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Jihadist attacks on Critical Infrastructure

Abstract

Besides its function to maintain the social and economic well-being of a nation, operating critical infrastructure serves as a proof of the ability of the state to provide protection to its citizens. Hence, a successful terrorist attack targeting critical infrastructure - in addition to generating fear and panic in the ranks of society undermines the operational character of the state. In recent years, several terrorist incidents in Europe have highlighted the vulnerability of critical infrastructure and, consequently, the importance of protecting it. Bearing this in mind, the protection of critical infrastructure has become a high priority for Western states, in parallel with the growing trend of risks, challenges and threats posed by international terrorism. Recently Europe has seen an increase in terrorist attacks against members of law enforcement as well as the armed forces. This paper argues that such attacks should also be considered as attacks on critical infrastructure, as it is ultimately the human resources being responsible for the well-functioning of those agencies. Further, the paper aims to examine the religious justification of Jihadist terrorist attacks against critical infrastructure.

Keywords: Critical infrastructure, terrorist attack, Salafi-Jihadism, al-Qā'ida, Islamic State

Introduction

Greatly simplified, critical infrastructure can be defined as all those infrastructures our society depends on in daily life, including transport, energy, information technology and many other sectors. Critical infrastructure has made life of the citizens in a modern state much more simple compared to previous dec-

ades, but it has also made them dependent of and vulnerable to these complex infrastructures (Muha, 2007, 9.). Considering its increasing importance in the information society, where the different critical infrastructures are closely interlinked with one another, (Haig, 2009, 329-337.) critical infrastructure has always been an attractive target for malicious intent, springing both from state as well as from non-state actors, such as the Madrid (2004) and London (2005) attacks, further the assassinations on train and public transport, as well as the terrorist attack at the airport and central metro station in Brussels (2016). The precise definition of critical infrastructure is complicated by the dense connections, networks, nodes and interactions involved as well as by the fact that the parameters by which a particular infrastructure is classified as critical may change over time.¹

The European Commission defines critical infrastructure as a tool or system that is vital to maintaining basic social functions. (URL1) Critical infrastructure encompasses communications, emergency services, energy, dams, finance, food, public services, industry, health, transportation, gas, public communications, radio and television, information technology, commercial equipment, chemical and nuclear industries, water and forest management. (Besenyő, 2019) A broader definition of critical infrastructure includes banking and finance, telecommunications, emergency services, air, sea and rail transport, health care, the food industry and energy and water supply. Recent studies argue that the question of protecting critical infrastructure should not be seen as an isolated phenomenon and the question of solely independent-functioning systems, but rather as something integrating several aspects of security and vital functions of society. Attacks against such systems can inevitably lead to disruption of public services, which - in more serious cases - is accompanied by chaos on a social scale. Some components of critical infrastructure are predominantly interdependent and closely interrelated, e.g. food supply depends on transport, telecommunications on electricity, and healthcare can simultaneously depend on electricity, water, and emergency services. As more states become increasingly dependent on critical infrastructure that is partially or totally outside the narrower public sphere (in the competitive sphere), it is of pivotal importance that public-private partnerships and constructive cooperation form an integral part of comprehensive defence and preventive strategies (Clemente, 2013). An important contribution to the debate on critical infrastructure protection and the research thereof was made by several Hungarian researchers as part of a larger

1 United Nations Security Council Counter-Terrorism Committee Executive Directorate (CTED). Physical protection of Critical Infrastructure Against Terrorist Attacks, CTED Trends Report, 2017.03.08.

project thoroughly and comprehensively investigating the methods for such protection (Nádai, 2016).

In order to investigate the broader meaning of the term critical infrastructure, the paper makes an attempt to argue why certain categories of human resources may be considered within this definition. This paper argues that in the context of jihadist-inspired terrorist attacks against members of law enforcement agencies as well as military personnel, these targets should be considered within the broader definition of critical infrastructure, as it is the members of these organisations that are ultimately responsible for the well-functioning of the agencies tasked with providing order and security for the citizens. Including the human resources in the definition of critical infrastructure may contribute to these agencies receiving protection to a larger extent through more comprehensive preventative strategies in the context of counterterrorism and counter-extremism.

The ideology behind the attacks on critical infrastructure

Analysis of a large sample of CI attack data (through the Critical Infrastructure Terrorist Incident Catalog – CrITC – created by researchers at the Lawrence Livermore National Laboratory) shows that groups generally classified as religiously motivated have accounted for roughly 73% of all casualties and 35% of all fatalities claimed by attacks against critical infrastructure worldwide that took place in the second half of the 20th century and in the years following the millennium until 2003. The vast majority of the organisations involved fall into the Islamic subcategory. As Ackerman et. al. has underlined, *‘these statistics support a frightening hypothesis – that religious terrorist groups are more likely than other groups to mix CI attacks with mass casualty attacks.’* (Ackerman, 2007).

a. The trope of total war

With regards to Jihadi Salafism, following the invasion of Afghanistan and that of Iraq, jihadist ideologists declared Europe to be a territory of war and called for attacks on the continent. Collective retaliation, i.e. aggression against civilians got justified once members of a community carry out acts against Muslims with the approval and consent of the others. The dogma got applied in the attacks against Western democracies, claiming that citizens elect their leaders and therefore bear responsibility for their acts. One of the most detailed elaborations of this approach is laid down in the text justifying the 2005 London attacks: *‘Any Briton who voted for war is a combatant, or at least sides with the enemy’*. (March, 2009)

The apocalyptic revanchist (Sandal, 2018) dogma that justified the attacks against civilians was elaborated in a series of manuals and propaganda materials. In the ideology of the Islamic State (in the following: ISIS) apocalypse is of crucial importance: it has either already started or just about to take place. Every single combat or attack is a part of or a prelude to the final battle between the righteous and the false. A tradition that envisions *Dabiq* in the north of Syria as the location of this final battle was very emphatic in the discourse of ISIS, (URL2) and this is why their primary propaganda magazine was entitled *Dabiq* (Wood, 2015).

The al-Qā'ida propaganda asserting that Europe is carrying out a crusade against Islam, is reiterated by the ideologues of ISIS as well. Among their arguments not only the participation in the wars in Iraq and Afghanistan was listed, but also grievances of Muslims living in Europe such as the ban on the *hijab* or the cartoons ridiculing Muhammad. In February 2004, Ayman al-Zawahiri classified banning the *hijab* from French schools as equivalent to burning down villages in Afghanistan, destroying Palestinian homes, murdering children or the looting Iraq. (Nesser, 2000).

Given that the notion of critical infrastructure includes public communications, radio and television, the attacks on the headquarters of the French satirical magazine *Charlie Hebdo* on 7 January 2015 may be considered as such, as well as being a strong indicator of the global aspirations of ISIS and a turning point in its media campaign. Hitting a symbolic outlet of secular press freedom in the heart of Europe was a high profile, effective and economical manoeuvre, the first in a chain of terrorist attacks that shook Europe between 2015 and 2019. Bernat Aragó proved to be right in assuming that the goal instead of urging radical Muslims to enrol in the army in their caliphate was rather *'to encourage the receiver living in the West to move to action without the need to travel to the Middle East.'* (Aragó, 2015) In the 4th issue, quoting Abu Muhammad al-‘Adnānī al-Shāmī, the spokesman of the organisation back then, the logic of revanchism appears at its clearest: *'O Americans, and O Europeans ... It is you who started the transgression against us, and thus you deserve blame and you will pay a great price. You will pay the price when your economies collapse. You will pay the price when your sons are sent to wage war against us, and they return to you as disabled amputees, or inside coffins, or mentally ill. You will pay the price as you are afraid of travelling to any land. Rather you will pay the price as you walk on your streets, turning right and left, fearing the Muslims. You will not feel secure even in your bedrooms. You will pay the price when this crusade of yours collapses, and thereafter we will strike you in your homeland, and you will never be able to harm anyone afterwards.'* (URL3)

Al-‘Adnānī’s call to murder crusaders, whether they are dressed in uniform or as civilians, by all possible means, made any target legitimate, blurring all kinds of boundaries between law enforcement and military infrastructure, politicians and common citizens. From this moment on, the declared goal was the destruction of western lifestyle in its entirety. Attacks on critical infrastructure, on their manpower in specific are highlighted, however the definition of critical infrastructure is broad and inclusive:

‘Strike their police, security, and intelligence members, as well as their treacherous agents. Destroy their beds. Embitter their lives for them and busy them with themselves...Do not ask for anyone’s advice and do not seek anyone’s verdict. Kill the disbeliever whether he is civilian or military, for they have the same ruling.’ (URL3)

As the examples show, jihadist propaganda employs figurative language. Every civilian is referred to as a representative of the hostile system through the use of synecdoche - any part of the described object refers to its whole and vice versa – and metonymy – designating the object by only one of its qualities – such as describing the West as crusader and imperialist, and transferring this quality to the individual citizen defined as a inimical soldier, agent etc. This linguistic tool helps defacing the victims and dispelling any moral doubt regarding the carnage of innocent civilians. The idea magazine is further elaborated in the Rumiyah by explicitly calling for attacks on citizens, claiming that *‘the blood of the disbelievers is halal, ...This includes the businessman riding to work in a taxicab, the young adults (post-pubescent children) engaged in sports activities in the park, and the old man waiting in line to buy a sandwich. Indeed, even the blood of the kafir street vendor selling flowers to those passing by is halal to shed – and striking terror into the hearts of all disbelievers is a Muslim’s duty. There is no shar‘i requirement to target soldiers and policemen nor judges and politicians, but all kuffar who are not under the covenant of dhim-mah are fair game.’ (URL4)*

In this line of argument, each human or material constituent represents the whole inimical system. Through a semantic shift, civilians are defined as crusaders, and the ordinary infrastructure of daily life as symbols, embodiments, and requisites of the western secular order. There is no small or insignificant target, the all-inclusive understanding and the frequency of the attacks pose constant threat, thus exhaust the enemy and empower the attacker. In the reframing of ISIS, no target is forbidden to hit, and there is no attack of small significance. The Rumiyah – magazine took over where al-Qā‘ida’s Inspire had left off that is encouraging *‘Open Source Jihad’* renamed as just terror operations by the use of common, available means such as vehicles and knives (URL5).

b. Theoretical foundations

The strategy was elaborated in various manuals and books, the most well-known of them are Questions from the Jurisprudence of Jihad also known as *Fiqh al-Dama'* (Jurisprudence of Blood) a volume compiled from lectures given by Abu Abdallah al-Muhajir in the 1990s in Afghanistan, (URL6) and *The Management of Savagery* written under the pseudonym Abu Bakr Nājī, that has been circulating on the Internet since 2004. Al-Muhajir is considered as the principal architect of Islamic legal justification supporting terrorist attacks and all-out war. He was an Egyptian national who graduated from the Islamic University in Islamabad fought in Afghanistan where he also worked as an instructor in jihadi camps. From 2012 he stayed in Syria where he allegedly died in 2016. In defining forms of killing al-Muhājir drew parallels between the traditional and the modern means and approved the use of weapons of mass destruction, nuclear and chemical weapons. Concerning critical infrastructure, he agreed to burning or flooding crops, cutting trees and plants, and destroying all kinds of land, property, facilities, all that can strengthen the enemy. Similarly he encouraged targeting children, women, the elderly and monks asserting that Islam does not differentiate between military and civilians. As such, killing an infidel is always justified as punishment of infidelity. He argued for kidnapping, beheading and suicide operations. Following the structure of standard fiqh literature he supports his views by referring to Quranic passages (for example 59: 2, 59: 5,² 22: 39,³ 9: 14-15⁴) and various traditions which affirm that Muhammad also destroyed his enemies' fruit trees that were an essential source of food sustenance and of protection from the desert sun. (Peters, 1977). In the referred texts, God is an active participant in the battles, therefore fighting is no longer just a doubtful political tool, but becomes a religious obligation. Based on the quotes, al-Muhajir reiterates that one cannot be a good Muslim unless he fights for the cause of God. Reaching out to the enemy in their safe zones, depriving them of their livelihood and the basic infrastructure that guarantees their survival was meant to be a proportionate punishment for their disbelief.

The Management of Savagery is a Salafi jihadist manual on how to wage jihad in a non-declared war. It outlines a strategic road map of how to create chaos

2 Qur'an 59: 5 'Whatever you have cut down of [their] palm trees or left standing on their trunks - it was by permission of Allah and so He would disgrace the defiantly disobedient.' (URL7)

3 Qur'an 22: 39 'Permission [to fight] has been given to those who are being fought, because they were wronged. And indeed, Allah is competent to give them victory.' (URL8)

4 Qur'an 9: 14-15 'Fight them, and Allah will punish them by your hands, cover them with shame, help you (to victory) over them, heal the breasts of Believers, And still the indignation of their hearts. For Allah will turn (in mercy) to whom He will; and Allah is All-Knowing, All-Wise' (URL9)

and fear among the enemies of Islam and grasp power from inside in any given society. The book describes the process in three stages the first of which is called *marḥalat al-nikāya wa-l-inhāk* (the power of vexation and exhaustion) carried out by groups and separate cells until the anticipated chaos and savagery breaks out. The objectives of this phase are the following:

‘1 – Exhausting the forces of the enemy and the regimes collaborating with them, dispersing their efforts, and working to make them unable to catch their breath by means of operations in the regions of the choice states, primary or otherwise, even if the operations are small in size or effect. Although the blow of the rod may only strike a (single) Crusader head, its spread and escalation will have an effect for a long period of time.

2 – Attracting new youth to the jihadi work by undertaking qualitative operations [‘amaliyyat naw‘iyya] – when it is appropriate with respect to timing and ability – that will grab peoples’ attention...Also note: The normal, small operation and its results must be considered very valuable...

3 – Dislodging the chosen regions – regions in which it was decided to have focused movement, whether in all of the priority regions or in some of them – from the control of the regimes and then working toward the administration of savagery which will transpire in it.

4 – The advancement of groups of vexation through drilling and operational practice so that they will be prepared psychologically and practically for the stage of the management of savagery.’ (Nāji, 2004)

The strategy described above is that of an asymmetric, guerrilla warfare. During this period, the primary goal is to dismantle the central power of the enemy and create favourable conditions for an all-out jihad. At the beginning of the process, when central power is still strong, the fight has to be carried out in smaller groups or cells. In this phase, vital economic and strategic targets are attacked, comprising oil facilities, economic infrastructure, tourism and foreigners as well as entertainment spots. This drains out the security forces and plunges the society into savagery and chaos which provides the jihadists an opportunity for launching a comprehensive offensive. As the author explains:

‘If an oil interest is hit near the port of Aden, there will have to be intensive security measures put in place for all of the oil companies, and their tankers, and the oil pipelines in order to protect them and draining will increase. If two of the apostate authors are killed in a simultaneous operation in two different countries, they will have to secure thousands of writers in other Islamic countries. In this way, there is a diversification and widening of the circle

of targets and vexation strikes which are accomplished by small, separate groups.' (Nājī, 2004)

This tactic is meant to spread hopelessness in the hearts of the enemy, and makes them pay the price. Moreover, it is not necessary that the retaliation is directed against the perpetrators, rather acts of deterrence in any part of the world is fit for purpose making the enemy feel that he is surrounded. Violence is therefore not only a means of physical warfare, but a strategic tool aimed at the psychic impact on both the victim and the perpetrators. The first issue of *Dabiq* deals in detail with the benefits of violence, defining its primary purpose, in the spirit of Nājī's book, is to provoke chaos. The manuals and texts call for the greatest possible destruction by legitimising any target, encouraging killing at any time in any place referring to cases of early Islamic history when aggression guaranteed expansion.

c. Aims and tactics

The strategic thinking is well reflected in the propaganda, and in certain instances the text is emphatic about the economic gains of the operation. This is well exemplified in the following:

'Attack the interests of the Crusader coalition near you, including their embassies, businesses, and 'civilians. Burn down their government institutions just as they try to bomb our buildings where Allah's law is upheld' (URL10)

The justification is backed by the monopoly of truth, based on the alliance with God. The corrupt West and all its inhabitants deserve material loss, while the spoils of war wait for the faithful. Besides the Qur'ānic references that call to retaliation,⁵ claiming that violence must be met with counter-violence as the only means for restraining the powerful, Muhammad's practice -itself a source of Islamic jurisprudence – reveals a conscious tactic of destroying the economic structure of the Meccan society led by the Quraysh, through attacking their caravans before the actual conquest of the city took place. As Patricia Crone highlighted in her study of Meccan trade in the early sources of Islam, among them works by early Muslim historians and hagiographers, Ibn Ishāq and al-Wāqidī: *'it could be argued that the traditional account of how Muhammad forced Mecca to surrender should be rejected. For one thing, the number of caravans*

5 Qur'an 6:126: *'And if you punish, you are to punish with the like of what you were punished.'* 2:19 *'Whoever commits aggression against you, retaliate against him in the same measure as he committed against you'* 4:78 *'Wherever you are, death will find you out. Even if you are in towers built up strong and high.'* (URL11)

threatened or intercepted by Muhammad is considerably larger in Wāqidī than in Ibn Ishāq: the three caravans that are plundered by the Muslims over a period of five or six years in the latter's work scarcely suffice to explain why a trading city of major importance let alone one backed by a 'Meccan Commonwealth' should have surrendered to a nest of robbers.' (Crone, 2004)

We can assume therefore that smiting the trade roots surrounding Mecca, raiding the caravans and posing a constant threat on the Meccan society prepared the way for its relatively easy invasion. In the contemporary Jihadi-Salafī manuals, hitting economic targets is recommended as it brings about exhaustion and social disruption. *The Management of Savagery* summarises the expected benefits as follows:

Prophetic tradition defines jihad as follows: *'I asked the Prophet: What is jihad? And he said it is fighting against the unbelievers whenever you meet them'* (Ism. b. Ish, 1998) From this tradition, jurists have inferred the following normative definition for jihad: *'Fight with a sword against the unbelievers until they convert to Islam or pay tribute to the expression of humility in the form of taxes.'* (M. b. A. Ibn Rushd, 1998) In the 7th century, jihad targeted pagan Arab tribes, and was later extended to Jews and Christians living on the Arabian Peninsula and its neighbouring territories. This was not just a religious war, it was equally about goods and territories. In its contemporary version, the envisioned effect is the exposed vulnerability of the states that shakes the trust of the citizens and their support of the government. This initiates a vicious circle, urging those in power to dedicate more efforts to maintaining law and order, an endeavour doomed to failure. This pressure burdens their economy, reduces their sources of income and creates an atmosphere of constant vigilance and general distrust. The planning process depends on many factors, among them the ideology in the name of which they act, the message and the specific operational objective of the attack, and last but not least the available means to carry it out as well as the accessibility and vulnerability of the target. The strategy outlined in *The Management of Savagery* suggests first attacking the periphery and with time, moving towards the centre, defining them as easier and more accessible *'the peripheries and the crowded, popular regions are devoid of military forces or there are a number of troops in them with brittle leadership and weak power, without a sufficient number of officers.'*

Similarly, there is no small target if it makes part of a strategy:

The text raises attention to the possibility of paralysing a system by eliminating its weakest constituents. With due understanding of the fact that the top of the hierarchy cannot function without its rank and file, it reiterates the slogan that every hit gains its significance with respect to the damage it causes to the entire

structure. The from the periphery to the centre strategy leads us to another highly contested issue, that of Jihadist infiltration into the armed forces. The *Management of Savagery* explicitly recommends this tactic in the following passage:

'(We) should infiltrate the police forces, the armies, the different political parties, the newspapers, the Islamic groups, the petroleum companies (as an employee or as an engineer), private security companies, sensitive civil institutions, etc. That actually began several decades ago, but we need to increase it in light of recent developments. Likewise, we may need to infiltrate a single place with more than one member—one member will not know another (member) and vice versa—for different roles or the same role if it requires more than one member.' (Nāji, 2004)

This line of thought summaries a conscious, gradual, three-pronged bottom – up approach: selecting and gaining access to crucial organisations and institutions, joining them and increasing the presence of agents, building up a reserve of them while maintaining their isolation and the security of the network.

Modus operandi - jihadist-inspired attacks on critical infrastructure in the west

a. Psychological operations in asymmetric warfare

In examining the relationship between critical infrastructure and jihadist attacks, it is a foregone conclusion that, in its genre, terrorism uses elements of military, economic as well as psychological warfare against the target country and its economy. In the field of psychological warfare, the aim is to spread fear, anxiety and panic throughout society (regardless of geographical location), making citizens feel unsafe everywhere. Therefore, the failure of a government to prevent and counter terrorist attacks that potentially target multiple segments of society - be it a critical infrastructure, a business, a restaurant, a mall, a hotel, a transport arena or a venue for public and social uprisings - conveys the message that the state is unable to guarantee the security of its citizens and protect its critical infrastructures against the damage caused by terrorists. With regards to the types and the methods of attack, against critical infrastructure between 1993 and 2003, oil/gas, power, and public service/Government Office infrastructure facilities top the list. These targets also accounted for the largest number of casualties. Minor attacks against embassies and consulates accounted for almost 50% of the total. Bombing has been the most favoured method. As Ackerman et. al. indicated, *'terrorists generally attack*

infrastructure because: 1) they want to destroy certain important facilities; 2) they feel that they can obtain more publicity or external support than if they had attacked non-infrastructure targets; 3) they can cause even larger number of casualties – or avoid causing casualties altogether – by attacking such facilities; 4) the symbolic value of infrastructural targets is greater than that of other targets; or 5) for a complex combination of general and very specific reasons.’ (Ackerman, 2007) Between 2004 and 2018 there were 107 Islamist terrorist attacks in Europe killing 622 individuals. In eight cases terrorists targeted public transport vehicles (train, metro) or stations. By November 2019, twelve attacks took place against police stations or personnel. On 3 October 2019, a police employee at the Paris police headquarters stabbed four of his colleagues to death and injured two others. It should be noted, however, that more than 80 percent of Western states’ critical infrastructure is owned and operated by the private sector, and it has become evident that security in this area is not solely the state’s responsibility but also depends to a large extent on the quality of public-private partnerships.

b. Attacks on transport systems, vehicles, stations and operators

Jihadist-inspired attackers have in recent years repeatedly demonstrated their ability and readiness to plan and execute attacks on any critical infrastructure in Europe. Examples include the bombing of the aforementioned Madrid train station in 2004 (10 bombs on four commuter trains at three stations in Madrid killed 193 people and wounded more than 1,800) and the coordinated suicide bombings on London public transport in 2005, both of which were carried out by al-Qā’ida followers. Already in 2015, several previous incidents pointed at the similar intent of the Islamic State, a terrorist organization carrying al-Qā’ida’s ideology calling for global jihad, according to Europol. (URL12) In June 2015, a man drove to the site of an American gas industrial company near Lyon called Air Products & Chemicals, where he wanted to blow up gas tanks (URL13). The courier and delivery man – in whose possession the black flag of the Islamic State was found - tried to set fire to one of the gas and acetone storage buildings but could only cause a smaller explosion. Before the blasting attempt, the man beheaded his property boss. One month after the incident, a large-scale explosion at an oil plant in southern France highlighted the vulnerability of similar sites and critical infrastructures. In both cases, the perpetrators had relatively easy access to the facilities and were able to trigger explosions using flammable chemicals, causing significant damage to the facilities. The selection of facilities, according to Europol, demonstrates that chemical plants

(and critical infrastructure as such) can play a key role in the future of targeting terrorist groups.

On March 22, 2016, two men who had pledged allegiance to the Islamic State carried out a simultaneous attack at Zaventem International Airport in the Belgian capital and at Maelbeek Metro Station near the city centre (Sinai, 2016). Nearly 30 people were killed and some 300 injured in the attacks. Such attacks on the capital's transport infrastructure also give rise to a sense of fear, uncertainty and vulnerability of the population, and a diminished confidence in the government's defence capabilities, as they will be targeted at the same time by future attacks on transport. It is no coincidence that the airport was blown up on a departure site with a lower level of security control, which has reaffirmed the terrorists' conscious strategy to identify and exploit vulnerable areas of the target.

In the United Kingdom, *'on September 15, 2017, an 18-year old Iraqi asylum seeker named Ahmed Hassan detonated a bomb using triacetone triperoxide on a District line train at Parsons Green Underground station in London. Thirty people were treated for burn and other injuries.'* (URL14) As for attacks against entertainment facilities, in 13 November 2015 the Bataclan Theatre in Paris Saint Denis was targeted simultaneously with Stade de France where a football match was taking place and various other entertainment facilities, with a death toll of 130. On May 22, 2017, Salman Abedi detonated an improvised explosive device in the Manchester Arena demanding the life of 22.

Some recent trends seem to imply that terrorist organisations such as al-Qā'ida in the Arabian Peninsula (AQAP) and the Islamic State (ISIS) rather propagate for the jihadi carrying out the attack to stay alive in order to be able to continue with further ones. An example of such an attack would be the derailment of trains, such as suggested in a 2017 issue of *Inspire*, the propaganda magazine of al-Qā'ida in the Arabian Peninsula, dedicating an entire edition to step-by-step describe how to derail trains in Europe and US for future terrorist attacks. The 18 pages article described in detail how to make a derailment tool with cardboard, an empty plastic container, part of a rubber tyre, pipes, iron wires, screws, sheet metal, and cement. The operation does not require any electronic or construction tools, so potential jihadis can easily *'remove any traces for suspicion.'* In the view of AQAP, railways make a perfect target, as they cannot be fully protected.

'America's railroads are estimated to be a 1/3 of the world's railway. So how can they protect 240,000 km of railroad ... it is practically impossible. The same goes to Britain, with 18,500 km and France, with 29,473 km. It is a daunting and almost impossible task to protect the long railroad length, and yet one of

the easiest to target. That may result to great damage and destruction on different levels,

To this, al-Qā'ida's 'Lone Jihad Guidance Team' adds:

'it is time that we instil fear and make them impose strict security measures to trains as they did with their air transportation.' We have to expose more of their vulnerabilities in their security. And when they spend millions of dollars to tackle a vulnerability, we should be ready to open a new [front]... we expect that there will be no effective solution to the security gaps that may be caused by these types of operations that target the train system. 'The mentioned three countries were singled out as they 'have shown open hostilities towards Muslims'.

As illustrated below, AQAP showed particular interest in the high-speed train Acela in the U.S.

'This is the most suited condition for a successful train derail operation. When a train reaches high speed then it has to be reduced to around 100 km/h. This is because a train at a very high speed is hard to control or manage using brakes. For example, America's high-speed train 'Acela' requires a whole mile so that it can come to a halt, this is because of the train's very high speed. Another reason is that the train losses weight and stability when it is at high speeds,' the article stated. 'Therefore, a Mujahid must be aware of areas where the train increases its speed and places where the train moves at a high speed.'

Another scenario favoured by the authors was the one *'that makes the different security agencies sleepless'* — if a jihadist could wage a complex 'dual operation' attacking a train hauling hazardous materials through a well-populated area. *'Observing and surveilling the movements of these Hazmat trains'* would be pivotal, as well as tapping into open-source intelligence available from government agencies in the U.S.

Research on the security capacity of Subway, U-Bahn, Underground, MRT, Rapid Transit, Metrorail showed that technical systems employed presently in metros cannot prevent bringing certain type of explosive devices into the metro stations and carriages. (Shvetsov, 2017) An analysis reflecting on the Brussels attacks highlighted, that according to the Congressional Research Service five times as many people per day in the U.S. travel by subway than by plane which makes public transport an ideal target for terrorists. Moreover, the much-needed high security – besides being extremely costly – would paralyse and destroy public surface transportation, while crowds of people waiting to get through a security back up at a crammed train station would create another target for terrorists. (URL15)

c. Attacks on members of law enforcement and armed forces

Jihadist-inspired attacks against members of law enforcement agencies and armed forces have increased in Europe. In October 2019 four police officers were knifed to death by their colleague at Paris police headquarters. What makes the incident especially alarming is that Mickaël Harpon, the perpetrator had access to classified police intelligence files. As *The Economist* summarised: ‘*He enjoyed high-level security clearance, which was renewed in 2008 and 2013. His job gave him access to a mass of intelligence data, including personal contact details of police officers and of individuals under surveillance, some of which have subsequently been found on a USB key in his possession.*’ (URL16)

This attack was not the only of its kind in France. Previous incidents include: ramming attack against soldiers stationed in Levallois-Perret in the north western suburbs of Paris (August 2017); crash into a police van outside Champs-Élysées with a car containing a gas canister (June 2017); a man attacking a policeman on patrol outside the Notre Dame cathedral in Paris with a hammer and two knives shouting ‘This is for Syria’ (June 2016); killing of a policeman and severely wounding of other two at Champs-Élysées (April 2017), murder of two policemen in the city of Magnanville west of Paris (June 2016) by a man who had sworn allegiance to ISIS; and the attack against police officers at the Tours police station by a Burundi-born convert to Islam (2014). These are merely examples; the list of attacks against members of law enforcement and military personnel in France contains many more incidents similar to the ones listed above. Similar examples of Islamist extremist attacking police and military personnel are found in a wide range of countries including e.g. Afghanistan, Indonesia, Iraq, Bosnia- Herzegovina, Saudi Arabia and Kenya.

The scale of the danger is well illustrated by the fact that Mickaël Harpon enjoyed high-level security clearance and his colleagues declined to submit written complaints against him, although noticed significant changes in his behaviour and sympathies. France has put in place a system designed to detect radicalised people, which was expanded in 2018. It comprises a list of warning signs, such as a change in dress or behaviour, which are supposed to trigger an alert. The findings are already alarming. ‘According to a parliamentary report in June, 12,809 people are on a watch list as a result. Such lists are used to help screen recruits to sensitive public services. In 2018, of the 10,840 queries concerning applicants to the police force forwarded to the national security inquiry service, five were judged problematic. It also keeps watch on employees. There are currently around 30 cases concerning suspected radicalisation within the police force and gendarmerie.’ – reports *The Economist*.

Several other countries are experiencing deadly violence against soldiers and police officers by Islamist extremists. Between December 2013 and May 2018, British intelligence and law enforcement agencies thwarted 25 plots from extreme Islamic groups, most of which were inspired rather than directed by the Islamic State and its ideology. In May 2013, British soldier Lee Rigby was murdered in Woolwich by two Islamist extremists of Nigerian origin. Combined attacks of driving into pedestrians and stabbing in central, governmental areas took place on March 22, 2017, when the British-born Khalid Masood drove a sports utility vehicle into pedestrians crossing Westminster Bridge in London, killing three people, then stabbed a police officer outside of Parliament. In September 2014, an Afghan Islamist extremist stabbed two counter terrorism officers in Melbourne. In October the same year a lone perpetrator shot a soldier at a war memorial and attacked Parliament in Ottawa, Canada. The offender has converted to Islam many years prior to the assault. The same month another attack took place against four police officers in New York. The hatchet-wielding assailant was identified as a former member of the U.S. Navy, who had been involuntarily discharged and who was also an advocate for black power as well as a recent convert to Islam at the time of the attack.

Conclusion

Critical infrastructure represents a global sector of a market economy, also implying that due to this nature it cannot be fully protected at all times and everywhere. Unfortunately, as the examples so far show, successful terrorist attacks targeting critical infrastructure are likely to continue. As discussed earlier, a broader definition of critical infrastructure includes banking and finance, telecommunications, emergency services, air, sea and rail transport, health care, the food industry and energy and water supply, but also the maintenance of order and security in the society. Since the latter – like almost all of the previously mentioned – are operated by humans, the question of human resources as critical infrastructure arises. In the context of this study, examining jihadist-inspired attacks on critical infrastructure, the authors have argued that members of law enforcement as well as armed forces to be considered within the scope of critical infrastructure. Jihadist sources are explicitly inclusive in their definition of critical infrastructure, which, besides their propaganda value prove a semantic shift, unilateral as it seems, still bears the potential to launch an overall attack against all dimensions of civil life in the West. The frequency of open source jihadist attacks – committed by bladed weapons like knives and vehicles - has turned the menacing message into a strategy of decentralised, non-coordinated, largely spontaneous and therefore

largely unpredictable attacks. Operations targeting human resources tasked with the maintenance of public order and security (as well as national security) can inevitably lead to severe disruption of these services and might result in chaos on a social scale. Moreover, creating vigilant societies or resilient structures places an unreasonably heavy burden on the affected states and its psychological impacts still have a long way to be estimated.

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