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Experimentation & Quasi-Experimentation in Countering Violent Extremism: Directions of Future Inquiry

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ABSTRACT

Experiments and quasi-experiments have been staples of the social sciences for decades. Researchers in dozens of disciplines leverage these methodological approaches to empirical inquiry to investigate research questions of all types. Although many terrorism researchers are from disciplines that have used experimental approaches in the past, these approaches have only rarely been used to study terrorism-related phenomena. This is unfortunate, given the wide array of issues that would benefit from observation via an experimental and/or quasi-experimental lens. This chapter builds on previous calls for the use of experimentation in terrorism studies by identifying two topics for which experimentation and/or quasi-experimentation would serve well: 1) analysis of terrorist material and 2) evaluation of countering violent extremism (CVE) programs. In addition, the chapter discusses the optimal methodological approaches for studying these topics and how those approaches might manifest in practice. This section will highlight challenges that researchers and practitioners may encounter in implementing their own experimental approaches and ways to overcome them.

EXPERIMENTATION AND QUASI-EXPERIMENTATION IN CVE

In 2018, the British Behavioural Insights Team (BIT) —part of the Home Office—evaluated 33 deradicalization programs in the United Kingdom (UK).[1] These programs—most of which fell under the auspices of the UK's oft-criticized Prevent initiative—had previously been reported as having success rates of 90% or higher, though these claims of success came from the programs themselves. The BIT's findings were not nearly as optimistic. The evaluation found that of the 33 programs intended to uncouple participants from their radical beliefs and attitudes, 31 had no effect, or worse, were counterproductive. Even the two programs that the BIT found to be potentially useful did not definitively yield the intended effects. Simon Ruda, director of home affairs and international programs with the Behavioural Insights Team, said some ideas "sounded good" but only "tended to work by chance—there was no grounding in psychological research that could potentially lead to impactful projects."[2] Stated plainly, there was no empirical evidence to suggest that any of the Prevent-related de-radicalization programs—even the ones that were evaluated favorably—produced their intended effects.

Failures among programs intended to challenge terrorist ideologies are attributed to several reasons. For one, and related to the BIT's findings, programs largely fail to achieve their intended outcomes because their practices are not empirically tested and, therefore, are not founded on any kind of evidence base.

1 Fiona Hamilton, "Most Programmes to Stop Radicalisation are Failing," *The Times*, last modified June 6, 2018, accessed September 2, 2019. https://www.thetimes.co.uk/article/most-programmes-to-stop-radicalisation-are-failing-0bwh9pbtd.

2 Ibid.

Too often, intervention programs like those described above do not employ practices that are scientifically proven to be effective. In terrorism studies, where a failure to implement effective practices can cost time, money, and potentially lives, it is critical to ensure that all efforts are demonstrably useful. To this end, it can be beneficial to use experimental and quasi-experimental methods to test terrorism prevention practices.

In this vein, this chapter offers a brief primer on experimental and quasi-experimental methods in the study of terrorism and related issues. Specifically, the chapter suggests some areas of empirical research within terrorism studies that may benefit from the application of these methods and describes some challenges that researchers may encounter when pursuing similar lines of research. The chapter concludes with a brief overview of some of the ethical considerations involved in the use of experimental and quasi-experimental methods. First, however, it is necessary to understand the nature of experimental and quasi-experimental methods and the distinctions between them. The next section provides a brief summary of these methods before turning to their application to the study of terrorism and political violence.

A BRIEF INTRODUCTION TO EXPERIMENTAL AND QUASI-EXPERIMENTAL METHODS

Both experimental and quasi-experimental methods help demonstrate whether some treatment induces a change in a group of individuals subjected to it. This treatment can take many forms, ranging from carefully designed interventions implemented in a laboratory setting to real-world events that participants encounter in their everyday lives. Although both experimental and quasi-experimental methods share similar goals, their implementation is substantially different. Most notably, experimental and quasi-experimental designs differ based on whether the researcher is able to randomly assign research participants into the necessary different conditions for the sake of comparison.

If the researcher has the means and resources to assign participants to different conditions at random (commonly referred to as random assignment), the study is a true experiment. As an example, consider a case in which a researcher wants to examine whether exposure to white nationalist propaganda affects audience beliefs and attitudes about African Americans. Suppose the researcher has access to 500 individuals that she or he can use to test this possibility. For a true experiment, the researcher would have the means to randomly assign these 500 individuals into two conditions: a treatment group exposed to white nationalist propaganda treatment and a control group not exposed to such propaganda. The researcher would then compare the beliefs and attitudes of the two groups following the respective administration of the treatment and control. If the researcher is able to fulfill all of these conditions, the study is considered a true experiment.

True experimentation hinges on the assumption that assigning participants to conditions randomly controls for confounding variables (e.g., personality traits, demographic variables, psychological character-

istics, previous exposure to treatment materials) that might also or otherwise affect the measured outcomes. Random assignment into study conditions ensures that any of these confounding variables are evenly distributed across all study conditions, thereby controlling their potential effects on outcome measures.

In some cases, however, random assignment to study conditions is not possible. This is particularly true within terrorism studies, where a significant amount of research is designed to examine the effects of certain stimuli in real-world contexts, away from controllable laboratory settings. In these cases, quasi-experimentation can be a valuable method for answering research questions. Like true experimentation, quasi-experimentation is designed to provide the researcher with data to compare the effect of some treatment on a group of research participants to a controlled baseline consisting of individuals who have not received the treatment in question. Unlike true experimentation, however, participants are not assigned to study conditions at random. Therefore, a researcher cannot assume the different groups to be equivalent, given that potential factors can influence participants' presence in one group (treatment) or the other (control) that cannot necessarily be accounted for.

For example, assume that a researcher wishes to evaluate the influence of an anti-radicalization message televised in a Middle Eastern country. To do so, the researcher will need to ask whether participants have seen the anti-radicalization message in question. Those that have seen it will constitute the treatment group; those that have not will comprise the control group. Although this practice will provide the researcher with two distinct groups that differ in having seen the anti-radicalization messaging, other factors may have contributed to individuals' exposure to the treatment (or not) that can skew their responses.

For instance, individuals in the treatment group may be of a higher socioeconomic status than those in the control group, given that the latter may lack the resources to possess a television. Perhaps individuals who reported having seen the anti-radicalization messaging simply remember that they were exposed to it because of some familiarity with the message source. There are several potential outside influences that might cause individuals to be drawn to a treatment or control group in a quasi-experiment. It is critical to recognize that these influences cannot be controlled for to the same degree that they could be in a true experiment.

However, this is not to suggest that quasi-experiments are somehow inferior to true experiments. Both true and quasi-experiments are useful to the extent they are suited to the study in which they are implemented and optimize the resources available to the researcher. In this regard, it is important to note that both design types are comprised of more refined research designs that are based on how the experimental manipulation (treatment) is administered and the point at which the researcher can measure salient outcomes in the experimental process. Table 1 includes examples of some true experimental and quasi-experimental research designs.

Table 1: Experimental and Quasi-Experimental Research Design Examples

True Experimental Design Examples	• Pre-test/post-test design (without a control group) • Pre-test/post-test design (with a control group) • Post-test only design (with control group) • Solomon Four-Group Design
Quasi-Experimental Design Examples	• Non-equivalent groups design • Proxy pre-test design • Switching-replications design • Regression point-displacement design

To explore the utility of some of these research designs in terrorism studies, the following section will discuss potential areas of inquiry that could benefit from the use of experimental or quasi-experimental methods. In the course of discussions, the section also describes the organization and implementation of some of these design types in greater detail, as well as some challenges a researcher may encounter in operationalizing them. Note, however, that a comprehensive discussion of all experimental and quasi-experimental designs is beyond the scope of this chapter. The interested reader can find detailed descriptions and illustrative examples of all the aforementioned experimental and quasi-experimental designs in a January 2019 research brief completed for the International Centre for Counterterrorism at the Hague.[3]

3 Kurt Braddock, *A Brief Primer on Experimental and Quasi-Experimental Methods in the Study of Terrorism*, ICCT Policy Brief (The Hague: International Centre for Counter-Terrorism - The Hague, January 2019). Available from https://icct.nl/wp-content/uploads/2019/01/ICCT-Braddock-Brief-Primer-on-Experimental-Methods-Study-of-Terrorism-January2019.pdf.

EXPERIMENTATION AND QUASI-EXPERIMENTATION IN TERRORISM STUDIES

Opportunities and Challenges

For several years, researchers have bemoaned a lack of primary data available to answer salient questions about terrorism and political violence. Although the use of primary data sources has become more prevalent within terrorism studies in recent years, a significant number of studies still rely on secondary data sources. Unfortunately, many studies also continue to rely on speculation.

To explore the extent of this problem, Bart Schuurman evaluated the methodological approaches employed in studies appearing in nine prestigious peer-reviewed journals that focus on terrorism and political violence between 2007 and 2016.[4] Schuurman demonstrated that the use of primary data sources grew more popular in that time frame; by 2016, nearly 60% of all studies appearing in the nine journals featured primary data, representing an increase of more than 10% from a decade prior. However, only 22% of the studies based on primary data between 2007 and 2016 featured any statistical analyses of the data. Of these statistical studies, more than two-thirds used statistics simply to describe the prevalence of a phenomenon. They did not feature inferential statistical analysis, which allows for the extrapolation of research findings to the larger populations from which samples are drawn. All told, Schuurman showed that only about 7% of all papers published in the nine leading terrorism journals featured the use of methods that produced inferential statistical analyses. These results clearly suggest there is ample room for the use of methods that produce data for inferential analyses.

As I have argued elsewhere, experimental and quasi-experimental methods can produce data on which inferential statistical analysis can be applied.[5] However, the question remains as to what areas of empirical inquiry would be best served by these methodological approaches and, relatedly, what sorts of challenges researchers will face in exploring those areas. This section describes two areas of terrorism research that could benefit from experimental or quasi-experimental methods. First, it explores the potential use of experimental methods to empirically investigate the effects of terrorist-produced material. Second, it raises the possibility of using quasi-experiments to evaluate various interventions intended to challenge terrorist ideologies. The section also highlights specific study designs that can be employed to optimally address relevant research questions and discusses some of my own experiences overcoming practical and methodological challenges in studying each.

4 Bart Schuurman, "Research on Terrorism, 2007-2016: A Review of Data, Methods, and Authorship," *Terrorism and Political Violence* (2018).

5 Braddock, *A Brief Primer on Experimental and Quasi-Experimental Methods in the Study of Terrorism.*

Using Experiments to Evaluate the Effects of Exposure to Terrorist Material

Within the field, there is a significant body of research on terrorist propaganda. Most of this work takes the form of content analyses intended to explain the inherent themes of different terrorist groups' stated ideologies,[6] deduce terrorists' intentions from their language style,[7] or explore how terrorist propaganda is used to achieve strategic goals.[8] Other areas of research include describing how terrorist propaganda is policed on the internet,[9] identifying extremist networks based on propaganda output,[10] predicting terrorist activity from a group's propaganda,[11] and using different rhetorical analysis tools to gain a deeper understanding of terrorist language.[12]

Each of these lines of research contributes to our knowledge about terrorist propaganda and its effect on audiences, governments, and rival groups. However, there has been little to no empirical work to evaluate the psychological effects of terrorist propaganda at the individual level. In other words, terrorism researchers have yet to employ methods that empirically demonstrate whether and how terrorist propaganda affects its audiences psychologically. This critical avenue of research can be effectively pursued with true experimentation.

When researchers have access to research participants with which they can test the efficacy of terrorist messaging, they can use several true experimental designs. First, a standard pre-test/post-test design with no set control group can provide some information about the effects of terrorist stimuli. In this research design, there is only a single condition into which participants are allotted. Though this seems to be contradictory to the spirit of experimentation—comparing a treatment group's responses to a control group's responses—a simple pre-test/post-test design has a no-treatment control built into it. In a pre-test/post-test study evaluating the effects of terrorist material, the researcher would gauge participants' responses on outcome measures at two points in time: before and after exposing participants to the

6 E.g., James P. Farwell, "The Media Strategy of ISIS," *Survival: Global Politics and Strategy* 56, no. 6 (2014): 49–55.

7 E.g., Max Abrahms, Nicholas Beauchamp, and Joseph Mroszczyk, "What Terrorist Leaders Want: A Content Analysis of Terrorist Propaganda Videos," *Studies in Conflict & Terrorism* 40, no. 11 (2017): 899–916.

8 E.g., Samantha Mahood and Halim Rane, "Islamist Narratives in ISIS Recruitment Propaganda," *The Journal of International Communication* 23, no. 1 (2017): 15–35.

9 E.g., Javier Argomaniz, "European Union Responses to Terrorist Use of the Internet," *Cooperation and Conflict* 50, no. 2 (2015): 250–68; Mehmet Nespi Ogun, "Terrorist Use of the Internet: Possible Suggestions to Prevent the Usage for Terrorist Purposes," *Journal of Applied Security Research* 7, no. 2 (2012): 203–17.

10 E.g., Jytte Klausen, Elaine Tschaen Barbieri, Aaron Reichlin-Melnick, and Aaron Y. Zelin, "The YouTube Jihadists: A Social Network Analysis of Al-Muhajiroun's Propaganda Campaign," *Perspectives on Terrorism* 6, no. 1 (2012). ; Akemi Takeoka Chatfield, Christopher G. Reddick, and Uuf Brajawidagda, "Tweeting Propaganda, Radicalization and Recruitment: Islamic State Supporters' Multi-Sided Twitter Networks," in J. Zhang and Y. Kim, eds., *Proceedings of the 16 Annual International Conference on Digital Government Research: Digital Government and Wicked Problems: Climate Change, Urbanization, and Inequality* (New York: ACM, 2015): 239–49.

11 Stephen G. Walker, "Anticipating Attacks from the Operational Codes of Terrorist Groups," *Dynamics of Asymmetric Conflict* 4, no. 2 (2011): 135–43.

12 James W. Pennebaker, "Using Computer Analyses to Identify Language Style and Aggressive Intent: The Secret Life of Function Words," *Dynamics of Asymmetric Conflict* 4, no. 2 (2011): 92–102.

material. This research design treats the entire sample as both the control group (i.e. responses provided before stimulus exposure) and the treatment group (i.e. responses provided following the stimulus exposure). The researcher would then compare the post-exposure responses to the pre-exposure responses to approximate the effect of the treatment.

A similar design—a pre-test/post-test design with a control group—is structured in a similar fashion but includes a second condition in which participants are not exposed to terrorist material. Both the treatment and control groups would provide responses to outcome measures before the former is exposed to terrorist material. Following the exposure, both groups are again measured on salient outcome variables. By structuring the experiment this way, a researcher can compare the treatment group's post-test scores to two other values: the treatment group's pre-test scores (as in the standard pre-test/post-test design) or the control group's post-test scores. Although this may seem redundant, there are benefits to having both comparisons. If the researcher is concerned that participants had been sensitized to the purpose of the study and provided responses to outcome measures based on what they believed were the "right" answers, they can compare the post-test scores of the two groups to investigate the possibility. Alternatively, if the researcher is concerned that assignment into the two conditions was not random (and the groups are therefore not equivalent), they can revert to comparing the treatment group's post-test scores to its pre-test scores.

When a researcher is concerned about the respondent sensitization to the purpose of a study resulting from participants' exposure to a pre-test, a post-test only design can be useful. In this kind of experiment, the researcher would randomly assign participants into two conditions, one in which participants are exposed to terrorist material and one in which they are not. After exposing the treatment group to the terrorist material, both groups provide responses to outcome measures. This allows the researcher to evaluate the psychological effects of the terrorist material on the treatment group relative to the responses of the control group, who serve as the baseline for measurement.

The creation and implementation of these design types is relatively straightforward. However, they, and other true experimental designs intended to measure the effects of terrorist material, share a key challenge. To effectively evaluate the impact of terrorist material on vulnerable audiences using true experimental methods, researchers must expose audiences to that material in an ethical way that minimizes the likelihood of the propaganda causing psychological harm to participants and its potential contribution to radicalization processes.

Research suggests that simple exposure to terrorist material is likely not sufficient in itself to motivate an individual to seek out opportunities to engage in political violence.[13] However, the potential for such

13 For example, research on ISIS propaganda has shown that its efficacy is driven not exclusively by the content in the messages, but by how well the group targets recruits who are prone to those messages. That is, the effectiveness of ISIS propaganda hinges on the interaction between message content and how well that content addresses the needs (e.g., need for identity) of specific audience members. See, for instance, Dylan Gerstel, "ISIS and Innovative Propaganda: Confronting Extremism in the Digital Age," *Swarthmore International Relations Journal* 1 (2016): 1–9.

material to contribute to radicalization processes[14] often leads to concern—both on the part of the researcher and the Institutional Review Boards that govern their research—that unmitigated presentation of terrorist propaganda to participants can lead those participants to seek out the groups mentioned in the material. Luckily, there are multiple strategies that can help reduce the likelihood of this occurrence. In coordination with the Institutional Review Board (IRB) at Penn State University, I have employed three such strategies, each designed to make it difficult, if not impossible, for a research participant to pursue opportunities to support the group that produced the material used in treatment conditions.

The first and simplest solution to avoiding this problem involves masking the name of the terrorist group if it appears in the stimulus material. By hiding the group's name outright, it removes the possibility that research participants can seek out information about that group following their participation in the study. For instance, in one study I evaluated the persuasive efficacy of propaganda produced by the National Alliance, a racist, white-nationalist group. I retained the ideological statements included in the group's messages but removed any information from the stimulus that might allow participants to seek further information about the group itself. In this way, participants were exposed to National Alliance propaganda, but could not identify the National Alliance as the source.

A similar solution involves using stimulus material from terrorist groups that no longer exist. Using this strategy, researchers can reveal the name of the group if it suits the study's needs without risking participants' joining that group because of the persuasive strength of their propaganda. In the same study as referenced above, another treatment condition involved exposing participants to propaganda from the Weather Underground Organization (WUO). Even with the knowledge that the propaganda came from the Weather Underground, research participants could not seek out members of the group; it disbanded in 1977.

Although this strategy circumvents the possibility that message recipients would seek out the group that produced the material to which they were exposed, researchers may be concerned that participants could seek out contemporary groups that espouse similar ideologies, engage in a lone-actor attack on behalf of the ideology they were exposed to, or seek to form their own extremist group. Though this is a nonzero risk, there are some psychological fail-safes to prevent participants from doing so. Most notably, the effort required for participants to apply their experience with the extremist propaganda to a search for other, similar groups (or the formation of their own) is likely great enough to prevent them from doing so. Of course, close consultation with the researcher's IRB is critical. The IRB is uniquely suited to gauging the degree to which the risk of these negative outcomes outweighs the benefits of the results produced by the research in question.

Finally, should the researcher feel it necessary to attribute statements or actions to a specific terrorist entity, it may be necessary to name one in the experiment's stimulus materials. In this case, the

14 Kurt Braddock, "The Utility of Narratives for Promoting Radicalization: The Case of the Animal Liberation Front," *Dynamics of Asymmetric Conflict* 8 (2015): 38–59.

researcher can create a terrorist group attributed to the treatment content. Using this strategy, the researcher makes up a name for a fictitious group, replacing the name of the real group in the treatment with that of the fake one. By using this strategy, the researcher provides participants with no outlet to pursue following their exposure to the propaganda—the group does not exist.

To illustrate, in a study I performed evaluating the persuasiveness of terrorist propaganda to audiences of different types, I attributed a narrative produced by Hamas to a group I called the "Cerbenia Freedom Alliance." I chose this fictitious name after running a pilot test of several potential names that I wanted participants to find geographically and culturally ambiguous. I did not want participants to attribute the group's name to any specific culture, ethnicity, or ideology, so I presented pilot participants with 10 candidate names and asked them to report their assumptions about (a) the group's geographic location, (b) the ethnicity of the group's members, and (c) other cultural factors. Of the 10 names, the "Cerbenia Freedom Alliance" option produced the greatest variation across the three response sets—making it the most ambiguous.

These three strategies—used together or independently—can help mitigate the possibility of terrorist stimulus material's persuasive appeal leading to action on the part of research participants. That said, it is critical to recognize that exposing research subjects to inherently persuasive ideological material (which terrorist propaganda is designed to be) can trigger interest in the ideology that underpins that material, regardless of the researcher's efforts to prevent it. The three strategies outlined above may protect against participants seeking out opportunities to support the groups that produced the treatment material. However, the ideas that serve as the basis for that material may also be fundamental to other groups' ideologies—groups that participants could seek out (or support through the performance of a lone-actor attack) if they are inspired by the treatment to which they were exposed.

Given this risk, it is critical that any researchers who expose participants to terrorist material also engage in a comprehensive debriefing process designed to counteract the persuasive appeal of that material. It is strongly recommended that the researcher closely coordinate with their IRB to produce an effective debriefing procedure. Typically, a debrief will overtly reveal the purpose of the study to participants, thereby breaking the illusion of the cover story to which participants were exposed. Following this revelation, the debrief should provide the participants with information that allows them to contact the researcher or the institution's Office of Research Protections (ORP) in the event they feel as though they have been harmed in any way by virtue of their participation.

In CVE studies, it would benefit researchers to explicitly warn participants that they may experience psychological changes in response to their participation, and if that occurs, they should contact the researcher or the ORP immediately. This debrief can be a deciding factor in whether the IRB decides that the study's benefits outweigh its potential risks. More importantly, however, it is part of a system of tools intended to ensure that a CVE study is performed as safely and ethically as possible. For more information on this topic, see the section titled "A Note on the Ethics of Experimentation and Quasi-Experimentation in CVE" below.

Using Quasi-Experiments to Evaluate Counter-Radicalization and De-Radicalization Interventions

As indicated above, performance of true experiments requires the researcher to guarantee that participants can be randomly assigned to treatment and control conditions to account for variation in factors that could affect study outcomes. By randomly assigning participants to conditions, a researcher can be (reasonably) sure that these confounding variables are evenly and normally distributed within all study conditions, thereby ensuring that their respective influences on outcome variables are controlled.

Unfortunately, the analysis of phenomenon in terrorism studies generally (and CVE specifically) often precludes the kind of control that permits true experimentation. Most research on CVE is performed in real-world contexts on real-world subjects who are not amenable to random assignment into groups. When a researcher is unable to randomly assign participants to conditions, quasi-experimental methods can be useful.

Quasi-experimental methods typically involve choosing a treatment group and comparing it to a control group that is as closely matched to the treatment group as possible. Despite matching the treatment group to the control group in terms of salient characteristics (e.g., demographic variables), the groups cannot be assumed to be equivalent because they were not randomly assigned to their respective conditions. To illustrate, let us consider a few contexts in which quasi-experimentation might be useful.

In contrast to the studies described in the previous section, where the primary focus was to experimentally evaluate the potential negative effects associated with exposure to terrorist material, some researchers may be interested in assessing the potential positive effects associated with interventions designed to challenge terrorist ideologies. The last decade witnessed a substantial increase in research on programs to prevent the adoption of radical beliefs and/or attitudes or engagement in violent activity (often referred to as counter-radicalization) or persuade participants to abandon their commitment to terrorist ideologies (often referred to as deradicalization).

Existing counter-radicalization research has focused heavily on critiquing government policies aimed at preventing the assimilation of terrorist ideologies (e.g. the UK's Prevent initiative)[15] and describing budding counter-radicalization campaigns.[16] Emergent private organizations such as Moonshot CVE[17] and the

15 E.g., Christopher Baker-Beall, Charlotte Heath-Kelly and Lee Jarvis, eds., *Counter-Radicalisation: Critical Perspectives* (London, UK: Routledge, 2015); Anthony Richards, "The Problem with 'Radicalization': The Remit of 'Prevent' and the Need to Refocus on Terrorism in the UK," *International Affairs* 87, no. 1 (2011): 143–52;

16 See, for example, Abdul Basit, "Countering Violent Extremism: Evaluating Pakistan's Counter-Radicalization and De-Radicalization Initiatives," *IPRI Journal* 15, no. 2 (2015): 44–68; Tom Pettinger, "De-Radicalization and Counter-Radicalization: Valuable Tools Combating Violent Extremism, or Harmful Methods of Subjugation," *Journal for Deradicalization* 12 (2017); Omar Ashour, "Online De-Radicalization? Countering Violent Extremist Narratives: Message, Messenger and Media Strategy," *Perspectives on Terrorism* 4, no. 6 (2010): 15–19.

17 http://moonshotcve.com/

Stabilisation Network[18] have also become active in the realm of countering violent extremism, developing and implementing their own programming to challenge terrorist messaging.

In the case of deradicalization, researchers have expended a substantial amount of effort to evaluate government-run programs intended to rehabilitate those who have been arrested for terrorism-related offenses. Research on programs in the Middle East,[19] Europe,[20] Southeast Asia and the South Pacific,[21] among other regions, has grown increasingly prevalent since the first initiatives emerged in the mid-2000s. Although most of the research on deradicalization describes extant programs, some researchers also sought to inform future efforts.[22]

Notably absent from the research on counter-radicalization and deradicalization efforts are empirical studies on the psychological effects of the practices that comprise these programs. This is troubling, given that the relative success of counter-radicalization efforts and deradicalization programs hinge on the psychological effects they exert on their participants. Researchers might effectively fill this research gap using quasi-experimentation to determine whether and how deradicalization and/or counter-radicalization efforts achieve their intended outcomes.

In choosing and implementing a quasi-experimental study design to gauge program effectiveness, the researcher must fulfill their responsibility to not only limit potential psychological harm to program participants, but also ensure that any psychological benefits derived from intervention materials are afforded to all participants involved in the study. This can prove difficult if a researcher wishes to test the efficacy of an intervention against a control group that does not receive that intervention. Luckily, there is a study design that ensures the validity of the study's findings, exposes all research participants to stimulus material that could produce positive psychological outcomes, and allows for the longitudinal evaluation of an intervention treatment's efficacy. This study design, which has long-been used in medi-

18 https://www.stabilisation.org/

19 John Horgan and Kurt Braddock, "Rehabilitating the Terrorists? Challenges in Assessing the Effectiveness of De-radicalization Programs," *Terrorism and Political Violence* 22, no. 2 (2010): 267–91; William Sheridan Combes, "Assessing Two Countering Violent Extremism Programs: Saudi Arabia's PRAC and the United Kingdom's Prevent Strategy," *Small Wars Journal* (2013). Available from https://smallwarsjournal.com/jrnl/art/assessing-two-countering-violent-extremism-programs-saudi-arabia's-prac-and-the-united-king; Marisa L. Porges, "Deradicalisation, the Yemeni Way," *Survival: Global Politics and Strategy* 52, no. 2 (2010): 27–33.

20 E.g., Daniel Koehler, "Family Counselling, De-radicalization, and Counter-Terrorism: The Danish and German Programs in Context," in Sara Zeiger and Anne Aly, eds., *Countering Violent Extremism: Developing an Evidence-Base for Policy and Practice* (Perth, Western Australia: Hedayah and Curtin University, 2015): 129–36; Jean-Luc Marret, *Prison De-radicalization and Disengagement: The French Case,* (London: International Centre for the Study of Radicalisation, ICSR Project on Deradicalization in Jail, 2009).

21 E.g., Milda Istiqomah, "De-Radicalization program in Indonesian Prisons: Reformation on the Correctional Institution," paper presented at the 1st Australian Counter Terrorism Conference, Edith Cowan University, Perth, Australia, December 5-7, 2011; Clarke R. Jones and Resurrecion S. Morales, "Integration versus Segregation: A Preliminary Examination of Philippine Correctional Facilities for De-Radicalization," *Studies in Conflict & Terrorism* 35, no. 3 (2012): 211–28.

22 E.g., Stefanie Mitchell, "Deradicalization: Using Triggers for the Development of a US Program," *Journal for Deradicalization* 9 (2017): 101–25; Jessica Stern, "Mind over Martyr: How to Deradicalize Islamist Extremists," *Foreign Affairs* 89, no. 1 (2010): 95–108; John Horgan and Mary Beth Altier, "The Future of Terrorist De-Radicalization Programs," *Georgetown Journal of International Affairs* 13, no. 2 (Summer/Fall 2012): 83–90.

cal and educational studies where provision of intervention benefits to all participants is critical, is called the switching-replications design. [23]

In a study featuring a non-equivalent switching-replications design (i.e. participants are not randomly assigned to conditions), each condition serves as both treatment and control. To illustrate, let us assume that we want to evaluate the degree to which a psychological counseling program reduces beliefs and/or attitudes consistent with a terrorist ideology. In a two-phase switching-replications quasi-experiment, the researcher would measure all participants' beliefs and attitudes prior to exposing half of them (Group A) to the counseling intervention. Following this, the researcher would again measure all participants' beliefs and attitudes to compare Group A's responses to those who did not receive counseling in the first phase (Group B). Then, participants in Group B would receive the counseling intervention and participants in Group A would not. The researcher would again measure all participants' beliefs and attitudes and compare Group B's responses (i.e. the treatment group in Phase 2) to Group A's (i.e. the control group in Phase 2).

By structuring the study in this fashion, the researcher can (a) guarantee that all participants would receive the benefits associated with the psychological counseling intervention, (b) measure the effect of the counseling intervention on the participant groups, and (c) determine whether the intervention's effects persisted over time. The switching-replication quasi-experimental design is particularly useful for the evaluation of extant counter-radicalization practices and deradicalization programs, given the demand for empirical data supporting (or refuting) the effectiveness of these programs' practices. Although researchers can use a switching-replications design in a true experiment by isolating and testing the specific activities these programs undertake, coordination with extant programs to quasi-experimentally test their practices as part of their real-world interventions is a rare opportunity to gather primary data from the interventions intended participant targets.

The switching-replication design has several advantages for the study of CVE intervention programs. However, researchers should be aware of potential difficulties associated with implementing this type of a quasi-experiment. As noted above, researchers can gather valuable data from real-world targets of CVE interventions by working closely with governments and NGOs that design and execute counter-radicalization and deradicalization programs. Unfortunately, some entities, particularly governments, are reluctant to allow for empirical investigation into their CVE practices.[24] Without viable connections to individuals in governmental and non-governmental organizations implementing counter-radicalization or deradicalization initiatives, gaining access to targeted participants can be exceedingly difficult.

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23 E.g., Theodoros Pesiridis, Panayota Sourtzi, Petros Galanis, and Athena Kalokairinou, "Development, Implementation and Evaluation of a Disaster Training Programme for Nurses: A Switching Replications Randomized Controlled Trial," *Nurse Education in Practice* 15, no. 1 (2015): 63–67.

24 In particular, government-regulated de-radicalization programs have been notoriously non-transparent about their practices and the effectiveness of those practices. Most evaluations of the programs' efficacy come from the governments themselves, and are often founded on unclear benchmarks for success, nebulous definitions for "de-radicalization," and unreasonable claims of effectiveness. See John Horgan and Kurt Braddock, "Rehabilitating the Terrorists?" for a synopsis of these issues.

Finally, the very nature of the switching-replications design requires that the researcher make observations for all treatment and control groups at several points in time. As such, to employ this design either experimentally or quasi-experimentally, researchers will need to ensure they have sufficient time to expose all participants to the intervention in question and take corresponding measurements.

A NOTE ON THE ETHICS OF EXPERIMENTATION AND QUASI-EXPERIMENTATION IN CVE

Unlike research methodologies that have been more prevalent in the study of terrorism and related issues, the use of controlled experimentation and quasi-experimentation requires a careful consideration of several ethical issues that may arise. Although these considerations are important in all research domains, they are doubly critical in terrorism studies where an inattention to certain details can result in dangerous outcomes.

Experimentally testing the efficacy of terrorist propaganda requires exposing participants to some form of it, which can risk inducing belief and attitude changes in participants consistent with the ideologies we mean to challenge. Exposing participants to material (or counter-messaging) that depicts or describes violent scenes or scenarios can impose psychological strain on research participants. Real-world quasi-experimentation with at-risk communities risks criminalizing the individuals that comprise those communities. The ethical researcher must consider these kinds of issues when using experimental methods.

As outlined above, a researcher's first step towards ensuring that a CVE-focused study is performed ethically is to coordinate with his or her IRB University IRBs are trained to evaluate research studies on the basis of the risk posed to participants and the benefits that would result from the study's performance. In this way, IRBs are critical tools for identifying potential risks that the researcher may overlook and ensure that the performance of research does not cause more harm than it solves.

Still, consultation with an IRB and consistency with its guidelines are the bare minimum that researchers should do to guarantee a study's adherence to ethical practices. Although experimental work in CVE is a relatively new prospect, researchers in similar domains (e.g. crime sciences) have used experiments and quasi-experiments to test interventions for years. Terrorism researchers using experimental or quasi-experimental methods would benefit from the experience of scholars from these disciplines. As such, researchers of issues related to CVE may consider involving experts who have dealt with similar ethical issues. Formal research collaborations (including authorships) may not be necessary, but at a minimum, CVE researchers should solicit advice from those with salient experience.

Finally, in addition to relying on external institutions (i.e. IRBs) or individuals (i.e. seasoned researchers) for guidance on how to navigate the waters of performing ethically sound CVE scholarship, CVE researchers can incorporate checks in their study protocols that further protect against negative outcomes for participants. For instance, for studies that risk participants' adoption to extremist beliefs and attitudes,

researchers can engage with research subjects following their participation. The first step in doing so is the aforementioned debrief process, where the researcher not only reveals the purpose of the study, but also provides the participant with contact information in the event they notice changes in their thoughts or behaviors. Depending on the nature of the study, some researchers may go a step further by re-contacting research participants in the future to measure psychological outcomes.

No research study is completely free of risk. However, the risks associated with experimental work in the CVE domain requires meticulous attention to all possible negative outcomes and the development of measures in order to mitigate them. Close coordination with Institutional Review Boards, solicitation of feedback from researchers who have dealt with ethical issues in the past, and the development of measures for gauging respondents' psychological responses to participating in the research represent three ways that this can be achieved.

CONCLUDING THOUGHTS

This chapter sought to introduce researchers of CVE, terrorism, and political violence to experimentation and quasi-experimentation and describe briefly how researchers can employ these methods to answer critical research questions about terrorist messaging and efforts to prevent and counter radicalization. However, the chapter covers only a fraction of the methodological possibilities for researchers who wish to use an experimental or quasi-experimental design to evaluate terrorism-related issues. Interested readers should seek out further literature and guidance on experiments and quasi-experiments to gain a more comprehensive understanding of their designs, benefits, and drawbacks.[25] It is only with a greater understanding of these valuable methodologies that can generate more scientifically-sound data on radicalization, terrorism, and the prevention of both.

25 See Kurt Braddock, "A Brief Primer on Experimental and Quasi-Experimental Methods in the Study of Terrorism"; William M. K. Trochim, "Design." https://socialresearchmethods.net/kb/design.php; Thomas D. Cook and Donald T. Campbell, Quasi-Experimentation: Design & Analysis for Field Settings (Boston, MA: Houghton Mifflin, 1979).

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