Global Network
on Extremism & Technology

Understanding the Trauma-Related Effects of Terrorist Propaganda on Researchers

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Executive Summary

Researchers who study online terrorism and political violence face a broad spectrum of risks to their safety and wellbeing. Awareness of the challenges researchers face in this subdiscipline has remained relatively low for years. Since the launch of Islamic State's propaganda campaign on the internet, which skilfully deployed scenes of death and dying to influence online audiences, that awareness has increased. Subsequently, some researchers have reported that prolonged exposure to terrorist content can be harmful across many wellbeing dimensions.

This research project aims to determine if exposure to terrorist propaganda may be a factor in causing trauma for researcher or their development of mood disorders. Our study is founded on two research methods: an online survey and a novel experiment. The online survey was completed by a group of recognised terrorism researchers who were asked about their opinions and experiences related to the impact of their research activities on mental health. The experiment used a biofeedback device and an eye-tracker to measure the short-term psychophysiological response of researchers to ordinary content available on the internet (Control Group) and certain types of terrorist propaganda (Experimental Group). The reactions of both groups, primarily their eye fixation and skin conductance, were subsequently compared.

Key Findings:

- We found that most surveyed terrorism researchers have experienced mental harms from exposure to violent extremist content at least once in their careers. There is a broad spectrum of reactions they have experienced. Terrorist propaganda frequently triggers sadness, irritation, anger and fear. Problems with concentration, headaches, dreams related to the analysed content or even memory loss are also quite common. Many of these reactions are considered symptoms of trauma or mood disorders. However, the most severe, trauma-related effects are less frequent than milder adverse psychological reactions.

- Scenes of death and dying, expressions of extreme, raw emotions and the suffering of civilian populations are potentially the most harmful types of violent extremist content for the mental health of researchers.

- Researchers with significant experience in terrorism studies are usually more aware of the risks involved in viewing terrorist content. Compared to junior researchers, senior researchers are more careful in how they approach such content.

- Our experiment indicates that the short-term attention of terrorism researchers is drawn mainly to faces, logotypes, text and objects located at the centre of the screen. Researchers also primarily concentrate their gaze on the gore content, namely the faces of

victims, injuries and blood, whenever they are displayed on the screen. This tendency opens promising solutions to mitigate the risk of trauma.

- Our biofeedback data shows that the Experimental Group exposed to terrorist content manifests stronger compensatory mechanisms, expressed through greater emotional instability, than the Control Group consuming ordinary internet releases. It may have significant importance for the coping processes of terrorism researchers.

- Most surveyed terrorism researchers have never been supported by their employing institutions to reduce the risks to their mental health. There is an urgent need to introduce new standards and policies in academia to protect researchers' wellbeing better. Such policies might include, among others, improvements in the working culture at universities, the availability of mental health counsellors and the organisation of awareness-raising training for junior researchers.

- Introducing new procedures in analysing terrorist content, including mutual supervision, working in teams, emotional reset methods and the development of the habit of looking away from the most challenging visual stimuli, may help to reduce potential risks to researchers. Designing effective cognitive schemas strictly for viewing emotionally challenging content can help to compartmentalise this professional experience as an element separate from the researcher's identity as a human being.

- Humour, selective attention, reducing screen time, taking breaks and adopting an analytical mindset are among the most promising coping strategies reported by our respondents. However, their efficiency is dependent on multiple factors. No single method works for all.

Contents

1. Introduction

Research on online terrorism and political violence has been ongoing for over two decades.[1] Scholars representing a variety of disciplines, including political science, security studies, psychology and computer science, have attempted to understand how violent extremist organisations (VEOs) utilise cyberspace to inspire, radicalise and recruit internet users.[2] In order to do so, researchers analysed the thematic landscape of propaganda productions released by VEOs,[3] identified the manipulative techniques they use,[4] measured their productivity[5] and examined the means they exploit to distribute these releases.[6] These research activities brought tangible benefits to tackling online terrorist communication.[7] However, to reach these objectives, most researchers in this subfield have had to expose themselves to a massive amount of violent extremist content, frequently featuring gruesome, shocking and controversial scenes.[8] Effectively, researchers have risked experiencing a broad spectrum of adverse psychological and physiological reactions triggered by the analysed materials that are commonly perceived as symptoms of trauma.[9]

This project had three scientific objectives. The <u>primary objective</u> was to analyse both the short-term and the long-term psychological effects of researchers' exposure to terrorist propaganda on the internet. This study focused primarily on secondary trauma resulting from consuming online extremist content by researchers,[10] but mood disorders and anxiety were also considered. The <u>secondary objective</u> was to measure the psychophysiological response of researchers to watching visual and audiovisual content released

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1 Yariv Tsfati, Gabriel Weimann, "www.terrorism.com: Terror on the Internet," *Studies in Conflict & Terrorism*, vol. 25, no. 5 (2002); Alison G. Anderson, "Risk, terrorism, and the internet," *Knowledge, Technology & Policy*, vol. 16, no. 2 (2003).

2 Haroro J. Ingram, Craig Whiteside and Charlie Winter, *The ISIS Reader: Milestone Texts of the Islamic State Movement* (New York: Oxford University Press, 2020); Manuel R. Torres-Soriano, "Jihadist Propaganda and Its Audiences: A Change of Course?," *Perspectives on Terrorism*, vol. 1, no. 2 (2007); Francesco Marone, ed., *Digital Jihad. Online Communication and Violent Extremism* (Milano: Ledizioni LediPublishing, 2019); Marc Sageman, *Understanding Terror Networks* (Philadelphia: University of Pennsylvania Press, 2004); Rüdiger Lohlker, ed., *New Approaches to the Analysis of Jihadism* (Vienna: Vienna University Press, 2012).

3 Haroro J. Ingram, "An analysis of Islamic State's Dabiq magazine," *Australian Journal of Political Science*, vol. 51, no. 3 (2016); Julian Droogan, Shane Peattie, "Mapping the thematic landscape of *Dabiq* magazine," *Australian Journal of International Affairs*, vol. 71, no. 6 (2017); Charlie Winter, "Redefining 'Propaganda': The Media Strategy of the Islamic State," *The RUSI Journal*, vol. 165, no. 1 (2020).

4 Peter Wignell et al., "A Mixed Methods Empirical Examination of Changes in Emphasis and Style in the Extremist Magazines Dabiq and Rumiyah," *Perspectives on Terrorism*, vol. 11, no. 2 (2017); Nuria Lorenzo-Dus, Stuart Macdonald, "Visual Jihad: Constructing the 'Good Muslim' in Online Jihadist Magazines," *Studies in Conflict & Terrorism*, vol. 44, no. 5 (2021).

5 Daniel Milton, *Down but Not Out: An Updated Examination of the Islamic State's Visual Propaganda* (West Point: United States Military Academy, 2018); Aaron Y. Zelin, "Picture or It Didn't Happen: A Snapshot of the Islamic State's Official Media Output," *Perspectives on Terrorism*, vol. 9, no. 4 (2015).

6 Stuart Macdonald, Daniel Grinnell, Anina Kinzel, Nuria Lorenzo-Dus, "Daesh, Twitter and the Social Media Ecosystem," *The RUSI Journal*, vol. 164, no. 4 (2019); Bennett Clifford, Helen Powell, *Encrypted Extremism. Inside the English-Speaking Islamic State Ecosystem on Telegram* (Washington D.C.: The George Washington University, 2019); Meili Criezis, *Create, Connect, and Deceive: Islamic State Supporters' Maintenance of the Virtual Caliphate Through Adaptation and Innovation* (Washington D.C.: George Washington University, 2022).

7 See, for instance: J. M. Berger, "Making CVE Work. A Focused Approach Based on Process Disruption," *ICCT Research Paper*, May (2016).

8 On the gore in salafi-jihadist propaganda, see: Olivier Roy, *Jihad and Death. The Global Appeal of Islamic State* (London: Hurst & Company, 2017); Miron Lakomy, "Danse macabre: Gore Images in the Islamic State's 'Dabiq' magazine as a propaganda device," *The International Journal of Intelligence, Security, and Public Affairs*, vol. 21, no. 2 (2019).

9 Adriel Boals, Shelley A. Riggs, Amanda Kraha, "Coping with Stressful or Traumatic Events: What Aspects of Trauma Reactions are Associated with Health Outcomes?," *Stress and Health*, vol. 29, no. 2 (2013), 156.

10 Secondary trauma is usually referred to as the emotional duress resulting from the indirect exposure to a difficult experience. See more in: Emma Williamson et al., "Secondary Trauma: Emotional Safety in Sensitive Research," *Journal of Academic Ethics*, vol. 18 (2020), 55–70.

by terrorist organisations online. The <u>tertiary objective</u> was to design a basic model of prevention and rehabilitation. The report is structured around these objectives with the practical elements separated into three sections: the online survey, the experiment and recommendations for prevention.

Literature review

For years, online terrorism researchers lacked awareness of the risks of consuming violent extremist content. This relatively new subfield paid little attention to protecting the wellbeing of researchers. This lack of attention was unsurprising, given that other well-established disciplines, such as criminology, were also late in identifying such challenges.[11] More recently, studies mentioning potential harm to researchers' mental and emotional wellbeing have emerged. The rising interest in researcher trauma was, at least partially, caused by the increased consumption of the internet propaganda of Islamic State (IS), which featured footage and images of death and dying. In 2018, Peter King noted that the shock and awe campaign of IS forced researchers in the subfield to "take a step back and reconsider the effect of the propaganda was having on them".[12] King was also one of the first researchers to suggest possible solutions to mitigate the risks of trauma caused by exposure to such content.[13] Charlie Winter also emphasised that "jihadist propaganda can be extremely distressing, as its intent is to upset viewers".[14] Winter noted that, while prolonged exposure to this content may be harmful, "we do not know much about the psychological consequences" of analysing propaganda productions by researchers due to the lack of available academic or clinical literature.[15] In 2020, Michael Krona published a call to action, arguing for the need to understand the impact of researching online extremist content on mental health. Krona encouraged academia to pay greater attention to researchers' personal safety.[16] Furthermore, Maura Conway admitted that the exposure to "hateful and often violent content" may be damaging to researchers. Conway also called for greater debate on the topic and pointed out the need for ethics guidelines in the subfield.[17] Finally, the REASSURE (Researcher Security, Safety and Resilience) team, a joint venture funded by Swansea University, has recently conducted an important study aimed at reducing harms to online extremism and terrorism researchers.[18] The report, which covered a broad spectrum of harms, including for instance online harassment and psychological issues, was published in March 2023.[19]

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11   See Patricia L. Brougham and Clarissa M. Uttley, "Risk for Researchers Studying Social Deviance or Criminal Behavior," *Social Sciences* vol. 6, no. 4 (2017).
12   Peter King, "Building Resilience for Terrorism Researchers," *VOX-Pol* (2018), https://www.voxpol.eu/building-resilience-for-terrorism-researchers/.
13   ibid.
14   Charlie Winter, *Researching Jihadist Propaganda: Access, Interpretation & Trauma* (Washington, D.C.: Resolve Network, 2019), 3.
15   ibid., 11.
16   Michael Krona, "Vicarious Trauma From Online Extremism Research – A Call to Action," *GNET Insights* (2020), https://gnet-research.org/2020/03/27/vicarious-trauma-from-online-extremism-research-a-call-to-action/.
17   Maura Conway, "Online Extremism and Terrorism Research Ethics: Researcher Safety, Informed Consent, and the Need for Tailored Guidelines," *Terrorism and Political Violence*, vol. 33, no. 2 (2021), 369, 377.
18   Elizabeth Pearson, "Academia is lagging behind when it comes to online extremism and terrorism researcher welfare," *VOX-Pol* (2022), https://www.voxpol.eu/academia-is-lagging-behind-when-it-comes-to-online-extremism-and-terrorism-researcher-welfare/.
19   Elizabeth Pearson, Joe Whittaker, Till Baaken, Sara Zeiger, Farangiz Atamuradova, Maura Conway, "Online Extremism and Terrorism Researchers' Security, Safety, and Resilience: Findings from the Field," *VOX-Pol* (2023), https://www.voxpol.eu/download/report/Online-Extremism-and-Terrorism-Researchers-Security-Safety-Resilience.pdf.

In addition to academic papers and reports, researcher trauma has also been intensively debated during multiple scientific events organised by, among others, the Global Internet Forum to Counter Terrorism, Tech Against Terrorism, Cyber Threats Research Centre at Swansea University and the International Centre for Counter-Terrorism.[20] Overall, the awareness of potential risks related to the mental health of online terrorism researchers has increased.

While academia has acknowledged the potential risks of exposure to terrorist content, the psychophysiological consequences of this exposure have yet to be explored. Our research project fills this gap. This report examines whether the consumption of terrorist propaganda[21] can cause trauma to researchers.[22] If the answer is yes, we intend to learn exactly how researchers react to such content.

This project perceives terrorist propaganda as all activities carried out by terrorist organisations and their followers to manipulate, inspire, radicalise and recruit targeted audiences. Terrorist propaganda activities include the production and distribution of text, audio, audiovisual and visual media in both offline and online environments. For the purpose of this report, "violent extremist propaganda" and "terrorist propaganda" are treated as synonymous.

Methodology

In order to address the issues mentioned above, we adopted a mixed-methods approach, utilising a combination of an online survey and a novel experiment. Each method constituted a separate research vector to help us to understand the short-term and long-term effects of being exposed to hateful content by researchers. We perceived short-term effects as reactions experienced "here and now" when watching terrorist productions. These reactions may fade over time. In contrast, long-term effects may accumulate due to being regularly exposed to such materials, which is frequently the case with experienced researchers.[23]

We measured the long-term impact of exposure to terrorist propaganda with an anonymous online survey addressed to a group of leading terrorism scholars. We opted for a survey instead of interviews for two reasons. First, due to the sensitive nature of the research problem, we feared that some researchers might be unwilling to participate in face-to-face interviews. Second, even if they agreed to such interviews, we also feared that their most difficult experiences related to mental health would not be mentioned in such a setting. Thus, we believed that an anonymous online survey would enable respondents to share their insights fully.

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20 See, for instance, https://www.tasmconf.com/; "TAT & GIFCT E-learning Session – Mental Health Tooling and Support for Researchers and Content Moderators," Tech Against Terrorism, https://www.techagainstterrorism. org/event/tat-gifct-e-learning-session-mental-health-tooling-and-support-for-researchers-and-content-moderators/.

21 See Miron Lakomy, *Islamic State's Online Propaganda: A Comparative Analysis* (London-New York: Routledge, 2021), 9–21.

22 This study follows the American Psychological Association's description of trauma: "an emotional response to a terrible event like an accident, rape or natural disaster. Immediately after the event, shock and denial are typical. Longer term reactions include unpredictable emotions, flashbacks, strained relationships, and even physical symptoms like headaches or nausea." See "Trauma", *American Psychological Association*, https://www.apa.org/topics/trauma.

23 Such effects were reported, among others, by Michael Krona. See Krona, "Vicarious Trauma From Online Extremism Research".

In order to understand the short-term impact, we focused on measuring psychophysiological reactions to exposure to terrorist content. We designed an experimental procedure based on monitoring researchers' reactions to the displayed propaganda with an eye-tracker and a biofeedback device. An eye-tracker allowed us to register eye fixation, which indicates what attracted the short-term interest of participants. Simultaneously, we used a biofeedback device that enabled the detection of psychophysiological reactions to the displayed content. In other words, the procedure was designed in a way that allowed us to discover what participants were looking at and how they reacted to the displayed content. The experiment included two distinct groups of participants: terrorism researchers exposed to different types of violent extremist content (Experimental Group – EG) and researchers with no experience in this regard who watched ordinary internet releases (Control Group – CG). The reactions of both groups were subsequently compared.

Research Ethics and Mechanisms for Mitigating Risks for Participants

This project has high-risk ethics clearance from King's College London and the University of Silesia. Four procedures were adopted to prevent potential harms to all participants. Researchers' reactions to terrorist content were primarily verified through the online survey, which involved no significant risk. Likewise, there were no risks for CG participants, as they were exposed to ordinary internet materials, which lacked any violent scenes.

However, the final part of the experiment for the EG involved content produced by VEOs, which could potentially trigger trauma for or anxiety in participants. This risk was mostly related to the last type of productions displayed: scenes presenting corpses killed in armed combat. To mitigate these risks, we implemented four safeguards.

First, the Experimental Group was composed of researchers with previous experience in analysing terrorist content. This inclusion criterion meant that the participation in this study did not constitute any change compared to participants' everyday professional activities. Moreover, this criterion also meant that researchers were less likely to experience negative emotions or stress during the research.

Second, participants were able to withdraw at any stage of the experiment. Moreover, each type of content presented during the research procedure was preceded by an information chart displayed on a computer screen. Explicit consent expressed by pressing a button was necessary to proceed. Thus, participants were made aware of what materials would be displayed. Participants could avoid seeing content by simply not pressing a button. This solution was also applicable to the CG.

Third, a forensic psychologist with extensive experience in working with stress-inducing content was a research team member and closely monitored the experimental procedure for both groups.

If the forensic psychologist noticed any adverse reactions of participants, the experiment could be stopped.[24] Upon the completion of the experiment, both EG and CG participants were also informed that they could consult with a psychologist at hand. Upon request, participants could also contact this research team member remotely and discuss the experiment's impact up to a year after the project's completion.

Fourth, only healthy adults who could give their full consent were part of the study. All vulnerable persons,[25] such as children, minors, individuals experiencing mental health problems or severe disabilities (blindness), as well as others who were unable to give consent, fell under the exclusion criteria. Moreover, the study was addressed only to members of the scientific community. Only individuals employed by higher education institutions (HEIs), think tanks or NGOs were invited to participate.

Data Handling and Confidentiality

Participant data from both the surveys and the experiments were entirely anonymised. The research team was not aware of the identity of researchers who reacted positively to the invitation and completed the online survey. The survey collected no personal data, IP addresses or metadata. As for the experiment, the study included the anonymisation of participant data. The aggregated results were fully anonymised and took the form of codes included in the database in random order. Furthermore, the project followed strict cyber-security standards. All non-aggregated results of the project were kept in a properly secured database on a computer located in a restricted-access office.

Limitations of the Project

Two main limitations of the project could be identified.

First, as explained above, the EG was exposed to scenes of death and dying featured in one of the terrorist videos. We did not include the most controversial and potentially disturbing scenes in the procedure (namely, execution videos and productions featuring the suffering of children or women), as we had to balance the need to verify the impact of the consumption of propaganda on the mental health of researchers with the principle of safeguarding their wellbeing. Exposing researchers to the most extreme content would allow us to learn more about the problem. At the same time, however, it would also expose the EG to greater risks and constitute significant ethical problems.

Second, the experiment did not include the consumption of terrorist propaganda by researchers with no previous experience in this regard, such as first-year PhD students. This solution would have allowed us to understand better how newcomers to the subfield

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24 Adverse reactions could manifest in a variety of ways including, for instance, an accelerated heartbeat or unnatural facial expressions.
25 *How to complete your ethics self-assessment* (Brussels: European Commission, 2021), 11.

may react to violent extremist content. However, the inclusion of inexperienced researchers would have increased the risk of trauma or mood disorders for these participants and receiving ethical clearance for this group would have been highly unlikely.

2. Survey Results: Understanding the Long-Term Impact of Researcher Exposure to Terrorist Propaganda

We measured the long-term impact of exposure to terrorist propaganda with an anonymous online survey addressed to a group of leading terrorism scholars. This section provides an in-depth overview of the online survey design and the findings.

Methodology

The first vector of our research aimed to explore self-reported signs of psychological trauma in researchers resulting from the prolonged consumption of violent extremist propaganda. We designed an online survey addressed to recognised researchers in terrorism studies. A database of researchers meeting the inclusion criteria was built at the project's launch. These criteria were based on:

- the authorship of at least one book on terrorism released by an academic publisher since 2015;

- the authorship of at least one paper published in one of the leading scientific journals in this field since 2015.

A link to a web-based survey was sent to a randomly selected group of researchers meeting these criteria by email.[26] The invitation consisted of general information about our research project, its methodology, data handling, funding and publication strategy. Access to the survey was restricted only to respondents who read the online information sheet and anonymously expressed their consent to be part of the research. We collected 95 completed surveys (N=95). Overall, the survey has allowed us to discover how some of the leading researchers in the subfield perceive the adverse, long-term effects of exposure to terrorist propaganda.

The survey consisted of 29 questions organised into three groups. First, respondents were asked about their academic background, including their represented discipline, academic rank and experience in the subfield. Second, respondents were asked about their opinions on the harmfulness of exposure to different types of content, including scenes of death and dying, suicide operations, combat footage and the suffering of women and children. The final part of the survey focused on respondents' personal experience in this

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26   The online survey was hosted on the LimeSurvey platform.

regard. Respondents were asked about their emotions, behaviours and physiological reactions to terrorist propaganda. They were also asked about their coping strategies to aid our understanding of which solutions may work and why.

Findings

The survey was completed by 25 female and 67 male respondents, two who preferred not to reveal their gender and one who selected the identity labelled "other". Most researchers were political scientists (63.1%). The remaining respondents represented researchers from sociology (9.4%), history (6.3%), psychology (3.1%), law (3.1%), linguistics (2.1%) and other fields (12.6%), such as criminology, communication and criminal justice (Figure 1). The survey was filled out by 21 professors, 17 associate professors, 34 assistant professors, six PhD students, one instructor and six respondents holding other academic positions, such as lecturers or senior fellows. Ten respondents no longer worked in higher education.

Figure 1. Disciplines represented by respondents
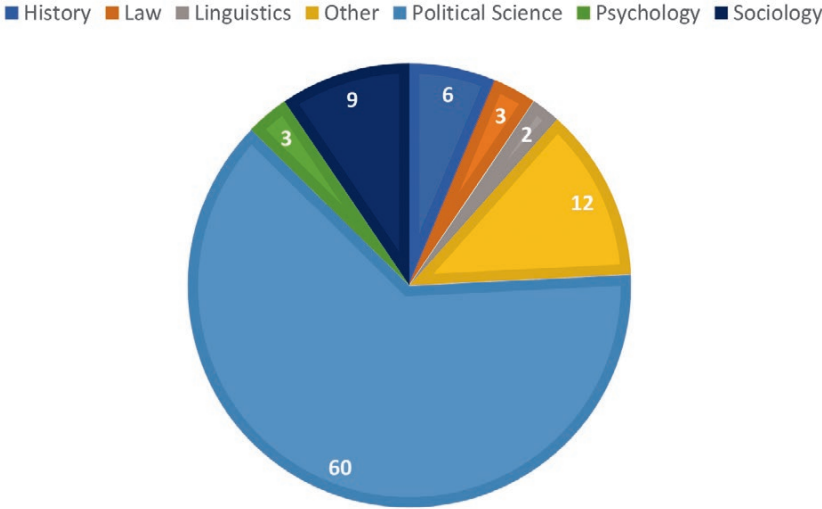
Most respondents had significant experience in studying terrorism. Of those surveyed, 27.3% have researched terrorism for more than ten years, 42.1% between six to ten years and 27.3% between two to five years. Only 3.1% of respondents reported having less than one year of experience. Most respondents admitted to focusing either on salafi-jihadist (77.8%) or far-right (55.7%) violent extremism. Only 18.9% of respondents were interested in the far left, while 8.4% specialised in other subjects, such as the incel community, manosphere or separatist movements (Figure 2).

Figure 2. Violent extremist ideologies studied by respondents

Q: What type/-s of violent extremist ideologies have you studied?
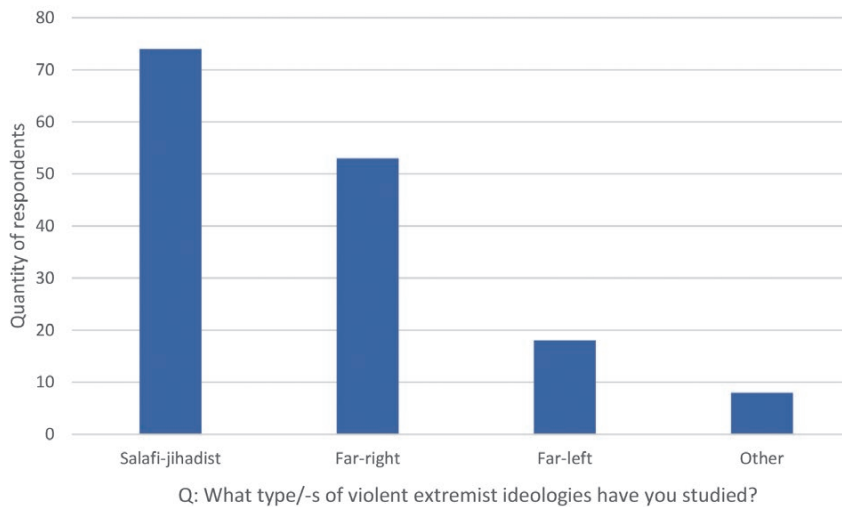
Types and Volume of Exposure

We also asked respondents approximately how many audiovisual and visual propaganda productions they have watched during their careers. Some 9.4% of respondents reported seeing fewer than 100 productions, 31.5% between 101 and 1,000 releases, while 23.1% analysed between 1,001 and 10,000 pieces of content. As many as 27.3% of respondents consumed more than 10,000 releases, while 8.4% of respondents chose "I do not know". Most respondents were exposed to the potentially most harmful types of content, including scenes of death and dying (88.4%), promotion of suicide operations (70.5%), combat footage (94.7%), religious or ideological indoctrination (95.7%) and materials presenting the suffering of the civilian population, including children and women (81%) (Figure 3).

Figure 3. Recorded types of audiovisual and visual productions consumed by respondents

Q: During research focused on terrorism and political violence, I have consumed audiovisual and visual productions containing
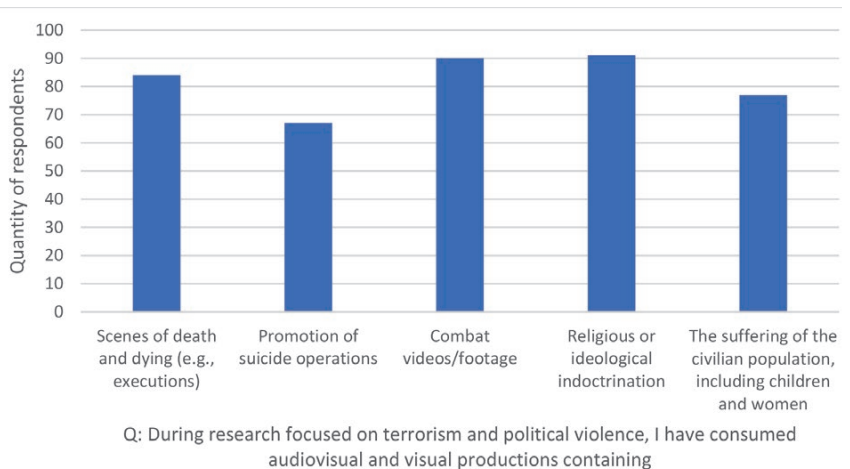
Institutional Training and Support

Next, we asked respondents whether they had ever thought about the psychological effects of being exposed to terrorist propaganda. Only 16.8% stressed that they had never considered exposure to terrorist propaganda a problem. Moreover, 83.1% noted that their employing institution has never provided training or support to study violent extremist content by, for instance, organising mental health support or providing information on available coping strategies. Some 69.4% of respondents strongly agreed or agreed that exposure to terrorist content on the internet should be preceded by specialised training focused on trauma prevention and rehabilitation.

These findings show that management at HEIs usually has little awareness of the risks involved in online terrorism and political violence research. Psychological help and training are frequently provided to students and researchers of other "edgework"-based disciplines,[27] but this was not the case for researchers in this subfield. This lack of support is unsurprising and chimes with concerns raised during many seminars and workshops on researchers' wellbeing in recent years.[28] Overall, our survey shows that terrorism researchers expect more support from their employing institutions, especially in terms of psychological counselling.

Perceived Impact of Exposure

We asked respondents about their opinions regarding the impact of the consumption of terrorist propaganda on the mental health of researchers. As expected, 75.7% of respondents agreed or strongly agreed (33 and 39 respondents respectively) that long-term exposure to online visual and audiovisual terrorist content can negatively affect the researcher's mood. Only 4.2% of respondents disagreed or strongly disagreed. Subsequently, researchers were asked what types of violent extremist content constitute the most significant risk of traumatisation in the long run (Figure 4). The most common response was scenes of death and dying (76.8% of respondents agreed or strongly agreed) and productions presenting the suffering of civilians, including women and children (72.6% agreed or strongly agreed). Combat footage was selected as potentially harmful by 69.4% of surveyed researchers (36 agree, 30 strongly agree), while 63.1% of respondents held a similar view of productions promoting suicide operations, a popular type of propaganda in digital jihad.[29] Religious or ideological indoctrination was perceived as the least challenging, with only 49.4% of respondents strongly agreeing or agreeing that such content might be the cause of trauma. Thus, the majority of respondents proved to be aware of the challenges to mental health caused by their professional activities.

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27   "Edgework" is usually defined as "voluntary risk-taking". See Brougham and Uttley, "Risk for Researchers", 130.
28   See, for instance: "Terrorism and Social Media 2022," Swansea University, http://terrorismandsocialmedia.com/; "TAT & GIFCT E-learning Session – Mental Health Tooling and Support for Researchers and Content Moderators," Tech Against Terrorism, https://www.techagainstterrorism.org/event/tat-gifct-e-learning-session-mental-health-tooling-and-support-for-researchers-and-content-moderators/.
29   See Paul Gill, "A Multi-Dimensional Approach to Suicide Bombing," *International Journal of Conflict and Violence* vol. 1, no. 2 (2007), 146.

Figure 4. Respondent perceptions of the risks in consuming the following types of terrorist content

Q: Long-term consumption of the following types of terrorist content increases the risk of researcher trauma

■ Strongly agree ■ Agree ■ Neither agree or disagree ■ Disagree ■ Strongly disagree
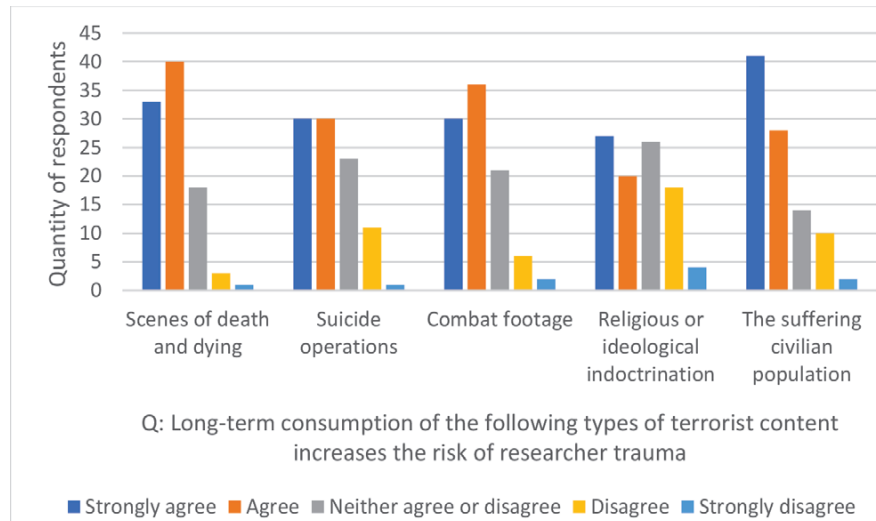
In this context, 50.5% of respondents agreed or strongly agreed that the long-term consumption of terrorist content online may also decrease research output. There are two main reasons this consumption can be a problem for the subfield. First, academic writing in terrorism research may be directly connected to the stressor. Some researchers may be discouraged from writing papers based on the analysis of violent extremist content, which negatively impacts their mood or mental health. Second, trauma has been perceived as one of the factors lowering productivity in professional settings. Trauma can manifest in problems with concentration.[30] Effectively, the quality of papers produced by traumatised researchers may be lower, reducing their potential impact on the subfield. Both outcomes may seriously challenge many academic careers, as most HEIs follow a "publish or perish" principle,[31] meaning that researchers are expected to maximise their scholarly outputs. This objective may not be reached by those facing mental health problems caused or exacerbated by their professional activities.
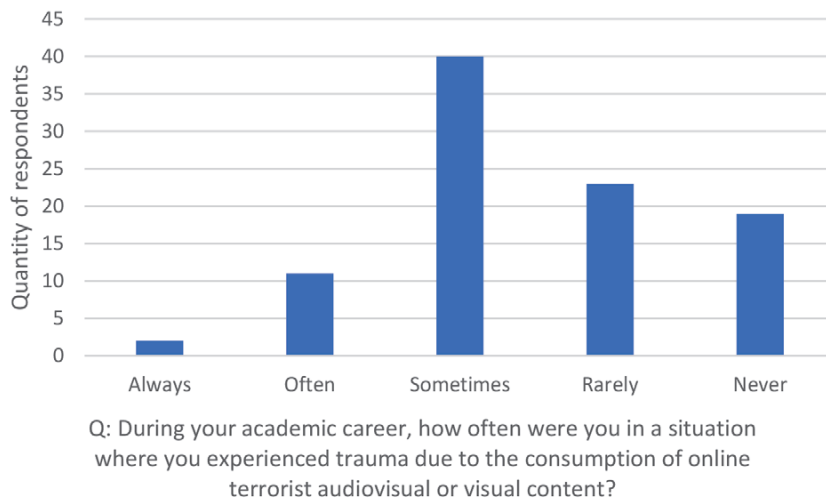
Personal Experiences with Trauma and Mental Health

In the third part of the survey, we asked respondents about their individual experience related to trauma and mood disorders. Some 13.6% of respondents admitted to always or often being traumatised by exposure to violent extremist materials on the internet (Figure 5). As many as 42.1% replied sometimes and 24.2% rarely. Only 20% reported never having trauma due to consuming terrorist visual and audiovisual content. On top of this, 44.2% were always or often (4 and 38 respondents respectively) disturbed by the terrorist propaganda they encountered, while 28.4% admitted to being sometimes disturbed. This reaction was rarely noticed by 21% of respondents, while 6.3% suggested they have never experienced disturbance in this regard. These answers clearly show that most individuals engaged in the research of terrorist content have noticed trauma at least once in their careers, although milder reactions are much more widespread.

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30 See Qadar Bakhsh Baloch et al., "Impact of Post Traumatic Stress Disorder on Employee Job Performance: Moderating Role of Spirituality," *Research Square*, https://www.researchsquare.com/article/rs-1180786/v1.
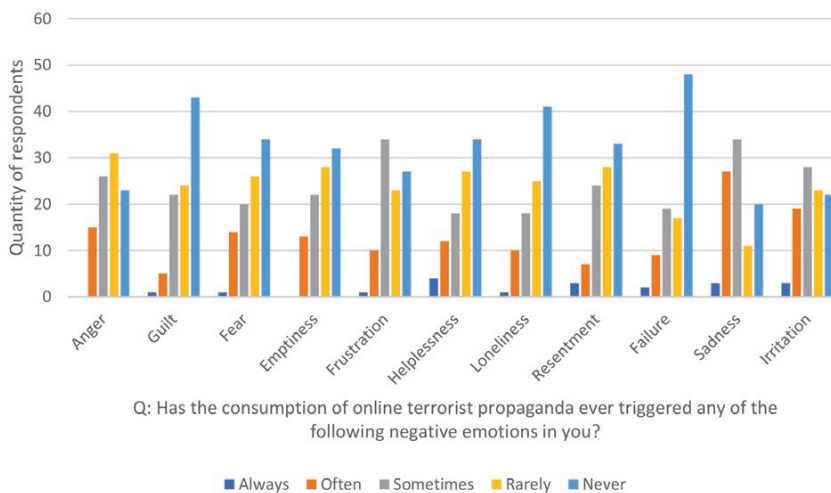31 Seema Rawat and Sanjay Meena, "Publish or perish: Where are we heading?," *Journal of Research in Medical Sciences* vol. 19, no. 2 (2014).

Figure 5. Personal experience of respondents in being traumatised by terrorist content

Q: During your academic career, how often were you in a situation where you experienced trauma due to the consumption of online terrorist audiovisual or visual content?

To learn more about the specificity of trauma and mood disorders suffered by researchers studying terrorism, we asked respondents about the negative emotions triggered by violent extremist propaganda (Figure 6). Sadness and irritation were the most common responses, experienced often by 28.4% and 20% of respondents respectively, with 3.1% of respondents answering "always" in both cases. Sadness and irritation were followed by anger (15.7% often) and fear (1% always, 14.7% often). The least common emotions identified by respondents were failure (50.5% never, 17.8% rarely), loneliness (43.1% never, 26.3% rarely), resentment (34.7% never, 29.4% rarely), helplessness (35.7% never, 28.4% rarely) and emptiness (33.6% never, 29.4% rarely). Relatively few respondents also reported indifference or disgust. Interestingly, one researcher experienced a feeling of uneasiness related not to the scenes of violence but to the expressions of raw emotions in analysed videos, such as fear, cries and yelling. In this context, the most predominant emotions mentioned in the survey – sadness, irritation and anger – show that the consumption of terrorist content may cause unhappiness, grief or sorrow, widely recognised as the symptoms of emotional trauma.[32]

Figure 6. Frequency of emotions experienced in reaction to the consumption of terrorist propaganda

Q: Has the consumption of online terrorist propaganda ever triggered any of the following negative emotions in you?
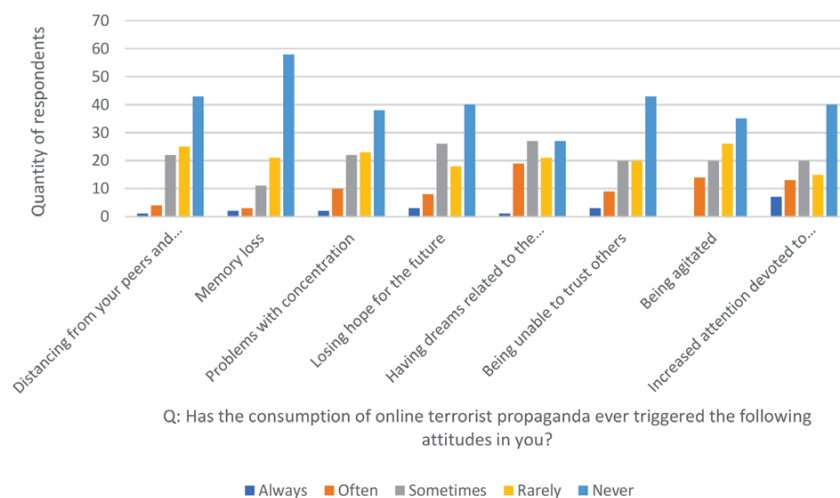
■ Always ■ Often ■ Sometimes ■ Rarely ■ Never

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32 Mias de Klerk, "Healing Emotional Trauma in Organisations: An O.D. Framework and Case Study," *Organization Development Journal* vol. 25, no. 2 (2007), 36.

Behavioural Responses to Exposure to Violent Extremist Content

Respondents were also asked about their behavioural responses (Figure 7) and 60% of respondents reported problems with concentration (two always, ten often, 22 sometimes, 23 rarely). Some 57.8% of respondents experienced losing hope for the future (three always, eight often, 26 sometimes, 18 rarely). A growing distance from family and peers, experienced at least once, was noticed by 54.7% of respondents (one always, four often, 22 sometimes, 25 rarely). Also, 54.7% of respondents were unable to trust others at least once (three always, nine often, 20 sometimes, 20 rarely). Agitation was quite common: only 36.8% of respondents never felt agitation.

Three types of reaction seem to be especially important. First, 71.5% of respondents admitted to having dreams related to the analysed content at least once, including 20% often and 28.4% sometimes. It is not surprising, given that "nightmares and recurring dreams are among the most common symptoms of PTSD".[33] The prevalence of sleep issues may be interpreted as a significant indicator of trauma disorders. A second notable finding was related to memory loss. While it was never experienced by the majority (61%) of respondents, it is worrying that 16.8% of researchers noticed such a reaction always, often or sometimes. This is a surprising finding, with deficits in short-term memory frequently interpreted as symptoms of intensive stress and trauma.[34] Memory loss seems especially challenging for the academic community, as researchers are expected to remember and draw conclusions from what they have seen. Finally, 57.8% of the surveyed researchers reported an increased devotion to food, alcohol or smoking at least once (seven always, 13 often, 20 sometimes, 15 rarely). In this context, substance abuse may provide temporary relief from stress and thus is considered a frequent reaction to trauma.[35] Still, according to available research, it is ultimately harmful. For instance, the use of drugs may reduce the ability to concentrate, limit productivity or cause sleeping problems, hindering one's overall ability to cope with the stressor.[36]

Figure 7. Frequency of behavioural reactions triggered by exposure to terrorist content

Q: Has the consumption of online terrorist propaganda ever triggered the following attitudes in you?

■ Always ■ Often ■ Sometimes ■ Rarely ■ Never

33   Deirdre Barrett, ed., *Trauma and Dreams* (London: Harvard University Press), 2.
34   Charles A. Nelson, "The Effects of Stress and Trauma on Brain and Memory: A View from Developmental Cognitive Neuroscience," *Development and Psychopathology* vol. 10, no. 4 (1998).
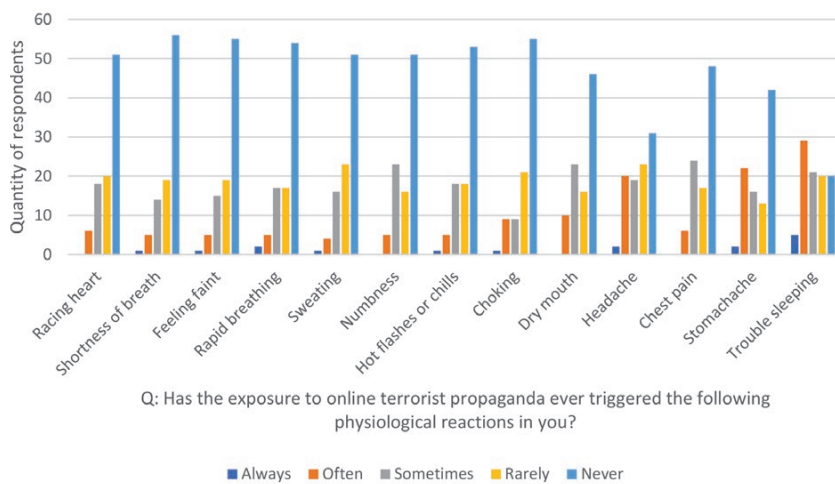35   "Traumatic Stress and Substance Abuse Problems," *International Society for Traumatic Stress Studies*, https://istss.org/ISTSS_Main/media/Documents/ISTSS_TraumaStressandSubstanceAbuseProb_English_FNL.pdf, 3.
36   ibid., 3.

Physiological Reactions to Violent Extremist Content

As for purely physiological reactions, only three proved to be common among researchers (Figure 8). Headaches were reported by 21% of respondents, while 2.1% emphasised always having such a reaction. Only 32.6% of respondents have never experienced headaches. Some 55.7% of respondents experienced a stomachache at least once (two always, 22 often, 16 sometimes, 13 rarely). Finally, only 21% of respondents have never had any problems with sleeping. Five respondents selected always having sleep issues, 29 often and 21 sometimes. Other physiological reactions, such as choking, dry mouth, hot flashes or chills, numbness, feeling faint or rapid breathing, were reported much less frequently. Still, a noticeable group of respondents experienced them sometimes or rarely.

Figure 8. Frequency of physiological reactions experienced by researchers exposed to violent extremist content

Q: Has the exposure to online terrorist propaganda ever triggered the following physiological reactions in you?

■ Always ■ Often ■ Sometimes ■ Rarely ■ Never

Coping Mechanisms

Finally, we wanted to learn more about the coping strategies and methods used by researchers.[37] In this context, only 64.2% of respondents (N=61) admitted to undertaking deliberate coping mechanisms,[38] with 70.4% of respondents using passive coping,[39] which manifests, for instance, in praying, hoping or simply avoiding a stressor.[40] Some 85.2% of respondents relied on active coping.[41] Most researchers have used both strategies, though the potentially more efficient, active strategies proved slightly more common. Interestingly, only 36% of respondents were very satisfied (eight) or

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37   Coping is usually defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." See Ellen A. Skinner, Melanie J. Zimmer-Gembeck, "Coping" in *Encyclopedia of Mental Health (Second Edition)*, ed. Howard S. Friedman (Oxford: Elsevier, 2016).
38   The following questions were answered by the 61 respondents who used coping strategies.
39   "Passive coping" is defined by the American Psychological Association as a "stress-management strategy in which a person absolves himself or herself of responsibility for managing a stressor and instead relinquishes control over its resolution to external sources, such as other people and environmental factors." See "Passive Coping," *American Psychological Association*, https://dictionary.apa.org/passive-coping.
40   ibid.
41   "Active coping" is defined by the American Psychological Association as a "stress-management strategy in which a person directly works to control a stressor through appropriately targeted behavior, embracing responsibility for resolving the situation using one's available internal resources." See "Active Coping," *American Psychological Association*, https://dictionary.apa.org/active-coping.

satisfied (14) with the efficiency of their coping strategies. As many as 42.6% were either dissatisfied (20) or very dissatisfied (6).

As for the coping mechanisms themselves (Figure 9),[42] the most common reported technique was acceptance, manifesting in learning to accept the problem and live with it, which was used always or often by more than 50% of respondents. Acceptance was followed by mental disengagement, understood as distracting oneself from thinking about the stressor, which was always or often used by 44.2% of respondents. Another popular mechanism was humour, with 42.6% of respondents indicating that they always or frequently make jokes about terrorist productions. Finally, seeking advice from others was also quite common, with 36% of respondents utilising this method always or often. Seeking advice primarily manifested in having therapy sessions. Other coping mechanisms proved to be much less popular. The least common mechanisms selected by respondents were turning to religion and the use of substances, such as drugs and alcohol. Only 37.7% of respondents proved to be satisfied or very satisfied with the efficiency of their coping strategies.

Figure 9. Coping mechanisms utilised by researchers studying terrorism and political violence

Q: Which coping method have you utilised?

■ Always ■ Often ■ Sometimes ■ Rarely ■ Never
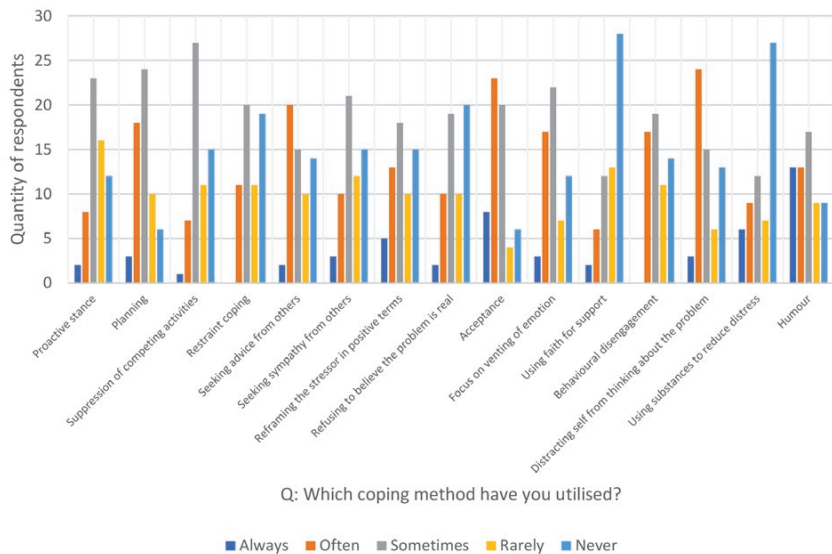
Experience- and Gender-Based Perceptions of Researcher Trauma

We have discovered a trend in our data related to the level of experience of respondents. We compared the feedback of two distinct groups: researchers who consumed more than 10,000 propaganda pieces (N=26) and those who watched between one and 1,000 productions during their career (N=39). A majority (96.1%) of the first group agreed or strongly agreed that long-term exposure to visual and audiovisual content released by terrorists may negatively impact the researcher's mood. The same feeling was shared by only 61.5% of

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42   See Charles S. Carver, Michael F. Scheier, Jagdish K. Weintraub, "Assessing coping strategies: A theoretically based approach," *Journal of Personality and Social Psychology*, vol. 56, no. 2 (1989), 267–83.

less experienced respondents. This suggests that junior researchers or newcomers to the subfield may generally be less aware of the risks involved in studying violent extremist content. Other answers in the survey seem to confirm this trend. For instance, scenes of death and dying were perceived as a potential cause of trauma by 96.1% of the more experienced cohort, compared to 61.5% of the second one. Indeed, 100% of veterans in terrorism research agreed or strongly agreed that combat footage may be harmful to mental health. This opinion was shared only by 56.4% of the group of less experienced respondents. Likewise, only 30.7% of the second group agreed or strongly agreed that exposure to religious or ideological indoctrination may constitute a risk, compared to 80.7% of more experienced researchers. This significant disparity between respondents based on their experience was also confirmed by answers to questions related to productivity and training on trauma prevention. A negative correlation between propaganda consumption and scholarly output was noticed by 84.6% (agree or strongly agree) of respondents having watched more than 10,000 propaganda pieces. Only 25.6% of respondents who saw less than 1,000 releases held a similar viewpoint. Additionally, 92.3% of the first cohort noticed the necessity of specialised training (agree or strongly agree), compared to 53.8% of the second.[43]

These findings show that researchers with relatively limited experience in this subfield are less concerned about the adverse effects of exposure to violent extremist content or the lack of self-care training. This finding contrasts with the more careful attitudes recorded by researchers who have analysed a significant amount of propaganda during their careers. There are several potential interpretations of this disparity. For instance, the greater awareness of experienced researchers may be explained by the fact that the adverse effects of exposure to propaganda may accumulate over time. Our data suggests that respondents who are traumatised by terrorist content always or often (N=13) have some distinct features: 92.3% of this group have more than six years of experience in the subfield and 53.8% have viewed more than 10,000 violent extremist productions. Likewise, 69.2% of this group always or often experienced stomachaches and had problems sleeping, while 61.5% of this group noticed their increased attention to food, smoking and alcohol. Furthermore, 92.3% of this group intentionally attempted to cope with these problems, though as many as 69.2% were dissatisfied or very dissatisfied with their attempts.

In this context, we also compared the attitudes demonstrated by male and female respondents. We noticed no significant differences in susceptibility to trauma. Some 11.9% of male and 16% of female respondents always or often experienced trauma resulting from terrorist propaganda. However, 47.7% of the surveyed men and only 36% of the women were always or often disturbed by such content. The only meaningful difference between genders related to the coping process, as men (71.6%) proved to be more inclined to deal with trauma intentionally than women (48%).

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43   Q: The consumption of terrorist content on the internet should be preceded by specialised training focused on trauma prevention and coping strategies.

3. Experiment Results: Measuring Researchers' Psychophysiological Responses to Terrorist Propaganda

To understand the short-term impact of researcher exposure to terrorist propaganda, we focused on measuring psychophysiological reactions to exposure to terrorist content. We designed an experiment that monitored researcher reactions using an eye-tracker and a biofeedback device. This section outlines the experiment methodology and findings.

Methodology

The second vector of our research project involved a novel experiment consisting of two tools with separate methodologies integrated into one procedure. The experiment aimed to measure short-term psychophysiological reactions to violent extremist propaganda by terrorism researchers employed by HEIs, think tanks or NGOs (labelled as the Experimental Group – EG). To do so, researchers (N=16)[44] meeting inclusion criteria were exposed to several qualitatively different types of productions organised into two distinct phases. The presentation of terrorist content was carried out with a laptop with special software prepared for the experiment. Psychophysiological reactions of participants were monitored and measured with an eye-tracker (registering eye movement and fixation) and a biofeedback device, with sensors placed on fingers, that allowed monitoring parameters related to stress.

The procedure for the EG was organised into two parts. Phase I concentrated on displaying visual propaganda released by terrorist organisations, including ten pictures presenting combat in first- and third-person perspective, ten posters and ten infographics. Phase II focused on displaying audiovisuals. Participants were exposed to fragments of a statement by a member of a terrorist organisation, a promotional video released by a VEO, an *anashid* video and combat footage.[45] The final part of the experiment focused on scenes of death and dying, namely a combat video presenting casualties on the battlefield. Aside from this final video, no other terrorist release used in the experiment consisted of images containing gore.

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44 Some 16 researchers participated in the EG, though data gathered from one of them was unclear due to technical reasons. As a result, the findings of only 15 experiments were taken into consideration.
45 Henrik Gråtrud, "Islamic State Nasheeds As Messaging Tools," *Studies in Conflict & Terrorism*, vol. 39, no. 2 (2016).

The experiment also included a Control Group (CG) composed of researchers (N=15) with no previous experience of analysing terrorist propaganda. They were exposed to neutral content available on the internet under an open licence,[46] in a mode that mirrored the EG's design paradigm. Content was selected and organised to replicate the EG's procedure as much as possible. Materials displayed to the CG were, again, organised into two phases. Phase I concentrated on displaying three types of visuals: ten pictures presenting ordinary, mostly household activities, ten posters and ten infographics. Phase II displayed audiovisual content. Fragments of a political speech, a promotional video, a music video and audiovisual content consisting of non-military-related instructions and gun training footage were displayed to participants. It should be stressed that these materials did not feature any form of criminal activity. This material also did not consist of any controversial or gruesome scenes. In a similar fashion to the EG, reactions of the CG were monitored with an eye-tracker and biofeedback device. Thus, we ensured that stimuli packages displayed to the EG and CG were of comparable length and visual character.

Subsequently, the reactions of the EG and the CG were compared. Overall, the experimental procedure was designed in a way that allowed us to understand what type of terrorist propaganda has the most significant impact on the cognitive and affective systems of researchers.

Data Collection and Analysis

The experimental stage of our project relied on two complementary devices:

- The Infiniti FlexComp biofeedback data acquisition and monitoring system, which used a dedicated BioGraph Infiniti software;
- The EyeLink Portable Duo eye-tracker with Web Link software.[47]

Due to the specificity of our study, we decided to opt for standard measurements related to stress: skin conductance, pulse and temperature. A custom data protocol was created in BioGraph Infiniti that focused on collecting these three types of reactions exclusively. This ensured precise biofeedback acquisition and reduced the resources needed to interpret the data gathered. We used collection electrodes, attaching them to participants' fingers.

Stimuli packages displayed to the EG and CG were prepared with Web Link. An eye-tracker was used to analyse the fixation and saccades, particularly in the context of predefined areas of interest. Nine-point automatic calibration was employed, though the procedure included validation to ensure good data quality. We opted for a high sampling rate of 1000 Hz, so even the small saccades were captured.

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46 Among others, under the Unsplash license: https://unsplash.com/license.
47 The experimental procedure included extensive testing and configuration of the equipment in order to identify and tackle potential technical challenges for our study. The first tests were carried out in Poland upon the project's launch. Another series of tests were conducted in Great Britain before and during the main part of the study, which focused on monitoring the EG's reactions. After each day of the experiment, we updated a backup database and double-checked both devices to exclude the risk of malfunctions or any corruption in the data.

An eye-tracker was utilised in head-free mode with an additional calibration sticker. These solutions were adopted to make our procedure similar to real-life reactions to audiovisual stimuli.[48]

Our methodology enabled us to compile two crucial measurements with an eye-tracker, allowing us to understand the impact of violent extremist content on terrorism researchers:

- <u>Fixation Count Percentage</u> (FixC%), which SR Research defines as the percentage of all fixations in a trial falling in the current interest area. It is calculated as the total number of fixations into the interest areas with this ID, divided by the total number of fixations in those trials using this interest area.[49]

- <u>Dwell Time Percentage</u> (DwellT%), which SR Research defines as the percentage of trial time spent on the current interest area. It is calculated as the sum of all fixation duration into the interest areas with this ID, divided by the total fixation dwell time of those trials using this interest area.[50]

On top of this, we used our data to generate heatmaps, a popular tool for summarising focus patterns. In both cohorts, interest areas were predefined based on our previous knowledge of the terrorist content and the existing scientific literature on the subject.

Findings

We identified several trends in the short-term psychophysiological reactions of researchers to terrorist content. For clarity, all conclusions related to the EG were compared to the relevant data collected from the CG.

Understanding the Eye Fixation-Related Response of Researchers to Terrorist Content

Participants of the EG mainly manifested the same typical focus patterns common in the CG. There are three types of objects that attracted the most significant attention of both cohorts:

- illustrative text;
- objects located at the centre of the screen;
- human faces.

Participants' eye movements were drawn to the text featured in propaganda. Participants looked at text-related areas whenever they were available on the screen. Text received at least 25% of both DwellT% and FixC%. This tendency is visible even if we rule out

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48   We expected that the gaze patterns of researchers experienced in analysing terrorist content would not differ much from those viewing non-violent materials. Their experience would render the otherwise harmful content to be perceived as non-threatening and thus treated as an ordinary visual stimulus. At this point, we did not anticipate any connection between this process and the long-term consequences of viewing violent materials as a part of daily professional responsibilities. This conclusion was reached upon comparing data from the online survey and the results of this experiment. On gaze patterns, see for instance: Roger Johansson, Franziska Oren, Kenneth Holmqvist, "Gaze patterns reveal how situation models and text representations contribute to episodic text memory," *Cognition*, vol. 175, no. June (2018), 53–68.
49   Andrew Duchowski, *Eye Tracking Methodology: Theory and Practice* (London: Springer, 2007).
50   ibid.

the part of the experiment that contains infographics. Overall, this finding reflects the natural inclination to read what our eyes see.[51] This inclination may be only greater with individuals who analyse text and images as part of their daily professional routine (Figure 10).

Figure 10. Example of the text-related focus patterns on posters presented to the EG and CG

Source: Islamic State

Source: https://unsplash.com/photos/52hSxHwXE7I (Unsplash License)

As seen in the above examples, participants of both cohorts spent a significant amount of time reading the visible text. At the same time, the weapon held by the figure in the first poster attracted almost no attention from the researchers, which was surprising.

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51   See Hsueh-Cheng Wang and Marc Pomplun, "The attraction of visual attention to texts in real-world scenes," *Journal of Vision*, vol. 12, no. 6 (2012).

A similar inclination can be seen in other types of materials displayed, such as infographics. In the case of infographics, participants focused mainly on large text (such as titles) and numbers. Moreover, the left side of all materials presented attracted slightly greater attention, which can be explained by the reading patterns adopted by populations using, for instance, the Latin and Cyrillic alphabets. This inclination can be seen in the screenshot below (Figure 11).

Figure 11. Example of the text-related focus patterns on infographics presented to the EG

Source: Islamic State

The second focus of participants' eye movements for both the EG and the CG tended to be on objects located at the centre of the screen. Central objects received almost 41% FixC% and close to 38% DwellT% in the EG and 51% FixC% and 44% DwellT% in the CG. This pattern is visible in the heatmaps provided below (Figure 12). For the first image, the eye-tracker captured some interest in the text at the bottom, though the most significant attention was devoted to the central objects, namely two armoured personnel carriers (APCs) seen from the first-person perspective by a person wielding an assault rifle. Interestingly, the participants' attention focused mainly on the APC that was targeted by a terrorist. This suggests that focus on central elements is influenced by the orientation of the object held by the depicted individual. Such an interpretation is confirmed by the eye-fixation reactions of the CG, as seen in the second picture. The attention of participants was divided between the man standing in the middle of the screen and the mower he holds. In a similar fashion to the first picture, the object's orientation and the person's eyeline seem to impact the audience's focus. This finding may be important for analysing combat footage and execution videos, which frequently feature

victims being targeted with various weapons. Thus, it contributes to the increased eye fixation on most graphic elements, such as mutilated corpses or injuries. In this context, the awareness of this trend may be used to divert the attention of researchers consciously when gore content is visible on the screen.

Figure 12. Example of object-related focus patterns in pictures displayed to the EG and CG


Source: Islamic State

Source: https://unsplash.com/photos/9Rtp9uvTs3Q (Unsplash License)

This tendency to focus on central objects and follow their orientation is especially visible in scenes without any other significant visual stimuli, as seen below (Figure 13). The EG focused primarily on the rifle and the gun-target line in the first picture. The heatmap generated by the CG, who were presented with an image with a neutral background, shows a similar inclination. CG participants focused on the central object – the sprayer – and the area to which it is directed.

Figure 13. Another example of object-related focus patterns in pictures displayed to the EG and CG

Source: Islamic State
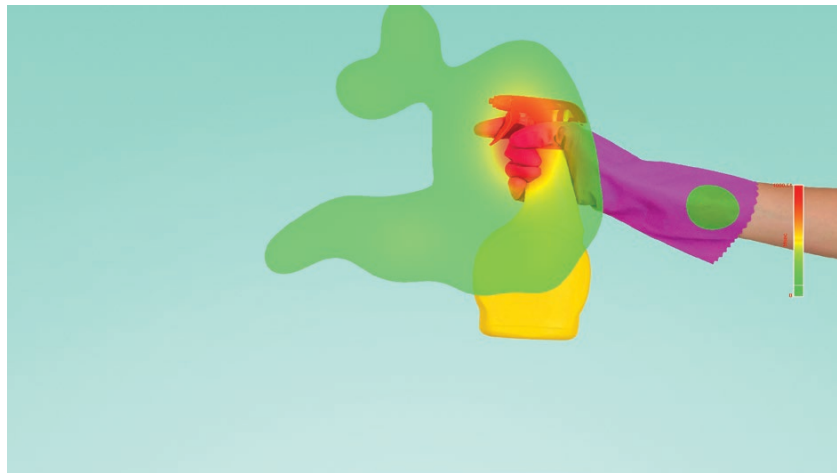
Source: https://unsplash.com/photos/__ZMnefol3k (Unsplash License)

The previous terrorist image in Figure 13 is also indicative of the third tendency identified using eye-tracking technology, as both the EG and the CG focused on human faces. The DwellT% was as high as 62% in the CG and 57% in the EG whenever faces were displayed. The FixC% counts were lower for both cohorts: 55% for the CG and 51% for the EG. This means that the gaze on the area containing a face was held once it was identified. This reaction can be seen in Figure 14: participants focused their attention on the face of the *mujahid* standing on a pickup truck, even though the face was barely visible. Similarly, the face of the lion attracted the most significant attention for the CG.

Figure 14. Face-related focus patterns in pictures displayed to the EG and CG

Source: Islamic State
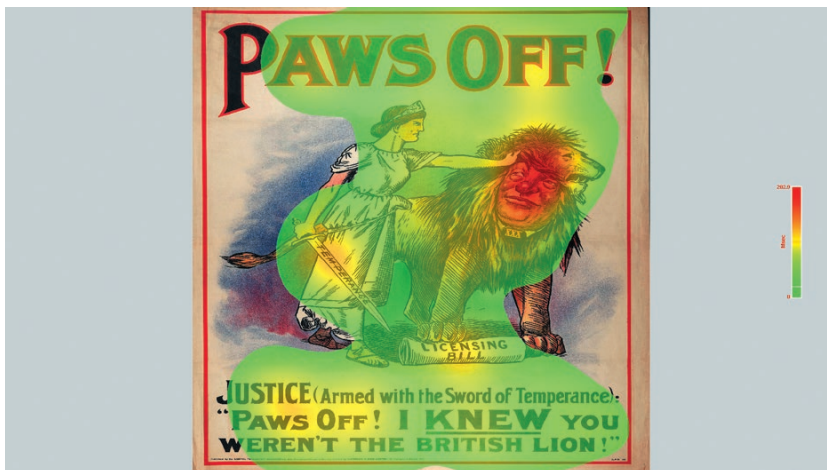
Source: https://unsplash.com/photos/CH1EJSfWPuQ (Unsplash License)

In this context, from a psychological viewpoint, facial expressions are of fundamental importance. They relate to personality and identity. Faces are also considered the area commonly associated with emotional states.[52] This response may constitute a factor increasing risks for researchers. As our online survey shows, looking at expressions of extreme emotions in terrorist videos, which are usually related to faces, may have serious negative consequences for mental health. Therefore, avoiding looking at faces in the most harmful audiovisual content may potentially reduce risks to a researcher's mental health.

Aside from the similarities in eye fixation for both the EG and the CG, there is also one noticeable difference between them. In contrast to participants of the CG, experienced terrorism researchers showed slightly greater interest in logotypes, as shown in Figures 12 and 14. This inclination may be explained by the professional responsibilities of these researchers, who are particularly interested in identifying the origin of an analysed video. However, this finding seems to have no significant meaning in the context of the wellbeing of researchers.

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52   See Dacher Keltner and Paul Ekman, "Facial Expression of Emotion," in *Handbook of Emotions*,
       eds. M. Lewis, J. Haviland-Jones (New York: Guilford Publications Inc., 2000).

The most important part of the experiment was related to monitoring the reactions of the EG to the scenes of death displayed at the final stage of our procedure. In this context, both FixC% and DwellT% for the areas of interest with visible faces of corpses were over 64%. This response indicates that whenever gore content was visible on screen, it attracted the greatest attention from participants. Researchers also focused, albeit shortly, on such elements as clothing or visible firearms, though the heads of victims – including mutilated faces, eyes and blood – were the main point of interest.[53] On the one hand, the prevalence of such a reaction could be explained by morbid curiosity, which is a common psychological trait.[54] This focus manifests, for instance, in the massive interest among internet users in gore content of varying origins.[55] Thus, focusing on the most gruesome elements on the screen seems to be a natural reaction from most viewers. On the other hand, exposure to such visuals is known to have serious adverse effects on mental health in other professions, including, for instance, journalism.[56] This risk is confirmed by the online survey, which shows that gore content may have the greatest potential to cause trauma for terrorism researchers.

Measuring Biofeedback of Researchers Exposed to Violent Extremist Propaganda

The same set of visuals and audiovisuals allowed us to collect information on physiological stress indicators. Skin conductance (SC) proved to be the most informative of the three measurements we collected. SC is used a common diagnostic aid in profiling mood disorders and can help to monitor emotional responses.[57] SC was analysed through the lens of a standard deviation from the norm measured over the short reference period.

We detected a noticeable difference between the CG and the EG in how they reacted to the displayed content when we compared deviations from the participants' baseline. Both groups stabilise after about three minutes into the experiment, but at different levels (Figure 15). This result does not tell us the nature of the deviation but shows that participants of the EG have much greater instability in their SC compared to the CG. In other words, even though terrorism researchers have a strong sense of control over the process of acquisition and analysis of the displayed content, their emotional state upon being exposed to such productions seems to be more unstable than members of the CG consuming ordinary internet releases. Unfortunately, due to the limited scope of our experiment, this issue requires further in-depth research.

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53 These reactions should be explored in greater detail. A longer exposure time, combined with more graphical areas would be needed to understand all mechanisms at play. However, designing such a study would be challenging from an ethical standpoint.

54 Coltan Scrivner, "The psychology of morbid curiosity: Development and initial validation of the morbid curiosity scale," *Personality and Individual Differences*, vol. 183 (2021).

55 Lakomy, "Danse macabre".

56 See Anthony Feinstein, Blair Audet and Elizabeth Waknine, "Witnessing images of extreme violence: a psychological study of journalists in the newsroom," *JRSM Open*, vol. 5, no. 8 (2014).

57 Galvanic skin response is usually used as a diagnostic aid in profiling mood disorders. It can also help to monitor patients' emotional experiences. See Róisín Vahey, Rodrigo Becerra, "Galvanic Skin Response in Mood Disorders: A Critical Review," *International Journal of Psychology and Psychological Therapy*, vol. 15, no. 2 (2015), 275–304.

Figure 15. Aggregated skin conductance of the CG and EG participants
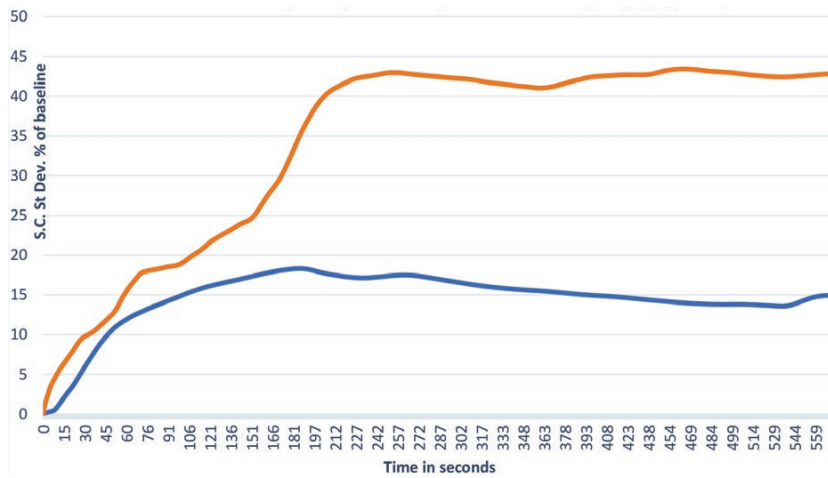
This finding provokes an interesting conclusion about the nature of coping in the EG and a possible adjustment trap. The higher deviation from the baseline of some terrorism researchers may be connected to more significant – but possibly subconscious – emotional reactions. This process can be compared to the boiling frog syndrome. The fact that the emotions stabilise, albeit at a high level, can give a false sense of coping and stability. From a long-term perspective, this may lead to developing unhealthy habits regarding the volume of analysed materials. Consuming more terrorist productions may lull researchers into a state of false confidence, believing that their affecting systems can easily deal with harmful content. This attitude, in turn, may lead to analysing an ever larger amount of violent extremist releases, the adverse effects of which will accumulate over time.

4. Identifying Basic Standards in Trauma Prevention and Coping for Terrorism Researchers

The third objective of this project was to design a basic model of prevention and rehabilitation. Drawing on our findings in the online survey and experiment, this section provides an overview of coping mechanisms employed by researchers, potential interventions that can be implemented by HEIs and suggestions for assistive technology that might reduce possible harm to researchers.

A heated scientific debate on trauma prevention and rehabilitation methods has been ongoing for decades, leading to multiple coping strategies and methods being identified. One of the most common approaches classifies problem-focused, emotion-focused and appraisal-focused coping.[58] Another popular classification lists future- and action-oriented behaviours. Future-oriented behaviours aim to prepare an individual to face stressors that are likely to happen in future, while action-oriented ones include building and strengthening one's resources, including developing necessary skills and abilities.[59] The scientific community has also identified a broad spectrum of coping methods, such as information seeking, cognitive restructuring, emotional expression, distraction, distancing, avoidance, wishful thinking, acceptance, seeking social support, denial, humour and turning to religion.[60] These and many other concepts have been tested in research on models of dealing with trauma and mood disorders.[61] In this context, most researchers agree that "there is no one universal coping strategy that will be effective in all situations. Coping strategies that lessen distress in one situation may be ineffective or even detrimental to the individual in another."[62] In other words, success in dealing with trauma is determined not only by the character of the coping models used but also an individual's situation and the nature of the stressor.

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58 Ata Ghaderi, "Coping: Escape Avoidance," in *Encyclopedia of Feeding and Eating Disorders*, ed. Tracey Wade (Singapore: Springer, 2017), 172–5.

59 See Scott Blum, Marnie Brow, Roxane C. Silver, "Coping" in *Encyclopedia of Human Behavior (Second Edition)*, ed. Vilayanur S. Ramachandran (Oxford: Elsevier, 2012).

60 Eric Dubow, Michelle Rubinlicht, "Coping," in *Encyclopedia of Adolescence*, eds. B. Bradford Brown and Mitchell J. Prinstein, (New York, NY: Academic Press, 2011).

61 See, for instance, Heather Littleton, Samantha Horsley, Siji John, David V. Nelson, "Trauma coping strategies and psychological distress: A meta analysis," *Journal of Traumatic Stress*, vol. 20, no. 6 (2007); Gabriele Prati and Luca Pietrantoni, "Optimism, Social Support, and Coping Strategies As Factors Contributing to Posttraumatic Growth: A Meta-Analysis," *Journal of Loss and Trauma*, vol. 14, no. 5 (2009); Abdelaziz Thabet, Omar El-Buhaisi, Panos Vostanis, "Trauma, PTSD, Anxiety, and coping strategies among Palestinians adolescents exposed to War on Gaza," *The Arab Journal of Psychiatry*, vol. 25, no. 1 (2014).

62 Blum et al., "Coping", 596–601.

Institutional Approaches

Our study has focused on two dimensions of the problems facing terrorism researchers. We were primarily interested in identifying institutional barriers to safeguarding the wellbeing of terrorism researchers. As explained in section two, most of our respondents face insufficient support from their employing institutions regarding training and access to counselling. Effectively, many researchers are forced to seek help independently. Many university managers remain unaware of the potential risks involved in terrorism research. A generally unhealthy workplace culture in academia is also a significant factor at play. As Elizabeth Pearson recently noted, "poor work-life balance, bullying, impact- and visibility-related pressures, along with precarity for junior researchers … increased the risks for harm from research on online extremism and terrorism."[63]

In this context, there is no doubt that researchers representing this subfield should be more open to express their needs to their employing institutions. The most important standard that should be reached by all research centres specialising in terrorism is to ensure equitable access to mental health services for all employees. Researchers facing trauma or mood disorders should be able to receive specialised help from therapists upon request, free of charge. Implementing such a solution is necessary to ensure that all willing researchers are able to receive professional help instead of the current status quo of researchers independently seeking specialised help and covering all the costs involved themselves. Some academic centres and think tanks specialising in violent extremism have already introduced periodic health examinations of their researchers. This move is undoubtedly a step in the right direction, though there is a question of whether such monitoring should be obligatory or optional. As Peter King noted, some employers may perceive a mandatory regular psychological assessment as an uncomfortable intrusion.[64] Amendments to the general working conditions at HEIs could also be considered. Improvements to the work-life balance of researchers and decreasing impact-related expectations are among the essential changes that need to be introduced.

Building awareness and resilience is a separate matter that must be addressed on an institutional level before allowing individuals to work with controversial and potentially harmful content. The results of our online survey show that less experienced researchers are more likely to underestimate the risks specific to this subdiscipline, so academia should be held responsible for supporting resilience- and awareness-building among researchers at the early stages of their careers. Some respondents even shared stories of junior researchers who decided to quit academia because of the lack of support. Their decisions to leave academia were caused primarily by the negative impact of their daily professional activities on their wellbeing. These reactions show an urgent need to organise awareness-raising sessions for all newcomers to the subfield, beginning with first-year PhD students. Such training should provide detailed information on the character of scientific activities related to terrorism and the potential challenges researchers may face. These sessions could be carried out by senior researchers with the necessary experience. Furthermore,

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63   Pearson, "Academia is lagging behind."
64   King, "Building Resilience for Terrorism Researchers."

separate training drawing from cognitive neuropsychology should be devoted to introducing junior researchers to the best coping practices allowing them to safeguard their wellbeing. Techniques of self-assessment should also be introduced. The cooperation of HEIs with experienced mental health advocacy or non-profit groups could be considered in this regard.[65] There is also a great need to enhance resource exchange, allowing increasing awareness of and access to the best standards. Some scientific centres and research networks, such as VOX-Pol, have already significantly contributed to sharing good practices in the subfield.[66]

Individual Approaches

Coping Strategies for Terrorist Researchers

Our study also aimed to identify coping strategies that have been relatively successful in dealing with mood disorders and trauma among terrorism researchers. As discussed above, a minority of our respondents were happy about the long-term efficiency of the coping solutions they adopted. There were only 22 respondents who were either satisfied or very satisfied with their coping strategies.[67] Some 14 of these respondents described their personal practices in the open question.[68] Several promising solutions were identified.

First, these researchers mentioned **selective attention**, meaning that only scenes necessary for the analytical process are watched. Those respondents who use selective attention attempt to avoid watching bloodshed as much as possible. Respondents reported looking away during scenes of death and dying.[69] While this approach allows the negative impact of many videos to be mitigated, as hinted at by our experiment, it also has its limitations. Gruesome scenes may pop up unexpectedly, so the researcher may be unable to look away in time. Moreover, in some research projects, analysis of gore scenes may be necessary.

Second, **reducing screen time** proved to be efficient for some respondents. On the one hand, reduced screen time means that only a part of the day is devoted to watching terrorist content. On the other, researchers do not expose themselves to such productions towards the end of the working day or outside work hours. Respondents also reported avoiding watching content on mobile phones. As one of the surveyed researchers explained, "this separation allows me to leave behind these thoughts at work". On top of this, using different virtual spaces for analysis should be considered. For instance, a separate computer or a dedicated user profile seems a promising solution, as researchers would then not encounter files or folders containing terrorist propaganda unwittingly.

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65   See Mriganka Awati, "We Need to Talk About Researcher Wellbeing," ScienceTalks (2020), https://sciencetalks.org/about-researcher-wellbeing/.

66   "Researcher Welfare 2: Mental and Emotional Well-Being and Self Care," *VOX-Pol*, https://www.voxpol.eu/researcher-welfare-2-wellbeing/.

67   Q: How satisfied are you with the efficiency of your coping strategy in the long run?

68   Q: Please describe the practices that you use most of the time in order to cope with the hardships of consuming terrorist propaganda materials as a part of your academic career.

69   See Andrew Barr, Alexandra Herfroy-Mischler, "ISIL's Execution Videos: Audience Segmentation and Terrorist Communication in the Digital Age," *Studies in Conflict & Terrorism*, vol. 41, no. 12 (2018).

Third, some researchers simply **take a break**. Respondents tended to stop viewing terrorist material for a period, which allows for negative emotions to settle. Researchers used breaks for activities they enjoy, such as spending time with friends, playing video games, sightseeing or watching television. In this context, multiple reports confirm the at least limited effectiveness of some of these solutions, including, for instance, online gaming.[70]

Fourth, a significant number of researchers happy with coping mechanisms mentioned **physical exercise**, which allows for venting negative emotions. The potential of exercise to manage trauma is confirmed in the scientific literature. For instance, Hegberg et al. find exercise interventions provide multiple health benefits. They are also low-cost and not associated with mental health stigma. As Hegberg et al. argue, "there is growing evidence of the beneficial effects of exercise on mental health disorders, including depression and anxiety … aerobic exercise may also reduce PTSD symptomatology across a variety of populations providing evidence for the clinical utility of exercise as a form of treatment."[71]

Five, some respondents also noted that they **talk about challenges they face with friends, partners and family**. Again, the effectiveness of coping methods based on seeking help from others has been confirmed by psychiatrists. For instance, the role of the family is usually related to fostering "a sense of belonging among family members whose traumatic experiences have led them to feel … alienated from others."[72] Communicating with friends and relatives may help to maintain treatment gains and avert relapse.[73]

The sixth coping solution mentioned by respondents **was making jokes** about terrorist content. Using humour to address trauma is quite popular among professionals exposed to traumatic experiences, such as paramedics or military personnel.[74] It is unsurprising that some researchers utilise the same method with relative success. However, as respondents emphasised in the survey, ridiculing violent extremist propaganda (for instance by creating memes) is an approach that is limited to the closed community of fellow researchers with similar professional backgrounds. These jokes are not able to be shared with or understood by relatives unfamiliar with such content, potentially limiting the effectiveness of using humour as a coping solution.

A few surveyed researchers also mentioned **adopting a mindset** that enables mood disorders to be avoided or mitigated as a seventh coping solution. This approach is based either on analytical distancing or on focusing on the added value of the work. It suggests that researchers being aware that they contribute practically to counter-terrorism[75] or countering violent extremism might be more resistant to the negative impact of terrorist content.[76]

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70   Maria di Blasi et al., "Problematic video game use as an emotional coping strategy: Evidence from a sample of MMORPG gamers," *Journal of Behavioral Addictions*, vol. 8, no. 1 (2019).

71   Nicole J. Hegberg, Jasmeet P. Hayes, Scott M. Hayes, "Exercise Intervention in PTSD: A Narrative Review and Rationale for Implementation," *Frontiers in Psychiatry*, vol. 133, no. 10 (2019), 9.

72   Patricia K. Kerig, James F. Alexander, "Family Matters: Integrating Trauma Treatment into Functional Family Therapy for Traumatized Delinquent Youth," *Journal of Child & Adolescent Trauma*, vol. 5, no. 3 (2012), 200.

73   ibid.

74   Sarah Christopher, "An introduction to black humour as a coping mechanism for student paramedics," *Journal of Paramedic Practice*, vol. 7, no. 12 (2015).

75   On current trends in counter-terrorism studies see: Alex P. Schmid, James J. F. Forest, Timothy Lowe, "Counter-Terrorism Studies: A Glimpse at the Current State of Research (2020/2021)," *Perspectives on Terrorism*, vol. 15, no. 4 (2021), 155–83.

76   See Georgia Holmer, "Countering Violent Extremism: A Peacebuilding Perspective," *United States Institute of Peace Special Report*, no. 336 (September 2013).

Last but not least, some researchers reported regularly attending sessions with a psychotherapist.

Frequency of Coping Methods Used by Respondents

The same cohort of satisfied or very satisfied respondents (N=22) reported some interesting tendencies regarding the coping methods they always or often utilise.[77],[78] The most popular solution was acceptance. As many as 59% of respondents in this group admitted to simply learning to live with the problem. The second most common, used by 50% of researchers, was to think about how to deal with trauma. Reframing the stressor in favourable terms and taking direct steps to deal with the problem were reported by 31.8%, while 36.3% admitted to always or often referring to humour. In contrast, the least common methods proved to be religion and substance abuse. Some 81.8% of respondents satisfied with their coping strategies have never turned to their faith, while 72.8% of respondents have never relied on substances to improve their mood.

Technological and Organisational Approaches

Several other technological and organisational solutions can be suggested based on the findings of our experiment and the potential offered by many developing technologies. First, using artificial intelligence (AI) image-editing capabilities in terrorist content analysis could be considered.[79] AI could be used to tag scenes with the most significant risk of harming viewers. AI may also be able to censor scenes featuring death or suffering in a way that would not hinder the analytical process. Considering the psychophysiological reactions discovered by our study, covering faces, blood or injuries could mitigate potential harms to the mental health of researchers.

Second, colour images and videos are known to have a greater psychological impact. Consuming only monochromatic content could be helpful in mitigating harm. Audiovisual and visual materials can easily be converted to monochrome with various open-source tools.

Third, terrorism researchers could address potential harms by isolating textual and visual layers from the content and analysing them separately. This can be done, for instance, with some optical character recognition tools.[80]

Fourth, exposure to violent extremist materials should be dependent on researchers' psychophysical state. Changes in the organisation of the working week need to be considered. For instance, researchers could be allowed to study such content only for a limited time, such as two to four days a week. Such a solution would decrease the risk of the long-term accumulation of the adverse effects of consuming propaganda.

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77   Q: Which coping method have you utilised?
78   For the attitudes of the whole group (N=61), see Figure 8.
79   Martin Anderson, "InstructPix2Pix: Accurate, AI-Based Image-Editing With GPT-3 and Stable Diffusion," Metaphysic (2022), https://metaphysic.ai/instructpix2pix-accurate-ai-based-image-editing-with-gpt-3-and-stable-diffusion/.
80   See S. Vijayarani, A. Sakila, "Performance Comparison of OCR Tools," *International Journal of UbiComp*, vol. 6, no. 3 (2015).

Fifth, working in well-organised teams may be helpful. Cooperation in content analysis and academic writing seems promising in decreasing exposure to terrorist content, given that each team member will be exposed only to a part of the sample under consideration. Among others, computer-assisted qualitative data analysis software may be helpful in this regard.[81] Mutual supervision for teams working on terrorist propaganda also seems to be a viable solution.[82]

Lastly, changes in the organisation of terrorist content analysis should be considered. This means identifying and adopting preparatory steps to working with controversial productions and learning a follow-up procedure focused on resetting mentally and emotionally. For instance, emotional reset methods may include physical exercise or entertainment.[83]

To summarise, there is a broad spectrum of potential ways of dealing with trauma, from using humour to taking a break or simply adopting a mindset that makes a researcher more resistant to a stressor. Still, no single solution works for everyone, as efficiency depends on multiple factors, including an individual's character and personal situation. Frequently, a combination of many of the methods mentioned above leads to noticeable effects. However, some researchers may be unable to select appropriate interventions for their circumstances without external help. The difficulty of identifying and implementing interventions is the primary reason why the availability of psychotherapists for terrorism researchers should be considered a priority. Changing the working culture and organisation of the content analysis process in academia should also be given due consideration.

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81 See Linnea L. Rademaker, Elizabeth J. Grace, Stephen K. Curda, "Using Computer-assisted Qualitative Analysis Software (CAQDAS) to Re-examine Traditionally Analyzed Data: Expanding our Understanding of the Data and of Ourselves as Scholars," *The Qualitative Report*, vol. 17, no. 22 (2012).
82 See Marion Bogo, Jane Paterson, Lea Tufford, Regine King, Interproffesional Clinical Supervision in Mental Health and Addiction: Toward Identifying Common Elements," *The Clinical Supervisor*, vol. 30 (2011).
83 See Shaohua Tang et al., "The Relationship between Physical Exercise and Negative Emotions in College Students in the Post-Epidemic Era: The Mediating Role of Emotion Regulation Self-Efficacy," *International Journal of Environmental Research and Public Health* (2022), https://doi.org/10.3390/ijerph191912166.

5. Conclusions

The results of our online survey show beyond doubt that long-term exposure to terrorist content may cause secondary trauma among researchers. Most respondents have been traumatised by violent extremist content at least once in their careers. However, most researchers have experienced it sometimes or rarely (66.3%). Moreover, a significant group of respondents (20%) had never noticed any trauma symptoms. Less harmful reactions proved more common. Secondary trauma may be triggered mainly by content that depicts bloodshed and violence, especially against women and children. Watching expressions of raw, extreme emotions, which, for instance, frequently accompany execution videos, may also constitute a significant risk for researchers.

Our online survey allowed us to identify several eye-catching trends in this regard. First, while most respondents understand the risks involved in studying terrorist content, the intentional use of popular coping methods is not as widespread as could be expected. More than a third have never made any attempts in this regard and those who did are usually unhappy with the results. Second, compared to inexperienced researchers, experienced researchers seem to be more aware of the risks involved in the subfield and are usually more careful in approaching the analysed content. Third, our data suggest that the adverse effects of being exposed to terrorist content may accumulate over time. The more researchers consume, the more likely trauma-related effects become. Finally, we have discovered no significant gender-based differences in reacting to violent extremist propaganda. Analysis of such productions has a generally similar impact on male and female researchers.

Our experiment proved that the gaze patterns of terrorism researchers mainly focus on the text, logotypes, objects at the centre of the screen, including gun-target lines, and faces. As expected, participant attention was also drawn by gore content whenever displayed, including mutilated heads, blood and injuries. Our biofeedback data indicate that terrorism researchers manifest more unstable psychophysiological reactions than those of the group exposed to ordinary internet content. However, understanding the true nature of the former group's galvanic skin response to terrorist content requires further research.

These findings show an urgent need to introduce new standards to the subfield aimed at protecting the wellbeing of researchers. HEIs frequently provide no real support to mitigate the potential challenges to researchers' mental health. This situation needs to change, especially regarding training on trauma-prevention techniques and awareness-raising sessions for junior researchers. Amendments in the working culture in academia, including impact- and visibility-related expectations, are also necessary.

Aside from institutional-level solutions, information exchange in the subfield focused on best practices in researchers' self-care is also crucial. As our study shows, multiple strategies may be more or less efficient, although no single strategy works for all. Humour, selective attention, reducing screen time, taking a break from work, or broadly

understood entertainment seem to be the most promising solutions. It should be stressed, however, that the efficient use of some of these strategies may encounter significant institutional problems. For instance, taking a break from research in a productivity-focused environment such as academia may backfire and impede many scientific careers. Thus, coping strategies require a certain amount of understanding and goodwill from supervisors and the introduction of formal support mechanisms for terrorism researchers in need at HEIs. Introducing new standards in the subfield in terms of follow-up procedures, working in teams and mutual supervision appears to be vital.

Policy Section

This policy section has been authored by Nicola Mathieson, Research Director, at the Global Network for Extremism and Technology (GNET) at the International Centre for the Study of Radicalisation (ICSR) at King's College London. This section provides policy recommendations and is produced independently from the authors of this report. Recommendations do not necessarily represent the views of the authors.

This report, *Understanding the Trauma-Related Effects of Terrorist Propaganda on Researchers*, is one of the first pieces of academic research to analyse systematically the impact of terrorist research on researcher wellbeing. Lakomy and Bożek conducted two interrelated studies using an online survey and a novel experiment to examine the short-term and long-term impacts of analysing terrorist propaganda. The key findings of this report carry corresponding policy implications for technology companies and policymakers.

This policy section ensures that GNET reports provides actionable research outcomes that can inform and support technology companies and policymakers to identify and prevent extremist and terrorist exploitation of digital platforms. The policy section fulfils GIFCT's core pillar of learning to improve prevention and responses to terrorist and violent extremist attacks.

1. Technology Companies

This report has identified two core areas for action for tech companies:

- Research and content moderation teams in tech companies are exposed to violent extremist content as a part of their everyday work. Tech companies should ensure that staff exposed to extremist content have appropriate training and support. The recommendations for researchers, institutions and tech companies provided by Lakomy and Bożek in this report can be directly applied to tech companies. As tech company staff, including researchers, are exposed to harmful content, industries should work together to develop a shared programme of best practice training and resources. This may include identifying psychotherapy and counselling services with specific expertise in secondary trauma and developing strategies for managing exposure to harm in a workplace.

- This report identifies some technical approaches that can assist researchers in mitigating the risks of viewing terrorist content, including using AI to identify the most harmful content and applying grayscale to content. Tech companies could help to develop technology designed to assist both their staff and independent researchers in reviewing terrorist content, including (but not limited to): AI programs that detect and flag gore content, the automatic identification and blurring of faces, the automatic application of grayscale to extremist content, limited time usage features that limit

viewing to a predetermined period. This technology could also be applied to other areas of research where viewing harmful content is part of everyday workplace activities.

2. Policymakers

In addition to the report findings and their implications for technology companies, this report has also identified two core areas for action by policymakers:

- Like tech companies and researchers, members of governments and law enforcement are similarly exposed to violent extremist content as part of their work. Organisations should ensure that staff exposed to extremist content have appropriate training and support for their staff. Policymakers should develop robust policies that ensure best practices are being implemented to protect staff.

- PhD students and early career researchers often receive funding from government bodies and, in many countries, universities remain public institutions. Therefore, government bodies can play a greater role in ensuring that appropriate training and resources are provided as a part of their funding schemes. While the researchers of online extremism who featured in this report face a unique risk of secondary trauma through research, secondary trauma as a result of academic research is by no means unique to this field. Government funding bodies have the opportunity to make appropriate safety and wellbeing training a mandatory part of funding applications for individual students as well as for larger project grants that deal with harmful content.

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on Extremism & Technology