Stephen Graham, ‘Vertical geopolitics: Baghdad and after’, *Antipode* 35: 1, 2004, pp. 12–23.

²¹ Elden, ‘Secure the volume’, p. 36.

²² Stephen Graham, *Vertical: the city from satellites to bunkers* (London: Verso, 2016); Graham, ‘Vertical geopolitics’; Ian Shaw, ‘Predator empire: the geopolitics of US drone warfare’, *Geopolitics* 18: 3, 2013, pp. 536–59; Ian Shaw, *Predator empire: drone warfare and full spectrum dominance* (Minneapolis: University of Minnesota Press, 2016).

²³ Derek Gregory, ‘From a view to a kill: drones and late modern war’, *Theory, Culture and Society* 28: 7–8, 2011, pp. 188–215; Shaw, ‘Predator empire’; Ian Shaw and Majed Akhter, ‘The unbearable humanness of drone warfare in FATA, Pakistan’, *Antipode* 44: 4, 2012, pp. 1490–1509.

²⁴ Franck Billé, ‘Subterranea: notes on the notion of a geopolitical unconscious’, *Geoforum*, July 2020.

incorporating the ‘underground’ into the analysis.²⁵ This literature emphasizes the ‘volumetric spatiality of territory’, arguing that territory should be conceptualized in terms not solely of what happens above ground, but also of what happens below the surface.²⁶ Territory is thus understood not only in terms of surface, but also as encompassing height and depth.²⁷ This appreciation of verticality and volume becomes crucial when devising strategies for control over subterranean natural resources, and the containment and control of competitors. The Israeli architect and theorist Ayal Weizman has argued that the Israeli–Palestinian conflict can only be fully understood by considering its various dimensions that stretch beyond the construction of walls and the negotiation of borders, to include control over airspace, and the use of tunnels and management of underground resources.²⁸ Under the 1995 Oslo Peace Accords, for example, the Palestinian Authority gained control over terrain, but Israel retained control of the area under the surface—which means Israel largely controlled water aquifers, archaeological sites and sewerage systems beneath Palestinian territory.²⁹

Perhaps it is not surprising that IR has not yet systematically grappled with tunnels. There is something disconcerting about depth: ‘the underground is essentially associated with danger, risk, undermining and subterfuge . . . to be covert, hidden, clandestine’.³⁰ The subterranean has long captured the popular imagination: from Alice’s venturing into the underground Wonderland, to Jules Verne’s *Journey to the centre of the Earth*, to James Bond’s frequent

²⁵ Elden, ‘Secure the volume’; Peter Adey, ‘Securing the volume/volumen: comments on Stuart Elden’s plenary paper “Secure the volume”’, *Political Geography* 34: 0{?}, 2013, pp. 52–4; *Geopolitics* 25: 1, 2020, special issue on ‘Subterranean geopolitics’; Gavin Bridge, ‘Territory, now in 3D!’, *Political Geography* 34: 0{?}, 2013, pp. 55–7; Franck Billé, ‘Volumetric sovereignty’, *Society and Space* 00: 0{?}, 2019, pp. 1–31.

²⁶ Adey, ‘Securing the volume/volumen’, p. 52.

²⁷ Elden, ‘Secure the volume’, p. 35.

²⁸ Ayal Weizman, *Hollow land: Israel’s architecture of occupation* (London: Verso, 2012).

²⁹ Jan Selby, ‘Dressing up domination as “cooperation”: the case of Israeli–Palestinian water relations’, *Review of International Studies* 29: 1, 2003, pp. 121–38.

³⁰ Elden, ‘Secure the volume’, p. 40.

chasing (or being chased) through underground tunnels.³¹ The opaque nature of the underground is arguably central to its secrecy, and, indeed, its romanticism.

Yet despite the challenges, the secrets of the world beneath the Earth's surface should be of interest to scholars of conflict and warfare. Not only are the natural resources that are found underground (or under the seabed), such as oil, minerals and gas, determining factors in many conflicts, but it becomes essential to develop military surveillance and control of the subterranean. Billé argues that what happens on the surface directly shapes dominant understandings of everyday life, while what happens beneath the surface might directly contradict those dominant narratives.³² The full picture remains largely hidden because of the obscurity of the subterranean. Tunnels, for example, can serve to provide links between or to bypass areas which, on the surface, are bounded by fences, walls and gates. The subterranean thus 'constantly threatens to disrupt the political clarity enacted at the surface'.³³ Indeed, studying the subterranean dimension of war provides a greater understanding of the ways in which power manifests itself and how it affects political violence.

This article will show how tunnels provide militarily inferior insurgent groups with the means to challenge the strategic efficacy and confidence of some of the most powerful states in the world, in a way that a conflict above the ground would fail to achieve. The study of tunnels in warfare leads to a more accurate reconceptualization of where the front line in a conflict truly lies; for the battles on the surface or in the skies often reveal little about the true gains and military progress that a group in the conflict may have made below the ground. These subterranean military gains and the progress they represent can be a determining factor in whether a war is won or lost, whether it is short or protracted.

Who uses tunnels and for what purposes?

Tunnels can be used in different ways by a variety of actors during conflict. They can serve defensive or offensive purposes during conflicts, and often become integral components in a covert political economy of smuggling.³⁴ The three types of tunnels have been distinguished

³¹ Rachael Squire and Klaus Dodds, 'Introduction to the special issue: subterranean geopolitics', *Geopolitics* 25: 1, 2020, p. 5.

³² Billé, 'Subterranea'.

³³ Billé, 'Subterranea', p. 3.

³⁴ Yiftah Shapir and Gal Perel, 'Subterranean warfare: a new-old challenge', in Anat Kurz and Shlomo Brom, eds, *The lessons of Operation Protective Edge* (Tel Aviv: Institute for National Security Studies, 2014), pp. 51–5; Harriet Sherwood, 'Inside the tunnels Hamas

on the basis of the purposes which they serve, but they are ideal-types and the different purposes or functions of tunnels are not necessarily mutually exclusive. One tunnel can serve defensive, offensive or smuggling purposes, or all of them, as and when the circumstances demand.

This section will show how a range of different actors during conflict use tunnels for defensive, offensive and smuggling purposes. These actors include insurgents, states, civilians and organized crime groups. Tunnels also have the potential to become spaces of cooperation between different actors in conflict.

Defensive tunnels promote concealment, serving as a means of moving weapons and combatants out of sight, or hiding them from air surveillance or attacks. Insurgents typically use tunnels for this purpose, often with great success. In 2015, when Kurdish troops drove Islamic State in Iraq and Syria (ISIS) out of Sinjar in Iraq, they found a vast network of 30–40 tunnels running below the city.³⁵ These tunnels clearly had a predominantly defensive purpose, as they contained sleeping quarters and medicines, and had space to hide explosives and weapons. This insurgent group's construction of complex and wide-ranging tunnel complexes across northern Iraq has stunned and challenged its adversaries.³⁶ ISIS devoted

built: Israel's struggle against new tactic in Gaza war', *Guardian*, 2 Aug. 2014, <https://www.theguardian.com/world/2014/aug/02/tunnels-hamas-israel-struggle-gaza-war>; Shaul Shay, *The Islamic State (ISIS) and the subterranean warfare* ({}?): IDC Herzliya, Dec. 2015); Pelham, 'Gaza's tunnel phenomenon'.

³⁵ Judit Neurink, 'Sinjar offensive: discovery of network of tunnels reveals how Isis prepared for looming Kurdish onslaught', *Independent*, 25 Nov. 2015, <https://www.independent.co.uk/news/world/middle-east/sinjar-offensive-discovery-network-tunnels-reveals-how-isis-prepared-looming-kurdish-onslaught-a6749001.html>.

³⁶ Derek H. Flood, 'From caliphate to caves: the Islamic State's asymmetric war in northern Iraq', *CTC Sentinel*, Sept. 2018, pp. 30–34; Amanda Erickson, 'The Islamic State has tunnels everywhere: it's making ISIS much harder to defeat', *Washington Post*, 14 April 2017, <https://www.washingtonpost.com/news/worldviews/wp/2017/04/14/the-islamic-state-has-tunnels-everywhere-its-making-them-much-harder-to-defeat/>; William Booth and Aaso Shwan, 'Islamic State tunnels below Mosul are a hidden and deadly danger', *Washington Post*, 5 Nov. 2016, <https://www.washingtonpost.com/world/2016/live-updates/battle-for-mosul/inside-the-battle-for-mosul/islamic-state-tunnels-below-mosul-are-a-hidden-and-deadly-danger/>.

considerable time and resources to constructing vast tunnel networks containing the weapons, food and other resources needed for waging a protracted guerrilla war across the mountainous northern regions of Iraq.³⁷ These tunnels and cave systems were often remarkably sophisticated, containing electrical rigging and powered with hidden solar grids. Under and around the city of Mosul,³⁸ ISIS created a complex system of caves spanning several square kilometres, which enabled fighters to hide, plan attacks and move unobtrusively from one area of the city to another.³⁹

It is not only insurgents who use tunnels as part of a defensive military strategy. States also use ‘deeply buried facilities’ as key parts of their military infrastructure to store weapons or provide safety bunkers.⁴⁰ Many states (including Russia, China and Sweden, whose naval headquarters are located in the underground Muskö naval base) develop and maintain sophisticated subterranean tunnel systems where they store military hardware and move troops around. Iran has an enormous underground base consisting of bunkers and tunnels along the Persian Gulf used to store missiles and missile launching systems.⁴¹

To a lesser extent, and in a slightly different way, civilians also use tunnels for defensive purposes: to provide shelter from fighting. After the liberation of Mosul from ISIS, UNICEF reported that many children remained absent even as schools reopened, and they were often found hiding among the rubble or in the tunnels that lie beneath the city.⁴² Similarly, during

³⁷ Flood, ‘From caliphate to caves’.

³⁸ Mosul was considered the capital city of ISIS in Iraq and was the site of a major offensive in 2016 in the war between the extremist group, on the one side, and Iraqi troops and the Kurdish *peshmerga* on the other.

³⁹ Jared Malsin and Sheikh Amir, ‘Qurans and solar cells: inside the ISIS tunnels around Mosul’, *Time*, 21 Oct. 2016, <https://time.com/4541647/isis-defensive-tunnels-mosul-iraq/>.

⁴⁰ Richemond-Barak, *Underground warfare*, p. xviii.

⁴¹ Maziar Motamedi, ‘Iran’s Revolutionary Guard unveils missile base amid US tensions’, *Al Jazeera*, 8 Jan. 2021, <https://www.aljazeera.com/news/2021/1/8/iran-revolutionary-guards-unveil-missile-base-amid-us-tensions>.

⁴² Angus MacSwan, ‘Lost children are legacy of battle for Iraq’s Mosul’, *Reuters*, 30 July 2017, <https://www.reuters.com/article/us-mideast-crisis-iraq-children-idUSKBN1AF0BN>.

the 2018 battle for eastern Ghouta, civilians hid from the Syrian and Russian aerial bombardments in abandoned ISIS tunnels.⁴³

While defensive tunnels hide objects or people, offensive tunnels are used to launch attacks. For example, so-called ‘tunnel bombs’ are often used by insurgent groups in the Middle East: these involve digging a tunnel to reach under the target where they detonate the explosives. The Thuwwar al-Sham rebel group killed more than 38 pro-government troops in this way in the Syrian city of Aleppo in 2016, when they detonated explosives in a tunnel under a building used by government troops.⁴⁴ Tunnel bombs were used 45 times in 2014–15 in Iraq and Syria.⁴⁵ This tactic—the weapons are officially known as tunnel-borne improvised explosives devices (TBIEDs)—is often used at military checkpoints, to target buildings and other protected facilities, and it is particularly effective in warfare in urban areas.⁴⁶

Unsurprisingly, offensive tunnels can facilitate cross-border attacks. After the 2006 war with Israel, there were reports of Hezbollah constructing and managing tunnels that provide a subterranean link between southern Lebanon and northern Israel. Between late 2018 and early 2019 the Israeli army launched Operation Northern Shield, aimed at uncovering and destroying tunnels built by Hezbollah following the 2006 war. As part of this campaign, the Israeli army uncovered six tunnels, including a highly sophisticated one that continued for 800 metres to a depth of 55 metres, contained a railway, and was wide enough to move military hardware and troops through as it crossed into Israel.⁴⁷ These tunnels would have been central to Hezbollah’s future offensive strategy, enabling them to launch attacks inside

⁴³ Robert Fisk, ‘How rebels and civilians survived near total destruction of eastern Ghouta through huge network of tunnels’, *Independent*, 4 April 2018, <https://www.independent.co.uk/news/world/middle-east/syria-eastern-ghouta-rebels-assad-regime-islamists-latest-tunnels-russia-a8287116.html>.

⁴⁴ ‘Syria war: Aleppo tunnel bomb “kills 38 government troops”’, BBC News, 22 July 2016, <https://www.bbc.co.uk/news/world-middle-east-36868706>.

⁴⁵ John Spencer, *The return of the tunnel bomb: a medieval tactic on the modern battlefield*, Modern War Institute, West Point, 30 Dec. 2019, <https://mwi.usma.edu/return-tunnel-bomb-medieval-tactic-modern-battlefield/>.

⁴⁶ Shay, *The Islamic State*; Spencer, *The return of the tunnel bomb*.

⁴⁷ Aron Heller, ‘Israeli troops discover Hezbollah’s largest tunnel yet’, *Independent*, 13 Jan. 2019, <https://www.independent.co.uk/news/world/middle-east/israeli-troops-hezbollah-tunnel-cross-border-discovered-lebannon-a8725496.html>.

Israel—indeed, it was Hezbollah’s abduction of two soldiers of the Israel Defense Forces (IDF) in Israel via a cross-border tunnel that sparked the 2006 Israel–Hezbollah war.⁴⁸ The third use of tunnels relates to smuggling: the unobtrusive movement of almost anything, from weapons to oil to consumer goods. Smuggling tunnels are also known as ‘economic tunnels’.⁴⁹ The aim is primarily to circumvent the international borders and barriers that define the surface. Smuggling tunnels often exist near border areas. In recent years, the tunnels under the US–Mexican border have become another high-profile example of smuggling tunnels which are used to facilitate the movement of contraband and trafficked humans.⁵⁰ These channels are sometimes called ‘benign’ tunnels when they are used exclusively for smuggling contraband. Civilians and organized crime groups are particularly closely associated with this use of tunnels. In Gaza, digging and maintaining a tunnel for smuggling goods is part of many family businesses.⁵¹ Families who straddle the border between Gaza and Egypt are often involved in legal partnerships where various investors and other collaborators cooperate to construct, operate and share the profits from a highly lucrative cross-border smuggling tunnel.⁵² Of course, civilians operate smuggling tunnels in peacetime too; but the restrictions on the transportation of goods and people above ground often increase during war as armed groups and states erect barriers, roadblocks and blockades to control movement across the surface territory. This increases civilians’ wartime economic reliance on tunnels. Since the introduction of the Israeli blockade around Gaza in 2008, almost everything, from building materials to agricultural products, from cars to people, is smuggled through tunnels to circumvent the restrictions on movement of goods and people into and out of the area.⁵³

⁴⁸ Lichtenwald and Perri, ‘Terrorist use of smuggling tunnels’, p. 211.

⁴⁹ Watkins and James, ‘Digging into Israel’, p. 87.

⁵⁰ Tony Payan, *The Three US–Mexico border wars: drugs, immigration, and homeland security* (Santa Barbara, CA: Praeger Security International, 2016); Cynthia Sorrensen, ‘Making the subterranean visible: security, tunnels, and the United States–Mexico border’, *Geographical Review* 104: 3, 2014, pp. 328–45.

⁵¹ Ian Slesinger, ‘A cartography of the unknowable: technology, territory and subterranean agencies in Israel’s management of the Gaza tunnels’, *Geopolitics* 25: 1, 2020, p. 28.

⁵² Pelham, ‘Gaza’s tunnel phenomenon’, p. 9.

⁵³ James Verini, ‘The tunnels of Gaza’, *National Geographic*, 2012, <https://www.nationalgeographic.com/magazine/article/gaza-tunnels>.

The relative ease and speed with which consumer goods can move through smuggling tunnels has the benefit of providing local populations with much-needed, or valued, goods and employment opportunities. However, this traffic can also have a negative impact on the local economy. Businesses that import goods through regular channels struggle to compete with the lower prices and shorter delivery times that tunnel operators promise.⁵⁴ Smuggling tunnels may thus provide local populations with crucial access to both essential and luxury goods, and thus soften the impact of the conflict, but they can also have a detrimental effect on the local economy by flooding the market with cheap(er) goods.

However, many smuggling tunnels are also hybrid tunnels that are (or could be) used for military purposes, such as the movement of weapons or combatants, when the need arises. Hamas's capturing of the IDF soldier Gilad Shalit in 2006 illustrates the use of economic tunnels for other (in this case, offensive) purposes. Hamas entered Israel via one of its smuggling tunnels, captured Shalit, held him prisoner for more than five years and eventually exchanged him in 2011 for 1,027 Palestinian prisoners.⁵⁵

The hybrid functions of smuggling tunnels in the Middle East illustrate the symbiosis between political conflict and organized crime. Tunnels become a site where the criminal and terrorist networks in the Middle East converge.⁵⁶ They become, quite literally, the place where smugglers and insurgents meet, and provide a site for the forging of alliances and relationships between different groups in society.

The illegal trafficking of archaeological artefacts by organized crime networks through tunnels provides one illustration of how organized crime groups enter into partnerships with armed groups in conflicts to expand their share of the shadow economy.⁵⁷ While small-scale looting of archaeological sites predates the conflicts in Syria and Iraq, archaeologists have raised the alarm in the last ten years about a dramatic increase in the scale and sophistication of this looting of cultural artefacts.⁵⁸ The construction of tunnels during the conflicts in the region has provided an opportunity for both insurgent groups and organized crime groups to

⁵⁴ Pelham, 'Gaza's tunnel phenomenon', p. 20.

⁵⁵ Watkins and James, 'Digging into Israel', p. 101.

⁵⁶ Lichtenwald and Perri, 'Terrorist use of smuggling tunnels'.

⁵⁷ Christina Steenkamp, 'The crime–conflict nexus and the civil war in Syria', *Stability: International Journal of Security and Development* 6: 1, 2017, pp. {?}.

⁵⁸ Neil Brodie, 'Syria and its regional neighbors: a case of cultural property protection policy failure?', *International Journal of Cultural Property* 22: 2–3, 2015, pp. 317–35.

extend their profit-making activities. For example, in 2017 tunnels were discovered under the mosque and shrine of Nabi Younis in east Mosul, Iraq. ISIS had, in spectacular fashion, blown up the mosque in 2014 in apparent outrage against its ‘heretical’ practice of containing tombs.⁵⁹ However, many observers believe that the real reason for the destruction of the mosque was to allow ISIS to dig tunnels beneath the site to access a wealth of Assyrian artefacts contained in the ancient palace upon which the mosque was built. It is highly unlikely that ISIS would have been able to sell these artefacts on the international market without collaborating with existing international organized crime groups.⁶⁰

This example shows how conflict tunnels provide an opportunity for the development of the crime–conflict nexus—the networks and collaboration between organized crime groups and armed groups during conflicts.⁶¹ Smuggling tunnels, especially, become central to these networks. This could have important consequences for efforts to end conflicts, as peace may simply not be in the economic interest of the groups (including both civilian and armed groups) who participate in this tunnel-based shadow economy.⁶²

⁵⁹ Tom Westcott, *Destruction or theft? Islamic State, Iraqi antiquities and organized crime* (Geneva: Global Initiative Against Transnational Organised Crime, March 2020), p. 9.

⁶⁰ Westcott, *Destruction or theft?*

⁶¹ There exists a significant literature on the political economy of conflict, especially the links between organized crime and armed conflict, but this work rarely focuses on the Middle East. Examples include Tamara Makarenko, ‘The crime–terror continuum: tracing the interplay between transnational organised crime and terrorism’, *Global Crime* 6: 1, 2004, pp. 129–45; Svante Cornell and Michael Jonsson, eds, *Conflict, crime, and the state in postcommunist Eurasia* (Philadelphia: University of Pennsylvania Press, 2014); Mary Kaldor, *New and old wars: organised violence in a global era* (Oxford: Wiley, 2013); Walter Kemp, ‘Crime and conflict’, in Nigel Inkster, ed., *The IISS armed conflict survey* (Abingdon: Routledge, 2015), pp. 34–44; John de Boer and Louise Bosetti, *The crime–conflict “nexus”: state of the evidence*, occasional paper no. 5 ({}): July 2015).

⁶² Louise Bosetti, James Cockayne and John de Boer, *Crime-proofing conflict prevention, management, and peacebuilding: a review of emerging good practice*, occasional paper no. 6 ({}): United Nations University Centre for Policy Research, Aug. 2016); Sabine Kurtenbach and Angelika Rettberg, ‘Understanding the relation between war economies and post-war crime’, *Third World Thematics: A TWQ Journal* 3: 1, 2018, pp. 1–8; James Cockayne,

This discussion has demonstrated the participation in the construction, maintenance and use of tunnels of various actors, including civilians, organized crime groups and insurgent groups. An understanding of the relationships and social networks that exist between these groups who use tunnels can shed light on the existence or emergence of alliances. In Yemen, there are reports that Houthi rebel groups use the subterranean arena both offensively and defensively to launch attacks on Saudi Arabia and to shield themselves from Saudi air strikes with the help of their Shi'a allies in Hezbollah and Iran.⁶³ The Houthis' use of tunnels in Yemen could be a manifestation of their political links with these regional allies—both of which are well versed in the offensive and defensive use of tunnels.

The impact of tunnels on conflicts in the Middle East

The central argument in this article is that contemporary conflicts in the Middle East happen not only in the skies and on the ground, but also beneath the surface. The third question that guides this study asks: How do tunnels influence the conflicts in the Middle East? This section will show that tunnels can influence conflict in four ways. First, tunnels become an integral component in an asymmetrical war strategy; second, the use of tunnels in a conflict can require changes in a state's military strategies; third, tunnels can become a conduit for (or a challenge to) political legitimacy; and finally, tunnels provide an economic lifeline for civilians. Overall, these consequences will affect both the longevity of the conflict and the political fortunes of the parties to it.

Asymmetrical warfare

The use of tunnels can explain how seemingly ill-equipped insurgent groups continue to wage unequal conflicts against powerful states. Tunnels can explain the protracted nature of these conflicts—even against the odds, as the subterranean can be instrumental in changing the balance of power in asymmetrical warfare. Just like improvised explosive devices on roadsides, or suicide bombers in busy markets, tunnels enable the militarily weaker side in a

‘Chasing shadows: strategic responses to organised crime in conflict-affected situations’, *RUSI Journal* 158: 2, 2013, pp. 10–24.

⁶³ Faris Saeed, ‘Houthi militia digging a vast network of tunnels in Yemen Sanaa under the supervision of Iranian, Hezbollah experts’, Khabar Agency, 3 March 2019, <https://www.khabaragency.info/news105831.html>; “‘I hope Saudis won’t accuse Yemenis of importing tunnels from Iran’”, *Tehran Times*, 5 July 2018, <https://www.tehrantimes.com/news/425113/I-hope-Saudis-won-t-accuse-Yemenis-of-importing-tunnels-from>.

conflict to challenge the opposition's superior firepower in a way to which conventional armed forces struggle to respond effectively. A commander in the Iraqi counterterrorist forces during the battle for Mosul explained how the underground dimension to the conflict challenged their abilities:

It's like we are fighting two wars in two cities. There's the war on the streets and there is a whole city underground where they are hiding. Now it's hard to consider an area liberated, because though we control the surface, ISIS will appear from under the ground, like rats.⁶⁴ This article argues that tunnels prolong, complicate and exacerbate ongoing conflicts; but they do not necessarily translate into victory for the weaker side. How, then, do tunnels affect the strategies of weaker sides in asymmetrical wars? Arreguín-Toft's work on theorizing asymmetrical conflict focuses on strategic interaction and is useful in identifying and interpreting the role of tunnels in asymmetric conflicts.⁶⁵ The strategic interaction thesis emphasizes the importance of actors' military strategies *vis-à-vis* those of their opponents in conflict, and holds that strong actors are likely to lose conflicts when they adopt the wrong strategies against their weaker opponents. Equally, weaker sides in an asymmetric conflict can significantly prolong a conflict (which could lessen the stronger party's *willingness* to fight) by adopting certain strategies.⁶⁶ Weaker parties can use two strategies to achieve this: direct defence (where armed forces are used to thwart the stronger opponent's attacks) or guerrilla warfare (where armed forces rely heavily on the cooperation of sections of the population to avoid direct military confrontation while still imposing costs on the stronger side).⁶⁷

The use of tunnels can play a crucial role in both these strategies, but particularly in a strategy of guerrilla warfare. A guerrilla warfare strategy requires sanctuary for the weak side's armed forces, as well as a supportive population that is willing to supply intelligence and logistical support.⁶⁸

⁶⁴ Quoted in Erickson, 'The Islamic State has tunnels everywhere'.

⁶⁵ Ivan Arreguín-Toft, 'How the weak win wars: a theory of asymmetric conflict', *International Security* 26: 1, 2001, pp. 93–128.

⁶⁶ Arreguín-Toft, 'How the weak win wars', pp. 121–2; Ivan Arreguín-Toft, 'Contemporary asymmetric conflict theory in historical perspective', *Terrorism and Political Violence* 24: 4, 2012, p. 642.

⁶⁷ Arreguín-Toft, 'How the weak win wars', p. 103.

⁶⁸ Arreguín-Toft, 'How the weak win wars', p. 104.

Weaker sides can use tunnels to evade detection by the opposition's superior military hardware and aerial technology, as part of both a direct defence and a guerrilla warfare strategy. Tunnels can thus give weaker sides in a conflict a defensive advantage, serving as 'a means of levelling the playing field'.⁶⁹ The attacker is at a disadvantage when approaching a tunnel system: tunnels are dark and difficult to navigate by external parties, they can be easily booby-trapped and they are difficult to detect. In Gaza, for example, tunnel entrances deliberately open up inside houses or buildings, making it almost impossible for the IDF to detect.⁷⁰ Tunnels can also be deliberately complex in their construction, including various different entry and exit shafts and/or possessing split or parallel tunnel routes.⁷¹ Tunnels provide insurgents with valuable space to hide and regroup in the face of the opposition's control over the surface and/or the skies. These subterranean spaces provide physical sanctuary for weaker parties—a crucial element for a guerrilla warfare strategy. After the sudden withdrawal of their US ally in the war against ISIS in 2019, for example, the Kurdish People's Protection Units (YPG) in north-eastern Syria dug tunnels to hide themselves and civilians in preparation for the impending Turkish air strikes.⁷²

Another requirement of guerrilla strategies is a supportive population. Tunnels can play an important role in cultivating the sympathy and loyalty of the population towards the weaker side, as will be explained later in this section.

Overall, tunnels enable weaker sides to use both direct defence and guerrilla warfare strategies (in particular the latter) in many of the asymmetrical Middle Eastern conflicts. This leads to a prolonged war—much to the frustration and potential detriment of the stronger adversary. While tunnels may not lead directly to victory for the weak in these cases, it does hurt the stronger side by prolonging the conflict, which may reduce its resolve to continue fighting.

Impact on states' military strategies

Tunnels directly affect states' military strategies. The use of subterranean warfare by insurgent groups poses challenges for states that struggle to develop their technological

⁶⁹ Watkins and James, 'Digging into Israel', p. 98.

⁷⁰ Sherwood, 'Inside the tunnels Hamas built'.

⁷¹ Shapir and Perel, 'Subterranean warfare', p. 53.

⁷² Raja Abdulrahim, 'Battle-hardened Kurds face military imbalance in Turkey's Syria offensive', *Wall Street Journal*, 10 Oct. 2019, <https://www.wsj.com/articles/battle-hardened-kurds-face-big-test-in-turkeys-syria-offensive-11570727475>.

capabilities to detect and respond effectively to this form of warfare—in addition to navigating international law that governs the underground.⁷³ Tunnels can significantly reduce the effectiveness of air strikes. A state may prefer to fight an insurgent group using aerial strikes in order to minimize casualties on its own side. Since tunnels are difficult to detect from the air, their use might force a state to shift its focus away from air strikes in favour of a (more casualty-prone) ground presence. This is what happened in Israel’s 2014 Operation Protective Edge campaign, when the IDF had to change its preferred strategy of aerial bombardment to launch a ground incursion in response to Hamas’s use of attack tunnels from Gaza.⁷⁴

When the role of tunnels in a conflict is misunderstood, this can be hugely damaging to a state’s military campaigns—often in unexpected ways. As noted above, Al-Qaeda used the tunnels of the ancient *karez* irrigation systems in Afghanistan to shield its members from US aerial attacks after 9/11. The US forces concentrated their efforts on destroying or closing these tunnels and the shafts that led into them—with little understanding of the crucial role they played in the agriculture of this arid region or their cultural significance in village life.⁷⁵ By viewing these tunnels as primarily military tools and by definition a security threat, the American army forfeited the sympathy or support of the local population.⁷⁶ {3} When tunnels become instrumental in a successful military campaign, this can have a significant psychological effect on the opposition—not just on the opposing armed forces, but also on civilians on the opposing side. This is perhaps the most important element in the success of Hamas’s tunnelling operations in Gaza: the fear of attack and kidnap has a severe psychological impact on border communities in Israel.⁷⁷ Observers argue that the Hamas tunnels undermine both the Israeli political and security establishment’s own confidence in their ability to secure their territory and the Israeli citizenry’s belief in the state’s ability to ensure their safety.⁷⁸

Political legitimacy

⁷³ Richemond-Barak, *Underground warfare*.

⁷⁴ Slesinger, ‘A cartography of the unknowable’, p. 18.

⁷⁵ Olson and Speidel, ‘Review and analysis’, p. 209.

⁷⁶ ref. to come. {?}

⁷⁷ Watkins and James, ‘Digging into Israel’, pp. 84–103.

⁷⁸ Slesinger, ‘A cartography of the unknowable’, p. 29.

Tunnels are not only military assets, but can become conduits for conferring political capital and legitimacy on political actors. Hamas's involvement in tunnels in Gaza once more provides an excellent example that is worth examining in some detail. After its take-over of the Gaza strip from Fatah in mid-2007 and the imposition of a blockade by Israel later that year, Hamas became increasingly involved in the construction, regulation and management of an extensive tunnelling network along the so-called Philadelphi corridor near the southern city of Rafah, which connects Gaza to Egypt. In 2009 the Gaza interior ministry created the Tunnel Affairs Commission (TAC) to formalize, regulate and tax the private tunnel smuggling industry.⁷⁹ The TAC was instrumental in enabling Hamas to establish control over this lucrative economic sector by creating a list of blacklisted imports (such as alcohol and the painkiller Tramadol); promoting safety and security in the construction and management of the tunnels; resolving disputes; licensing tunnels; and monitoring the market. Importantly, the TAC was instrumental in taxing the tunnels by levying administrative licensing fees, imposing a 14.5 per cent value added tax on all goods coming through the tunnels and levying extra charges on particular goods such as cigarettes and fuel.⁸⁰ This provided Hamas with a substantial revenue base: the TAC raised an estimated \$150–200 million for the Hamas government in 2009, and by 2012 this figure was thought to have risen to \$750 million.⁸¹ This source of funding was instrumental in Hamas's transformation into an organized political authority, relatively economically independent from outside forces.

In addition to the revenue, the Rafah tunnels also bestowed on Hamas a considerable degree of legitimacy by enabling it to direct the reconstruction of Gaza with little reliance on international aid or intervention.⁸² During Israel's Operation Cast Lead in 2008, aerial attacks destroyed much of Gaza's infrastructure. Afterwards, Hamas supported the improvement of the tunnel system and developed the commercial tunnels so that they could transport more and larger items, especially building materials. This fuelled the construction sector (an essential part of postwar recovery), ushered in a fall in unemployment and created a new wealthy class of tunnel-owners. The psychological impact that a successful subterranean strategy can have on the population is worth noting:

⁷⁹ Pelham, 'Gaza's tunnel phenomenon', pp. 11–12.

⁸⁰ Pelham, 'Gaza's tunnel phenomenon', p. 12.

⁸¹ Pelham, 'Gaza's tunnel phenomenon', p. 21; Verini, 'The tunnels of Gaza'.

⁸² Pelham, 'Gaza's tunnel phenomenon', p. 15.

For many Gazans, the tunnels, lethal though they can be, symbolize better things: their native ingenuity, the memory and dream of mobility, and perhaps most significant for a population defined by dispossession, a sense of control over the land. The irony that control must be won by going beneath the land is not lost on Gazans.⁸³

This political legitimacy and the resulting support from the population are crucial to a successful guerrilla warfare strategy. Tunnels can generate popular support for the weaker side in a conflict, a phenomenon that can help to explain the dynamics and longevity of asymmetrical conflicts in the Middle East.

Another point related to political legitimacy and tunnels is the contribution of tunnels to delegitimizing authority, as seen in the ways in which tunnels in Middle Eastern conflicts undermine official borders. Much has been written about the interpretation and meaning of state boundaries in the Middle East, in the face of refugee flows, cross-border trafficking and campaigns to redraw existing borders.⁸⁴ Disputes over borders are central to many of the contemporary Middle Eastern conflicts, such as the conflict between Israel and Palestine, the Kurdish struggle for independence in Syria, Iraq and Turkey, or the border conflict of 2000–2006 involving the Shebaa farms between southern Lebanon and Israel. Conflict can launch a process of state formation that entirely circumvents existing borders, such as ISIS's declaration of a caliphate that transcended the borders between Syria and Iraq, or carves out pockets of autonomy within existing states, such as the Rojava–Northern Syria Democratic Federal System established by the Kurds in 2016. Furthermore, borders vary in the extent to which they regulate movement: some borders are renowned for being porous in allowing unregulated movement of goods and people, whereas other borders are strictly enforced. The extent to which borders are regulated and monitored, and indeed enforced, can shift over time as a conflict evolves. For example, the Turkish–Syrian and Syrian–Jordanian borders were relatively porous until the Syrian conflict intensified and the authorities tightened their control over these boundaries in an effort to control the movement of contraband and people.⁸⁵

⁸³ Verini, 'The tunnels of Gaza'.

⁸⁴ *International Affairs* 93: 4, 2017, special issue on 'Contentious borders: the Middle East and North Africa post-2011'.

⁸⁵ 'Jordan declares Syria and Iraq borders closed military zones', BBC News, 22 June 2016, <https://www.bbc.co.uk/news/world-middle-east-36593579>; Asli Aydintaşbaş, *A new Gaza: Turkey's border policy in northern Syria*, policy brief (Berlin, London, Madrid: European

The critical border studies literature recognizes the subjective and constructivist nature of borders.⁸⁶ It rejects the concept of an objective, static border in favour of acknowledging the constant involvement of a range of actors in constructing and reconstructing borders.⁸⁷ States spend considerable time and resources on formally defining and controlling their territorial borders; but this article has shown how different actors, at various times and places, are able to circumvent this inside–outside dichotomy promoted by states. Actors including civilians, insurgents, organized crime groups and even governments themselves can use the subterranean as a way to challenge, thwart and even reject the official borders—and by definition the political authority—that characterize the surface.

Civilians' economic survival

Tunnels can have a non-military impact on conflict. Economic or smuggling tunnels can provide an economic lifeline to civilians in areas that have been cut off from regular markets as a result of siege warfare, or blockades, which often accompany conflict. This means that civilian populations are able to survive isolation measures intended to drive them to desperation and submission. This leads, in turn, to a more prolonged and protracted conflict. The siege by the Syrian government of the densely populated area of eastern Ghouta near Damascus in Syria from 2013 until 2018 is another example where tunnels were central to enabling a community to survive conflict and insurgent groups to continue their struggle.⁸⁸ Eastern Ghouta was a rebel stronghold right from the onset of the war and thus a target for the government, which severely restricted entry and exit of people and goods into and out of the area. The local population and the Islamist groups who controlled eastern Ghouta had to construct tunnels to connect themselves to the outside world, in order to bring in ‘everything

Council on Foreign Relations, 28 May 2020),

https://ecfr.eu/publication/a_new_gaza_turkeys_border_policy_in_northern_syria/.

⁸⁶ Mark Salter, ‘Theory of the/{}: the suture and critical border studies’, *Geopolitics* 17: 4, 2012, pp. 734–55; Corey Johnson, Reece Jones, Anssi Paasi, Louise Amoore, Alison Mountz, Mark Salter and Chris Rumford, ‘Interventions of rethinking “the border” in border studies’, *Political Geography* 30: 0{?}, 2011, pp. 61–9.

⁸⁷ Noel Parker and Nick Vaughan-Williams, ‘Critical border studies: broadening and deepening the “lines in the sand” agenda’, *Geopolitics* 17: 4, {?}, p. 729.

⁸⁸ Aron Lund, *Into the tunnels: the rise and fall of Syria's rebel enclave in the eastern Ghouta*, Century Foundation, 21 Dec. 2016, <https://tcf.org/content/report/into-the-tunnels/?agreed=1>.

from food and people to medicine and livestock, and also, almost certainly, weapons and ammunition'.⁸⁹ These tunnels were central to both citizens and insurgents and a crucial factor in the area's ability to survive the siege for so long.

Tunnels can thus become a lifeline for civilians caught up in the economic challenges that war brings. The informal economy that develops in conflict zones relies very heavily on tunnels to transport goods and people. Many civilians are reliant on smuggling tunnels for their economic survival. The involvement of civilians in tunnels illustrates that while tunnel-related smuggling may be illegal, it is not illicit; on the contrary, it is seen as an entirely legitimate form of economic activity. Felbab-Brown emphasizes this distinction between illicit economic activities (which are socially acceptable or unacceptable) and illegal economic activities (which are defined in legal terms, often with limited resonance in local communities).⁹⁰ Economic activity that is defined as illegal, and punishable by law, may enjoy significant popular support and involvement. This has implications for states whose counter-insurgency strategy prioritizes the destruction of tunnels: it may cause a delay (at most) in the use of tunnels—which are, after all, easy to rebuild; but it could cause a much longer-lasting resentment and lead to loss of the battle for 'hearts and minds' of the population.

This section has considered four ways in which the use of tunnels has an impact on conflict: by enabling weaker sides in a war to use strategies that will favour them *vis-à-vis* stronger opponents in asymmetrical conflicts; by causing states to change military strategy; by bestowing political capital and legitimacy on armed groups; and by providing civilians with economic survival strategies. The cumulative effect is that conflicts in which tunnels are used last longer, and benefit insurgent groups militarily, strategically and politically.

Conclusion

This article has shown that the battlefields in the current conflicts in the Middle East are multilevel arenas. These conflicts are battles for power which take place not only in the air and on the ground, but also—an important and often overlooked dimension—under the surface. Just as political geographers have started to go underground, it is time for IR to

⁸⁹ Aron Lund, 'The Syrian rebel who tried to build an Islamist paradise', *Politico*, 31 March 2017, <https://www.politico.com/magazine/story/2017/03/the-syrian-rebel-who-built-an-islamic-paradise-0214969>{?}

⁹⁰ Vanda Felbab-Brown, *Shooting up: counterinsurgency and the war on drugs* (Washington DC: Brookings Institution Press, 2009).

uncover the secrets of the subterranean in its understanding of modern conflicts, especially in the Middle East. A recognition of the subterranean dimension of warfare provides a more nuanced and complete picture of the dimensions, characteristics and impacts of conflict. Tunnels can be used during conflict for offensive, defensive or smuggling purposes (or all three), and they are used by a range of actors including civilians, insurgents, states and organized crime groups. Tunnels become a space where these actors meet, cooperate, and foster new networks and alliances. This article argues that tunnels can influence conflicts in the Middle East in four ways. First, they offer an advantage to weaker groups in asymmetrical warfare by influencing their strategic choices. Second, the use of tunnels in conflict can directly determine and change even powerful states' military strategies. Third, tunnels can become a channel through which armed groups gain political capital and legitimacy; and, on the flipside of this coin, can also pose a challenge to existing political authority as civilians and conflict actors use tunnels to circumvent the borders that may define—and confine—life on the surface. Fourth, tunnels influence conflicts in the Middle East by becoming central to the economic survival of civilians. Overall, these effects lead to longer conflicts, with armed groups and civilians using the subterranean to survive, challenge and circumvent the domination of states on the surface.

The subterranean remains the Achilles heel of powerful states in the Middle East. States respond by flooding tunnels with sewage, sea water or poisonous gas; by sealing or exploding them; or by constructing underground steel barriers. However, their opponents overcome these obstacles with relative ease by digging more tunnels, and by digging deeper and further. This article has illustrated how the subterranean serves the military, strategic, economic and political interests of various groups in the Middle East, with significant consequences for the conflicts themselves and the fortunes of the people who fight and live through them.