The Diffusion of Emerging Technologies into Pakistan's Militant Landscape and Its Implications

Abdul Basit [*]

Abstract

This paper explores the diffusion of emerging technologies into Pakistan's militant landscape and their implications for internal security. Terrorist groups, though often risk-averse and resource-constrained, are seen exploiting the ongoing technological revolution to enhance their operational and propaganda capacities. Drawing on Cronin's Lethal Empowerment Theory and the technology adoption curve, the study analyses militant groups' cost–benefit calculations in adopting new technologies and the characteristics that make them attractive. Three domains are examined: the weaponisation of commercial drones, the early adoption of Artificial Intelligence (AI) for propaganda and translation, and the exploitation of social media platforms for recruitment, radicalisation, and narrative projection. Findings indicate that while drone use is progressing toward a breakthrough phase and AI remains experimental, social media operations have entered a competition phase with state countermeasures. These trends lower entry barriers for educated youth, expand militants' operational reach, and raise the security burden on Pakistan's institutions. The paper concludes that counterterrorism frameworks must integrate cyber capabilities, anti-drone measures, and digital literacy

[*] Abdul Basit is a Senior Associate Fellow and head of South Asia desk at the International Centre for Political Violence and Terrorism Research (ICPVTR) of the S. Rajaratnam School of International Studies (RSIS), Singapore. He specializes in South Asian security issues with a primary focus on terrorism and religious extremism in the AF-Pak region. He can be reached at isabasit@ntu.edu.sg.UK

IPRI Journal ■ XXV (2): 89-123
https://doi.org/10.31945/iprij.250206

initiatives to mitigate the evolving threats posed by technology-enabled militancy.

Keywords: Drones, Social Media, Artificial Intelligence, Pakistan, Terrorism.

Introduction

Terrorist groups, despite being opportunistic in nature, rarely innovate new forms of weapons due to limited resources and a risk-averse nature.[1] In the past, only larger and resource-rich terrorist groups like the Japanese death-cult, Aum Shinrikyo, could afford to experiment with the development of highly toxic nerve agents like sarin gas and remote-controlled helicopters.[2] It is argued that terrorist groups are tactically sophisticated but technologically basic.[3] Their strategic decision-making is dictated by the expected utility of innovating with emerging technologies.[4] Hence, instead of frequently experimenting with new technologies, they mostly rely on tried and tested tactics.[5]

[1] James J. F. Forest, "Current Trends in International Terrorism and Their Impact on Counterterrorism Ambitions," in *Routledge Handbook of Transnational Terrorism,* ed., Nicolas Stockhammer, (New York: Routledge, 2024), pp. 230-239.

[2] Richard Danzig, Marc Sageman, Terrance Leighton, et al., "Aum Shinrikyo: Insights Into How Terrorists Develop Biological and Chemical Weapons," *Centre for American New Century*, December 2012, https://www.files.ethz.ch/isn/156879/CNAS_AumShinrikyo_SecondEdition_English.pdf.

[3] Adam Dolnik, Understanding Terrorist Innovation: Technology, Tactics and Global Trends (New York, Routledge, 2007): 23-24.

[4] Adam Dolnik, Tactical and Technological Innovations in Terrorist Campaigns, PhD Dissertations, Institute of Defence and Strategic Studies, Nanyang Technological University, 2006, p.207, https://dr.ntu.edu.sg/server/api/core/bitstreams/5d44e8ab-de48-4f8e-bc0c-471c0871580c/content.

[5] Gabriel Koehler-Derrick and Daniel James Milton, "Choose Your Weapon: The Impact of Strategic Considerations and Resource Constraints on Terrorist Group Weapon Selection," *Terrorism and Political Violence*, Volume 31, Issue 5 (2019): 909-928, https://doi.org/10.1080/09546553.2017.1293533.

Terrorist groups' cost-benefit calculus vis-à-vis emerging technologies is based on maximum-returns-on-minimum-investment logic.[6] In other words, they try to maximise their benefits with limited risks. Evidence from history also confirms this observation. For over a century, dynamite and firearms have been the longstanding weapons of choice for terrorist groups.[7] Hence, it is unsurprising that from 1970-2015, around 88% of terrorist attacks involved small arms and explosions.[8] Another key example is the Improvised Explosive Device (IED) attacks. Between 2004 and 2014, respectively, 70% and 50% attacks in Iraq and Afghanistan were carried out by IEDs.[9]

Nonetheless, a careful reading of history indicates that terrorist groups have innovated during the periods of open technological revolution, such as the invention of dynamite, as opposed to close technological revolutions like the development of nuclear weapons, which have been tightly controlled by military and political elites.[10] In 1867, Alfred Nobel's invention of dynamite fuelled political violence by anarchist movements across 52 countries, especially against Europe's autocratic regimes, and culminated in World War-I with the 1914 assassination of Austrian Archduke Franz

[6] James J. F. Forest, "Current Trends in International Terrorism and Their Impact on Counterterrorism Ambitions."…

[7] "Conventional Terrorist Weapons," United Nations Office on Drugs and Crimes, accessed on August 30, 2025, https://www.unodc.org/images/odccp/terrorism_weapons_conventional.html; Sandra Laville and Jason Burke, "Why has the AK-47 become the jihadi terrorist weapon of choice?" *The Guardian*, December 29, 2015, https://www.theguardian.com/world/2015/dec/29/why-jihadi-terrorists-swapped-suicide-belts-kalashnikov-ak-47s;

[8] Audrey Kurth Cronin, Power to the People: How Open Technological Innovation is Arming Tomorrow's Terrorists (New York" Oxford University Press: 2020), p. 39.

[9] Susan Sim, Emerging Terrorist Threats: Everything, Everywhere, All At Once?" in Emerging Technologies and Terrorism: An American Perspective, *US Army War College*, April 18, 2024, p.73.

[10] Audrey Kurth Cronin, "Technology and Strategic Surprise: Adapting to an Era of Open Technology and Strategic Surprise:" *Parameters,* Volume 50, Number 3 (Autumn 2020): 71-84, https://press.armywarcollege.edu/cgi/viewcontent.cgi?article=2675& context=parameters.

Ferdinand.[11] Likewise, the release of the Avtomat Kalashnikova in 1947 (AK-47) assault rifle facilitated the second wave of political violence by insurgents, criminals, and terrorists around the world.[12] Ironically, the Afghan Mujahideen groups defeated Russia, which universalised the AK-47, in Afghanistan with Kalashnikov and shoulder-fired Stinger missiles.[13]

Open technological revolutions redistribute lethal power, shifting the balance from state to non-state actors (private armies, terrorist groups, and criminal gangs) in consequential ways.[14] It not only enables terrorist groups to carry out more devastating terrorist attacks but also helps them expand their reach and provide them with unprecedented command-and-control capabilities.[15] In turn, it compels states to reset.[16]

On the heels of the information revolution, the world is entering another era of open technological revolution where a cluster of emerging technologies

[11] Susan Sim, p.73.

[12] Sandra Laville and Jason Burke, "Why has the AK-47 become the jihadi terrorist weapon of choice?" *The Guardian*, December 29, 2015, https://www.theguardian.com/world/2015/dec/29/why-jihadi-terrorists-swapped-suicide-belts-kalashnikov-ak-47s

[13] Ali Ahmad Jalali and Lester W. Garu, "The Other Side of the Mountain: Mujahideen Tactics in the Soviet Afghan War," *The United States Marine Corps Studies and Analysis Division*, Undated, pp. 141-143, https://www.govinfo.gov/content/pkg/GOVPUB-D214-PURL-LPS72248/pdf/GOVPUB-D214-PURL-LPS72248.pdf.

[14] Jospeh S. Nye Junior, "Technology is driving another global power shift," *The Strategist*, August 7, 2020, https://www.aspistrategist.org.au/technology-is-driving-another-global-power-shift/; Kathrin Bachleitner, Anne Wolf and Sarah Bufkin, "Technology, Non-State Actors and the Crisis of Liberal Governance: Security and Conflict Studies in the Twenty-First Century," *Perspective on Politics*, Volume 23, Issue 2 (June 2025): 717-720, https://doi.org/10.1017/S1537592725000313.

[15] Mauro Lubrano, "Navigating Terrorist Innovation: A Proposal for a Conceptual Framework on How Terrorists Innovate," *Terrorism and Political Violence*, Volume 35, Issue 2 (2023): 248-263, https://doi.org/10.1080/09546553.2021.1903440.

[16] Cronin, Power to the People: How Open Technological Innovation is Arming Tomorrow's Terrorists, p.14.

like drones, automation, Artificial Intelligence (AI), 3D printing, augmented and virtual reality will enhance the lethality and power of terrorist groups.[17] In this regard, the main threats are emerging from innovations and diffusion at the low-end, developed from technologies created for widespread commercial use.[18]

Against this backdrop, it is critical to examine the diffusion of emerging technologies in Pakistan's security landscape and the way terrorist groups are innovating them to attack, recruit, radicalise and propagandise. Pakistani terrorist groups are laggards in embracing and innovating emerging technologies, barring some notable exceptions.[19] However, in 2024-2025, more frequent drone attacks,[20] heavy reliance on encrypted social media channels for propaganda warfare[21] and the use of Artificial Intelligence (AI) to create infographics and translate news bulletins into

[17] Susan Sim, p.40; T.X. Hammes, "Technology Converges; Non-State Actors Benefit," Hoover Institute, February 25, 2019, https://www.hoover.org/research/technology-converges-non-state-actors-benefit.; and National Intelligence Council. (2023, July 05). *Non-state actors playing greater roles in governance and international affairs* (NICM-Non-State-Actors_23-01637). https://www.dni.gov/files/ODNI/documents/assessments/NICM-Non-State-Actors_23-01637_05-18-24_.pdf

[18] Cronin, Power to the People: How Open Technological Innovation is Arming Tomorrow's Terrorists p.8.

[19] Abdul Basit and Ruben Das, "Tech and Terror: Why Have Drones Not Penetrated the Afghanistan-Pakistan Militant Landscape?" *Global Network on Extremism and Technology,* April 29, 2024, https://gnet-research.org/2024/04/29/tech-and-terror-why-have-drones-not-penetrated-the-afghanistan-pakistan-militant-landscape/.

[20] Ruben Das and Abdul Basit, "Nascent Adoption: Emerging Tech Trends by Terrorists in Afghanistan and Pakistan," *Global Network on Extremism and Technology, June 18, 2025, https://gnet-research.org/2025/06/18/nascent-adoption-emerging-tech-trends-by-terrorists-in-afghanistan-and-pakistan/.*

[21] Amira Jadoon, Saif Tahir, and Joey Moran, "From Jihad to Jirga: How the TTP Is Rebranding Itself as Defender of the Pashtun Nation," *The Diplomat*, August 20, 2025, https://thediplomat.com/2025/08/from-jihad-to-jirga-how-the-ttp-is-rebranding-itself-as-defender-of-the-pashtun-nation/.

regional languages point to an evolving dynamic.[22] It warrants a careful analysis to understand, i) their evolution in weaponising emerging technologies, ii) factors shaping their strategic calculi in adopting them, and iii) their impact on Pakistan's threat landscape.

Divided into three parts, the first section of this paper will use the lethal empowerment theory and the technology adoption curve to unpack factors shaping certain Pakistani terrorist groups' cost-benefit considerations in embracing emerging technologies and their existing level of expertise in weaponising them. It will also highlight key features and characteristics that terrorist groups look for while exploring emerging technologies. Then, it will examine diffusion of three technological trends, drone attacks, the use of Artificial Intelligence (AI) and social media for propaganda, which are subtly reshaping Pakistan's threat landscape. The third section will reflect on likely implications of these evolving technological trends on Pakistan's internal security and offer some policy recommendations as a conclusion.

The Arithmetic Shaping Terrorist Groups' Adoption of Emerging Technologies

The diffusion of a new cluster of emerging technologies, leading to an era of automation, full autonomy and AI, is redefining the character of inter- and intra-state conflicts.[23] The current situation with emerging technologies vis-à-vis conflicts is akin to dynamite's innovation in 1867 that destabilised Europe and culminated in World War-I.[24] In future, it will become exceedingly challenging for conventional militaries to fight tech-savvy

[22] "Strategic Messaging," *Durand Dispatch*, May-June 2025, https://drive.google.com/file/d/1cNfqt4MZYQTPffDdeD70x3uPRGB8EN9z/view?pli=1.

[23] Cronin, Power to the People: How Open Technological Innovation is Arming Tomorrow's Terrorists pp.23-27…

[24] Steven Johnson, "When Dynamite Turned Terrorism Into an Everyday Threat," *The New York Times*, May 17, 2024, https://www.nytimes.com/2024/05/17/magazine/dynamite-terrorism-anarchists-law-enforcement.html.

terrorist groups without revisiting their prevailing security paradigms.[25] To this end, the policy and academic discourse on international security will have to evolve from concerns around the abuse and proliferation of dual technologies[26] by terrorist groups with the multi-use and diffusion of emerging technologies, respectively.[27]

In the past, terrorist groups exploited, stole or adopted the dual-use technologies to advance their strategic and political objectives.[28] However, emerging technologies driven by market forces and consumer requirements have empowered them to innovate in ways that create new technologies, making them more lethal and powerful.[29] In addition to the three traditional categories of technology users—i) producers or professionals, ii) consumers, and iii) hobbyists or amateurs — emerging technologies have given rise to a fourth category: prosumers. Prosumers are consumers who can innovate to create new technologies.[30]

It is important to understand the strategic factors that terrorist groups consider while endorsing emerging technologies.[31] Ackerman (2016) maintains that terrorist groups' decision-making surrounding the adoption of technology is *equifinite*, i.e., there is no single causal pathway that

[25] Christina Schori Liang, "The Technology of Terror: from Dynamite to the Metaverse," *Global Terrorism Index 2022*, p.74, https://www.visionofhumanity.org/wp-content/uploads/2022/03/GTI-2022-web.pdf#page=75.
[26] Technologies which have simultaneously military and civilian utility…
[27] Cronin, Power to the People: How Open Technological Innovation is Arming Tomorrow's Terrorists, p.54…
[28] Cronin, Power to the People…
[29] Gazos, Alexandros, Octavia Madeira, Georg Plattner, Tim Röller, and Christian Büscher. 2024. "Malevolent Creativity and Civil Security: The Ambivalence of Emergent Technologies." *TATuP – Zeitschrift für Technikfolgenabschätzung in Theorie und Praxis* 33 (2): 8–54. https://doi.org/10.14512/tatup.33.2.08.
[30] Gazos, Alexandros, Octavia Madeira …, p.55.
[31] Yannick Veilleux-Lepage, *How Terror Evolves: The Emergence and Spread of Terrorist Techniques*, (London: Rowman and Littlefield, 2020), p.22.

determines their adoption of a new weapon.[32] Dolnik (2007) maintains that factors relevant to terrorist innovation include "role of ideology and strategy, dynamics of the struggle, countermeasures, targeting logic, attachment to weapon and innovation, group dynamics, relationship with other organisations, resources, openness to new ideas, durability and nature of the technology."[33]

Cronin's (2020) Lethal Empowerment Theory outlines a set of factors that terrorist organisations consider when incorporating technologies into their operational toolkits. These factors, while not exhaustive, emphasise the appeal of technologies that are:[34]

1. Accessible (commercially available and bought off the shelf)
2. Cheap (affordable)
3. Easy to use (simple)
4. Transportable (easy to carry in the battle space)
5. Concealable (easy to hide to evade security check posts)
6. Effective (providing leverage and more bang for the buck)[35]
7. Multiuse (beyond dual use; suitable for a wide range of contexts)
8. Not cutting edge (usable in the second or third wave of innovation)
9. Part of a cluster of other emerging technologies which are combined to magnify the overall effect
10. Symbolically resonant (makes them potent than just their tactical efficacies)
11. Given to unchecked uses.[36]

---

[32] Gary A. Ackerman, "Designing Danger": Complex Engineering by Violent Non-State Actors: Introduction to the Special Issue," *Journal of Strategic Security*, Vol. 9, No. 1 (Spring 2016): 1-11, https://www.jstor.org/stable/26465410.

[33] Adam Dolnik, Understanding Terrorist Innovation: Technology, Tactics and Global, p.13…

[34] Cronin, Power to the People: How Open Technological Innovation is Arming Tomorrow's Terrorists, p.13…

[35] Michael Jetter, "More Bang for the Buck: Media Coverage of Suicide Attacks," *Terrorism and Political Violence*, Volume 31, Issue 4 (2019): 779-799.

[36] Michael Jetter, "More Bang...

Five characteristics shape terrorist groups' cost-benefit calculi when they consider adopting and innovating with the emerging technologies. First, relative advantage and feasibility: The extent to which innovation is better than its predecessor in price, prestige and power.[37] On the one hand, new technologies should enhance the social status and legitimacy of terrorist groups without financially costing them much. On the other hand, they should also increase their organisational and operational power.[38]

Second, compatibility: The new technologies must align with terrorists' norms, values, needs, and past experiences.[39] Yanick (2020) maintains that legitimacy is a critical factor in terrorists' cost-benefit estimations while considering a (technological) technique, i.e., whether a particular technique is just and right or not.[40] Any technology which does not fulfil the operational requirement of a group or undermines its legitimacy is typically avoided by the group. For instance, the Islamic State (IS) has been reluctant to fully embrace AI due to internal ideological differences and debates about its utility and religious permissibility.[41]

Third, complexity: If a technology is complicated, requires higher technological knowledge and expertise for its use and maintenance, then terrorist groups tend to ignore it. The simpler a technology is to innovate and use, the more likely it will be adopted.

Fourth, tri-ability: The degree to which terrorist groups can experiment with a technology for multiple purposes.[42] If a technology is hard to innovate and experiment with, then groups will shy away from it. Yanick

[37] Michael Jetter, "More Bang, p.56
[38] Michael Jetter, "More Bang for the Buck: Media Coverage of Suicide Attacks,"…
[39] Michael Jetter, "More...
[40] Yannick Veilleux-Lepage, p.32…
[41] Steven Humphrys, "How Jihadists Experimented with AI in 2024," *BBC Monitoring*, November 2024, https://monitoring.bbc.co.uk/product/b0002qiw; Bronte Philips, "Analysis: Pro-ISKP outlet al-Azaim slows release of content across languages," *BBC Monitoring*, August 4, 2025, p.8.
[42] Cronin, Power to the People: How Open Technological Innovation…

(2020) terms it as effectiveness, i.e., the adopted technique must be useful and lead to desired outcomes.[43]

Fifth, the new technology should enhance the visibility of terrorist groups adopting them.[44] Terrorism is a propaganda by deed and groups aspire for publicity to attract public attention to their ideological causes, political objectives or grievances.[45] If an emerging technology fails to amplify the publicity of a terrorist group, it will less likely be adopted.

Beyond enabling factors and key characteristics that terrorist groups consider while innovating with emerging technologies, it is equally important to understand the adoption process. Shear, Clarke and Gartenstein-Ross' (2020) technology adoption curve outlines four phases through which terrorist groups adopt emerging technologies.[46]

i) **Early adoption**: In this initial phase, terrorist groups incorporate a particular technology into their toolkits. However, it is marked by repeated failures preceded by an initial trial-and-error period.[47]

ii) **Iteration**: The technology undergoes consumer-focused transformations and improvements that help terrorist groups overcome some of their technological deficiencies. Although there is a slight improvement in performance, this phase is still marked by a high failure rate, and terrorist groups often experience significant setbacks.[48]

[43] Yannick Veilleux-Lepage, p.39…
[44] Cronin,Power to the People: How Open Technological Innovation…
[45] Louise Richardson, What Terrorists Want: Understanding the Enemy, Containing the Threat (New York: Random House Inc, 2006), p.71.
[46] Daveed Gartenstein-Ross, Colin P. Clarke and Matt Shear, Terrorists and Technological Innovation," Lawfare Blog, February 2, 2020, https://www.lawfaremedia.org/article/terrorists-and-technological-innovation.
[47] Daveed Gartenstein-Ross, Colin P. Clarke and Matt Shear, Terrorists and Technological Innovation"…
[48] Daveed Gartenstein-Ross, Colin P. Clarke and Matt Shear, Terrorists and Technological Innovation"…

iii) **Breakthrough**: Terrorist groups hone their technological skills and begin employing the technology successfully. At this stage, their success rate increases dramatically, and they become a more imminent threat.[49]

iv) **Competition**: Governments and technology companies introduce countermeasures to undercut terrorist groups' ability to exploit and weaponise emerging technologies.[50] In response, terrorist groups innovate to circumvent these measures, triggering a cycle of adoption and counter-adoption. As a result, outcomes in this phase remain uncertain.[51]

Given terrorism's complex incentive structure, it will be myopic to view terrorist groups' early flop attempts to adopt emerging technologies as failures and successive efforts as successes in a binary fashion. The respective attempts by Islamic State (IS)[52] and Aum Shinrikyo[53] to use social media to mobilise and recruit radicals and employ drones for attacks illustrate this phenomenon.

---

[49] Daveed Gartenstein-Ross, Colin P. Clarke and Matt Shear, Terrorists and Technological Innovation"…

[50] Daveed Gartenstein-Ross, Colin P. Clarke and Matt Shear, Terrorists and Technological Innovation"…

[51] Bennit Clifford, "Moderating Extremism: The State of Online Terrorist Content Removal Policy in the United States," Programme on Extremism, *George Washington University*, December 2021, https://extremism.gwu.edu/sites/g/files/zaxdzs5746/files/Moderating%20Extremism%20The%20State%20of%20Online%20Terrorist%20Content%20Removal%20Policy%20in%20the%20United%20States.pdf.

[52] Antonia Ward, "ISIS's Use of Social Media Still Poses a Threat to Stability in the Middle East and Africa," *RAND Corporation*, December 11, 2018, https://www.rand.org/pubs/commentary/2018/12/isiss-use-of-social-media-still-poses-a-threat-to-stability.html

[53] Brian Scheu and Philipp C. Bleek, "Death Cult Drones, Maybe," *Arms Control Wonk*, March 3, 2022, https://www.armscontrolwonk.com/archive/1215915/death-cult-drones-maybe/.

In the first instance, IS successfully used X to mobilise around 46,000 foreign terrorist fighters across 120 countries to join its ranks in Iraq and Syria, as well as disseminate its propaganda at an unprecedented scale.[54] IS' success in using social media as an effective technological tool was built on Al-Qaeda's initial failed attempts.[55] It bears mention that IS is a splinter group of Al-Qaeda, which eclipsed its mother group to claim a monopoly over the global militant movement.[56]

Likewise, Aum Shinrikyo's botched attempts in 1995, to use remotely piloted helicopters retrofitted to spray sarin gas, paved the way for future terrorist groups to use unmanned aerial systems more successfully.[57] The helicopter crashed the second time Aum Shinrikyo tried to use it.[58] However, future commercial improvement in unmanned aerial systems also enhanced terrorist groups' ability to weaponise drones based on Aum Shinrikyo's earlier attempts to use remotely piloted helicopters.[59] So,

---

[54] "Foreign Terrorist Fighters," *United Nations Office on Drugs and Crimes*,Undated,? https://www.unodc.org/unodc/en/terrorism/expertise/foreign-terrorist-fighters.html.

[55] National Institute of Justice. "The Role of Social Media in the Evolution of Al-Qaeda-Inspired Terrorism." *National Institute of Justice*, September 5, 2017. https://nij.ojp.gov/topics/articles/role-social-media-evolution-al-qaeda-inspired-terrorism.

[56] R. Kim Cragin and Ari Weil, "Virtual Planners in the Arsenal of Islamic State External Operations," *Science Direct*, Volume 62, Issue 2 (2018): 294-312, https://doi.org/10.1016/j.orbis.2018.02.007.

[57] Rohan Gunaratna, "Aum Shinrikyo's Rise, Fall and Revival," *Counter Terrorist Trends and Analyses* 10, no. 8 (2018): 1–6, https://www.jstor.org/stable/26481827

[58] Thomas G. Pledger, "The Role of Drones in Future Terrorist Attacks," Land Warfare Paper 137, *The Association of the United States Army*, February 2021, https://www.ausa.org/sites/default/files/publications/LWP-137-The-Role-of-Drones-in-Future-Terrorist-Attacks_0.pdf.

[59] Emil Archambault, Yannick Veilleux-Lepage, "Tower 22: Innovations in Drone Attacks by Non-State Actors," *International Centre for Counter-Terrorism*, February 1, 2024, https://icct.nl/publication/tower-22-innovations-drone-attacks-non-state-actors.

instead of seeing terrorist groups' botched attempts as failures, they should be taken seriously to deny them technological advantage.

It is important to point out that not all terrorist groups are using emerging technologies. For instance, the Islamic State of Khorasan Province (ISKP) and the Baloch separatist groups have not used drones for attacks, despite possessing and using them for shooting propaganda videos. Likewise, ISKP is avoiding the use of AI despite pioneering the efforts to employ it for claiming attacks due to internal ideological differences and online safety concerns.[60] In any case, the focus of this study is to understand those technologies which have been used by Pakistani terrorist groups for attacks and propaganda.

Three Evolving Technological Trends in Pakistan's Threat Landscape

The three key trends discussed here are at various stages of their evolution. They pose qualitatively different levels of threats to Pakistan's internal security. As per the technology adoption curve, terrorist groups' use of social media has passed through the breakthrough phase, and it has entered the competition phase, where the state's countermeasures and its coordination with tech and social media companies are forcing terrorist groups to find more innovative ways to navigate content moderation and deplatforming efforts.[61] Meanwhile, the use of quadcopters has progressed through the early adoption phase, and it is currently located at the intersection of iteration and breakthrough phases as terrorist groups try to improve the use of drones for attacks, intelligence, surveillance, and reconnaissance (ISR).[62] The use of AI, on the other hand, is still at the early adoption phase, where it is being used to create infographics, posters,

[60] Bronte Philips, "Analysis: Pro-ISKP outlet al-Azaim slows release of content across languages."
[61] "Govt urges social media firms to block accounts run by terrorist groups," *Dawn*, July 25, 2025, https://www.dawn.com/news/1926532.
[62] Ruben Das and Abdul Basit, "Nascent Adoption: Emerging Tech Trends by Terrorists in Afghanistan and Pakistan."

translate propaganda bulletins into different languages and rarely produce videos using deep fake.[63]

The Weaponisation of Drones

Terrorist groups' interest in drones is not new.[64] Aum Shinrikyo considered using remotely piloted helicopters to deliver sarin gas in the Tokyo Subway attack in 1995, but opted for an alternative tactic at the last minute.[65] Hezbollah, Hamas, IS and Hayat Tahiri Al-Sham are the earliest groups to weaponise drones.[66] Houthi rebels in Yemen joined this list in 2018.[67] In the second wave, more than two dozen insurgent, terrorist and cartels, including the Afghan Taliban, incorporated drones into their arsenals.[68] The stage is set for a notable uptick of drone attacks across conflict theatres as recently witnessed in Pakistan.[69]

---

[63] "Strategic Messaging," *Durand Dispatch*, June-July 2025, https://drive.google.com/file/d/1SzdNZst7IQGnbjjkDJ09hwmkzGxJl5me/view.

[64] Don Rassler and Yannick Veilleux-Lepage, "On the Horizon: The Ukraine War and the Evolving Threat of Drone Terrorism," *CTC Sentinel*, Volume 18, Issue 3 (March 2025): 1-24, https://ctc.westpoint.edu/wp-content/uploads/2025/03/CTC-SENTINEL-032025_cover-article.pdf.

[65] Don Rassler, "Remotely Piloted Innovation, Terrorism, Drones and Supportive Technology," Combating Terrorism Centre, West Point, October 2016: 1, https://apps.dtic.mil/sti/pdfs/AD1020277.pdf.

[66] Jake Dulligan, Laura Freeman, Austin Phoenix and Bradley Davis, "The Rising Threat of Non-State Actor Commercial Drone Use: Emerging Capabilities and Threats," *CTC Sentinel,* Volume 18, Issue 3 (March 2025): 39-44, https://ctc.westpoint.edu/wp-content/uploads/2025/03/CTC-SENTINEL-032025_article-4.pdf.

[67] Luca Nevola and Valentin d'Hauthuille, "Six Houthi Drone Warfare Strategies: How Innovation Is Shifting the Regional Balance of Power," *ACLED* (August 6, 2024), https://acleddata.com/report/six-houthi-drone-warfare-strategies-how-innovation-shifting-regional-balance-power

[68] Austin C. Docter, *The Logic of Terrorist Use of Unmanned Aerial Systems, Enabling Factors, and Barriers to Exploitation* (Omaha, NE: National Counterterrorism Innovation, Technology, and Education Center, 2025),8, https://digitalcommons.unomaha.edu/ncitereportsresearch/131/.D

[69] Fidel Rahmati, "Militants Use Drones to Attack Security Forces in Pakistan's Northwest, Pakistani Officials Say," *The Khama Press*, July 22, 2025, https://www.khaama.com/militants-use-drones-to-attack-security-forces-in-pakistans-northwest-pakistani-officials-say/.

Drones offer outsized value to terrorist groups and they weaponise commercially available quadcopters for attacks and propaganda with profound security implications.[70] Drones are flexible and can be modified for multiple purposes. They can help to reduce risks to manpower, provide intelligence to increase efficiency of armed attacks.[71] Generally, terrorist groups use commercially available options of the drones, which provide them with asymmetric tactical and strategic advantages without too much risk and help them forward their ideological interests.[72] In this regard, their decision-making is shaped by ideological priorities, expected audience costs, and other considerations reflected in their tools and tactics.[73]

Pakistani terrorist groups are latecomers in adopting quadcopters for attacks and ISR operations.[74] This is despite the fact that the Taliban possessed a secret drone unit as early as 2020, which targeted their opponents and rivals in targeted assassinations by dropping grenades, mortar shells and IEDs.[75] Reportedly, the Taliban purchased industrial drones used in agriculture through a Pakistani front company from China.[76] Later, these quadcopters were smuggled into Afghanistan from Pakistan. The Taliban recruited software engineers to modify and weaponise quadcopters. However, the logistical challenges in acquiring commercial drones, prohibitively high

[70] Austin C. Docter, *The Logic of Terrorist Use of Unmanned Aerial Systems, Enabling Factors, and Barriers to Exploitation* (Omaha, NE: National Counterterrorism Innovation, Technology, and Education Center, 2025),6, https://digitalcommons.unomaha.edu/ncitereportsresearch/131/.D

[71] Australian Army Research Centre, "How are Drones Changing Modern Warfare?" *Land Power Forum*, August 1, 2024, https://researchcentre.army.gov.au/library/land-power-forum/how-are-drones-changing-modern-warfare

[72] Australian Army Research Centre, "How are Drones p.7…

[73] Australian Army Research Centre, "How are Drones…

[74] Abdul Basit and Ruben Das, "Tech and Terror: Why Have Drones Not Penetrated the Afghanistan-Pakistan Militant Landscape?"…

[75] Fazelminallah Qazizai, "The Drone Unit that Helped the Taliban Win the War," *New Lines Magazine*, September 15, 2021, https://newlinesmag.com/reportage/the-drone-unit-that-helped-the-taliban-win-the-war/.

[76] Fazelminallah Qazizai, "The Drone Unit that Helped…

cost, and lack of sufficient technical capabilities forced the Taliban to close the drone unit.[77] Nevertheless, since the Taliban had more effective ways of eliminating their rivals (IEDs and suicide attacks), the adoption of drones did not add any value to their arsenal. Furthermore, as Cronin notes, drones did not enhance their relative advantage. Consequently, it is unsurprising that the Taliban eventually discarded their secret drone programme.

Generally, there are four types of drones: military, industrial, commercial off-the-shelf, and homemade.[78] Pakistani terrorist groups are weaponising commercially available Chinese quadcopters.[79] Their easy availability[80] in Pakistan's open market, low cost, user-friendly manuals that do not require sophisticated skills, and tactical utility have made these drones particularly lucrative to terrorist groups. [81] Though the quadcopter attacks did not have much of an impact at the incipient phase in 2024, their efficacy and lethality have somewhat improved in 2025, and they will enhance further over time.[82] Pakistani terrorist groups' use of commercial quadcopters resemble their use by IS and the Afghan Taliban in 2016-2017 and 2020-2021, respectively, signifying cross-border and cross-conflict learning among

[77] Fazelminallah Qazizai, "The Drone Unit that Helped…

[78] ZenaTech, "Different Types of Drones and Their Uses," 2025, accessed September 1, 2025, https://www.zenatech.com/different-types-of-drones-and-their-uses/

[79] Megan Gates, "The 4 Types of UAS on the Market Today," *Security Management*, May 22, 2023, https://www.asisonline.org/security-management-magazine/articles/2023/05/uncrewed-aerial-systems/types-of-UAS/.

[80] Rueben Dass, "Militants and Drones: A Trend That is Here to Stay," *Royal United Services Institute*, September 6, 2022, https://www.rusi.org/explore-our-research/publications/commentary/militants-and-drones-trend-here-stay.

[81] Author's conversation with a Pakistan security official, based in Quetta, August 29, 2025.

[82] Abdul Basit, "Growing Use of Drones by Militant Groups in Pakistan's Khyber Pakhtunkhwa," *The Diplomat*, August 7, 2025, https://thediplomat.com/2025/08/growing-use-of-drones-by-militant-groups-in-pakistans-khyber-pakhtunkhwa/.

terrorist groups in the region. It also indicates the transfer of inter-group knowledge and resources.[83]

Currently, the drones being used in Pakistan are low-tech commercial Chinese DJI quadcopters and DJI Matrice 350 RTK. They are powered by four rotors, which allow for vertical take-off or landing.[84] They are locally assembled, rigged with 400-700 grammes of explosives and mixed with ball bearings or iron nails (to enhance the impact) in plastic bottles and detonated with grenades.[85] Mortars and grenades have also been dropped onto targets on the ground. Terrorist groups like Tehreek-e-Taliban Pakistan (TTP), Lashkar-e-Islam (LeI), Harkat-e-Inqilab-e-Islami Pakistan (HIIP) and the Hafiz Gul Bahadur Group's Jaish-e-Omeri faction now possess and use quadcopters for attacks.[86]

According to a Singapore-based expert on terrorists' use of emerging technologies, sanctuaries provide terrorist groups safety, time and space to procure, train, and successfully weaponise drones.[87] It also helps them to experiment and overcome their technical deficiencies. The Taliban's protection umbrella to TTP and the Ittehad-ul-Mujahidin Pakistan (IMP)-linked groups has enabled them to add drones to their respective arsenals.[88] On the contrary, ISKP has not used weaponised drones despite being the

[83] Abdul Basit and Ruben Das, "Tech and Terror: Why Have Drones Not Penetrated the Afghanistan-Pakistan Militant Landscape?"…

[84] Mushtaq Ali and Asif Shahzad, "Pakistani Islamist militants use drones to target security forces, officials say," *Reuters*, July 21, 2025, https://www.reuters.com/world/asia-pacific/pakistani-islamist-militants-use-drones-target-security-forces-officials-say-2025-07-21/.

[85] Iftikhar Firdous, "Pakistani Officials Believe Pakistani Taliban Have Developed 'Nascent' Drone Technology," *The Khorasan Diary*, September 29, 2024, https://thekhorasandiary.com/en/2024/09/25/tkd-exclusive-pakistani-officials-believe-pakistani-taliban-has-developed-%27nascent%27-drone-technology.

[86] Abdul Basit, "Growing Use of Drones by Militant Groups in Pakistan's Khyber Pakhtunkhwa."…

[87] Author's conversation with Ruben Das, a Singapore-based expert of terrorists' use of emerging technologies, August 29, 2025.

[88] Author's conversation with Ruben Das, a Singapore-based …

first terrorist group in the region to circulate five drone manuals[89] on various social media platforms. They are more tech-savvy as compared to its peer competitors due to lack of sanctuary.[90]

Though IMP-linked groups started using drones as early as 2024 to target security convoys and check posts, they did not officially claim them.[91] In 2024, at least six quadcopter attacks by various factions linked to the Hafiz Gul Bahadur Group were reported from North Waziristan.[92] The Hafiz Gul Bahadur Group did not officially acknowledge them; the government attributed them to the former.[93] During this period, drone footages were quietly circulated by different social media accounts linked to TTP, indicating that it also possessed drones. Terrorist groups deemed it strategically unsound to publicly claim the attacks.[94] The fear of a strong terrorism backlash and pressure from the Taliban would also have contributed to their decision to keep quiet on their drone attacks.[95] However, this dynamic changed in 2025 when IMP started to officially claim attacks and TTP, despite its serious reservations, followed suit.[96]

---

[89] MEMRI, "Pro-Islamic State (ISIS) Outlet Releases Step-By-Step Manual To Equip Drones With Video System Using Custom-Made 3D-Printed Mount," *MEMRI Jihad and Terrorism Threat Monitor*, March 11, 2025, https://www.memri.org/cjlab/pro-islamic-state-isis-outlet-releases-step-step-manual-equip-drones-video-system-using-custom

[90] Author's conversation with Ruben Das, August 29, 2025…

[91] Muhammad Amir Rana, "The drone challenge," *Dawn*, August 10, 2015, https://www.dawn.com/news/1929884.

[92] Iftikhar Firdous, "TKD EXCLUSIVE: Pakistani Officials Believe Pakistani Taliban Have Developed 'Nascent' Drone Technology," *The Khorasan Diary*, September 25, 2024, https://thekhorasandiary.com/en/2024/09/25/tkd-exclusive-pakistani-officials-believe-pakistani-taliban-has-developed-%27nascent%27-drone-technology

[93] Iftikhar Firdous, "TKD EXCLUSIVE…"

[94] Muhammad Amir Rana, "The drone challenge…"

[95] Author's conversation with a security official, based in Peshawar, on August 28, 205.

[96] Muhammad Amir Rana, "The drone challenge…"

In future, Pakistani terrorist groups could incorporate drones into their attack tactics to distract[97] security personnel at the target selection. If terrorist groups incorporate quadcopters into their operations as a form of combined arms, it would increase the impact of their attacks.[98] Additionally, drones may also be used to smuggle illegal goods, arms and personnel or even other drones to support an attack.[99] In future, advances in drone systems like avionics, autonomy, and improved obstacle avoidance would make terrorists' use of commercial drones in Pakistan more frequent.[100] Enhanced range, payload capabilities, speed, battery life and lower noise emission coupled with reduced cost are other notable factors which could make drones attractive for Pakistani terrorist groups.[101]

The Diffusion of Artificial Intelligence

Terrorist groups across the ideological spectrum are using Generative Artificial Intelligence (AI) to fuel their recruitment, propaganda and fundraising campaigns.[102] AI's diffusion will have a profound impact on organisational and tactical evolution of terrorist groups with far-reaching consequences for global security.[103]

---

[97]Dragonfly Intelligence, "Terrorists Innovating with Hobby Drones," accessed September 2, 2025, https://publications.dragonflyintelligence.com/terrorists-innovating-with-hobby-drones

[98] Muhammad Amir Rana, "The drone challenge…"

[99] Muhammad Amir Rana, "The drone challenge…"

[100] Author's conversation with a former Pakistani security official who worked on counterterrorism, based in Islamabad, August 30, 2025.

[101]Amam Hossain Bagdadee, *"A Comparative Analysis of Drone Technologies," ResearchGate*, November 2023, https://www.researchgate.net/publication/375823432A_Comparative_Analysis_of_Drone_Technologies; and Author's conversation with Ruben Das.

[102] Asha Hemrajani, "The Use of AI in Terrorism," RSIS Commentary, S. *Rajaratnam School of International Studies*, August 26, 2024, https://rsis.edu.sg/rsis-publication/rsis/the-use-of-ai-in-terrorism/.

[103] Clarisa Nelu, "Exploitation of Generative AI by Terrorist Groups," *International Counter-Terrorism Centre*, June 10, 2024, https://icct.nl/publication/exploitation-generative-ai-terrorist-groups.

Alarmingly, AI will enable terrorist groups to rapidly share their propaganda at a wider scale in an anonymous manner.[104] Concurrently, they will be able to lure vulnerable individuals through tailor-made propaganda[105] strategies matching their social norms and values and appealing to their cognitive biases.[106] Often, the consumers of such content are unaware of the sophisticated mechanisms used to create it. In this respect, the integration of AI with deepfakes is particularly alarming as it will deeply enhance the terrorist threat.[107] Deepfakes arguably make it difficult for humans and machines to distinguish them from reality.[108]

Terrorist groups will also be able to prepare sophisticated disinformation campaigns by exaggerating a situation or tinkering with reality to manufacture a parallel but digestible reality.[109] Generative AI can create content, images, audio, video, and multifunctional simulations that can

[104] Gabriel Weimann, Alexander T. Pack, et al., "Generating Terror: The Risks of Generative AI Exploitation," *CTC Sentinel*, Volume 17, Issue 1 (January 2024): 17-24, https://ctc.westpoint.edu/wp-content/uploads/2024/01/CTC-SENTINEL-012024.pdf.

[105] Bar Fishman, *AI's Dual Role in Driving Online Terrorist Content and Counter Strategies: Is NATO Prepared for AI-Enhanced Extremism?*, October 2024, 6. https://www.researchgate.net/publication/384925486_AI's_Dual_Role_in_Driving_Online_Terrorist_Content_and_Counter_Strategies_Is_NATO_Prepared_for_AI-Enhanced_Extremism

[106] Bar Fishman, AI's Dual Role in Driving…

[107] Algorithms and Terrorism: The Malicious Use of Artificial Intelligence for Terrorist Purposes," *United Nations Office of Counter-Terrorism*, 2021, pp.17-21, https://www.un.org/counterterrorism/sites/www.un.org.counterterrorism/files/malicious-use-of-ai-uncct-unicri-report-hd.pdf.

[108] Kristian Silva, "Deepfake videos increasingly difficult to detect as people, computers struggle to keep up," *ABC News*, September 24, 2020, https://www.abc.net.au/news/2020-09-24/humans-no-better-at-spotting-deepfakes-than-computers/12689440.

[109] "Preventing Terrorists from Using Emerging Technologies," *Vision of Humanity*, September 11, 2023, https://www.visionofhumanity.org/preventing-terrorists-from-using-emerging-technologies/.

have a transformative impact on terrorist propaganda.[110] For instance, text-based chatbots like ChatGPT, Google Gemini, Llama 2, and Claude are designed to simulate conversation with humans. Similarly, image and video generators such as DALL·E 3, Stable Diffusion, and Bing Image Creator, as well as voice generators like Microsoft VALL-E, have opened new avenues for terrorist groups to evade detection while expanding the reach of their propaganda.[111]

A cursory look at Pakistani terrorist groups' propaganda capabilities reveals that they are at the early adoption phase of the technology adoption curve, marked by a high rate of failure.[112] However, dismissing their struggle with AI as a failure will be a fatal mistake. Their technological capabilities will be enhanced with commercial improvements in AI, making it simpler and easier to use.[113] At any rate, they are still exploring the advantages and opportunities that AI offers. As of now, they are using synthetic images, videos and audios that align with their respective organisations' strategic and ideological goals.[114]

ISKP is the first group to use generative AI videos in 2024 to claim a terrorist attack on foreign tourists in Afghanistan's Bamiyan province under Khurasan TV.[115] Though the video had several technical flaws, it was the

[110] "Early terrorist experimentation with generative artificial intelligence services," *Tech Against Terrorism*, November 2023, https://techagainstterrorism.org/hubfs/Tech%20Against%20Terrorism%20Briefing%20-%20Early%20terrorist%20experimentation%20with%20generative%20artificial%20intelligence%20services.pdf.

[111] Terrorism Situation and Trend Report," *European Union*, 2024, p.10, https://www.europol.europa.eu/cms/sites/default/files/documents/TE-SAT%202024.pdf/

[112] Author's conversation with an AI-expert, based in Islamabad, August 30, 2025.

[113] Author's conversation with an AI-expert…

[114] Author's conversation with an AI-expert…

[115] Iftikhar Firdous, "ISKP Begins Publishing Pashto News Bulletins Using Artificial Intelligence," *The Khorasan Diary*, May 21, 2024,

first effort by ISKP to exploit AI's potential.[116] The 52-second video in Pashto showed a male news presenter dressed in Western clothes claiming the attack.[117] The video used text-to-speech and text-to-video tools to claim, while imitating the news studio of a mainstream Afghan news channel.[118] Since then, ISKP has produced many AI videos using backgrounds of Afghan and Pakistani news channels while urging its supporters to produce more such videos in the Urdu and Persian languages.[119] With each video, the production quality improved, notwithstanding the persistence of some flaws, such as poor coordination of hand gestures, erratic synchronisation of lip movement and audio speech.[120]

The main concern of ISKP's AI-generated videos was the use of neutral and euphemistic language to avoid detection and suspension.[121] It deliberately avoided bellicose and derogatory jargon, the cornerstone of the group's propaganda strategy, to exploit platform moderation gaps,[122]

---

https://thekhorasandiary.com/en/2024/05/21/iskp-begins-publishing-pashto-news-bulletins-using-artificial-intelligence.

[116] Centre for Information Resilience, "ISKP: Use of Generative AI Presenters to Create Newscasts," *Afghan Witness*, June 19, 2024, https://www.info-res.org/afghan-witness/reports/iskp-use-of-generative-ai-presenters-to-create-newscasts/

[117] Centre for Information Resilience, "ISKP: Use of…

[118] Fabrizio Minniti, "Automated Recruitment: Artificial Intelligence, ISKP, and Extremist Radicalisation," *Global Network on Extremism and Technology*, April 11, 2025, https://gnet-research.org/2025/04/11/automated-recruitment-artificial-intelligence-iskp-and-extremist-radicalisation/.

[119] "ISKP: Use of Generative AI presenters to create newscasts," *Centre for Information and Resilience*, June 19, 2024, https://www.info-res.org/afghan-witness/reports/iskp-use-of-generative-ai-presenters-to-create-newscasts/.

[120] Iftikhar Firdous, "ISKP Begins Publishing Pashto News Bulletins Using Artificial Intelligence…"

[121] Mona Thakkar And Anne Speckhard, "ISIS Supporters Harness the Power of AI to Ramp Up Propaganda on Facebook, X and TikTok," *Home Land Security Today*, July 15, 2024, https://www.hstoday.us/featured/is-iskp-supporters-harness-generative-ai-for-propaganda-dissemination/.

[122] Julia Mendelsohn, Ronan Le Bras, Yejin Choi, and Maarten Sap, "From Dogwhistles to Bullhorns: Unveiling Coded Rhetoric with Language Models," *arXiv*, May 26, 2023, preprint, https://arxiv.org/abs/2305.17174

amplify visibility, ensure longer shelf-life and wider dissemination on larger social media platforms like Facebook, Instagram, X and TikTok.[123]

For instance, ISKP has desisted from using derogatory terms like" Crusaders" and "infidels" while referring to the West; the Soldier of Caliphate when mentioning its operatives and avoided "*Mushrikeen*" and "*Rafidah*" while referring to Hazara Shias killed in the Bamiyan attack.[124]

Nonetheless, internal ideological differences have slowed the use of AI videos by ISKP. Some ISKP supporters on encrypted social media channels objected to full body images of news anchors and backgrounds imitating Western newsroom studios on religious grounds. These discussions became more pronounced following the publication of an article on AI's use in ISKP's monthly English language magazine, the Voice of Khorasan's June issue. Later, the article was retracted by ISKP's propaganda arm, Al-Azaim Media Foundation. The article's main message that learning AI is "Fardayn" (religious obligation) strengthens the impression that ISKP has been using AI for producing and disseminating propaganda.[125]

In 2025, TTP has also increasingly leveraged AI-generated English and Urdu news bulletins to expand its linguistic and digital footprint, especially in Punjab and Sindh's urban areas.[126] AI has also been employed to translate propaganda into regional languages like Brahui, Sindhi, and Punjabi, in addition to Urdu, English, and Pashto.[127]

---

[123] Sirwan Kajjo, "IS turns to artificial intelligence for advanced propaganda amid territorial defeats," *Voice of America*, May 23, 2024, https://www.voanews.com/a/is-turns-to-artificial-intelligence-for-advanced-propaganda-amid-territorial-defeats/7624397.html.

[124] Mona Thakkar And Anne Speckhard, "ISIS Supporters Harness the Power of AI to Ramp Up Propaganda on Facebook, X and TikTok."

[125] Bronte Philips, "Analysis: Pro-ISKP outlet al-Azaim slows release of content across languages."

[126] "Strategic Messaging," *Durand Dispatch*, May-June 2025.

[127] "Strategic Messaging," *Durand Dispatch*,..

Likewise, Baloch separatist groups have started using AI to enhance their propaganda reach. Although their videos rely on rudimentary techniques, they reflect a broader trend of militant organisations across the ideological spectrum in Pakistan adopting emerging technologies to amplify messaging.[128] These videos often glamorise militancy and frame violence as a noble struggle, seeking to resonate with and recruit educated Baloch youth.[129]

The Exploitation of Social Media for Propaganda

Unlike the rudimentary use of AI and moderately advanced use of drones, Pakistani terrorist groups have matured in employing various social media platforms, open and encrypted, for propaganda.[130] Publicity acts as oxygen for terrorist groups, and political violence's main purpose is not to kill but to use it to draw attention to their grievances, political objectives or strategic goals.[131] Social media has allowed these groups, despite countermeasures taken by social media companies and states, to leverage various platforms to articulate their narratives and reach larger audiences beyond their radical constituencies.[132] The ease of making social media accounts and channels on encrypted platforms,[133] the rapid propagation of ideological messages,

---

[128] Ruben Das and Abdul Basit, "Nascent Adoption: Emerging Tech Trends by Terrorists in Afghanistan and Pakistan."

[129] Amira Jadoon, Saif Tahir and Joey Moran, "Strategic Messaging," *Durand Dispatch*, June-July 2025, https://drive.google.com/file/d/1SzdNZst7IQGnbjjkDJ09hwmkzGxJl5me/view.

[130] Abdul Basit, "Afghanistan-Pakistan's Radical Social Media Ecosystem: Actors, Propaganda Comparison and Implications," *Counter Terrorist Trends and Analyses*, Volume 15, Issue 4 (September 2023): 9-16, https://rsis.edu.sg/wp-content/uploads/2023/09/CTTA-September-2023.pdf.

[131] Ray Surette, Kelly Hansen and Greg Noble, "Measuring media oriented terrorism, *Journal of Criminal Justice*, Volume 37, Issue 4 (July-August 2009): 360-370, https://doi.org/10.1016/j.jcrimjus.2009.06.011.

[132] Jessica Mueller, Christine Collins, David B. Ross and Rande Matteson, "Jihadist web postings and popular social media: A forensic psychological analysis," *Nova Southeastern University*, 2015, https://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1244&context=fse_facarticles.

[133] Aaditya Dave, "Transnational Lessons from Terrorist Use of Social Media in South Asia," *Global Research Network on Terrorism and Technology*, Paper

and the privacy some messaging applications offer have made them an integral element of terrorist groups' propaganda toolkit.[134]

From the technology adoption curve's lens, Pakistan terrorist groups are in the competition phase with the state and social media companies. As social media companies take down their accounts and channels on their own or upon reports from the Pakistani state,[135] they return with new accounts and channels to persist in the digital space. They have adapted to content moderation efforts in multiple ways, like employing grey-area content which does not violate different platforms' community standards and subtly gets their ideological message across.[136]

TTP's propaganda arm, Al-Umar Media, has evolved significantly since the Taliban's return to power in Afghanistan.[137] The inclusion of an Al-Qaeda propagandist, Chaudhry Muneeb Jutt, who was managing As-Sahab's propaganda operations, has been a game-changer. He is the head of Al-Umar Media as well as TTP's so-called Ministry of Information.[138] His inclusion has contributed to elevating the overall quality of published

No. 13, Royal United Services Institute, January 7, 2020, https://www.rusi.org/explore-our-research/publications/special-resources/transnational-lessons-terrorist-use-social-media-south-asia

[134] Gabriel Weimann, "Terrorist Migration to Social Media," *Georgetown Journal of International Affairs*, Volume 16, Number 1 (Winter-Spring 2015): 180-187, https://www.jstor.org/stable/43773679.

[135] "Govt urges crackdown on digital terrorism," *Express Tribune*, July 26, 2025, https://tribune.com.pk/story/2557912/govt-urges-crackdown-on-digital-terrorism.

[136] "The Online Regulation Series: The Handbook," *Tech Against Terrorism*, July 2021, pp. 62-64, https://www.techagainstterrorism.org/hubfs/Tech-Against-Terrorism-–-The-Online-Regulation-Series-–-The-Handbook-2021.pdf.

[137] Abdul Sayed, "Resurgence of Umar Media Boosts Pakistani Taliban," *BBC Monitoring*, January 13, 2023, https://monitoring.bbc.co.uk/product/c2040oi5.

[138] Iftikhar Firdous, Ihsanullah Tipu Mehsud and Riccardo Valle, "The resurrection of the TTP," *Dawn*, January 10, 2023, https://www.dawn.com/news/1763805.

content and significantly enhancing the production value of audio-visual materials.[139]

Currently, TTP is publishing three magazines, two in Urdu language, Mujallah Taliban, and women-focused Banat-e-Khadijat-ul-Kubra and one in the Pashtu language, Sada-e-Taliban. The group also published a daily newsletter, Manzil, which runs news and articles about its operational activities.[140] Initially, Manzil was published once every ten days, which was made weekly before becoming a daily publication, signifying the growing propaganda capabilities of TTP. The group's propaganda is published in Urdu, Pashto, Balochi, Sindhi, Punjabi, and English.[141]

TTP simultaneously uses a top-down and bottom-up dissemination strategy where original products are shared from Al-Umar Media's official channels, and then supporter channels and accounts proliferate them across multiple platforms. TTP's accounts and channels are present on Telegram, WhatsApp, Instagram, Facebook, X, TikTok, and YouTube.[142] Recently, TTP has revamped its social media team as well, which comprises nine members and is responsible for uploading podcasts and content.

On the other hand, ISKP's propaganda arm, Al-Azaim Media Foundation, also has an elaborate social media structure spread across Telegram, Teleguard, Rocket Chat, Element, SimpleX, X, Facebook, TikTok, and Instagram. However, currently, Al-Azaim's propaganda output has declined significantly due to Euro Pol's crackdown, suspension of two key

[139] Iftikhar Firdous, "The Reinvention of Tehrik-e-Taliban Pakistan: A Case Study," *XCEPT*, https://www.xcept-research.org/wp-content/uploads/2025/03/The-reinvention-of-the-Tehrik-e-Taliban-Pakistan_a-case-study.pdf.
[140] Abdul Sayed, "Pakistani Taliban's media shows growing ambitions, despite challenges," *BBC Monitoring*, March 7, 2025, https://monitoring.bbc.co.uk/product/b0003fdv.
[141] Abdul Sayed, "Pakistani Taliban's media …
[142] Abdul Basit, "Afghanistan-Pakistan's Radical Social Media Ecosystem: Actors, Propaganda Comparison and Implications."

communication nodes, I'LAM Foundation and Al-Raud,[143] and arrests of several leaders, including key social media operatives.[144] As a result, ISKP's Turkish language propaganda has come to a complete halt, English content is published intermittently, while Pashtu materials have also suffered with a slow output.[145] Though Urdu contents are coming out regularly from Nashir Pakistan, it is the circulation of old materials, translation of contents from other languages, and IS's newsletter, Al-Naba.[146]

At any rate, ISKP has suffered such setbacks in the past as well, but it has bounced back. Unlike Al-Umar Media, Al-Azaim publishes original content, but allows supporter channels to produce their own propaganda as well.[147] ISKP publishes its flagship English language monthly magazine, the Voice of Khorasan, and Pashto language monthly periodical, Khorasan Ghag. Al-Azaim's sister propaganda outfit, Nashir Pakistan, publishes the monthly Urdu language magazine, Nida-e-Khurasan. It also publishes polemical books, lengthy statements, as well as video documentaries, and publishes responsibility claims through the Amaq news agency.[148]

---

[143] "Major takedown of critical online infrastructure to disrupt terrorist communications and propaganda," *Europol*, accessed on August 31, 2025, https://www.europol.europa.eu/media-press/newsroom/news/major-takedown-of-critical-online-infrastructure-to-disrupt-terrorist-communications-and-propaganda.

[144] "The Islamic State in Afghanistan: A Jihadist Threat in Retreat?" Briefing No 183, *International Crisi Group*, July 16, 2025, https://www.crisisgroup.org/asia/south-asia/afghanistan/b183-islamic-state-afghanistan-jihadist-threat-retreat.

[145] Bronte Philips, "Analysis: Pro-ISKP outlet al-Azaim slows release of content across languages."

[146] Bronte Philips, "Analysis: Pro-ISKP...

[147] Barry Marston, "Al-Azaim continues as ISKP's unofficial mouthpiece," *BBC Monitoring*, December 13, 2023, https://monitoring.bbc.co.uk/product/c204ub5t.

[148] Bronte Philips, "Analysis: Pro-ISKP outlet al-Azaim slows release of content across languages."

The Baloch separatist groups have become equally astute at leveraging their obscurity to exploit open and encrypted messaging apps and social media platforms to disseminate their propaganda.[149] The increasing utilisation of cyberspace, coupled with their growing lethality, enabling them to carry out high-profile attacks, has helped Baloch separatist groups highlight their struggle at the global stage.[150]

The propaganda arms of the Baloch Liberation Army (BLA)-Jeeyand faction and the Baloch Liberation Front (BLF), Hakkal and Ashoob, are the two main propaganda hubs sharing attack claims, videos of ground battles, songs, poetry, infographics containing details of monthly attacks, and posters comprising brief biographies of and tributes to suicide bombers. Baloch separatist groups are present on encrypted platforms like Rumble, Telegram, WhatsApp, as well as Facebook, X, TikTok, Instagram, and YouTube, and the Internet Archives.[151] It is important to mention that content uploaded on mainstream platforms in abridged forms contains links directing users to private channels and pages. [152] Social media platforms are also used to share updates of ongoing attacks, particularly during high-

[149] Sajid Aziz, Digital Warfare: The Baloch Liberation Army's Tactical Use of Social Media in the Herof Attack," *Global Network on Extremism and Technology*, November 8, 2024, https://gnet-research.org/2024/11/08/digital-warfare-the-baloch-liberation-armys-tactical-use-of-social-media-in-the-herof-attack/.

[150] Farzana Shaikh, "The hijacking of a train marks a watershed in the Balochistan insurgency," *Chatam House*, March 21, 2025, https://www.chathamhouse.org/2025/03/hijacking-train-marks-watershed-balochistan-insurgency.

[151] Sajid Aziz, "Virtual Battlegrounds: Understanding the Online Campaign of Baloch Separatist Groups in Pakistan," *Global Network on Extremism and Technology*, April 2, 2024, https://gnet-research.org/2024/04/02/virtual-battlegrounds-understanding-the-online-campaign-of-baloch-separatist-groups-in-pakistan/.

[152] "The BLA's Propaganda and the Reality of Pakistan's Struggle for Stability," *Ground Zero*, February 12, 2025, https://groundzero.pk/the-blas-propaganda-and-the-reality-of-pakistans-struggle-for-stability/.

profile attacks. Such factors have eliminated the Baloch separatist groups' reliance on traditional media to get their message across.[153]

They use social media propaganda to attract recruits and funding, highlight their grievances and separatist demands, justify and glorify violence, and challenge the Pakistani state's narrative.[154] Radicalised Baloch diasporic individuals are a key node in Baloch separatist groups' social media architecture.[155] They run several accounts and channels from Europe and the Middle East and help these groups amplify their narrative across multiple platforms.[156]

Despite being repeatedly banned on several social media platforms, Baloch separatist groups recreate their accounts and channels and continue to churn out published and audio-visual propaganda materials, underscoring their digital resilience.[157] One reason for the longer shelf life of Baloch separatist groups on different social media platforms is their localised nature. Furthermore, since 90% of their propaganda is in regional languages like Balochi, Brahui, and Urdu, it is difficult for social media companies to flag such materials due to a lack of linguistic expertise and understanding of social dynamics.[158] Also, it is extremely difficult for algorithm filters to spot such propaganda.

---

[153] Author's interview with a Quetta-based Baloch journalist, who closely tracks Baloch separatist groups, on August 30, 2025.

[154] Aush Verma, Imtiaz Baloch and Riccardo Valle, "The Baloch Insurgency in Pakistan: Evolution, Tactics, and Regional Security Implications," *CTC Sentinel*, Vol. 18, Issue 4 (April 2025): 27-40, https://ctc.westpoint.edu/wp-content/uploads/2025/04/CTC-SENTINEL-042025_article-3.pdf.

[155] Aush Verma, Imtiaz Baloch and Riccardo Valle, "The Baloch Insurgency…"

[156] Mahnoor Saleem, "Propaganda Around Naushki and Panjgur Terrorist Attacks," *Centre for Contemporary Strategic Research*, February 15, 2022, https://cscr.pk/explore/themes/defense-security/propaganda-around-naushki-and-panjgur-terrorist-attacks/.

[157] Sajid Aziz, "Virtual Battlegrounds: Understanding the Online Campaign of Baloch Separatist Groups in Pakistan."

[158] Author's conversation with a counterterrorism official in National Counterterrorism Authority, based in Islamabad, August 30, 2025.

In sum, Pakistani terrorist groups across the ideological spectrum are locked in a competition phase with the state and social media companies in navigating the latter's countermeasures and persist in the digital space.

Implications

The diffusion and innovation of different emerging technologies into Pakistan's threat landscape will have far-reaching consequences on terrorism and counterterrorism. Of the three trends discussed in this study, the weaponisation of drones by terrorist groups is most concerning. Meanwhile, the use of social media for propaganda warfare by terrorist groups across the ideological spectrum is in the competition phase not clear. They are continuously adapting their strategies to countermeasures taken by the Pakistani state and social media companies. On the other hand, the use of AI by Pakistani terrorist groups is at an early adoption and experimentation phase. At any rate, the more emerging technologies diffuse and improve commercially, the more Pakistan terrorist groups will adopt them.

Each technological trend and its use by terrorist groups poses unique challenges to Pakistan's internal security and requires niche training and expertise to counter them. Going forward, the diffusion of these technologies will change traditional counterterrorism frameworks. Pakistan security institutions will have to build their cyber capabilities to monitor the threat's evolution in the cyberspace. They will need to incorporate an anti-drone system in the battlefield, along with developing a deeper understanding of challenges that AI poses. How terrorist groups can leverage it to spread chaos, panic and insecurity through misinformation and disinformation must be taken into consideration.

Following are some of the implications emanating from the three technological trends discussed above which will require continuous monitoring.

First, quadcopters attacks discussed in this paper have been reported only in Khyber Pakhtunkhwa province. Furthermore, TTP and IMP-linked

militant factions are using them. Though ISKP is the first group to proliferate drone manuals on social media platforms, it lacks resources and a stable sanctuary to experiment and successfully employ drones despite having the technical expertise to modify them.[159] Likewise, Baloch separatist groups use drones for shooting propaganda videos and ISR, but they have not weaponised them yet. However, as the use of quadcopter attacks becomes more frequent, they will also be tempted to put them to arsenal use. Nonetheless, it can take terrorist groups years to develop the technical expertise to weaponise drones. Meanwhile, TTP and IMP, which for now are using drones for ISR and attacks, could adopt First Person View (FPV) drones, which will help them increase their accuracy and lethality.[160] Furthermore, drone attacks recorded in Khyber Pakhtunkhwa have not been very damaging in terms of their lethality and destructive capabilities as compared to more tested tactics like suicide bombings and IED attacks. This is because the payload dropped from drones is low yield, such as grenades, plastic IEDs, and mortars. Going forward, these groups could employ fire-and-forget tactics involving suicide or kamikaze drones. They could also consider developing the swarm of drone tactics, but it would take time, requiring high-end capabilities involving AI, where quadcopters in a swarm need to be independent of the operator on the ground while being linked to each other.[161]

TTP and IMP's have the ability to modify and weaponise drones point to transfer of inter-group knowledge and resources. It is not clear whether they received help and financial assistance from the Taliban, Al-Qaeda, or both.[162] In a recent video, Al-Qaeda's media outlet Al-Malahem featured TTP's training footage, strengthening the impression that the technical

[159] "The Islamic State in Afghanistan: A Jihadist Threat in Retreat?.."
[160] Author's conversation with an Islamabad-based former security official, with an extensive counterterrorism background, August 30, 2025.
[161] Author's conversation with a Singapore-based expert on terrorists' use of emerging technologies, August 28, 2026.
[162] Author's conversation with a Singapore-based…

knowledge and skills could have come from it.[163] Likewise, if it is true that there has been a transfer of inter-group knowledge and resources, then in the future, TTP and IMP will try to employ more innovative tactics to use drones in combination with other firearms.[164] For instance, in July, TTP ambushed and engaged a military convoy in South Waziristan in a fire exchange and dropped a mortar from a quadcopter, killing three soldiers and injuring the same number.[165] Such incorporation of drones into a coordinated attack to distract security personnel shows tactical innovation as well as their use in combination with other tactics.

As commercial drones will increase their payload capacity and flight time, terrorist groups will try to acquire them, resulting in an increase in the number of quadcopter attacks in future. At the same time, with the technological knowledge they possess, they will try to increase the flight time, payload capacity, speed, and battery timing of commercially available drones.

Second, the increasing and successful use of emerging technologies by Pakistani terrorist groups will lure hobbyists and prosumers to their ranks with two important repercussions. First, it will expedite emerging technology's adoption by terrorist groups to achieve quick breakthroughs.[166] Second, it will lower entry barriers for educated radical youth from Pakistan's urban areas to join terrorist groups. The inclusion of educated, urban youth will earn terrorist groups social prestige as they bring strategic thinking, a semblance of legitimacy, and technical skills.[167]

---

[163] "Strategic Messaging," *Durand Dispatch*, June-July 2025. https://drive.google.com/file/d/1SzdNZst7IQGnbjjkDJ09hwmkzGxJl5me/view.
[164] Author's conversation with a Peshawar-based counterterrorism official, August 30, 2025.
[165] "3 soldiers have lost their lives and 3 including a Captain ranking officer are injured," *The Khorasan Diary*, July 23, 2025, https://x.com/khorasandiary/status/1947728841176211594.
[166] Abdul Basit Khan, "In Pakistan, lethal drones could open a new front in militancy," *Arab News*, December 4, 2024, https://arab.news/ceur9.
[167] Abdul Basit Khan, "In Pakistan, lethal drones could…

Third, these trends will raise the security costs for Pakistan's law enforcement agencies to secure their installations and critical infrastructure in major cities from militant drone strikes. Pakistani security institutions will have to keep up with technological innovation and adoption to mitigate the challenges arising from them.[168] However, they must also be mindful of balancing the countermeasures concerning the costs involved. Drones that terrorists use are very cheap, while counter-drone measures are relatively expensive. So, they should strive for cost-effective measures, keeping in view Pakistan's limited resources.[169]

Fourth, weaponised drones will potentially enhance the threat of urban terrorism, which Pakistani terrorist groups have been eager to achieve.[170] Both TTP and Baloch separatist have strived hard to extend their recruitment and militant campaigns to Pakistan's main cities. Drones are quite useful in densely built-up urban environments and are hard to stop from reaching their targets. A lone actor terrorist can weaponise a commercial drone without attracting security attention.[171]

Fifth, though Pakistani terrorist groups' use of AI-generated propaganda is in an exploratory phase and does not pose an imminent threat, it is concerning from a long-term strategic perspective. In 2023, ISKP ran at least three sessions of online courses spanning 24 days each for its online supporters, designed in Pashto, Urdu, Persian, and Tajiki languages. Once terrorist groups master the art of using technologies to their advantage, they pose a more serious threat. While TTP and Baloch separatist groups are nascently employing AI for propaganda, ISKP is internally divided over its use, despite being the first group to experiment with it, due to operational

[168] Author's conversation with a Peshawar-based counterterrorism official.
[169] Author's conversation with a Singapore-based expert on terrorists' use of emerging technologies.
[170] Hassan Abbas, "Extremism and Terrorism Trends in Pakistan: Changing Dynamics and New Challenges," *CTC Sentinel*, Volume 14, Issue 2 (February 2021): 44-51, https://ctc.westpoint.edu/wp-content/uploads/2021/02/CTC-SENTINEL-022021.pdf.
[171] Author's conversation with a Peshawar-based counterterrorism official.

security and ideological concerns. In any case, as emerging technologies become more widely available and commercially advanced, terrorist groups are likely to adopt them more often.

Finally, in the age of freelancing due to rampant unemployment in the formal sector and changing working hierarchies, terrorist groups will reach out to potential technical personnel, offering them lucrative packages to train their online supporters in AI or produce propaganda for the group. A case in point is the arrest of a university student, Hamza, from Islamabad in April 2023. He was arrested with an ISKP video, "We are coming", featuring Islamabad's Serena Hotel, went viral on social media platforms.[172] So, focusing on youth involving digital literacy, critical thinking, and awareness about extremist ideologies in educational institutions, as well as creating firewalls, should be part of Pakistan's counterextremism frameworks.

Conclusion

Future threats from terrorist groups' innovation and adoption of emerging technologies will depend on three critical factors: i) the availability of safe sanctuaries, ii) access to resources and supply chain networks, and iii) the speed with which groups acquire technical expertise. Denying these advantages will be central to disrupting and dismantling their capacity to weaponise new technologies.

The weaponisation of drones, although still at an early stage in Pakistan, signals a potential shift in militant tactics. As commercially available drones become cheaper, more durable, and capable of carrying heavier payloads, terrorist groups will likely increase their use in both rural and urban theatres. This not only raises the prospect of more frequent attacks but also lowers entry barriers for lone actors, thereby complicating

[172] Iftikhar Firdous and Ihsanullah Tipu Mehsud, "Creeping Ideology; The Generation-Z Freelancers of the ISKP," *The Khorasan Diary*, August 31, 2023, https://thekhorasandiary.com/en/2023/08/31/tkd-exclusive-creeping-ideology-the-generation-z-freelancers-of-the-iskp.

counterterrorism responses. Similarly, while AI adoption remains rudimentary, its potential for producing persuasive propaganda, disinformation, and deepfakes makes it a long-term strategic concern. Social media, by contrast, has already become a mature battlefield, with terrorist groups in a sustained competition with the state and platform moderators.

Given that, Pakistan's counterterrorism strategy must shift from reactive to anticipatory and proactive strategy involving its psychological and political implications as well. This requires investment in cyber capabilities to monitor and disrupt online extremist networks, the incorporation of cost-effective anti-drone systems to protect critical infrastructure, and the development of expertise to counter AI-enabled disinformation. Beyond the technical sphere, a multipronged approach must address the social and political factors that facilitate technology adoption by militant groups. Digital literacy, critical thinking, and counter-narrative programmes targeting at-risk youth are vital to reducing recruitment pools. At the international level, sustained cooperation with technology companies and cross-border intelligence sharing will be necessary to curb both the transfer of expertise and the misuse of commercial technologies.■