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Jihadism and the industrial revolution of terrorism

Jihadism research has been affected by a neglect of practical aspects of terrorism as the operational art of Jihadi groups, their dissemination of military knowledge among the members of their sub-cultures.[1] This holds true for right-wing terrorism, too.

Research on Jihadism focussed on the communicative aspect of Jihadi online and offline activities. This may be due to a large number of people trained in political studies, communication studies etc. who by training tend to ignore other aspects of the phenomena studied – leaving aside the shallowness of a large number of terrorism and Jihadism experts. Practitioners in police, law enforcement, and IT are much more attentive to other aspects of Jihadism.

We propose the need of an integrated approach to the field studied including a thorough understanding of online communication on all platforms of the Internet available to Jihadis, the ability to follow Jihadi communication in all languages available to the members if the Jihadi subcultures, esp., Arabic, Somali, Pashto, Urdu, Bengali, Bahasa Indonesia etc., and an understanding of the religious context of Jihadi communication.

We will look into some elements of Jihadi communication and action that may help us to better understand potential dangers beyond the usual terrorism discourses. We will look into three fields of research in a way that may help us to give an impression of the effects we get reconfiguring the study of Jihadism based on evidence.

Ammunition etc.

Recent research has demonstrated the way in which ISIS blue-collar technicians have been developing their manufacturing process. Look at Khalid Sheikh Mohammed who

„received a degree in mechanical engineering from North Carolina A&T State University, the Associated Press reported, he received permission to build a vacuum cleaner from scratch. Mindless hobbyism, according to his CIA holders, or the mark of a maker. The schematics had been downloaded from the Internet."[2]

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1   A preliminary version of some of the cases discussed here have been published in Lohlker, R. (ed.) (2018). *World Wide Warriors.* Göttingen: Vienna University Press.
2   Castner, B. (2017, December 12). Exclusive: Tracing ISIS' Weapons Supply Chain – Back to the US. Retrieved from https://www.wired.com/story/terror-industrial-complex- isis-munitions-supply-chain.

ISIS cadres did something similar to Khalid Sheikh Muhammad. When they were running out of supplies

„they did something that no terrorist group has ever done before and that they continue to do today: design their own munitions and mass-produce them using advanced manufacturing techniques. Iraq's oil fields provided the industrial base – tool-and-die sets, high-end saws, injection-molding machines – and skilled workers who knew how to quickly fashion intricate parts to spec. Raw materials came from cannibalizing steel pipe and melting down scrap. ISIS engineers forged new fuzes, new rockets, and launchers, and new bomblets to be dropped by drones, all assembled using instruction plans drawn up by ISIS officials."[3]

The next step of the work of IS engineers may be the utilization of 3D printers in order to produce the resources they need, using information readily available on the Internet (see below). Here we can see another aspect of merging real and virtual life. In fact, this is already happening right now – not using 3-D printer devices – but distributing jihadi knowledge online. For the moment, let's leave aside other supply chains from Eastern European Countries, China, the USA, Russia, Saudi Arabia, Libya, Sudan, etc. - ranging from battlefield captures to diverted material – adding to IS-produced ammunition (see above). Let us focus instead on IS widely using IEDs: „IS forces have manu-factured and deployed improvised explosive devices (IEDs) across the battlefield on a quasi-industrial scale."[4] Yet again, we can see IS blue-collar technicians at work. 3D printing will become more important in the future. Even for Western DIY terrorists blueprints have already accessible.

3D Printing

Jihadi media provide many sources and specific instructions to make bombs, poisons and other weapons.[5] The pressure cook bomb of the Boston Marathon attackers following the al-Qa'ida online magazine Inspire may be a famous case.

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3   Ibid.
4   Conflict Armament Research (2016)- *Tracing the Supply of Components used in Islamic States IEDs. Evidence from a 20 Months Investigation in Iraq and Syria.* London: Conflict Armament Research, p.7.
5   See Lohlker, R. (2018). Collective Organizers. Lohlker, R. (ed.) (2018). *World Wide Warriors*, Göttingen: Vienna University Press and Lohlker, R./Abu-Hamdeh, T. (eds.) (2019). *Jihadism Revisited*, Berlin: Logos.

„Ultimately, the ‚Inspire' kitchen bomb was rudimentary. But what if the bomb designers and bombers hat 3D printers? A much more advanced device would be readily accessible, and arguably easier to build."[6]

Even now there are pieces of information out in the Web that make printing drones, firearms, ammunition, or missiles accessible. In recent years law enforcement officials and some journalists have warned of the danger of terrorists using 3D printing technology for their ends.[7] An article explains the situation:

„It's not a question of when criminals and terrorists will take on 3D printing. They've already got it. But are they churning out weapons in secret 3D printing labs in caves in faraway lands? If not now, it's certainly a real possibility."[8]

What are the possibilities mentioned above? To quote another online article:

„On July 31st, just hours before a repository of firearm blueprints were meant to go online, a federal judge issued a temporary nationwide injunction halting their release. U.S. District Court Judge Robert S. Lasnik granted a temporary restraining order on Defense Distributed—the maker of the blueprints […]

However, a cursory review of the encrypted instant messaging service Telegram reveals that DIY 3D firearm blueprints remain easily accessible on public channels. One Telegram channel created August 1st, 2018, openly allows a number of blueprints to be easily downloaded. The channel seems to have uploaded blueprints ranging from complete AR-10s to the infamous so-called "Liberator"."[9]

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6   Colquhoun, C. (2018, July 28). Plastic Terrorism: 3D Printing will Transform Security. Retrieved from http://www.neoncentury.io/blog/2015/7/28/plastic-terrorism-3d-printing-will-transform-security.
7   A recent case (October 2019) in Germany demonstrated how easy it is for terrorists to use 3D printing.
8   Butler O'Neal, Bridget (2015, March 4). Defense, War & Terrorism: How will the 3D Printing Revolution Change Everything? Retrieved from https://3dprint.com/38825/3d-printing-revolution-defense/.
9   Anna K/Riki M (2018, August 15). Were DIY 3D Gun Blueprints Really Taken Offline? On Telegram, not Quite. Retrieved from https://medium.com/@rikimatsumoto/were-diy-3d-gun-blueprints-really-taken-offline-on-telegram-not-quite-f5488dde4481.

The telegram channel – not run by a Jihadi[10] – mentioned above[11] is not available any more. The channel had 339 subscribers, not an impressive number, started August 1, 2018, and has as a motto „Printable freedom."[12] The media uproar caused by the case reminds us of similar attempts to deny the possibility of military use of consumer drones.[13]

As mentioned above, several files are available: ar10_complete, ar15_80_percent_lower, beretta_ 92fs_complete, liberator_complete, ruger_10-22_complete, vz58_complete, Ammo, Firearms, Muzzle_Devices, Pistols, Rifles; all the files containing the blueprints are zipped. The variety of files demonstrates the possible use of this information.

Taking into account that there are channels using Arabic or Persian language and dedicated to 3D printing[14], it is only a matter of time we will see a discussion among Jihadis about the use of 3D printers for their purposes will pop up on the Web.

A case causing a lot of concern among law enforcement officials around the world was the arrest of a group of nine individuals in Hong Kong. Among the items recovered during the arrest was a 3D printer.[15] It is still not clear which role the printer played in the activities of the group.

3D printing may have an impact on other aspects of terrorist threat:

„Mark Rowley, Metropolitan Police Head of Special Operations and Assistant Commissioner, [...] has now warned that terrorists might utilize 3D printing technology to create airborne drones or to build bombs."[16]

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10 See on this Texas company Simkins, J. D. (2018, July 28). 3D-printing guns in your home? A Texas company just got the green light to give you instructions. Retrieved from https://www.militarytimes.com/news/your-air-force/ 2018/07/29/3d-printing-guns-in-your-home-a-texas-company-just-got-the-green-light-to-sell-instructions/ (posted July 28, 2018) (accessed August 22, 2018).

11 Cf. Anna K/Riki M (2018, August 15). Were DIY 3D Gun Blueprints Really Taken Offline? On Telegram, not Quite. Retrieved from https://medium.com/@rikimatsumoto/were-diy-3d-gun-blueprints-really-taken-offline-on-telegram-not-quite-f5488dde4481.

12 *Defense Distributed at telegram.me* (started at August 1, 2018) (accessed August 22, 2018).

13 We may think of the ‚consumerization of warfare' related to online activities (e. g., Zapparoli Manzoni, A./Passeri, P. (2011, July 16). Consumerization of Warfare. Retrieved from https://www.hackmageddon.com/2011/06/16/ consumerization-of-warfare/.

14 *3D printings at telegram.me* (started at February 5, 2018) (accessed August 22, 2018).

15 Milkert, H. (2015, June 26). Hong Kong Terrorists Caught with 3D Printer, Perhaps looking to modify Airsoft Guns. Retrieved from https://3dprint.com/76737/3d-printer-terrorists/ and Alec (2015, June 26). Possible terrorist group apprehended in Hong Kong with bomb material and a 3D printer. Retrieved from https://www.3ders.org/ articles/20150626-possible-terrorist-group-apprehended-in-hong-kong-with-bomb-material-and-a-3d-printer.html.

16 Anderson Goehrke, S. (2015, April 27). UK Police Note Potential for 3D Printing Uses in Terrorist Activities Retrieved from https://3dprint.com/59830/uk-anti-terror-3d-printing/. It goes whithout saying we do not advocate any overstated scaremongering, but we have to take account of existing developments and those to be expected.

Drones

Drones are relevant to our discussion due to the large number of publications related to the use of drones as weapons by IS especially. Those who have not read or seen any of the related material apart from the group's official videos may only know that IS has utilized drones as a tool for producing impressive video footage.[17] Yet, they were also used for reconnaissance and intelligence gathering purposes and the step of using them as weapons was to be expected. As predicted, the weaponization of drones occurred and spread throughout the year 2016. After two Kurdish soldiers were killed in the same year, this development could no longer be ignored and the Combating Terrorism Center (CTC) published the first overview on the issue in January 2017. However, despite previous experiences the CTC report attempted to downplay the role of consumer drones whilst Jake Godin has pursued a more realistic approach, calling drones "the industrial revolution of terrorism".

A slightly disquieting aspect of this industrial revolution may be the US buying Swarm Drone systems to be prepared against swarm attacks like those on Saudi Arabia in 2019[18] or Russia developing ‚Jihadi Aviation' drones.[19]

A very apt commentary reads: "Some here also say they don't possess enough of a skill level to do it, or that toy/hobby grade aircraft/drones will never be used by terrorist."[20] This commentary could truly be the motto of most terrorism research – deny it, until it is too late.

IS has used jihadi-attack-drones, whilst other jihadi forces have also used them for an attack on a Russian airbase near Latakia in early 2018. The number of drones used for the attack was reported to be 13[21] – a small swarm. Outside the borders of the Syrian/Iraqi area of operation, more drone attacks are to be expected. In September 2017 we read:

17 Recent footage (July 2019) demonstrated that IS is still able to use drones.

18 Mitra, P. (2019, October 3). US buys Swarm Drone defence system, after the attacks on the Saudi oil projects. Retrieved from http://www.newscast-pratyaksha.com/english/us-buys-swarm-drone-defence-system/.

19 Mitra, P. (2019, July 11). Russia develops 'Jihadi Aviation' drones. Retrieved from http://www.newscast-pratyaksha.com/english/russia-develops-jihadi-aviation-drones/.

20 Some Here Say This Kind of Thing is Untrue and Not Really Happening (2017, February 13). Retrieved from https://www.rcgroups.com/forums/showthread.php?2833203-Some-Here-Say-This-Kind-of-Thing-is-Untrue-and-Not-Really-Happening.

21 Aboufadel, L. (2018, August 1). Russian military shoots down 13 jihadist drones over Hmaymim Airport. Retrieved from https://www.almasdarnews.com/article/russian-military-shoots-13-jihadist-drones-hmaymim-airport/.

„The terror group's technicians claim to have perfected modifications which would allow a drone to carry a devastating payload of up to 20kg – some 20 times the current maximum. The Jihadists' online material now regularly exhorts sympathizers to use the devices to launch attacks and experts have told that a successful atrocity using a drone against countries including the UK is one of the terror group's highest priorities."[22]

On a telegram channel called „Islamic State" (al-dawla al-islāmiyya) we could follow a series of tutorials on how to fly drones as early as in March 2016. However, the use of drones by IS goes back to even 2014 and we may argue that this knowledge on the possible utilization of drones was out there in the jihadi swarm already at very early stages - yet often ignored.[23]

Drones are discussed in Jihadi magazines (see below). In al-Īhā'āt al-jihādiyya, an Arabic language magazine published by the Centre for Jihadi Preachers (markaz du'āt al-jihād min ard al-Shām al-mubāraka) close to the Jihadi preacher al-Muhaysinī, a leading figure in the al-Qa'ida related organizations in Syria, published some comprehensive articles on drones. The first article describes the ways in which drones might be operated whereas the following article attempts to convince Jihadis of its feasibility. Another article in this part of the magazine discusses operational art in times of drone surveillance. Reading these journals helps to understand the Jihadi way of reflecting on their practice. In fact, this is the only way of achieving such an understanding.

To conclude our overview with a look into other aspects of Jihadism that will help us to reconfigure our view on recent developments of Jihadi subcultures we will turn to Jihadi magazines.

Magazines

The study of the role of magazines in Jihadi subcultures is one of the many neglected fields of research on Jihadism; one of the current magazines was mentioned above The case of the Jihadi magazines may easily demonstrate the problems arising from the linguistic restrictions of conventional Jihadism research. Jihadi magazines do have a history of their own going back to the first wave of operations of al-Qaeda on the Arab Peninsula (AQAP).

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22 Milmo, C. (2017, September 8). Drone terror attack by Jihadists in Britain is 'only a matter time', security sources warn.Retrieved from https://inews.co.uk/news/uk/drone-terror-attack-jihadists-britain-matter-time-security-sources-warn/.
23 For a first report on the IS drone program see ISIS Drones: Evolution, Leadership, Bases, Operations and Logistics Almohammad, A./Speckhard, A. (2017, May 5). Retrieved from http://www.icsve.org/research-reports/isis-drones-evolution-leadership-bases-operations-and-logistics/#_ftn55.

The first magazine produced by AQAP was Sawt al-jihād[24], focussing on theological and practical issues of military Jihad in Saudi-Arabia, the second one Muʿaskar al-battār focussing on military issues. Both magazines and its articles are republished online again and again until today.

Conventional research – because of a lack of linguistic competence – focussed on Jihadi English language magazines – or on the English language parts.[25] So it seems, the only researchable Jihadi magazines are Inspire, Dabiq, Rumiyah, English versions, for a smaller number of researchers French, German, Russian, etc., but not Arabic.

A thorough analysis of al-Nabāʿ, at the time of writing 144 issues, is still missing. Nothing about Fustāt al-muslimīn, al-Waʿd al-ākhir, al-Anfāl, al-Malhama, al-Waqqār, fa-dhakkir will provide other examples of Arabic language Jihadi communication ignored. The many issues of magazines in South Asian cannot be discussed here, but are ignored by conventional research as well. As we mentioned above the bilingual Somali/English magazine Gaidi Mtaani is only interesting because of its English language part

To summarize: Conventional Jihadism research ignores large sectors of Jihadi communication and even does not attempt to understand new developments – innovations (see below) – of the Jihadi subcultures. There has been no serious analysis of the ‚family magazine‘ disseminated for some time through Jihadi channels called „My House“ (in Arabic *Majallat Baytiki*) or a youth journal, an interesting case of community building in the times of so-called decline starting in 2017.

Some years ago Adam Dolnik wrote in his still not often studied book on terrorist innovations: „the topic of innovation in terrorist campaigns per se has not yet been widely researched.“[26] The cases studies presented here demonstrate we are still in need of a serious scholarly analysis of Jihadi innovation. If not, Jihadism research will lag behind these innovative approaches.

Insight: The most important development of Jihadi operations has been the „terrorist industrial revolution“ resulting in Military Jihad 4.0. This has largely been ignored by terrorism researchers to a lack of linguistic knowledge, religious knowledge, and technical interest.

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24 There is only still one detailed analysis of this magazine: Prucha, N. (2010). *Die Stimme des Dschihad.* Hamburg: Dr. Kovač.

25 See, e. g., Conway, M. et al. (eds.) (2017). *Terrorists' Use of the Internet: Assessment and Response,* IOS Press, Amsterdam, pp. 182-193 or Beifuss, A./Scheuermann, A. (2017). *The Virtual Rhetoric of ‚IS' - An Editorial Design Case Study of the ‚IS' Magazine* Dabiq. Bern: University of the Arts HKB.

26 Dolnik, A. (2007). *Understanding Terrorist Innovation: Technology, Tactics and Global Trends.* London/New York: Routledge, p.5.