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Individual Trauma, Collective Stability:

The Psychological Consequences of Conflict and Forced Migration on Social Cohesion

by

Elizabeth Danielle Herman

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Political Science

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Aila M. Matanock, Chair
Professor Cecilia Hyunjung Mo
Professor Marika Landau-Wells
Professor Ron E. Hassner
Professor Dacher Keltner

Summer 2022

Individual Trauma, Collective Stability:

The Psychological Consequences of Conflict and Forced Migration on Social Cohesion

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by

Elizabeth Danielle Herman

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Abstract

This dissertation examines how the psychological implications of living through conflict and forced migration affect social cohesion. While scholars have begun to test the relationship between trauma exposure, the subsequent psychological distress that can emerge in its aftermath, and various sociopolitical outcomes—including prosociality, group relations, political participation, and institutional trust—they have conceptualized, operationalized, and measured trauma exposure and psychological distress in different ways, often resulting in disparate conclusions.

As the process of living through and responding to trauma exposure has significant heterogeneity at the individual level, I maintain that it should be conceptualized and studied as such. I present the theory of psychological foundations of social cohesion, which posits that individuals' adverse responses to trauma exposure, manifest as psychological distress, lead to changes in social cohesion outcomes. I identify two dimensions of social cohesion: *bonding* social cohesion, which is social cohesion targeted at ingroup members, and *bridging* social cohesion, which is social cohesion targeted at outgroup members. I develop seven hypotheses regarding the variation in how individuals react to living through trauma exposure (H1-H2), how differential responses to trauma shape social cohesion (H3-H6), and how emotion regula-

tion shapes social cohesion (H7). I hypothesize that only a subset of individuals will develop psychological distress in responses to trauma exposure, that there will be variation in the characteristics of that distress, and that different manifestations of psychological distress will differentially affect bonding and bridging social cohesion. I further theorize that individuals whose response to trauma is characterized by *hyperarousal*—commonly referred to as "fight or flight" behaviors—will have lower reported levels of bridging social cohesion, while individuals whose response to trauma is characterized by *hypoarousal*—commonly referred to as "freezing or immobilizing" behaviors—will have lower levels of bridging and bonding social cohesion. I additionally theorize that individuals with increased emotion regulation, defined as the ability to modulate one's emotional responses in a way proportional to stimuli, will have greater reported bonding and bridging social cohesion.

I present three main empirical tests of the hypotheses. The first takes a cross-context approach, assessing cross-national variation in rates of trauma exposure and psychological disorders, as reported by the World Health Organization's World Mental Health Survey Initiative. I find that rates of trauma exposure and psychological disorders vary significantly across countries, and there is a significant positive association between the proportion of a nation's population that reports at least one trauma exposure and the prevalence of mental health disorders, including anxiety and mood disorders. I next estimate associations between individual-level measures of psychological distress and social cohesion, as measured cross-nationally in the second wave of the World Values Survey. The findings provide cross-national support for the expectation that hyperarousal and hypoarousal have differential impacts on social cohesion, such that hyperarousal is significantly negatively associated with bridging social cohesion, while hypoarousal is significantly negatively associated with both bonding and bridging social cohesion.

The second—and primary—test of the theory uses an original panel dataset gathered via a randomized controlled trial (RCT) evaluating the efficacy of *The Field Guide for Barefoot*

Psychologists, a novel psychoeducational program designed to improve emotion regulation and reduce psychological distress among Syrian refugees living in Za'atari Refugee Camp in Jordan. I use the baseline data to assess the prevalence of trauma exposure and psychological distress, as well as associations between baseline levels of psychological distress and social cohesion. I then use the baseline and endline data to evaluate how intervention-driven improvements in psychological distress and emotion regulation are associated with changes in social cohesion. The intervention has a significant effect on both hypoarousal and emotion regulation, leading to a 21.4% improvement in hypoarousal from baseline, and a 18.7% improvement in emotion regulation from baseline; the intervention has no significant effect on hyperarousal. Using a structural equation model, I find that the intervention-driven improvement in hypoarousal is significantly associated with improvements in bonding social cohesion (ingroup trust) and bridging social cohesion (outgroup trust, outgroup anxiety, and perceived communal security), while the improvement in emotion regulation is significantly associated with improvements in bonding social cohesion (ingroup trust) and bridging social cohesion (outgroup trust and perceived communal security). These findings indicate that interventions designed to improve individual psychological well-being may have secondary improvements on community-relevant factors via the theorized relationship between psychological distress and social cohesion.

The third empirical test uses data from the Survey of War Affected Youth (SWAY) to provide another individual-level test of the theory in a highly different context. The SWAY data is a large-scale survey of 1360 conflict-affected youth in Kitgum and Pader districts in northern Uganda. I assess variations in psychological distress based on degree and type of trauma exposure, finding that forced violence and sexual abuse are the two types of trauma exposure most strongly positively associated with both hyperarousal and hypoarousal. I then estimate associations between psychological distress and social cohesion.

From these empirical tests I draw three key conclusions. First, trauma exposure cannot be

seen as a uniform experience, and neither can responses to trauma exposure. As such, social science research must ensure that we are conceptualizing and measuring each in a way that reflects the complexity and heterogeneity in both trauma exposure and psychological distress. The theory on psychological foundations of social cohesion provides an informative framework for conceptualizing psychological distress by differentiating between responses characterized by hyperarousal and hypoarousal. Second, the results provide empirical support for the hypotheses derived from the theory of psychological foundations of social cohesion regarding psychological distress. Specifically, they support the expectations that hyperarousal and hypoarousal have differential effects on social cohesion, that hyperarousal is associated with lower reported bridging social cohesion, that among individuals with hyperarousal, those who do not additionally have hypoarousal will have higher reported bonding social cohesion, and that hypoarousal will be associated with lower bonding and bridging social cohesion. Third, the results from the evaluation of *The Field Guide for Barefoot Psychologists* indicate that the relationship between intervention-driven improvements in psychological distress and emotion regulation with social cohesion outcomes is a promising avenue for future inquiry and practice. If these results reflect the theorized underlying relationship, then they would indicate that treatments designed to improve individual mental health are worth investing in not only because of improvements in individual psychological well-being, but because of improvements in social cohesion outcomes, driven by improvements in distress and emotion regulation, relevant to the wider community.

This dissertation project makes both theoretical and empirical contributions related to how different manifestations of psychological distress that can emerge in the aftermath of trauma exposure affect social cohesion. It offers important contributions to the understanding of how mental health contributes to peace and stability in communities affected by conflict and forced migration, new avenues for academic and practical inquiry, and insights into broader implications and policy strategies regarding mental health and social cohesion.

To Dad and Mom.

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Acknowledgments

This dissertation project has been supported by an incredible community, for whom I am forever grateful. To my dissertation committee at Berkeley: Aila Matanock, for serving as chair of this work, for always believing in its potential, and for providing invaluable guidance and encouragement throughout its many iterations; Cecilia Hyunjung Mo, for modeling how to conduct applied inquiry into complex problems, for providing community and support throughout, and for the encouragement to iterate and strengthen developing ideas; Marika Landau-Wells, for pioneering the path that made this project possible, and for always giving the best advice; Ron Hassner, for your excitement for and engagement with this work, and for always offering a cup of coffee and an open door; and Dacher Keltner, for providing a foundation of knowledge as I began to delve into the realm of psychology, for awe-inspiring research, and for offering the most heartening encouragement in the continued development of this work.

To my academic advisors across disciplines and institutions, who have provided a wonderful community to learn from and grow with: Adam Brown, for inviting me into the Trauma and Global Mental Health Lab and providing an academic home in New York City; Wendy D'Andrea, for offering a new perspective on understanding trauma and its implications; Beth Simmons, for the close readings, thoughtful feedback, and innovative suggestions for future avenues of inquiry; Ryan Brutger, for offering continued encouragement and feedback on the iterations of this project; Susan Hyde, for creating a space at Berkeley for work that sits at the intersection of international relations and comparative politics; Guy Grossman, for being an advocate and for welcoming me into new spaces; Dara Kay Cohen, for providing a model of ethical inquiry; and the Harvard Program in Refugee Trauma community, for the inspiration and community across time and time zones.

To my colleagues and peers at Berkeley, who were a source of encouragement, joy, and support throughout grad school: the Ladies of Science, the group chat that single-handedly

made an often-isolating endeavor feel quite the opposite; Justine Davis, for being a guiding force and a constant sounding board; Allison Grossman, for being the ultimate pomodoro-partner and a source of both focus and mirth; Laura Jákli, for the incomparable combination of drive and generosity; Whitney Mello, for being a encouraging and radiant presence always; Catlan Reardon, for crossing the finish line together; The Faffers, for being a family on the left coast when home felt too far away; Andrew McCall, for the most joyful laugh and the kindest heart; Alexander Sahn, for always reminding us to never stop exploring; Neil O'Brian, for the commitment to the work and the long chats during the breaks from it; Jake Grumbach, for the grounded and inspired research (and for the tunes); and Orion Davis-Klein, for ushering in the next generation and reminding us to find the joy in the everyday.

To the team at Beyond Conflict, Questscope, and The New School for Social Research that worked tirelessly on *The Field Guide for Barefoot Psychology* study: Michael Niconchuk, for his vision in the design of *The Field Guide for Barefoot Psychology*; Vivian Khedari DePierro, Wendy D'Andrea, and Sarah Beranbaum for their contributions to study design and implementation; Tim Phillips for his support and leadership; Basma Jaber for her conscientious oversight and coordination; and Maiada Qazaq, Mawadda Al-Akkad, Amani Zughbar, Mohammad Kheir Refai, Sahem Al-Nimr, Hamza Al-Nimr, and Ahmad Joukhan for their contribution to data collection. The project would not have been possible without the leadership of local partners, including those who drew from on own experiences as refugees and residents of Za'atari to thoughtfully plan and coordinate recruitment and data collection—Zakaria Al-Kareem, Abdulkareem Al-Hassan, Ahmad Abu Nimreh, Zaher Al-Deiri and Ziad Jazzazi—and to facilitate the workshops—Abdallah Khasawneh, Mohanad Al-Hiraki, Mohammad Al-Rajabi, Mohamad Al-Ahmad, Shireen Al-Hiraki, Merfat Al-Hamad, Kafa Eweijan, and Zad Al-Kheir Al-Zoubi. And to the individuals who participated in the intervention and data collection, without whom the study would have been impossible.

To my mentors at Tufts University that started me on the path that led me to Berkeley:

Kelly Greenhill, who first taught me how to build a research project and who read many, many pages of my trying to follow in her footsteps; Sherman Teichman, whose boundless love and commitment to his work and community has led to untold synergies; Heather Barry, whose unparalleled dedication to her students has shaped and continues to shape thousands of lives; and Gary Knight, who always emphasized the importance of asking questions and seeing beyond the edges of the frame.

To the dedicated research assistants who have contributed to this dissertation via the Undergraduate Research Apprentice Program at Berkeley and the Institute for Global Leadership at Tufts—Siwaar Abouhala, Mel Britt, Andres Borjas, Jay Miguel Fonticella, Avani Kabra, Hasan Abdel-Nabi, Cori Schumacher, Himani Someshwar, Dawson Stout, Sofia Abramsky-Sze, Iman Qureshi, and Cami Uyesato—not only did you provide incredible research assistance over the course of this project, but you offered inspiration about the future of research, community during isolated times, and insights borne from your unique perspectives and interests.

This dissertation was made possible with support provided by the University of California Institute on Global Conflict & Cooperation, the John L. Simpson Memorial Research Fellowship, the Ford Foundation, and Beyond Conflict's Innovation Lab. I'm immensely grateful to the feedback I received from the participants at numerous workshops and conferences where I was able to share iterations of this project, including: the American Political Science Association Annual Meeting; the Human Security, Violence, & Trauma Conference; the InterGroup Relations Workshop; the Penn Development Research Initiative; the Perry World House Borders & Boundaries Lab Meeting; the UC Berkeley Monday International Relations Thought Series Colloquium; and the Center for Effective Global Action Workshop.

To my friends who cheered me on and sent support while I was away for fieldwork trips and writing seclusions: Chelsea, Jeff, Marysa, Andrew, Kate, Sara, Ryan, Lori, Julia, and Natalie. To Chris, whose support and enthusiasm for this project has kept it grounded in the

human questions central to the project. To Cantwell, whose love is a buoy I feel continually lucky to be blessed with. And especially to Dr. Laura Adams, who not only provided invaluable feedback and support as I worked through the theoretical sections of this project, but who always provided the emotional footing to move forward with the ideas and through the doubts that felt insurmountable.

To my grandparents—Grandma, Pop, Nana, and Grampy—whose support for and belief in the power of education carried through generations and was a source of inspiration to the children they raised and the children those children raised. To Camille Westney, who has always been a shining voice of inspiration to keep pushing and to always believe in myself.

To my incredible extended family, especially The Family Brunch Crew, who are a source of both side-splitting laughter and boundless support, and who did an incredible job of lifting spirits even during the darkest times of the pandemic. To Richard D'Amore and Jennifer Eckert, whose support of education is unparalleled and without whom this journey would not have been possible. To Deanna D'Amore, whose friendship and family suppers mean more than I can say. To Paula Binder, Lewis Rubin, and Ben Rubin, for the warmest of welcomes and the immense support from the get-go.

To my Mom and Dad, for whom there are no words to express how deeply grateful I am: for the example you have set, the ways you have modeled love of work and lifelong learning, and your constant willingness and excitement to support and cheer me on at each and every stage. I am forever grateful.

And finally, to Sam and Eleanor, the brightest of lights throughout this process. To Eleanor: your insistence on exploring the world and your ability to make me pause, look up, and find joy was an immense gift. And to Sam: who ushered in a realm of new possibilities, who always believed in this work and my ability to undertake it, and who is a source of inspiration and light every day—thank you, forever and always.

Chapter 1

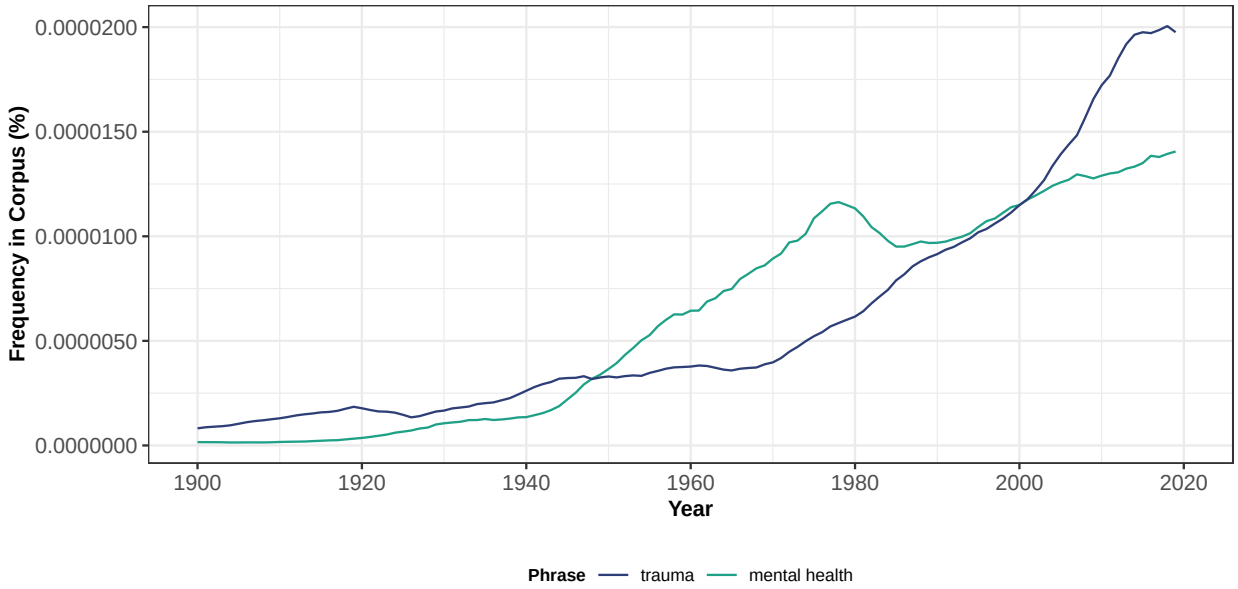
Introduction

> *The science of mental hygiene is one of our newer disciplines, concerned with the human mind and emotions. Even in its present early stage of development, it helps man adjust to his environment, to live in greater harmony with his family, his community, his world. This science of mental hygiene needs urgently to be developed and applied as a basic element in preventing war and destroying the seeds of war. The World Health Organization is, therefore, a collective instrument which will promote physical and mental vigor, prevent and control disease, expand scientific health knowledge, and contribute to the harmony of human relations. In short, it is a powerful instrument forged for peace.*
>
> — Preamble of the Charter for World Health in 1946 after the International Health Conference (Parran 1946)

Awareness of and interest in trauma and mental health has grown significantly in the past decades, both among the general public and in academic research. Figure 1.1 demonstrates the significant rise in the frequency of usage of "trauma" and "mental health" in the largest publicly-available corpus of documents. This interest in better understanding and addressing

trauma and mental health has been further accelerated by the Covid-19 pandemic, which has exacerbated psychological distress globally (Tsamakis et al. 2021). At the beginning of the pandemic, the World Health Organization (WHO) conducted a survey in 130 WHO Member States from June to August 2020, finding that Covid-19 disrupted mental health services in 93% of countries surveyed (WHO 2020), with the greatest impact falling on community-based services (Diseases 2020).

Figure 1.1: Frequency of "trauma" and "mental health" in Google Ngram books corpus



Notes: Plot displays the frequency of each "trauma" and "mental health" in a large corpus of books; generated using Google Ngram (https://books.google.com/ngrams).

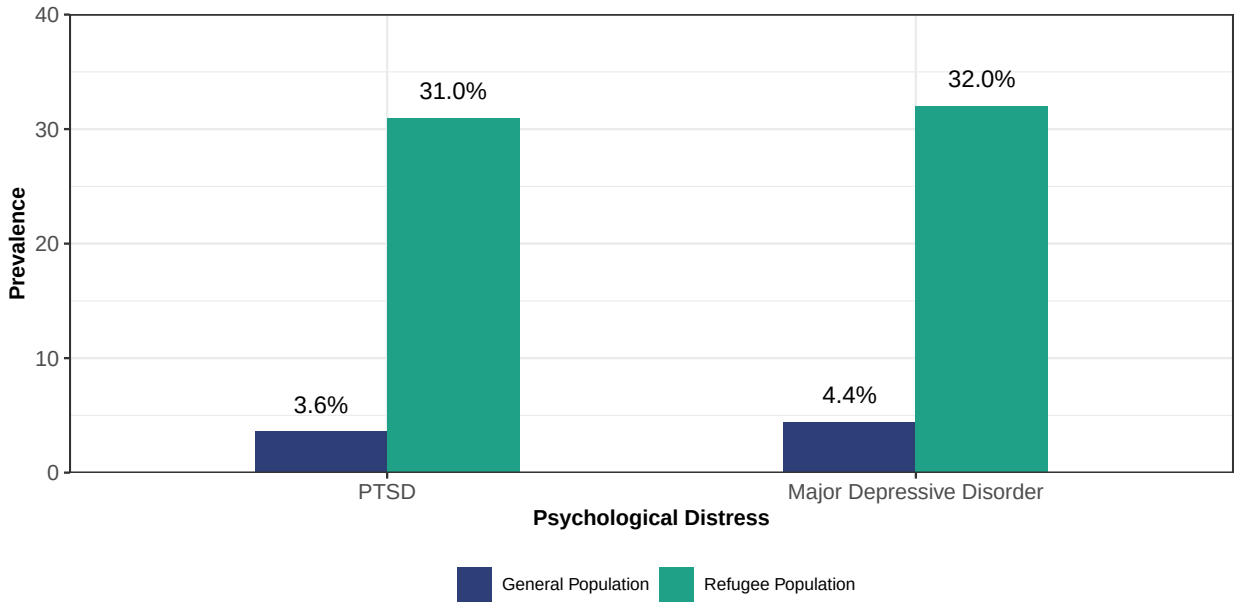
Among those most vulnerable to adverse mental health outcomes are populations affected by conflict and forced migration. Roughly one billion people live in fragile and conflict-affected situations, where they face increased risk of being directly affected by war, economic and social insecurity, and the impacts of climate change (Baier, Kristensen and Davidsen 2021). Further, the level of persons forcibly displaced is at an all-time high; as of June 2022, an estimated 89.3 million people were forcibly displaced worldwide.[1] This includes 27 million

[1] I use the International Organization for Migration (IOM) definition of forced migration, which refers to

refugees, a number that is expected to increase as ongoing civil conflicts are compounded by climate change and rising economic inequality.

It has been widely documented that the experience of living through conflict and forced migration have profound effects on mental health outcomes (Hollifield et al. 2002; Fazel, Wheeler and Danesh 2005), putting persons at increased risk of psychological distress, including post-traumatic stress disorder (PTSD), complex PTSD (CPTSD), depression, and anxiety (Steel et al. 2009). A systematic review of the prevalence of PTSD and major depressive disorder (MDD) in refugees estimates rates of 31.0% for PTSD and 32.0% for MDD (Patanè et al. 2022), compared to the overall global prevalence of PTSD and MDD of 3.6% and 4.4%, respectively (Figure 1.2 (World Health Organization 2017).

Figure 1.2: Mental health prevalence rates, general versus refugee populations



Notes: Prevalence rates on psychological disorders among refugee population from Patanè et al. (2022), and among general population from World Health Organization (2017).

How do the psychological implications of living through conflict and forced migration in turn

"migratory movement which, although the drivers can be diverse, involves force, compulsion, or coercion" (UNHCR 2022*h*). This overarching category includes refugees, displaced persons, and asylum seekers.

affect social cohesion? Given the significant proportion of the world's population impacted by conflict and displacement, this question has deep importance and implications for supporting stable and peaceable communities. Presently, there is little consensus regarding the impact of living through trauma exposure and the subsequent psychological distress that can arise in its aftermath on sociopolitical dynamics. While scholars have begun to test relationships between trauma exposure, psychological distress, and sociopolitical outcomes (Blattman and Miguel 2010; Buvinic et al. 2013; Becker and Ferrara 2019; Davenport et al. 2019; Godefroidt 2022), they have conceptualized, operationalized, and measured trauma exposure and psychological distress in different ways, often resulting in disparate conclusions.

To date, studies on trauma exposure in political science have largely focused on the effect of trauma exposure itself (Bauer et al. 2016; Blattman and Annan 2010; Gilligan, Pasquale and Samii 2014). This is due both to the ability to use geolocated data to measure trauma exposure, and due to the ability to structure causal identification strategies around the randomness of being exposed to certain kinds of trauma. Yet, research in psychology has shown that there is significant variation in responses to trauma exposure, with only a subset of those exposed subsequently developing psychological distress (Bonanno and Mancini 2008).

This dissertation takes an interdisciplinary approach, applying insights from psychology research to theorize how the psychological implications of trauma exposure affect social cohesion. I maintain that, as the process of living through and responding to trauma exposure has significant heterogeneity at the individual level, it should be conceptualized and studied as such. I present the theory of psychological foundations of social cohesion, which theorizes that individuals with responses to trauma characterized by *hyperarousal*—commonly referred to as "fight or flight" behaviors—will have lower levels of *bridging* social cohesion, while individuals with responses to trauma characterized by *hypoarousal*—commonly referred to as "freezing or immobilizing" behaviors—will have lower levels of *bridging and bonding* social cohesion. This study contributes to scholarship that examines pathways between trauma

exposure and sociopolitical outcomes, empirically testing how psychological distress characterized by hyperarousal and hypoarousal differentially affects social cohesion.

This dissertation uses *social cohesion*, defined as individual-level attitudes and behaviors that capture the perceived "degree of interconnectedness between individuals" as the outcome of interest (Van der Meer and Tolsma 2014). Social cohesion not only captures dimensions of interpersonal grievance that may lead to conflict, but has also been identified as a key factor in rebuilding and reconciling societies, which is vital in post-conflict and forced migration affected populations. Lack of social cohesion has been identified as a key source of future conflict potential and as a key determinant of reconciliation in conflict's aftermath. Thus, while measured at the individual level, social cohesion has implications for the interpersonal or group level (Mac Ginty 2021).

This chapter proceeds as follows. I first review the existing research on the study of trauma exposure, responses to trauma exposure, and sociopoltical outcomes as it presently exists in conflict and forced migration studies. I then provide an overview of the theory of psychological foundations of social cohesion, highlighting the hypotheses to be tested in this project and the contributions the theory offers to the literature. I outline the empirical strategy used, discuss ethical considerations for research with trauma-exposed populations, and outline the scope of the theory and the empirical tests of the project. I conclude by providing an outline of the manuscript and briefly discussing the origins of the central question of the project.

1.1 The Rise of Micro-Level Research on Violence in the Study of Conflict & Forced Migration

The past two decades in international relations (IR) has seen a significant rise in microfoundational approaches (Solomon and Steele 2017), which are influenced by the comparative

politics subfield and focus on subnational actors as the primary unit of analysis (Balcells and Stanton 2021). This is due to both an increased interest in questions concerning individual behavior and attitudes among populations affected by conflict and forced migration, as well as to innovations in methodological approaches and data collection strategies, including increased use of surveys (Lupu and Michelitch 2018) and experiments (Baldassarri and Abascal 2017; Hyde 2015) in violence-affected field contexts. In a review of microfoundational research in IR journals, Kertzer (2017) notes the sharp rise in articles referencing "microfoundations" published in nine IR journals from 1996 to 2015—from roughly three to 30 articles per year, or a 900% increase—over that time (Kertzer 2017). Extending that same analysis to cover the years 1986 (the first mention of "microfoundations" in those nine journals) to 2021, using the search criteria specified by Kertzer (2017), it is evident that this trend has continued, with an 83% increase to 57 articles in 2021 from 31 articles in 2015, the year in which Kertzer's analysis leaves off.[2]

This microfoundational turn has been especially significant in the conflict studies literature (Blattman and Miguel 2010), as well as in the study of other forms of political violence, including terrorism and violent extremism. This trend has been accompanied by a significant increase in theorizing about and testing of the mechanisms underlying how individual behaviors contribute to conditions for peace and stability.

Within the research on the microfoundations of violence, a seeming contradiction has emerged: while some studies have found that trauma exposure and violence are linked with increased social cohesion and political participation (Blattman 2009; Bellows and Miguel 2009; Koos 2018; Voors et al. 2012), others have found trauma exposure and violence to be linked with decreased social cohesion and increased exclusionary behavior and attitudes (Mironova and Whitt 2018; Grossman, Manekin and Miodownik 2015; Scacco and Warren 2021).

[2]Data on mentions of microfoundations in top IR journals, disaggregated by journal and year, are available in Appendix A, along with a visualization of the data.

There are a number of factors that may account for these discrepancies. The first is whether improvements in cooperation, prosociality, and altruism are measured as directed toward ingroup or outgroup members (White et al. 2012; Bauer et al. 2014; Beber, Roessler and Scacco 2014), and whether outgroups are viewed as neutral or hostile (Hall and Kahn 2020). Given that interpersonal relations differ significantly when interacting with ingroup members and outgroup members, ensuring that outcomes account for the targets of attitudes and behaviors is imperative for accurate measurememt. This consideration of ingroup and outgroup distinctions is especially important in the context of forced migration, where refugees find themselves as perpetual outsiders.

The second factor that may contribute to this discrepancy is whether the study population is comprised of individuals who have been displaced or who have remained in their communities. One underlying hypothesized mechanism by which violence increases pro-social behavior among those who have remained in their communities is a purging and collective coping dynamic: people believed to be less social flee their communities and those left behind must band together to survive (Gilligan, Pasquale and Samii 2014). Yet, the validation of this mechanism has been empirically challenged; specifically, the questions of which individuals left their communities and why they did remain empirically untested (Ozaltin, Shakir and Loizides 2020). Further, there is a gap in the literature on the impacts of trauma exposure on those who have migrated. Though some recent studies have begun to examine the impact of wartime trauma on migrants (Hall and Kahn 2020), the vast majority of research on communities impacted by forced migration study the behaviors and attitudes of host communities (Ghosn, Braithwaite and Chu 2019; Hangartner et al. 2019; Lehmann and Masterson 2020), including violence against refugees by host communities (Savun and Gineste 2019). This gap may be driven by challenges in conducting ethical research with resettled refugee populations, the difficulty in finding such persons, the understandable distrust that might make refugees living in host communities unwilling to participate in research studies, and the logistical challenges in accessing encamped populations for data collection

purposes (Pernice 1994).

The final potential driver of inconsistencies in findings, which is the focus of this dissertation, may be whether *individual variation in responses to trauma exposure* is taken into account in estimating the impact of experiencing trauma exposure. The past two decades has seen an increase in studies estimating the causal effect of trauma exposure. Studies have argued that different types of trauma exposure, including abduction (Annan et al. 2011), insurgent violence (Gilligan, Pasquale and Samii 2014), individual wartime injury (Hazlett 2020), and school shootings (García-Montoya, Arjona and Lacombe 2021), can be considered as-if randomly experienced in certain contexts. Such research has found that experiencing violence causes increases in altruism (Voors et al. 2012; Hartman and Morse 2020), pro-social behavior (Bellows and Miguel 2009), political participation (Blattman 2009; Balcells and Torrats-Espinosa 2018), and support for peace (Tellez 2019; Hazlett 2020).

Yet, as has been widely documented in the psychology literature, two individuals who experience the same trauma event can have vastly different psychophysiological reactions. Gaining causal leverage on questions of responses to trauma is, however, much more difficult as compared to questions of trauma exposure; unlike the original trauma exposure, the subsequent responses to it cannot be plausibly considered as-if random. Further, data on individual responses to trauma exposure are much more costly to collect and must be gathered from the individuals themselves, whereas data on trauma exposure can often reliably be gathered using geolocated data.

In studies where individual responses to trauma exposure—manifest as psychological distress—have been incorporated into estimates of the effects of trauma exposure, findings differ significantly from research that assesses the impact of trauma exposure directly. Specifically, in research that estimates the impact of both trauma exposure and psychological distress, trauma exposure itself is found to not be significantly associated with social and political outcomes, while psychological distress is found to be significantly associated with social and

political outcomes. Studies have found significant associations between psychological distress and reduced support for reconciliation (Vinck et al. 2007), reduced prosocial and intergroup attitudes (Pham, Weinstein and Longman 2004), increased exclusionary attitudes toward outsiders (Canetti et al. 2009; Kupatadze and Zeitzoff 2021), and greater feelings of revenge toward outgroups (Bayer, Klasen and Adam 2007).

This dissertation seeks to more fully theorize why these disparate findings exist: that it is not the trauma exposure itself, but the individual-level responses to trauma exposure that lead to variation in social cohesion outcomes, and that different responses to trauma exposure will result in differential changes in social cohesion outcomes.

1.2 Theory of Psychological Foundations of Social Cohesion

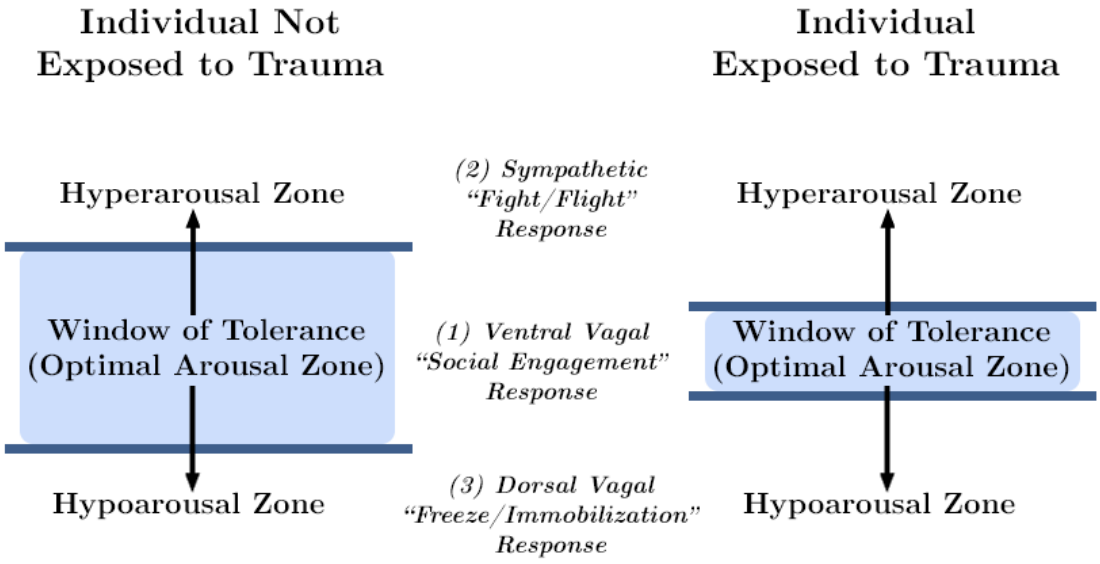
In this dissertation, I argue that if the outcomes of interest operate at the micro-level, then it is both imperative and informative to examine the *individual psychological responses to trauma exposure*. I present the theory of psychological foundations of social cohesion and maintain that individuals' adverse responses to trauma exposure, manifest as psychological distress, lead to changes in social cohesion outcomes, including *bonding* social cohesion (social cohesion targeted at ingroup members) and *bridging* social cohesion (social cohesion targeted at outgroup members).

The theory draws on evolutionary understandings of human responses to trauma exposure. When individuals are in an environment that they do not find threatening, either because they are not experiencing trauma or stress, or because they find the degree of trauma or stress they are experiencing manageable, they are in what is known as the "window of tolerance," which is an optimal arousal zone that allows for social engagement with others (Porges 2011). If the threat becomes unmanageable, then the sympathetic nervous system is

activated, which leads to hyperarousal and its associated fight or flight survival mechanisms. Being in such a state of hyperarousal is energy-costly, however; if a person experiences chronic exposure to trauma or stress, and the sympathetic nervous system is not able to mitigate the threat, or it is not possible to escape the threat, then the dorsal vagal complex is activated, which results in energy conservation via hypoarousal and its associated freeze and immobilizing survival mechanisms (Ogden, Minton and Pain 2006).

People inherently have variations in what they perceive as threatening, which means that there will be variation in how "wide" each individuals' window of tolerance is, as well as variation in when and why a person may exit their window of tolerance. Prior research has shown that individuals who have past trauma exposure are more likely to process all kinds of external stimuli as threatening as compared to persons without a trauma history (Williamson et al. 2015). This means that individuals with a history of trauma exposure live with a narrower window of tolerance, and are likely to be more frequently in a state of hyperarousal or hypoarousal (Figure 1.3).

Figure 1.3: Varying window of tolerance by trauma exposure



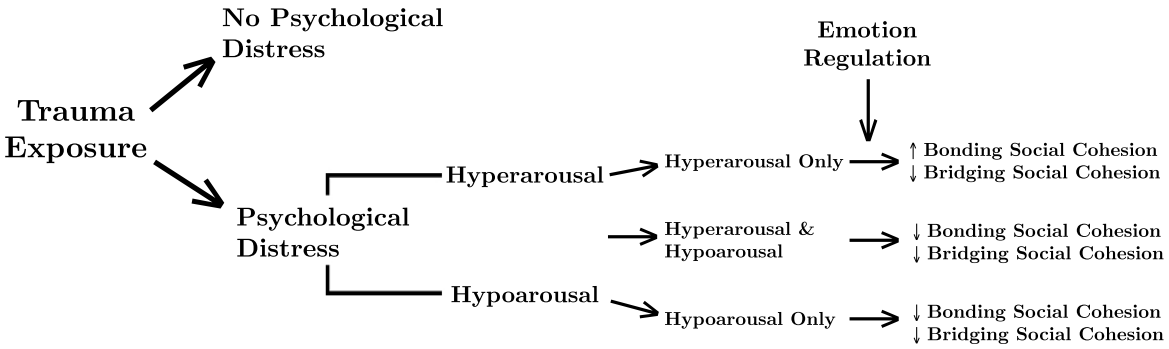
Notes: Figure adapted from Ogden, Minton and Pain (2006) illustrating the "correlation of the three arousal zones and the polyvagal hierarchy."

The theory specifies the pathways between specific responses to trauma exposure on social cohesion outcomes, outlining the expectation that hyperarousal and hypoarousal will differentially impact bonding and bridging social cohesion. Specifically, I theorize that responses to trauma exposure characterized by hyperarousal will be associated with lower reported bridging social cohesion, while responses characterized by hypoarousal will be associated with lower reported bridging and bonding social cohesion. Hyperarousal responses are characterized by fight or flight behaviors, including excessive vigilance, heightened threat reactivity, and increased anxiety. These responses are rooted in adaptive processes that evolved to help keep individuals safe from threat (Baldwin 2013). As such, it becomes adaptive to limit interactions and protect oneself from unknown outsiders. Hypoarousal responses, by contrast, are characterized by freezing or immobilizing behaviors, including numbing, dissociation, avoidance, and anhedonia. Similar to hyperarousal processes, hypoarousal responses are rooted in adaptive behaviors that help an individual endure chronic, sustained trauma and stress. These processes are protective in allowing for an individual to survive in the midst of chronic or inescapable trauma exposure. Such responses can also, however, result in individuals withdrawing interactions with others as a consequence of the coping mechanism. I additionally theorize that individuals with increased emotion regulation, defined as the ability to modulate one's emotional responses in a way proportional to stimuli (Gross 2008), will be more able to remain within or return to their "window of tolerance" (Ogden, Minton and Pain 2006).

I develop seven hypotheses regarding the variation in how individuals react to living through trauma exposure (H1-H2), how differential responses to trauma exposure shape social cohesion (H3-H6), and how emotion regulation shapes social cohesion (H7). Primarily, I hypothesize that only a subset of individuals will develop psychological distress in responses to trauma exposure, and that there will be variation in the character of that distress. I expect that individuals with responses to trauma characterized by *hyperarousal* will have lower *bridging* social cohesion (outgroup social cohesion), while individuals with responses

to trauma characterized by *hypoarousal* will have both lower *bridging* and *bonding* social cohesion (ingroup social cohesion). I further hypothesize that individuals with greater emotion regulation will have higher bonding and bridging social cohesion. Figure 1.4 visualizes the theorized relationship between trauma exposure, responses to trauma exposure, emotion regulation, and social cohesion.

Figure 1.4: Model of psychological foundations of social cohesion



This theory makes a key contribution to the political science literature by offering a translational conceptualization of responses to trauma exposure. It acknowledges that, within the wide umbrella of psychological distress that can emerge in response to trauma exposure, there can be different patterns of responses (Porges 2011; Baldwin 2013; Taylor and Master 2011). The theory differentiates between responses to trauma exposure characterized by hyperarousal and those characterized by hypoarousal, outlines their differential expected effects on social cohesion outcomes, and provides a framework for empirically assessing differential effects of hyperarousal and hypoarousal on social cohesion. It underscores the importance of separating out different kinds of psychological distress in measurement tools assessing responses to trauma exposure, rather than using a generalized measure of psychological distress.

Further, the theory highlights the role of emotion regulation, which has not been significantly studied in the existing political science literature. Emotion regulation is increasingly

becoming a concept of importance in the psychology and mental health intervention space (Tull and Aldao 2015), because it has been shown to be more readily and accessibly targeted by low-cost, non-specialist interventions in low resource contexts (Gratz, Weiss and Tull 2015). Better understanding the role that emotion regulation plays in improvement of social cohesion is of interest in both a theoretical and practical sense.

1.3 Empirical Strategy

This dissertation presents three main empirical tests of the theory of psychological foundations of social cohesion. The first applies the theory cross-contextually. Presented in Chapter 4, I assess cross-national variation in reported trauma exposure and rates of psychological disorder, as measured by the World Health Organization's (WHO) World Mental Health (WMH) Survey Initiative, which assesses the cross-national prevalence of "mental, substance use, and behavioral disorders in countries in all WHO Regions" (Schoo 2005). The WHO WMH Surveys were conducted in 29 countries between 2001 and 2015. While the individual-level survey data are not publicly available, I construct a dataset of national prevalence rates, as reported in WHO WMH publications, in order to assess how rates of trauma exposure and psychological distress co-vary at the national level. I then use the second wave of the World Values Survey (WVS) to conduct an analysis of how individual-level measures of psychological distress are associated with social cohesion cross-nationally.

The second—and primary—test of the theory, presented in Chapter 5, uses an original panel dataset gathered via a randomized controlled trial (RCT) evaluating the efficacy of *The Field Guide for Barefoot Psychologists*, a novel psychoeducational program designed to improve emotion regulation and reduce psychological distress among Syrian refugees living in Za'atari Refugee Camp in Jordan. I use the baseline data to assess the prevalence of trauma exposure and psychological distress, as well as associations between baseline levels of psychological distress and social cohesion. I then use the baseline and endline data to evaluate

how intervention-driven improvements in psychological distress and emotion regulation are associated with changes in social cohesion. This evaluation of intervention-driven improvements in psychological distress on social cohesion is novel in the way it seeks to gain insight on the impacts of psychological distress, which is methodologically challenging to gain causal leverage on and requires significant ethical considerations. Unlike some kinds of trauma exposure, psychological distress cannot be considered experienced as-if randomly; it cannot be measured using geolocated data and must be assessed at the level of the individual, making it challenging to construct a large enough sample size to adequately power analyses. Further, if psychological distress is to be experimentally manipulated, it must only be done in a way that could potentially reduce it, and even then, it must be done with significant oversight and a sound reasoning as to why the intervention should be randomly delivered, rather than made accessible to all who need it.

This empirical test was the result of a years-long collaboration with Beyond Conflict, Questscope, and The New School for Social Research's Trauma and Affective Psychophysiology Lab, and was made possible with funding from The Ford Foundation. In addition to the impact evaluation, I was closely engaged with Beyond Conflict and Questscope in the development of the intervention, which allowed for the ability to more precisely understand the theorized effect of the intervention on participants. I directed and edited the instructional self-care videos that were used in the intervention (Figure 1.5), which were voiced and acted by the Syrian volunteers living in Za'atari who served as facilitators for the intervention.[3]

The third empirical test of the theory uses data from the Survey of War Affected Youth (SWAY) (Blattman et al. 2013) to provide another individual-level test of the theory in a conflict-affected context in which individuals were able to return to their communities, rather than remained forcibly displaced. The SWAY data is a large-scale survey of youth in Kitgum and Pader districts in northern Uganda that was collected in two phases; the first

[3]Due to restrictions on employment, Syrians living in Za'atari who are engaged with Questscope are referred to as volunteers and have a cap on the amount they can be compensated for their time.

Figure 1.5: Filming of self-care exercise videos for *The Field Guide* in Ajloun, Jordan



Notes: Filming a guided meditation video Ajloun, Jordan on September 28, 2018. The video was one of 16 used as part of *The Field Guide* psychoeducational intervention with Syrian refugees living in Za'atari Refugee Camp. Photograph by Biz Herman.

was conducted from July 2005 to March 2006 and surveyed 741 male respondents, while the second phase was from October 2006 to August 2007 and surveyed 619 female respondents, for a total of 1360 individual respondents. The SWAY data are unique in that they contain individual-level measures of trauma exposure, psychological distress, and social cohesion. As such, I use the SWAY data to assess associations between psychological distress and social cohesion in the aftermath of conflict across individuals who were abducted and who were not abducted.

1.4 Ethical Considerations for Research with Trauma-Affected Populations

As noted above, are important ethical considerations when conducting research with trauma-exposed populations. Research with trauma-exposed populations is often necessary to more fully understand how trauma exposure impacts individuals, the variation in individual-level responses to trauma exposure, and the impact of interventions designed to help individuals reduce psychological distress in the aftermath of trauma exposure. Yet, research designs with trauma-exposed populations should face higher levels of scrutiny and protocols should be put in place to better understanding how participation in such research may affect trauma-exposed individuals. While Institutional Review Board processes provide useful structures for basic ethical review, there is increasingly widespread acknowledgement that additional considerations must be taken into account to ensure that research minimizes risks and maximizes benefits to study participants and communities.

Doing research in conflict-affected areas has a specific set of challenges, including access, sampling, generalization, bias, and, as noted, significant ethical concerns (Barakat et al. 2002; Brück et al. 2016). Prior research has highlighted the ethical challenges of field research in conflict zones, underscoring the importance of prioritizing "doing no harm," of briefing and obtaining fully informed consent, of ensuring the preservation of anonymity and of data confidentiality, and of the specific challenges that researchers themselves face while conducting research in such settings (Wood 2006). Underscoring why these considerations are of particular importance in conflict-affected settings, Cronin-Furman and Lake (2018) note that "conflict contexts can constitute permissive environments in which researchers can engage in conduct that would be considered deeply problematic at home."

The field of traumatic stress has long asked and emphasized whether and under what conditions trauma-exposed individuals might require special precautions when participating in

research (Newman, Risch and Kassam-Adams 2006; Newman and Kaloupek 2009). Such research has found that, even the relatively small subset of trauma-exposed participants that "report strong negative emotions or unanticipated distress" while participating in research "do not regret or negatively evaluate the overall experience" (Newman and Kaloupek 2004), with harm being is offset by the perceived benefits of participation in research that can contribute to a collective good (Jaffe et al. 2015; Baron and Young 2021).

Recent research offers insights into how to design and conduct studies that best reflect the concerns of trauma-exposed populations, work to minimize potential harms and distress, and seek to maximize benefits to study communities. Herman et al. (2022) group the research process into four stages—idea generation, planning, implementation, and dissemination—highlighting ways that the community on which the research is centering can be engaged and how researchers can better consider issues of positionality when conducting field experiments in the Global South. Firchow (2018) underscores the importance of locally-validated concepts and measures in order to ensure that results are truly informed by and of use to the community in which the research took place. This is imperative not only for the external validity of research findings, but also to avoid causing unnecessary distress by asking questions that are insensitive to both participants and enumerators (Davis and Wilfahrt 2022). Sangaré and Bleck (2020) underscore the importance of protecting the safety of research staff by applying the principle of "do no harm" to research participants *and* research staff, especially when conducting research in the Global South (Kaplan, Kuhnt and Steinert 2020). Davis and Wilfahrt (2022) confirm the need for increased consideration and protection of the physical and psychological safety of research staff; in a survey of 245 enumerators working in violent research environments, over 60% of enumerators reported feeling unsafe while working, with 58% having experienced or witnessed some form of violence or threat of violence during fieldwork.

Academics can also make use of research and best practices for work with trauma-exposed

populations generated by practitioners. Numerous humanitarian agencies have worked to develop best practices and considerations for work involving trauma-affected populations (Corlazzoli and White 2013; The Office for Victims of Crime Training and Technical Assistance Center 2022; Corlazzoli and White 2013). Similarly, resources in the journalism world for trauma-informed reporting (Simpson and Coté 2006) may be exceptionally useful for researchers looking to conduct trauma-informed interviews (Thompson 2021).

It is highly encouraging to see the increasing calls to more fully incorporate discussions of ethical considerations into research presentations and publication across the discipline of political science (Association 2020), including through mechanisms like dedicated ethics appendices or sections in research articles (Asiedu et al. 2021). With regard to research specifically on trauma-exposed populations, it is increasingly being seen as important to put structures in place throughout the research generation and publication process; suggestions include lists of questions that reviewers can use for evaluating research conducted in violent contexts (Cronin-Furman and Lake 2018). I echo a suggestion made by Eck and Cohen (2021), who call for increased oversight for student-led research on political violence and maintain that further integration of lessons on ethical considerations into courses on research design would support junior scholars in developing ethical research practices. While many graduate-level research design courses include modules or sessions on ethical conduct, it would be beneficial to have entire courses dedicated to ethical conduct of research. These courses could also cover other practical issues that arise in the course of conducting research in complex contexts, including setting up systems to protect the physical and psychological well-being of research teams, considering positionality and identity issues, generating funding, working through logistical considerations, and developing systems for project management.

The ethical considerations outlined in this section informed the research design for the main empirical test in this dissertation, which included an RCT of a novel psychoeducation intervention designed to reduce psychological distress among Syrian refugees living in Za'atari

Refugee Camp. As will be discussed in greater detail in section 5.3, during the design process the research team collaborated closely with the implementing partner on: the ways in which participants were recruited and consented to take place in the study, how data collection took place, how the implementing partner could ensure all participants eventually had access to the intervention, and what monitoring and vertical integration of mental health care systems could be put in place to ensure safety not just of research participants, but also of intervention facilitators, project managers, and enumerators.

1.5 Scope of the Project

The theory of psychological foundations of social cohesion presented in this dissertation has been developed to apply broadly across contexts. This wide applicability emerges from the evolutionary lens it adopts, and the fact that most humans will experience at least one trauma exposure in their lifetime. For the purposes of this dissertation, I focus specifically on contexts and populations affected by conflict and/or forced migration. This focus was selected for both substantive and practical reasons, each of which is outlined below.

Substantively, populations affected by conflict and forced migration are marked by widespread and often chronic exposure to trauma, as well as higher than average rates of psychological distress (Roberts and Browne 2011; Patanè et al. 2022). Understanding how trauma exposure and its aftereffects impact social cohesion among these populations is highly relevant and vital in understanding how to support the development of healthy and peaceable communities. Further, in populations affected by conflict and forced migration, existing social bonds have been broken. This may vary in degrees depending on whether or not forcibly displaced individuals have resettled or not, or whether conflict-affected populations have remained in their original communities. Yet, the erosion of at least some social bonds will be inherent in all contexts, as will be the need to rebuild or establish such bonds. As such, a focus on contexts affected by conflict and/or forced migration allows for the prioritization

of this research among populations where it is of particular import, in which individuals are in the process of establishing new or rebuilding old communities. Practically, there is a significant amount of overlap between populations affected by conflict and forced migration.

One normative exclusion restriction for the theory presented in this project, however, is that the theory should not be tested in places where there is active, ongoing violent conflict. The psychological processes and dynamics of social cohesion in the *midst* of active conflict and forced migration must be viewed differently from those in the *aftermath* of conflict and forced migration. In active conflict, the psychological responses that individuals experience following trauma exposure are the result of living in active danger and often constitute a normal, adaptive response that helps ensure survival. Asking people to mitigate these symptoms in the midst of conflict may place them in harms' way. Similarly, while social cohesion has been identified as a measure of local-level peace and coexistence, as well as an indicator of macro outcomes such as peace, reconciliation, and conflict reduction—as discussed in detail in section 3.3—it cannot be reasonably expected for individuals who have legitimate safety and security concerns in regard to intergroup dynamics, or have been subjected or targeted on the basis of their identity, to foster increased bridging social cohesion. Just as heightened threat reactivity can be adaptive, so can a lack of intergroup trust or cooperation in contexts where individuals have been repeatedly harmed or targeted by members of the outgroup. As such, the normative value in fostering social cohesion in contexts actively experiencing violent conflict is not ethically sound.

1.6 Manuscript Outline

The dissertation proceeds as follows. In Chapter 2, I conceptualize trauma exposure and psychological distress as used in this project. I first outline existing conceptualizations of trauma exposure and how such conceptualizations have evolved over time. I then highlight the individual-level variation in responses to trauma exposure, reviewing how individuals

can have variation in the presence, kind, and degree of psychological distress in response to trauma exposure. I review existing ways of conceptualizing and measuring psychological distress, highlighting the differences in and overlap between diagnostic and dimensional measures of psychological distress. I then present a framework of responses to trauma exposure, applying an evolutionary lens and conceptualizing adverse responses to trauma exposure as psychological distress characterized by hyperarousal and/or hypoarousal. In Chapter 3, I conceptualize the main outcome of interest—social cohesion—explicating the difference between bonding (intragroup) and bridging (intergroup) social cohesion, before presenting the theory of psychological foundations of social cohesion, as well as main hypotheses to be tested.

In Chapter 4, I use data from the WHO WMH Surveys Initiative, conducted from 2001 to 2015 in 29 countries, and from the second wave of the WVS, conducted in 17 countries from 1990 to 1994, to provide a cross-national test of the hypotheses. Using the WHO WMH data, I present a cross-national analysis on prevalence of trauma exposure and psychological distress. I find that, across all surveys, 67.7% of respondents report experiencing at least one trauma exposure in their lifetimes. I find that there is significant variation in the prevalence of psychological disorders across countries, and that there is a significant positive association between the proportion of the population reporting at least one trauma exposure and the prevalence of mental health disorders. Next, using the second wave of the WVS, I assess associations between psychological distress and social cohesion at the individual-level cross-nationally. I find that the presence of hyperarousal and hypoarousal symptoms have differential impacts on social cohesion outcomes. Specifically, and as expected, hyperarousal symptoms are significantly associated with lower bridging social cohesion, while hypoarousal symptoms are significantly associated with lower bridging and bonding social cohesion. Further, I find that, among individuals with high hyperarousal symptoms, those who do not additionally have high hypoarousal report significantly higher bonding social cohesion.

In Chapter 5, I present the main empirical test of the theory, using a panel dataset collected via a RCT of *The Field Guide for Barefoot Psychology*, a novel psychoeducation program design to improve emotion regulation and reduce psychological distress among Syrian refugees living in Za'atari Refugee Camp. Using the baseline data, I first provide a descriptive overview of the rates of trauma exposure and psychological distress among the sample, before assessing associations between psychological distress and social cohesion outcomes. I find that there is widespread trauma exposure, such that 96.9% of the sample reports at least one trauma exposure, with respondents reporting having experienced, on average, 5.5 out of 12 types of trauma exposure. Individuals with high hyperarousal report significantly lower bridging social cohesion across measures, while individuals with high hypoarousal report significantly significantly lower bonding and bridging social cohesion on the ingroup trust and outgroup anxiety indicators. Among individuals with high hyperarousal, those who do not additionally have high hypoarousal report, on average, significantly higher bonding social cohesion on the ingroup trust indicator.

Next, using the baseline and the endline data, collected prior to and following the intervention, I assess the average treatment effect of *The Field Guide for Barefoot Psychology* intervention on psychological distress and emotion regulation. The intervention has a significant effect on both hypoarousal and emotion regulation, leading to a 21.4% improvement in hypoarousal from baseline, and a 18.7% improvement in emotion regulation from baseline; the intervention had a positive, but not significant effect on reducing hyperarousal. I then assess how intervention-driven improvements hyperarousal and emotion regulation are associated with changes in social cohesion. Using a structural equation model, I find that the 21.4% intervention-driven improvement in hypoarousal is significantly associated with a 6.9% improvement in ingroup trust, an 8.1% improvement outgroup trust, an 11.7% improvement in outgroup anxiety, and a 12.9% improvement in perceived communal security, while the 18.7% improvement in emotion regulation is significantly associated with a 4.0% improvement in ingroup trust, an 11.5% improvement outgroup trust, and an 8.7% improve-

ment in perceived communal security. These findings indicate that interventions designed to improve individual psychological well-being may additionally have secondary improvements in community-relevant factors via the theorized relationship between psychological distress and social cohesion.

In Chapter 6, I present an additional empirical test of the theory in a different conflict-affected context, using survey data from the SWAY dataset (Blattman et al. 2013). Similar to the sample in the Za'atari study, I find that trauma exposure is exceptionally widespread among respondents, with only 5 of 1360 respondents reporting no prior trauma exposure, and respondents reporting, on average, having experienced 8.4 out of 25 possible kinds of trauma exposure. I find that additional trauma exposure is significantly positively associated with hyperarousal and hypoarousal, both for individuals who were abducted to serve as child soldiers, and for those who were not abducted. I find that not all individuals who have past trauma exposure report subsequent psychological distress, and that there is variety in the severity and kind of psychological distress reported, both among individuals who were abducted and those who were not. I assess how different types of trauma exposure are associated with psychological distress, and find that all types of trauma exposure are positively associated with both hyperarousal and hypoarousal, with forced violence and sexual abuse most strongly positively associated with each. I next assess associations between psychological distress and social cohesion. Both hyperarousal and hypoarousal are significantly associated with greater reported hostile acts, lower reported family closeness, and lower reported community connection. Hypoarousal is also significantly associated with lower reported community group membership. Among individuals with high hyperarousal, respondents who additionally do not have high hypoarousal report, on average, significantly higher rates of family closeness and of community connection, when compared to individuals who have both high hyperarousal and high hypoarousal.

Chapter 7 concludes, reviewing the main findings, offering future directions and avenues of

inquiry, and highlighting the project's main contributions. I note the policy-relevant features of the work, underscoring how conversations about mental health and psychosocial support have been on the rise in recent years among organizations working on forced migration and peacebuilding globally. I underscore the broader implications of the dissertation, and why conversations about mental health are so important to include in considerations of the lasting effects of conflict and forced migration.

1.7 Conclusion

This dissertation project makes both theoretical and empirical contributions related to how different manifestations of psychological distress that may emerge in the aftermath of trauma exposure affect social cohesion. It offers important contributions to the understanding of how mental health contributes to peace and stability in conflict and forced migration-affected communities, new avenues for academic and practical inquiry, and insights into the broader implications and policy strategies regarding mental health and social cohesion.

This dissertation was borne out of conversations with over 120 women in six countries who had been engaged in various conflicts in recent decades, with many experiencing displacement from their homes (Figure 1.6). That project, undertaken while working as a journalist prior to starting my graduate studies, revealed the varied, individual responses to living through conflict and displacement, the ways trauma exposure can linger in one's life, and how such experiences can shape how communities cohere in the aftermath of war and displacement. The questions asked and tested in this dissertation are rooted in those conversations; the stories of these women drove my desire to theoretically and empirically account for the profound ways their lives had been shaped by past traumas.

Figure 1.6: Portraits from A Woman's War



Notes: Võ Thi Yên (top left), pictured in her living room in Hue, Vietnam in July 2010, served as a member of the North Vietnamese Army. Kakon Bibi (top middle), pictured in a guesthouse in Dhaka, Bangladesh in September 2011, served as a Mukti Bahini (freedom fighter) in the 1971 Bangladesh Liberation War, but does not receive the veterans' stipend from the government that male veterans receive and lives in extreme poverty in northeastern Bangladesh. A young girl (top right), who wished to remain anonymous and is pictured in Cairo, Egypt in May 2012, was raped while participating in political protests in Tahrir Square following the fall of Hosni Mubarak during the Arab Spring. Dževada Trešnjo (bottom left), pictured in her living room in Ilidža, Bosnia and Herzegovia in July 2012, served in the Bosnian Army Medical Corps and lost her hand while trying to protect a young boy who had been wounded by enemy fire. Begum Gulferdous (bottom middle), pictured in her living room with her granddaughter in Comilla, Bangladesh in August 2011, served as a spy and weapons smuggler with the Mukti Bahini after the 1971 Liberation War began. Katerina Kaltak (bottom right), photographed in her living room in Ilidža, Bosnia and Herzegovina in August 2012, joined the Bosnian Army Medical Corps at age 16 with her older sister, Kristina Mujak, after their younger sister, who was eleven at the time, was killed by artillery fire in July 1992. Women pictured were interviewed as part of a documentary photography and oral history project centered on women engaged in modern conflicts in Bangladesh, Bosnia and Herzegovina, Egypt, Northern Ireland, Vietnam, and the United States. Testimonies and additional portraits are available at https://www.elizabethdherman.com/awomanswar-gallery. All photographs by Biz Herman.

Chapter 2

Defining Trauma Exposure & Trauma Response

> *Mental health symptoms can result in changes in the way affected people think, feel and behave, and can affect their ability to maintain their positive relationships with others.*
>
> — UNDP Guidance Note Integrating Mental Health and Psychosocial Support into Peacebuilding (UNDP 2022)

How do the psychological implications of conflict and forced migration affect social cohesion? More fully understanding how mental health impacts prospects for stability or peace within communities is imperative, especially as the proportion of the world's population affected by conflict and forced migration continues to rise (UNHCR 2022*h*). As reviewed in Chapter 1, there has been increased interest in examining the political and social effects of violence and displacement in recent years (Blattman and Miguel 2010; Bauer et al. 2016; Buvinic et al. 2013; Becker and Ferrara 2019; Davenport et al. 2019; Godefroidt 2022), with an eye toward learning how to more effectively promote peace, foster reconciliation, and reduce

conflict. At the same time, there have been significant improvements in knowledge of humans' psychological responses to living through and after trauma exposure (Bonanno and Mancini 2012). While studies have begun to incorporate psychological factors into models of social and political behavior in the context of conflict and forced migration (Canetti et al. 2009, 2013; Hirsch-Hoefler et al. 2016; Mordeno et al. 2020), trauma exposure and the heterogeneity in human responses to it have not been fully specified in such models.

But what is the importance of highlighting the heterogeneity in psychological responses to trauma exposure, especially as it relates to asking and answering questions regarding social cohesion in the context of conflict and forced migration? As noted in two wide-ranging reviews on political psychology in international relations conducted since 2000, many prominent theories of international politics are built on "implicit psychological microfoundations" (Goldgeier and Tetlock 2001; Kertzer and Tingley 2018). While incorporation of theories from psychology, social psychology, neuroscience, and cognitive science into international relations and comparative politics research has advanced significantly in recent decades, it is imperative to consider how underlying theories and models of human behavior can be more fully built into models and research designs that are, at their core, about humans and the ways they connect to each other, their communities, and their polities.

This dissertation develops a theoretical model linking heterogeneous psychological responses to trauma exposure with social cohesion. In this chapter, I present definitions of *trauma exposure* and *responses to trauma exposure*, which are central to the theory of psychological foundations of social cohesion presented in Chapter 3. I outline dominant conceptualizations and measures of trauma exposure and responses to trauma exposure, how each has evolved over time, and how shifts in definitions and measurement strategies have impacted research and practice. I draw on evolutionary theories to develop a conceptualization of responses to trauma exposure, wherein adverse responses to trauma exposure are characterized by protracted distress consisting of *hyperarousal* ("fight or flight" responses), *hypoarousal* ("freeze

or immobilize" responses), or a combination of both. I argue that this proposed framework for conceptualizing responses to trauma exposure will help to more precisely assess how living through trauma exposure affects social cohesion via differential responses. This can, in turn, help explain seemingly contradictory findings in the current literature.

The chapter proceeds as follows. I first look to the psychology literature to review past and current conceptualizations of trauma exposure. I outline what constitutes trauma exposure, how it relates to violence as defined in political science research on conflict and forced migration, and the dimensions on which trauma exposure can vary. I then outline the heterogeneous responses individuals can have to trauma exposure, as well as the primary characteristics of such responses. This section draws on key insights from recent research in psychology and neuroscience on patterns in individual-level differences in responses to trauma exposure. Taken together, this review of the multidisciplinary literature on trauma exposure and human responses to trauma exposure contributes to the growing body of work on the micro-level determinants of peace and stability in the aftermath of conflict and forced migration, while also providing the foundation of the theory presented in Chapter 3.

2.1 Defining Trauma Exposure

In order to better understand how to study trauma exposure and responses to trauma exposure in the context of conflict and forced migration, this section provides an overview of trauma exposure, including a brief history of the study and conceptualization of trauma exposure. I then outline definitions of trauma exposure as they have evolved over the years and highlight how the concept of trauma exposure can be used in political science research, where studies of trauma exposure—more commonly referred to as violence in existing research—have proliferated widely.

Trauma exposure has global relevance, with an estimated 70% of individuals worldwide experiencing at least one traumatic event in their lifetimes and an estimated 31% of individuals

experiencing four or more traumatic events (Shalev, Liberzon and Marmar 2017). As defined in the current (5th) edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM), a trauma exposure is a "direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate" (American Psychiatric Association 2013).

In considering what constitutes a traumatic event, it is important to differentiate between *trauma exposures* and *stressful events* (Richter-Levin and Sandi 2021). For example, an individual's experiences during what is popularly discussed as a traumatic time (for example, the Covid-19 pandemic) may constitute a trauma exposure "if they involved actual or possible death or serious injury" that the person "directly experienced, witnessed, or learned of occurring to a close loved one" (International Society for Traumatic Stress Studies 2021). If an individual's experience does not reach that threshold, then it would not be considered a trauma exposure, but rather would be viewed as a stressful event, which involves "undesirable, unplanned, abnormal, and/or uncontrollable experiences that threaten our day-to-day functioning" (International Society for Traumatic Stress Studies 2021). Experiences such as living through forced migration may be more universally experienced as a traumatic event, depending on the nature of the migration and the circumstances under which the individual was forced to migrate.

Importantly, in a diagnostic context, the type or nature of trauma is not differentiated; in other words, a traumatic exposure resulting from a natural disaster is not categorized differently from a traumatic exposure resulting from sexual assault. The differentiating point of interest from a diagnostic perspective is whether the trauma exposure resulted in the emergence of subsequent psychological distress symptoms; responses to trauma exposure

will be discussed in section 2.2. As noted previously, not all trauma exposures result in the development of persistent and adverse psychological distress in response. For that reason, some clinicians and scholars have advocated for trauma exposures to be referred to as "potentially traumatic events" (PTEs), to acknowledge that not all individuals who experience a traumatic exposure develop subsequent distress symptoms in its aftermath (Bonanno and Mancini 2008).

The History of Conceptualizing Trauma Exposure

The study and conceptualization of trauma exposure originated in large part due to the desire to better understand the effects of conflict on men serving in combat. The study of trauma exposure and the conceptualization of post-traumatic stress disorder (PTSD) emerged in the 1980s in the United States, primarily centering on American veterans of foreign wars (Herman 1997). Prior to then, post-combat syndromes had been discussed in popular culture following the majority of major conflicts since the United States Civil War (Jones et al. 2002), described variously as "railway spine," "shell shock," "soldier's heart," and "battle fatigue" (Jones et al. 2003). In the 1980s, following the Vietnam War and a rise in the study of domestic abuse, PTSD was conceptualized as a diagnostic criteria, establishing the modern study of trauma exposure and its aftereffects (Herman 1997). PTSD was first included in the DSM in its third edition in 1980 under anxiety disorder classifications, with trauma exposure defined as "a psychologically traumatic event that is generally outside the range of usual human experience, a recognizable stressor that would evoke significant symptoms of distress in almost everyone" (American Psychiatric Association 1980).

Since trauma exposure was first defined, its conceptualization has evolved significantly over the years.[1] Table 2.1 provides an overview of the various definitions of trauma exposure as specified in versions of the DSM since 1980, as well as in versions of the International

[1]Definitions of responses to trauma exposure have also evolved significantly over the years; this is discussed in detail in section 2.2.

Classification of Diseases (ICD), a globally-used diagnostic tool maintained by the World Health Organization (WHO), in which PTSD was first included in the 10^{th} edition in 1994. In both the DSM and the ICD, the definition of trauma exposure has shifted over time to separate the trauma exposure itself from the potential psychological distress that can emerge in some individuals in response to trauma exposure. Specifically, in the DSM, the language describing a trauma exposure as an event that is "outside the range of usual human experience and [one] that would be markedly distressing to almost anyone" was edited out of the conceptualization from 1994 onward. In the ICD, language describing a trauma exposure as an event "likely to cause pervasive stress in almost anyone" was edited out in the most recent edition in 2018.

The Conceptualization and Use of Trauma Exposure in Political Science Research

While the concept of trauma exposure has not been widely used or studied in existing political science research, the concept of violence has. Violence, as studied in existing political science research, falls within the definition of trauma exposure. There are, however, types of trauma exposure commonly experienced in the context of conflict and forced migration that do not necessarily involve experiencing or witnessing violence, yet are commonly referred to as violence (for example, forced separation from friends and family or the disappearance of loved ones). As such, I propose that it is more useful to use the concept of *trauma exposure* rather than *violence* in many cases in research on conflict and forced migration.

Definitions of trauma exposure and their applications in clinical and practical contexts do not differentiate between different *kinds* of trauma. In other words, experiencing a life threatening hurricane and living through a school shooting are both considered trauma exposures. As two individuals who live through the same trauma exposure can have vastly different responses to it, individual responses to trauma, rather than the nature of the trauma

Table 2.1: Definitions of trauma exposure in diagnostic manuals since inclusion in 1980

Manual	Year	Definition
DSM-III	1980	A psychologically traumatic event that is generally outside the range of usual human experience, a recognizable stressor that would evoke significant symptoms of distress in almost everyone
DSM-III-R	1987	An event that is outside the range of usual human experience and that would be markedly distressing to almost anyone, e.g., serious threat to one's life or physical integrity; serious threat or harm to one's children, spouse, or other close relatives and friends; sudden destruction of one's home or community; or seeing another person who has recently been, or is being, seriously injured or killed as the result of an accident or physical violence
DSM-IV	1994	Direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate
ICD-10	1994	Exposure to a stressful event or situation (either brief or long-lasting) of exceptionally threatening or catastrophic nature, which would be likely to cause pervasive distress in almost anyone
DSM-IV-TR	2000	Direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate
DSM-5	2013	Direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate
ICD-11	2018	Exposure to an event or situation (either short- or long-lasting) of an extremely threatening or horrific nature. Such events include, but are not limited to, directly experiencing natural or human-made disasters, combat, serious accidents, torture, sexual violence, terrorism, assault or acute life-threatening illness (e.g., a heart attack); witnessing the threatened or actual injury or death of others in a sudden, unexpected, or violent manner; and learning about the sudden, unexpected or violent death of a loved one

exposure itself, must be assessed to understand the human impact of the trauma exposure. In other words, it is not enough to know either whether an individual has experienced a trauma exposure or the nature of the trauma exposure experienced in order to understand whether such an experience will result in subsequent psychological distress or impacted functioning for any given individual.

As such, the primary focus of this dissertation is assessing the differential effect of individual *responses to trauma exposure* on social cohesion, with the goal of addressing the current gap in the literature that primarily assesses the impact of trauma exposure directly. If future research indicates that certain types of trauma exposures are more likely to lead to certain kinds of responses—for example, it has been consistently documented that child sexual abuse perpetrated by trusted adults is more likely to result in persistent adverse psychological outcomes (Browne and Finkelhor 1986; Van der Kolk 2015)—then it would be possible to use proximity or exposure to a certain type of trauma exposure as a proxy for psychological distress in contexts where it is neither feasible nor ethical to collect individual-level distress data. However, at present, not enough is known about such patterns resulting from exposure to *specific* kinds of traumas to utilize this approach. As such, it is vital to more fully theorize and empirically test the specific types of psychological distress operating in response to trauma exposure. Such responses are described in detail in section 2.2.

2.2 Defining Responses to Trauma Exposure

In this section, I provide an overview of recent research on various psychological responses to trauma exposure. I first highlight how research has demonstrated individual-level variation in whether and when adverse psychological responses emerge after trauma exposure. I then outline variation in the kinds of adverse responses that can emerge following trauma exposure. I describe the ways in which responses to trauma exposure have been classified, highlighting the differences between categorical and dimensional approaches of assessment,

and the limitations and benefits of each. In addition to providing a translational overview of responses to trauma exposure from the psychology literature, this section highlights the limitations of responses to trauma exposure as currently conceptualized and used in microlevel research, prior to introducing a novel framework of responses to trauma exposure for use in microlevel political science research in section 2.3.

Variation in *Presence* of Adverse Responses to Trauma Exposure

Within the psychology literature, it has been widely documented that individuals have significant variation in responses to trauma exposure (McFarlane and Yehuda 2000; McNally 2003; D'Andrea et al. 2013; Williamson et al. 2015). While some individuals have no change in functioning in the aftermath of trauma exposure, others may develop unwanted, persistent adverse changes in functioning (Ozer and Weiss 2004; Bonanno and Mancini 2012). This underscores the importance of using an "individual-differences model" of responses to trauma exposure, to account for variation within and across individuals over time (Bonanno and Mancini 2008). Research has not identified risk or protective factors that are both necessary and sufficient for the continuation of normal functioning or the development of adverse responses in the aftermath of trauma exposure (Briere and Jordan 2004; Vogt, King and King 2007). However, certain individual and environmental characteristics have been found to have a greater likelihood of being associated with adverse responses, including the age of the individual at the time of exposure (Heim et al. 2010; Ogle, Rubin and Siegler 2013), the chronicity of exposure (Wamser-Nanney and Vandenberg 2013), whether the trauma exposure was interpersonal (Ford et al. 2006), and the type of psychological processes experienced during and immediately after the trauma exposure (Ozer et al. 2008).

Following a single or acute trauma exposure, the majority of individuals will have no significant changes in functioning and no emergence of persistent psychological distress (Kessler et al. 1995). This is less often the case when exposure to trauma is chronic or prolonged, as is typical for populations affected by conflict and forced migration to experience chronic or

prolonged trauma exposure. Conflict-affected and refugee populations face a far greater than average incidence of psychological distress when compared to the general population (Steel et al. 2009; Priebe et al. 2010). A systematic review of studies on the prevalence of PTSD and major depressive disorder (MDD) in refugees estimates rates of 31.0% for PTSD and 32.0% for MDD (Patanè et al. 2022),[2] compared to the overall global prevalence of PTSD and MDD of 3.6% and 4.4%, respectively (World Health Organization 2017).

Studies have documented how adverse symptoms do not necessarily emerge shortly following a trauma exposure.[3] The emergence of persistent, adverse psychological distress may be delayed for months or years after the trauma exposure or exposures (Hiskey et al. 2008). Bonanno and Mancini (2008) contend that variability in patterns in responses to trauma exposure can be captured by four prototypical trajectories: chronic dysfunction, wherein people develop severe adverse responses that persist over time; recovery, in which people experience moderate adverse responses in the aftermath of a trauma exposure, but such responses improve over time; resilience, wherein individuals may experience slight disruption in normal functioning, but return relatively quickly to normal functioning post-trauma exposure; and delayed reaction, wherein individuals develop adverse responses a year or more following the trauma exposure (Bonanno and Mancini 2008).

[2]For their systematic review, Patanè et al. (2022) conduct a literature search in three databases and include studies that examine the prevalence of MDD, PTSD, borderline personality disorder, and psychosis in adult refugees. They then estimate pooled prevalence rates for each disorder using the Meta-prop package in Stata.

[3]Of note, immediate adverse responses to highly stressful or traumatic events are not considered disordered, as responding in such a way is normal given the nature of the event: "Acute stress reaction refers to the development of transient emotional, somatic, cognitive, or behavioural symptoms as a result of exposure to an event or situation (either short- or long-lasting) of an extremely threatening or horrific nature (e.g., natural or human-made disasters, combat, serious accidents, sexual violence, assault). Symptoms may include autonomic signs of anxiety (e.g., tachycardia, sweating, flushing), being in a daze, confusion, sadness, anxiety, anger, despair, overactivity, inactivity, social withdrawal, or stupor. The response to the stressor is considered to be normal given the severity of the stressor, and usually begins to subside within a few days after the event or following removal from the threatening situation" (WHO 2018).

Variation in *Kinds* of Adverse Responses to Trauma Exposure

In addition to variation in *whether* and *when* adverse responses to trauma exposure may emerge, there is variation in the *kinds* of adverse responses individuals may have to traumatic events. Much like trauma exposure, conceptualizations and understandings of trauma-related psychological disorders have evolved significantly over time (North et al. 2016). PTSD was the first trauma-related disorder conceptualized, introduced as a diagnostic criterion in the DSM-III in 1980. The diagnostic criteria for PTSD have continued to evolve significantly since then, both in the DSM and in the ICD (PTSD was introduced as a diagnostic criteria in the ICD-10 in 1994) (Glasheen et al. 2016). Table 2.2 provides an overview of the evolution in the diagnostic criteria for PTSD; of note is the eventual addition of endorsement of functional impairment, meaning that the symptoms reported impact the individual's ability to function in their lives and relationships. This change took effect in the DSM from the 1994 edition on, and in the ICD in the most recent edition in 2018.

Given the history of the conceptualization of PTSD in the U.S., which was primarily concerned with American veterans of foreign wars (Herman 1997), the validity and applicability of the construct of PTSD in other contexts has been questioned. While diagnostic criteria for PTSD have been developed and validated in numerous contexts (Hinton and Lewis-Fernández 2011; Patel and Hall 2021), some scholars and practitioners are wary of what is known as the *category fallacy*, or "the reification of one culture's diagnostic categories and their projections onto patients in another culture, where those categories lack coherence and their validity has not been established" (Kleinman 1987).

Thus, while PTSD remains the most commonly researched and widely-known adverse response to trauma, recent studies have expanded to examine a wider range of potential adverse responses to trauma exposure (Breslau et al. 2000; D'Andrea et al. 2013). There has been a shift to include a broader range of psychological disorders and post-trauma symptoms in the conceptualization of responses to trauma exposure, even if they have not always been

Table 2.2: Definitions of PTSD in diagnostic manuals since inclusion in 1980

Manual	Year	Definition
DSM-III	1980	12 symptoms in 3 groups: re-experience ($\geq$ 1 of 3 symptoms), numbing ($\geq$ 1 of 3 symptoms), arousal and avoidance ($\geq$ 2 of 6 symptoms). Symptom duration not specified.
DSM-III-R	1987	17 symptoms in 3 groups: re-experience ($\geq$ 1 of 4 symptoms), avoidance/numbing ($\geq$ 3 of 7 symptoms), hyperarousal ($\geq$ 2 of 6 symptoms) Symptom duration $\geq$ 1 month.
DSM-IV	1994	17 symptoms in 3 groups: re-experience ($\geq$ 1 of 5 symptoms), avoidance/numbing ($\geq$ 3 of 7 symptoms), hyperarousal ($\geq$ 2 of 5 symptoms). Symptom duration $\geq$ 1 month. Clinically significant distress or impairment in functioning required.
ICD-10	1994	Persistent remembering of the stressor ($\geq$ 1 of 3), avoidance ($\geq$ 1 of 2), either: inability to recall (1 of 1 symptom) OR persistent symptoms of increased psychological sensitivity and arousal ($\geq$ 2 of 4). Onset of symptoms within 6 months of exposure.
DSM-IV-TR	2000	Same as DSM-IV (1994).
DSM-5	2013	20 symptoms in 4 groups: intrusion ($\geq$ 1 of 5 symptoms), avoidance of reminders ($\geq$ 1 of 2 symptoms), altered cognitions and mood ($\geq$ 2 of 7 symptoms), altered arousal and reactivity ($\geq$ 2 of 6 symptoms). Symptom duration $\geq$ 1 month. Clinically significant distress or impairment in functioning required. Exclusion criteria: not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition—added criterion.
ICD-11	2018	Endorsement of one of two symptoms from the symptom clusters of (1) reexperiencing in the here and now, (2) avoidance, and (3) sense of current threat, plus endorsement of at least one indicator of functional impairment associated with these symptoms. Experiencing symptoms and impairment in past month.

Notes: For full symptom criteria see Appendix B. DSM symptom criteria are drawn from (North et al. 2016), ICD-10 symptom criteria are drawn from (Treatment US), and ICD-11 symptom criteria are drawn from (Cloitre et al. 2019).

considered as being related to trauma exposure (Wamser-Nanney and Vandenberg 2013). Recent studies have begun to examine the presence of other mental disorders in the aftermath of trauma exposure, including complex PTSD (CPTSD), mood disorders, and anxiety disorders (Maercker 2021; Seng, D'Andrea and Ford 2014; Price and van Stolk-Cooke 2015) (Table 2.3). Research has shown that the kinds of responses that emerge in the aftermath trauma exposure differ depending on whether an individual was exposure to an acute trauma exposure or to chronic trauma exposure (D'Andrea et al. 2013), with PTSD being more common following acute exposure and CPTSD being more common following chronic exposure. Many post-trauma exposure symptoms and disorders have been found to be co-occurring (Breslau et al. 2000); PTSD in particular been found to be "highly comorbid with other mental health diagnoses" (Baldwin 2013), with an estimated 80% of individuals diagnosed with PTSD receiving a co-morbid diagnosis (Kessler et al. 2005). Such varied responses have been documented across a wide variety of populations (Patel et al. 2018).

Classification of Responses to Trauma: Categorical and Dimensional Approaches

Given the variety in responses to trauma exposure, as well as the evolution of diagnostic criteria used to assess such responses, it is useful to consider how such conceptualizations can and should be applied in micro-level political science research. Before offering a framework for responses to trauma exposure that can be used in future research, I briefly review the two most commonly used conceptualizations of psychological distress—*categorical* and *dimensional* approaches—highlighting the benefits and limitations of each.

Psychopathologies are commonly conceptualized either using *categorical* or *dimensional* approaches: a categorical approach identifies mental disorders as "discrete clinical conditions" (Widiger and Samuel 2005), while a dimensional system "classifies clinical presentations based on quantification of attributes rather than the assignment to categories"

Table 2.3: Psychopathologies and classes of mental disorders commonly documented in the aftermath of trauma exposure

Concept	Definition
Anxiety Disorders	"Anxiety disorders include disorders that share features of excessive fear and anxiety and related behavioral disturbances. Fear is the emotional response to real or perceived imminent threat, whereas anxiety is anticipation of future threat" (American Psychiatric Association 2013).
CPTSD	Complex post-traumatic stress disorder (CPTSD) was first included in the International Classification of Diseases, 11^{th} edition in 2018 (it is not officially included in the DSM). It is defined as "a disorder that may develop following exposure to an event or series of events of an extremely threatening or horrific nature, most commonly prolonged or repetitive events from which escape is difficult or impossible (e.g. torture, slavery, genocide campaigns, prolonged domestic violence, repeated childhood sexual or physical abuse)" (WHO 2018). For a CPTSD diagnosis, all the diagnostic requirements for PTSD are met, in addition to symptoms related to affect dysreguation, negative self-concept, and disturbances in relationships (Cloitre et al. 2019).
Mood Disorders	Includes depression disorders, the common feature of which are "the presence of sad, empty, or irritable mood, accompanied by somatic and cognitive changes that significantly affect the individual's capacity to function" (American Psychiatric Association 2013).
PTSD	Characterized by re-experiencing the traumatic event, avoidance of thoughts, memories, people, and activities surrounding the event, and heightened threat reactivity, including hypervigilance and increased startle response. While PTSD can develop after either acute (single) or chronic trauma exposure, it has been found to be more commonly diagnosed following the former (Green et al. 2000).

Notes: More information on diagnostic criteria available in American Psychiatric Association (2013) and WHO (2018).

(Chmura Kraemer, Noda and O'Hara 2004). Studies have documented that categorical and dimensional assessments do not always yield comparable data (Moreland and Dumas 2008), and have highlighted the strengths and drawbacks of each (Clark et al. 2017).

Categorical approaches, which are outlined by diagnostic manuals such as the DSM-5 and the ICD-11, are useful in clinical diagnosis, in gauging incidence of psychological disorders at a population level, and in service provision (Clark et al. 2017). Categorical approaches suffer, however, from issues related to heterogeneity of disorder presentation across individuals, thresholds that set the boundaries of meeting diagnostic criteria (Clark et al. 2017), and inter-rater reliability (Brown and Barlow 2009). Threshold issues can be especially problem-

atic in capturing the presence of psychological distress, as it can result in individuals being excluded from both the acknowledgement of distress and potential access to treatment if they have symptoms present, yet do not meet the threshold of the diagnostic criteria (Brown and Barlow 2009). Further, given the nature of the structure of categorical approaches, they are often scrutinized for their lack of cross-cultural relevance (Patel et al. 2018). Studies have assessed whether diagnostic criteria that were developed in the context of Western conceptions of psychopathology are able to accurately account for contextual factors and cultural conceptions of distress, which are different presentations and descriptions of distress specific to a given population or context (Rasmussen, Smith and Keller 2007; Marsella 2010; Patel et al. 2018). One way of addressing issues of contextual relevance is to examine literature and research that "relies on interpretation by cultural insiders," rather than research that relies on "interpreting information from observers' perspectives" in order to find ways to adapt diagnostic criteria used in a given context (Rasmussen, Keatley and Joscelyne 2014). Incorporating cultural concepts or idioms of distress can be useful not only in constructing more contextually and culturally accurate diagnostic criteria (Kohrt et al. 2014), but also in reducing stigma, as idioms of distress can be perceived as less stigmatizing (Kohrt and Hruschka 2010; Patel et al. 2018).

Dimensional approaches, on the other hand, assess psychological distress on a variety of relevant dimensions, with an eye toward the idea that "symptoms associated with mental disorders exist on a spectrum" (Appelbaum 2017). The DSM-5 has sought to use an integrated approach that incorporates dimensional features into its categorical diagnostic criteria, allowing for "degree of acuteness" to be added to various diagnoses (Association 2013). Proponents of dimensional approaches maintain that dimensional approaches encourage "consideration of how symptoms dynamically interact with each other in a network of psychopathology, and of how this network is impacted by the social world" (Van Os 2015).

In the political science literature that examines the effects of psychological distress resulting

from conflict and forced migration, most studies have adopted either a categorical approach, using the PTSD diagnostic criteria, or constructed an index of generalized psychological distress comprised of symptoms from the diagnostic criteria of various mental disorders, including depression, anxiety, and PTSD (Davis and Herman 2022). While these approaches have their benefits—there are existing questionnaires and batteries that can be employed for evaluation and measurement—it is important to note that both categorical and dimensional approaches are "primarily atheoretical, emphasizing description over etiological mechanisms" (Beauchaine, Gatzke-Kopp and Mead 2007).

For this reason, in the following section I draw on insights and conceptualizations from Porges's *polyvagal theory*, which takes an evolutionary approach to human neurophysiology and behavior, to develop a framework conceptualizing responses to trauma exposure for use in microlevel political science research (Porges 2011).

2.3 A Framework of Responses to Trauma Exposure for Microlevel Research

In this section, I draw on insights from Porges's polyvagal theory to present a framework of responses to trauma exposure that can be used in microlevel research assessing the effects of responses to trauma exposure on social cohesion. As covered in section 2.2, research has documented that only a subset of individuals with trauma exposure will develop persistent and adverse psychological distress, and that there is variation in the kind of psychological distress that can emerge. In this section, I draw on insights from polyvagal theory, which applies an evolutionary lens to understanding human responses to external stimuli, to theorize that trauma-exposed individuals are more likely to be reactive to external stimuli, such that they are more likely to be in a state of psychological distress in response to such stimuli. This psychological distress can be characterized by *hyperarousal*, commonly referred to as "fight or flight" behaviors, and/or by *hypoarousal*, commonly referred to as "freezing or immobi-

lizing" behaviors. In addition, I operationalize the concept of *emotion regulation*, defining it as a deliberate or reflexive process that allows individuals to modulate their responses to external stimuli, with the goal of remaining within their *window of tolerance*, meaning not in a state of hyperarousal or hypoarousal.

This framework offers two key benefits for microlevel research, especially for research on populations affected by conflict and forced migration. First, it highlights the universalizing psychophysiologic features of responses to trauma exposure. This allows for the application of this framework across various contexts and populations, even if the specific words and idioms to describe such responses may vary (Rasmussen, Keatley and Joscelyne 2014). Second, the evolutionary approach of this framework moves away from pathologizing responses to trauma exposure (Kirmayer et al. 2008), instead theorizing that responses characterized by hyperarousal and hypoarousal evolved to ensure survival (Baldwin 2013). As such, they should not be considered inherently disordered, but rather may need to be mitigated when they are no longer helping the individual survive in a challenging context and/or are actively impairing daily functioning.

Below, I provide a brief overview of polyvagal theory, from which the concepts of hyperarousal and hypoarousal are drawn, before providing greater detail about the characterizations and processes associated with each hyperarousal, hypoarousal, and emotion regulation.

An Evolutionary Approach to Understanding Responses to Trauma Exposure

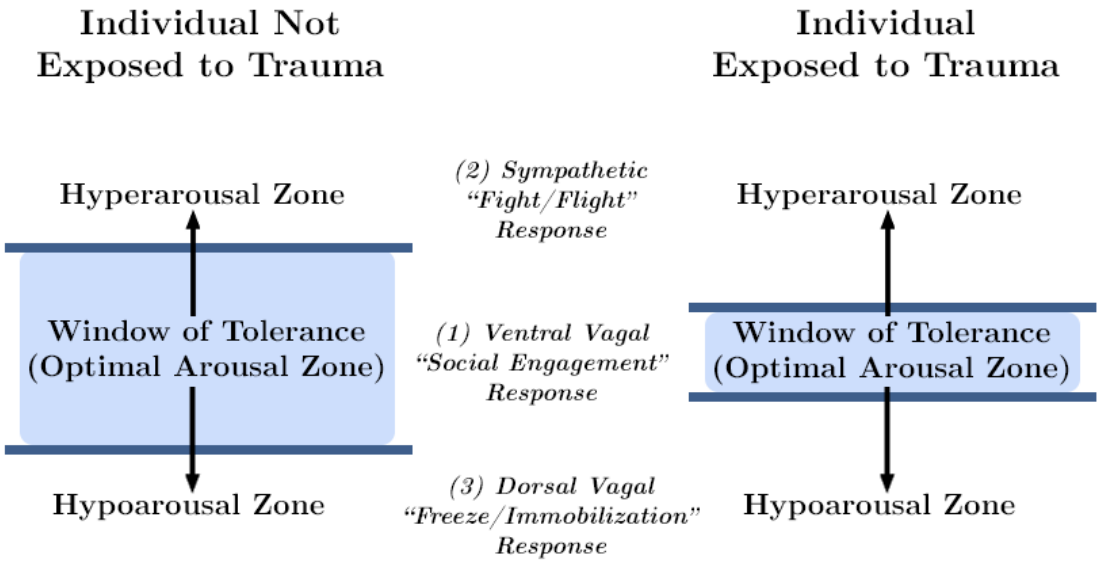
Polyvagal theory describes "three hierarchically organized subsystems of the autonomic nervous system that govern our neurobiological responses to environmental stimulation...The social engagement (ventral vagal) system correlates with the optimal arousal zone, the sympathetic system with the hyperaroused zone, and the dorsal vagal system, with the hyperaroused zone" (Ogden, Minton and Pain 2006). When an individual does not sense threat or

is able to regulate the threats they face, then the *social engagement system*, mediated by the ventral vagal system, which is one branch of the parasympathetic nervous system, regulates the sympathetic nervous system. This allows the individual to engage with their social and physical environment. If the threat becomes too much to regulate, then the sympathetic nervous system is activated, which leads to hyperarousal and its associated survival mechanisms, commonly referred to as "fight or flight" behaviors. Yet, being in a state of hyperarousal is energy-costly for the body and brain. As such, if an individual faces a chronic state of threat, but the sympathetic nervous system responses are not effective in assuring safety or are not possible to carry out (e.g., a person is trapped and unable to escape a threatening situation), then the other branch of the dorsal vagal complex—the other branch of the parasympathetic nervous system—is activated. This results in energy conservation through hypoarousal and its associated survival mechanisms, commonly referred to as "freezing or immobilizing" behaviors, (Ogden, Minton and Pain 2006).[4]

People inherently have variations in what they perceive as threatening, which means that there will be variations in when and why they exit the social engagement system and enter a state of hyperarousal or hypoarousal. Porges (2011) characterizes the space in which an individual does not perceive the environment to be threatening, or is able to manage threats while remaining in the social engagement zone as the "window of tolerance," also referred to as the optimal arousal zone (Ogden, Minton and Pain 2006). It has been widely documented that individuals who have been exposed to trauma process environmental stimuli differently from those who do not, such that "reaction to perceived threat takes precedence" (Williamson et al. 2015), meaning that they "have a lower threshold to move from a neutral to a defensive state" (Williamson et al. 2015). In other words, trauma-exposed individuals often live with a smaller window of tolerance, such that they find themselves more frequently perceiving threats in their environment, and thus more frequently operating in a state of hyperarousal or hypoarousal (Figure 2.1).

[4]For a comprehensive overview of polyvagal theory, see: Porges (2011); Porges, Porges and Dana (2018).

Figure 2.1: Varying window of tolerance by trauma exposure



Notes: Figure adapted from Ogden, Minton and Pain (2006) illustrating the "correlation of the three arousal zones and the polyvagal hierarchy."

As Slonim (2014) notes, polyvagal theory is particularly useful in that it creates links "between basic science research, social behavior, and clinical practice," "highlights basic physiological processes that are at the core of most psychiatric conditions," and "enhances our understanding of what leads to social engagement or disengagement" (Slonim 2014). As such, in section 2.3, I present a framework informed by polyvagal theory for categorizing responses to trauma exposure, which will in turn form the basis of the theory presented in Chapter 3.

An added benefit of using this framework is that it avoids pathologizing what are normal, human responses to the abnormal experience of living through conflict and forced migration. In recent years, and as studies of responses to trauma exposure have extended to contexts characterized by chronic displacement, violence, and conflict (Turnbull 1998), there has been a push to not pathologize reactions to trauma exposure. In understanding that reactions characterized by hyperarousal and hypoarousal have evolved as survival mechanisms, we are

better able to understand how such responses may be normal reactions to abnormal events. The proposed framework presented herein seeks to adopt this mentality, moving away from describing responses to trauma using pathologizing language. This does not mean that such responses cannot and do not have deleterious impacts on individuals and their ability to function, but rather that these responses need not be framed using a language of disorder (SAMHSA 2014).

Hyperarousal and Hypoarousal

In the fight, flight, freeze, and immobilize construction, sympathetic *hyperarousal* states are characterized by the former two (Ogden, Minton and Pain 2006). Responses to trauma exposure characterized by hyperarousal include hypervigilance, heightened threat reactivity, excessive startle response, and panic attacks (Stanley 2019). Such responses can be triggered by both external cues and internal cues. Importantly, studies have identified that hyperarousal does not only occur in response to stimuli related to the original trauma exposure; research among populations that have high levels of trauma exposure "found a more generalized increase in reactivity across a range of stressful stimuli" (Kinzie, Boehnlein and Sack 1998).

In the fight, flight, freeze, and immobilize construction, parasympathetic hypoarousal states are characterized by the latter two (Ogden, Minton and Pain 2006). Responses to trauma exposure characterized by hypoarousal include hopelessness, suppression, disassociation, avoidance, numbing, cognitive or motor slowing, and anhedonia (inability to feel pleasure) (Brown and Barlow 2009; Williamson et al. 2015). Hypoarousal can occur as the result of chronic hyperarousal with an inability to escape, as a means of survival and preservation (Frewen and Lanius 2006). This is because when individuals experience chronic exposure to trauma, the metabolic cost of remaining in a constant state of hyperarousal is extremely high (Williamson et al. 2015). Responses characterized by hypoarousal—including numbing, disassociation, and avoidance—allow individuals to "guard against the arousal of trauma-relevant cues"

(Rosen 2004).

Individuals can have responses to trauma exposure characterized by hyperarousal, hypoarousal, or both hyperarousal and hypoarousal; such responses are not mutually exclusive. It has been documented that some individuals who meet the diagnostic criteria for CPTSD oscillate frequently between hyperarousal and hypoarousal states, "without an intervening 'calm' state that would provide opportunities for positive social interactions" (Williamson et al. 2015). Given that hypoarousal can occur as the result of chronic hyperarousal, it is theoretically likely that individuals with responses to trauma exposure characterized by hypoarousal may additionally have responses characterized by hyperarousal (Frewen and Lanius 2006).

Emotion Regulation

In addition to responses to trauma exposure characterized by hyperarousal and hypoarousal, I focus on the role of *emotion regulation*, which I operationalize as an individual's ability to regulate and modulate their emotional responses in a way that is proportional to stimuli (Gross 2008). Emotion regulation allows an individual to remain in or return to the *window of tolerance* (Schore 2003), wherein they are neither in a state of hyperarousal or hypoarousal and "where optimal social functioning and goal engagement is possible" (Chambers, Gullone and Allen 2009). In keeping with the emotion regulation literature on adults, I focus on intrinsic emotion regulation processes (how individuals regulate their own emotions) rather than extrinsic emotion regulation processes (how people help others regulate their emotions).[5] Emotion regulation, which can include either behavioral or cognitive strategies that can each be either deliberate or reflexive in nature (Gross 2008), "influenc[es] the inten-

[5]As socially-oriented creatures, social interactions themselves can play a role in emotion regulation. Yet, as is indicated by polyvagal theory, "social engagement comes online only in conditions evaluated as safe via neuroception, the non-conscious risk assessment process thought to take place in the primitive parts of the brain" (Slonim 2014). For individuals who have experienced trauma exposure and have a lower threshold for perceiving threat, this is less likely to occur. Therefore, as noted, for the purposes of this framework and keeping with the literature on emotion regulation in adults, I operationalize emotion regulation as an individual's *own* ability to regulate and modulate their emotional responses in a way proportional to stimuli.

sity, duration, or quality of a current or future emotion" (Bullis et al. 2019). Gross (2015) identifies five points in the emotion generative process at which an individual can regulate their emotions, including situation selection, situation modification, attentional deployment, cognitive change, and response modulation.

Emotion regulation research has grown significantly in the past three decades (Tull and Aldao 2015) and has more recently gained traction in the microfoundational study of international politics, particularly in regard to conflict and conflict resolution (Halperin 2014). This is in part due to the universalizing features of emotions across cultures and contexts (Jackson et al. 2019; Davis and McDermott 2021), in that emotion "rests on a physiological foundation" and "stimulation from the external world results in physiological changes within the human body" (McDermott 2004).[6] Emotion regulation is also relatively more straightforward to target in interventions, including those administered by non-specialists. This has practical implications for improving well-being among populations affected by trauma exposure, as well as empirical implications for assessing the impact of emotion regulation on sociopolitical outcomes.

2.4 Conclusion

This chapter provides an overview of conceptualizations of trauma exposure and the heterogeneous, individual-level responses to it. It highlights the variation in the presence, degree, and kinds of psychological distress that can emerge in response to trauma exposure, and applies an evolutionary lens to conceptualizing adverse responses to trauma exposure as psychological distress characterized by hyperarousal and hypoarousal. In doing so, it lays the groundwork for the theory of psychological foundations of social cohesion presented in

[6] *Emotions*, which are "characterized by changes in physiology, subjective experience, and behavior that unfold over time and occur in response to an activating event," are conceptually differentiated from *moods*, which last longer, are more generalized (e.g., feeling down), and often lack obvious causes, and from *affect*, which is a "umbrella term that refers to emotions, moods, and stress responses" (Bullis et al. 2019).

Chapter 3, allowing for a more precise approach to theorizing and assessing how the psychological implications of conflict and forced migration affect social cohesion.

Chapter 3

Theory of Psychological Foundations of Social Cohesion

> *If we are to tackle serious political-social problems we must start with a frame in which traditional assumptions give way to ones that reflect far more the human elements in social relations.*
>
> Burton and Burton (1997)

In this chapter, I present the theory of psychological foundations of social cohesion. The theory specifies how various responses to trauma exposure affect *social cohesion*, defined as individual-level attitudes and behaviors that capture the perceived "degree of interconnectedness between individuals" (Van der Meer and Tolsma 2014; Baumeister and Leary 1995). Social cohesion is of particular interest in contexts affected by conflict and forced migration, as it has been identified as a key factor in constructing stable societies, capturing aspects of interpersonal dynamics that can contribute to discord. I identify two dimensions of social cohesion: *bonding* social cohesion, the target of which is ingroup members, and *bridging* social cohesion, the target of which is outgroup members.

For the proposed theory, I draw on the framework of responses to trauma exposure for microlevel research presented in section 2.3, arguing that individuals' adverse responses to trauma exposure, manifest as psychological distress, lead to changes in attitudes and behaviors that reduce social cohesion outcomes. I maintain that different kinds of psychological distress will have differential impacts on social cohesion; specifically, I theorize that individuals with responses to trauma characterized by *hyperarousal*—commonly referred to as fight or flight behaviors—will have lower levels of *bridging* social cohesion, while individuals with responses to trauma characterized by *hypoarousal*—commonly referred to as freezing or immobilizing behaviors—will have lower levels of both *bridging* and *bonding* social cohesion. Finally, I maintain that individuals with greater emotion regulation skills will report higher levels of both bridging and bonding social cohesion.[1] I maintain that post-trauma interventions that improve hyperarousal, hypoarousal, and emotion regulation can thus play a significant role in improving the well-being of persons affected by conflict and forced migration, by not only reducing the incidence and burden of post-trauma exposure symptoms, but also by improving social cohesion via improvements in psychological factors. This theory provides a conceptual framework for understanding the specific pathways operating between trauma exposure, the responses individuals have to trauma exposure, and the ways those differential responses affect social cohesion.

The chapter proceeds as follows. Section 3.1 presents the conceptualization and operationalization of the project's main outcome of interest, social cohesion, drawing on the multidisiplinary literature that engages with the concept. I outline the functional (behavioral) and ideational (attitudinal) aspects of social cohesion, and further elaborate on the differences between bridging and bonding social cohesion (Putnam 2001). Section 3.2 outlines the theory of psychological foundations of social cohesion, presenting seven hypotheses to be tested in the empirical chapters of this project. Section 3.3 details three ways that this project

[1] As noted in section 2.3, emotion regulation allows an individual to remain in or return to the *window of tolerance* (Schore 2003), wherein they are neither in a state of hyperarousal or hypoarousal and "where optimal social functioning and goal engagement is possible" (Chambers, Gullone and Allen 2009).

addresses the challenges with crossing levels of analysis, specifying how social cohesion—as measured at the individual level—connects to peace, stability, and conflict, which typically have been conceived of as macro-level outcomes. First, I maintain that social cohesion should be seen as a measure of everyday peace, meaning peace experienced at the local and individual level (Firchow 2018; Mac Ginty 2021). This approach adopts a human security lens (Newman 2011) that orients the individual as the referent of security (Newman 2001). Second, the project draws on existing theories and empirical tests that identify social cohesion as a key individual-level indicator of macro-level peace (Firchow 2018), reconciliation (Cole and Firchow 2019), and conflict (Vollhardt, Migacheva and Tropp 2009). Third, the theory emphasizes the interpersonal dynamics of peace and conflict, by theorizing how individual-level psychological responses to trauma exposure map onto relational dynamics. Section 3.4 identifies other models that have theorized and tested how psychological and physiological processes affect social and political outcomes (Hibbing, Smith and Alford 2014; Landau-Wells and Saxe 2020), highlighting studies that theorize psychological processes as operating between trauma exposure and sociopolitical outcomes relevant to peace, reconciliation, and violence (Canetti et al. 2013). Section 3.5 concludes and previews the empirical tests that will be carried out in subsequent chapters.

3.1 Defining Social Cohesion

In this section, I operationalize social cohesion, which serves as the dependent variable of interest in this project. I differentiate between *bonding* and *bridging* social cohesion as the two primary dimensions of social cohesion (Putnam 2001). After providing definitions of each, I outline the targets of social cohesion (ingroup members, outgroup members, and members of the general population), as well as the functional (behavioral) and ideational (attitudinal) aspects of social cohesion (Van der Meer and Tolsma 2014). The operationalization of social cohesion presented herein is intended to be both specific enough to provide a framework for empirical analyses, while flexible enough to allow for context-specific variation.

The Concept of Social Cohesion

Social cohesion has been variously defined across disciplines and sub-fields (Friedkin 2004; Chan, To and Chan 2006; Bruhn 2009*a*; Vollhardt, Migacheva and Tropp 2009), and is conceptually related to outcomes such as social capital (Putnam 2001), social interactions (Arrow 2000), social inclusion (Oxoby 2009), social trust (Justwan, Bakker and Berejikian 2017), social tolerance (Vogt 1997), and solidarity (Moody and White 2003). Across various studies, conceptualizations of social cohesion commonly share the idea that it captures the "connectedness" of individuals (White 2003), or the "glue that binds people together" (Lavis and Stoddart 2003).

I draw on these existing conceptualizations, operationalizing social cohesion as individual-level attitudes and behaviors that capture the degree to which individuals feel themselves to be interconnected (Van der Meer and Tolsma 2014). Like Fearon, Humphreys and Weinstein (2009) and Gilligan, Pasquale and Samii (2014), I use *social cohesion* rather than *social capital* or other related concepts in order to emphasize how individual behaviors and attitudes contribute to interpersonal and community dynamics, rather than how they affect the attributes of individuals in isolation (Gilligan, Pasquale and Samii 2014). I do this to create a more explicit link between the individual-level of analysis at which this project operates and the interpersonal dynamics that can result in conflict (Mac Ginty 2014).

Social cohesion can operate on both a functional (behavioral) level and an ideational (attitudinal) level (Otte 2019). Specifically, the functional level of social cohesion includes behaviors such as participation, exclusion, and interpersonal relations, while the ideational level captures attitudes such as trust, identities, norms, and values (Friedkin 2004; Chan, To and Chan 2006). Importantly, while functional aspects require actual interaction with other individuals, ideational aspects do not and can exist regardless of in-person interaction (Otte 2019). Key indicators of social cohesion include both attitudes and behaviors related to trust, commitment, prosociality, and group membership, including identification, prejudice,

participation, and norms (Keltner et al. 2014; Friedkin 2004; Chan, To and Chan 2006; Van der Meer and Tolsma 2014).

Bonding and Bridging Social Cohesion

In this section, I define the two primary dimensions of social cohesion—bonding social cohesion and bridging social cohesion—and highlight the primary targets of each. I adapt the concepts of bonding capital and bridging capital presented by Putnam (2001), with *bonding* social cohesion capturing social cohesion among members of the ingroup and *bridging* social cohesion capturing social cohesion among members of the outgroup (Gittell and Vidal 1998; Otte 2019). Bridging social cohesion has also commonly been referred to as intergroup social cohesion (Gilligan, Pasquale and Samii 2014), capturing "patterns of cooperation among individuals from different social groups who live and work in close proximity" (Mousa 2020). Bridging social cohesion may often be more challenging to establish in the context of societies affected by conflict or forced migration, compared to in societies characterized by relative peace, as engaging with outgroup members in conflict and forced migration-affected contexts can often require "a leap of faith" (Mac Ginty 2021) or active pushing back against established community norms (Tam et al. 2009).

In addition to ingroup and outgroup members, members of the general population are also a target of social cohesion (Van der Meer and Tolsma 2014). While many measures of social cohesion focus specifically on capturing either ingroup (intragroup) attitudes and behavior or outgroup (intergroup) attitudes and behavior, many commonly-used indicators of social cohesion focus on the general population as the target, including social trust, a frequent measure of social cohesion across contexts (Justwan, Bakker and Berejikian 2017). Whether members of the general population are targets of bonding or bridging social cohesion will be dependent on the homogeneity or the heterogeneity of the composition of the individual's community. In such cases, it may not be possible to specify whether such a measure is capturing bonding or bridging social cohesion, unless it is possible to assess more information

about the specific context in which the individual resides; thus, such measures may be viewed as a measure of generalized social cohesion.

While both bonding and bridging social cohesion have been deemed as beneficial to the health and well-being of societies (Putnam 2001), research has demonstrated that too much bonding social cohesion and/or bonding social cohesion to the exclusion of bridging social cohesion can result in parochialism (Mironova and Whitt 2016), negative solidarity (Mac Ginty 2021), and outgroup scapegoating (Vollhardt, Migacheva and Tropp 2009).

3.2 Theory of Psychological Foundations of Social Cohesion

In this section, I present the theory of psychological foundations of social cohesion. I draw from the extensive literature reviewed in section 2.2 documenting the significant variation in individual-level responses to trauma exposure. I then use the framework of responses to trauma exposure presented in section 2.3 to conceptualize how differential responses to trauma exposure affect bonding and bridging social cohesion.[2]

To review the aforementioned framework briefly, hyperarousal is psychological distress characterized by what are commonly referred to as fight or flight responses, such as increased threat reactivity, startle response, and panic (Stanley 2019). Hypoarousal is psychological distress characterized by what are commonly referred to as freeze and immobilization responses, such as dissociation, avoidance, numbing, and anhedonia (Brown and Barlow 2009; Williamson et al. 2015). Following trauma exposure, individuals can have no development of psychological distress, psychological distress characterized either hyperarousal, psycho-

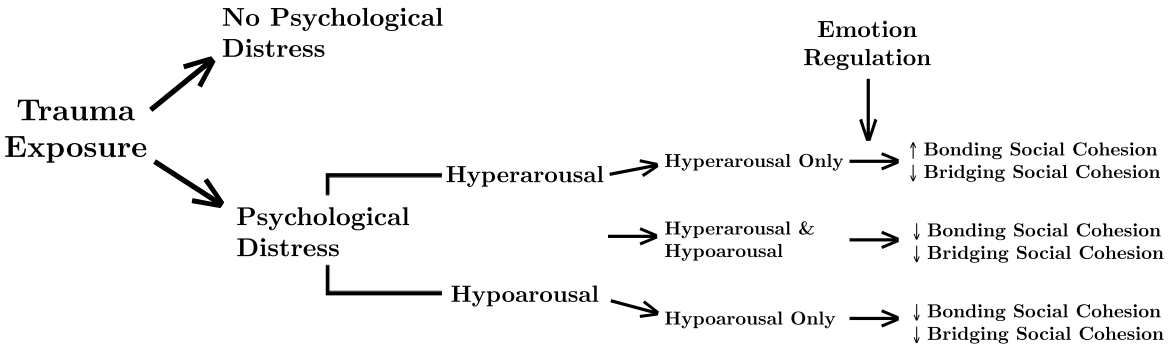
[2]Of note, there are other kinds of social cohesion outcomes of interest to political science research that are not easily classified as either bonding or bridging social cohesion. Throughout this project, I will seek to classify indicators as bonding or bridging social cohesion to the extent possible, and will explain the reasoning for when I cannot.

logical distress characterized by hypoarousal, or psychological distress characterized by both hyperarousal and hypoarousal. Emotion regulation is an either deliberate or reflexive process by which individuals experience, perceive, and manage their emotional responses to stimuli (Gross 2008), allowing them to remain within or return to their window of tolerance, meaning they are neither in a state of hyperarousal nor hypoarousal (Schore 2003). Individuals who have been exposed to trauma often have a reduced window of tolerance, and thus exist more frequently in a state of hyperarousal or hypoarousal. Emotion regulation can help individuals mitigate psychological distress either prior to, during, or after they have emerged (Gross 2015).

I develop seven hypotheses regarding the variation in how individuals react to living through trauma exposure (H1-H2), how differential responses to trauma shape social cohesion (H3-H6), and the role that emotion regulation plays in mitigating the effects of hyperarousal and hypoarousal on social cohesion (H7). Specifically, I hypothesize that only a subset of individuals will develop psychological distress in responses to trauma exposure (H1), and that there will be variation in the character of that distress (H2). I expect that psychological distress characterized by hyperarousal and hypoarousal will have differential impacts on social cohesion (H3), such that individuals with responses to trauma characterized by *hyperarousal* will have lower *bridging* social cohesion (intergroup social cohesion), while individuals with responses to trauma characterized by *hypoarousal* will have lower *bonding* social cohesion (intragroup social cohesion) and *bridging* social cohesion. I further hypothesize that individuals with greater emotion regulation will have higher bonding and bridging social cohesion (H7). Figure 1.4 visualizes the theorized relationship between trauma exposure, responses to trauma exposure, emotion regulation, and social cohesion.

As noted previously, this theoretical model explicitly seeks to *not* pathologize or normatively evaluate the responses to trauma exposure as outlined, nor the changes in social cohesion that they may cause. In contexts related to conflict and forced migration, psychological

Figure 3.1: Model of psychological foundations of social cohesion



processes that emerge in the aftermath of trauma exposure—even if they are consistent with diagnostic criteria for various psychopathologies—are often adaptive (Baldwin 2013). For example, heightened threat reactivity in an environment where individuals are experiencing continual violence is *adaptive* to survival. Yet, once individuals are in new contexts—trying to settle into a new community, to return home and rebuild social ties, or to construct a life in the confines of a refugee camp—processes that were previously adaptive can often prevent individuals from leading healthy lives and building functioning relationships. The theory presented herein specifies how psychological processes—which have emerged as the result of trauma exposure and may have been adaptive for a period of time—shape social cohesion, with an eye toward supporting healthy community dynamics in contexts where people affected by conflict and displacement reside.

Hypotheses and Observable Implications of the Theory

In this section, I outline the hypotheses (Table 3.1) that I derive from the theory of psychological foundations of social cohesion.

Hypotheses on Trauma Exposure

Building on the research in psychology that has found significant individual-level variation in responses to trauma exposure, as was reviewed in 2.1, I expect that:

H1: Of individuals who experience trauma exposure, only a subset will develop psychological distress in response.

H2: Of individuals who develop psychological distress in response to trauma exposure, there will be variation in degree and kind of psychological distress.

Hypotheses on Responses to Trauma Exposure

The logic of the theory of psychological foundations of social cohesion predicts that different psychological distress responses to trauma exposure will differentially impact bonding and bridging social cohesion, such that responses characterized by hyperarousal will be associated with lower reported bridging social cohesion, and responses characterized by hypoarousal will be associated with both lower reported bonding social cohesion and lower reported bridging social cohesion. Hyperarousal responses are characterized by fight or flight behaviors, including excessive vigilance, heightened threat reactivity, and increased anxiety. These responses are rooted in adaptive processes that evolved to help keep individuals safe from threat (Baldwin 2013). As such, it becomes adaptive to limit interactions and protect oneself from unknown outsiders.[3] Hypoarousal responses, by contrast, are characterized by freezing or immobilizing behaviors, including numbing, dissociation, avoidance, and anhedonia. Similar to hyperarousal processes, hypoarousal responses are rooted in adaptive behaviors that help an individual endure chronic, sustained trauma and stress. These processes are protective in

[3]While bridging social cohesion is needed for functioning and healthy communities the long-term, encouraging groups to mix before they can have positive and mutually-beneficial interactions can lead to adverse outcomes (Allport, Clark and Pettigrew 1954). Therefore, when individuals' responses to stimuli are characterized by hyperarousal, reduced bridging social cohesion manifest by reduced intergroup interactions should not be seen as a normatively bad outcome; rather, it might help prevent additional conflict. This is discussed in greater detail in section 1.5.

allowing for an individual to survive in overwhelming in the midst of chronic or inescapable trauma exposure. Such responses can also, however, result in individuals withdrawing from individuals around them in their daily lives, regardless of such individuals' membership in the ingroup or the outgroup, as a consequence of these coping mechanismism. This logic informs the main hypotheses of this project; I expect that:

> **H3:** Psychological distress characterized by hyperarousal will differently impact social cohesion, as compared to psychological distress characterized by hypoarousal.
>
> **H4:** Individuals with psychological distress characterized by hyperarousal will be more likely to report lower levels of bridging social cohesion, as compared to individuals without distress characterized by hyperarousal.
>
> **H5:** Individuals with psychological distress characterized by hypoarousal will be more likely to report lower levels of bonding and bridging social cohesion, as compared to individuals without psychological distress characterized by hypoarousal.

The logic of the theory also predicts how *combinations* of responses to trauma will differentially impact social cohesion. As outlined above, if individuals have responses characterized by hyperarousal, I expect that they will subsequently have lower levels of bridging social cohesion as a result of the adaptive, evolutionary response to protect themselves from outsiders and reduce their exposure to unknown threats. However, if in addition to hyperarousal, they do *not* also have responses characterized by hypoarousal, I expect that they will turn to ingroup members as a means for improving safety, protection, and survival.[4] Thus, I expect that individuals with responses characterized by hyperarousal, but not characterized by hypoarousal, will report higher levels of bonding social cohesion as compared to individuals

[4]Of note, the ingroup could be as small as the family unit, or as broad as the nation state, and will be highly dependent on the context. Therefore, assessing salient group identity or identities will be vital in hypothesis testing.

with responses characterized by both hyperarousal *and* hypoarousal. I thus hypothesize that:

> **H4A:** Individuals with psychological distress characterized by hyperarousal and *not* hypoarousal will be more likely to report higher levels of bonding social cohesion than individuals with psychological distress characterized by hyperarousal *and* hypoarousal.

Individuals can have responses characterized by both hyperarousal and hypoarousal; they are not mutually exclusive. Thus, I expect that that if individuals have responses to trauma characterized by *both* hyperarousal *and* hypoarousal, they will not only avoid outgroup members, but also withdraw from their own community as a consequence of the protective, adaptive processes corresponding with each hyperarousal and hypoarousal. As such, I expect the presence of *both* hyperarousal *and* hypoarousal to be associated with lower reported levels of *both* bonding *and* bridging social cohesion, such that:

> **H6:** Individuals with psychological distress characterized by both hyperarousal *and* hypoarousal will be more likely to report lower levels of bonding and bridging social cohesion, as compared to individuals without psychological distress.

Hypotheses on Emotion Regulation

The final hypothesis relates to emotion regulation. I postulate that individuals with increased ability to emotionally regulate in the face of stimuli are able to remain within or return to their "window of tolerance," which is when their social engagement system is able to be operative (Ogden, Minton and Pain 2006). Deliberate emotional regulation can help an individual return to their window of tolerance, even if they have responses to trauma characterized by hyperarousal or hypoarousal. As such, I hypothesize that:

H7: Individuals with greater emotion regulation skills will be more likely to report higher levels of bonding and bridging social cohesion, as compared to individuals with fewer emotion regulation skills.

Table 3.1: Hypotheses derived from the theory of psychological foundations of social cohesion

	Hypotheses on Trauma Exposure
H1:	Of individuals who experience trauma exposure, only a subset will develop psychological distress in response.
H2:	Of individuals who develop psychological distress in response to trauma exposure, there will be variation in the degree and kind of psychological distress.
	Hypotheses on Responses to Trauma Exposure
H3:	Psychological distress characterized by hyperarousal will differently impact social cohesion, as compared to psychological distress characterized by hypoarousal.
H4:	Individuals with psychological distress characterized by hyperarousal will be more likely to report lower levels of bridging social cohesion, as compared to individuals without distress characterized by hyperarousal.
H4A:	Individuals with psychological distress characterized by hyperarousal and *not* hypoarousal will be more likely to report higher levels of bonding social cohesion than individuals with psychological distress characterized by hyperarousal *and* hypoarousal.
H5:	Individuals with psychological distress characterized by hypoarousal will be more likely to report lower levels of bonding and bridging social cohesion, as compared to individuals without psychological distress characterized by hypoarousal.
H6:	Individuals with psychological distress characterized by both hyperarousal *and* hypoarousal will be more likely to report lower levels of bonding and bridging social cohesion, as compared to individuals without psychological distress.
	Hypotheses on Emotion Regulation
H7:	Individuals with greater emotion regulation skills will be more likely to report higher levels of bonding and bridging social cohesion, as compared to individuals with fewer emotion regulation skills.

As noted in section 2.2, I maintain that it is useful to look at responses to trauma as characterized by symptoms, rather than by diagnostic criteria because of cross-cultural issues in designing diagnostic criteria, threshold issues inherent to diagnostic criteria, and stigmas associated with Western conceptions of psychopathology that may lead to an under-reporting in diagnostic assessment. However, because of the dominance of the use of diagnostic criteria

in data collection and reporting—such that data and statistics on individual symptomatology are not as commonly reported as prevalence of psychological disorders—as well as the utility of diagnostic criteria in assessing the scope and severity of mental health outcomes at the population or cross-population level, my empirical strategy will use disaggregated underlying symptomatology when available for hyperarousal and hypoarousal, and diagnostic reporting when underlying symptomatology is not available.

3.3 Bridging Levels of Analysis

As highlighted in Chapter 1, the growth in interest in microfoundational studies of peace, reconciliation, and conflict, as well as innovations in methodological approaches and data collection at the micro-level has led to a significant increase in studies examining the individual-level of analysis.[5] This has led many scholars to warn about an "aggregation issue in international relations" (Hafner-Burton et al. 2017). Scholars warning of this issue maintain that micro-level research provides key insights on individual and interpersonal dynamics in communities, but that there is a need to address how to bridge individual-level measures of social and political dynamics and meso- or macro-level concepts like peace, reconciliation, and conflict (Balcells and Justino 2014; Balcells and Stanton 2021). Recent research, however, has begun to assess the ways in which the aforementioned "aggregation problem" might not be as much of an issue for psychological theories in IR than has previously been feared Kertzer et al. (2022).

This section engages with these questions of aggregation in microlevel studies of peace, reconciliation, and conflict, offering three ways in which the proposed framework and theory address such issues. First, I underscore how social cohesion captures the interpersonal level of analysis, allowing for an interrogation of how individual-level factors map onto relational dynamics. Second, I detail how social cohesion can be conceived of as a measure of *every-*

[5]See Figure A.1 in Appendix A for visualization of growth in microfoundational studies in international relations.

day peace. Third, I review existing research that has assessed and found a significant link between social cohesion and macro-level outcomes of peace, reconciliation, and stability. I conclude by highlighting that, while I do not empirically test the relationship between micro- and macro-level outcomes within this project, I believe the theory and framework provided can contribute significantly to how scholars and policymakers understand the relevance of individual and interpersonal outcomes as they relate to often hard-to-define concepts like peace, reconciliation, and stability.

Social Cohesion as a Relational Concept

As stated by Pires (2012), "social order is embodied in patterns of social relationships." At its conceptual core, social cohesion is a multi-level, *relational* concept (Vollhardt, Migacheva and Tropp 2009), concerned with the interpersonal as a key point of analysis (Mac Ginty 2021). Though it is often measured at the individual level, social cohesion captures interpersonal dynamics operating at the "neighborhood, group, community, and societal levels" (Bruhn 2009*b*). In other words, social cohesion is a concept that assesses how individuals relate to, integrate into, and identify with their communities. As such, social cohesion provides a conceptual and empirical link between what is commonly seen as the individual and the collective levels of analysis, capturing individual-level behaviors and attitudes regarding collective-relevant outcomes.

Social Cohesion as Everyday Peace

Consistent with the 'micro turn' in research outlined in section 1.1, there has been increased interest in understanding how peace manifests at the local, individual level, as opposed to as a macro-level concept measured at the state level (Brewer 2010; Justino, Brück and Verwimp 2013). This is due, in part, to the increased relevance of local actors and decreased confidence in international institutions in matters related to peacebuilding, reconciliation, and conflict reduction (Mac Ginty and Richmond 2013). It is also the result of human security approaches

to matters of peace, displacement, and conflict (Newman 2001; Jarvis and Lister 2013), which center the individual rather than the state as the referent for security, equating "security with people rather than territories" (United Nations Development Programme 1994). The concept and framework of human security, which is at the intersection of security studies, development studies, and conflict resolution, was first significantly popularized by the 1994 United Nations Development Programme (UNDP) Human Development Report, and has since experienced a widening and deepening in both academic and practitioner literature in the realms of peace, reconciliation, and conflict (Benedek 2007).

Building on this approach of identifying the individual as the referent for security, social cohesion as operationalized in this project can be seen as an indicator of *everyday peace* (Mac Ginty 2021), which is "context specific and involves the observations and decisions made by individuals and communities as they navigate their way through life" (Mac Ginty and Firchow 2016). Everyday peace is a concept central to the Everyday Peace Indicators (EPI) (Mac Ginty and Firchow 2016), which use participatory research methods as a way of capturing how individuals experience and define peace in the context of their own lives (Mac Ginty and Firchow 2016). While the following section identifies how social cohesion has been linked to macro-level measures of peace, reconciliation, and conflict, the EPI have identified social cohesion as a common indicator of peace itself, as defined and experienced at the local level across contexts (Firchow 2018). This is especially the case in communities that are not currently experiencing ongoing violent conflict (Mac Ginty and Firchow 2016; Firchow 2018), as is the primary context of interest for this project; this is explained in detail in section 1.5.

Further, such local level conceptions of peace are of interest to the broader study of peace in that they allow for a better understanding of the experiences of people at the center of peace and conflict (Mac Ginty 2013; Solomon and Steele 2017). Such a "turn towards people" means that peace and conflict research—which is, at its most basic level, about the humans

who live through and experience peace, or lack thereof, on a daily basis—can more effectively understand the human experience and "turn away from depoliticized abstraction" (Sylvester 2013). Further, as Mac Ginty (2021) states, local, everyday peace is often the "first and last peace" experienced, meaning the first peace to follow the cessation of conflict and the last peace to prevail prior to an outbreak in violence.

Social Cohesion as an Indicator of Macro Outcomes

In their 1999 Declaration and Programme of Action on a Culture of Peace, the United Nations General Assembly stated that "issues of tolerance, understanding, solidarity, and social cohesion represent a key foundation for building cultures of peace" (Assembly 1999). This statement has been empirically supported, with research demonstrating that social cohesion is empirically linked to the promotion of peace, reconciliation, and stability through numerous pathways (Vollhardt, Migacheva and Tropp 2009). Social cohesion has been identified as connected to macro outcomes of coexistence (Cole and Firchow 2019), conflict (Varshnay 2002), and peace, including both negative peace (the absence of violence) (Osberg and Dayton-Johnson 2003) and positive peace (the promotion of equality and justice) (Vollhardt, Migacheva and Tropp 2009). Social cohesion has additionally been identified as a key indicator of reconciliation (Cole and Firchow 2019); all major barometers that assess reconciliation—including the South African Reconciliation Barometer (SARB) (Moosa 2022), the Social Cohesion and Reconciliation (SCORE) Index (Louise, Ioannou and Lordos 2015), the Colombian Index for the Conditions for National Reconciliation and the Colombian Index for Reconciliation (Organización Internacional para las Migraciones 2016), and others—employ measures of social cohesion in assessing of strength of reconciliation. Studies focusing specifically on bridging (intergroup) social cohesion have found it to be linked to other macro outcomes that contribute to peace and stability, including good governance (Bowles and Gintis 2002), stable democracy (Cuellar 2009), and economic development

(Knack and Keefer 1997; Dayton-Johnson 2003).[6]

3.4 Existing Models of Psychological Effects on Sociopolitical Outcomes

In recent years, there has been a growing body of interdisciplinary work that seeks to theorize and test the relationships between psychological (and physiological) processes and sociopolitical outcomes (Hibbing, Smith and Alford 2014; Canetti et al. 2009; Landau-Wells and Saxe 2020). This section provides a brief overview of this research, highlighting how the theory presented in section 3.2 builds on and contributes to it.

Research on Psychological Processes Mediating the Effect of Violence

Recent research has sought to test how psychological responses to violence affect political and intergroup attitudes (Canetti et al. 2009; Horgan 2005). Canetti et al. (2009) propose a stress-based model of political extremism, positing "that distress brought about by experiences of war and conflict heightens perceived threat that ultimately leads to the formation of political extremist attitudes." Mordeno et al. (2020) uses this model with adolescents in Southeast Asia, and similarly find that "psychological distress and perceived threat serially mediate the relationship between exposure to violence and the formation of exclusionist attitude."

[6]Outside the scope of this project, though substantively important for future research, is empirically testing how social cohesion aggregates up to macro-level outcomes. In addition to the idea of linear aggregation (i.e., more social cohesion equals more peace and less conflict) and the idea of behavior scaling out (Peruzzotti, Goodman and Pegram 2012; Mac Ginty 2021), other models have been posited, including those represented by tipping points in behavior changes characterized by collective action (Fine 2012), circuitry of structures and processes nested within and reinforcing one other (Mac Ginty 2021), and ecological systems models characterized by a series of nesting circles that center the individual (Bronfenbrenner 1974). Finally, there is the recognition that specific individuals can have outsized influence on community outcomes, either through leadership (serving as elites and swaying others) or through isolated behaviors that influence others (e.g. violent extremism). While such tests are outside the empirical aims of the current project, potential avenues for future inquiry are discussed at length in section 7.3.

These studies have been foundational in drawing attention to individual differences in responses to violence and how such differential responses may impact sociopolitical outcomes. Yet, such models primarily focus on the role of psychological responses characterized by *hyperarousal*, such as heightened threat reactivity. I build on these models, by also theorizing about the effects of psychological responses characterized by *hypoarousal*, which have been documented as being more commonly experienced by individuals who have experienced chronic trauma exposure (D'Andrea et al. 2013). Further, I expand the analysis beyond the existing literature's focus on political attitudes and voting behavior to examine social cohesion, an outcome central to peace, reconciliation, and stability in contexts affected by conflict and forced migration. Thus, the proposed theory contributes to the literature by both accounting for additional individual variation in responses to trauma exposure and by positing the distinct effects that various responses have on social cohesion.

Research on Emotion Regulation in Improving Relational Dynamics

Recent studies have also sought to empirically evaluate the role of emotion regulation on prosocial behaviors (Martí-Vilar, Serrano-Pastor and Sala 2019) and intergroup conflict resolution (Halperin et al. 2013). Halperin and Pliskin (2015) find that individuals who receive a cognitive-reappraisal treatment—"which involves changing the meaning of a situation to change the emotional response to it (Gross 2008)"—are more likely to support conciliatory policies and less likely to support aggressive policies. This dissertation builds on this growing body of research by assessing how intervention-driven changes in emotion regulation can in turn affect social cohesion outcomes. This further ties the impact of individual-level interventions to outcomes relevant to stability in communities affected by conflict and forced migration.

3.5 Conclusion

Mental health is a fundamental, yet understudied factor that carries across all contexts and issues. All humans have brains. All humans have bodies. These brains and bodies impact the decisions we make, the behaviors we carry out, and the attitudes we hold. It is therefore essential to better understanding how psychological responses that can emerge in the aftermath of trauma exposure affect the ability for individuals to build or maintain relationships that contribute to stable, peaceable communities.

The theory of psychological foundations of social cohesion presented in this project provides a framework and set of testable hypotheses to systematically evaluate these pathways, positing that individuals' adverse responses to trauma exposure, manifest as psychological distress, lead to changes in social cohesion outcomes. I identify two dimensions of social cohesion: *bonding* social cohesion, which is social cohesion targeted at ingroup members, and *bridging* social cohesion, which is social cohesion targeted at outgroup members. I hypothesize that only a subset of individuals will develop psychological distress in responses to trauma exposure, that there will be variation in the character of that distress, and that different manifestations of distress will differentially affect bonding and bridging social cohesion. Specifically, I theorize that individuals with responses to trauma characterized by *hyperarousal*—commonly referred to as "fight or flight" behaviors—will have lower levels of *bridging* social cohesio, individuals with responses to trauma characterized by *hypoarousal*—commonly referred to as "freezing or immobilizing" behaviors—will have lower levels of *bonding* and *bridging* social cohesion. I additionally theorize that individuals with greater capacity for emotion regulation, defined as the ability to modulate one's emotional responses in a way proportional to stimuli, will have greater reported bonding and bridging social cohesion. I develop seven hypotheses regarding the variation in how individuals react to living through trauma exposure (H1-H2), how differential responses to trauma shape social cohesion (H3-H6), and how emotion regulation shapes social cohesion (H7).

The subsequent chapters present three empirical tests of the theory. Chapter 4 takes a cross-contextual approach, by first assessing cross-national variation in rates of trauma exposure and psychological disorders, as reported by the World Health Organization's World Mental Health Survey Initiative, and next estimating associations between individual-level measures of psychological distress and social cohesion, as measured cross-nationally in the second wave of the World Values Survey. Chapter 5 presents the main empirical test of the theory, using an original panel dataset gathered via a randomized controlled trial (RCT) that evaluates the efficacy of *The Field Guide for Barefoot Psychologists*, a novel psychoeducational program designed to improve emotion regulation and reduce psychological distress among Syrian refugees living in Za'atari Refugee Camp in Jordan. I use the baseline data to assess the prevalence of trauma exposure and psychological distress, as well as to evaluate associations between baseline levels of psychological distress and social cohesion. I then use the baseline and endline data to evaluate how intervention-driven improvements in psychological distress and emotion regulation are associated with changes in social cohesion. Finally Chapter 6 uses data from the Survey of War Affected Youth (SWAY), a large-scale survey of 1360 conflict-affected youth in Kitgum and Pader districts in northern Uganda, to provide another individual-level test of the theory in a highly different context, assessing variations in psychological distress based on degree and type of trauma exposure, before estimating associations between psychological distress and social cohesion.

Chapter 4

Cross-National Analyses of Trauma Exposure, Psychological Distress, and Social Cohesion

This chapter uses publicly accessible datasets to present an empirical test of the theory of psychological foundations of social cohesion. It proceeds as follows: I first provide an overview of the data used in this chapter, including data from the World Health Organization (WHO) World Mental Health (WMH) Survey Initiative and from the second wave of the World Values Survey (WVS). I then use the WHO WMH data to examine the cross-national prevalence of trauma exposure and psychological disorders, as well as assess how trauma exposure and psychological disorders co-vary cross-nationally (H1-H2). I then use the WVS data to assess associations between psychological distress and social cohesion indicators (H3-H6), before summarizing findings in the conclusion.

4.1 Overview of Data Sources

In this chapter, I use data from the WHO WMH Survey Initiative and from the second wave of the WVS. An overview of each is provided below.

WHO World Mental Health Surveys

The WHO WMH Surveys are a project within the Assessment, Classification, and Epidemiology (ACE) Group at the WHO that seeks to assess the cross-national prevalence and correlates of "mental, substance use, and behavioral disorders in countries in all WHO Regions" (Schoo 2005). The WHO WMH Surveys were conducted between 2001 and 2015 in 29 nations, including Argentina, Australia, Belgium, Brazil, Bulgaria, China, Colombia, France, Germany, India, Iraq, Israel, Italy, Japan, Lebanon, Mexico, Netherlands, New Zealand, Nigeria, Northern Ireland, Peru, Poland, Portugal, Romania, Saudi Arabia, South Africa, Spain, Ukraine, the United States (Figure 4.1). Table 4.1 provides an overview of each of the 29 nationally or regionally representative WHO WHM Surveys, including the year conducted, response rate, sample size, and age range of respondents. Across all surveys, 159,382 individuals were interviewed.

The WHO WMH Surveys use the WMH-Composite International Diagnostic Interview (CIDI), a structured diagnostic interview based on definitions and criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) and the ICD-10 Classification of Mental and Behavioral Disorders (ICD-10) to evaluate past trauma exposure, the presence of psychological disorders, and whether the respondent is receiving or has received treatment (Schoo 2005). Disorders assessed include anxiety disorders, mood disorders, disorders that are characterized by impulse control, and substance disorders. All interviews were conducted face-to-face in respondents' homes, and batteries were translated, back-translated, and verified for cross-contextual relevance according to WHO procedures (Harkness et al. 2008; Pennell et al. 2008). Additional information about the sampling and

implementation procedures for the WHO WMH Surveys is provided in Appendix C.

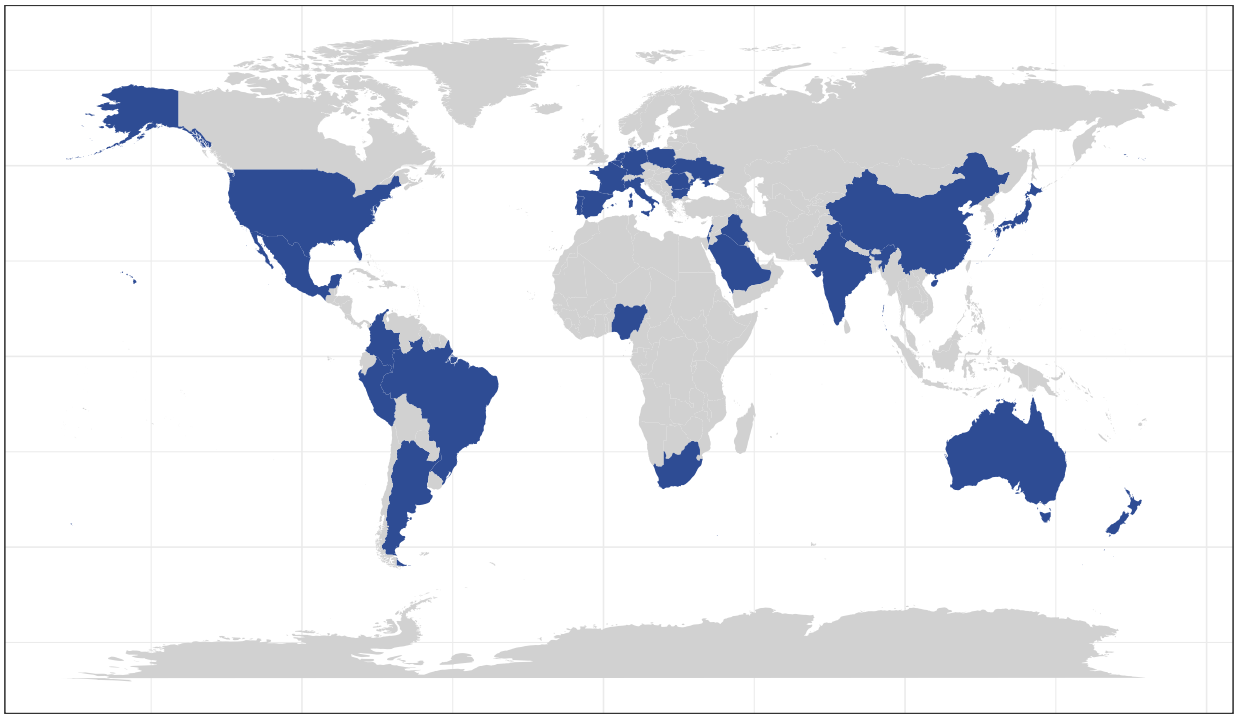
Table 4.1: Overview of WHO World Mental Health Surveys

Country	Year	Response Rate (%)	Sample Size	Age Range
Argentina	2015	77.3	3927	18+
Australia	2007	60.0	8841	16-85
Belgium	2001 - 2002	50.6	2419	18+
Brazil	2005 - 2007	81.3	5037	18+
Bulgaria	2003 - 2007	72	5318	18+
Bulgaria	2016 - 2017	61.0	578	18+
China	2002 - 2003	74.7	5201	18 - 70
China (Shenzhen)	2006 - 2007	80.0	7134	18 - 88
Colombia	2003	87.7	4426	18 - 65
Colombia (Medellín)	2011 - 2012	97.2	3261	19 - 65
France	2001 - 2002	45.9	2894	18+
Germany	2002 - 2003	57.8	3555	18+
India	2003 - 2005	98.8	2992	18+
Iraq	2006 - 2007	95.2	4332	18+
Israel	2002 - 2004	72.6	4859	21+
Italy	2001 - 2002	71.3	4712	18+
Japan	2002 - 2003	56.4	1663	20+
Japan	2003 - 2004	55.1	1323	20+
Japan	2004 - 2006	42.6	1143	20+
Lebanon	2002 - 2003	70	2857	18 - 94
Mexico	2001 - 2002	76.6	5782	18 - 65
Netherlands	2002 - 2003	56.4	2372	18+
New Zealand	2004 - 2005	73.3	12992	18+
Nigeria	2002 - 2003	79.3	6752	18+
Northern Ireland	2004 - 2007	68.4	4340	18+
Peru	2004 - 2005	90.2	3930	18 - 65
Poland	2010 - 2011	50.4	10081	18 - 64
Portugal	2008 - 2009	57.3	3849	18 - 81
Romania	2005 - 2006	70.9	2357	18+
Saudi Arabia	2013 - 2016	61	4004	15 - 65
South Africa	2002 - 2004	87.1	4351	18+
Spain	2001 - 2002	78.6	5473	18+
Spain	2010 - 2012	67.4	2621	18 - 64
Ukraine	2002	78.3	4724	18+
United States	2002 - 2003	70.9	9282	18+

Notes: WHO World Mental Health Surveys conducted on nationally or sub-nationally representative portions of each population. More information on The World Mental Health Survey Initiative is available at https://www.hcp.med.harvard.edu/wmh.

While the individual-level data are not made available, rates of different kinds of trauma exposure, as well as lifetime and 12-month prevalence rates of psychological distress have

Figure 4.1: Countries with WHO World Mental Health Survey



Notes: Countries shaded in dark blue are those in which a WHO World Mental Health Survey was conducted on nationally or sub-nationally representative portion of the population. More information on the World Mental Health Survey Initiative is available at https://www.hcp.med.harvard.edu/wmh.

been published in papers.[1] I collected these rates and used them to analyze questions related to variation in trauma exposure and psychological distress at the cross-national level. These data are especially useful in that representative and comparable cross-national prevalence rates for trauma exposure and psychological distress are exceedingly difficult to obtain. This is due to a number of reasons, including the use of different measures, survey approaches, and sampling procedures.[2] The data collected via the WHO WMH Survey Initiative provide

[1]Trauma exposure rates as collected by the WHO WMH Survey Initiative are collected from Benjet et al. (2016). Psychological distress rates as collected by the WHO WMH Survey Initiative are collected from al-Hasnawi et al. (2009); Altwaijri, Al-Subaie, Al-Habeeb, Bilal, Al-Desouki, Aradati, King, Sampson and Kessler (2020); Altwaijri, Al-Habeeb, Al-Subaie, Bilal, Al-Desouki, Shahab, Hyder, Sampson, King and Kessler (2020); Alonso et al. (2002, 2018); Andrade et al. (2012); Bunting et al. (2013); Chaskel et al. (2015); de Girolamo et al. (2006); Ferry et al. (2014); Harris et al. (2020, 2022); Herman et al. (2009); Ishikawa et al. (2016); Karam et al. (2014); Kessler et al. (2005, 2009); Kiejna et al. (2015); Navarro-Mateu et al. (2015); Slade et al. (2009); Stagnaro et al. (2018); Stein et al. (2017).

[2]For more information on the differences between diagnostic and dimensional measurement approaches,

a unique opportunity to compare rates of trauma exposure and psychological distress both within and across populations included in the data collection effort.

World Values Survey, Wave 2

The WVS is a nationally-representative, comparative time-series social survey. There have been seven waves conducted since the first round of data collection started in 1981, occurring roughly every five years. It is one of the most widely-used cross-national surveys, covering a range of topics, including democratization, subjective well-being, economic development, and social cohesion (Survey 2020).

In the second wave of the WVS (Inglehart et al. 2014), conducted from 1990 to 1994, respondents were asked about psychological distress in 17 countries. They were additionally surveyed about a number of questions regarding social cohesion indicators, including group membership and attitudes toward outsiders. Table 4.2 provides information about the sample population and data collection for each country included in the second wave of the WVS in which the aforementioned psychological distress questions were asked. These data provide the opportunity to examine whether and how psychological distress symptoms correlate with social cohesion outcome in a cross-national context at the individual level.

4.2 Cross-National Rates of Trauma Exposure and Psychological Distress

In this section, I present descriptive statistics from the WHO WMH Survey Initiative on cross-national rates of trauma exposure and psychological disorders, including the kinds of trauma exposure and psychological disorders reported. I use these data to examine whether and how cross-national variation exists in the prevalence and kind of both trauma exposure

see section 2.2.

Table 4.2: Survey information and summary statistics by country, WVS Wave 2

Country	Year	N	Age Range	Sex	Married	Has Kids	# Kids
Argentina	1991	1002	17 - 86	0.53	0.59	0.71	1.7
Brazil	1991	1782	21 - 55	0.50	0.51	0.68	2.0
Canada	1990	1730	18 - 90	0.50	0.61	0.73	1.9
Chile	1990	1500	18 - 99	0.52	0.54	0.73	2.0
China	1990	1000	18 - 85	0.40	0.77	0.78	1.7
Czechoslovakia	1991	924	18 - 83	0.52	0.67	0.83	1.7
India	1990	2500	18 - 89	0.47	0.69	0.92	2.6
Japan	1990	1011	18 - 83	0.52	0.76	0.77	1.7
Mexico	1990	1531	17 - 82	0.45	0.46	0.57	1.9
Nigeria	1990	1001	16 - 99	0.40	0.51	0.54	1.9
Poland	1989	938	16 - 88	0.51	0.73	-	-
Soviet Union	1990	1961	18 - 88	0.57	0.68	0.82	1.5
South Africa	1990	2736	18 - 72	0.54	0.57	0.71	2.0
Slovakia	1990	466	18 - 80	0.52	0.67	0.74	1.8
Spain	1990	1510	18 - 94	0.55	0.62	0.67	1.7
Switzerland	1989	1400	20 - 86	0.54	0.61	0.70	1.7
United States	1990	1839	17 - 94	0.50	0.63	0.77	2.1

Notes: Data from the second wave of the WVS survey (Haerpfer et al. 2020). Sex represents the percentage of respondents identifying as female in the sample. Married represents the percentage of respondents whop report being married at the time of the survey. Values indicated with '-' indicate questions not asked in that country for the second wave of the WVS.

and psychological distress across countries. I then assess cross-national co-variance of trauma exposure and different psychological disorders, in order to evaluate whether populations with higher reported rates of trauma exposure have higher reported rates of psychological distress.

Cross-National Rates of Trauma Exposure

As defined in section 2.1, trauma exposure is a "direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate" (American Psychiatric Association 2013). The WHO WMH Surveys define six overarching categories of trauma exposure: experiencing collective violence, causing or witnessing harm, experiencing

interpersonal violence, experiencing sexual or intimate violence, experiencing accidents and injuries, and experiencing other trauma.

Across these six categories, there are 27 different types of specific trauma exposure in the WHO WMH questionnaire that respondents could endorse having experienced in their lifetime. *Collective violence* includes the following types of trauma exposure: living as a civilian in a war zone; migrating as a refugee; being kidnapped; working as a relief worker in a war zone. *Causing or witnessing harm* includes: purposely injuring; torturing, or killing another person; having combat experience; accidentally causing serious injury or death; seeing atrocities; witnessing death, dead bodies, or someone being hurt. *Interpersonal violence* includes: being beaten up by a caregiver; witnessing physical fights at home; being beaten up by someone else. *Sexual violence* includes: experiencing rape; experiencing sexual assault; being beaten up by a spouse or romantic partner; being stalked; having a traumatic event happen to a loved one; experiencing a private event or some other kind of sexual traumatic event. *Accidents and injuries* include: having a child with a serious illness; experiencing a natural disaster; experiencing a life-threatening event; experiencing a toxic chemical exposure; experiencing an other kind of life threatening accident; experiencing an automobile accident. *Other trauma* includes: experiencing unexpected death of a loved one; being mugged or threatened with a weapon; experiencing a man-made disaster. Of note is how varied the experience of trauma exposure can be for individuals, and how many kinds of experiences fall within the broader category of trauma exposure, as noted in section 2.1.

Table 4.3 summarizes the overall rates of trauma exposure for each of the six overarching categories of trauma exposure across all WHO WMH Surveys. The most commonly reported type of trauma exposure experienced across all countries was "other trauma" (38.3% of respondents), followed by accidents or injuries (34.3%), and causing or witnessing harm (24.5%), intimate or sexual violence (20.0%), interpersonal violence (16.0%), and collective violence as the least commonly experienced (11.3%). Across all surveys, 67.7% of respondents

Table 4.3: Rates of trauma exposure across WHO World Mental Health Surveys

Trauma Exposure	Mean (%)	Min	Max	Std. Dev.
Collective Violence	11.3	0.4	65.0	12.18
Cause, Witness Harm	24.5	6.0	37.3	8.99
Interpersonal Violence	16.0	1.2	43.0	11.25
Intimate, Sexual Violence	20.0	6.6	36.9	7.98
Accidents or Injuries	34.3	16.1	52.5	8.44
Other Trauma	38.3	12.6	60.4	12.40
At Least One Trauma of Any Kind	67.7	28.6	84.6	13.37

Notes: Data collected by WHO World Mental Health Surveys on nationally representative portions of each population, as reported in Benjet et al. (2016). Countries included in summary statistics are Australia, Belgium, Brazil, Bulgaria, China, Colombia, France, Germany, Israel, Italy, Japan, Lebanon, Mexico, Netherlands, New Zealand, Nigeria, Northern Ireland, Peru, Portugal, Romania, South Africa, Spain, Ukraine, US. For details on each survey conducted, see Table 4.1. Respondents can report more than one kind of trauma exposure; as such, *At Least One Trauma of Any Kind* represents the proportion of respondents reporting at least one trauma exposure. For prevalence of trauma exposure reported by country, see Table 4.4.

reported experiencing at least one trauma exposure of any kind.

Table 4.4 presents the rates of different kinds of trauma exposure disaggregated by country, with the top type for each country displayed in **bold**. This variation indicates the kinds of traumas that are most commonly experienced by populations depending on the country-level context and climate; there are a few key insights that can be derived from these data. First, in contexts not currently experiencing active conflict, other trauma and accidents or injuries are reported as most commonly experienced. In contexts that were, at the time of survey, affected by conflict and forced migration (e.g., Lebanon, Northern Ireland), there is a much larger percentage of the population that reported experiencing collective violence; Lebanon is the only country wherein respondents report collective violence as the most commonly-experienced type of trauma exposure. In contexts that do not have an active conflict ongoing, but do experience higher levels of crime or political violence (e.g., Colombia, South Africa) there were higher rates of causing or witnessing harm reported by respondents. Finally, sexual violence was reported at high rates across contexts. This indicates that, regardless of levels of economic development or active conflict, sexual violence is experienced by significant proportions of populations in countries across the globe.

Table 4.4: Percent of respondents reporting each type of trauma exposure, by country

Country	Collective Violence	Cause, Witness Harm	Interpersonal Violence	Sexual Violence	Accidents, Injuries	Other Trauma	At Least One Trauma of Any Kind
Australia	8.2	29.0	16.8	28.5	37.7	**42.9**	76.2
Belgium	15.3	20.6	6.2	20.5	32.2	**34.5**	65.8
Brazil	1.9	36.8	25.2	16.7	28.9	**52.3**	73.8
Bulgaria	0.4	7.1	1.2	6.6	**16.1**	12.6	28.6
China	6.1	16.8	10.5	8.4	**33.7**	15.3	52.5
Colombia	10.5	37.3	37.6	27.7	39.4	**60.4**	82.7
Colombia (Medellín)	12.6	33.3	32.9	26.9	33.4	**53.2**	75.1
France	14.8	29.3	4.6	22.0	36.0	**38.3**	72.7
Germany	14.7	25.1	9.3	20.7	32.2	**34.1**	67.3
Israel	6.4	34.2	6.3	23.8	34.4	**44.6**	74.8
Italy	6.9	25.8	4.1	11.3	**27.9**	24.3	56.1
Japan	5.9	20.4	19.7	19.9	25.2	**25.8**	60.7
Lebanon	**65.0**	34.9	7.4	21.9	28.7	41.0	81.1
Mexico	3.0	17.2	33.4	19.3	37.4	**40.1**	68.8
Netherlands	12.6	21.7	6.1	20.3	28.2	**38.6**	65.6
New Zealand	9.2	28.2	19.0	33.3	43.3	**44.4**	79.3
Nigeria	13.9	30.5	13.8	15.7	39.6	**42.1**	67.1
Northern Ireland	24.3	21.7	12.6	18.3	22.8	**34.9**	60.6
Peru	8.1	24.8	43.0	25.0	47.9	**50.4**	83.1
Portugal	7.5	23.9	20.0	15.8	**41.2**	33.5	69.0
Romania	3.1	12.0	7.5	8.1	**26.4**	13.9	41.5
South Africa	11.5	31.8	21.0	22.5	35.0	**48.7**	73.8
Spain	7.0	8.7	3.8	7.7	28.5	**32.0**	54.0
Spain (Murica)	3.0	6.0	12.2	11.9	32.9	**36.7**	62.4
Ukraine	15	28.8	20.6	29.9	**52.5**	49.5	84.6
U.S.	6.8	31.3	21.4	36.9	50.6	**52.1**	82.7

Notes: Data collected by WHO World Mental Health Surveys on nationally or sub-nationally representative samples of each population, as reported in Benjet et al. (2016). For details on when surveys were conducted, see Table 4.1. Respondents can report more than one kind of trauma exposure, so **Total Any Event** represents the proportion of respondents reporting at least one trauma exposure. For summaries of kinds of trauma exposures that fall within each category, see Table 4.3. Of note, reporting likely varies across contexts in regard to which kinds of trauma exposure individuals are willing to report as having experienced.

Cross-National Rates of Psychological Distress

Similar to rates of reported trauma exposure, rates of reported psychological disorder vary significantly across countries in the WHO WMH Surveys. Table 4.5 reports lifetime and 12-month prevalence rates of psychological disorders across WHO WMH Surveys.[3]

Across countries, the United States had the highest reported rates of lifetime prevalence of any psychological disorder (47.4%), followed by Australia (45.5%), and Colombia (Medellín) (40.1%). For lifetime prevalence of anxiety disorders, the highest reported rates were in the United States (31.0%), Australia (26.3%), and Colombia (25.3%). The United States also reported the highest lifetime prevalence of mood disorders (21.4%), followed by France (21.0%), and New Zealand (20.4%). The highest rates of substance disorders were reported in Australia (24.7%), Ukraine (15.0%), and the United States (14.6%).

For 12-month prevalence rates of psychological disorders, Brazil (29.6%), the United States (26.2%), and Northern Ireland (23.1%) reported the highest rates of any mental health disorder. For 12-month prevalence of anxiety disorders, Portugal had the highest reported rate (27.9%), followed by Brazil (19.9%), and Romania (19.6%). For 12-month prevalence of mood disorders, Brazil had the highest reported rate (11.0%), followed by Northern Ireland (9.6%), and the United States (9.5%). For 12-month prevalence of PTSD, the highest rate was reported by Australia (6.4%), followed by Northern Ireland (5.1%), and the United States (3.5%). These data provide useful insight into the prevalence of psychological disorders across countries using the same diagnostic criteria, which is both difficult to coordinate and gather at this scale.

[3]It was not possible to find either lifetime or 12-month prevalence rates as reported for some countries included in the WHO WMH Survey Initiative.

Table 4.5: Cross-national rates of psychological distress (lifetime and 12-month prevalence)

	Any Disorder		Anxiety		PTSD		Mood		MDD	
Country	Life	12-mo	Life	12-mo	Life	12-mo	Life	12-mo	Life	12-mo
Argentina	29.1	14.8	16.4	9.4	-	1.1	12.3	5.7	8.7	3.8
Australia	45.5	20	26.3	14.4	-	6.4	15	6.2	13.5	-
Belgium	29.1	13.2	13.1	8.4	-	0.6	14.1	5.4	14.1	5
Brazil	-	29.6	5.6	19.9	-	1.6	-	11	16.9	9.4
Bulgaria	-	-	0.8	7.6	-	0.9	-	-	5.1	-
Bulgaria	-	6.1	-	-	-	-	-	-	-	-
China	-	-	-	2.3	-	0.2	-	-	-	-
China (Shenzhen)	13.2	7.1	4.8	3	-	-	3.6	1.9	6.1	-
Colombia	39.1	21	25.3	14.4	-	0.3	14.6	7	9.9	-
Colombia (Medellin)	40.1	16	-	-	-	-	-	-	-	-
France	37.9	18.9	22.3	13.7	-	1.4	21	6.5	21	5.9
Germany	25.2	11	14.6	8.3	-	0.5	9.9	3.3	9.9	3.9
Iraq	18.8	13.6	13.8	10.4	2.5	1.1	7.5	4.1	7.2	3.9
Israel	17.6	10	5.2	3.6	-	0.4	10.7	6.4	9.8	-
Italy	18.1	8.8	11.1	6.5	2.3	0.8	11.2	3.5	10.1	3
Japan	18	7.4	6.9	4.2	1.3	0.7	7.6	2.5	6.1	2.2
Japan	-	-	-	-	-	-	-	-	-	-
Lebanon	25.8	17.9	16.7	12.2	-	1.6	12.6	6.8	9.9	-
Mexico	26.1	13.4	14.3	8.4	-	0.3	9.2	4.7	-	-
Netherlands	31.7	13.6	15.9	8.9	-	1.2	17.9	5.1	17.9	4.9
New Zealand	39.3	20.7	24.6	15	-	2.1	20.4	8	-	-
Nigeria	12	6	6.5	4.2	-	-	3.3	1.1	3.1	-
Northern Ireland	-	23.1	6	14.6	8.8	5.1	-	9.6	16.3	7.9
Peru	-	-	2.6	0.3	-	0.2	-	-	-	2.7
Poland	-	-	1.4	0.9	-	-	-	-	3	-
Portugal	-	-	4.7	27.9	-	-	-	-	16.7	-
Romania	-	-	1.3	19.6	-	0.4	-	-	2.9	-
Saudi Arabia	34.2	20.2	23.2	12.3	3.3	1.8	9.3	6.8	6	3.8
South Africa	30.3	16.7	15.8	8.2	2.3	0.6	9.8	4.9	-	-
Spain	19.4	9.7	9.9	6.6	2	-	10.6	4.4	10.6	4
Spain	33.2	16.3	15	9.7	2.8	0.9	15.6	6.6	13.8	6
Ukraine	36.1	21.4	10.9	6.8	-	2	15.8	9	-	-
United States	47.4	26.2	31	18.1	-	3.5	21.4	9.5	-	6.7

Notes: Data collected by WHO World Mental Health Surveys on nationally or sub-nationally representative portions of each population. Include summary of each disorder here.

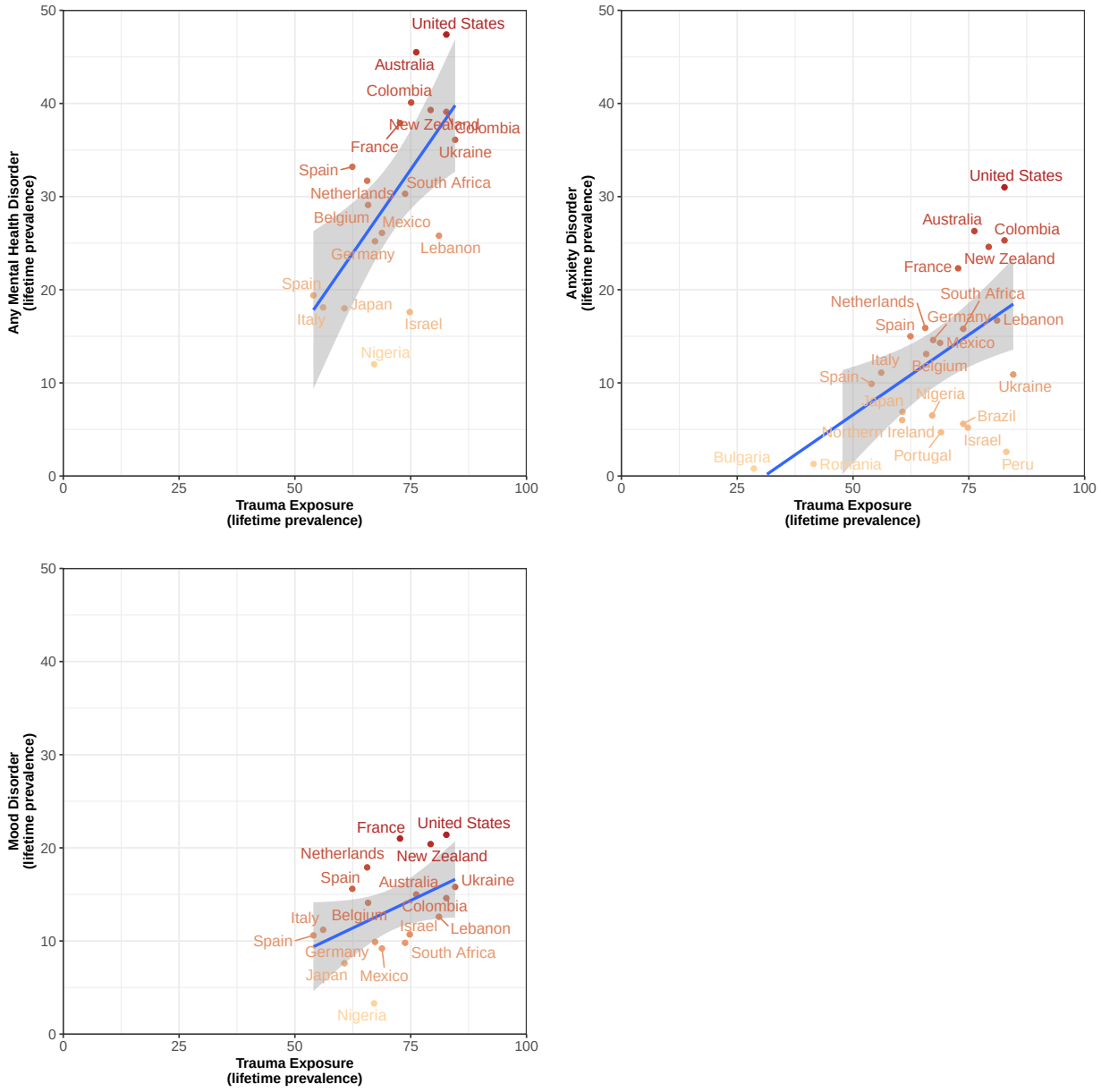
Cross-National Covariance of Trauma Exposure and Psychological Disorders

I use the data presented above to conduct a cross-national test of the hypotheses on trauma exposure (H1-H2). I first examining whether there is variation in the presence of psychological distress in the aftermath of trauma exposure (H2). Across all countries surveyed, both lifetime and 12-month prevalence of psychological disorders (Table 4.5) are lower than the total rates of trauma exposure as a proportion of the population (Table 4.4), providing cross-national support for H1. This is consistent with the existing research reviewed in 2.2, which has consistently found that only a proportion of individuals who experience trauma exposure will develop persistent psychological distress in response.

I next use the data to assess how cross-national rates of trauma exposure and psychological disorders co-vary, testing whether there is variation in the kind of psychological distress in the aftermath of trauma exposure (H2). Figure 4.2 presents a scatterplot with fitted linear regression line for trauma exposure and *lifetime* prevalence rates of various psychological disorders (any mental health disorder, anxiety disorder, mood disorder). Figure 4.3 presents a scatterplot with fitted linear regression line for trauma exposure and *12-month* prevalence rates of various psychological disorders (any mental health disorder, anxiety disorder, mood disorder, PTSD).

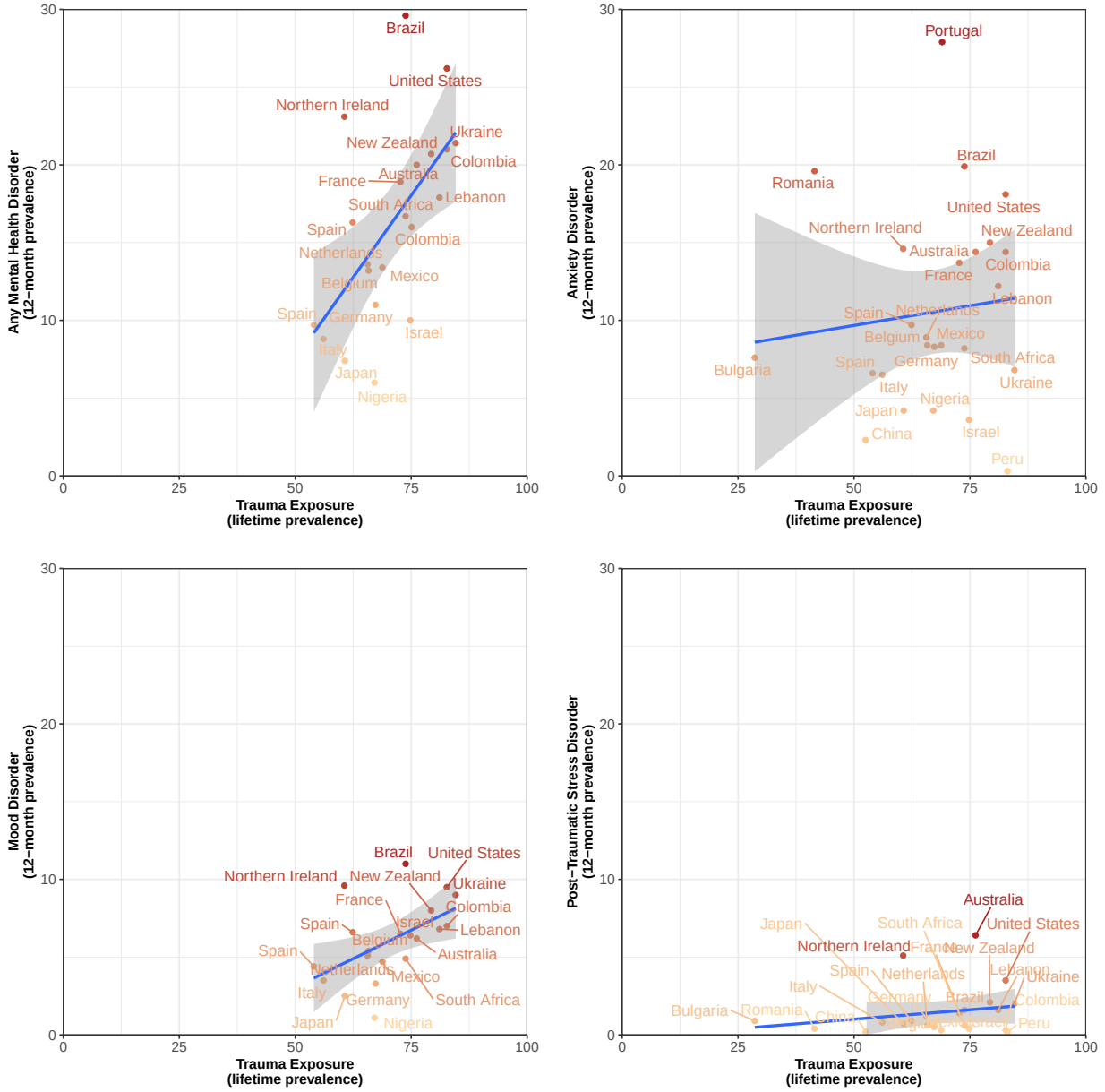
As expected, there is variation in the presence of different psychological disorders among populations that have reported trauma exposure. Assessing covariance between trauma exposure and rates of psychological disorder, controlling for population, gross domestic product, Gini index, and whether or not the country is a democracy, a one percentage point increase in the total proportion of the population with at least one trauma exposure is associated with a 0.74 percentage point increase ($p = 0.002$) in lifetime prevalence and 0.54 percentage point increase ($p < 0.001$) in the 12-month prevalence of any mental health disorder; a 0.32 percentage point increase ($p = 0.012$) in lifetime prevalence and 0.02 percentage point increase

Figure 4.2: Rates of psychological disorders (lifetime prevalence) and trauma exposure



Notes: Lifetime PTSD prevalence was not reported across enough countries to create an informative graphic. More information on the World Mental Health Survey Initiative is available at https://www.hcp.med.harvard.edu/wmh.

Figure 4.3: Rates of psychological disorders (12-month prevalence) and trauma exposure



Notes: More information on the World Mental Health Survey Initiative is available at https://www.hcp.med.harvard.edu/wmh.

(p = 0.839) in 12-month prevalence of anxiety disorder; a 0.28 percentage point increase (p = 0.015) in lifetime prevalence and 0.21 percentage point increase (p = 0.001) in 12-month prevalence of mood disorders; and a 0.02 percentage point increase (p = 0.227) in the 12-month prevalence of PTSD.[4] In sum, there is a positive association between proportion of population reporting at least one trauma exposure and the prevalence of mental health disorders, with a significant association between trauma exposure and any mental health disorder (lifetime, 12-month prevalence), anxiety disorders (lifetime prevalence), and mood disorders (lifetime, 12-month prevalence).

These analyses provide support for the expectation that there is variation in the *kind* of psychological distress reported following trauma exposure (H2). However, given the inability to access the underlying individual data, it was not possible to control for individual-level factors that may be contributing to variation. In section 7.3, I speak about future directions for this analysis, should I be able to access the underlying individual-level data.

4.3 Individual-Level Cross-National Associations Between Psychological Distress and Social Cohesion

In this section, I examine how psychological distress is associated with social cohesion indicators cross-nationally at the individual level, as reported in the second wave of the WVS. As noted in section 4.1, in the second wave of the WVS, respondents were asked four questions about psychological distress symptoms in 17 countries in which the WVS was conducted: Argentina, Brazil, Canada, Chile, China, Czechoslovakia, India, Japan, Mexico, Nigeria, Poland, the Soviet Union, South Africa, Slovakia, Spain, Switzerland, and the United States.[5]

[4]Lifetime PTSD prevalence was not reported across enough countries to assess covariance. Values for control variables assessed for the same year as WHO WMH data collection.

[5]The question wordings were: "We are interested in the way people are feeling these days. During the past few weeks, did you ever feel...(1) depressed or very unhappy, (2) very lonely or remote from other people,

Using factor analysis, I constructed an index of symptoms characterized by hyperarousal and an index of symptoms characterized by hypoarousal.[6] Questions about psychological distress were not included in any of the other six waves of the survey, nor were they asked in other countries included in the second wave of the WVS (Belarus, South Korea, and Turkey). The second wave of the WVS also assessed a number of social cohesion outcomes, including social trust, group membership, political participation, intergroup attitudes, and institutional trust.

I use these data to examine associations between psychological distress and social cohesion across countries at the individual-level, assessing whether hyperarousal and hypoarousal have differential impacts on social cohesion.

Rates of Psychological Distress Across Countries

Mean reported rates of symptoms characterized by hyperarousal and symptoms characterized by hypoarousal, summarized by country, are visualized in Figure 4.4, with hyperarousal on the x-axis and hypoarousal on the y-axis. Of note, unlike in the WHO WMH Survey data reported previously, the WVS did not use diagnostic criteria, but rather asked about the presence of various psychological distress symptoms. Thus, the psychological distress rates reported from the WVS data capture the presence of symptoms, rather than the presence of a diagnosable disorder based on standardized diagnostic criteria. Each index consists of two symptoms that an individual could endorse, and both indices are rescaled between 0 and 1 for all analyses; thus, endorsement of one out of two possible symptoms on the scale equals 0.5.

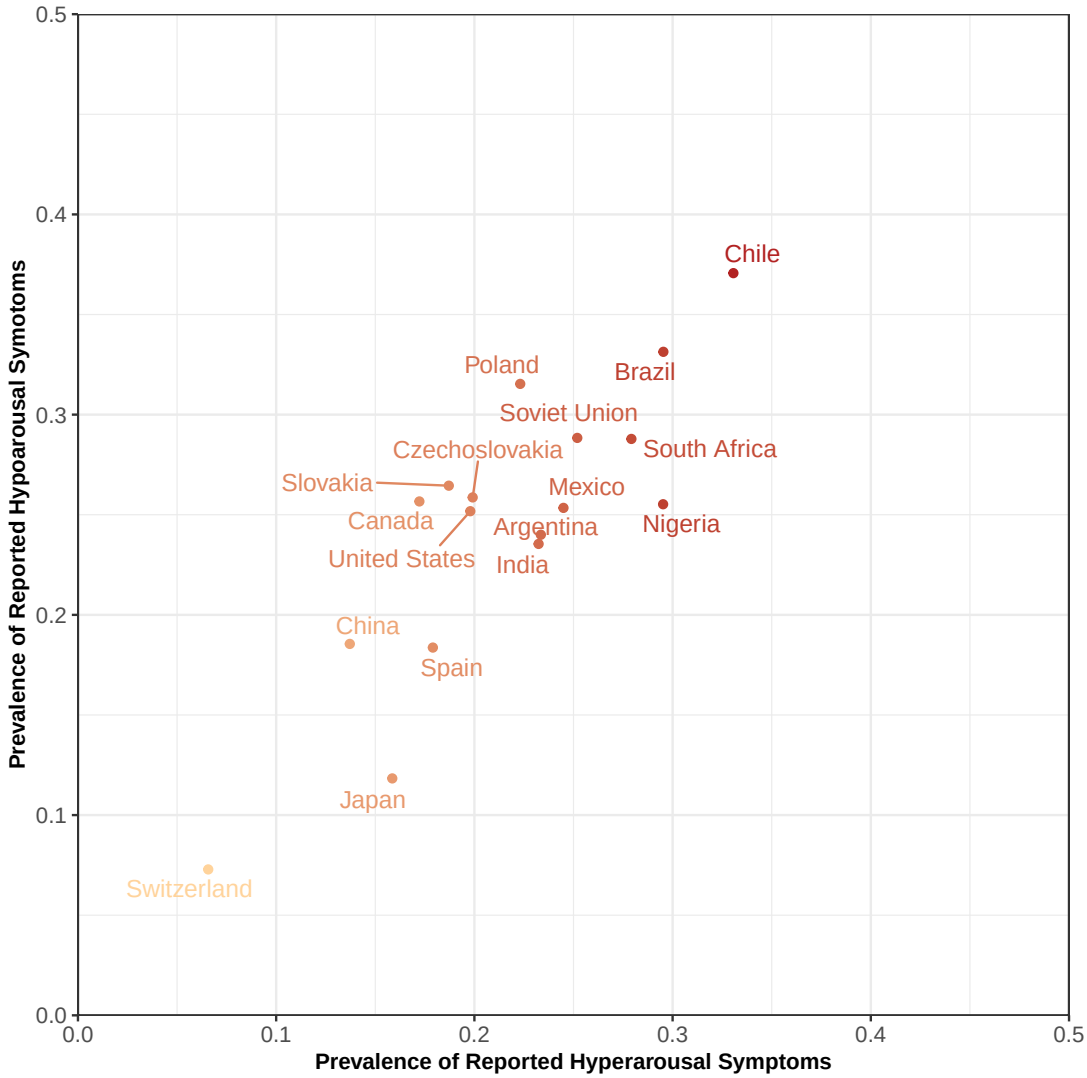
Across all countries, the mean individual level of psychological distress characterized by hyperarousal is 0.25, while the mean individual level of psychological distress characterized by hypoarousal is 0.22. Overall, the presence of hyperarousal and hypoarousal symptoms

(3) restless, (4) upset because someone criticized you." Respondents answered "yes" (1) or "no" (0).

[6] For more information on the construction of the indices, see Appendix D.

tend to trend together within countries, with the presence of hyperarousal symptoms being, on average, slightly higher than the presence of hypoarousal symptoms. The country with the lowest reported rates of hyperarousal and hypoarousal symptoms is Switzerland (0.07 and 0.07, respectively), while the country with the highest reported rates of hyperarousal and hypoarousal symptoms is Chile (0.37 and 0.33, respectively).

Figure 4.4: Reported rates of hyperarousal and hypoarousal, by country



Notes: As reported by respondents in WVS Wave 2. For values, see Table E.1 in Appendix E.

Psychological Distress and Bonding Social Cohesion, Bridging Social Cohesion

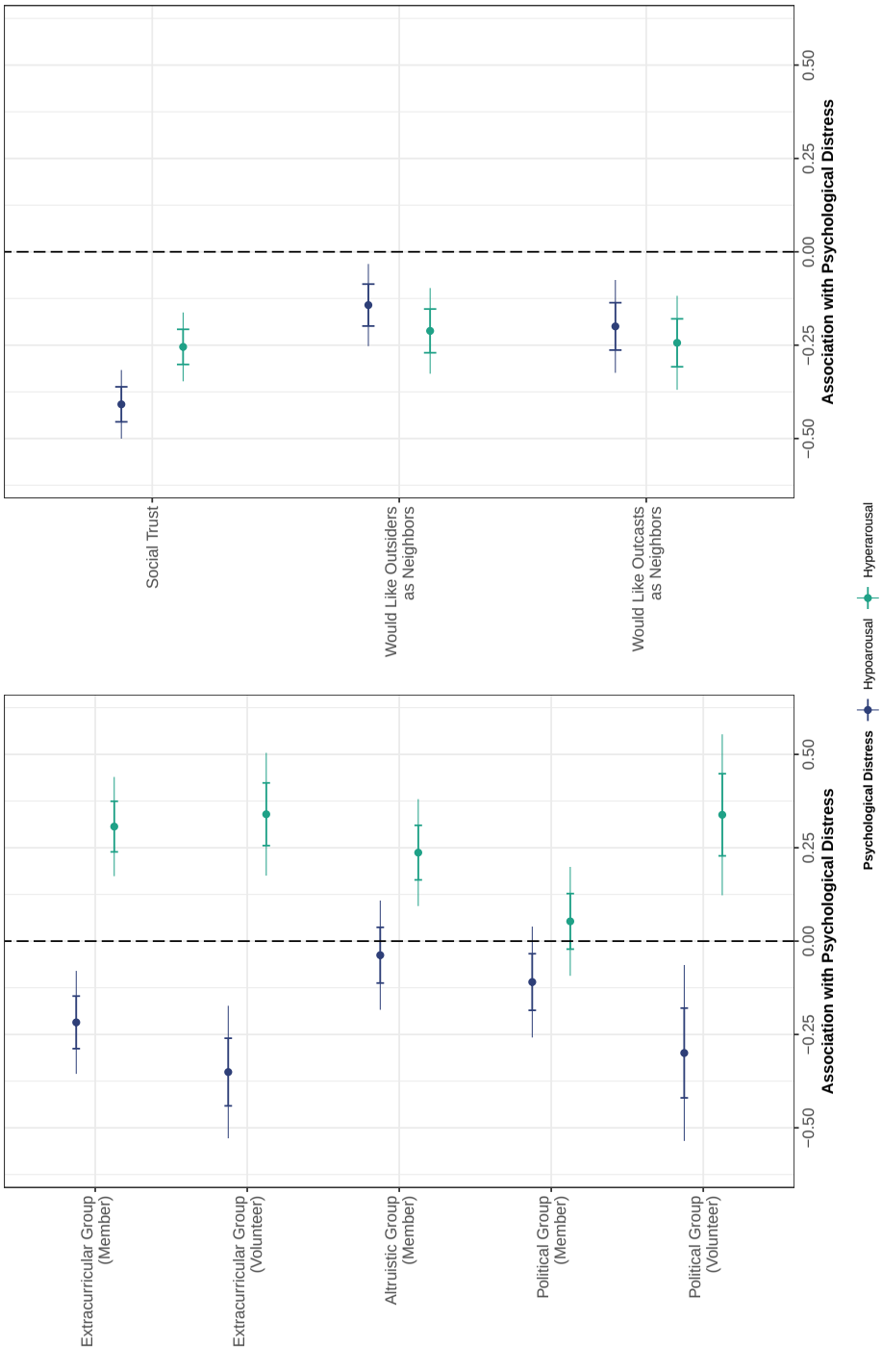
Using data from the second wave of the WVS, I first estimate associations between psychological distress characterized by either hyperarousal or hypoarousal and bonding and bridging social cohesion. Indicators for bonding social cohesion assess group membership and group participation, including membership in an extracurricular, altruistic, or political group, and volunteering one's time in an extracurricular or political group. Indicators for bridging social cohesion capture social trust and attitudes towards outsiders, including generalized trust toward others, attitudes toward having outsiders as neighbors, and attitudes toward having outcasts as neighbors.[7]

Figure 4.5 visualizes the analysis, with each line indicating a separate logit regression, in which either hyperarousal or hypoarousal as the explanatory variable of interest and the social cohesion indicator is the dependent variable of interest. All models include country fixed effects and the same set of control variables, which include age, gender, marital status, whether the respondent has children, and income level.

Consistent with H4, hyperarousal symptoms are significantly associated with lower reported bridging social cohesion. Specifically, endorsement of one additional hyperarousal symptom is associated with a 25.5 percentage point ($p < 0.001$) reduction in social trust, a 21.2 percentage point ($p < 0.001$) reduction in preference toward having outsiders as neighbors and a 24.4 percentage point ($p < 0.001$) reduction in preference toward having outcasts as neighbors.

[7] As noted in section 3.1, generalized trust toward others may, in a given context, be classified as either bridging or bonding social cohesion. I keep this in mind as I conduct this analysis.

Figure 4.5: Psychological distress and bonding, bridging social cohesion



Notes: Estimates of the association between psychological distress and the social cohesion outcome of interest. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error. Each estimate represents a separate logit regression, in which either hyperarousal or hypoarousal serves as the explanatory variable of interest. All models include country fixed effects and the same set of control variables, which include age, gender, marital status, whether the respondent has children, and income level. Data are measured at the individual level in the second wave of the WVS in 17 countries: Argentina, Brazil, Canada, Chile, China, Czechoslovakia, India, Japan, Mexico, Nigeria, Poland, the Soviet Union, South Africa, Slovakia, Spain, Switzerland, and the United States. For more information about measures, see Appendix D.

Hyperarousal is also significantly associated with higher reported bonding social cohesion across four of the five indicators assessed. I thus test whether there is variation in bonding social cohesion among individuals with hyperarousal symptoms, dependent on whether they additionally have hypoarousal symptoms. This analysis tests the expectation that individuals with hyperarousal who do not also exhibit hypoarousal symptoms will have higher rates of bonding social cohesion (H4A). I subset to individuals with high hyperarousal symptoms and assess the difference in means in bonding social cohesion between individuals with low hypoarousal and with high hypoarousal (Table 4.6).[8] As predicted, individuals with high hyperarousal symptoms and low hypoarousal symptoms report significantly higher reported bonding social cohesion across indicators of group membership (extracurricular and political groups) and group volunteering (extracurricular and political groups). Specifically, among individuals with high hyperarousal, those with low hypoarousal report, on average, higher group membership in extracurricular groups by 7.1 percentage points ($p = 0.002$) and in political groups by 4.3 percentage points ($p = 0.046$), as well as higher group volunteering in extracurricular groups by 8.0 percentage points ($p < 0.001$) and in political groups by 2.7 percentage points ($p = 0.070$).

Consistent with H5, hypoarousal symptoms are significantly associated with lower reported rates of both bonding and bridging social cohesion (Figure 4.5), including lower rates of group membership (extracurricular), group volunteering (extracurricular and political groups), social trust, and preference in having outgroup members (outsiders, outcasts) as neighbors. With regard to bonding social cohesion, endorsement of one additional hypoarousal symptom is associated with a 21.8 percentage point ($p < 0.001$) reduction in group membership in extracurricular groups, a 35.1 percentage point ($p < 0.001$) reduction in volunteering in extracurricular groups, and a 30.0 percentage point ($p < 0.001$) reduction in volunteering in political groups. Hyperarousal is also negatively associated with group membership in

[8] High hyperarousal and high hypoarousal are each determined as endorsement of all symptoms on the scale. For more information on construction of measures, see Appendix D.

Table 4.6: Difference in means for bonding and bridging social cohesion, by low versus high hypoarousal among individuals with high hyperarousal

Indicator	**High Hyperarousal, Low Hypoarousal**			**High Hyperarousal, High Hypoarousal**			Test
	N	Mean	SD	N	Mean	SD	
				Bonding Social Cohesion			
Extracurricular Group (Member)	1011	0.24	0.43	502	0.17	0.38	F= 9.883**
Extracurricular Group (Volunteer)	877	0.17	0.37	464	0.09	0.28	F= 16.544***
Altruistic Group (Member)	1011	0.17	0.38	502	0.17	0.37	F= 0.080
Political Group (Member)	1011	0.21	0.41	502	0.17	0.37	F= 4.001*
Political Group (Volunteer)	877	0.08	0.28	464	0.06	0.23	F= 3.288*
				Bridging Social Cohesion			
Social Trust	1522	0.30	0.46	794	0.23	0.42	F= 12.327***
Would Like Outsiders as Neighbors	1315	0.79	0.41	647	0.76	0.43	F= 2.463
Would Like Outcasts as Neighbors	1315	0.18	0.39	647	0.18	0.39	F= 0.025

Notes: High hyperarousal and high hypoarousal are each determined as endorsement of all symptoms on the scale. Analysis only includes individuals with high reported hyperarousal symptoms. Data are measured at the individual level in the second wave of the WVS in 17 countries: Argentina, Brazil, Canada, Chile, China, Czechoslovakia, India, Japan, Mexico, Nigeria, Poland, the Soviet Union, South Africa, Slovakia, Spain, Switzerland, and the United States. For more information about measures, see Appendix D. *p<0.05; **p<0.01; ***p<0.001.

altruistic groups (β = -0.038, p = 0.614) and political groups (β = -0.110, p = 0.148), though neither association is statistically significant. With regard to bridging social cohesion, endorsement of one additional hypoarousal symptom is significantly associated with a 40.8 percentage point reduction in social trust ($p < 0.001$), a 14.3 percentage point ($p = 0.011$) reduction in preference toward having outsiders as neighbors, and a 20.0 percentage point ($p = 0.002$) reduction in preference toward having outcasts as neighbors.

I next assess whether individuals with psychological distress characterized by both hyperarousal *and* hypoarousal have, on average, lower reported bonding and bridging social cohesion, when compared to individuals without psychological distress (H6). Table 4.7 demonstrates that across indicators (with the exception of group membership in altruistic groups), individuals with both high hyperarousal and high hypoarousal have, on average, lower average reported bonding and bridging social cohesion, when compared to individuals with

low hyperarousal and low hypoarousal. The difference in means is only significant, however, on volunteering in an extracurricular group (1.79 percentage point difference, $p = 0.011$), on social trust (12.8 percentage point difference, $p < 0.001$), and on preference in having outsiders as neighbors (3.46 percentage point difference, $p = 0.033$).

Table 4.7: Difference in means for bonding and bridging social cohesion, by low versus high hyperarousal and hyperarousal

	Low Hyperarousal, Low Hypoarusal			**High Hyperarousal, High Hypoarusal**			
Indicator	N	Mean	SD	N	Mean	SD	Test
			Bonding Social Cohesion				
Extracurricular Group (Member)	13456	0.19	0.39	502	0.17	0.38	F= 1.006
Extracurricular Group (Volunteer)	10867	0.13	0.33	464	0.09	0.28	F= 6.493*
Altruistic Group (Member)	13456	0.15	0.36	502	0.17	0.37	F= 0.74
Political Group (Member)	13456	0.20	0.40	502	0.17	0.37	F= 2.617
Political Group (Volunteer)	10867	0.07	0.26	464	0.06	0.23	F= 1.758
			Bridging Social Cohesion				
Social Trust	18760	0.36	0.48	794	0.23	0.42	F= 54.676***
Would Like Outsiders as Neighbors	17471	0.79	0.40	647	0.76	0.43	F= 5.558*
Would Like Outcasts as Neighbors	17471	0.20	0.40	3621	0.17	0.38	F= 12.286

Notes: High hyperarousal and high hypoarousal are each determined as endorsement of all symptoms on the scale. Data are measured at the individual level in the second wave of the WVS in 17 countries: Argentina, Brazil, Canada, Chile, China, Czechoslovakia, India, Japan, Mexico, Nigeria, Poland, the Soviet Union, South Africa, Slovakia, Spain, Switzerland, and the United States. For more information about measures, see Appendix D. *p<0.05; **p<0.01; ***p<0.001.

The results presented above provide cross-national support for H3, demonstrating how the presence of hyperarousal and hypoarousal symptoms have differential impacts on social cohesion outcomes, indicating that it is imperative to examine how different *kinds* of psychological distress differently impact social cohesion.

4.4 Conclusion

This chapter has presented a cross-national test of the theory using two data sources: the WHO WMH Survey Initiative and the second wave of the WVS. Using the WHO WMH data,

I assess national prevalence rates of trauma exposure and psychological disorders, finding that rates of psychological disorders vary significantly across countries, and that there is a significant positive association between the proportion of the population reporting at least one trauma exposure and the prevalence of psychological disorders, including anxiety disorders and mood disorders. I then use the second wave of the WVS to assess associations between psychological distress and social cohesion cross-nationally at the individual level. The findings provide cross-national empirical support for the expectation that hyperarousal and hypoarousal have differential impacts on social cohesion. Specifically, I find that hyperarousal is significantly negatively associated with bridging social cohesion across indicators of social trust and of preferences towards having either outsiders or outcasts as neighbors, while hypoarousal is significantly negatively associated with both bonding social cohesion across indicators of group membership in extracurricular groups and group volunteering in extracurricular or political groups, and bridging social cohesion across indicators of social trust and of preferences towards having either outsiders or outcasts as neighbors. Among individuals with high hyperarousal, those who do not additionally have high hypoarousal report, on average, higher levels of bonding social cohesion, including on indicators of group membership in extracurricular and political groups, and of group volunteering in extracurricular and political groups. Taken together, these results provide an insightful cross-contextual test of the theory, providing a strong foundation for the empirical tests presented in Chapters 5 and 6.

Chapter 5

Intervention-Driven Improvements in Psychological Distress and Emotion Regulation on Social Cohesion

This chapter presents the main empirical test of the theory of psychological foundations of social cohesion, assessing how responses to trauma exposure affect social cohesion. I maintain that adverse responses to trauma exposure, manifest by psychological distress characterized by hyperarousal and/or hypoarousal, affect subsequent social cohesion outcomes. I expect that individuals with psychological distress characterized by hyperarousal will be, on average, more likely to report lower levels of bridging social cohesion, while individuals with psychological distress characterized by hypoarousal will be, on average, more likely to report lower levels of both bonding and bridging social cohesion. I further expect that individuals with greater emotion regulation skills will be, on average, more likely to report greater levels of both bonding and bridging social cohesion. Finally, building on the previous expectations, I posit that intervention-driven improvements in psychological distress and emotion regulation will be associated with higher reported levels of bonding and bridging social cohesion.

To test the proposed theory in a highly-relevant context, I use a panel dataset collected via a randomized controlled trial (RCT) of a novel psychoeducation intervention, *The Field Guide for Barefoot Psychologists*, written by Beyond Conflict and implemented by Questscope in Jordan's Za'atari Refugee Camp. *The Field Guide* was designed with the goal of improving emotion regulation and mitigating psychological distress for Syrian refugees living in Za'atari Refugee Camp.[1] Using baseline data collected prior to treatment assignment, I first assess associations between trauma exposure and responses to trauma exposure. I find that there is significant individual variation in responses to trauma exposure, with only a subset of individuals with past trauma exposure developing psychological distress symptoms and that such symptoms are variously characterized by hyperarousal, hypoarousal, or both. I then use the baseline data to examine associations between psychological distress and social cohesion. I find that hyperarousal and hypoarousal are differentially associated with social cohesion. Specifically, respondents with high hyperarousal at baseline report, on average, significantly lower bridging social cohesion across measures of outgroup trust, outgroup anxiety, and perceived communal security, while respondents with high hypoarousal at baseline report, on average, significantly lower bonding social cohesion on the measure of ingroup trust and bridging social cohesion on the measure of outgroup anxiety. Individuals with high hyperarousal who do not additionally have high hypoarousal report, on average, significantly higher bonding social cohesion on the measure of ingroup trust.

I next use baseline and endline data to assess the average treatment effects of *The Field Guide* on psychological distress and emotion regulation. The intervention has a meaningful and statistically significant effect on both hypoarousal and emotion regulation, resulting in a 21.4% and 18.7% improvement from baseline, respectively. *The Field Guide* does not lead to a significant reduction in hyperarousal from baseline. I then assess how intervention-driven improvements in hypoarousal and emotion regulation are associated with changes in social cohesion. I find that intervention-driven improvements in emotion regulation are significantly

[1]The RCT was conducted in collaboration with Beyond Conflict, Questscope, and the Ford Foundation.

associated with a 4.0% improvement in ingroup trust, an 11.5% improvement outgroup trust, and an 8.7% improvement in perceived communal security, while intervention-driven improvements in hypoarousal are significantly associated with a 6.9% improvement in ingroup trust, an 8.1% improvement outgroup trust, an 11.7% improvement in outgroup anxiety, and a 12.9% improvement in perceived communal security. Taken together, the findings from these empirical tests provide strong support for the theory.

This empirical test additionally offers two key practical insights that can be used by researchers seeking to conduct applied research with trauma-affected populations. First, it highlights the importance of working with an implementing partner who has deep contextual knowledge and awareness of how to design and carry out an intervention tailored to the study population and setting. Second, it demonstrates how impact evaluations can be used to assess not just the primary outcomes of the intervention—in this case, psychological distress and emotion regulation—but also to evaluate how intervention-driven improvements in primary outcomes are associated with other relevant factors. It is my hope that this contribution can encourage future innovation via interdisciplinary inquiry and researcher-practitioner collaboration.

This study, at the time that it was conducted, was also the largest RCT of a novel psychoeducational program among an encamped refugee population. Roughly 22% of refugees worldwide live in refugee camps (UNHCR 2022*a*). Yet, refugee camps are often highly regulated, making independent, rigorous, and ethical data collection that is not conducted by the host government or implementing organization challenging. This study provides a test of the theory in a naturalistic setting, using measures that were assessed for contextual relevance and screened for safety, among an often difficult-to-access population with widespread trauma exposure.

Ultimately, the empirical test presented in this chapter offers novel ways to understand how psychological distress and emotion regulation affect social cohesion in the aftermath of

conflict and forced migration, while additionally providing promising new avenues of inquiry for researchers and practitioners looking to better understand the impact of individual mental health on community-relevant outcomes.

5.1 Syrian Case Overview

This section provides a brief overview of the Syrian civil war, the resulting forced migration crisis, and Za'atari Refugee Camp, where the study took place.

Syrian Civil War and Forced Migration Crisis

Intense waves of political and economic unrest began to take shape in Syria in 2011 during the Arab Spring (Marks 2018). Bashar al-Assad, who had taken power in 2000 following the rule of his father, Hafez al-Assad (Laub 2021), had faced significant criticism during his rule (Marks 2018). Protests began emerging across the country as early as January 2011; in March 2011, after significant protests emerged in Dara'a in response to fifteen teenagers being arrested for writing "the people want the regime to fall" on city walls, Bashar al-Assad sent the Syrian army into Dara'a with tanks and opened fire on protesters (Laub 2021). This further fueled unrest, which escalated into the formation of opposition forces to challenge the Syrian army (Britannica 2022). Since the start of the war in 2011, it has been estimated that 400,000 Syrians have been killed, including over 300,000 civilians (UNHCR 2022*f*).

The war has also led to a massive forced migration crisis; to date, Syrian refugees constitute one of the largest forcibly displaced population globally (UNHCR 2022*g*), with 5.7 million registered Syrian refugees outside of Syria (UNHCR 2021*b*) and 6.7 million Syrians displaced internally (UNHCR 2022*e*).[2] Among Syrians who remain displaced outside of Syria, roughly

[2]As of June 2022, the number of registered Syrian refugees displaced abroad (5.6 million) is lower than the number of reported Ukrainian refugees displaced abroad (6.6 million) (BBC 2022).

300,000 Syrian refugees live in camps, while 5.4 million Syrian refugees live outside of camps in urban, peri-urban, or rural settings (UNHCR 2022*b*).

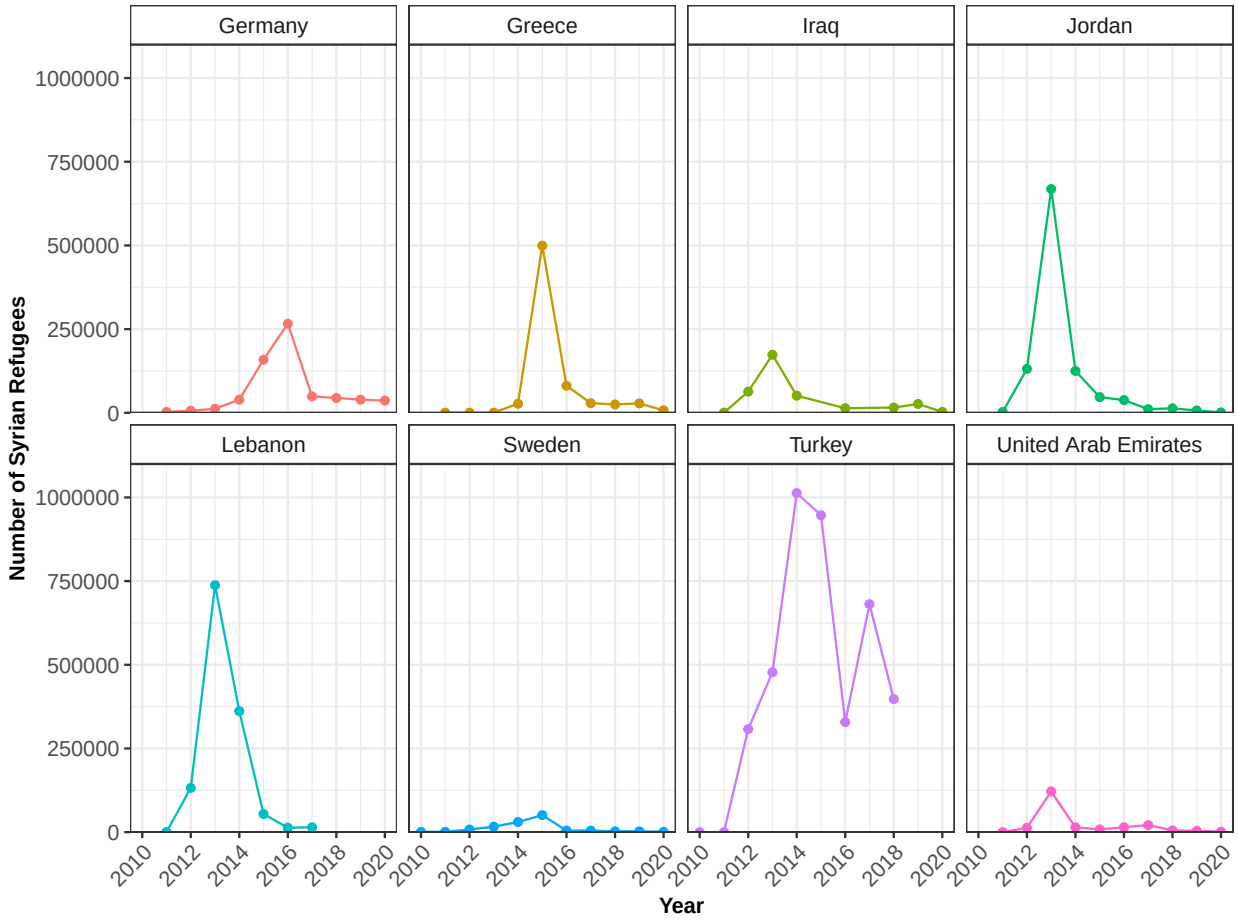
The top receiving countries of Syrian asylum-seekers and refugees since 2011 have included Turkey, Lebanon, Jordan, Greece, Germany, Iraq, United Arab Emirates, and Sweden, listed in descending order of most Syrian migrants received. Figure 5.1 illustrates the rate of Syrians migrating to each of the eight aforementioned countries since 2011. Each of these countries has received over 100,000 Syrians since the start of the war, with Turkey receiving the greatest number of Syrians at 4.1 million registered refugees and asylum-seekers accepted since 2011 (UNHCR 2022*g*).

Jordan as a Receiving Country

While Syrians began migrating to Jordan as a result of the war beginning in late 2011, the rate of migration increased significantly in 2013 (Figure 5.1), as the Syrian conflict increased in intensity and became characterized by battles for territorial control (Khoury 2017). Of the 5.7 million Syrians currently living abroad, roughly 650,000 live in Jordan. While a border crossing opened in October 2018 between Syria and Jordan with the intent of allowing Syrians a pathway to return home, as of 2019 only two percent of Syrian refugees reportedly returned to Syria from Jordan (Plan 2019). As such, the number of Syrians living in Jordan has remained fairly constant since mid-2016, when it reached 650,000 (UNHCR 2022*c*). Many Syrians cite safety concerns or fears of retribution upon return as reasons for remaining in Jordan (HRW 2021), especially for men who had previous military involvement, rebel group involvement, or who left Syria to evade recruitment into rebel groups or military service.

Of the roughly 650,000 Syrians currently living in Jordan, approximately 20% (132,000) live in camps and 80% (542,000) live outside of camps (UNHCR 2022*c*). This is consistent with the proportion of all refugees worldwide living within camps (22%) (UNHCR 2022*a*),

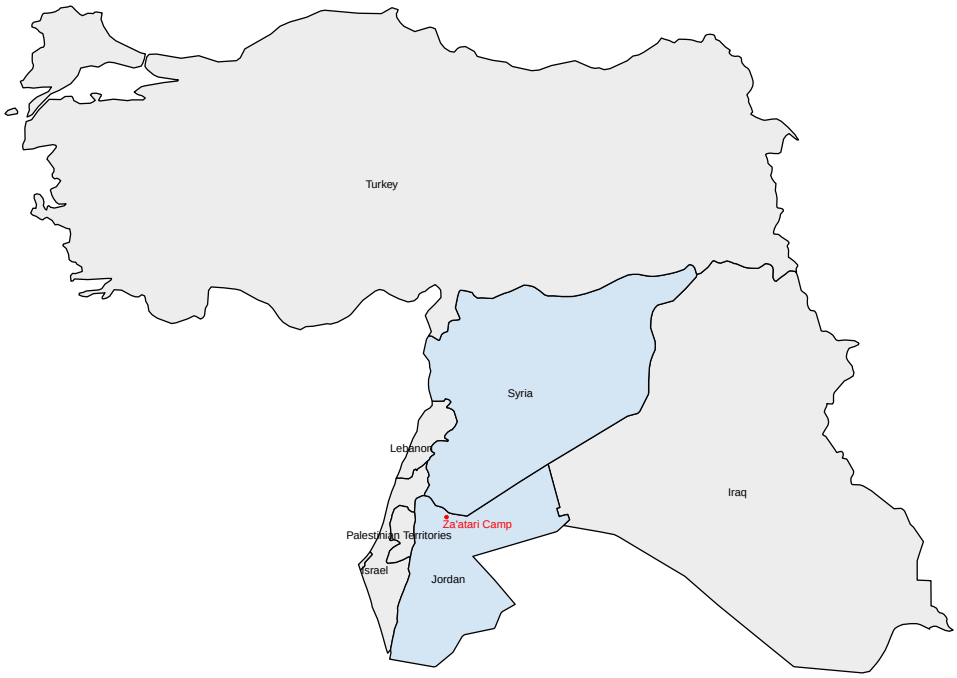
Figure 5.1: Number of Syrian refugees registered in top receiving countries, by year



Notes: Data provided by Andrew Shaver, see: Shaver et al. (2022); Fearon and Shaver (2021); UNHCR (2022*g*). Includes registered refugees and asylum-seekers from Syria arriving in each of the eight top receiving countries, aggregated yearly.

but differs significantly from the proportion of Syrians who lived in camps in Jordan at the start of the refugee crisis; from the start of the crisis until May 2013, the significant majority of Syrian refugees in Jordan lived within one of the two refugee camps—Za'atari and Azraq—that were established for Syrians in Jordan, rather than in urban, peri-urban, or rural settings (UNHCR 2022*c*).

Figure 5.2: Location of Za'atari Refugee Camp in the region



Notes: Location of Za'atari Refugee Camp indicated by red dot, 10 kilometers from the Syria-Jordan border.

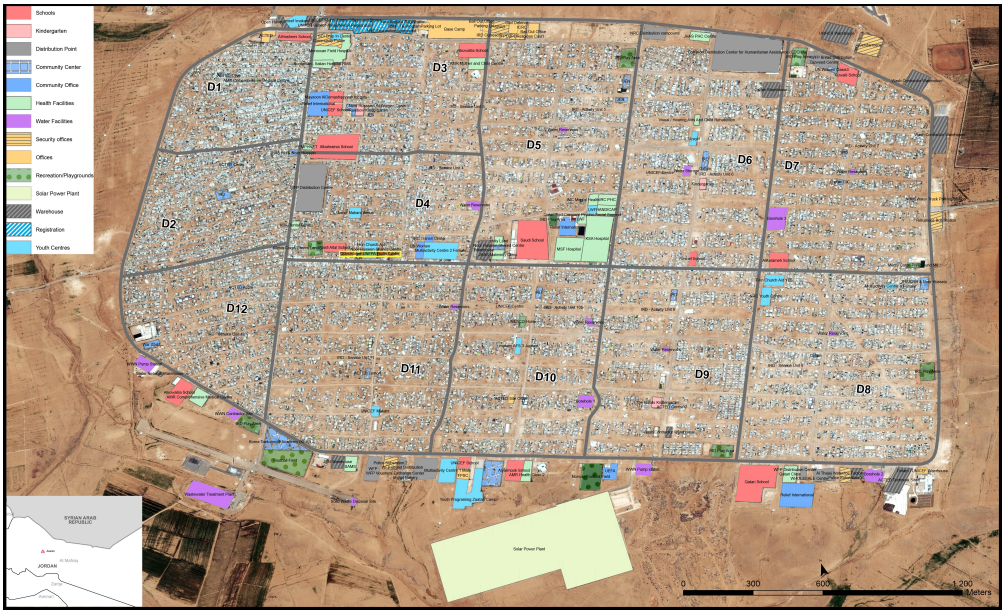
Za'atari Refugee Camp

Za'atari Refugee Camp is the site of the empirical test presented in this chapter and is currently home to an estimated 81,000 Syrian refugees (UNHCR 2022*d*). Opened on July 28, 2012, Za'atari Refugee Camp has served as the largest encampment of Syrian refugees worldwide (Clarke 2017; UNHCR 2022*a*). Located in the Mafraq Governorate in northern Jordan, the camp sits ten kilometers from the border with Syria (Figure 5.2). At its peak occupancy in April 2013, Za'atari was home to over 202,000 Syrians and was the second-largest refugee camp in the world (it is now the third largest in the world, second to Kakuma refugee camp northwest Kenya, and Dadaab refugee complex to the southeast of Kakuma) (UNHCR 2021*a*).

Za'atari Refugee Camp is under joint administration by the Syrian Refugee Affairs Directorate and the United Nations High Commissioner for Refugees (UNHCR) (UNHCR 2019*a*).

After originally being run by the Jordanian Hashemite Charity Organization (JHCO) from its opening in 2012 (Clarke 2017), its administration switched to UNHCR on March 1, 2013 after the rapid expansion of Za'atari in early 2013 and subsequent unrest that occurred within the camp (UNHCR 2013). Za'atari Refugee Camp is divided into 12 districts (Figure 5.3). The offices of Questscope, the implementing partner of the intervention in this study, are in D4, indicated by a yellow box in Figure 5.3.

Figure 5.3: Za'atari Refugee Camp Infrastructure and Facilities, May 2019



Notes: Satellite image taken on April 13, 2019, produced by UNITAR-UNOSAT. Map printed by UNHCR on May 27, 2019 (UNHCR 2019*b*).

5.2 Mental Health and Conflict-Affected Migrants

This section provides an overview of mental health considerations and interventions for refugee populations, before describing *The Field Guide for Barefoot Psychology*, the psychoeducational intervention used in this study.

MHPSS Interventions Used in Humanitarian Settings

Trauma exposure within refugee populations is widespread, with the experience of being forced to leave one's home often constituting a trauma exposure itself. Most refugees report having multiple trauma exposures, which can take place before migration, during migration, or during resettlement (Li, Liddell and Nickerson 2016). Among refugee populations, it is more likely to find variation in the number and type of trauma exposures, rather than in whether or not individuals have been exposed to trauma at all. Such populations are also much more likely to report experiencing psychological distress. It is estimated that prevalence rates for PTSD and major depressive disorder (MDD) among refugee populations are 31.0% and 32.0%, respectively (Patanè et al. 2022), as compared to the overall global prevalence of PTSD and MDD at 3.6% and 4.4%, respectively.

Thus, there is a significant and urgent need for support for psychological distress among refugee populations. There are numerous challenges with and barriers to providing mental health care to refugees, however, including structural barriers (Koch 2019), stigma associated with seeking care (Khedari et al. 2021), and the presence of comorbidity or co-occurring disorders (Koch 2019). Even if structural and cultural hurdles can be addressed, and contextually-relevant interventions can be identified and validated, there is a significant lack of resources and specialists for mental health care, with mental health accounting for just 0.4% of global health aid (Chisholm et al. 2019).

As such, there has been a push to develop and implement mental health and psychosocial support (MHPSS) interventions that can be carried out by trained non-specialists. Such interventions have taken many different forms, including task shifting interventions (Deimling Johns, Power and Malcolm MacLachlan 2018), transdiagnostic interventions (Bolton et al. 2014), and peer-to-peer interventions (Murphy, Clissold and Keynejad 2017). Task shifting interventions rely on the training of lay community members, peers, and non-specialists to deliver mental health services, which allows for scaling up of services, lower

costs overall, and a reduced burden on existing healthcare systems (Patel et al. 2011; Petersen et al. 2012; Seidman and Atun 2017). Transdiagnostic interventions seek to "apply the same underlying principles across mental disorders, without tailoring the protocol to specific diagnoses" (Dawson et al. 2015), and are especially useful in contexts where being evaluated for a psychological disorder in a mental healthcare setting may be significantly stigmatized, such that people may not seek care if they must be assessed first. Transdiagnostic interventions can also be delivered by trained non-specialists, allowing for them to be more easily scaled up and more cost-effective. Peer-to-peer interventions focus on providing therapeutic care through supportive reciprocal relationships with peers who have shared similar experiences and challenges with the persons receiving the intervention (Parnes et al. 2020). These interventions have been found to be less stigmatizing, as participants are working with peers, and to be extremely adaptable across delivery modalities, such that they can be delivered in person, online, or via telephone (Murphy, Clissold and Keynejad 2017; Griffiths, Reynolds and Vassallo 2015).

The intervention used in this study—*The Field Guide for Barefoot Psychology*—is a transdiagnostic, peer-to-peer intervention that uses psychoeducation to teach about how living through conflict and migration can affect psychological and physical health. Psychoeducation—the process of providing information to individuals about the ways in which mental health and well-being can impact their brain and body, as well as ways to mitigate adverse psychological distress symptoms—has been found to lead to significant improvements in symptomatology and well-being, and to significant reduction in stigma surrounding mental health (Khedari et al. 2021). The intervention is described in detail below.

The Field Guide for Barefoot Psychology

The Field Guide for Barefoot Psychologists (hereafter referred to as *The Field Guide*) is a psychoeducation and self-care tool created by Beyond Conflict, an organization that uses brain science to design and promote new tools to reduce conflict. Developed in consulta-

tion with mental health experts working with refugee communities, as well as with refugee populations themselves, *The Field Guide* is intended to improve emotion regulation and reduce psychological distress among communities affected by conflict and forced displacement through psychoeducation and self-care. It uses narrative storytelling, contextually-relevant illustrations, culturally-grounded metaphors, and accessible scientific descriptions to explain various psychological, physiological, and neurobiological experiences associated with conflict, including trauma, stress, guilt, shame, hopelessness, resilience, and post-traumatic growth. *The Field Guide* is written in language accessible to lay audiences with a secondary school education; an example page from *The Field Guide* is presented in Figure 5.4.

Figure 5.4: Sample page from *The Field Guide*



Lesson 3

A Predictive Brain

The brain, like an airport control tower, is constantly scanning for risks, constantly trying to keep you alive. Your brain coordinates every response—from breath to feelings to thoughts—to help you accrue all the survival resources you need to survive—everything from food and water to love and friendships. It does this using two main tools: **associations** and **predictions**. These tools are distinct but closely related.

Learning by association

Think back to when you were a small child, like Isra'. At some point, you may have encountered a hot flame, oven, or stove for the first time. Perhaps you were helping your mother in the kitchen, or just wandering around. Like many young children, you may have curiously reached out to touch the hot stove or flame. Quickly, you found out that it is hot! It burned you.

Chances are, you only needed to touch the stove once to learn an important lesson. Maybe it took a few times, or a few trials of pain, to learn the lesson. Whether it was just once, or a few incidents, chances are, you have not touched a hot stove since then.

What happened in your brain in this scenario is simple:
- An event happened (you touched the stove)
- It made you feel unsafe or at risk or in pain (you were burned)
- You quickly or gradually learned to not do that.

You formed an **association**, a link between a stimulus and a set of physical or emotional sensations.

Every input from the world around you passes through your brain at some point. Every smell, every sight, every touch, every emotion, and every physical state is in some way processed and coordinated by your brain.

When inputs are first sensed, the brain has to interpret those inputs. Are they good? Pleasurable? Dangerous? Friendly? Unfriendly?

Learning by Association

Notes: More information on *The Field Guide* is available at https://beyondconflictint.org/what-we-do/curent-intitatives/migrant-and-refugee-crisis/the-field-guide-for-barefoot-psychologists.

The Field Guide focuses primarily on the ways that living through conflict and forced migra-

tion can impact the brain and body, describing the science behind the range of responses that individuals can have. In contexts where mental healthcare is not widely available, and/or where accessing mental healthcare is highly stigmatized, psychoeducation can serve as a stopgap in care, offering two major advantages. First, psychoeducation interventions allow individuals to decide the degree to which they disclose personal experiences, as compared to individual or group therapy, which center on personal sharing. Second, psychoeducation interventions are grounded in science and empirical evidence, permitting individuals to take a more objective, distanced perspective on psychological distress. *The Field Guide* includes self-care exercises backed by empirical evidence, drawing on insights from various fields of trauma therapy, including somatic experiencing, yoga, mindfulness, and cognitive behavioral therapy. Each self-care exercise presented in *The Field Guide* has an accompanying instructional video and includes an explanation about the science behind and potential gains of each exercise. *The Field Guide* was specifically designed to target and improve emotion regulation via psychoeducation, teaching participants about brain and body reactions to trauma exposure and chronic stress as experienced as the result of conflict and forced migration; improving emotion regulation is of particular interest, as prior research has found that treatments designed to target emotion regulation have transdiagnostic utility (Gratz, Weiss and Tull 2015).

Central to the mission of *The Field Guide* is for all materials be fully comprehensible and de-jargonized. During the process of creating the intervention, it was discovered that many concepts to be discussed in the intervention did not have readily-available or digestible translations in Arabic. Ensuring that the materials could be easily understood in Arabic by individuals with a secondary school education was a guiding principle for the intervention developers. All materials went through repeated rounds of review and editing with various stakeholders, including persons in the target population, practitioners specializing in mental health and psychosocial treatment in post-conflict contexts, and researchers focused on psychological and physiological responses to trauma exposure. As a result, *The Field Guide* uses

"a culturally informed perspective" in order to elicit "idioms of distress, cultural syndromes, and illness beliefs" (Patel et al. 2018).

The intervention was administered either individually (at home treatment) or in a group setting (workshop treatment); both treatment modalities delivered the same content. All analyses presented in the main text pool the treatment delivery modalities. Analyses with treatment modalities estimated separately are included in Appendix J. Additional details on the study design and delivery are provided in section 5.3 below.

5.3 Overview of RCT Design and Implementation

This section offers an overview of the study design, ethical considerations that were addressed in the planning and implementation of the intervention and the study, and the measures used to assess key concepts.

Study Design

In addition to presenting descriptive statistics on the levels and characteristics of trauma exposure experienced by the study sample, the empirical goals of this chapter are to assess how individual responses to trauma exposure vary (H1), including variation degree and kind of psychological distress (H2); to assess whether and how psychological distress is associated with social cohesion (H3-H6); to assess whether and how emotion regulation is associated with social cohesion (H7); and assess whether intervention-driven improvements in emotion regulation and/or psychological distress are associated with improvements in social cohesion (H4-H7).[3]

To test the hypotheses outlined above, the empirical strategy uses a novel panel dataset collected via an RCT impact evaluation of the *The Field Guide*. I first use baseline data

[3]Hypotheses are outlined in detail in section 3.2 and presented in Table 3.1.

collected prior to treatment assignment to examine variations in rates and kinds of trauma exposure and psychological distress among the sample. I then use the baseline data to assess associations between psychological distress and social cohesion, as well as between emotion regulation and social cohesion. The final set of empirical analyses use the baseline and endline data to test how intervention-driven improvements in psychological distress and emotion regulation are associated with changes in social cohesion. This study is unique in that it allows for the assessment of psychological distress and social cohesion measures generally not assessed in the same study.

Evaluating both a novel psychoeducation intervention and its secondary effects poses significant ethical challenges, as will be discussed below, as well as methodological challenges, especially in a context affected by conflict and forced migration. Methodologically, if the intervention did not substantially reduce psychological distress or improve emotion regulation, then it would not be possible to rely on randomizing the receipt of its treatment to empirically assess associations between randomized, intervention-induced improvements in psychological outcomes with social cohesion outcomes.[4] Using the baseline data allows for an assessment of associations between psychological factors and social cohesion, without the requirement that the intervention have its intended impact.

As noted above, the study took place in Za'atari Refugee Camp in northeastern Jordan, ten kilometers from the border with Syria (Figure 5.2). In addition to Beyond Conflict, the partners on the project included Questscope, which served as the implementing partner, and The New School, who was a partner on the research team, led by myself and Dr. Vivian Khedari. The intervention and the data collection were funded by The Ford Foundation.

Recruitment of the 160 study participants began in April 2019 and was carried out by trained Questscope facilitators. The study sample size was capped at 160 based on Questscope's

[4]Of note, of the psychological variables used in the study, it was expected to see the most intervention-driven improvement on emotion regulation, which was the intended outcome to be most significantly improved in the design of *The Field Guide*.

capacity in the camp. An equal number of men and women were recruited to the study, as per the requirements of Questscope, which needed balance on gender in order to run the gender-segregated workshop groups for the intervention.

Participants were randomly assigned to one of three groups: the control group, the at-home treatment group, or the workshop treatment group. Individuals who were randomized into the control group at baseline were informed upon receipt of their treatment assignment that they would be enrolled in the workshop group following the second round of data collection. Individuals in the at-home treatment came to the Questscope offices every two weeks to pick up new chapters with accompanying video material and instructions to review on their own at home. Participants in this treatment also received twice-weekly SMS reminders about engaging with the content and coming to Questscope to receive the next set of materials. In addition to ensuring that participants did not speed through the material all at once, this method of delivery of the materials allowed for Questscope project staff to conduct check-ins and assess whether participants needed additional support during the course of the intervention. Participants assigned to the workshop treatment group attended 120-minute workshop group sessions twice weekly in Questscope's offices in Za'atari Refugee Camp. Each workshop group had 12 to 14 participants, were sex-segregated, and were led by paired, same-sex facilitators. Individuals were randomized prior to arriving for the first round of data collection, but only informed of their treatment assignment following the completion of the baseline data collection. Participant IDs were used for the duration of the study. Table 5.1 presents balance across treatment assignment on observable factors.[5]

The study included two waves of treatment and three rounds of data collection, carried out between April 2019 and October 2019. The baseline data were collected over two weeks in April 2019, with the first wave of treatment administered immediately after, lasting for eight weeks. Immediately following the conclusion of the first wave of treatment, the second round of data collection was conducted, which lasted for two weeks in July 2019. Individuals

[5]For balance tests across separate treatment delivery modalities, see Appendix F.

Table 5.1: Balance across treatment & control groups

Variable	Control	Treated	p-value
Demographic Variables			
Age	25.15	24.33	0.408
Gender	0.51	0.49	0.872
Married	0.51	0.47	0.683
College-Level Education	0.23	0.23	0.968
Social Support	0.71	0.71	0.814
Number of Children	1.31	1.24	0.815
Number of People in Household	5.75	5.95	0.613
Total Income Past Month (Jordanian Dinar)	56.84	60.93	0.803
Health Index	3.50	3.54	0.767
Trauma Exposure			
Trauma Exposure (Binary)	0.98	0.96	0.400
Trauma Exposure (Index)	0.44	0.47	0.393
Psychological Factors			
Hyperarousal (Dimensional)	0.42	0.40	0.416
Hyperarousal (Diagnostic)	0.29	0.26	0.658
Hypoarousal (Dimensional)	0.30	0.27	0.320
Hypoarousal (Diagnostic)	0.12	0.13	0.998
Emotion Regulation	0.68	0.71	0.232
Social Cohesion			
Ingroup Trust	0.64	0.65	0.791
Group Membership (Community Groups)	0.20	0.20	0.924
Group Membership (Extracurricular Groups)	0.34	0.29	0.403
Outgroup Trust	0.31	0.34	0.421
Outgroup Anxiety (Reverse-Scored)	0.57	0.60	0.324
Perceived Communal Security	0.43	0.43	0.828
Proportion	0.38	0.62	

Notes: As reported by respondents in the first round of data collection in April 2019. Treatment includes individuals treated via either intervention delivery modality (at home or workshop group); for balance broken out by delivery modality, see Appendix F.

who had originally been assigned to the control group then received the intervention via the workshop group delivery modality in the second wave of treatment, which also lasted for eight weeks. The third and final round of data collection was completed over two weeks in October 2019, immediately following the end of the second wave of treatment.

In this chapter, I restrict analyses to the first wave of treatment and analyze both treatment delivery modalities combined, such that individuals referred to as being in the control group received no treatment, while individuals referred to as being in the treated group received the treatment either via the at home or the workshop group delivery modality. Analyses with both waves of treatment and with the treatment modalities analyzed separately are available in Appendix J.

There was extensive training provided for both the intervention facilitators and for the study enumerators. Intervention facilitators participated in a three-week training, carried out by Beyond Conflict and Questscope. Study enumerators participated in a week-long data collection training, carried out by the research team with support from Beyond Conflict and Questscope. The enumerator training covered data collection protocols, how to identify distress in respondents participating in the survey, and how to ethically collect data and protect participant confidentiality.

Ethical Considerations

There are significant ethical considerations that must be prioritized when designing and conducting a study that involves trauma-exposed populations, as highlighted in section 1.4. These concerns take on an additional level of import when an intervention designed to target psychological distress is involved. Ethical concerns in regard to the research design—including both intervention and the data collection—were centered throughout the idea generation, planning, design, and implementation stages of the research, with various stakeholders engaged to ensure that considerations of all relevant populations taken into account

(Herman et al. 2022). This included holding conferences in Boston, Massachusetts (where Beyond Conflict is located) and in Amman, Jordan (Figure 5.5) in order to solicit feedback from stakeholders on what should be included in both the intervention and study designs.

Figure 5.5: *The Field Guide* conference with stakeholders in Amman, Jordan



Notes: Taken on January 25, 2018 in Amman, Jordan.

The implementing partner, Questscope, is a non-profit organization that has operated in Za'atari camp since 2014 (Figures 5.6 and 5.7) and was highly involved in all conversations and meetings for both intervention and study design (Figure 5.8). Syrians living in Za'atari, who were volunteers with Questscope, served as facilitators on the intervention, provided feedback on the intervention design, and were the actors in the instructional self-care videos used as part of the intervention (Figure 5.9).

There was a desire on the behalf of both Beyond Conflict and Questscope to randomize the treatment. Due to the operating capacity and space restrictions Questscope faces in Za'atari

Figure 5.6: Questscope space in Za'atari Camp, main courtyard



Notes: Taken on March 19, 2019 in Za'atari Refugee Camp in Jordan. Photograph by Biz Herman.

Figure 5.7: Questscope space in Za'atari Camp, room used for programs



Notes: Taken on January 23, 2018 in Za'atari Refugee Camp in Jordan. Photograph by Biz Herman.

Figure 5.8: First meeting in Za'atari with Questscope, Beyond Conflict, and research teams



Notes: Taken on January 23, 2018 in Za'atari Refugee Camp in Jordan.

Refugee Camp, implementation of the intervention could not be delivered to all participants at once; as such, Questscope preferred to randomize who first received the treatment so that administration would be perceived as fair. Additionally, as *The Field Guide* was a novel intervention that had not previously been validated, Beyond Conflict and Questscope were committed to partnering with the research team to rigorously assess the efficacy of the program. Thus, while receipt of the intervention was randomized for the first wave of treatment, in order to both match the capacity of the implementing partner and to assess the impact of the intervention, participants who were originally assigned to the control group were able to receive the intervention via the workshop modality in the second wave of the treatment. This was an ethical imperative for Beyond Conflict, Questscope, and the research team in order to ensure that all respondents had access to a program that could potentially lead to improvements in psychological distress and emotion regulation. Participants were

Figure 5.9: Filming of self-care exercise videos for *The Field Guide*



Notes: Taken on September 28, 2018 in Ajloun, Jordan. Photograph by Biz Herman.

informed that they would receive the treatment in July 2019 if they were randomized into the control group in April 2019.

There was no screening for prior trauma exposure or existing psychological distress to qualify for *The Field Guide* intervention; this differs significantly from other mental health treatments, which often require a threshold of psychological distress or the meeting of diagnostic criteria to qualify for a study. Such pre-screenings are commonly used in studies being assessed for impact, both because requiring a threshold of psychological distress allows for a better chance of capturing a treatment effects, by ensuring that all participants start with a high level of distress, and because treatments are often targeted for specific manifestations of distress.

The Field Guide specifically did not screen for existing distress for two reasons. First, the intervention is advertised as a psychoeducational training, rather than as a mental health intervention, in order to reduce potential issues related to stigma of seeking mental health treatment. Therefore, pre-screening for psychological distress was not included in the recruitment design, as it was feared that doing so would stigmatize those who enrolled in the study. Second, the *The Field Guide* was specifically designed to be used by all individuals regardless of their mental health need at the time of receipt. *The Field Guide* is intended to be beneficial for all individuals—those who are currently experiencing psychological distress, those who may have loved ones who are experiencing psychological distress, those who may experience psychological distress in the future—in that it provides psychoeducational knowledge and skills to develop a robust self-care toolbox to address needs as they exist at present or as they may arise in the future.

In dealing with individuals who have prior trauma exposure, it is essential to ensure safety and provide appropriate support prior to, during, and after the intervention and data collection. *The Field Guide* intervention and study underwent an ethics review with The New School for Social Research's Institutional Review Board (IRB).[6] As noted above, the intervention and data collection procedures were developed in conjunction with and thoroughly reviewed by field partners, who had deep knowledge of the study sample and their specific needs. Prior to the initiation of data collection, the survey instrument was reviewed by the intervention facilitators and by the study enumerators to ensure contextual relevance and to exclude questions that might cause undue emotional distress; significant modifications were made to the survey instrument during this time. Special care was given to the screening of questions related to trauma exposure and psychological distress. Measuring psychological distress accurately and in a contextually-relevant manner poses a number of challenges, from the sensitive nature of the questions, to the accuracy of self-reporting, to the difficulty

[6]Recruitment, intervention, and data collection procedures were reviewed and received approval from The New School's IRB (Protocol 2019-1016).

accessing and surveying populations of interest (Pernice 1994).[7] The research team and implementing partner worked together prior to the start of the study to ensure that measures were both relevant to the study sample and would not cause undue distress in the course of collecting responses.

Given that the intervention had not been previously evaluated, there were monitoring protocols established to identify and mitigate potential adverse responses to both the intervention and to the data collection. A week-long enumerator training was conducted in Amman, Jordan to ensure that all data collectors had the ability to recognize and support respondents who might experience psychological distress during data collection. A protocol was established so that respondents who exhibited symptoms of psychological distress either during data collection or during the intervention would be connected to counselors who could provide follow-up care. The project manager, Zakaria Al-Kareem, based in Za'atari Camp, checked in with respondents throughout the course of the study and referred them to care as needed.

The intervention facilitators—themselves Syrian refugees living in Za'atari—received three weeks of training and had their own weekly check-ins with a psychologist to ensure that they received any needed support. All enumerators, intervention facilitators, and project management members were blind to study hypotheses.

Measures Used

Measures used for trauma exposure, psychological factors, and social cohesion indicators are outlined in Table 5.2. In addition to these primary indicators of interest, a number of demographic measures were collected, including gender, age, marital status, household size, number of children, educational attainment, earned income (individual and household),

[7] It is often more feasible to assess trauma exposure, either using location-based measures or through self-report instruments. As a result, trauma exposure has been the predominant explanatory factor studied to date. The ability of this study to assess both trauma exposure and psychological distress in a highly-relevant context provides valuable insight.

Figure 5.10: Enumerator training for impact evaluation of *The Field Guide*



Notes: Taken on March 20, 2019 in Amman, Jordan. Photograph by Biz Herman.

and health status. Exact question wording is provided in Appendix G, and Cronbach's alpha scores of internal consistency of scales are provided in Appendix H. All measures were screened and adapted for safety concerns by local field partners in advance of data collection, as is discussed in greater detail in section 5.3.

Trauma exposure was measured using the Refugee Trauma Checklist (Sigvardsdotter et al. 2017), which consists of 12 items assessing whether a respondent has experienced each of six kinds of trauma exposure common to conflict-affected refugee populations either before and/or after leaving their home. The index used in the analyses takes the average of responses and is rescaled to 0 to 1.[8]

For *hyperarousal* and *hypoarousal*, I use the International Trauma Questionnaire, developed

[8]In addition, I construct trauma exposure scales that assess the number of trauma exposures experienced either before or after departure from home, as well as indicators for whether a respondent experienced each type of trauma.

for use of diagnosis of PTSD and CPTSD as defined in the International Classification of Diseases 11th Revision (ICD-11) (Cloitre et al. 2019; WHO 2018). The battery was validated for use in Arabic, and was reviewed for cultural and contextual relevance by the implementing partner. I use the dimensional scoring of the symptoms and functional impairment from the PTSD scale as the measurement for hyperarousal, and the dimensional scoring of the symptoms and functional impairment from the disturbances in self-organization (DSO) scale as the measurement for hypoarousal.

Emotion regulation was measured using the average of the self-regulation and emotional awareness subscale measures from the Multidimensional Assessment of Interoceptive Awareness (MAIA) (Mehling et al. 2018).

For *social cohesion*, I selected indicators after conducting a systematic review of studies in the political science, economics, and psychology literatures that study the impacts of trauma exposure and responses to trauma exposure on sociopolitical outcomes (Davis and Herman 2022). Whenever possible, I used measures employed in previous studies in order to make direct comparisons to past findings. Yet, a number of the outcome factors of interest tested in the existing literature were either not relevant in the given context or were deemed too sensitive to assess. For example, due to safety and security concerns, it was not possible to ask questions related to past political or military involvement, to political affiliations and attitudes, or to views on reconciliation. In the context of Za'atari Refugee Camp, where many individuals fled military conscription and/or fought on opposing sides of the conflict, there was no secure and responsible way to assess these measures while keeping participants safe.

For *bonding social cohesion* indicators, ingroup trust, group membership in community groups, and group membership in extracurricular groups were chosen as the key outcomes of interest. Ingroup trust was measured using a standard battery of questions relating to trust in ingroup members, including family, friends, neighbors, and people known personally.

Group membership was assessed with standard question wording about membership in various groups and organizations; the list of possible groups and organizations to ask about was constructed in consultation with the implementing partner to ensure that the most common options would be included in the battery. Using factor analysis, I identified that group membership should be constructed as two indicators: group membership in community groups (membership in volunteer committees, social committees, youth groups, school committees, or cultural committees), and group membership in extracurricular groups (membership in sports teams, drama clubs, music clubs, or sports clubs).

For *bridging social cohesion* indicators, outgroup trust, outgroup anxiety, and perceived communal security were chosen as the key outcomes of interest. Given participants' refugee status, which can be conceptualized as being perceived as perpetual outsiders, measures relating to outgroup interactions and attitudes may be considered the most relevant. Outgroup trust was assessed with a standard battery of questions relating to trust in outgroup members, including people not previously known, people of a different religion, and people of a different nationality. Outgroup anxiety—which is reverse-scored so that higher values indicate lower outgroup anxiety, in order to allow for higher scores of all social cohesion outcomes to indicate greater reported social cohesion—is measured using a standard index of reported emotions when meeting non-Syrians. Perceived communal security was measured using the Human Insecurity Scale (Lonergan, Gustavson and Carter 2000); it is reverse-scored so that greater values indicate greater perceived communal security.

Table 5.2: Measures used for trauma exposure, psychological variables, and social cohesion variables

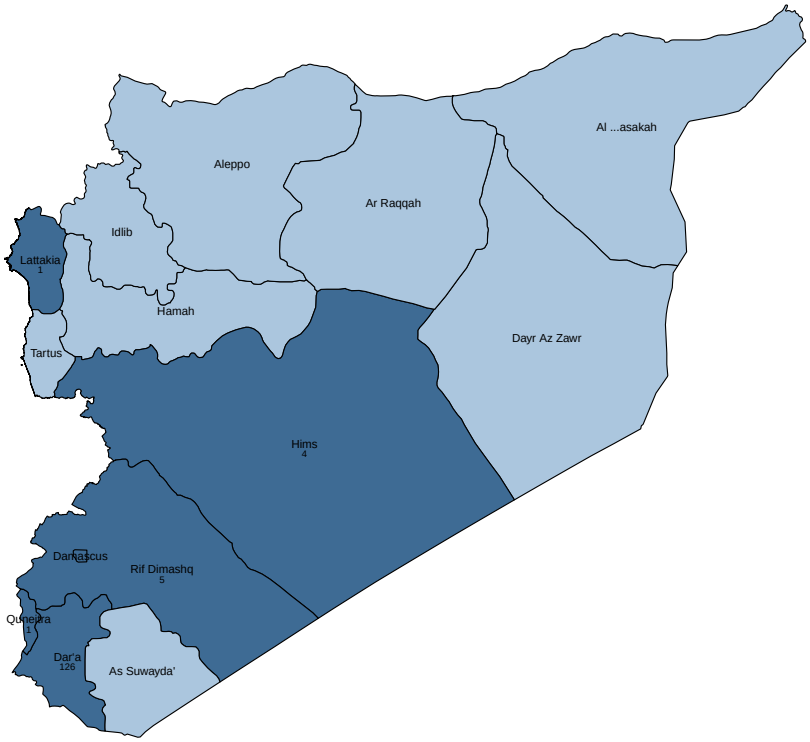
Variable	Measure	Scoring
	Trauma Exposure	
Trauma Exposure	Refugee Trauma Checklist (Sigvardsdotter et al. 2017)	Average of six trauma exposures (war, separation, loss of loved one, violence, witness violence, other life threatening event) before and/or after departure
	Psychological Factors	
Hyperarousal	International Trauma Questionnaire (Cloitre et al. 2019)	**Dimensional:** average of PTSD symptoms and functional impairment scores; **Diagnostic**: indication of at least one symptom from each cluster (re-experiencing, avoidance, sense of current threat) plus at least symptom-related functional impairment
Hypoarousal	International Trauma Questionnaire (Cloitre et al. 2019)	**Dimensional:** average of disturbances in self-organization (DSO) symptoms and functional impairment scores; **Diagnostic:** indication of at least one symptom from each cluster (affective dysregulation, negative self-concept, disturbances in relationships) plus at least symptom-related functional impairment
Emotion Regulation	Multidimensional Assessment of Interoceptive Awareness (Mehling et al. 2018)	Average of symptoms within self-regulation and emotional awareness subscales
	Bonding Social Cohesion	
Ingroup Trust	Index of reported ingroup trust	Average of ingroup trust measures (trust in family, friends, neighbors, people know personally), higher score indicates more ingroup trust
Group Membership (Community)	Average of membership in community-related groups	Index of whether individual is a member of volunteer committee, social committee, youth group, school committee, or cultural committee
Group Membership (Extracurricular)	Average of membership in extracurricular groups	Index of whether individual is a member of sports team, drama, music, or sports club
	Bridging Social Cohesion	
Outgroup Trust	Index of reported outgroup trust	Average of outgroup trust measures (trust in people you first meet, of another religion, of different nationality), higher score indicates more outgroup trust
Outgroup Anxiety (R)	Index of reported emotions when meeting non-Syrians	Average of emotions (nervous, anxious, worried, afraid) when meeting non-Syrians, reverse-scored so higher score indicates *less* outgroup anxiety
Perceived Communal Security	Human Insecurity Scale (Lonergan, Gustavson and Carter 2000)	Average of measures, higher score indicates greater perceived communal security

Notes: For ease of interpretation, all variables have been rescaled to 0 to 1 for all analyses. In visualizations, trauma exposure may be depicted not rescaled, to represent the number of trauma exposures (from 0 to 12) reported by respondents. All psychological distress measures are scored so that higher values indicate greater distress. Questions used for each measure are provided in Appendix G. Internal consistency of indices, assessed using Cronbach's alpha measures, are included in Appendix H.

5.4 Sample Description

Out of 160 participants, 157 were born in Syria, one was born in Kuwait, and two were born in Lebanon. All but one respondent was living in Syria prior to arriving in Jordan; one was residing in Lebanon. Of those who migrated from Syria, 126 migrated from Dara'a governate, 22 migrated from Damascus, five migrated from Rif Dimashq, four migrated from Homs, and one each migrated from Latakia and Quneitra (Figure 5.11). Dara'a borders Jordan and is close to the Israeli-occupied Golan Heights; its inhabitants are predominantly Sunni Muslims (Sterling 2012).

Figure 5.11: Regions in Syria from which study participants migrated



Notes: Regions from which study participants migrated indicated in dark blue. Number of study participants that migrated from given region indicated with number under name of region.

The majority of respondents (100, 62.5%) arrived at Za'atari Refugee Camp in 2013, with 30.6% arriving before 2013 and 6.9% arriving after 2013. All 160 participants reported

making the journey from Syria with family or friends, rather than alone. Summary statistics for respondents as reported at baseline in April 2019 are presented in Table 5.3.

Table 5.3: Summary statistics for respondents at baseline

Variable	Mean	Min	Max	Std. Dv.	N
Demographic Variables					
Age	24.64	18.0	45.0	6.02	160
Gender	0.50	0.0	1.0	0.50	160
Married	0.49	0.0	1.0	0.50	160
College-Level Education	0.23	0.0	1.0	0.42	160
Social Support	0.71	0.2	1.0	0.22	160
Number of Children	1.27	0.0	7.0	1.81	160
Has Children	0.45	0.0	1.0	0.50	160
Number of People in Household	5.88	1.0	13.0	2.37	160
Total Income Past Month (Jordanian Dinar)	59.32	0.0	450.0	94.97	142
Earned Income in Past Month	0.35	0.0	1.0	0.48	142
Health Index	3.52	1.0	4.5	0.83	160
Trauma Exposure					
Trauma Exposure (binary)	0.97	0.0	1.0	0.17	160
Trauma Exposure (# of exposures)	5.52	0.0	12.0	2.59	160
Psychological Factors					
Hyperarousal (dimensional)	0.40	0.0	1.0	0.17	160
Hyperarousal (diagnostic)	0.28	0.0	1.0	0.45	160
Hypoarousal (dimensional)	0.28	0.0	0.9	0.18	160
Hypoarousal (diagnostic)	0.13	0.0	1.0	0.34	160
Emotion Regulation	0.70	0.0	1.0	0.19	159
Bonding Social Cohesion					
Ingroup Trust	0.65	0.2	0.9	0.14	160
Group Membership (Community Groups)	0.21	0.0	1.0	0.27	160
Group Membership (Extracurricular Groups)	0.32	0.0	1.0	0.41	159
Bridging Social Cohesion					
Outgroup Trust	0.32	0.0	0.8	0.21	160
Outgroup Anxiety (Reverse-Scored)	0.59	0.0	1.0	0.24	160
Perceived Communal Security	0.43	0.0	1.0	0.24	160

Notes: As reported by respondents in the first round of data collection in April 2019. In analyses, the number of trauma exposures indicator has been rescaled to 0 to 1 for ease of interpretation and consistency, but is depicted here as the actual number of trauma exposures to indicate how many of the 12 possible types of trauma exposures participants reported experiencing. Hyperarousal and hypoarousal are constructed so that greater values indicate greater psychological distress. Social cohesion measures are constructed so that greater values indicate higher reported social cohesion; to that end, outgroup anxiety is reverse-scored, so that greater values indicate less outgroup anxiety.

Baseline measures of psychological factors suggest that this sample is consistent in rates of trauma exposure and psychological distress to other similarly conflict- and forced migration-affected samples. Among respondents in this study, 44 (27.5%) reported high levels of hyperarousal at baseline, while 21 (13.1%) reported high levels of hypoarousal at baseline.[9]

In considering group identify, Figure 5.12 details the group identities with which study respondents report most strongly identifying. The top choice reported by respondents was national identity, with 100 respondents (62.5%) indicating it as one of their top three identities. Age group was the second most commonly indicated group identity, with 93 respondents (58.1%) indicating it as one of their top three identities, followed by region of Syria (70, 43.8%) and religion (70, 43.8%), which were tied for third most commonly indicated group identity. The importance of national and regional identity may be due to their increased salience as a result of respondents' refugee status (Campbell 2019).

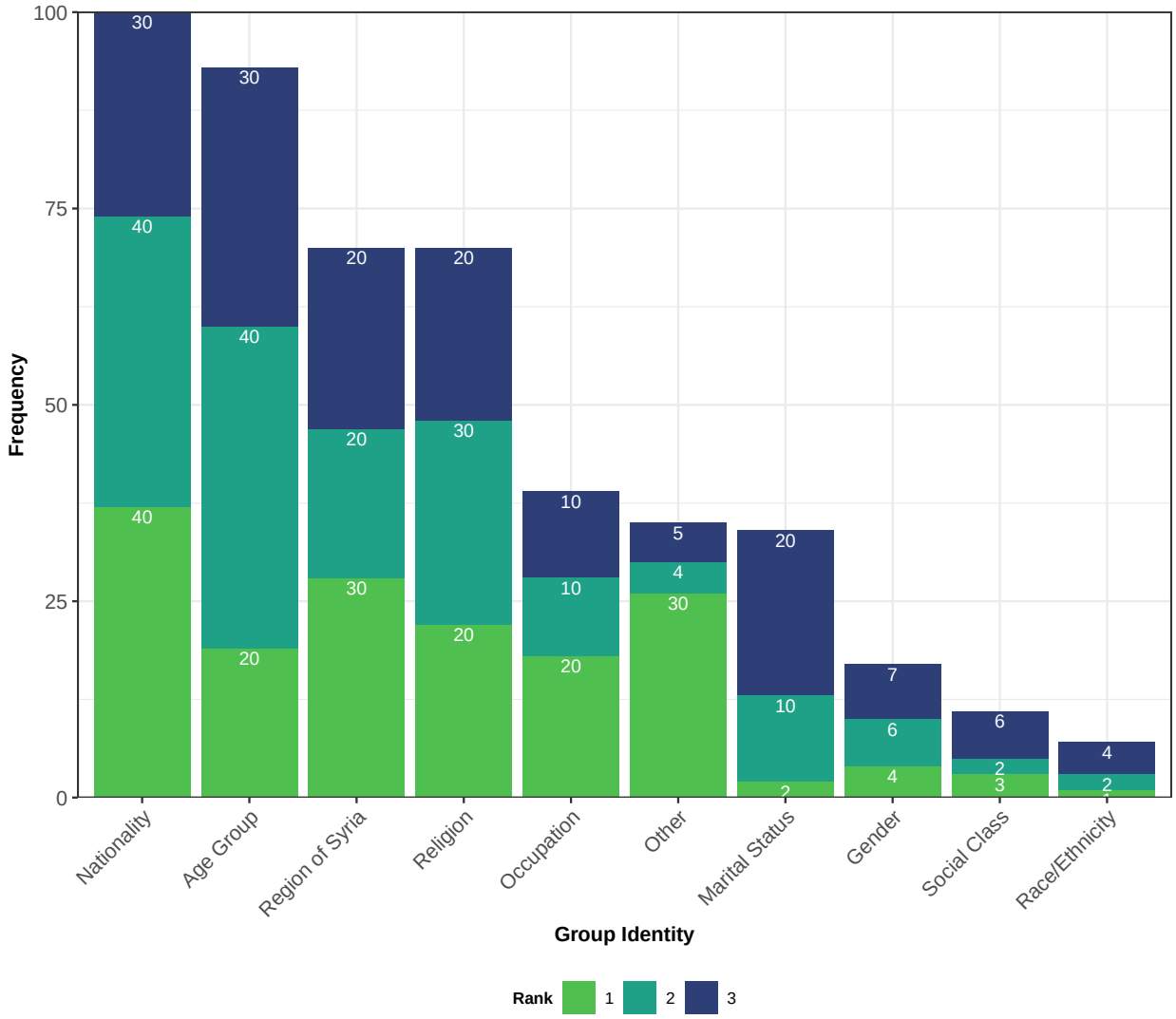
5.5 Reported Trauma Exposure

Of 160 respondents, only five reported having no trauma exposure. As noted in section 5.3, the Refugee Trauma Checklist, used to measure trauma exposure, assesses whether individuals have been exposed to any of six different kinds of trauma, as well as whether the trauma exposure occurred before and/or after leaving home (Sigvardsdotter et al. 2017). If a respondent indicates that they witnessed violence both before and after leaving home, that would be counted as two trauma exposures.[10] The 160 respondents reported an average of 5.52 different kinds of trauma exposures.

[9] Cutoff for levels of each hyperarousal and hypoarousal determined using diagnostic criteria, as specified in Appendix G.

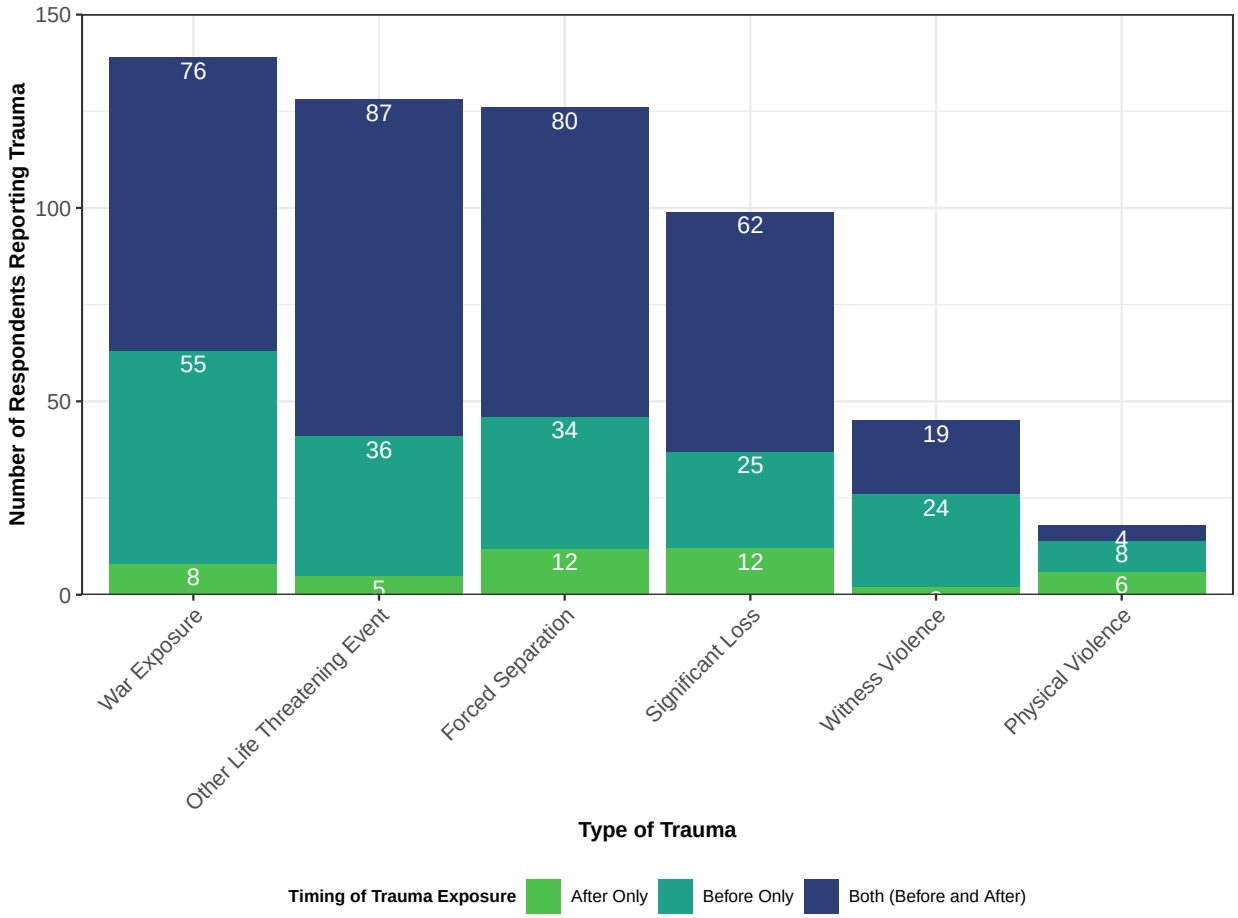
[10] Of note, this measure does not capture whether an individual experienced a certain kind of trauma exposure multiple times in each time period; in other words, whether the individual witnessed violence multiple times prior to leaving home. Future adaptations of this measure would benefit from adding that specificity and capturing whether an individual had none, one, or multiple exposures of each trauma type in each time period.

Figure 5.12: Top group identities reported by respondents



Notes: Data were collected at baseline prior to treatment assignment. The question working was: "If you were amongst a group of people who did not know anything about you, which from the following options would best inform them of your identity?" The figure visualizes the number of respondents who indicated the given identity as their top identity (lime green), second most important identity (teal) or third most important identity (blue). For answer options see Appendix G.

Figure 5.13: Types of trauma exposure reported



Notes: Data were collected at baseline prior to treatment assignment. Numeric labels indicate the number of respondents who reported experiencing a given type of trauma exposure: both before and after departure from home, only before departure from home, or only after departure from home. The Y-axis indicates the number of respondents (out of 160 total) who reported experiencing the given type of trauma exposure. Survey questions adapted from Harvard Refugee Trauma Questionnaire (Sigvardsdotter et al. 2017); for question wording see Appendix G.

The type and timing of trauma exposure reported by respondents at baseline are visualized in Figure 5.13. The most commonly reported trauma exposure was war exposure (139, 86.9%), followed by other situations in which the respondent felt that their life was in danger (128, 80.0%), forced separation from family and friends (126, 78.8%), and loss or disappearance of family members or loved ones (99, 61.9%). Both witnessing physical violence (45, 28.1%) and experiencing physical violence (18, 11.2%) were less frequently reported. War exposure, other situations in which the respondent felt that their life was in danger, forced separation, and significant loss were all most commonly reported as having been experienced both before and after leaving home, while witnessing and experiencing physical violence were most commonly reported as having been experienced before leaving home. In addition to providing insight into how challenging life after departure from home is for individuals affected by forced migration, these data indicate that respondents often have multiple exposures that are sustained over long periods of time. This has implications for understanding how trauma exposure operates in the lives of individuals affected by forced migration, as well as for understanding how treatments, which may often rely on the assurance that danger has passed, must take into account the realities of these populations experiencing chronic trauma exposures.

5.6 Results

This section presents the results from empirical tests of the hypotheses, including assessing the variation in presence and kind of psychological distress among individuals who have trauma exposure (H1-H2), assessing associations between psychological distress and social cohesion (H3-H6), and assessing associations between emotion regulation and social cohesion (H7).

Trauma Exposure and Psychological Distress

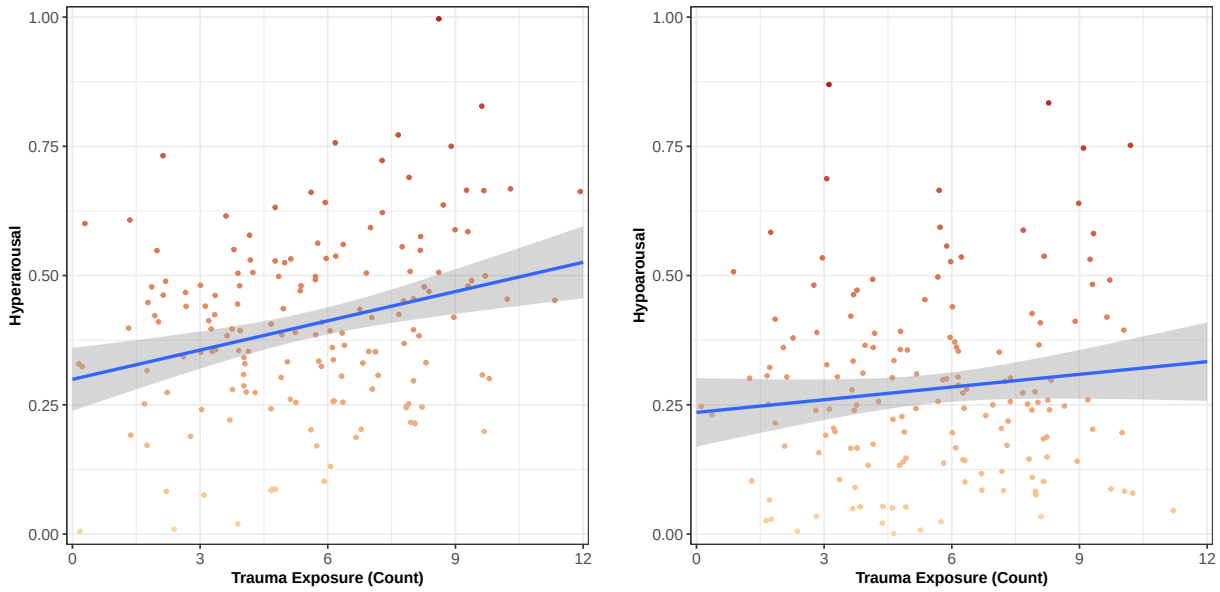
Figure 5.14 visualizes associations between trauma exposure and psychological distress characterized by each hyperarousal and by hypoarousal. There is a significant association between each additional trauma exposure and hyperarousal, such that each additional reported trauma exposure is associated with a 1.5 point increase in hyperarousal symptoms ($p < 0.001$).[11] While trauma exposure is positively associated with hypoarousal, the association is not significant.[12] Taken together, these data provide support for the expectation that among individuals who do develop psychological distress in response to trauma exposure, there will be variation in both the degree and kind of psychological distress (H2).

One explanation for why associations between trauma exposure and psychological distress may not be as robust as has been identified in past studies is that this sample has an extremely high prevalence of trauma exposure, with only five respondents out of 160 (3.1%) reporting no prior trauma exposure, either before or after leaving Syria. The lack of variation in the mere presence of trauma exposure may blunt the ability to statistically isolate the impact of trauma exposure on the presence and degree of psychological distress. Further, the measure used to capture trauma exposure only asked respondents whether they had experienced each type of trauma exposure and whether it occurred before and/or after leaving home; it did not capture whether someone experienced *multiple* instances of the same kind of trauma exposure in each period. Understanding if repeated trauma exposure to the same kind of trauma increases one's likelihood of psychological distress may provide more insight into whether and how specific trauma exposure types and frequencies impact the development of

[11] See Appendix I for models estimating the association between trauma exposure and psychological distress (Table I.1), as well as models estimating the association between timing of trauma exposure and psychological distress (Table I.2).

[12] This result may be an artifact of the way the trauma exposure measure was constructed, as it captured whether an individual experienced a given kind of trauma exposure, but not the chronicity of that trauma exposure (i.e., if a respondent experienced that kind of trauma exposure more than once either before or after departure from home). As hypoarousal is more commonly associated with chronic trauma exposure, a more sensitive trauma exposure measure that was able to capture *how many times* an individual has been exposed to a given kind of trauma exposure may allow for a more accurate assessment of this association.

Figure 5.14: Trauma exposure and psychological distress



Notes: Plotted with the jitter option to add a small amount of random noise to observations on the scatterplot, allowing for a better visual sense of how many observations exist at each pair of X and Y values.

psychological distress in their aftermath.

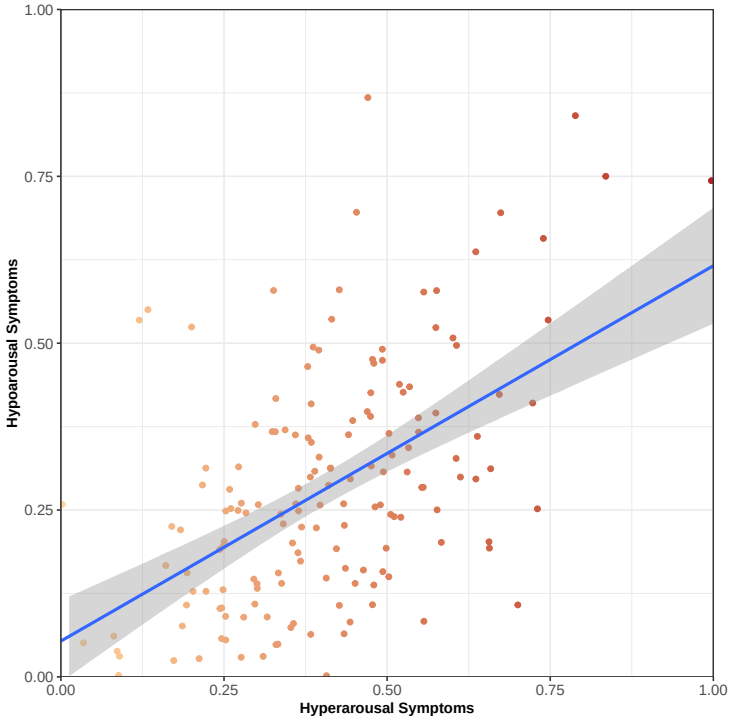
Figure 5.15 visualizes the association between reported hyperarousal and hypoarousal symptoms at baseline, illustrating that while they trend together, respondents are more likely to report higher levels of hyperarousal rather than hypoarousal symptoms.

Psychological Distress and Social Cohesion

Using the baseline data, I next estimate associations between psychological distress and social cohesion outcomes. Because of the size of the sample, regression analyses using baseline data are not sufficiently powered; I thus use t-tests to assess the difference in means between individuals with low presence of psychological distress and high presence of psychological distress, using the diagnostic criteria specified in Table 5.2 as the threshold.

I first assess whether there is a significant difference in means in bridging social cohesion

Figure 5.15: Hyperarousal and hypoarousal symptoms, by respondent



Notes: Higher numbers indicate greater symptoms. Plotted with the jitter option to add random noise to observations on the scatterplot, allowing for a better visual sense of how many observations exist at each pair of X and Y values.

outcomes among individuals with low and high hyperarousal (H4). As hypothesized, Table 5.4 demonstrates that individuals with high hyperarousal report, on average, lower levels of bridging social cohesion across indicators (H4). Individuals with high hyperarousal report, on average, lower outgroup trust by 6.0 percentage points ($p = 0.087$), higher outgroup anxiety (reverse-coded) by 11.0 percentage points ($p = 0.005$), and lower perceived communal security by 15.6 percentage points ($p < 0.001$) when compared to individuals with low hyperarousal.

I next assess whether, among individuals with high hyperarousal, those who *do not also* have high hypoarousal report higher bonding social cohesion than those who *do also* have high hypoarousal (H4A). Table 5.5 displays the difference in means between individuals with low

Table 5.4: Reported means of social cohesion outcomes, low v. high hyperarousal

Indicator	Low Hyperarousal			High Hyperarousal			Test
	N	Mean	SD	N	Mean	SD	
				Bonding Social Cohesion			
Ingroup Trust	104	0.66	0.14	56	0.63	0.14	F= 2.092
Group Mem. (Community)	104	0.19	0.27	56	0.24	0.29	F= 1.002
Group Mem. (Extracurricular)	103	0.30	0.39	56	0.35	0.44	F= 0.486
				Bridging Social Cohesion			
Outgroup Trust	104	0.35	0.21	56	0.29	0.2	F= 2.966
Outgroup Anxiety	104	0.63	0.24	56	0.52	0.22	F= 8.031**
Perceived Communal Security	104	0.49	0.25	56	0.33	0.19	F= 16.56***

Notes: Threshold for high hyperarousal is determined by the diagnostic criteria specified in Table 5.2. Difference in means across social cohesion indicators between respondents with low and high hyperarousal, as reported at baseline in April 2019. *p<0.05; **p<0.01; ***p<0.001.

and high hypoarousal, subsetting to respondents with high hyperarousal. Among individuals with high hyperarousal, those who do not additionally have high hypoarousal report, on average, higher ingroup trust by 12.7 percentage points (p = 0.005), when compared to those who do additionally have high hypoarousal. There is not a significant difference in means on either of the group membership indicators.

I next assess whether there is a significant difference in means in bonding and bridging social cohesion outcomes among individuals with low and high hypoarousal (H5). Table 5.6 presents the difference in means on social cohesion outcomes between individuals with low and high hypoarousal. As hypothesized, individuals with high hypoarousal report lower bonding and bridging social cohesion, across all indicators. Differences in means between individuals with low and high hypoarousal are significant on indicators of ingroup trust by 7.8 percentage points (p = 0.019) and on outgroup anxiety by 12.7 percentage points (p = 0.023).

I finally assess whether individuals with both high hyperarousal and high hypoarousal have significantly lower reported social cohesion across bonding and bridging outcomes, when compared to individuals with low hyperarousal and low hypoarousal (H6). Table 5.7 presents

Table 5.5: Reported means of social cohesion outcomes, low v. high hypoarousal (among respondents with high hypoarousal)

	High Hyperarousal, Low Hypoarousal			**High Hyperarousal, High Hypoarousal**			
Indicator	N	Mean	SD	N	Mean	SD	Test
			Bonding Social Cohesion				
Ingroup Trust	44	0.65	0.13	12	0.53	0.16	F= 8.396**
Group Mem. (Community)	44	0.24	0.28	12	0.22	0.30	F= 0.067
Group Mem. (Extracurricular)	44	0.33	0.43	12	0.42	0.47	F= 0.372
			Bridging Social Cohesion				
Outgroup Trust	44	0.29	0.22	12	0.28	0.14	F= 0.000
Outgroup Anxiety	44	0.53	0.21	12	0.48	0.25	F= 0.471
Perceived Communal Security	44	0.32	0.17	12	0.37	0.23	F= 0.638

Notes: Analysis is subset to individuals with high hyperarousal, with the threshold determined by the diagnostic criteria specified in Table 5.2. Difference in means across social cohesion indicators between respondents with low and high hypoarousal, as reported at baseline in April 2019. *p<0.05; **p<0.01; ***p<0.001.

Table 5.6: Reported means of social cohesion outcomes, low v. high hypoarousal

	Low Hypoarousal			**High Hypoarousal**			
Indicator	N	Mean	SD	N	Mean	SD	Test
			Bonding Social Cohesion				
Ingroup Trust	139	0.66	0.14	21	0.58	0.16	F= 5.625*
Group Mem. (Community)	139	0.21	0.28	21	0.21	0.26	F= 0.003
Group Mem. (Extracurricular)	138	0.32	0.41	21	0.29	0.41	F= 0.148
			Bridging Social Cohesion				
Outgroup Trust	139	0.33	0.21	21	0.28	0.19	F= 0.999
Outgroup Anxiety	139	0.61	0.24	21	0.48	0.23	F= 5.257*
Perceived Communal Security	139	0.44	0.25	21	0.39	0.22	F= 0.694

Notes: Threshold for high hypoarousal is determined by the diagnostic criteria specified in Table 5.2. Difference in means across social cohesion indicators between respondents with low and high hypoarousal, as reported at baseline in April 2019. *p<0.05; **p<0.01; ***p<0.001.

demonstrates that respondents with both high hyperarousal and high hypoarousal report, on average, lower social cohesion across all indicators, when compared to individuals with both low hyperarousal and low hyperarousal; differences were only significant, however, on indicators of ingroup trust (13.5 percentage points, p = 0.003) and outgroup anxiety (16.3 percentage points, p = 0.03).

Table 5.7: Reported means of social cohesion outcomes, low hyperarousal and hypoarousal v. high hyperarousal and hypoarousal

	Low Hyperarousal, Low Hypoarusal			**High Hyperarousal, High Hypoarusal**			
Indicator	N	Mean	SD	N	Mean	SD	Test
			Bonding Social Cohesion				
Ingroup Trust	95	0.66	0.14	12	0.53	0.16	F= 9.245**
Group Mem. (Community)	95	0.19	0.27	12	0.22	0.3	F= 0.105
Group Mem. (Extracurricular)	94	0.32	0.40	12	0.42	0.47	F= 0.607
			Bridging Social Cohesion				
Outgroup Trust	95	0.35	0.21	12	0.28	0.14	F= 1.164
Outgroup Anxiety	95	0.64	0.24	12	0.48	0.25	F= 4.838*
Perceived Communal Security	95	0.49	0.26	12	0.37	0.23	F= 2.551

Notes: Thresholds for high hypoarousal and high hypoarousal are determined by the diagnostic criteria specified in Table 5.2. Difference in means across social cohesion indicators between respondents with both high hyperarousal and high hypoarousal, compared to respondents with low hyperarousal and low hypoarousal, as reported at baseline in April 2019. *p<0.05; **p<0.01; ***p<0.001.

The results presented in Tables 5.4 through Table 5.7 provide empirical support for H3-H6. Specifically, I find that psychological distress characterized by hyperarousal has differential impacts on social cohesion, compared to psychological distress characterized by hypoarousal (H3); that individuals with hyperarousal will report lower levels of bridging social cohesion (H4); that among individuals with high hypoarousal, those who do not additionally have high hypoarousal report higher levels of bonding social cohesion, when compared to individuals with high hyperarousal and high hypoarousal (H4A); that individuals with high hypoarousal were more likely to report, on average, lower levels of both bonding and bridging social cohesion, when compared to individuals with low hypoarousal (H5); and that individuals with both high hyperarousal and high hypoarousal are more likely to report lower levels of

bonding and bridging social cohesion, as compared to individuals with low hyperarousal and low hypoarousal (H6).

Emotion Regulation and Social Cohesion

I next assess variation in social cohesion outcomes across individuals with low and high reported emotion regulation skills at baseline. Table 5.8 illustrates that, across measures, individuals with high emotion regulation report, on average, higher levels of social cohesion across outcomes, though none of the differences are statistically significant.

Table 5.8: Reported means of social cohesion outcomes, low v. high emotion regulation

	Low Emotion Regulation			**High Emotion Regulation**			
Indicator	N	Mean	SD	N	Mean	SD	Test
			Bonding Social Cohesion				
Ingroup Trust	102	0.64	0.14	58	0.67	0.14	F= 2.163
Group Mem. (Community)	102	0.20	0.27	58	0.21	0.28	F= 0.069
Group Mem. (Extracurricular)	101	0.30	0.41	58	0.34	0.40	F= 0.406
			Bridging Social Cohesion				
Outgroup Trust	102	0.31	0.21	58	0.35	0.22	F= 1.181
Outgroup Anxiety	102	0.57	0.23	58	0.62	0.26	F= 1.893
Perceived Communal Security	102	0.43	0.25	58	0.43	0.23	F= 0.000

Notes: Threshold for high hyperarousal is determined by the diagnostic criteria specified in Table 5.2. Difference in means across social cohesion indicators between respondents with low and high hyperarousal, as reported at baseline in April 2019. *p<0.05; **p<0.01; ***p<0.001.

The Field Guide Treatment Effects

I next use the baseline and endline data to evaluate whether randomly-assigned, intervention-driven improvements in psychological distress and emotion regulation are associated with improvements in social cohesion.[13] I first estimate the average treatment effect for each of

[13] *The Field Guide* was not designed to directly address social cohesion; to empirically test this, I estimate the average treatment effect of *The Field Guide* on social cohesion (Figure 5.16).

the psychological factors of interest—hyperarousal, hypoarousal, and emotion regulation—using an OLS estimator:[14]

$$Y_{t_1 i} = \beta_0 + \beta_1 X_i + \beta_2 Y_{t_0 i} + \epsilon$$

Where $Y_{t_1 i}$ is the measure of the psychological factor for respondent i at endline, X_i is a binary indicator for whether respondent i received the treatment or control, and $Y_{t_0 i}$ is the baseline value of the psychological factor. Estimates of average treatment effects on psychological outcomes are presented in the first panel of Figure 5.16.

As expected, the treatment has a large and highly statistically significant effect on emotion regulation (β = 0.131, p < 0.001), which translates to an 18.7% improvement in emotion regulation from baseline. It additionally has a statistically significant effect on hypoarousal (β = -0.060, p = 0.023), which translates to a 21.4% improvement in hypoarousal from baseline. Directionality of the treatment effect on hyperarousal is as expected (β = -0.020, p = 0.357), though the effect is not statistically significant (first panel of Figure 5.16).[15]

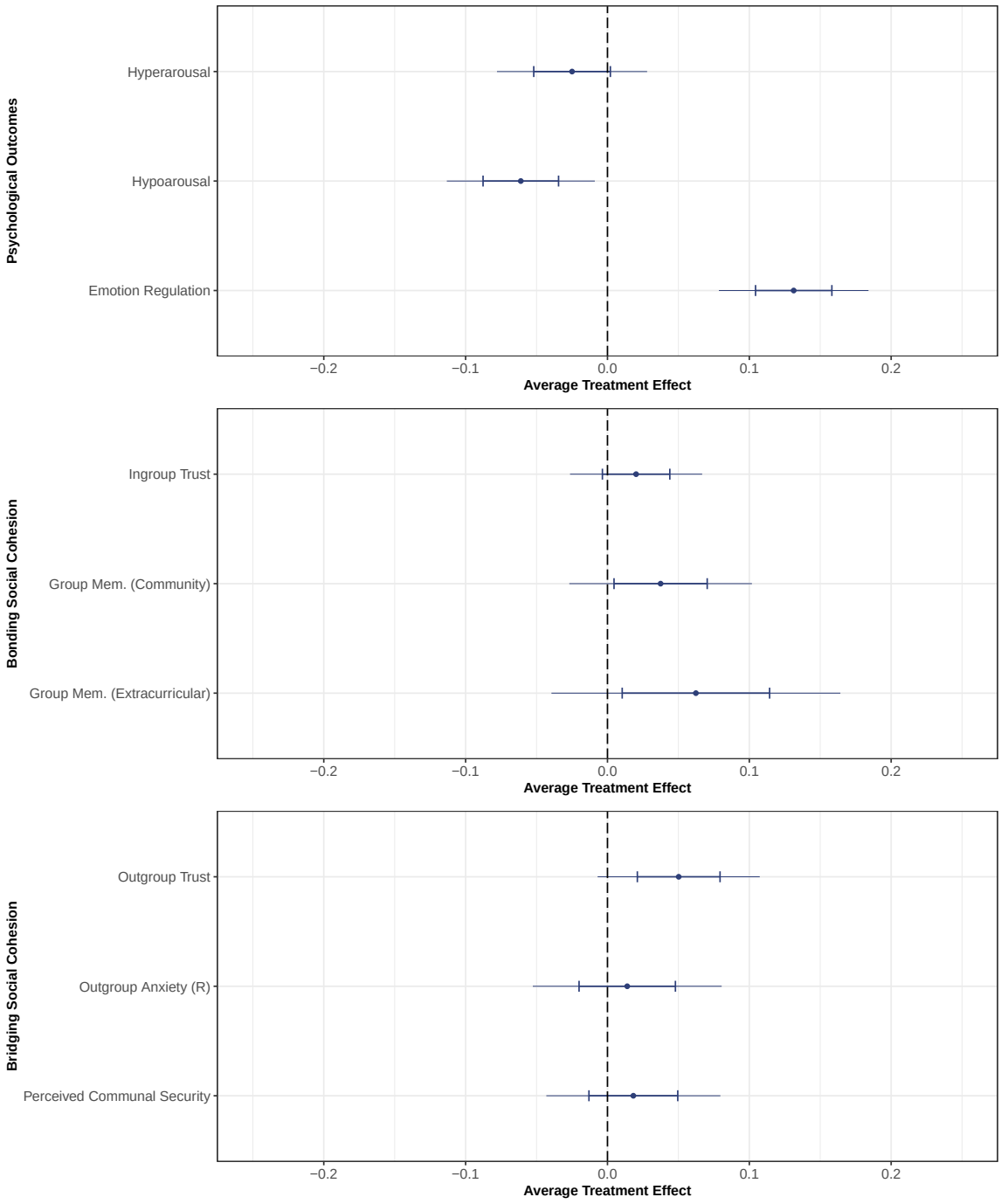
I additionally estimate the average treatment effect on all bonding and bridging social cohesion indicators in order to assess whether the treatment has a direct effect on any social cohesion outcomes; as expected, the intervention does not have a meaningful or statistically significant on any indicators of social cohesion, across measures of bonding and bridging social cohesion (second and third panel of Figure 5.16).[16]

[14]For the purposes of this analysis, I only use the first wave of treatment and I pool the two treatment delivery modalities (at home and workshop groups). For the average treatment effect using both waves of treatment and for each treatment delivery modality estimated separately, see Appendix J.

[15]Results are robust estimating the treatment effects using both waves of treatment and with treatment modalities separated; those estimates are available in Appendix J.

[16]Results are robust estimating the treatment effects using both waves of treatment and with treatment modalities separated out, which are available in Appendix J.

Figure 5.16: Average treatment effect of *The Field Guide* on psychological factors, bonding social cohesion, and bridging social cohesion

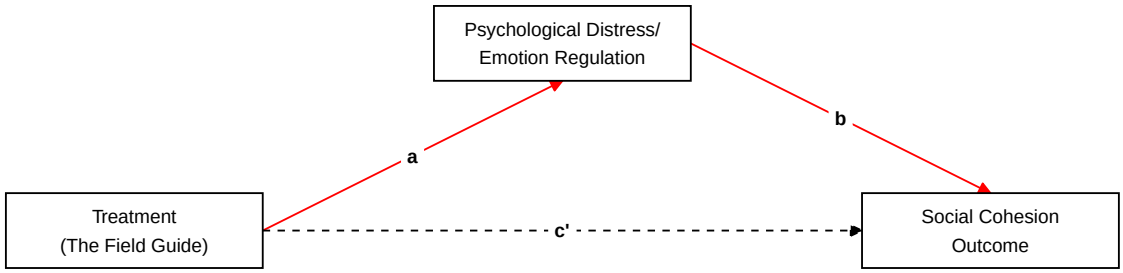


Notes: Estimates of average treatment effects, using the first wave of treatment. All models include value of the outcome at baseline. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error. Estimates of average treatment effects using both waves of treatment and with treatment modalities separated are reported in Appendix J.

Effects of Intervention-Driven Improvements in Psychological Distress and Emotion Regulation on Social Cohesion

I next assess whether and how intervention-driven improvements in emotion regulation and hypoarousal—the two psychological outcomes on which the intervention has a statistically significant effect—are associated with improvements in social cohesion. I use a structural equation model framework, which allows for assessment of the impact of experimentally-induced improvements in either emotion regulation or hypoarousal on social cohesion indicators. The model used for the estimates is represented in Figure 5.17, wherein the arrow indicated by **a** indicates the causal effect of *The Field Guide* treatment on the psychological factor of interest, the arrow indicated by **c'** indicates the effect of *The Field Guide* on the social cohesion outcome adjusting for the psychological factor (the direct effect), and the arrow indicated by **b** indicates the association between the psychological factor and the social cohesion outcome.

Figure 5.17: Structural equation model for estimating association between *The Field Guide*-driven improvements in emotion regulation & psychological distress with social cohesion



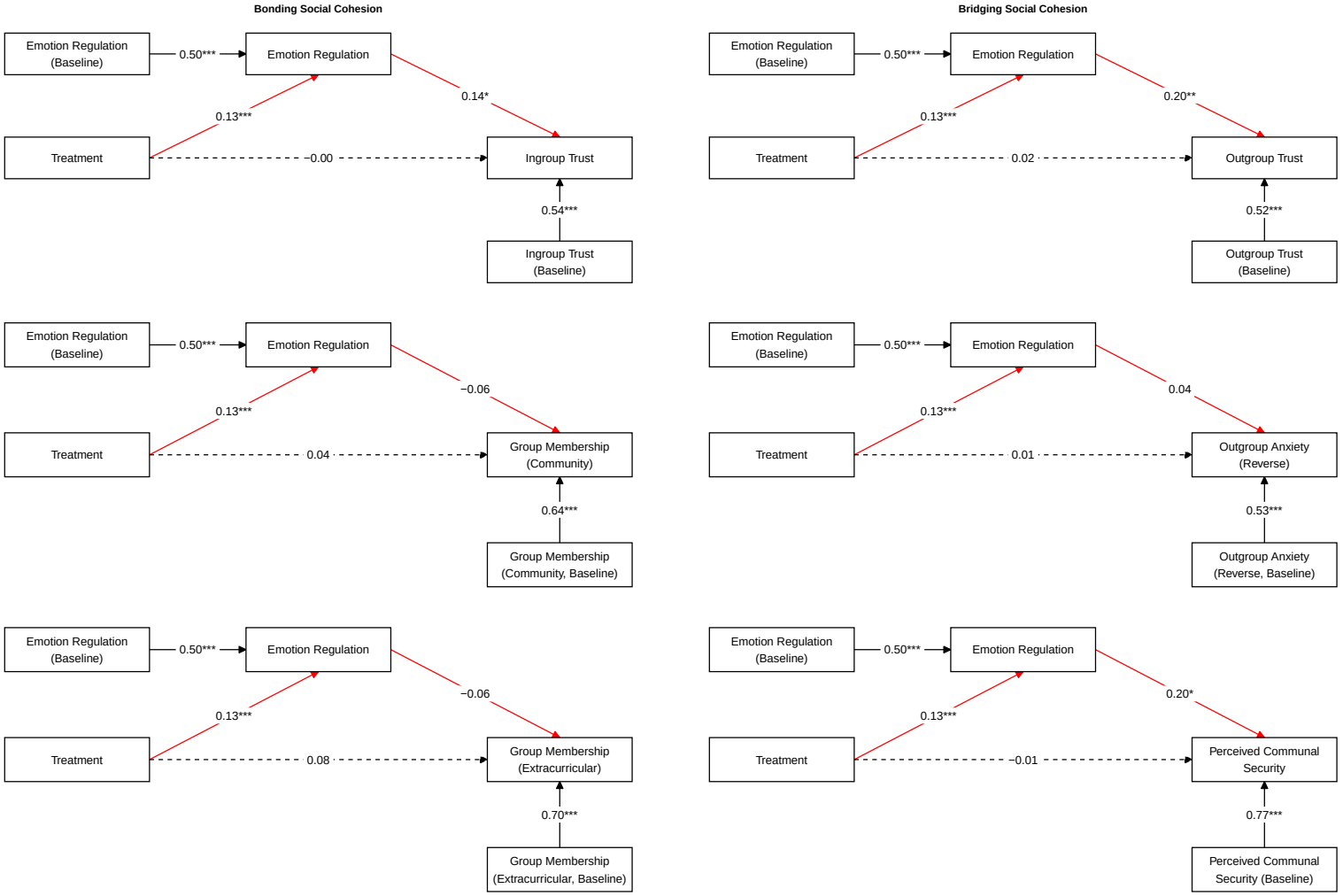
Notes: The arrow indicated by **a** indicates the causal effect of *The Field Guide* treatment on the psychological factor of interest, the arrow indicated by **c'** indicates the effect of *The Field Guide* on the social cohesion outcome adjusting for the psychological factor (the direct effect), and the arrow indicated by **b** indicates the association between the psychological factor and the social cohesion outcome.

Estimates for associations between intervention-driven improvements in emotion regulation with social cohesion outcomes are presented in Figure 5.18; they provide support for the expectation that greater emotion regulation will be associated with greater bonding social

cohesion and with greater bridging social cohesion (H7). Specifically, the 18.7% intervention-driven improvement in emotion regulation ($\beta = 0.13$, $p < 0.001$) is significantly associated with increased reported ingroup trust ($\beta = 0.140$, $p = 0.03$), outgroup trust ($\beta = 0.20$, $p = 0.01$), and perceived communal security ($\beta = 0.20$, $p = 0.02$). In practical terms, that means that a 18.7% improvement in emotion regulation from baseline is associated with 4.0% improvement in ingroup trust, a 11.5% improvement in outgroup trust, and a 8.7% improvement in perceived communal security. There was not a statistically significant association between intervention-driven improvement in emotion regulation and outgroup anxiety or either group membership indicator.

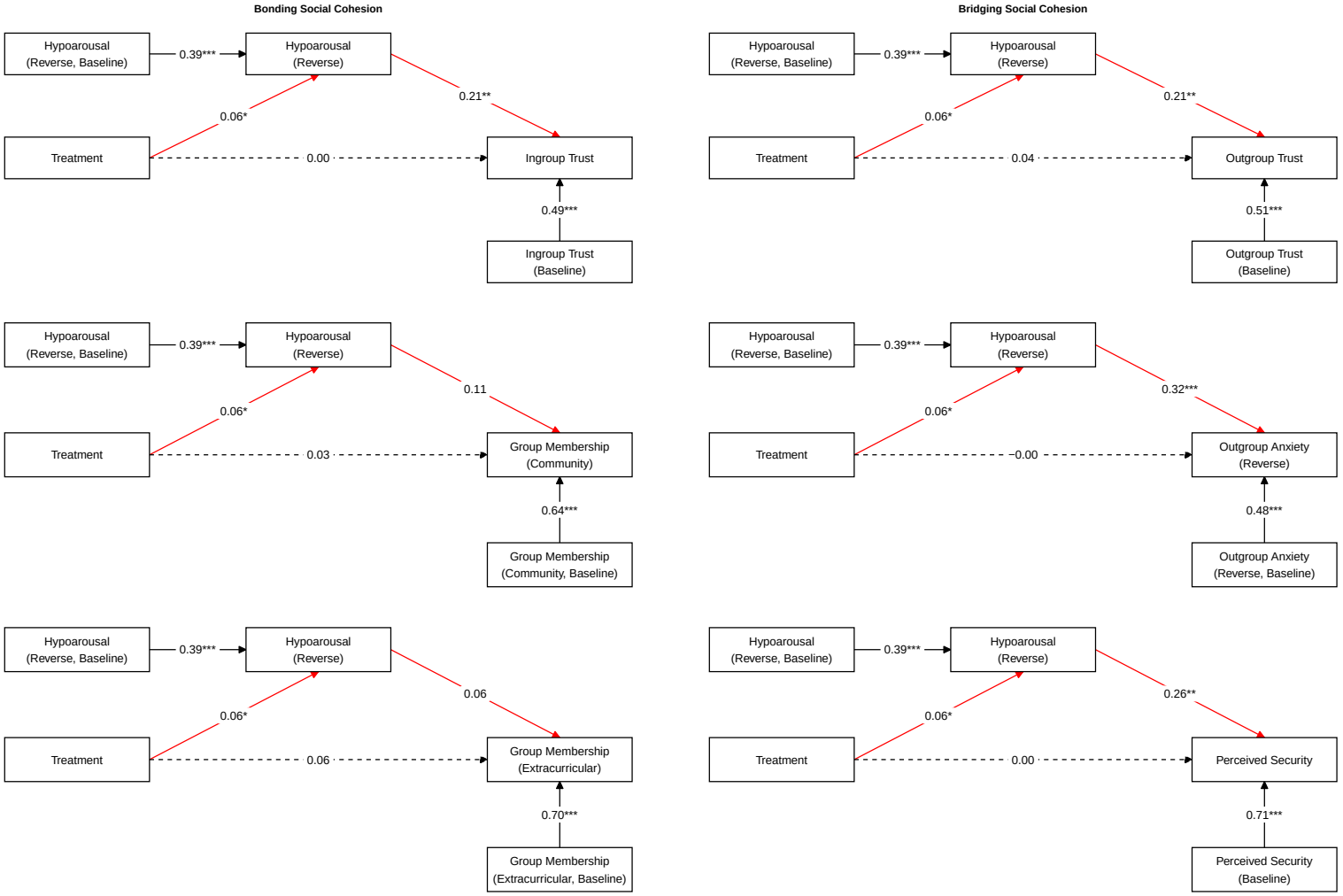
Turning to hypoarousal, estimates for associations between intervention-driven improvements in hypoarousal with social cohesion outcomes are presented in Figure 5.19. For ease of interpretation, hypoarousal has been reverse coded for this analysis, such that the positive coefficient on the treatment effect represents a *reduction* in hypoarousal. The analysis finds that the 21.4% intervention-driven improvement in hypoarousal ($\beta = 0.060$, $p = 0.023$) is significantly associated with improvements in ingroup trust ($\beta = 0.208$, $p = 0.002$), outgroup trust ($\beta = 0.215$, $p = 0.007$), outgroup anxiety ($\beta = 0.321$, $p < 0.001$) and perceived communal security ($\beta = 0.260$, $p = 0.003$). In practical terms, that means that a 21.4% improvement in hypoarousal from baseline is associated with a 6.9% improvement in ingroup trust, an 8.1% improvement outgroup trust, an 11.7% improvement in outgroup anxiety, and a 12.9% improvement in perceived communal security.

Figure 5.18: Associations between *The Field Guide*-driven improvements in emotion regulation with bonding and bridging social cohesion



Notes: Bonding social cohesion outcomes on left, bridging social cohesion outcomes on right. Emotion regulation coded as a continuous variable, with higher scores indicating greater emotion regulation skills endorsed by respondent.

Figure 5.19: Associations between *The Field Guide*-driven improvements in hypoarousal with bonding and bridging social cohesion



Notes: Bonding social cohesion outcomes on left, bridging social cohesion outcomes on right. Hypoarousal dimensionally coded as a continuous variable, with higher scores indicating lower hypoarousal symptoms.

5.7 Conclusion

In a small group conversation during the initial fieldwork for this study with the Syrians living in Za'atari camp who were volunteering with Questscope, one young Syrian man reflected on what he would say if he could talk to the version of himself that arrived at the camp four years ago. He answered that the idea that mental health is not a first-order need, like shelter or water, is unfounded. Without mental health and the ability to address the psychological wounds of war, he added, little else can be accomplished. He recalled all the issues among youth in the camp when they first arrived—violence and conflicts and unrest—but noted that after community and local organizations began to provide both the literal and figurative space to address psychological distress, interpersonal relationships began to reestablish themselves and conflicts gradually subsided.

This empirical test presents an applied test of the theory of psychological foundation of social cohesion in a naturalistic setting, using a novel panel dataset collected via the impact evaluation of a new psychosocial intervention, *The Field Guide for Barefoot Psychologists*, with Syrian refugees living in Za'atari Refugee Camp in Jordan. Using the baseline data, I first provide a descriptive overview of the rates of trauma exposure and psychological distress among the sample, before assessing associations between social cohesion and both psychological distress and emotion regulation. I find that there is widespread trauma exposure, with 96.9% of the sample reporting having experienced at least one trauma exposure, and respondents reporting having experienced, , on average, 5.5 out of 12 types of trauma exposures. At baseline, individuals with high hyperarousal report significantly lower bridging social cohesion across measures when compared to individuals with low hyperarousal, while individuals with high hypoarousal report significantly lower bonding and bridging social cohesion on the ingroup trust and outgroup anxiety indicators when compared to individuals with low hypoarousal. Further, among individuals with high hyperarousal, those who do not additionally have high hypoarousal report, on average, significantly higher bonding social

cohesion on the ingroup trust indicator.

Using the baseline and the endline data, collected prior to and following *The Field Guide* intervention, I assess the average treatment effect of the intervention on psychological distress and emotion regulation, before estimating how intervention-driven improvements psychological factors are associated with changes in social cohesion. The intervention has a significant effect on both hypoarousal and emotion regulation, leading to a 21.4% improvement in hypoarousal from baseline, and a 18.7% improvement in emotion regulation from baseline. Using a structural equation model, I find that the 21.4% intervention-driven improvement in hypoarousal is significantly associated with a 6.9% improvement in ingroup trust, an 8.1% improvement in outgroup trust, an 11.7% improvement in outgroup anxiety, and a 12.9% improvement in perceived communal security, while the 18.7% improvement in emotion regulation is significantly associated with a 4.03% improvement in ingroup trust, an 11.5% improvement in outgroup trust, and an 8.7% improvement in perceived communal security. These findings, if reflective of the theorized underlying relationship, indicate that interventions designed to improve individual mental health may be especially valuable to devote time and resources to, not only because of the benefits they deliver for individual mental health, but also because of the subsequent improvements in social cohesion outcomes, driven by improvements in psychological distress and emotion regulation.

At present, international aid and organizations are structured such that concerns regarding mental health often fall outside the purview of any one sector. Further, mental health is commonly framed as a factor related primarily to the individual, rather than being seen as relevant to community stability and well-being. With additional empirical tests that can demonstrate how individual mental health outcomes impact social cohesion and stability, psychological interventions take on added significance beyond improving personal well-being; they improve the welfare of the entire community. In highlighting how trauma exposure and its consequences impact social dynamics, this empirical test underscores potential linkages

between mental health and future conflict potential. In doing so, it fills a significant gap in knowledge and seeks to contribute to conversations regarding the future of humanitarian and stabilization efforts in forced migration and conflict-affected communities globally.

Chapter 6

Types of Trauma Exposure, Psychological Distress, and Social Cohesion in a Post-Conflict Context

This chapter presents a test of the theory in a highly different context using the Survey of War Affected Youth (SWAY) dataset (Blattman et al. 2013). The SWAY dataset is a large-scale survey of youth in Kitgum and Pader districts in northern Uganda that was collected in two phases. Phase I was collected from July 2005 to March 2006 and surveyed 741 male respondents and 1018 households, while Phase II was collected from October 2006 to August 2007 and surveyed 619 female respondents, for a total of 1360 individual respondents. The SWAY data are unique in that they contain individual-level measures of trauma exposure, psychological distress, and bonding social cohesion. As such, I use the SWAY data to assess associations between psychological distress and bonding social cohesion in the aftermath of conflict across individuals who were abducted and who were not abducted.

The papers that have resulted from the SWAY dataset have been fundamental in advancing the study of the microlevel consequences of violence on individuals in the aftermath of

conflict, estimating the causal effects of forced recruitment to serve as child soldiers with the Lord's Resistance Army (LRA) on individuals' economic, educational, and psychological distress outcomes (Blattman and Annan 2010); on voting, community leadership, and nonpolitical participation (Blattman 2009); and on social and economic reintegration across genders (Annan et al. 2011).

Although the Ugandan respondents who were surveyed in the SWAY dataset and the Syrian respondents who participated in the study presented in Chapter 5 both have been affected by civil conflict, a key difference between the two samples is that many respondents in the SWAY dataset have returned to their pre-conflict homes, while the Syrians living in Za'atari have remained displaced. Further, the SWAY data include an extensive battery on trauma exposure, which asks about exposure to 25 types of war experiences. The specificity of this battery allows for a deeper examination of which *types* of trauma exposure are most strongly associated with specific forms of psychological distress in the context of conflict.

The chapter proceeds as follows: I begin with an overview of the data, describing the context in which they were collected and the constructs to be used in the analysis. I then provide descriptive statistics of the sample. I assess variations in types of trauma exposure reported, both across the entire sample and within sub-samples broken down by gender and abduction status. I then assess associations between trauma exposure and psychological distress, including evaluating how different types of trauma exposure are differentially associated with hyperarousal and with hypoarousal. I next estimate associations between psychological distress and bonding social cohesion, as well as between psychological distress and measures of political participation, in order to provide the foundation for potential future avenues of inquiry. I conclude with a summary of findings, highlighting how understanding the differential impacts of hyperarousal and hypoarousal on bonding social cohesion is of great importance in a post-civil conflict setting, where individuals have returned home and must reestablish ties with their communities.

6.1 SWAY Dataset and Measures

In this section I provide an overview of the context in which the SWAY data were collected, the measures used in the analysis, and descriptive statistics of the sample. I use a number of measures as they were constructed in the original SWAY codebook, as well as indices constructed to capture the concepts specific to this dissertation project, including hyperarousal and hypoarousal.[1]

Context

The LRA was formed in 1988 in northern Uganda under Joseph Kony (AlJazeera 2014). It was originally formed from ethnic Acholi forces, a northern ethnic group that had been prominent in the government and army, but had been overthrown by southern rebels in 1986. Once the LRA was formed with the espoused intention of the creation of a theocratic state (Special Representative of the Secretary-General for Children and Armed Conflict 2012), the group received little support from the public. It therefore adopted a strategy of abducting youth and attacking homes to gain resources in the form of manpower and supplies (Blattman and Annan 2010). With the exception of senior officials, it was believed that nearly all individuals fighting with the LRA were abducted. There was a particular focus on abducting children, who were forced to commit atrocities, brutally beaten, and forced to serve both as soldiers and in other logistical support roles (Special Representative of the Secretary-General for Children and Armed Conflict 2012). Both girls and boys were abducted; girls were thought to comprise about 25% of the child soldiers abducted (McKay 2005). According to Blattman and Annan (2010), 84% of abductees escaped, while the remainder of abducted youth died or were killed; all abductees subsequently were granted amnesty by the Ugandan government (Blattman and Annan 2010).

While there was limited active fighting between the Ugandan government and the LRA ini-

[1] For all question wording and additional details on indices construction, see Appendix K.

tially, conflict increased dramatically after 1996 with support from Sudan, which supplied materials and soldiers in retaliation for the government of Uganda supporting Sudanese rebels. Beginning in 2002, the Uganda People's Defence Force (UPDF) undertook a significant military operation to attack LRA bases in southern Sudan. Violence once again declined beginning in 2004, and the Juba Peace Process was launched in July 2006. While an agreement was reached in March 2008, Joseph Kony failed to sign it, and in December 2008 the government of Uganda, with the support of neighboring nations, launched a military operation to target LRA bases in the Garamba National Park area in the Democratic Republic of the Congo (UNSC 2012).

The SWAY data were collected between July 2005 and August 2007, in the midst of the Juba Peace Process. Respondents were surveyed in the Kitgum and Pader districts in northern Uganda in two phases; men were surveyed in the first phase and women were surveyed in the second phase (Blattman et al. 2013).

Measures Used

Below, I outline the key measures used in the analysis. For information on question wording and index construction for all measures, see Appendix K.

For *trauma exposure*, I use the construct as coded in (Blattman and Annan 2010), which is a count indicator of 25 kinds of common potential war-related trauma exposures experienced.[2] I additionally use factor analysis to create indices of different types of trauma exposure: forced violence, sexual abuse, loss of a parent, loss of a family or friend, experiencing a serious injury, experiencing gunfire, and witnessing violence.

In the original SWAY dataset, there is a measure of psychological distress that is a sum of 19 different questions related to generalized psychological distress. For the measures of

[2]Blattman and Annan (2010) refers to this indicator as "war experiences"; for the sake of consistency with terminology in this dissertation, and because all of the items included in the battery constitute trauma exposure, I refer to the measure as an index of trauma exposure.

psychological distress used in the analyses presented in this chapter, I use factor analysis to construct two indices, which measure psychological distress as characterized by either *hyperarousal* or by *hypoarousal*. This construction of psychological distress variables differs from the psychological distress variable in the SWAY dataset, which combines psychological distress symptoms characterized by hyperarousal and by hypoarousal in the same index; separating out hyperarousal and hypoarousal into their own indices allows for a more precise estimation of their differential impacts on social cohesion.[3]

For *social cohesion* outcomes, I assess seven *bonding* social cohesion indicators: (1) an index of prosocial behavior, (2) an index of group membership, (3) an indicator for whether an individual belongs to a community group, (4) an indicator for whether an individual belongs to an extracurricular group, (5) an index of hostile behavior, (6) an index of closeness with family, and (7) an index of connection with community, which was asked only of women. There are no bridging social cohesion outcomes included in the SWAY dataset, which was primarily focused on individuals' behaviors and attitudes related to reintegrating in their *own* communities (bonding social cohesion), as compared to behaviors and attitudes toward outsiders (bridging social cohesion).

I additionally assess five measures of political participation and attitudes: (1) an indicator of whether the individual voted in 2005, (2) an indicator of whether the individual voted in 2001, (3) an indicator of whether the individual voted in 2006, (4) an indicator of whether the individual is registered to vote, and (5) an index of autocratic attitudes. Though political outcomes are beyond the scope of the hypotheses presented in Chapter 3, including them in this analysis provides the foundation for avenues of future inquiry, as is discussed in greater

[3]The hyperarousal index includes 12 items; questions ask respondents about the frequency of experiencing symptoms that include heightened fight or flight responses, including "Are you easily irritated?", "Do you have difficulty concentrating?", "Does your body shake uncontrollably from over thinking?" The hypoarousal index includes four items; questions ask respondents about the frequency of experiencing symptoms that include heightened freeze or immobilizing responses, including "Do you feel like you do not treasure your life?", "Do you feel lonely?" For information on question wording and index construction for all measures, see Appendix K.

detail in section 6.5.

Sample Description

Table 6.1: Summary statistics for SWAY respondents

Variable	Mean	Min	Max	Std. Dv.	N
Demographic Variables					
Age	22.41	14.0	38.0	5.75	1360
Gender	0.46	0.0	1.0	0.50	1360
Married	0.45	0.0	1.0	0.50	1360
Has Children	0.56	0.0	1.0	0.50	1345
Number of Children	1.87	0.0	12.0	2.31	1359
Educational Achievement	5.85	0.0	16.0	3.43	1360
Secondary School	0.26	0.0	1.0	0.44	1360
Literate	0.53	0.0	1.0	0.50	1360
Assets in Top 25%	0.67	0.0	1.0	0.47	1360
Trauma Exposure & Psychological Distress					
Abducted	0.51	0.0	1.0	0.50	1360
Trauma Exposure (Binary)	0.99	0.0	1.0	0.06	1360
Trauma Exposure (Count)	8.37	0.0	24.0	5.04	1356
Hyperarousal	0.31	0.0	0.9	0.17	1360
Hypoarousal	0.14	0.0	1.0	0.18	1360
Social Cohesion					
Prosociality	0.56	0.0	1.0	0.16	1360
Group Membership	0.13	0.0	1.0	0.17	1360
Group Membership (Extracurricular)	0.10	0.0	1.0	0.17	1360
Group Membership (Community)	0.07	0.0	1.0	0.14	1360
Family Closeness	0.75	0.0	1.0	0.25	1354
Community Connection (Women Only)	0.85	0.0	1.0	0.19	616
Hostility	0.02	0.0	0.8	0.06	1360
Political Participation					
Voted in 2005	0.50	0.0	1.0	0.50	1073
Voted in 2001 (Men Only)	0.41	0.0	1.0	0.49	545
Voted in 2006 (Women Only)	0.60	0.0	1.0	0.49	534
Registered to Vote (Women Only)	0.59	0.0	1.0	0.49	613
Autocratic Attitudes (Women Only)	0.45	0.1	0.9	0.13	611

Notes: Includes male respondents surveyed in Phase I and female respondents surveyed in Phase II of the SWAY Survey. Trauma exposure count measure captures how many out of 24 possible trauma exposures respondents reported experiencing during the war.

Summary statistics for the SWAY sample are provided in Table 6.1. The average age of respondents is 22.4 years old and roughly 46% of the sample is female. Roughly 45% of

respondents are married and 56% have children, with the average number of children among those who have children being 1.97. Twenty-six percent of respondents report having attended secondary school and 67% report being among the top 25% richest in assets in 1996.

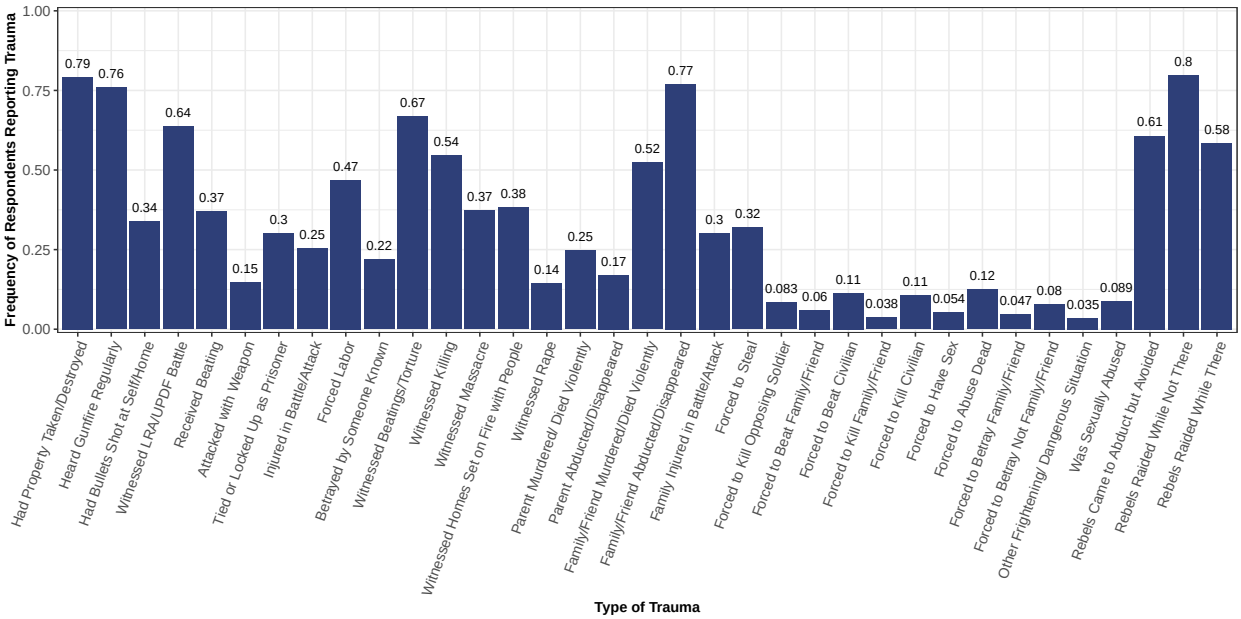
Trauma exposure is highly prevalent in this population; overall, only five respondents out of 1,356 (0.37%) reported no trauma exposure. The average number of reported types of trauma exposure experienced was 8.4. Regarding psychological distress, the mean level of hyperarousal symptoms among respondents was 31.2, equivalent to experiencing hyperarousal symptoms "some of the time". The mean level of hypoarousal symptoms was 14.1, which is equivalent to experiencing hypoarousal symptoms "rarely".

6.2 Variation in Kinds of Trauma Exposure

In this section, I assess the frequency with which respondents endorsed experiencing different kinds of trauma exposure. This section helps illustrate the variety of experiences that are captured within the umbrella of trauma exposure, and provides a descriptive foundation for the analyses presented in section 6.3. Of the 25 types of trauma exposures both men and women respondents were asked about, respondents reported experiencing an average of 8.4 different types of trauma exposure. Figure 6.1 visualizes the frequency of different trauma exposure as reported by men and women. Among the types of trauma exposure that both men and women respondents were asked about, the most commonly experienced was having a family or friend abducted (77.0%), hearing gunfire (75.9%), and witnessing beatings or torture (66.8%).

There is significant variation in the types of trauma exposure experienced by sub-populations within the sample. Figure 6.2 visualizes the frequency of types of trauma exposure reported by each male and female abducted and non-abducted respondents. While all four sub-populations reported high levels of trauma exposure, abducted respondents reported higher levels of trauma exposure overall: abducted respondents reported experiencing an average of

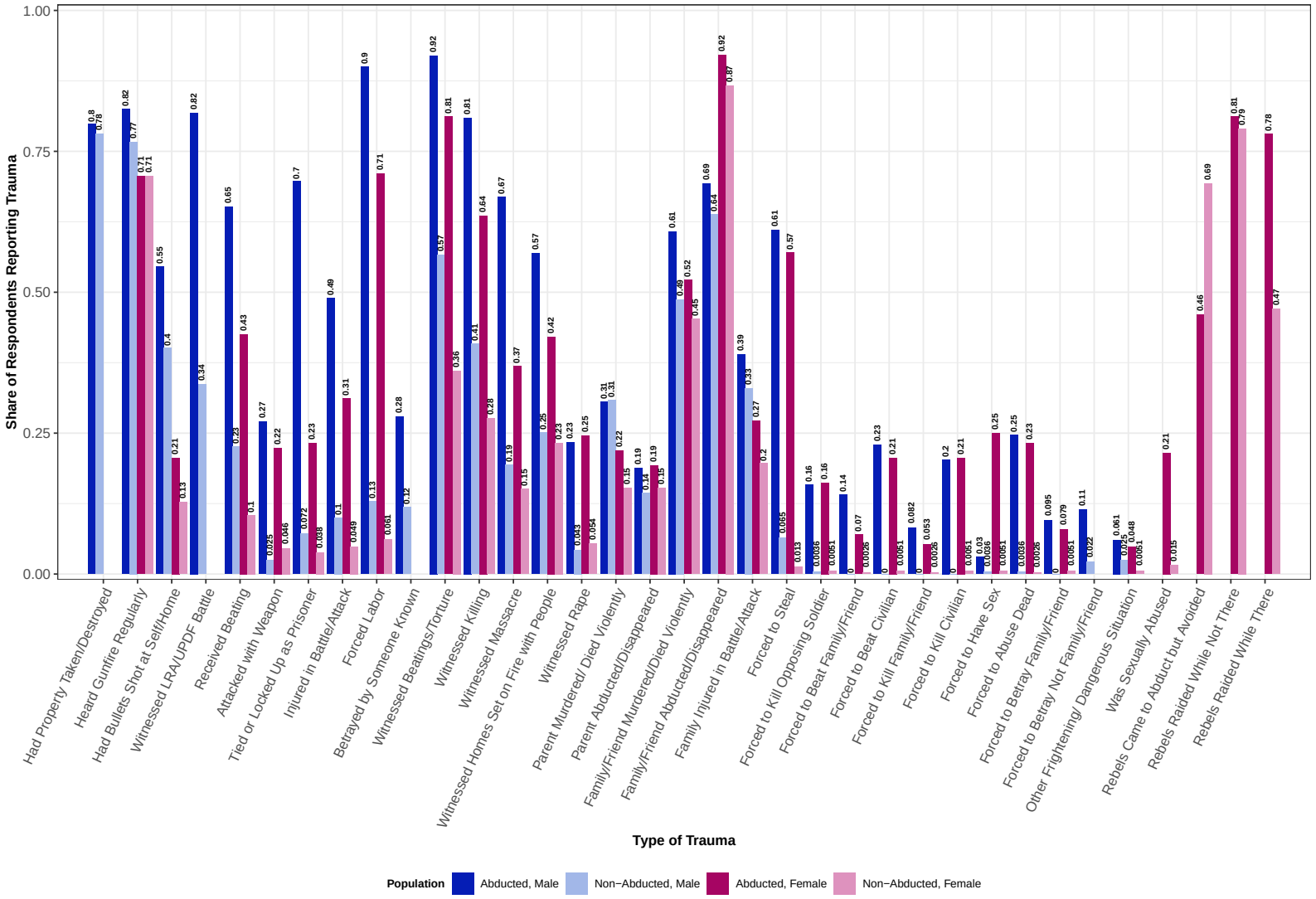
Figure 6.1: Frequency of types of trauma exposure



Notes: Female respondents, surveyed in SWAY Phase II, were not asked if they experienced the following types of trauma exposure: "Had Property Taken/Destroyed," "Witnessed LRA/UPDF Battle," "Betrayed by Someone Known," and "Forced to Betray Not Family/Friend." Male respondents, surveyed in SWAY Phase I, were not asked if they experienced the following types of trauma exposure: "Was Sexually Abused," "Rebels Came to Abduct but Avoided," "Rebels Raided While Not There," "Rebels Raided While There."

11.5 types of trauma exposure, as compared to non-abducted respondents, who reported an average of 5.2 types of trauma exposure. Among both abducted and non-abducted populations, male respondents reported experiencing, on average, more types of trauma exposure, when compared to female respondents. Comparing the four sub-populations, abducted men reported experiencing an average of 12.7 types of trauma exposure, compared to an average of 9.0 for abducted women; non-abducted men reported experiencing an average of 6.7 types of trauma exposure, compared to 4.1 for non-abducted women. As can be seen in Figure 6.2, abducted respondents, regardless of gender, were much more likely to report having experienced all types of forced violence—including being forced to steal, to kill an opposing soldier, to beat a family or friend, to beat a civilian, to kill a family or friend, to kill a civilian, to have sex, to abuse the dead, to betray a family or friend, and to betray someone who was not a family or friend—as compared to non-abducted respondents.

Figure 6.2: Frequency of types of trauma exposure, by abduction status and gender



Notes: Female respondents, surveyed in SWAY Phase II, were not asked if they experienced the following types of trauma exposure: "Had Property Taken/Destroyed," "Witnessed LRA/UPDF Battle," "Betrayed by Someone Known," and "Forced to Betray Not Family/Friend." Male respondents, surveyed in SWAY Phase I, were not asked if they experienced the following types of trauma exposure: "Was Sexually Abused," "Rebels Came to Abduct but Avoided," "Rebels Raided While Not There," "Rebels Raided While There."

6.3 Associations Between Trauma Exposure and Psychological Distress

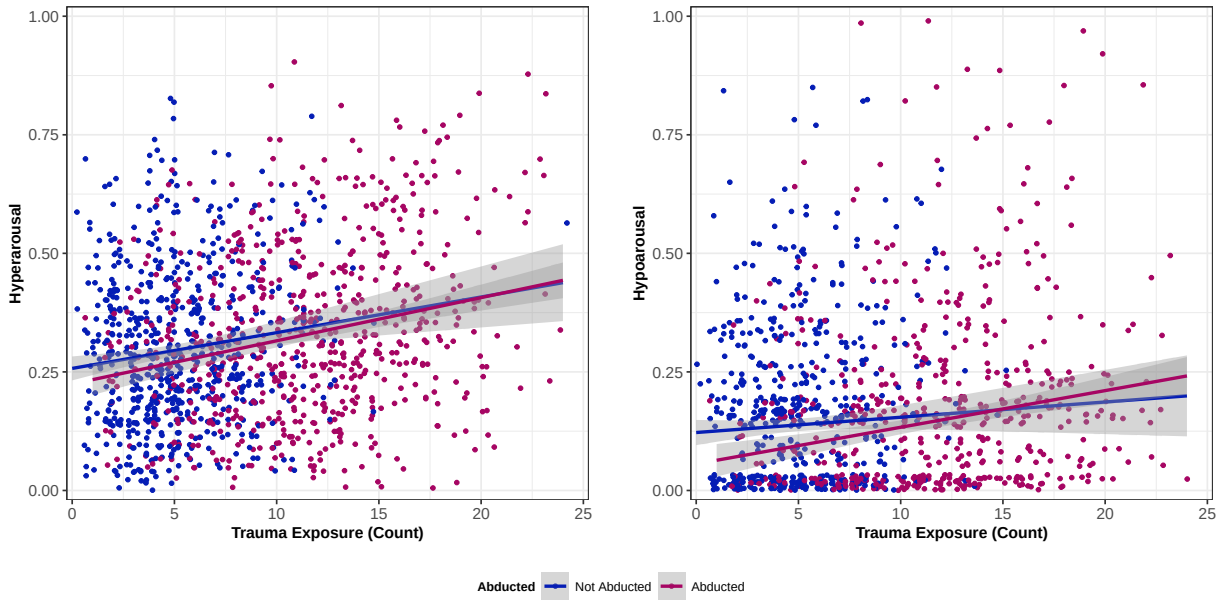
This section first looks at how trauma exposure is associated with hyperarousal and hypoarousal, before assessing how specific *types* of trauma exposure are associated with hyperarousal and hypoarousal.

Trauma Exposure and Psychological Distress, by Abduction Status

Figure 6.3 plots individual-level values of trauma exposure against psychological distress characterized by either hyperarousal (left plot) or by hypoarousal (right plot), with the color of plot points and fitted regression lines indicating whether the individual was abducted or not. The data show that, even though individuals who were abducted have, on average, higher rates of trauma exposure, there is a positive association between trauma exposure and both hyperarousal and hypoarousal across individuals who were abducted and who were not abducted. Among abducted individuals, each additional trauma exposure is, on average, associated with a 0.009 point increase ($p < 0.001$) in hyperarousal symptoms and a 0.008 point increase ($p < 0.001$) in hypoarousal symptoms. Among non-abducted individuals, each additional trauma exposure is, on average, associated with a 0.008 point increase ($p < 0.001$) in hyperarousal symptoms and a 0.003 point increase ($p = 0.159$) in hypoarousal symptoms. This is consistent with the findings of Blattman and Annan (2010), who conducted forty in-depth interviews and assessments to supplement the survey data while conducting data collection for SWAY; they also found that psychological distress symptoms that impeded daily functioning were not limited to former abductees (Blattman and Annan 2010).

Further, as can be seen in Figure 6.3, while nearly the entire sample experienced at least one trauma exposure—only 5 out of 1360 respondents reported no prior trauma exposure—not

Figure 6.3: Trauma exposure and psychological distress, by abduction status



Notes: Scatterplot constructed with jitter option to add random noise to observations, allowing for a better visual sense of how many observations exist at each pair of X and Y values, given that trauma exposure is plotted as a count variable.

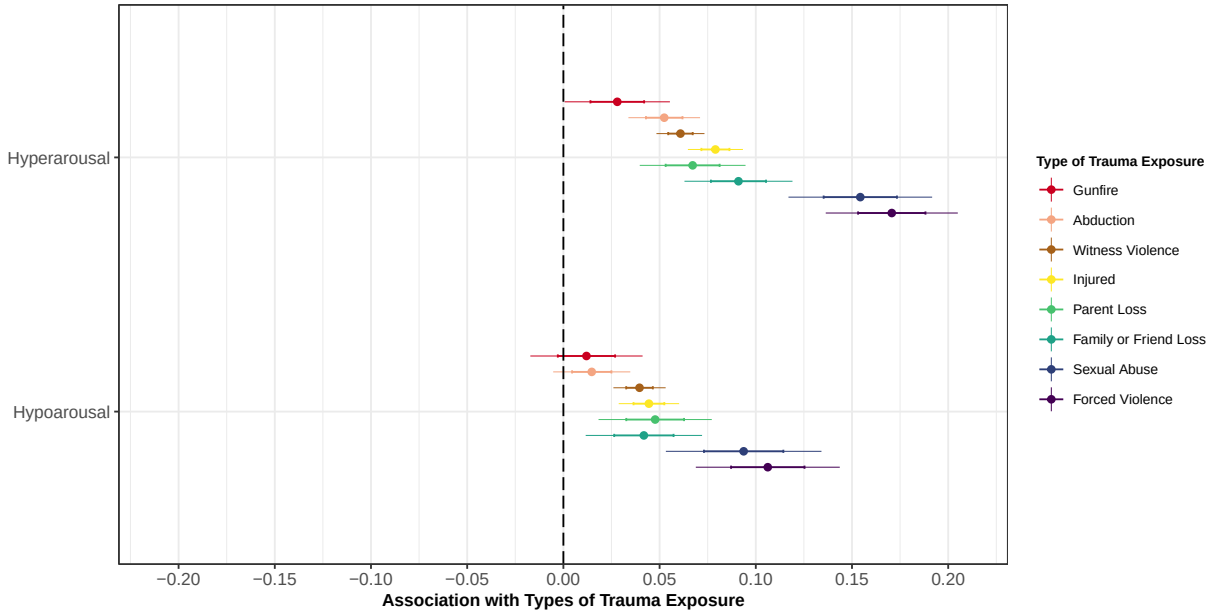
all individuals report subsequent psychological distress (H1). There is also significant variety in the severity and kind of psychological distress reported (H2), among individuals who both were abducted and who were not abducted.

Types of Trauma Exposure and Psychological Distress

The SWAY data allow for a further examination of how different *types* of trauma exposure are differentially associated with increased psychological distress. Figure 6.4 visualizes estimates of associations between different types of trauma exposure with each hyperarousal (top of plot) and hypoarousal (bottom of plot). All models are estimated using OLS regression and include district fixed effects and the same set of control variables (age, gender, education, marital status, whether the respondent has children, and household asset level).

All types of trauma exposure are positively associated with both hyperarousal and hy-

Figure 6.4: Types of trauma exposure and psychological distress, by abduction status



Notes: Estimates of the association between types of trauma exposure and psychological distress. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error. Each estimate represents a separate linear regression, in which either hypoarousal or hypoarousal symptoms serves as the outcome of interest, with a different type of trauma exposure as the explanatory factor of interest. All models include district fixed effects and the same set of control variables, including age, gender, education, marital status, whether the respondent has children, and household asset level. Trauma exposure measures are constructed as indices of the average number of kind of trauma exposure experienced by respondent. For regression results, see Tables L.1 - L.2 in Appendix L. For more information on construction of measures, see Appendix K. For binary constructions of trauma exposure, and for results diaggregated by gender and abduction status, see L.

poarousal, and all associations are significant with the exception of those between hypoarousal and each experiencing gunfire and being abducted. Of all types of trauma exposure, forced violence and sexual abuse are the most strongly positively associated with each hyperarousal and hyperarousal. These results are consistent with past research that has found that interpersonal trauma (e.g., sexual abuse) and attributable trauma (e.g., forced violence) are more likely to result in subsequent psychological distress (Ford et al. 2006; Charuvastra and Cloitre 2008; Wamser-Nanney and Vandenberg 2013). Specifically, each additional exposure to forced violence is associated with, on average, a 0.17 point ($p < 0.001$) increase in hyperarousal symptoms and a 0.10 point ($p < 0.001$) increase in

hypoarousal symptoms. Each additional incidence of sexual abuse is associated with, on average, a 0.15 point ($p < 0.001$) increase in hyperarousal symptoms and a 0.94 point ($p < 0.001$) increase in hypoarousal symptoms.

6.4 Associations Between Psychological Distress and Social Cohesion Outcomes

In this section, I assess associations between psychological distress characterized by hyperarousal and by hypoarousal with bonding social cohesion outcomes. These analyses were estimated with OLS regression and include district fixed effects, the main set of covariates as specified in models above (age, gender, education, marital status, having children, social support, and assets), and trauma exposure. I additionally assess associations between each hyperarousal and hypoarousal with political participation. This analysis is included because political participation indicators have not been accessible in any of the other datasets used in this analysis, and because it provides avenues for future inquiry assessing the relationship between psychological distress and outcomes relevant to peace and reconciliation. Analyses for indicators capturing voting behavior (voting, whether someone was registered to vote) were estimated with logit regression, while analyses for autocratic attitudes were estimated using the same OLS regression model specified for the bonding social cohesion estimates.

Bonding Social Cohesion

Figure 6.5 (left panel) visualizes estimates of associations between psychological distress and bonding social cohesion indicators. Overall, hypoarousal is significantly negatively associated bonding social cohesion across indicators of group membership in community groups, hostility, family closeness, and community connection, the latter of which was only assessed for female respondents; hypoarousal was not significantly associated with prosociality (β = 0.030, p = 0.102), general group membership (β = -0.048, p = 0.056), or group membership

in community groups (β = -0.006, p = 0.817). Specifically, a one unit increase in hypoarousal symptoms—which is equivalent to moving a step up from never to rarely, from rarely to sometimes, or from sometimes to often experiencing a single symptom in the index—is associated with 0.07 point lower reported group membership in community groups (p < 0.001), 0.05 point greater reported hostility (p < 0.001), 0.30 point lower family closeness (p < 0.001), and 0.18 lower community connection (p < 0.001).

Table 6.2: Reported means of bonding social cohesion outcomes, low v. high hypoarousal (among individuals with high hyperarousal)

	High Hyperarousal, Low Hypoarousal			**High Hyperarousal, High Hypoarousal**			
Indicator	N	Mean	SD	N	Mean	SD	Test
				Women and Men			
Prosocial Index	180	0.62	0.18	123	0.64	0.18	F= 1.304
Group Membership	180	0.12	0.18	123	0.11	0.17	F= 0.230
Group Mem. (Extracurricular)	180	0.08	0.16	123	0.09	0.16	F= 0.338
Group Mem. (Community)	180	0.07	0.15	123	0.05	0.13	F= 1.004
Hostility Index	180	0.02	0.07	123	0.03	0.08	F= 0.90
Family Closeness	176	0.65	0.25	123	0.58	0.29	F= 4.774*
Community Connection (Women Only)	99	0.85	0.19	86	0.76	0.21	F= 9.731**

Notes: For more information about measures, see Appendix K. *p<0.05; **p<0.01; ***p<0.001.

Among bonding social cohesion outcomes, hyperarousal is significantly positively associated with hostility, and significantly negatively associated with family closeness and community connection. As such, I look at whether among individuals with high hyperarousal, those do not additionally have high hypoarousal report higher bonding social cohesion, as compared to to those who do additionally have high hypoarousal (H4A). Sub-setting to individuals who have high hyperarousal, the differences in means between respondents who additionally have high hypoarousal and those who do not have high hypoarousal are reported in Table 6.2. Individuals with high hyperarousal and low hypoarousal report, on average, significantly higher average rates of family closeness by 6.8 percentage points (p = 0.03) and of community connection by 9.3 percentage points (p = 0.002, asked only of women), when compared to individuals with both high hyperarousal and hypoarousal. This is consistent with the

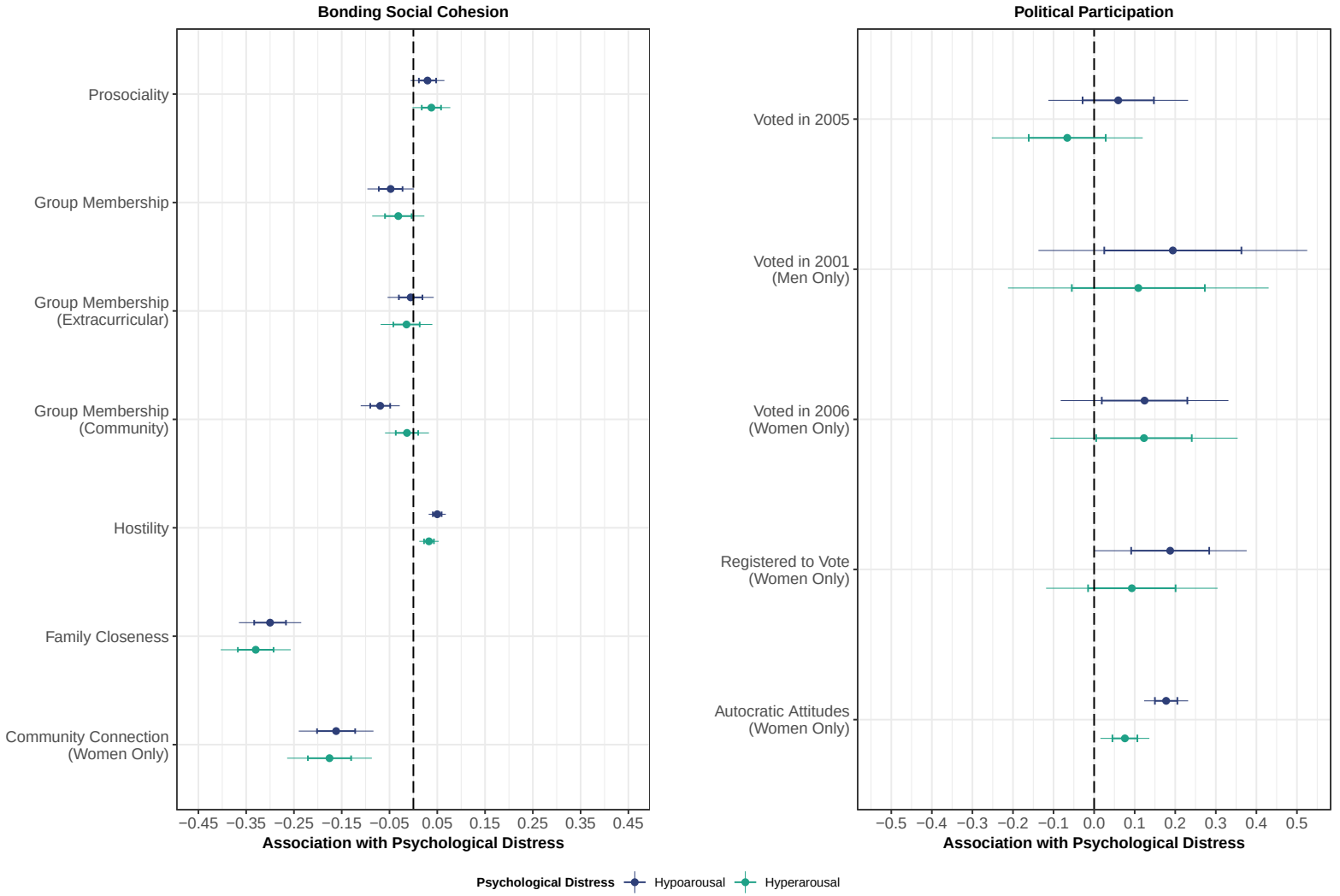
expectation that individuals with high hyperarousal who do not additionally have high hypoarousal will have greater reported bonding social cohesion, when compared to individuals with high hyperarousal and high hypoarousal.

Political Participation and Attitudes

I also assess associations between psychological distress and political participation and attitudes. While political outcomes are outside the scope of the theory presented in this project, assessing associations between psychological distress and political participation and attitudes allows for possible avenues for future inquiry, as will be discussed in detail in 7.3.

The right panel of Figure 6.5 visualizes associations between political participation and each hyperarousal and hypoarousal. Across measures of voting behavior—which include whether the respondent voted in 2005 (asked of both women and men), voted in 2001 (asked of men only), voted in 2006 (asked of women only), or was registered to vote (asked of women only)—none are significantly associated with either hyperarousal or hypoarousal. There is, however, a significant positive association between autocratic attitudes and both hyperarousal and hypoarousal. Specifically, a one unit increase in hyperarousal symptoms—which is equivalent to moving a step up from never to rarely, from rarely to sometimes, or from sometimes to often experiencing a single symptom in the index—is associated with a 0.08 point increase in endorsement of autocratic attitudes ($p = 0.0139$), while a unit increase in hypoarousal symptoms is associated with a 0.18 point increase in endorsement of autocratic attitudes ($p < 0.001$).

Figure 6.5: Associations between psychological distress and bonding social cohesion



Notes: Estimates of the association between psychological distress and social cohesion. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error. Each estimate represents a separate linear regression, in which either hypoarousal or hypoarousal serves as the explanatory variable of interest. All models include district fixed effects and the same set of control variables, including trauma exposure, age, gender,education, marital status, whether the respondent has children, household asset level, and social support. For regression results, see Tables M.1 - M.3 in Appendix M.

Table 6.3 examines whether there is a significant difference in the mean values on political outcomes between individuals with both low hyperarousal and low hypoarousal and those with both high hyperarousal and high hypoarousal. Individuals with both high hyperarousal and high hypoarousal have, on average, significantly greater endorsement of autocratic attitudes by 7.0 percentage points ($p < 0.001$), when compared with individuals with both low hyperarousal and low hypoarousal. While individuals with both high hyperarousal and high hypoarousal have, on average, higher rates of voter turnout across measures when compared to individuals with low hyperarousal and low hypoarousal, the differences in means are not statistically significant.

Table 6.3: Reported means of political participation outcomes, low hyperarousal and hypoarousal v. high hyperarousal and hypoarousal

	Low Hyperarousal, Low Hypoarousal			**High Hyperarousal, High Hypoarousal**			
Indicator	N	Mean	SD	N	Mean	SD	Test
Voted in 2005 (men and women)	589	0.60	0.49	83	0.64	0.48	F= 0.467
Voted in 2001 (men)	216	0.69	0.46	13	0.77	0.44	F= 0.362
Voted in 2006 (women)	283	0.69	0.46	61	0.80	0.40	F= 3.009
Registered to Vote (women)	283	0.75	0.43	61	0.85	0.36	F= 3.012
Autocratic Attitudes (women)	375	0.44	0.13	84	0.51	0.12	F= 21.571***

Notes: Analysis for voter turnout and registration limited to individuals who would have been of age to vote. *p<0.05; **p<0.01; ***p<0.001.

6.5 Conclusion

This chapter offers a test of the theory in a different context using the SWAY dataset, collected in Uganda between 2006 and 2007 (Blattman et al. 2013). I find that, similar to the sample that participated in the Za'atari study, trauma exposure is exceptionally widespread, with only 5 out of 1360 respondents reporting no prior trauma exposure, and respondents reporting having experienced an average of 8.4 out of 25 possible types of trauma exposure. I find that additional trauma exposure is significantly positively associated with hyperarousal and hypoarousal, both for individuals who were abducted to serve as child soldiers, and

those who were not abducted. Further, I find that while all types of trauma exposure are positively associated with both hyperarousal and hypoarousal, forced violence and sexual abuse are most strongly positively associated with each hyperarousal and hypoarousal.

The analyses presented in this chapter provide additional empirical support for the theory presented in section 3.2. I find that not all individuals who have past trauma exposure report subsequent psychological distress, and that there is variety in the severity and kind of psychological distress reported, both among individuals who were abducted and those who were not. I further find that both hyperarousal and hypoarousal are significantly associated with greater reported hostile acts, lower reported family closeness, and lower reported community connection, while hypoarousal is also significantly associated with lower reported community group membership. Among individuals with high hyperarousal, respondents who additionally do not have high hypoarousal report, on average, significantly higher rates of family closeness and of community connection, when compared to individuals who have both high hyperarousal and high hypoarousal.

Chapter 7

Conclusion

> *We as humanitarian agencies cannot do it alone and need more support. We call upon and urge all our partners to act and to scale up the investment in innovative, multi-sectoral and quality mental health and psychosocial interventions. These interventions are not a luxury, but an essential investment and contribution to mitigating the effects of war, natural disasters, displacement and pandemics. Addressing mental health and psychosocial wellbeing is critical to reaching each and every one of the Sustainable Development Goals. The topic must remain at the top of the global agenda for humanitarian assistance with strengthened links to the agendas for preparedness, development and peacebuilding. Good mental health and psychosocial wellbeing is a universal right, and is at the heart of a sustainable global future for everyone.*
>
> — Joint Interagency Call for Action on Mental Health and Psychosocial Support (Interagency Standing Committee 2020)

How do the psychological consequences of conflict and forced migration affect social cohesion? In this dissertation, I have presented a framework for conceptualizing and assessing the

differential impacts of psychological distress characterized by hyperarousal and hypoarousal on social cohesion, which I define as individual-level attitudes and behaviors that capture the perceived "degree of interconnectedness between individuals" (Van der Meer and Tolsma 2014). I argue that only a subset of individuals who live through trauma exposure will develop subsequent psychological distress in response, and that there will be variation in the degree and kind of psychological distress symptoms that individuals develop. Building on evolutionary theories of human responses to trauma exposure and stress, I classify two primary kinds of psychological distress: *hyperarousal*—commonly referred to as fight or flight behaviors—and *hypoarousal*—commonly referred to as freezing or immobilizing behaviors.

I present the theory of psychological foundations of social cohesion, from which I derive the main hypotheses tested in this project. I first hypothesize that there will be variation in the presence of psychological distress, such that of individuals who experience trauma exposure, only a subset will develop psychological distress in response (H1). Further, I hypothesize that of individuals who develop psychological distress in response to trauma exposure, there will be variation in degree and kind of psychological distress (H2). In theorizing the relationship between psychological factors and social cohesion, I hypothesize that psychological distress characterized by hyperarousal and hypoarousal will have differential effects on social cohesion (H3); specifically, I hypothesize that *hyperarousal* will lead to lower reported *bridging* social cohesion (H4)—defined as social cohesion relating to outgroup attitudes and behaviors—while *hypoarousal* will lead to lower reported *bridging* social cohesion and *bonding* social cohesion (H5)—defined as social cohesion relating to ingroup attitudes and behaviors. I further hypothesize that individuals who have psychological distress characterized by hyperarousal, but not by hypoarousal, will have higher rates of bonding social cohesion, when compared to individuals who have psychological distress characterized by both hyperarousal and hypoarousal (H4A). I further hypothesize that individuals with psychological distress characterized by both hyperarousal and hypoarousal will have lower reported bonding and bridging social cohesion, when compared to individuals without psychological distress (H6).

Finally, with an eye toward understanding how to mitigate psychological distress, I define emotion regulation as a deliberate or reflexive process that helps individuals recognize and modulate their emotional responses in proportion with stimuli. I hypothesize that individuals with greater emotion regulation skills will have higher reported bonding and bridging social cohesion, as compared to individuals with fewer emotion regulation skills (H7).

This framework more precisely theorizes the potential pathways linking trauma exposure, individual-level responses to trauma exposure, and the impacts such responses have on interpersonal behaviors and attitudes. It seeks to explain the seemingly contradictory findings that have emerged in microfoundational studies on the consequences of conflict and migration: that experiencing violence has been linked to both greater reported social cohesion outcomes, and lower reported social cohesion outcomes across studies. This dissertation offers a logic for how different manifestations of psychological distress differentially impact social cohesion.

7.1 Findings

In this dissertation, I offer three main empirical tests of the theory. Chapter 4 takes a cross-national approach and uses two data sources: the World Health Organization (WHO) World Mental Health (WHM) Survey, collected between 2001 and 2015, and the second wave of the World Values Survey (WVS), collected between 1990 and 1994. Using the WHO WMH data, I provide a descriptive overview of the national prevalence rates of trauma exposure and psychological disorders across the 29 countries in which the survey was conducted. Across all 159,382 individuals surveyed, 67.7% reported experiencing at least one kind of trauma exposure in their lifetime. Further, across countries, rates of reported psychological disorders were lower than the rates of reported trauma exposure, indicating that there is variation in the presence of psychological distress in the aftermath of trauma exposure (H1), as well as variation in the kinds of psychological distress in the aftermath of trauma exposure (H2).

Rates of trauma exposure and psychological disorders vary significantly across countries, and there is a significant positive association between the proportion of a nation's population that reports at least one trauma exposure and the prevalence of mental health disorders, including anxiety and mood disorders.

Next, using individual-level data collected in 17 countries during the second wave of the WVS, I estimate associations between psychological distress and social cohesion. The findings provide cross-national support for the expectation that hyperarousal and hypoarousal have differential impacts on social cohesion (H3). Specifically, I find that hyperarousal is significantly negatively associated with bridging social cohesion across indicators of social trust, preference towards having outsiders as neighbors, and preference toward having outcasts as neighbors (H4). Further, I find that, among individuals with high hyperarousal, those who do not additionally have hypoarousal report, on average, significantly higher bonding social cohesion outcomes, when compared individuals with both high hyperarousal and hypoarousal (H4A). I theorize that this is the result of individuals with hyperarousal turning to ingroup members as a coping and survival mechanism, which would be suppressed by the additional presence of hypoarousal. I find that hypoarousal is significantly negatively associated with both bonding social cohesion, including lower reported group membership in extracurricular groups and group volunteering in extracurricular and political groups, and bridging social cohesion, including lower reported social trust, preference towards having outsiders as neighbors, and preference toward having outcasts as neighbors.

Chapter 5 presents the main empirical test of the theory, conducted in Za'atari Refugee Camp, home to nearly 80,000 Syrian refugees living in Jordan. I partnered with Beyond Conflict, who had created a novel psychoeducational treatment entitled *The Field Guide for Barefoot Psychologists*, which was designed to reduce psychological distress and improve emotion regulation among Syrian refugees living in Za'atari. The program was implemented by Questscope, a social development non-profit working in Za'atari Camp, from April to

October 2019. Data on all outcomes were collected at baseline prior to randomizing participants into the treatment or control conditions, as well as at the conclusion of the intervention, which lasted eight weeks.

I first use the baseline data to assess the prevalence of trauma exposure among the sample, and find that of 96.9% of the sample report at least one previous trauma exposure, with the average respondent reporting that they experienced an average of 5.5 out of 12 kinds of trauma exposure. I further find that trauma exposure is significantly positively associated with hyperarousal, such that each additional reported trauma exposure is associated with a 1.5 point increase in hyperarousal symptoms. I additionally use the baseline data to compare the difference in means in social cohesion outcomes between individual with high and low levels of psychological distress. Individuals with high hyperarousal report, on average, significantly greater bridging social cohesion across indicators, when compared to individuals with low hyperarousal (H4). Among individuals with high hyperarousal, those who do not additionally have high hypoarousal have, on average, significantly higher reported bonding social cohesion on the ingroup trust indicator, but not on the group membership indicators (H4A). Individuals with high hypoarousal have, on average, significantly lower reported bonding social cohesion on the ingroup trust indicator, as well as significantly lower reported bridging social cohesion on the outgroup anxiety indicator, when compared to individuals with low hypoarousal (H5). Individuals with both high hyperarousal and high hypoarousal have, on average, lower reported bonding and bridging social cohesion across all indicators, though differences are only significant on measures of ingroup trust and outgroup anxiety (H6).

I next use the baseline and endline data to assess the average treatment effect of *The Field Guide* intervention on psychological distress and emotion regulation. The intervention leads to a 21.4% reduction in hypoarousal compared to baseline, and to a 18.7% improvement in emotion regulation compared to baseline. The treatment has no significant effect on hyper-

arousal, nor does it have any significant effects on any of the social cohesion outcomes; the latter finding is as expected, as the intervention was not designed to affect social cohesion directly. I then use a structural equation model to estimate how intervention-driven improvements in each hypoarousal and emotion regulation are associated with improvements in social cohesion outcomes. The 21.4% improvement in hypoarousal is significantly associated with a 6.9% improvement in ingroup trust, an 8.1% improvement in outgroup trust, an 11.7% improvement in outgroup anxiety, and a 12.9% improvement in perceived communal security. The 18.7% improvement in emotion regulation is significantly associated with a 4.0% improvement in ingroup trust, an 11.5% improvement in outgroup trust, and an 8.7% improvement in perceived communal security. If these results reflect the theorized underlying relationship, then they would indicate that treatments designed to improve individual mental health are worth investing in not only because of improvements in individual psychological well-being, but because of improvements in social cohesion outcomes relevant to the wider community, driven by individual-level improvements in psychological distress and emotion regulation.

Chapter 6 tests the theory in a post-conflict context using the Survey of War Affected Youth (SWAY), which surveyed 1360 war-affected youth in Uganda from October 2006 to August 2007. This sample also indicates how pervasive trauma exposure is among conflict-affected populations; out of the 25 types of trauma exposure asked about, respondents reported experiencing an average of 8.4 different types of trauma exposure, and only 5 out of 1360 respondents reported having experienced none. Trauma exposure is significantly positively associated with both increased hyperarousal and hypoarousal, but not all individuals who experience trauma exposure report having hyperarousal or hypoarousal. I additionally assess associations between the type of trauma exposure and psychological distress; all types of trauma exposure are significantly positively associated with each hyperarousal and hypoarousal, with the exception of gunfire and being abducted, for which the association remains positive but does not reach statistical significance on either hyperarousal or hy-

poarousal. Of all types of trauma exposure, forced violence and sexual abuse are the most strongly positively associated with each hyperarousal and hypoarousal, consistent with past research that has found that interpersonal trauma (sexual abuse) and attributable trauma (forced violence) are more likely to result in psychological distress in their aftermath.

I then assess associations between psychological distress and social cohesion outcomes. Both hyperarousal and hypoarousal are significantly associated with greater reported hostile acts, lower reported family closeness, and lower reported community connection. Hypoarousal is also significantly associated with lower reported community group membership. Among individuals with high hyperarousal, respondents who additionally do not have high hypoarousal report, on average, significantly higher rates of family closeness and community connection, when compared to individuals who have both high hyperarousal and high hypoarousal. Finally, I assess associations between psychological distress and political participation and autocratic attitudes. While there is no significant association between either hyperarousal or hypoarousal and political participation across indicators, both hyperarousal and hypoarousal are significantly associated with greater endorsement of autocratic attitudes. This indicates that extending the theory to examine the relationship between psychological distress and political attitudes could be an area of future research, as is explicated in greater detail in section 7.3.

From these findings I highlight three key conclusions. First, trauma exposure cannot be seen as a uniform experience, and neither can responses to it. As such, social science researchers must ensure that we are conceptualizing and measuring trauma exposure and responses to trauma exposure in ways that reflect their complexity and heterogeneity. The theory on psychological foundations of social cohesion provides a useful framework for conceptualizing psychological distress by applying an evolutionary lens and differentiating between responses characterized by hyperarousal and hypoarousal. Below, I present a conceptualization of trauma exposure for use in political science research, both drawing on the trauma studies

literature presented in section 2.1 and on the insights gained through the course of the fieldwork and analyses presented in this dissertation.

Second, these results provide empirical support for the hypotheses derived from the theory of psychological foundations of social cohesion regarding psychological distress. Specifically, they support the expectation that hyperarousal and hypoarousal have differential effects on social cohesion (H3), that hyperarousal is associated with lower reported bridging social cohesion (H4), that among individuals with hyperarousal, those who do not additionally have hypoarousal will have higher reported bonding social cohesion (H4A), that hypoarousal will be associated with lower bonding and bridging social cohesion (H5), and that individuals with both hyperarousal and hypoarousal will have lower bonding and bridging social cohesion, when compared to individuals without hyperarousal and hypoarousal (H6).

Third, the findings from Chapter 5 indicate that the relationship between emotion regulation and social cohesion warrants greater inquiry. Though there were no differences in mean reported social cohesion between individuals with high and low emotion regulation at baseline in the Za'atari study, intervention-driven improvements in emotion regulation were significantly associated with improvements in ingroup and outgroup trust, as well as in perceived communal security. Understanding whether and how this finding may exist in other contexts, as well as the mechanism by which it operates—whether it is via improvement in managing psychological distress symptoms as they arise, or whether it is because individuals are better able to understand their own emotional responses, which allows them to have improved interpersonal interactions—is an area worthy of further research.[1]

7.2 Contributions

This dissertation offers six primary contributions. First, as noted above, it highlights the importance of interrogating conceptualizations and measures of both trauma exposure and

[1] Areas for future inquiry are addressed in section 7.3.

responses to trauma exposure for use in political science research. While commonly referred to as *violence*, experiences commonly lived through during conflict and forced migration may be more accurately represented as *trauma exposure*, as the term is more inclusive of the full range experiences that individuals may face—such as experiencing violence, witnessing violence, forced separation from loved ones, and being forced by others to carry out acts of violence.

Second, this dissertation offers a framework for assessing the differential impacts of various manifestations of psychological distress. By underscoring the evolutionary origins of different psychological distress responses, such that they provided adaptive ways to ensure survival in the face of threatening situations, the framework presented moves away from pathologizing language around psychological distress, but still allows for the understanding that psychological distress can have adverse effects on social cohesion.

Third, and relatedly, this dissertation explains how and why divergent findings may be present in existing studies that assess the impacts of violence on sociopolitical outcomes. By outlining the differential impacts that hyperarousal and hypoarousal have on bridging and bonding social cohesion, this work offers a systematic way to assess how any why seemingly contradictory conclusions may be reached when looking at the effects of psychological distress without differentiating between psychological distress characterized by hyperarousal and by hypoarousal.

Fourth, this dissertation empirically tests the relationship between psychological distress and social cohesion at the individual level, both cross-nationally and in two relevant, applied contexts with samples that have lived through forced displacement and conflict. This is a unique contribution because outcomes on psychological factors and social cohesion are often not collected together, making empirically assessing linkages between them challenging, especially in a cross-contextual way.

Fifth, this dissertation presents a model of academic-practitioner partnership, by which researchers can partner with organizations conducting impact evaluations on psychological interventions in order to assess how intervention-driven reductions in psychological distress are associated with sociopolitical outcomes of relevance. Such approaches allow for theory testing in naturalistic settings, for gaining greater leverage on psychological factors that are often challenging to assess, and for research to be fundamentally informed by the practitioners and individuals central to the work, ensuring that the research remains rooted in human experience.

Finally, this dissertation contributes to foregrounding the importance of psychological distress in the study of peace and conflict at a time when there is unprecedented interest in mental health. By providing a model to conceptualize and test linkages between psychological distress and social cohesion, this work offers a path forward to continue to investigate how and why psychological factors are central to the promise of peace and stability.

7.3 Future Directions & Extensions

In this section, I identify areas for future research and extensions of the project, highlighting relevant work that is already underway.

Identifying Dimensions of Trauma Exposure for Use in Political Science Research

As noted above, this project engages with the ways that trauma exposure and responses to trauma exposure are conceptualized and assessed. While this project offers novel operationalizations of responses to trauma exposure for use in microlevel political science research, it does not offer or extensively assess the heterogeneity within the conception of trauma exposure itself. To that end, I build on the psychology research presented in section 2.1 and the empirical tests presented in section 6.3 to outline nine dimensions on which trauma ex-

posure can vary that are of particular import to political science research, with the intention of these dimensions being used for the development of measures in future microlevel political science research.

1. **Acute v. chronic:** The number and frequency of trauma exposures that an individual has experienced. Acute trauma refers to a single incidence (e.g., a discrete fear event like a sudden shock or attack), while chronic trauma refers to repeated trauma exposures (e.g., war-related persistent trauma exposures) (Rasmussen, Keatley and Joscelyne 2014). Research has found that "the longer and more frequently the trauma occurs, the more severe and varied are the posttraumatic sequelae" (Blaauw et al. 2002; Mechanic et al. 2000; Wamser-Nanney and Vandenberg 2013).

2. **Witness v. experience:** Whether someone witnessed a trauma exposure or directly experienced a trauma exposure firsthand.[2]

3. **Degree of exposure:** The proximity of an individual to the trauma exposure, as well as the duration and intensity of the experience. While chronic trauma exposure may result in a greater degree of exposure, it is useful to isolate the degree of trauma exposure as its own dimension, in order to allow for variations in intensity and duration both within and across either acute or chronic trauma exposures.

4. **Attributable v. not attributable:** Whether the trauma exposure is attributable to an individual, institution, or organization. Research has indicated that individuals who experience attributable trauma exposures are more likely to have psychological distress in their aftermath (Charuvastra and Cloitre 2008).[3]

[2]This area of research has started to include inquiry into vicarious trauma exposure (Nault Connors et al. 2021; Satterthwaite et al. 2019; Aparicio, Michalopoulos and Unick 2013) and secondary trauma (Dubberley, Griffin and Mert Bal 2015).

[3]While natural disasters have generally been identified as not-attributable in the past, given the link between many natural disasters and climate change, this characterization may be shifting and is relevant for future inquiry.

5. **Interpersonal v. not interpersonal:** Whether the trauma exposure was perpetrated by someone known to the individual experiencing the event. Research has indicated that interpersonal trauma exposures can lead to a higher incidence of adverse responses as they "render the victim's views regarding safety, intimacy, and trustworthiness vulnerable to unhelpful or inaccurate alterations" (Carnelley and Janoff-Bulman 1992; Wamser-Nanney and Vandenberg 2013).

6. **Individual v. collective:** Whether the trauma exposure was a unique event experienced primarily by the individual (e.g., a car accident or assault), or was experienced collectively (e.g., an earthquake or war). This dimension is, in some ways, challenging to capture and differentiate; even when a trauma exposure is experienced at the collective level, individuals have their own experiences of the event. That being said, this dimension seeks to capture the idea that collective trauma exposures and the shared reference points they provide may have different implications for individuals that experience them, as compared to trauma exposures experienced primarily individually.

7. **Presence of power asymmetry:** Whether the trauma exposure was perpetrated by an individual or organization that is viewed to be more powerful or that has more power. Research has demonstrated that differentials in power have significant consequences for human behavior (Keltner, Gruenfeld and Anderson 2003). As such, it is possible that a trauma exposure perpetrated by a more powerful entity will evoke different responses than one in which a power differential is not present.

8. **Age at time of experience:** The age at which the trauma exposure is experienced. Research has shown that the age at the time of trauma exposure has a significant impact on an individual's response to the event, with children being much more likely to develop subsequent adverse reactions, due to children's rapidly developing and changing brains (Cloitre et al. 2008; Toth and Cicchetti 2013; Wamser-Nanney and Vandenberg 2013).

9. **Significance to individual**: The extent to which the trauma exposure is identified by the individual who experienced it as important or significant in the course of their life.

It is my hope that the preceding delineation of dimensions of trauma exposure can be used in political science research seeking to more systematically conceptualize the various aspects of trauma exposure. This will also allow for a much stronger and explicit link to existing psychological and neurobiological research on the ways in which specific types of trauma exposure shape psychological distress responses in their aftermath.

Additionally, outlining dimensions of trauma exposure in this manner will allow for the construction of more precise batteries that may be of greater utility in empirical analyses. The most common form of trauma exposure measure used at present is a checklist of potential types of trauma exposures, which asks individuals to indicate if they did or did not experience a certain type of trauma exposure. While this allows for understanding the prevalence of certain types of trauma exposure, it does not allow for the assessment of the frequency with which types of trauma exposure were experienced (e.g., if they were experienced once or more than once by a given individual), the degree of exposure, whether there were power asymmetries present, the age of onset, or the degree of importance assigned to the event. Capturing variation on these dimensions may provide more insight into how and by what pathways trauma exposure shapes attitudes and behavior in its aftermath.

Alternative Measurement Strategies

Though the conceptualizations and measures presented in this project capture the heterogeneity in trauma exposure and responses to trauma exposure, they still rely on self-report measures. Future research would benefit from incorporation of other kinds of assessment—psychophysiological, neuroendocrine, neuroimaging (Landau-Wells and Saxe 2020), and other measurement techniques—which may allow for more precise estimations of how responses

to trauma exposure relate to sociopolitical outcomes. While these types of measures have previously been inaccessible to studies being carried out in the field, improvements in mobile assessment technologies may allow for the inclusion of these approaches in future works.

Ensuring that all measurement strategies are contextually-relevant and culturally-sensitive will be imperative when using new assessment techniques. Participatory research methods can be used, both as a way of generating more contextually-relevant measures (Kia-Keating and Juang 2022)—such as identifying which dimensions are most relevant in a given context for measuring trauma exposure—and for ensuring that any proposed data collection techniques will be accepted by the community in which the study is taking place.

Systematic Review on Measures used in Studies of Trauma Exposure and Responses to Trauma Exposure

The importance of better understanding the conceptualization and measurement of trauma exposure and its psychological consequences is the central focus of a systematic review I am currently undertaking with Justine Davis. We examine how, in studies on political violence, both trauma exposure and responses to trauma exposure have been conceptualized and measured. We assess how different conceptualizations and measures find differential relationships between each trauma exposure and response to trauma exposure on sociopolitical dynamics Davis and Herman (2022).

Application of Theory in Additional Contexts

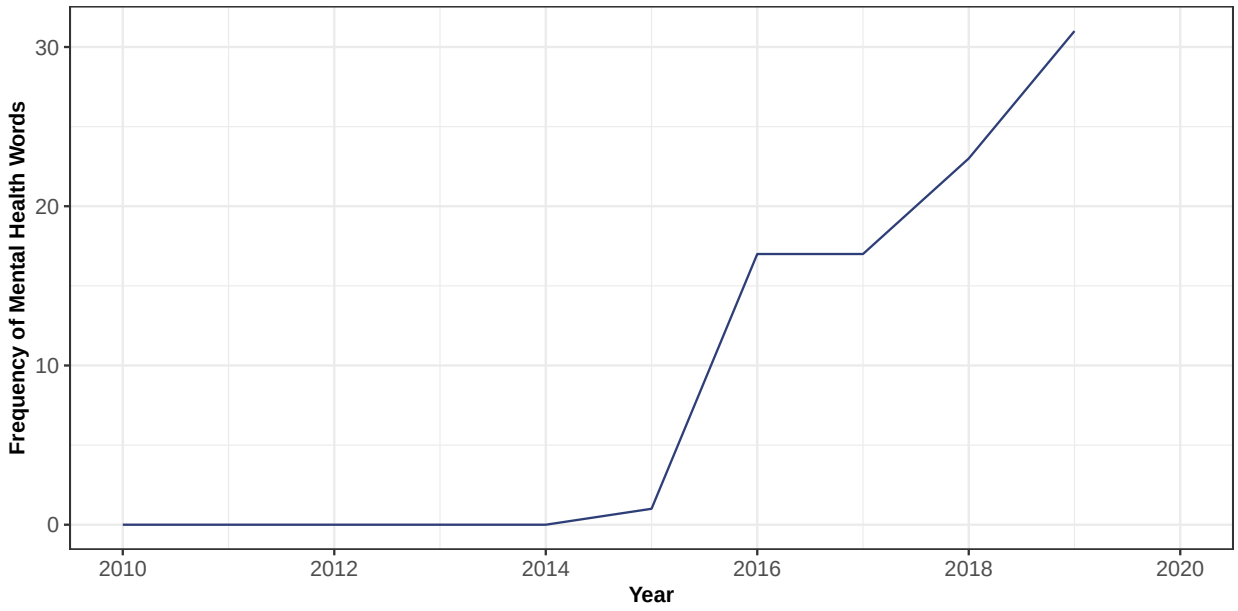
While it was beyond the scope of this dissertation project, it would be useful to apply the theory of psychological foundations of social cohesion to other kinds of political unrest, including crime-related trauma exposure, economic migration, police brutality, or natural disaster-related trauma exposure. The latter context is of particular importance: as natural disasters are increasingly linked with climate change, it will be important to assess their impacts on populations and whether they are perceived as the result of political choices,

and therefore, perhaps, more akin to state violence. Further, adapting the theory to understand how psychological distress impacts factors beyond social cohesion—including political participation, institutional trust, democratic attitudes, and more—would be of great utility.

7.4 Conclusion

The Covid-19 pandemic has brought conversations about mental health rapidly into the foreground. As noted by Arthur and Monnier (2021), "after experimenting with months of lockdown and imposed social distancing measures in response to the COVID-19 pandemic, people everywhere now have a more immediate understanding of how prolonged crisis can create challenges for both individuals' mental health as well as maintaining the social fabric of communities" (Arthur and Monnier 2021).

Figure 7.1: Frequency of use of words related to mental health in UNHCR annual reports, 2010-2020



Notes: Count of number of times the following words or word stems appeared in UNHCR's annual report from 2010 to 2019: addict, anxieti, anxious, bipolar, depress, distress, mental, mental-health, mental health, mhpss, psychiat, psychiatrist, psycho, psycholog, psycho-social, psychosocial, self-care, therapist, trauma, trauma-inform, trauma-sensit.

This increased interest has emerged as conversations about mental health among humanitarian agencies working with conflict and forced migration-affected populations have been on the rise; Figure 7.1 illustrates the frequency of use of words related to mental health in UNHCR annual reports from 2010 to 2020, showing the marked increase in references to mental health over that time. On May 5, 2022, the United Nations Development Programme (UNDP) released a Guidance Note on Integrating Mental Health and Psychosocial Support into Peacebuilding (UNDP 2022). Just over a month later, on June 17, 2022, the World Health Organization (WHO) released the "World Mental Health Report: Transforming Mental Health for All," identified as its "largest review of world mental health since the turn of the century" (World Health Organization 2022).

These trends and reports capture the increasing desire and urgency to better understand the impact of trauma exposure and psychological distress on prospects for peace, reconciliation, and stability. This dissertation project and the theory of psychological foundations of social cohesion presented herein contributes to this conversation, offering a theoretical framework for analysis, providing empirical tests of its implications, and highlighting the ways in which improving individual mental health can contribute to social cohesion in the aftermath of conflict and forced migration.

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Appendix A

Microfoundational Studies in International Relations Journals

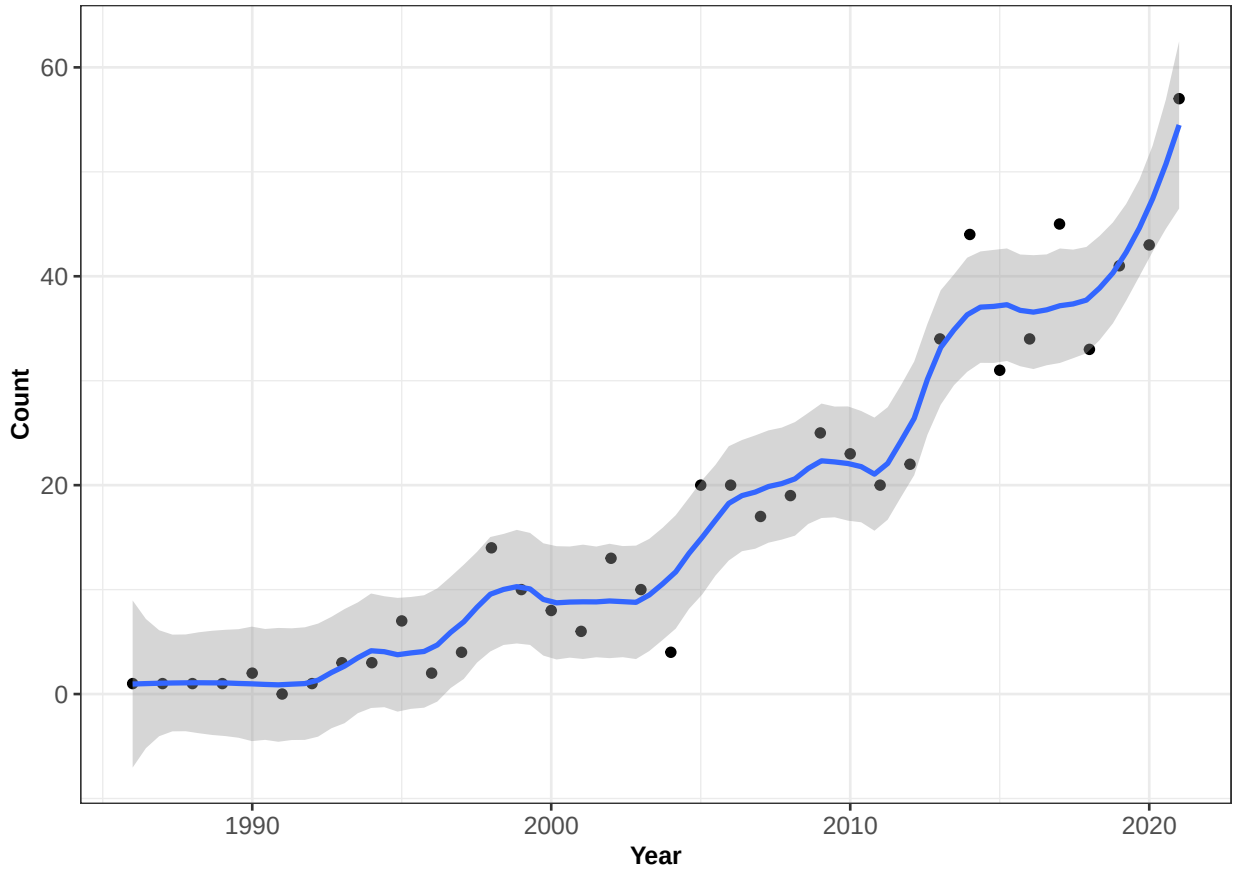
Data were collected using the search criteria specified by Kertzer (2017): "The figure uses search results from Google Scholar to depict the number of articles making reference to 'microfoundation', 'microfoundations', 'micro-foundation' or 'micro-foundations' published in *Conflict Management and Peace Science*, *European Journal of International Relations*, *International Organization*, *International Security*, *International Studies Quarterly*, *Journal of Conflict Resolution*, *Journal of Peace Research, Security Studies*, and *World Politics* from 1986 to 2021, overlaid with a smoother and 95% CIs." Data are presented in Table A.1 and visualized in Figure A.1.

Table A.1: Mentions of microfoundations in top international relations journals, by year and journal

Year	Total	CMPS	EJIR	IO	IS	ISQ	JCR	JPR	SS	WP
1986	1	0	0	1	0	0	0	0	0	0
1987	1	0	0	1	0	0	0	0	0	0
1988	1	0	0	0	0	0	0	0	0	1
1989	1	0	0	0	1	0	0	0	0	0
1990	2	0	0	0	0	1	1	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	1	0	0	1	0	0	0	0	0	0
1993	3	0	0	1	0	1	1	0	0	0
1994	3	0	0	0	0	0	0	0	0	3
1995	7	0	1	2	0	0	0	1	1	2
1996	2	0	0	1	0	0	0	0	0	1
1997	4	0	0	2	0	1	0	0	1	0
1998	14	0	0	6	0	2	0	1	3	2
1999	10	0	1	3	1	1	0	1	3	0
2000	8	0	1	1	2	1	2	0	0	1
2001	6	0	0	1	2	0	2	0	1	0
2002	13	0	0	2	0	2	4	2	2	1
2003	10	1	1	2	1	0	2	2	0	1
2004	4	0	0	0	0	0	2	1	0	1
2005	20	5	0	2	2	1	5	1	2	2
2006	20	0	1	3	0	5	4	2	1	4
2007	17	0	1	3	0	7	2	2	0	2
2008	19	0	0	1	0	7	6	3	0	2
2009	25	1	2	3	2	9	4	2	1	1
2010	23	4	2	2	1	6	3	4	0	1
2011	20	3	1	3	1	3	2	4	1	2
2012	22	1	0	1	2	4	4	7	2	1
2013	34	3	6	6	1	8	2	3	2	3
2014	44	5	2	6	3	8	11	4	1	4
2015	31	1	1	7	1	7	3	4	1	6
2016	34	4	2	4	1	4	4	9	4	2
2017	45	4	1	13	3	8	6	7	2	1
2018	33	5	2	6	0	5	8	4	3	0
2019	41	1	3	4	1	10	9	9	1	3
2020	43	4	4	5	1	8	12	6	2	1
2021	57	6	4	6	1	11	14	9	1	5

Notes: CMPS = *Conflict Management and Peace Science*, EJIR = *European Journal of International Relations*, IO = *International Organization*, IS = *International Security*, ISQ = *International Studies Quarterly*, JCR = *Journal of Conflict Resolution*, JPR = *Journal of Peace Research*, SS = *Security Studies*, WP = *World Politics*.

Figure A.1: Articles invoking microfoundations in international relations journals, 1986 – 2021



Notes: These data were collected using the search criteria specified by Kertzer (2017): "The figure uses search results from Google Scholar to depict the number of articles making reference to 'microfoundation', 'microfoundations', 'micro-foundation' or 'micro-foundations' published in *Conflict Management and Peace Science*, *European Journal of International Relations*, *International Organization*, *International Security*, *International Studies Quarterly*, *Journal of Conflict Resolution*, *Journal of Peace Research, Security Studies*, and *World Politics* from 1986 to 2021, overlaid with a smoother and 95% CIs."

Appendix B

Diagnostic Criteria for PTSD in Diagnostic Manuals

Table B.1: Definitions of PTSD in diagnostic manuals since inclusion in 1980

Manual	Year	Definition
DSM-III	1980	12 symptoms in 3 groups: re-experience ($\geq$ 1 of 3 symptoms), numbing ($\geq$ 1 of 3 symptoms), arousal and avoidance ($\geq$ 2 of 6 symptoms). Symptom duration not specified.
DSM-III-R	1987	17 symptoms in 3 groups: re-experience ($\geq$ 1 of 4 symptoms), avoidance/numbing ($\geq$ 3 of 7 symptoms), hyperarousal ($\geq$ 2 of 6 symptoms). Symptom duration $\geq$ 1 month.
DSM-IV	1994	17 symptoms in 3 groups: re-experience ($\geq$ 1 of 5 symptoms), avoidance/numbing ($\geq$ 3 of 7 symptoms), hyperarousal ($\geq$ 2 of 5 symptoms). Symptom duration $\geq$ 1 month. Clinically significant distress or impairment in functioning required.
ICD-10	1994	Persistent remembering of the stressor ($\geq$ 1 of 3), avoidance ($\geq$ 1 of 2), either: inability to recall (1 of 1 symptom) OR persistent symptoms of increased psychological sensitivity and arousal ($\geq$ 2 of 4). Onset of symptoms within 6 months of exposure.
DSM-IV-TR	2000	Same as DSM-IV (1994)
DSM-5	2013	20 symptoms in 4 groups: intrusion ($\geq$ 1 of 5 symptoms), avoidance of reminders ($\geq$ 1 of 2 symptoms), altered cognitions and mood ($\geq$ 2 of 7 symptoms), altered arousal and reactivity ($\geq$ 2 of 6 symptoms). Symptom duration $\geq$ 1 month. Clinically significant distress or impairment in functioning required. Exclusion criteria: not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition—added criterion.
ICD-11	2018	Endorsement of one of two symptoms from the symptom clusters of (1) reexperiencing in the here and now, (2) avoidance, and (3) sense of current threat, plus endorsement of at least one indicator of functional impairment associated with these symptoms. Experiencing symptoms and impairment in past month.

Notes: DSM symptom criteria are drawn from (North et al. 2016), ICD-10 symptom criteria are drawn from (Treatment US), and ICD-11 symptom criteria are drawn from (Cloitre et al. 2019).

Appendix C

Survey Protocol, WHO World Mental Health Surveys

The WHO World Mental Health Surveys were completed using the following procedure: "All surveys are based on multistage household probability samples. Internal subsampling is used to reduce respondent burden by dividing the interview into 2 parts. Part 1 includes core diagnostic assessment. Part 2 includes information about correlates and disorders of secondary interest. All respondents complete Part 1. All Part 1 respondents who meet criteria for any disorder and a subsample of approximately 25% of others are administered Part 2. All interviews are carried out face-to-face by trained lay interviewers. All surveys use the WMH-CIDI, a fully structured diagnostic interview, to assess disorders and treatment. Disorders considered include anxiety disorders (agoraphobia, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, posttraumatic stress disorder, social phobia, specific phobia), mood disorders (bipolar I and II disorders, dysthymia, major depressive disorder), disorders that share a feature of problems with impulse control (bulimia, intermittent explosive disorder, and adult persistence of 3 childhood-adolescent disorders including attention-deficit/hyperactivity disorder, conduct disorder, and oppositional-defiant disorder among respondents in the 18- to 44-year age range), and substance disorders (alcohol abuse

and dependence, drug abuse and dependence, nicotine). Disorders are assessed using the definitions and criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) and the ICD-10 Classification of Mental and Behavioral Disorders (ICD-10). CIDI organic exclusion rules were imposed in making all diagnoses. Methodological evidence collected in the WHO-CIDI Field Trials and later clinical calibration studies showed that all the disorders considered herein are assessed with acceptable reliability and validity both in the original CIDI and in the original version of the WMH-CIDI. Studies of cross-national comparability in the validity of the WMH-CIDI are currently underway.The central WMH staff trained bilingual supervisors in each country. Consistent interviewer training documents and procedures are used across surveys. The WHO translation protocol was used to translate instruments and training materials. Standardized descriptions of the goals and procedures of the study, data uses and protection, and the rights of respondents were provided in both written and verbal form to all predesignated respondents before obtaining verbal informed consent for participation in the survey. Quality control protocols were standardized across countries to check on interviewer accuracy and to specify data cleaning and coding procedures. The institutional review board of the organization that coordinated the survey in each country approved and monitored compliance with procedures for obtaining informed consent and protecting human subjects" (Schoo 2005).

Appendix D

Question Wording and Index Construction, WVS Dataset

D.1 Psychological Distress

Hyperarousal

Questions: We are interested in the way people are feeling these days. During the past few weeks, did you ever feel: (1) Restless? (2) Upset because someone criticized you?

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1. Scored so that greater scores indicate greater hyperarousal.

Hypoarousal

Questions: We are interested in the way people are feeling these days. During the past few weeks, did you ever feel: (1) Depressed or very unhappy? (2) Very lonely or remote from other people.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0

and 1. Scored so that greater scores indicate greater hypoarousal.

D.2 Bonding Social Cohesion

Extracurricular Group (Member)

Question: Now I am going to read off a list of voluntary organizations. For each organization, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?: (1) Sports or recreation groups? (2) Youth group? (3) Education, arts, music or cultural group?

Scoring: 1 if yes to any, 0 if no to all.

Extracurricular Group (Volunteer)

Question wording: And for which, if any, groups, are you currently doing unpaid voluntary work? (1) Sports or recreation groups? (2) Youth group? (3) Education, arts, music or cultural group?

Scoring: 1 if yes to any, 0 if no to all.

Altruistic Group (Member)

Question: Now I am going to read off a list of voluntary organizations. For each organization, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?: (1) Self-help group, mutual aid group? (2) Consumer organization? (3) Humanitarian or charitable organization? (4) Women's group? (5) Environmental organization? (6) Professional association?

Scoring: 1 if yes to any, 0 if no to all.

Political Group (Member)

Question: Now I am going to read off a list of voluntary organizations. For each organization, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?: (1) Labor unions? (2) Political parties or groups?

Scoring: 1 if yes to any, 0 if no to all.

Political Group (Volunteer)

Question: And for which, if any, groups, are you currently doing unpaid voluntary work? (1) Labor unions? (2) Political parties or groups?

Scoring: 1 if yes to any, 0 if no to all.

D.3 Bridging Social Cohesion

Social Trust

Question: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

Scoring: Most people can be trusted (1), need to be careful (0).

Would Like Outsiders as Neighbors

Question On this list are various groups of people. Could you identify any that you would not like to have as neighbours?

Scoring: 0 if respondent identified any of the following groups of people as people they would not like to have as neighbors: people of a different religion, people of a different race, people who speak a different language, immigrants or foreign workers; 1 if they did not.

Would Like Outcasts as Neighbors

Question On this list are various groups of people. Could you identify any that you would not like to have as neighbours?

Scoring: 0 if respondent identified any of the following groups of people as people they would not like to have as neighbors: drug addicts, heavy drinkers, homosexuals, people who have AIDS; 1 if they did not.

Appendix E

Rates of Hyperarousal and Hypoarousal, WVS Dataset

Table E.1: Rates of psychological distress by country, WVS Wave 2

Country	Hyperarousal	Hypoarousal	N
Argentina	0.24 (0.32)	0.23 (0.34)	1002
Brazil	0.33 (0.37)	0.30 (0.38)	1782
Canada	0.26 (0.33)	0.17 (0.31)	1730
Chile	0.37 (0.36)	0.33 (0.38)	1500
China	0.19 (0.29)	0.14 (0.28)	1000
Czechoslovakia	0.26 (0.34)	0.20 (0.33)	924
India	0.24 (0.33)	0.23 (0.34)	2500
Japan	0.12 (0.25)	0.16 (0.30)	1011
Mexico	0.25 (0.32)	0.24 (0.35)	1531
Nigeria	0.26 (0.33)	0.30 (0.37)	1001
Poland	0.32 (0.38)	0.22 (0.35)	938
Soviet Union	0.29 (0.34)	0.25 (0.36)	1961
South Africa	0.29 (0.35)	0.28 (0.38)	2736
Slovakia	0.26 (0.33)	0.19 (0.32)	466
Spain	0.18 (0.29)	0.18 (0.33)	1510
Switzerland	0.07 (0.26)	0.07 (0.19)	1400
United States	0.25 (0.32)	0.20 (0.34)	1839

Notes: Mean for each index, with standard deviation in parentheses.

Appendix F

Balance Tests across Treatment Modalities, Za'atari Study

Table F.1: Balance across treatment and control groups, by treatment delivery modality

Variable	Control	At Home	Workshop	p-value (1 v. 2)	p-value (1 v. 3)	p-value (2 v. 3)	p-value (all)
Demographic Variables							
Age	25.15	24.02	24.64	0.329	0.668	0.605	0.624
Gender	0.51	0.49	0.50	0.850	0.932	0.920	0.982
Married	0.51	0.41	0.54	0.300	0.741	0.193	0.393
College-Level Education	0.23	0.29	0.18	0.506	0.526	0.217	0.464
Social Support	0.71	0.74	0.69	0.434	0.701	0.238	0.511
Number of Children	1.31	0.82	1.66	0.137	0.348	0.014	0.065
Number of People in Household	5.75	5.82	6.08	0.895	0.467	0.576	0.756
Total Income Past Month (Jordanian Dinar)	56.84	69.28	51.33	0.526	0.761	0.409	0.664
Health Index	3.50	3.62	3.46	0.432	0.806	0.341	0.601
Trauma Exposure							
Trauma Exposure (Binary)	0.98	0.96	0.96	0.439	0.450	0.984	0.702
Trauma Exposure (Index)	0.44	0.47	0.47	0.502	0.425	0.930	0.692
Psychological Factors							
Hyperarousal (Dimensional)	0.42	0.36	0.43	0.109	0.822	0.070	0.150
Hyperarousal (Diagnostic)	0.29	0.22	0.30	0.408	0.956	0.398	0.640
Hypoarousal (Dimensional)	0.30	0.25	0.29	0.156	0.822	0.192	0.305
Hypoarousal (Diagnostic)	0.13	0.10	0.16	0.642	0.670	0.398	0.699
Emotion Regulation	0.68	0.74	0.69	0.121	0.697	0.184	0.239
Social Cohesion							
Ingroup Trust	0.64	0.66	0.64	0.511	0.820	0.377	0.665
Group Mem. (Community)	0.20	0.23	0.18	0.544	0.631	0.232	0.509
Group Mem. (Extracurricular)	0.34	0.30	0.29	0.566	0.417	0.897	0.700
Outgroup Trust	0.31	0.35	0.32	0.279	0.765	0.463	0.544
Outgroup Anxiety (R)	0.57	0.64	0.56	0.089	0.990	0.105	0.159
Perceived Communal Security	0.43	0.48	0.39	0.247	0.457	0.093	0.205
Proportion	0.38	0.31	0.31				

Notes: As reported by respondents in the first round of data collection in April 2019.

Appendix G

Question Wording and Index Construction, Za'atari Study

G.1 Trauma Exposure

Trauma Exposure (Refugee Trauma Checklist, Sigvardsdotter et al. (2017))

Questions: Before you left your home, have you experienced any of the following situations or events? (1) War at close quarters? (2) Forced separation from family or close friends? (3) Loss or disappearance of family member(s) or loved one(s)? (4) Physical violence or assault? (5) Witnessing physical violence or assault? (6) Other frightening situation(s) where you felt your life was in danger? After you left your home, during your flight, have you experienced any of the following situations or events? (7) War at close quarters? (8) Forced separation from family or close friends? (9) Loss or disappearance of family member(s) or loved one(s)? (10) Physical violence or assault? (11) Witnessing physical violence or assault? (12) Other frightening situation(s) where you felt your life was in danger?

Scoring: yes (1), no (0); index constructed by summing number of traumatic events experienced, before and after leaving home and rescaling between 0 and 1. Scored so that greater scores indicate greater trauma exposure.

G.2 Psychological Factors

Hyperarousal (International Trauma Questionnaire-11, Cloitre et al. (2019))

Questions: Below are a number of problems that people sometimes report in response to stressful life events. Please read each item carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month. (1) Having upsetting dreams that replay part of the experience or are clearly related to the experience. (2) Having powerful images or memories that sometimes come into your mind in which you feel the experience is happening again in the here and now. (3) Avoiding internal reminders of the experience (for example, thoughts, feelings or physical sensations). (4) Avoiding external reminders of the experience (for example, people, places, conversations, objects, activities or situations). (5) Being 'super-alert', watchful or on guard. (6) Feeling jumpy or easily startled. In the past month have the above symptoms: (7) Affected your relationships or social life? (8) Affected your work or ability to work? (9) Affected any other important part of your life such as parenting, or school or college work, or other important activities?

Scoring: not at all (0), a little bit (1), moderately (2), quite a bit (3), extremely (4); diagnostic scored according to the diagnostic scoring criteria outlined by the instrument (Cloitre et al. 2019). Dimensional scoring by summing value of all symptoms and rescaling between 0 and 1, and so that greater scores indicate greater distress.

Hypoarousal (International Trauma Questionnaire-11, Cloitre et al. (2019))

Questions: Below are problems that people who have had stressful or traumatic events sometimes experience. The questions refer to ways you typically feel, ways you typically think about yourself and ways you typically relate to others. Answer the following thinking about how true each statement is of you. (1) When I am upset, it takes me a long time to calm down. (2) I feel numb or emotionally shut down. (3) I feel like a failure. (4) I feel worthless. (5) I feel distant or cut off from people. (6) I find it hard to stay emotionally close to people. In the past month, have the above problems in emotions, in beliefs about yourself and in relationships: (7) Created concern or distress about your relationships or social life? (8) Affected your work or ability to work? (9) Affected any other important parts of your life such as parenting, or school or college work, or other important activities?

Scoring: not at all (0), a little bit (1), moderately (2), quite a bit (3), extremely (4); diagnostic scored according to the diagnostic scoring criteria outlined by the instrument (Cloitre et al. 2019). Dimensional scoring by summing value of all symptoms and rescaling between 0 and 1, and so that greater scores indicate greater distress.

Emotion Regulation (Multidimensional Assessment of Interoceptive Awareness Mehling et al. (2018))

Questions: Below you will find a list of statements. Please indicate how often each statement applies to you generally in daily life. (1) I notice how my body changes when I am angry. (2) When something is wrong in my life I can feel it in my body. (3) I notice that my body feels different after a peaceful experience. (4) I notice that my breathing becomes free and easy when I feel comfortable. (5) I notice how my body changes when I feel happy / joyful. (6) When I feel overwhelmed I can find a calm place inside. (7) When I bring awareness to my body I feel a sense of calm. (8) I can use my breath to reduce tension. (9) When I am

caught up in thoughts, I can calm my mind by focusing on my body/breathing.

Scoring: never (5), very rarely (4), rarely (3), occasionally (2), very frequently (1); index constructed by summing across 16 and rescaling between 0 and 1. Scored so that greater scores indicate greater emotion regulation.

G.3 Bonding Social Cohesion

Ingroup Trust

Questions: I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group a great deal, a lot, somewhat, a little, or not at all? The groups are: (1) Your family? (2) Your friends? (3) Your neighbors? (4) People you know personally?

Scoring: trust a great deal (5), trust a lot (4), trust somewhat (3), trust a little (2), do not trust at all (1); index constructed by summing across three measures and rescaling between 0 and 1. Scored so that greater scores indicate greater ingroup trust.

Group Membership (Community)

Are you a member of any organization or formal groups, including: (1) A volunteer committee? (2) A social committee? (3) A youth group? (4) A school committee? (5) A cultural committee?

Scoring: yes (1), no (0); index constructed by summing measures and rescaling between 0 and 1. Scored so that greater scores indicate greater group membership.

Group Membership (Community)

Are you a member of any organization or formal groups, including: (1) A drama, music, or sport club? (2) A sports team?

Scoring: yes (1), no (0); index constructed by summing measures and rescaling between 0 and 1. Scored so that greater scores indicate greater group membership.

G.4 Bridging Social Cohesion

Outgroup Trust

Questions: I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group a great deal, a lot, somewhat, a little, or not at all? The groups are: (1) People you meet for the first time? (2) eople of another religion? (3) People of another nationality?

Scoring: trust a great deal (5), trust a lot (4), trust somewhat (3), trust a little (2), do not trust at all (1); index constructed by summing across three measures and rescaling between 0 and 1. Scored so that greater scores indicate greater outgroup trust.

Outgroup Anxiety

Questions: When you meet non-Syrians, how often do you experience each of the following emotions? (1) Nervous? (2) Anxious? (3) Worried? (4) Afraid?

Scoring: never (5), a little (4), some of the time (3), most of the time (2), always (1); index constructed by summing across four measures and rescaling between 0 and 1. Scored so that greater scores indicate less outgroup anxiety.

Perceived Communal Security (Human Insecurity Scale, Lonergan, Gustavson and Carter (2000))

Questions: Now I would like to ask you a few questions about how you feel about your own security and that of your family. Please tell me if you never, sometimes, or often feel this way. (1) In the past month, how often did you fear for yourself in your daily life? (2) In the past month, how often did you fear for your family in your daily life? (3) In the past month, how often did you feel worry/fear not being able to provide your family with daily life necessities? (4) In the past month, how often did you worry/fear about losing your source of income or your family's source of income? (5) In the past month, how often did you worry/fear losing your house? (6) In the past month, how often did you feel worry/fear from displacement or uprooting? (7) In the past month, how often did you worry/fear for your future and your family's future?

Scoring: never (1), a little (2), some of the time (3), most of the time (4), always (5); index constructed by summing across seven measures and rescaling between 0 and 1. Scored so that greater scores indicate greater perceived security.

Appendix H

Internal Consistency of Scales, Za'atari Study

Table H.1: Internal consistency of scales (Cronbach's alpha)

Index	t_0	t_1	t_2
Trauma Exposure	0.722	0.766	0.840
Hyperarousal	0.796	0.815	0.859
Hypoarousal	0.847	0.861	0.906
Emotion Regulation	0.847	0.898	0.941
Ingroup Trust	0.418	0.605	0.449
Group Membership	0.802	0.789	0.789
Outgroup Trust	0.684	0.719	0.841
Outgroup Anxiety	0.769	0.770	0.811
Perceived Communal Security	0.803	0.830	0.840

Notes: t_0 was collected in April 2019, t_1 was collected in July 2019, and t_2 was collected in October 2019.

Appendix I

Trauma Exposure and Psychological Distress, Za'atari Study

I.1 Associations between Trauma Exposure and Psychological Distress

Table I.1 presents associations between cumulative trauma exposure and psychological distress characterized by hyperarousal and by hypoarousal. Each model is estimated using OLS regression, with data collected at baseline prior to the administration of treatment. Models (2) and (4) include five covariates—age, gender, education, marital status, and social support—selected based on previous empirical studies assessing demographic and environmental strongly associated with the development psychological distress. It shows that while there is a strong and significant association between each additional trauma exposure and hyperarousal, such that each additional reported trauma exposure is associated with a 1.5 percentage point increase in hyperarousal symptoms ($p = 0.001$).

Table I.1: Trauma exposure and hyperarousal and hypoarousal (dimensional)

	Dependent variable:			
	Hyperarousal		Hypoarousal	
	(1)	(2)	(3)	(4)
Trauma Exposure	0.015***	0.015***	0.007	0.005
	(0.004)	(0.004)	(0.005)	(0.004)
Age		−0.003		−0.001
		(0.002)		(0.002)
Gender		0.015		0.056*
		(0.022)		(0.024)
Marital Status		−0.011		−0.007
		(0.025)		(0.027)
College Education		−0.022		−0.024
		(0.027)		(0.029)
Social Support		−0.102*		−0.146**
		(0.050)		(0.054)
Constant	0.427***	0.582***	0.374***	0.493***
	(0.025)	(0.066)	(0.027)	(0.071)
Observations	160	160	160	160
R^2	0.081	0.136	0.014	0.104

Notes: Each model represents a separate OLS regression using baseline data. Trauma exposure is a count measure of the number of trauma exposures a respondent reports having experienced before and after leaving their home. Standard errors in parentheses, *p<0.05; **p<0.01; ***p<0.001.

I.2 Associations Between Trauma Exposure (Timing) and Psychological Distress

Table I.2 shows associations between hyperarousal and hypoarousal with trauma exposure that occurred either before or after departure. While there is a positive association between trauma exposure occurring either before or after departure for both hyperarousal and hypoarousal, only trauma exposure occurring after departure and hyperarousal are significantly associated (p = 0.003).

Table I.2: Trauma exposure (before, after) and hyperarousal, hypoarousal

	Dependent variable:			
	Hyperarousal		Hypoarousal	
	(1)	(2)	(3)	(4)
Trauma Exposure (before departure)	0.043	0.039	0.041	0.034
	(0.049)	(0.050)	(0.054)	(0.054)
Trauma Exposure (after departure)	0.138**	0.133**	0.040	0.026
	(0.046)	(0.045)	(0.050)	(0.049)
Age		−0.003		−0.001
		(0.002)		(0.002)
Gender		0.012		0.056*
		(0.022)		(0.024)
Marital Status		−0.011		−0.007
		(0.025)		(0.027)
College Education		−0.021		−0.025
		(0.027)		(0.029)
Social Support		−0.109*		−0.146**
		(0.050)		(0.054)
Constant	0.436***	0.594***	0.374***	0.492***
	(0.026)	(0.067)	(0.029)	(0.072)
Observations	160	160	160	160
R^2	0.089	0.144	0.014	0.104

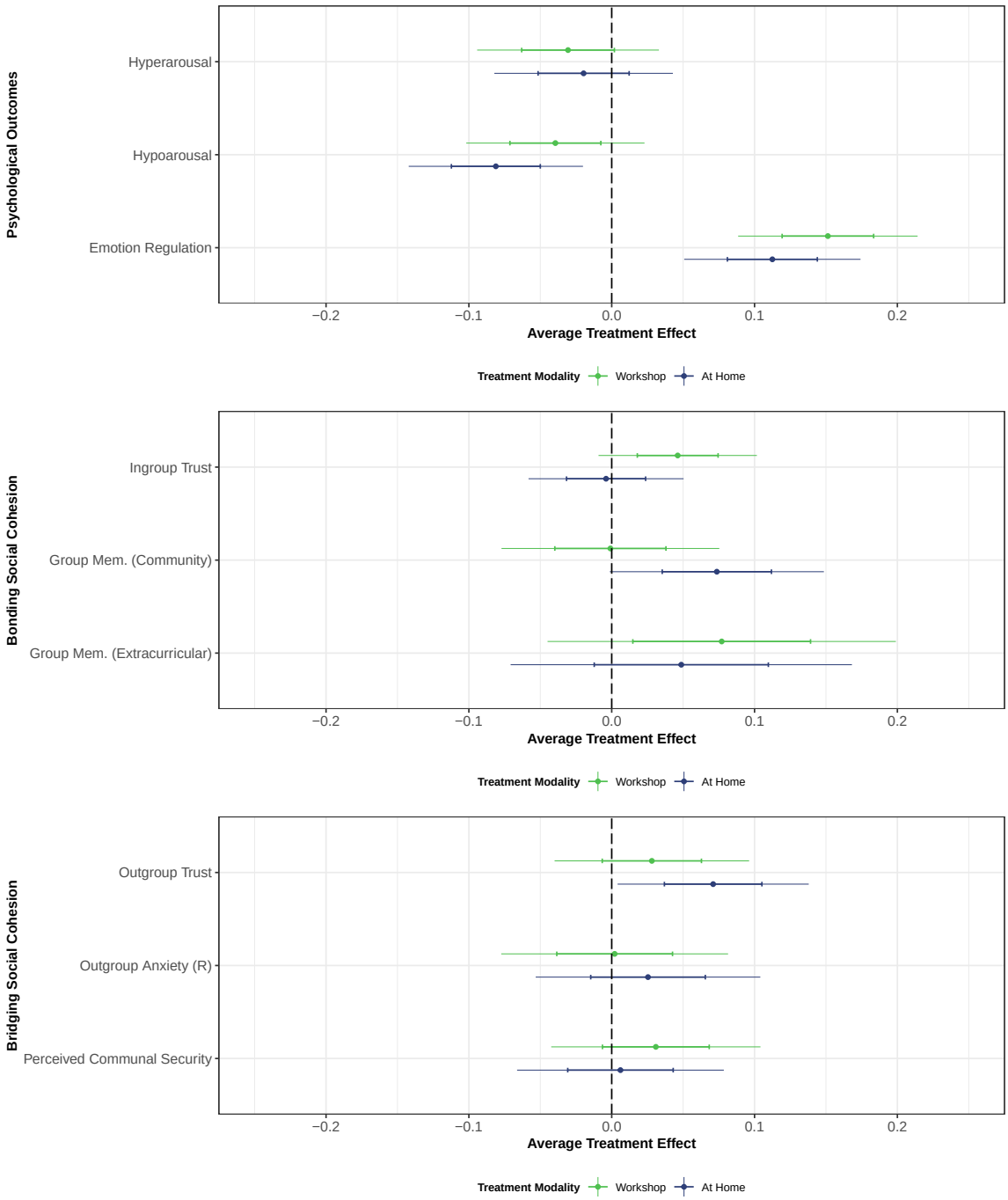
Notes: Each model represents a separate OLS regression using baseline data. Trauma exposure is a count measure of the number of trauma exposures a respondent reports having experienced before and after leaving their home. Standard errors in parentheses, *p<0.05; **p<0.01; ***p<0.001.

Appendix J

Average Treatment Effect Using Both Waves of Data and Both Treatment Modalities, Za'atari Study

J.1 *The Field Guide* Treatment Effect, First Wave, Separate Treatment Modalities

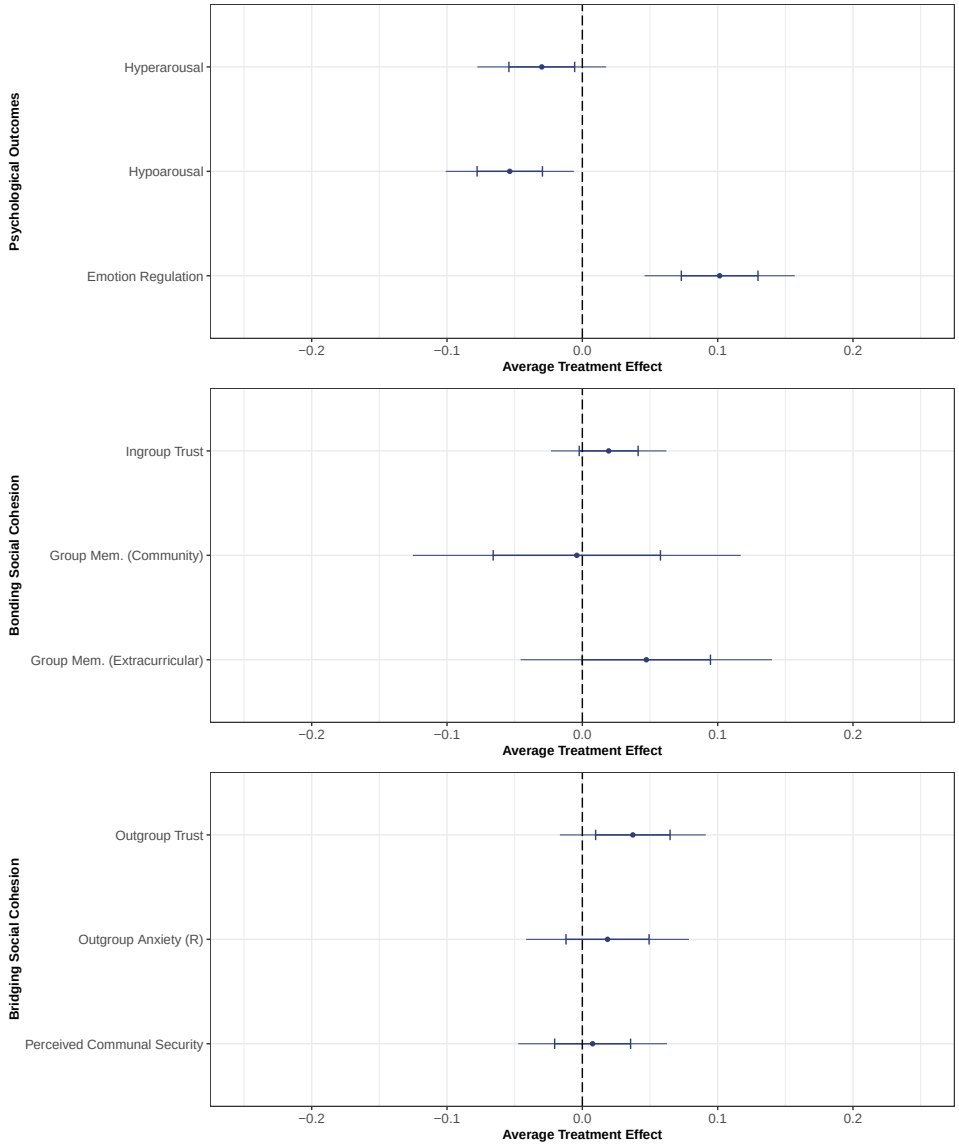
Figure J.1: *The Field Guide* average treatment effects, first wave of treatment, separate treatment modalities



Notes: Estimates of average treatment effects, using the first waves of treatment with effects for treatment delivery modalities (at home and workshop group) estimated separately. All models include value of the outcome at baseline. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error.

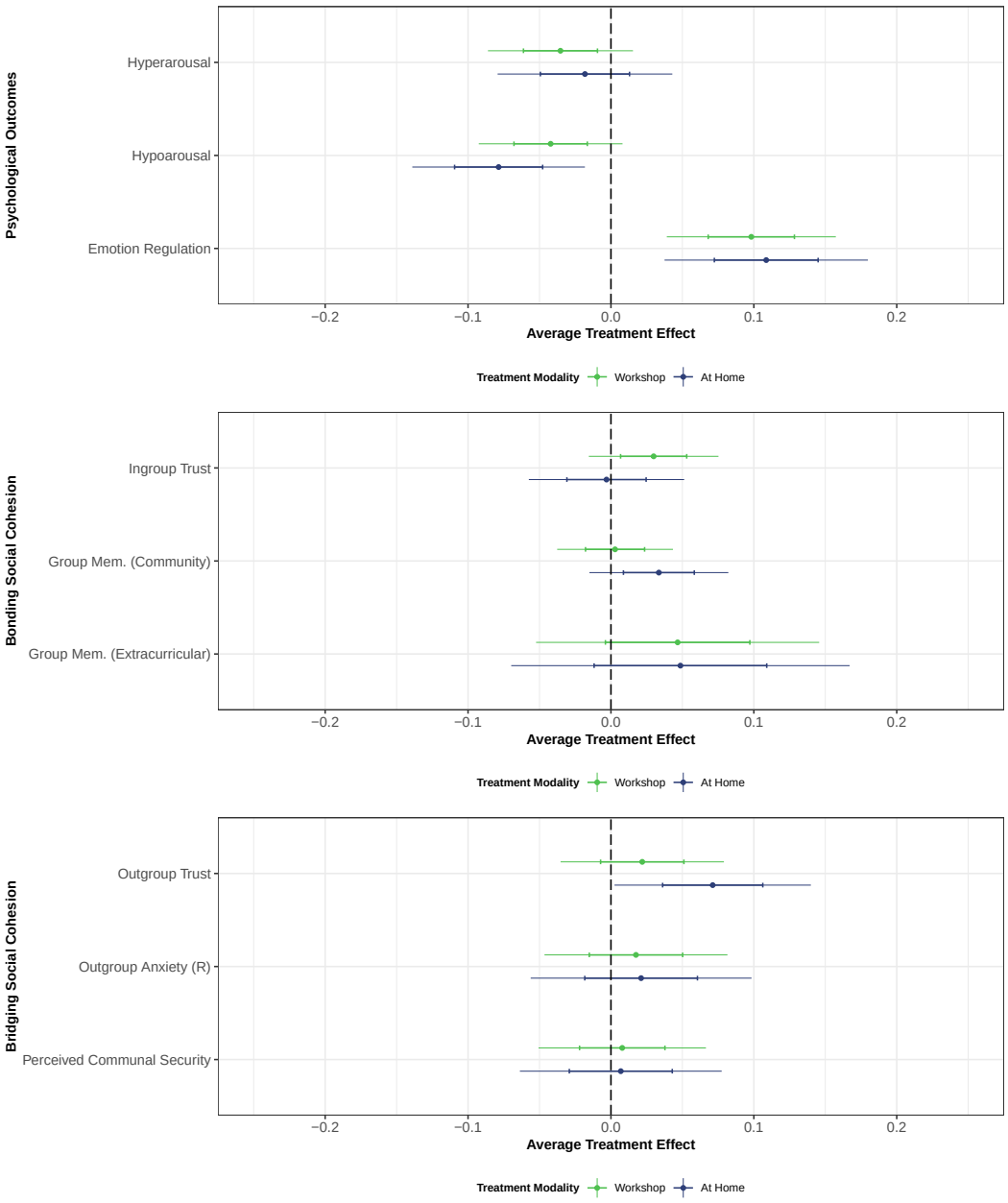
J.2 *The Field Guide* Treatment Effects, Both Waves, Pooled Treatment Modality

Figure J.2: *The Field Guide* average treatment effects, both waves of treatment, pooled treatment modalities



Notes: Estimates of average treatment effects, using both waves of treatment, with treatment delivery modalities pooled. All models include value of the outcome at baseline. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error.

Figure J.3: *The Field Guide* average treatment effects, both waves of treatment, separate treatment modalities



Notes: Estimates of average treatment effects, using both waves of treatment with effects for treatment delivery modalities (at home and workshop group) estimated separately. All models include value of the outcome at baseline. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error.

Appendix K

Question Wording and Index Construction, SWAY Dataset

K.1 Trauma Exposure

Total Trauma Exposure

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer. Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) You heard gun fire regularly. (2) Someone shot bullets at you or your home. (3) You received a severe beating to the body by someone. (4) Someone attacked you with a panga or other weapon. (5) You were tied up or locked up as a prisoner. (6) You received a serious physical injury in a battle or rebel attack. (7) You were forced to carry heavy loads or do other forced labor. (8) You witnessed beatings or torture of other people. (9) You witnessed a killing. (10) You witnessed a massacre. (11) You witnessed the setting of houses on fire with people inside.

(12) You witnessed the rape or sexual abuse of a woman. (13) A parent was murdered or died violently. (14) A parent disappeared or was abducted. (15) Another family member or friend was murdered or died violently. (16) Another family member or friend disappeared or was abducted. (17) A family member received a serious physical injury from combat or landmine. (18) You were forced to steal or destroy someone else's property or possessions. (19) You were forced to kill an opposing soldier in battle. (20) You were forced to beat or cut someone who was a family member or friend. (21) You were forced to beat or cut a civilian who was not a family member or friend. (22) You were forced to kill a family member or friend. (23) You were forced to kill a civilian who was not a family member or friend. (24) You were forced to step on or otherwise abuse the bodies of dead persons. (25) You were forced to betray a family member or friend, placing them at risk of death or injury.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Forced Violence

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer. Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) You were forced to kill an opposing soldier in battle. (2) You were forced to beat or cut someone who was a family member or friend. (3) You were forced to beat or cut a civilian who was not a family member or friend. (4) You were forced to kill a family member or friend. (5) You were forced to kill a civilian who was not a family member or friend. (6) You were forced to step on or otherwise abuse the bodies of dead persons. (7) You were forced to betray a family member or friend, placing them at risk of death or injury.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Sexual Abuse

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer. Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) You witnessed the rape or sexual abuse of a woman. (2) You were forced to have sex with a woman/man.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Family or Friend Loss

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer. Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) Another family member or friend was murdered or died violently. (2) Another family member or friend disappeared or was abducted. (3) A family member received a serious physical injury from combat or landmine.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Parent Loss

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer. Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) A parent was murdered or died violently. (2) A parent disappeared or was abducted.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Seriously Injured

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer. Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) You received a severe beating to the body by someone. (2) Someone attacked you with a panga or other weapon. (3) You were tied up or locked up as a prisoner. (4) You received a serious physical injury in a battle or rebel attack.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Witness Violence

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer.

Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) You witnessed beatings or torture of other people. (2) You witnessed a killing. (3) You witnessed a massacre. (4) You witnessed the setting of houses on fire with people inside.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Gunfire

Questions: Now I would like to ask you about your experiences during the conflict. Some of these experiences are upsetting to think or talk about. If so, feel free not to answer. Say, "I prefer to go to the next question" or "I prefer to stop talking about the conflict and move on." Also, remember that your answers are very confidential. I am going to mention several events. Please tell us if you have ever experienced any of these events. (1) You heard gun fire regularly. (2) Someone shot bullets at you or your home.

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Abduction

Question: How many times have you been with the LRA, even if only for a few hours?

Scoring: 1 if greater than 1, 0 if none.

K.2 Psychological Distress

Hyperarousal

Questions: Now I want to ask you about how you have felt in the past year. The answers to these questions will help us understand how war and displacement affect people's daily lives. In each case, please tell us whether you always, sometimes, rarely, or never feel or act in this way. If you are not comfortable answering any of these questions, please say so and we will move to the next question. (1) Do you think about bad things from the past? (2) Do you worry about too many things? (3) Do you have restless nights? (4) Do you feel sad? (5) Do you find life difficult whether you are home or elsewhere? (6) Do you cry when you remember bad things from the past? (7) Do you have difficulty concentrating? (8) Do you keep to yourself when you are worried? (9) Are you easily irritated? (10) Do you get chest pains when you are over thinking? (11) Does your body shake uncontrollably from over thinking? (12) Do you get headaches from over thinking? (13) Are you jumpy? (14) Do you have nightmares?

Scoring: never (0), rarely (1), sometimes (2), always (3); index constructed by summing questions and rescaling between 0 and 1. Scored so that greater scores indicate greater hyperarousal.

Hypoarousal

Questions: Now I want to ask you about how you have felt in the past year. The answers to these questions will help us understand how war and displacement affect people's daily lives. In each case, please tell us whether you always, sometimes, rarely, or never feel or act in this way. If you are not comfortable answering any of these questions, please say so and we will move to the next question. (1) Do you feel helpless? (2) Do you feel like you do not treasure your life? (3) Do you feel unloved? (4) Do you feel lonely?

Scoring: never (0), rarely (1), sometimes (2), always (3); index constructed by summing questions and rescaling between 0 and 1. Scored so that greater scores indicate greater hypoarousal.

K.3 Bonding Social Cohesion

Prosociality

Questions: Now I want to ask you about how you have felt in the past year. The answers to these questions will help us understand how war and displacement affect people's daily lives. In each case, please tell us whether you always, sometimes, rarely, or never feel or act in this way. If you are not comfortable answering any of these questions, please say so and we will move to the next question. (1) Do you enjoy talking and spending time with peers? (2) Are you helpful to elders? (3) Do you feel sympathy for others? (4) Do you enjoy doing things in the community? (5) Do you have love for your peers? (6) Do you share with others? (7) Do you help younger ones? (8) Do you share your feelings or ideas with your friends? (9) Do other youth like associating with you?

Scoring: never (0), rarely (1), sometimes (2), always (3); index constructed by summing questions and rescaling between 0 and 1. Scored so that greater scores indicate greater prosociality.

Group Membership

Questions: Are you currently a member, participant or a volunteer for any of the following groups? (1) A drama, music, or dance club? (2) A peace club? (3) A farmers group or cooperative? (4) A water committee? (5) A church, prayer or bible study group? (6) A school committee or school club or a school prefect? (7) A sports team? (8) A volunteer for an NGO? (9) Someone who mobilizes the community for meetings? (10) Are you a member

of any other community or church group we have not mentioned?

Scoring: no (0), yes (1); index constructed by summing questions and rescaling between 0 and 1.

Group Membership (Extracurricular)

Questions: Are you currently a member, participant or a volunteer for any of the following groups? (1) A drama, music, or dance club? (2) A peace club? (3) A school committee or school club or a school prefect? (4) A sports team?

Scoring: 1 if yes to any, 0 if no to all.

Group Membership (Community)

Questions: Are you currently a member, participant or a volunteer for any of the following groups? (1) A farmers group or cooperative? (2) A water committee? (3) A volunteer for an NGO? (4) Someone who mobilizes the community for meetings?

Scoring: 1 if yes to any, 0 if no to all.

Hostility

Questions: Now I want to ask you about how you have felt in the past year. The answers to these questions will help us understand how war and displacement affect people's daily lives. In each case, please tell us whether you always, sometimes, rarely, or never feel or act in this way. If you are not comfortable answering any of these questions, please say so and we will move to the next question. (1) Are you quarrelsome? (2) Do you take things from other places without permission? (3) Do you curse or use abusive language? (4) Do you threaten to hurt others?

Scoring: never (0), rarely (1), sometimes (2), always (3); index constructed by summing questions and rescaling between 0 and 1. Scored so that greater scores indicate greater hostility.

Family Closeness

Questions: (1) How do you feel living in your household: very comfortable, somewhat comfortable, or not at all comfortable? (2) Are there quarrels between you and your household members often, sometimes, or almost never? (3) Do you feel your household is very caring, somewhat caring, or not at all caring towards you?

Scoring: (0) not at all comfortable / often / not at all caring, (1) somewhat comfortable / sometimes / somewhat caring, (2) very comfortable / almost never / very caring; index constructed by summing questions and rescaling between 0 and 1. Scored so that greater scores indicate greater family closeness.

Community Connection

Questions: (1) Do you feel that your neighbors understand you a lot, somewhat, or not at all? (2) Since the beginning of the year, have you had trouble getting along with your neighbors often, sometimes, or almost never? (3) Do you consider your neighbors to be like your brothers and sisters very much, somewhat, or not at all?

Scoring: (0) not at all / often / not at all, (1) somewhat / sometimes / somewhat, (2) a lot / almost never / very much; index constructed by summing questions and rescaling between 0 and 1. Scored so that greater scores indicate greater community connection. Asked only of women.

K.4 Political Participation

Voted in 2005

Question: Did you vote in the August 2005 referendum?

Scoring: yes (1), no (0).

Voted in 2001

Question: Did you vote in the 2001 presidential elections?

Scoring: yes (1), no (0). Asked of men only.

Voted in 2006

Question: Did you vote in the 2006 Presidential election?

Scoring: yes (1), no (0). Asked of women only.

Registered to Vote

Question: Did you register to vote before the 2006 Presidential election?

Scoring: yes (1), no (0). Asked of women only.

Autocratic Attitudes

Questions: I'm going to describe various forms of government and ask what you think about each as a way of governing Uganda. For each one, would you say it is a very good, fairly good, fairly bad or very bad way of governing Uganda? (1) Having a strong president who does not have to bother with parliament and elections? (2) Reverse scored: Having many political parties compete democratically for parliament and the presidency? (3) Having one

political party compete democratically for parliament and the presidency? (4) Having the army rule the country? (5) Having a local political leader give you a gift or a little something in return for your vote?

Scoring: very good (3), fairly good (2), fairly bad (1), very bad (0); index constructed by summing questions and rescaling between 0 and 1. Asked of women only. Scored so that greater scores indicate greater autocratic attitudes.

Appendix L

Trauma Exposure and Psychological Distress, SWAY Data

L.1 Trauma Exposure (Type) and Psychological Distress

Table L.1: Associations between trauma exposure (type) and hyperarousal

	Dependent variable:							
	Hyperarousal (1)	Hypoarousal (2)	Hyperarousal (3)	Hypoarousal (4)	Hyperarousal (5)	Hypoarousal (6)	Hyperarousal (7)	Hypoarousal (8)
Abduction	0.053***	0.014						
	(0.009)	(0.010)						
Forced Violence			0.174***	0.104***				
			(0.018)	(0.019)				
Sex Abuse					0.159***	0.091***		
					(0.019)	(0.021)		
Parent Loss							0.070***	0.045**
							(0.014)	(0.015)
Age	0.004**	−0.0002	0.005***	0.001	0.004***	−0.0001	0.003**	−0.0003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender	0.072***	0.039***	0.066***	0.040***	0.054***	0.033**	0.061***	0.037***
	(0.011)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)
College Education	−0.020	−0.023	−0.020	−0.022	−0.019	−0.022	−0.023*	−0.024*
	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)
Marital Status	−0.017	−0.034*	−0.014	−0.032*	−0.015	−0.033*	−0.016	−0.033*
	(0.013)	(0.014)	(0.012)	(0.014)	(0.013)	(0.014)	(0.013)	(0.014)
Has Children	0.00003	0.020	−0.011	0.012	−0.002	0.017	0.006	0.022
	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)
Social Support	−0.040	0.057	−0.063*	0.041	−0.062*	0.042	−0.050	0.048
	(0.029)	(0.031)	(0.028)	(0.031)	(0.029)	(0.031)	(0.029)	(0.031)
Assets	0.007	−0.006	0.003	−0.007	0.005	−0.007	0.004	−0.007
	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)
Observations	1,342	1,342	1,339	1,339	1,339	1,339	1,340	1,340
R^2	0.086	0.021	0.128	0.041	0.110	0.033	0.081	0.026

Notes: Results visualized in Figure 6.4. All models are estimated using OLS and include district fixed effects. *p<0.05; **p<0.01; ***p<0.001.

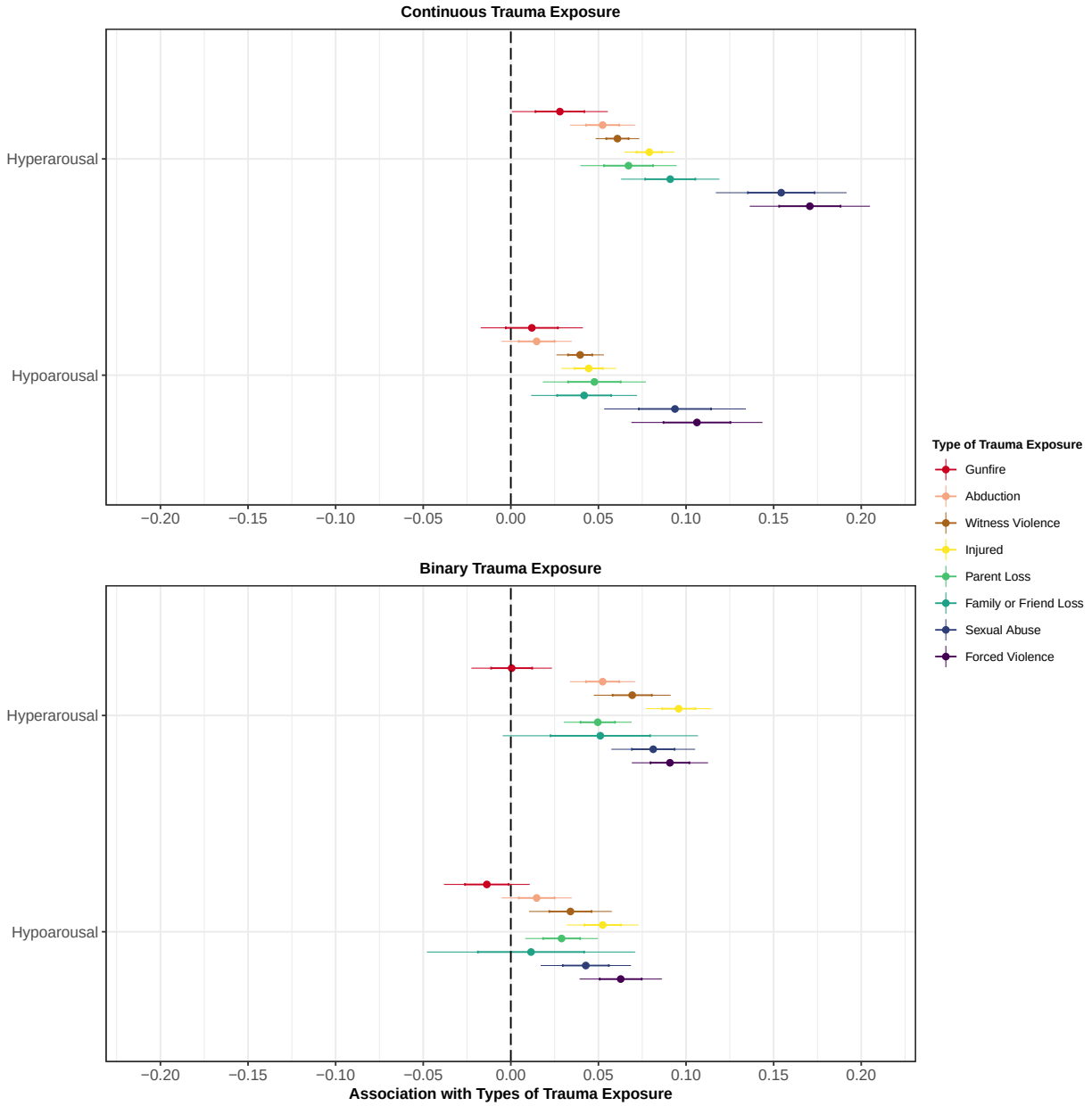
Table L.2: Associations between trauma exposure (type) and hypoarousal

	Dependent variable:							
	Hyperarousal (1)	Hypoarousal (2)	Hyperarousal (3)	Hypoarousal (4)	Hyperarousal (5)	Hypoarousal (6)	Hyperarousal (7)	Hypoarousal (8)
Loss of Family/Friend	0.094***	0.040*						
	(0.014)	(0.015)						
Injured			0.080***	0.044***				
			(0.007)	(0.008)				
Experiencd Gunfire					0.032*	0.008		
					(0.014)	(0.015)		
Winess Violence							0.062***	0.039***
							(0.006)	(0.007)
Age	0.003**	−0.0003	0.003**	−0.0005	0.003**	−0.0003	0.003**	−0.0003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender	0.070***	0.036*	0.096***	0.056***	0.063***	0.036**	0.086***	0.053***
	(0.013)	(0.014)	(0.011)	(0.012)	(0.011)	(0.011)	(0.010)	(0.011)
College Education	−0.035*	−0.042**	−0.019	−0.021	−0.024*	−0.024*	−0.023*	−0.024*
	(0.013)	(0.014)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)
Marital Status	−0.025	−0.037*	−0.017	−0.034*	−0.018	−0.034*	−0.019	−0.036**
	(0.014)	(0.015)	(0.012)	(0.014)	(0.013)	(0.014)	(0.012)	(0.014)
Has Children	−0.009	0.017	−0.002	0.017	0.006	0.022	0.001	0.019
	(0.016)	(0.018)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)
Social Support	−0.079*	0.055	−0.053	0.048	−0.048	0.054	−0.052	0.047
	(0.034)	(0.037)	(0.028)	(0.031)	(0.030)	(0.032)	(0.028)	(0.031)
Assets	0.006	−0.016	0.006	−0.006	0.006	−0.006	0.007	−0.005
	(0.012)	(0.013)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)
Observations	1,018	1,018	1,341	1,341	1,340	1,340	1,340	1,340
R^2	0.087	0.028	0.141	0.041	0.068	0.020	0.125	0.042

Notes: Results visualized in Figure 6.4. All models are estimated using OLS and include district fixed effects. *p<0.05; **p<0.01; ***p<0.001.

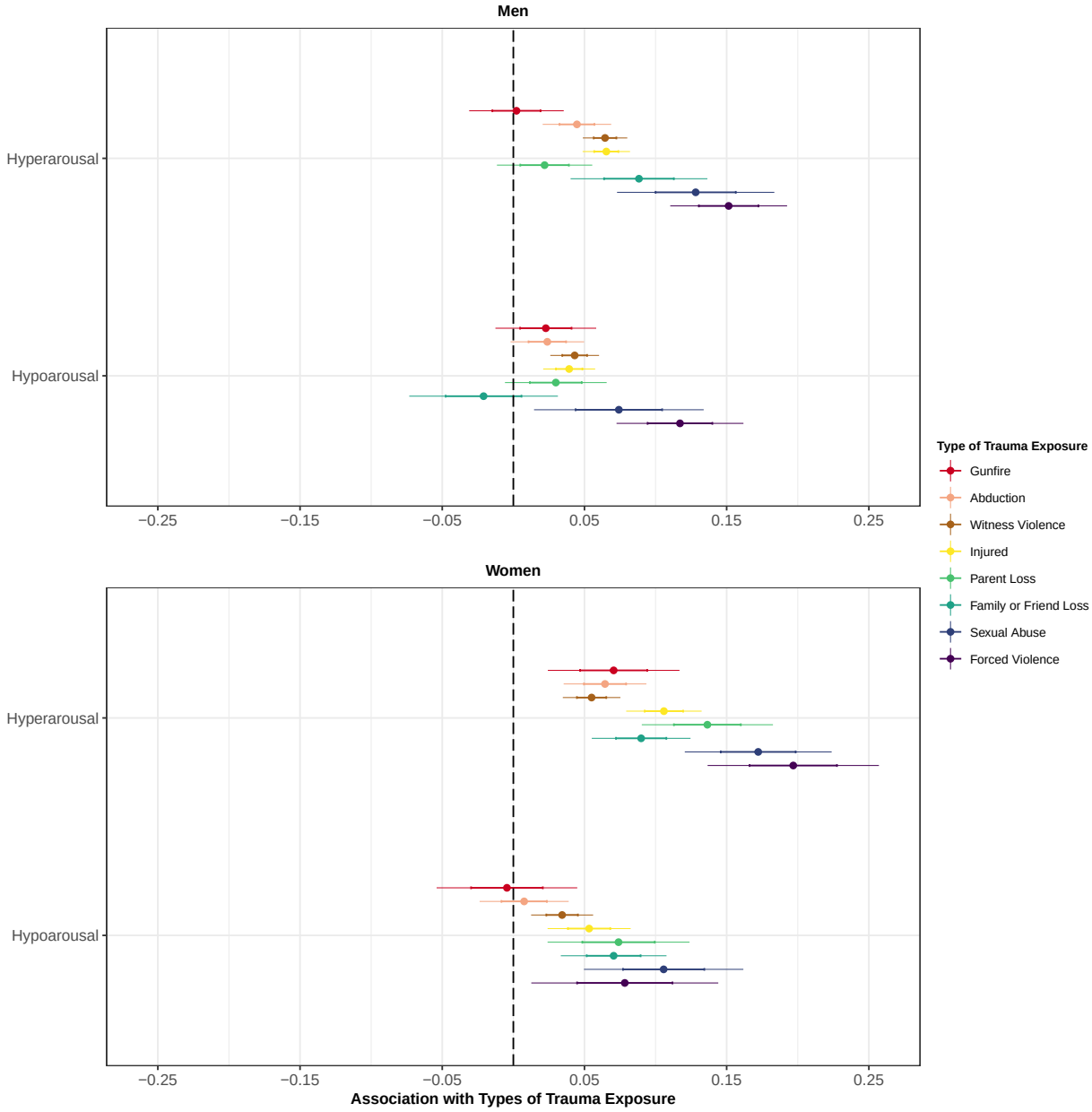
L.2 Trauma Exposure and Psychological Distress, Additional Analyses

Figure L.1: Types of trauma exposure (continuous, binary) and psychological distress



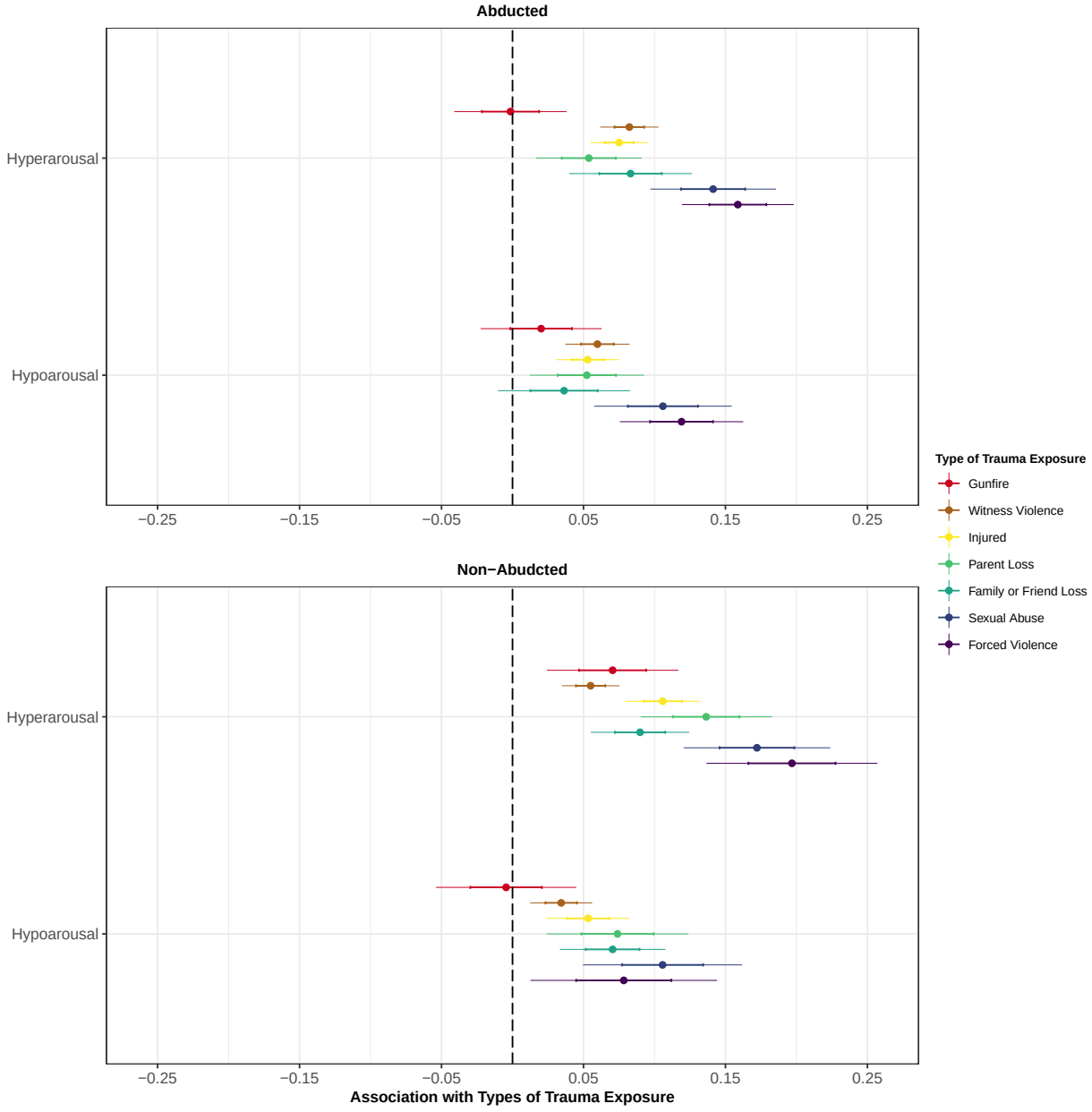
Notes: Estimates of the association between types of trauma exposure and psychological distress. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error. Each estimate represents a separate linear regression, in which either hypoarousal or hypoarousal symptoms serves as the outcome of interest, with a different type of trauma exposure as the explanatory factor of interest. All models include district fixed effects and the same set of control variables, including age, gender, education, marital status, whether the respondent has children, and household asset level. Continuous trauma exposure measures are constructed as indices of the average number of kind of trauma exposure experienced by respondent; binary trauma exposure measures measure whether respondent experienced at least one trauma exposure within that kind of trauma exposure. For more information on construction of measures, see Appendix K.

Figure L.2: Types of trauma exposure and psychological distress, by gender



Notes: Estimates of the association between types of trauma exposure and psychological distress. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error. Each estimate represents a separate linear regression, in which either hypoarousal or hypoarousal symptoms serves as the outcome of interest, with a different type of trauma exposure as the explanatory factor of interest. All models include district fixed effects and the same set of control variables, including age, education, marital status, whether the respondent has children, and household asset level. Trauma exposure measures are constructed as indices of the average number of kind of trauma exposure experienced by respondent. For more information on construction of measures, see Appendix K.

Figure L.3: Types of trauma exposure and psychological distress, by abduction status



Notes: Estimates of the association between types of trauma exposure and psychological distress. The 95% confidence intervals surround point estimates; the thicker lines between the bars represent one standard error. Each estimate represents a separate linear regression, in which either hypoarousal or hypoarousal symptoms serves as the outcome of interest, with a different type of trauma exposure as the explanatory factor of interest. All models include district fixed effects and the same set of control variables, including age, gender, education, marital status, whether the respondent has children, and household asset level. Trauma exposure measures are constructed as indices of the average number of kind of trauma exposure experienced by respondent. For more information on construction of measures, see Appendix K.

Appendix M

Psychological Distress and Social Cohesion, SWAY

M.1 Psychological Distress and Bonding Social Cohesion

Table M.1: Associations between psychological distress and bonding social cohesion

	Dependent variable:							
	Prosocial Index		Group Membership		Group Membership (Extracurricular)		Group Membership (Community)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hyperarousal	0.038		−0.032		−0.014		−0.013	
	(0.020)		(0.028)		(0.028)		(0.023)	
Hypoarousal		0.030		−0.048		−0.006		−0.069***
		(0.018)		(0.025)		(0.025)		(0.021)
Trauma Exposure	0.0002	0.001	0.001	0.001	0.001	0.001	0.0005	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age	0.002**	0.002**	0.001	0.0005	−0.003**	−0.003**	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender	0.279***	0.282***	0.064***	0.063***	0.034**	0.032**	0.008	0.012
	(0.008)	(0.008)	(0.011)	(0.011)	(0.011)	(0.011)	(0.010)	(0.009)
College Education	0.011	0.011	0.030**	0.029**	0.026*	0.027*	0.007	0.006
	(0.008)	(0.008)	(0.011)	(0.011)	(0.011)	(0.010)	(0.009)	(0.009)
Marital Status	−0.004	−0.003	0.010	0.009	−0.010	−0.010	0.040***	0.038***
	(0.009)	(0.009)	(0.012)	(0.012)	(0.012)	(0.012)	(0.010)	(0.010)
Has Children	−0.021*	−0.022*	−0.014	−0.013	−0.036**	−0.036**	0.005	0.006
	(0.010)	(0.010)	(0.014)	(0.014)	(0.013)	(0.013)	(0.011)	(0.011)
Social Support	0.011	0.007	0.126***	0.130***	0.094***	0.095***	0.093***	0.096***
	(0.020)	(0.020)	(0.028)	(0.028)	(0.028)	(0.028)	(0.024)	(0.023)
Assets	0.0005	0.001	0.015	0.015	0.006	0.006	0.005	0.005
	(0.007)	(0.007)	(0.010)	(0.010)	(0.009)	(0.009)	(0.008)	(0.008)
Observations	1,338	1,338	1,338	1,338	1,338	1,338	1,338	1,338
R^2	0.588	0.588	0.063	0.065	0.071	0.070	0.090	0.097

Notes: All models are estimated using OLS and include district fixed effects. *p<0.05; **p<0.01; ***p<0.001.

Table M.2: Associations between psychological distress and bonding social cohesion

	Dependent variable:					
	Get Along with Family		Connection with Family		Comfort with Family	
	(1)	(2)	(3)	(4)	(5)	(6)
Hyperarousal	−0.303***		−0.327***		−0.358***	
	(0.049)		(0.037)		(0.045)	
Hypoarousal		−0.336***		−0.296***		−0.224***
		(0.044)		(0.033)		(0.041)
Trauma Exposure	−0.003	−0.004*	−0.003*	−0.005***	−0.005**	−0.008***
	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Age	0.003	0.002	0.001	0.0002	0.002	0.001
	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Gender	−0.128***	−0.142***	−0.222***	−0.240***	−0.251***	−0.278***
	(0.020)	(0.019)	(0.015)	(0.015)	(0.018)	(0.018)
College Education	0.009	0.008	0.009	0.009	0.010	0.012
	(0.019)	(0.019)	(0.014)	(0.014)	(0.017)	(0.017)
Marital Status	−0.036	−0.043*	0.027	0.022	0.051*	0.050*
	(0.022)	(0.022)	(0.016)	(0.016)	(0.020)	(0.020)
Has Children	0.032	0.040	0.010	0.017	−0.012	−0.005
	(0.024)	(0.024)	(0.018)	(0.018)	(0.022)	(0.022)
Social Support	0.074	0.110*	0.145***	0.181***	0.215***	0.253***
	(0.050)	(0.049)	(0.037)	(0.037)	(0.046)	(0.046)
Assets	0.023	0.019	0.004	−0.0003	0.006	0.002
	(0.017)	(0.017)	(0.013)	(0.013)	(0.016)	(0.016)
Observations	1,338	1,338	1,338	1,338	1,338	1,338
R^2	0.089	0.103	0.283	0.284	0.258	0.240

Notes: All models are estimated using OLS and include district fixed effects. *p<0.05; **p<0.01; ***p<0.001.

Table M.3: Associations between psychological distress and bonding social cohesion (women only outcomes)

	Dependent variable:					
	Gets Along with Neighbors		Community Understands You		Community Connection	
	(1)	(2)	(3)	(4)	(5)	(6)
Hyperarousal	−0.317***		−0.203**		−0.179***	
	(0.063)		(0.063)		(0.045)	
Hypoarousal		−0.248***		−0.230***		−0.159***
		(0.056)		(0.055)		(0.040)
Trauma Exposure	0.0003	−0.003	−0.0004	−0.002	−0.001	−0.002
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
Age	0.003	0.001	0.006**	0.006*	0.005**	0.004**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
College Education	−0.009	−0.015	−0.026	−0.033	−0.008	−0.012
	(0.029)	(0.029)	(0.029)	(0.029)	(0.021)	(0.021)
Marital Status	−0.016	−0.018	−0.029	−0.034	−0.029	−0.031
	(0.024)	(0.024)	(0.024)	(0.024)	(0.017)	(0.017)
Has Children	0.009	0.014	0.017	0.021	0.015	0.018
	(0.032)	(0.032)	(0.032)	(0.032)	(0.023)	(0.023)
Social Support	0.112	0.141*	0.157*	0.177*	0.097	0.113*
	(0.071)	(0.071)	(0.071)	(0.070)	(0.051)	(0.051)
Assets	0.047*	0.044*	−0.003	−0.007	0.014	0.012
	(0.022)	(0.022)	(0.022)	(0.022)	(0.016)	(0.016)
Observations	601	601	599	599	599	599
R^2	0.061	0.053	0.047	0.057	0.059	0.060

Notes: All models are estimated using OLS and include district fixed effects. *p<0.05; **p<0.01; ***p<0.001.