Connected by Trauma: Investigating the nature and effects of shared traumatic experiences

By

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Thesis
Submitted to Flinders University
for the degree of

Doctor of Philosophy (Clinical Psychology)

College of Education, Psychology and Social Work
24th January 2025

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Summary

People share traumatic experiences with others (e.g., natural disasters). Yet, research examining the nature and psychological effects of shared traumatic experiences is limited by narrow conceptualisations of sharing and a focus on specific trauma contexts. My thesis aimed to address these gaps by investigating how people share traumatic events and the potential psychological implications of sharing.

First, I identified the unique ways people share different traumatic events and assessed how, how often, and with whom people share traumatic events, and how often different shared experiences emerge from the same event (Chapter 3). I found that people perceive stressful/traumatic events as shared (i.e., subjective sharing) due to sharing the event physically (i.e., presence during the same event), emotionally (i.e., same/similar emotions), verbally (i.e., discussion/disclosure), relationally (i.e., experiencing a similar event), and attitudinally (i.e., same/similar attitudes, beliefs and/or opinions). Most participants shared their worst stressful/traumatic event in multiple ways, with close others, and with two to five people. These findings demonstrate that people share *a range of* traumatic events *often* and *in many unique ways*.

Second, sharing traumatic events is associated with both better and worse psychological functioning but most studies have examined shared experiences individually. Thus, I examined the link between several sharing forms and posttraumatic stress (PTS) symptomology across various traumatic events (Chapter 4). Sharing traumatic events verbally, physically, and emotionally was related to *less* severe PTS symptomology. Yet, physically sharing with a perpetrator (i.e., perpetrator present/involved) was related to *more* severe PTS symptomology. Hence, sharing traumatic events is related to lower PTS symptoms, but other people's role in such events could influence this relationship.

Third, existing research mainly uses simulated trauma to examine how psychological distance—i.e., people's social/spatial relationships—influences shared traumatic experiences. Therefore, I examined relationships between sharing, psychological functioning, and psychological distance, using a current real-world trauma (COVID-19 pandemic; Chapter 5). Participants subjectively, verbally, and relationally shared COVID-19 more with close others and relationships between subjectively, verbally, and relationally sharing COVID-19 were stronger amongst close others. Although subjective and verbal sharing were related to poorer psychological functioning overall, subjectively sharing COVID-19 *with household members* was related to better psychological functioning. Therefore, the extent of sharing COVID-19, relationships between different sharing forms, and relationships between sharing COVID-19 and psychological functioning, differed based on people's social/spatial relationships.

Finally, although physically sharing trauma is common, few studies have focused on physical sharing in *online* settings. Thus, I experimentally investigated the psychological effects of viewing a traumatic event virtually with vs. without other people (Chapter 6). Physically sharing traumatic content did not influence psychological functioning differently to viewing the content alone, aside from PTS symptomology which was lower when shared. Thus, physically sharing traumatic content virtually buffers traumatic stress symptoms.

Overall, my thesis demonstrates that: 1) people commonly share traumatic events in many unique ways, 2) shared experiences are inter-related, 3) social/spatial relationships influence links between sharing traumatic events and psychological functioning, and 4) physically sharing traumatic content virtually can reduce traumatic stress reactions. Conceptually, my research reveals a novel holistic framework for investigating shared traumatic experiences. Methodologically, my thesis highlights the importance of examining shared experiences individually and together across numerous traumatic contexts. Clinically, my findings suggest that shared experiences inform how we conceptualise and treat PTSD.

Declaration

I certify that this thesis:

1. does not incorporate without acknowledgment any material previously submitted or

    degree or diploma in any university; and

2. the research within will not be submitted for any other future degree or diploma

    without the permission of Flinders University; and

3. to the best of my knowledge and belief, does not contain any material previously

    published or written by another person except where due reference is made in the text.

Signed:

Nadine Patricia Hutchison

Date: 26/09/2024

Acknowledgement of Country

I would like to acknowledge that this work was produced on the lands of the Kaurna nation. I recognise the Traditional Custodians of the land where my research was conducted and pay my respects to their Elders past, present, and emerging.

Acknowledgments

First, I would like to thank my supervisor, Professor Melanie Takarangi. You are undoubtedly the reason I fell in love with research and have made it to where I am today. Your wisdom, passion, and leadership are truly inspiring. Thank you for your unwavering generosity and guidance, for building my confidence as a researcher, for pulling me out of conceptual spirals, for celebrating every achievement, and for being there for me when life got tough. Most of all, thank you for creating a lab that is built on support, trust, laughter, and good quality wine. I feel so lucky to be a part of this beautiful family.

To the Takarangi Lab, thank you for making my PhD an experience I will cherish for the rest of my life. I am extremely grateful to be surrounded by so many strong, intelligent, and compassionate women. To my big sisters (Sasha, Ella, Deanne, Victoria, Taylor, Di), thank you for your invaluable advice and continual encouragement. You are all amazing role models not only to me, but to the entire lab. To my little sisters (Sarah, Izzy, Sasha), thank you for supporting me both emotionally and practically, and for allowing me to be a part of your research journey. I have no doubt you will all achieve great things in the future. To my fellow middle sisters (Lucy, Nadine, Erin, Catherine), thank you for the lunch dates, the wild adventures, the continual reassurance and cheerleading, and for always making me smile. You kept me grounded and strong through it all. In particular, to my twin, Lucy, thank you for always being by my side. From practically living in the lab together in Honours to encouraging each other's shopping addictions during COVID-19, navigating our first clinical placement, having lengthy talk times in our office, and attending international conferences—we shared it all! You are an incredible researcher and a truly special friend.

To my associate supervisor, Professor Emma Thomas, thank you for supporting me throughout my thesis journey. Your wealth of knowledge and advice have been invaluable, and your enthusiasm and kind words gave me strength and confidence when I needed it most.

To the clinical team, particularly Professor Reg Nixon and Professor Michael Gradisar, thank you for passing on your clinical knowledge and skills and for teaching me the importance of self-care. I can only hope to be as good of a clinician as you both are someday. To my clinical cohort, I am grateful to have such wonderful people to learn and practice my clinical skills with. Thank you for your patience and kindness. I acknowledge the contribution of an Australian Government Research Training Program Scholarship for funding my candidature.

To all my friends and family outside of the research and clinical world, thank you for your endless love and support during the last four and a half years. To my mum and dad, thank you for believing in me, for providing me with respite and comfort, and for the endless hugs and laughs. To my brother, Sam, and sister, Georgia, thank you for your wicked humour, your words of encouragement, and the much-needed distractions. To my best friend, Emily, thank you for being my soundboard, my counsellor, my wine and cheese sponsor, and everything in between. Thank you for always being there for me. To my fluffy friends, Saffy, Lily, Angus, and Max, thank you for your endless cuddles and for reminding me that there is more to the world than this thesis.

Last, to my partner, Corey, thank you for everything. You are my rock, my hype guy, and my greatest source of strength. Thank you for listening to my late-night research tangents, for helping me dance my troubles away, for travelling the world with me, and for trying to remember my study numbers so you know which one I'm babbling on about. You made me laugh, you held me when I cried, and you made me feel loved every day. We've been through it all during this time and I know we will face any new challenges with the same hope and courage that guided us through this one. I couldn't have done it without you.

Here's to the next chapter!

Publications

Hutchison, N. P., Thomas, E. F., & Takarangi, M. K. T. (2024). The Nature of Shared Traumatic Experiences: When, how, and how often do we share trauma with others? *Psychological Reports, 0*(0), https://doi.org/10.1177/00332941241301357.

Hutchison, N. P., & Takarangi, M. K. T. (2024). *Investigating the relationship between shared traumatic experiences and PTS symptomology.* Manuscript submitted for publication.

Hutchison, N. P., & Takarangi, M. K. T. (2024). *Sharing COVID-19: A cross-sectional study on the importance of psychological distance in sharing COVID-19.* Manuscript submitted for publication.

Hutchison, N. P., & Takarangi, M. K. T. (2024). *Does virtually sharing trauma influence psychological functioning?* Manuscript submitted for publication.

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Chapter 1: Literature Review

Humans are social beings, driven to connect with people. We share countless positive and negative experiences with others throughout our lives, such as sports games, work stressors, and television shows. We even share traumatic experiences. For instance, we often share the death of a loved one, natural disasters, and vehicle accidents with people. But what does *sharing* entail? The term sharing encompasses many different social practices. For instance, sharing can refer to having the same experiences or feelings as other people or telling other people about personal experiences, ideas, or feelings (Oxford University Press, n.d.; Cambridge University Press, n.d.). Thus, in traumatic contexts, sharing may involve witnessing the same dangers as others, feeling the same intense fear as others, or talking about what happened during a traumatic event with others.

Indeed, a wealth of scientific literature demonstrates that traumatic events can be shared in these ways (e.g., Davidson & Moss, 2008; Drury, 2018; Pelletier, 2018; Rimé et al., 2010; von Scheve & Salmella, 2014). Importantly, approximately 70% of people are exposed to a traumatic event at some point in their lives and around a third experience three or more traumatic events (Bromet et al., 2018). Such exposure to traumatic events can cause Posttraumatic Stress Disorder (PTSD), which is characterised by four symptom clusters: re-experiencing (e.g., flashbacks), avoidance of stimuli (e.g., places) related to the trauma, negative alterations to cognition and mood (e.g., difficulty remembering event details, inability to experience happiness), and alterations in arousal and reactivity (e.g., hypervigilance, anger outbursts; American Psychiatric Association [APA], 2022). Although people tend to demonstrate psychological resilience following exposure to traumatic events—with 6.1% to 8.3% of people estimated to develop PTSD during their lifetime—people commonly experience posttraumatic stress (PTS) symptoms without meeting PTSD criteria (e.g., APA, 2022; Bryant et al., 2017; McMillen et al., 2000). Other psychological

reactions—such as phobic responses (e.g., Garcia, 2017), dissociation (e.g., Bremner & Brett, 1997), depressive symptoms (e.g., Tracy et al., 2011; 2014; APA, 2022), and substance use disorders (e.g., Basedow et al., 2020)—can also arise from exposure to traumatic events. Hence, investigating sharing in traumatic contexts is critical for understanding how people experience traumatic events and what factors influence people's mental health following such events.

Despite countless studies exploring the nature and effects of sharing traumatic events, the terms, concepts, methodologies, and contexts used to examine shared experiences vary considerably. Due to this variation in research approaches, we don't know how people share traumatic events with others in different ways, whether and when these shared experiences are inter-related (i.e., multiple shared experiences emerging from a single traumatic event and/or influencing one another), or what the unique and cumulative effects of sharing traumatic events in different ways are. My thesis aimed to address these issues. In the following sections, I review existing scientific literature on this topic to establish our current understanding of the nature and effects of sharing traumatic events. I first review research on sharing for mass traumatic events—which are typically social experiences that involve and affect many people, and then turn to research on individual traumatic events—which appear to be more solitary by nature. I then outline several limitations of the existing research and how my thesis sought to overcome these limitations.

Notably, the definition of a "traumatic event" has evolved within the scientific literature and clinical practice over the past several decades. Currently, what constitutes a traumatic event ranges from specific experiences—such as DSM-5 Criterion A for PTSD, i.e., "exposure to actual or threatened death, serious injury, or sexual violence" (APA, 2013; Galatzer-Levy & Bryant, 2013)—to events that simply have the potential to cause reactions that significantly impact people's lives—such as any events that elicit posttraumatic stress

(PTS) symptoms (e.g., Carlson et al., 2013; for reviews, see Dalenberg et al., 2017 and Marx et al., 2024). Some researchers use the term *potentially traumatic events* to bridge the gap between these different definitions of a traumatic event, however even this term is used inconsistently (e.g., referring to Criterion A events that can elicit PTS symptoms vs. any negative events that can elicit PTS symptoms; e.g., Knipscheer et al., 2020; Nilsson et al., 2010; Ogle et al., 2013; Shipherd et al., 2011). A detailed discussion of how best to define a traumatic event is beyond the scope of my research. Thus, my thesis considers both specific and broad definitions of a traumatic event to capture a wide variety of shared traumatic experiences. Yet, to clearly separate these different definitions, I operationalise *traumatic* events based on DSM-IV or DSM-5 Criterion A for PTSD (APA, 2000; 2013) and use the term *stressful* events for all other events that could elicit PTS reactions.

Sharing Mass Traumatic Events

The harsh summer sun blazes down upon the farm whilst the wind rips through the trees. Your family lounges inside to escape the heat when suddenly you are notified of a nearby bushfire. You immediately tell your family and witness the shock on their faces, mirroring your own expression. Everyone turns to the window and gasps at the smoke emerging in the distant hills. You follow the evacuation plan and quickly flee. Eventually, you reach the evacuation site to see hundreds of community members gathered and supporting one another through their losses. The fire takes two days to control, leaving devastation in its wake.

This is an example of a mass traumatic event: an innately shared experience. Mass traumatic events—such as natural disasters, terrorist attacks, fires, public health emergencies, and riots—are catastrophic events that involve and affect entire groups (e.g., religious or ethnic groups), communities (e.g., neighbourhoods or towns), and/or societies (e.g., countries; see Hoffman & Kruczek, 2011; Shalev et al., 2004). These large-scale events are

often also termed *collective traumatic events* (e.g., Rimé et al., 2010), *public emergencies or disasters* (e.g., Drury et al., 2019), *community disasters* (e.g., Adams & Boscarino, 2005) and *mass emergencies, disasters*, *violence, or conflict* (e.g., Drury, 2018; Srinivasa Murthy, 2007). However, given some terms lack clear and consistent definitions and are limited to specific contexts (e.g., only disasters; Cypress, 2021; Shalev et al., 2004), I use the broader term *mass traumatic events* hereon to describe such large-scale catastrophic events.

Mass traumatic events elicit several sharing processes, encompassing social experiences, reactions, and consequences. Indeed, during and following mass traumatic events, groups of people acknowledge they are simultaneously exposed to the same terrors (common fate), engage in discussions about the event (social sharing), express the same emotions in response to the event (emotional synchronisation), and identify with one another as victims of the traumatic experience (social identification). Here, I review existing literature on these sharing processes to illustrate the nature and effects of sharing mass traumatic events.

Common fate

Many people are both directly and indirectly exposed to mass traumatic events, which can create a sense of *common fate* between such people (Drury, 2012; 2018; Drury et al., 2015; Turner et al., 1982; Williams & Drury, 2009). That is, people in the same traumatic situation can perceive and recognise that they are experiencing the same danger, threat, or adversity as others (e.g., Drury, 2018; Drury et al., 2019; Fritz & Williams, 1957; Ntontis et al., 2018). This sense of common fate has been identified in traumatic events including bombings (Drury et al., 2009b), floods (Ntontis et al., 2018), earthquakes (Drury et al., 2016), riots (Reicher, 1996), and stadium disasters, fires, and sinking ships (e.g., Drury et al., 2009a). People can experience a sense of common fate during and in the aftermath of mass traumatic events. For instance, in the 2015-2016 Great Britain and Ireland floods, a sense of

common fate amongst community members emerged through their similar direct flood experiences and similar secondary stressors (e.g., looting incidents) resulting from the floods (Ntontis et al., 2018). Thus, a sense of common fate between victims can transform a traumatic event that is simply *experienced* by many people, to an event that is *shared* amongst a group of people.

Social sharing

Mass traumatic events can also be *socially shared*. In other words, people talk to others about what they experienced and how they felt during and following exposure to a mass traumatic event (Rimé et al., 1991; 1998). Such sharing has been documented in events including the 1989 San Francisco earthquake (Pennebaker & Harber, 1993), the Gulf War (Pennebaker & Harber, 1993), the COVID-19 pandemic (e.g., Kim et al., 2022), and the 2004 Madrid and 2015 Paris terrorist attacks (Garcia & Rimé, 2019; Rimé et al., 2010). Emotions elicit a need to talk about them (Rimé, 2009), meaning all group members who are affected by a traumatic event can be motivated to socially share the event. In fact, socially sharing emotional experiences can promote further social sharing (i.e., secondary and tertiary social sharing) by reactivating felt emotions in people who were directly exposed to the experience and eliciting emotional responses in those who were not exposed (Rimé, 2007; 2009). The widespread coverage of mass traumatic events in the media can also enhance people's emotional responses and subsequent desire to socially share the event (Echterhoff, 2009; Rimé, 2007; Rimé et al., 2020). Hence, mass traumatic events often create a chain reaction of social sharing. Indeed, people frequently socially share mass traumatic events during and shortly after those events have occurred (e.g., Pelletier & Drozda-Senkowska, 2016; Pennebaker & Harber, 1993; Rimé et al., 2010; Xie et al., 2017). People socially share traumatic events through many mediums including in-person (e.g., Pennebaker & Harber, 1993; Rimé et al., 2010), in writing (e.g., letters; Hanna, 2003), and virtually (e.g., social

media, phone calls; Cantwell & Kushlev, 2021; Garcia & Rimé, 2019; Kim et al., 2022; Pelletier & Drozda-Senkowska, 2016). Furthermore, although people can socially share mass traumatic events with all affected group members, people tend to socially share these events with people they are close to, such as partners, friends, and colleagues (Pelletier & Drozda-Senkowska, 2016; Rimé, 2009). Many also speak to emergency responders about the event to receive professional advice and support (Drury et al., 2019). Therefore, overall, people frequently socially share their experiences and emotions of mass traumatic events with other people. These discussions often involve close others and can occur online and offline (e.g., Pelletier & Drozda-Senkowska, 2016).

Emotional synchronisation

In addition, mass traumatic events can cause people's emotional states to synchronise, meaning the affected group, community, or society experience a *collective emotion* (similar terms include *group-based emotions*, *group/shared affect*, *emotional synchronisation, emotional convergence*; for reviews, see von Scheve & Ismer, 2013 and von Scheve & Salmella, 2014). For instance, during and following the 2015 Paris terrorist attacks (Garcia & Rimé, 2019), COVID-19 pandemic (Metzler et al., 2022; Stanley et al., 2021), and Rwandan genocide trials (Nils & Rimé, 2012), members of the same community expressed similar emotions of anxiety, sadness, and fear synchronously. Shared emotional experiences have been investigated for centuries (see von Scheve & Salmella, 2014). Émile Durkheim (1912) was particularly influential in this field. He proposed that during emotional events (e.g., rituals, celebrations), people synchronise their thoughts and behaviours (e.g., gestures, verbal communication), causing them to reciprocate each other's emotions and in turn, experience *collective effervescence*—a shared positive emotional state, a sense of belonging, and social consensus within a group. More recent conceptualisations of shared emotions that extend to traumatic events highlight similar mechanisms to those Durkheim suggested. Specifically,

researchers argue that directing attention towards an emotional event (i.e., shared attention), imitating others' expressions, behaviours and feelings (i.e., facial mimicry, neural mirroring), and catching emotions from others (i.e., emotional contagion) all contribute to synchronising emotional states in a group (e.g., Collins, 2004; Goldenberg et al., 2020; Hatfield et al., 2014; Shetynberg, 2018; von Scheve & Salmella, 2014; Wlodarczyk et al., 2020). These mechanisms elicit both actual synchronisation (i.e., collective emotions) and subjectively perceived synchronisation (i.e., *perceived emotional synchrony*; Páez et al., 2015) of emotional states during mass traumatic events (von Scheve & Salmella, 2014). Emotional synchronisation can arise from the presence of other people (e.g., Hatfield et al., 2014; Wlodarczyk et al., 2020) and virtual communication between people (e.g., social media posts; Stanley et al., 2021; Garcia & Rimé, 2019). Altogether, this research demonstrates that people's emotional states can synchronise during and following mass traumatic events. Such emotional synchronisation can develop through shared attention, facial and behavioural mimicry, and emotional contagion, both in-person and virtually.

Inter-relations of shared experiences – mass traumatic events

Shared experiences involving a sense of common fate, social sharing, and emotional synchronisation are common in mass traumatic events and are inter-related, meaning they can influence and involve one another. Specifically, experiencing a sense of common fate with people exposed to the same mass traumatic event can encourage people to socially share the event (e.g., Paton & Irons, 2016). Such discussions may even strengthen a sense of common fate by allowing people to recognise similarities in their experiences and circumstances with others. Indeed, in the case of the Mad Gasser of Mattoon event, social sharing elicited a sense of common threat and subsequent emotional synchronisation in the Mattoon community (Bartholomew & Victor, 2004). In particular, news of several apparent gas attacks rapidly spread through discussions amongst community members and the media, which generated a

belief that a shared threat was present in the community, and in turn elicited collective anxiety across the town. No other research appears to have demonstrated direct links between common fate and either social sharing or emotional synchronisation regarding mass traumatic events. Yet, the link between social sharing and emotional synchronisation is well-supported in the literature. Many theories posit that discussing mass emotional events can elicit similar emotional reactions in others and a subsequent alignment in people's emotional states (e.g., Durkheim, 1912; Hatfield et al., 1994; Páez et al., 2015). Further, socially sharing a mass traumatic event can convey and reinforce actual and perceived emotional synchronisation between people (e.g., Garcia & Rimé, 2019; Metzler et al., 2022; Páez et al., 2015; Rimé, 2007; Rimé et al., 2010). Whilst it is likely common for emotional synchronisation to arise from a sense of common fate or social sharing, emotions can also be observed through non-verbal communication (e.g., facial expressions, gestures; Durkheim, 1912; Hatfield et al., 1994). These non-verbal cues could strengthen people's sense of common fate and prompt social sharing about a mass traumatic event. Hence, sharing mass traumatic events through common experiences, discussions, and similar emotions can overlap, underpinned by the shared nature and experiences of these events.

Social identification

Importantly, these shared experiences are all associated with the emergence of *shared social identities* during and following mass traumatic events. Social identification occurs when people define themselves as members of particular social groups based on their similarities and the emotional significance and value they attribute to the group. The concept of social identification stems from Social Identity Theory (SIT; Tajfel & Turner, 1979) and Self-Categorization Theory (SCT; Turner et al., 1987), which have been combined to become the Social Identity Approach (SIA; see Reicher et al., 2010). By identifying with a particular social group, people extend their self-concepts from the individual to the social world,

perceiving themselves as "we" rather than "I" (e.g., Hogg, 2016; Reicher et al., 2010). These social identities determine and guide who members are, what they should believe, and how they should behave towards each other (in-group) and other social groups (out-groups; Hogg, 2016). A sense of common fate, social sharing, and emotional synchronisation all contribute to the development, shifts, and implications of social identities concerning mass traumatic events.

The Social Identity Model of Collective Behaviour in Emergencies and Disasters (SIMCBED; previously known as the Social Identity Model of Collective Psychosocial Resilience; Drury, 2012; 2018; Williams & Drury, 2009) posits that a sense of common fate facilitates social identification between victims of a mass traumatic event. That is, perceiving threat or danger as shared amongst others during and following a mass traumatic event can lead people to perceive themselves as similar (see Ntontis et al., 2020). This sense of commonality causes previous social boundaries between people to dissolve, allowing a new social identity to form (Drury, 2012; 2018; Drury et al., 2019; Fritz & Williams, 1957; Paton & Irons, 2016; Walker-Springett et al., 2017). These shared social identities are often termed *collective identities* (e.g., Hirschberger, 2018) but similar concepts exist within the literature where such communities are conceptualised as *altruistic communities* (e.g., Barton, 1969), *therapeutic communities* (e.g., Fritz, 1996), *disaster communities* (e.g., Wright et al., 1990), and *emergent groupness* (e.g., Drury, 2018).

Moreover, social sharing is implicated in processes that emerge from social identification, particularly communal coping and social support. Indeed, one dominant feature of communal coping is social sharing because it allows people to exchange and integrate their knowledge and experiences to generate a shared appraisal about the event and address the traumatic situation (Lyons et al., 1998; Wlodarczyk et al., 2016). Similarly, social support often involves communicating with others—like providing advice or expressing

concern about someone's injury or mental health (e.g., Ntontis et al., 2018). Thus, social

sharing is involved in helping behaviours that arise as communities develop a shared social

identity in response to mass traumatic events. Crucially, social sharing also plays a role in

shaping and reinforcing these social identities (e.g., Maliepaard & Phalet, 2012; Páez et al.,

2015; Wetherell & Mohanty, 2010).

Finally, drawing on Durkheim's (1912) theory of collective effervescence, emotional

synchronisation can strengthen social identification by creating a sense of social consensus

and group belonging amongst people. Consistently, perceived emotional synchronisation

enhances collective identities, social integration, and socioemotional climates (e.g., solidarity,

mutual helping; Páez et al., 2015; Pelletier, 2018). In fact, emotional synchronisation and

social identification appear to have a bidirectional relationship (see von Scheve & Salmela,

2014). That is, shared emotions help form collective identities through perceptions of

similarity and unity (e.g., "we feel the same", "we are the same") and collective identities

influence how groups express emotions (Collins, 2004; Rossano, 2012; von Scheve & Ismer,

2013; von Scheve & Salmela, 2014). Thus, overall, people can share mass traumatic events

by identifying with others who are or were affected by the same event. This shared social

identification can arise from and cause other shared experiences that emerge during and

following mass traumatic events.

Effects of sharing

Many of the effects of sharing mass traumatic events are attributed to the formation

and strengthening of shared social identities from such events. These effects include both

positive and negative outcomes for people's social and psychological functioning. I draw

from existing empirical research and theoretical models—including the Social Identity Model

of Collective Behaviour in Emergencies and Disasters [SIMCBED; Drury, 2012; 2018;

Williams & Drury, 2009], Collective Action [SIMCA; van Zomeren et al., 2008], and

Traumatic Identity Change [SIMTIC; Craig et al., 2022], as well as the Elaborated Social Identity Model of Collective Action [ESIMCA; Thomas et al., 2012]—to review the effects of social identification emerging from mass traumatic events here.

Positive effects

　　Social identification amongst mass traumatic event victims can facilitate and strengthen shared knowledge and shared goals, which can be crucial when addressing the aftermath of the event (Drury, 2018; Hardin & Higgins, 1996; Ntontis et al., 2018; Reicher, 2011; Swaab et al., 2007). That is, when individuals within a community identify with each other in the context of a mass traumatic event, they are more likely to share their knowledge and experiences, which in turn can lead to a collective understanding of the event. This shared knowledge can help the community align on common goals, such as recovery or advocacy, which is especially important when addressing the long-term consequences of the trauma. Social identification also increases validation amongst groups, encouraging members to agree on different issues and trust each other's judgments (e.g., prioritising tasks and who needs medical attention; Drury, 2018; Drury et al., 2009b). Further, social identities can elicit collective efficacy—i.e., feelings of empowerment and perceived resilience (Drury, 2012; 2018; Williams & Drury, 2009; van Zomeren et al., 2008)—as well as social identity revitalisation—i.e., the reinvigoration of the value given to a social identity (Muldoon et al., 2019). Critically, social identity revitalisation and collective efficacy promote post-traumatic growth, whereby people experience positive and meaningful psychological shifts in how they think about themselves and the world following exposure to challenging or traumatic life events (Craig et al., 2022; Muldoon et al., 2017; 2019; Tedeschi & Calhoun, 2004). Hence, when individuals perceive themselves as part of a larger, empowered group, they are more likely to find meaning in their experiences and adopt positive changes in their worldview.

This process helps individuals cope with the immediate consequences of trauma and facilitates long-term psychological healing.

Social identification also fosters solidarity and social cohesion amongst mass trauma victims, which typically involve cooperation and collective action (i.e., actions to improve conditions or achieve group goals; e.g., Drury et al., 2009b; 2018; Drury & Reicher, 1999; Gilligan et al., 2014; Jetten et al., 2020; Levine & Manning, 2013; Thomas et al., 2012; van Zomeren & Iyer, 2009). Such cooperation and collective action are often exhibited through social support (e.g., support groups), volunteer and community services (e.g., cleaning-up and rebuilding towns), rallies, petitions, and donations (Thomas et al., 2012; van Zomeren et al., 2008). Collective action is particularly important because it is a key contributor to collective psychosocial resilience (Drury, 2012; Williams & Drury, 2009). Indeed, the formation and strengthening of social identities fosters expected social support from group members and the provision of emotional support (i.e., expressing empathy, trust, and concern) and coordinated support (via expected support; i.e., providing help with tangible aid and service; Drury, 2018; Ntontis et al., 2018; see House & Kahn, 1985). Such support protects against PTSD development (e.g., Brewin et al., 2000; Ozer et al., 2003; Schumm et al., 2006; Wind & Komproe, 2012). Moreover, participation in collective gatherings (e.g., protests) can increase social integration, hope, solidarity, and trust in a group, and enhance posttraumatic growth (Gasparre et al., 2010; Páez et al., 2007; Rimé et al., 2010; Wlodarczyk et al., 2016). In addition, collective gatherings involve perceived emotional synchronisation, which strengthens collective identification, social integration, personal and collective self-esteem and self-efficacy, positive affect, social support, and positive social beliefs and values (Páez et al., 2015; Pelletier, 2018). Thus, sharing experiences and identities with others in the face of a mass traumatic event has primarily positive social and psychological effects for people's functioning, encouraging resilience and growth.

Negative effects

Negative social and psychological consequences can also arise following a mass traumatic event. One particularly common and harmful consequence of mass traumatic events is *collective trauma* (also termed *mass, historical, complex, social, national, cultural, intergenerational, transgenerational, intergroup,* and *indigenous trauma*; see Cypress, 2021). Collective trauma refers to the significant psychological distress caused by a potentially harmful or life-threatening event that an entire group, community, or society experiences (APA, 2022; Cypress, 2021; Saul, 2022). This distress can tear a group's "social fabric", damaging bonds, altering group dynamics, and reducing a sense of communality between people (Erikson, 1976; 1979; Erikson & Vecsay, 1980; Szy, 2018). Collective trauma can diminish people's sense of belonging to a group and the perceived value of the group, reducing social support availability and weakening people's resilience towards developing PTSD and posttraumatic stress (PTS) symptoms (Haslam et al., 2005; 2012; Hirschberger, 2018; Jetten et al., 2020; Muldoon et al., 2019). Collective trauma also elicits a collective memory of the trauma. That is, people directly and indirectly exposed to a large-scale traumatic event continually recollect and reconstruct the event during and long after its occurrence to make sense of what happened (Finkenauer et al., 1997; Hirschberger, 2018). The memories and effects of a collective trauma can be transmitted from victims to younger generations, extending the trauma's impact (i.e., transgenerational/intergenerational trauma; Hirschberger, 2018; Yehuda & Lehrner, 2018). Thus, although sharing a mass traumatic event with other people can have many positive consequences for victims, the overall shared nature of the event can have detrimental and long-lasting consequences to the affected community.

Clinical effects

On a final note, sharing mass traumatic events has also been investigated within health professions. Following the September 11 terrorist attacks, the term *shared traumatic reality* (also known as *shared reality* and *shared trauma*) emerged to describe experiences in which mental health clinicians (e.g., social workers, psychologists) are both directly (via personal experiences) and indirectly (via clients' experiences) exposed to a mass traumatic event (Baum, 2010; 2014; Goelitz, 2022; Tosone et al., 2012). Shared realities have emerged in wars (e.g., Freedman & Mashiach, 2018), health pandemics (i.e., COVID; e.g., Tosone, 2020), natural disasters (e.g., Goelitz 2022), and terrorist attacks (e.g., Shamai & Ron, 2008). Such experiences can have both positive effects (e.g., enhancing clinical skills, resilience, self-care, compassion, connection with clients) and negative effects (e.g., compromised professional competence, exacerbated trauma symptoms) on clinicians' psychological and occupational functioning (Bauwens & Tosone, 2010; for a review, see Goelitz, 2022). This experience is associated with common fate and social sharing, in that clinicians and their clients experience the same threat and discuss the clients' experiences of the traumatic event (e.g., Cohen et al., 2015; Freedman & Mashiach, 2018; Tosone et al., 2012). Therefore, clinicians can share a mass traumatic event by experiencing the same event as, discussing the event with, and feeling the same emotions about the event as, the client they are supporting.

Summary

In conclusion, sharing in the context of mass traumatic events has been extensively investigated, highlighting that these events are, by nature, shared experiences. Mass traumatic events affect large groups of people and tend to elicit perceptions of a common threat, social sharing of experiences and reactions, synchronisation of emotions, and common identities, amongst victims. These shared experiences are linked through their influence on and convergence with one another during and following mass traumatic events. Importantly,

sharing mass traumatic events in these ways, particularly through the formation and strengthening of shared social identities, has many positive implications for victims' social and psychological functioning (e.g., solidarity, posttraumatic growth). Yet, negative implications of merely experiencing such a large-scale, group traumatic event also exist (e.g., collective trauma). Furthermore, clinicians can share mass traumatic events with their clients through exposure to the same event, which can positively and negatively affect clinicians' mental health and practice. Overall, the scientific literature exploring mass traumatic events sheds light on the different ways in which people share traumatic events with others and the potential social and psychological consequences of such sharing.

Sharing Individual Traumatic Events

After a long day at work, you're dropping your colleague off on the way home. It's dark outside. The roads are wet and slippery. As you accelerate out of the intersection, you notice a car quickly approaching from your right. You slam on the brakes, but the car collides into your door. The impact sends the cars skidding across the intersection. The seatbelt cuts into your skin and the sounds of shattering glass and scraping metal fill the air. Once the car stops, you turn to find your colleague, covered in glass shards and looking just as terrified as you feel. You check that each other are ok and discuss what happened while you wait for help.

As demonstrated in the above narrative, smaller-scale traumatic events—such as physical and sexual assaults, accidents, and the sudden loss of a loved one—can also be shared between people. These events are often referred to as individual traumatic events, broadly defined as harmful or life-threatening events that cause significant emotional and psychological distress to a person (APA, 2022; Weisner, 2020). Such events can be experienced as a single event (e.g., car accident) or as repeated and prolonged events (e.g., domestic violence; e.g., Herman, 1992; Scheeringa, 2014). Unlike mass traumatic events,

which are typically characterised by *social* experiences, reactions, and implications (e.g., Drury, 2012; Erikson 1976; Mawson, 2005), individual traumatic events are not inherently social experiences. Individual traumatic events involve fewer people and are experienced on a personal rather than collective level, meaning they impact people differently based on people's unique experiences of the event (vs. common experiences within a group; Erikson, 1976). Nevertheless, individual traumatic events are not entirely solitary experiences either, only ever involving and affecting one person. They can be shared in similar ways to mass traumatic events, including through others' presence (e.g., Paterson & Kemp, 2006; Mauritz et al., 2013), discussions about the event (e.g., Rimé, 2009), and an alignment of people's emotional states during or following the event (e.g., Albuquerque et al., 2018). Additionally, individual traumatic events can be shared through similar experiences, whereby people know other people who have been exposed to a similar traumatic event to them (e.g., sexual assault; Konya et al., 2020).

Most research investigating the nature and effects of sharing individual traumatic events has focussed on unique ways of sharing, or "sharing concepts" (e.g., sharing physical presence, sharing via talking) separately, which differs from the holistic research approach used for sharing mass traumatic events. Individual traumatic experiences are more diverse than mass traumatic events—ranging from public accidents to deliberate, private assaults. Consequently, research examining sharing within individual traumatic events occurs in specific contexts, including eyewitness (e.g., Skagerberg & Wright, 2008), clinical (e.g., Konya et al., 2020), and simulated (e.g., Shteynberg et al., 2014) experiences. Further, many sharing concepts within the scientific literature on individual traumatic events appear similar. For example, several terms refer to experiencing the same or similar emotions about an event as other people (e.g., emotional contagion, emotional synchronisation, shared emotions; Durkheim, 1912; Hatfield et al., 1994; Kruger & Szanto, 2016). Therefore, in the next

section, I review current research on the nature and effects of sharing individual traumatic events by grouping existing sharing concepts into sharing via physical presence, talking, emotion, and similar experiences. I then discuss how these broad forms of sharing may be linked and how perceptual experiences and social and spatial relationships may influence people's experiences of sharing individual traumatic events.

Sharing via physical presence

As with mass traumatic events, people can be *physically present* during the same individual traumatic event simultaneously. For instance, people can witness another person being physically assaulted, both be passengers in a vehicle accident, or have a medical emergency at work. Indeed, many traumatic experiences occur through social interaction, known as *interpersonal traumas*. Interpersonal traumas typically involve events where a person is assaulted or violated by another person or a group; these experiences include emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse (Lilly & Valdez, 2012; Mauritz et al., 2013), and are common in both childhood (Australian Institute of Health and Welfare [AIHW], 2018; Curren et al., 2018; Finkelhor et al., 2013; Lewis et al., 2019; Hillis et al., 2016) and adulthood (AIHW, 2018; Benjet et al., 2016; Zlotnick et al., 2008). Interpersonal trauma can have detrimental and long-lasting effects to people's wellbeing, such as increasing suicidal behaviour, emotional and behavioural dysregulation, interpersonal difficulties, and risk of PTSD, depression, anxiety, and substance use disorders (e.g., Chen et al., 2010; D'Andrea, 2012; Dugal et al., 2016; Kilpatrick et al., 2000; Mauritz, et al., 2013). However, these effects are attributed to the harmful and distressing nature of the social interactions experienced (e.g., being physically restrained or attacked), rather than the mere presence of others during such events (Resick et al., 2014). Thus, while research on interpersonal trauma demonstrates that people commonly share traumatic events via others' presence, it does not provide insight into the potential

psychological implications of simply being present during the same individual traumatic event as others.

Moreover, we know people commonly *co-witness* criminal events—such as physical and sexual assault, robbery and theft, vandalism, homicide, and accidents. Between 86% and 88% of people who have witnessed a crime report co-witnessing the event with at least one other person (Paterson & Kemp, 2006; Skagerberg & Wright, 2008). In fact, multiple co-witnesses are often present during criminal events (Ms = 5.02-7.77). Co-witnessing a crime can have social consequences. For instance, co-witnessing a crime often elicits discussions between co-witnesses about their experiences, a process that has implications for witness memory reliability (e.g., Gabbert et al., 2003; Garry et al., 2008). Additionally, depending on the context (e.g., perceived dangerousness of event, communication), co-witnessing a crime can increase or decrease the likelihood that witnesses help victims (Darley & Latané, 1968; Fischer et al., 2011; Philpot et al., 2019; Stadler, 2008). Therefore, most people share criminal—likely also traumatic—events via the presence of multiple people and these shared experiences can have both positive and negative social effects. However, less is known about the *psychological* consequences (e.g., anxiety, stress) of co-witnessing criminal events.

Fortunately, some experimental research has investigated the social and psychological effects of sharing negative experiences via the presence of others. This research uses varying terminology to describe sharing via physical presence. For instance, the terms *co-experience*, *co-presence*, and *shared experience* are often used to describe situations where two or more people experience and/or participate in the same event (e.g., Boothby et al., 2016; Miao et al., 2021; Nahleen et al., 2019). Further, situations in which people direct their attention to the same object or stimulus simultaneously are referred to as experiences of *co-attention* (independently, without awareness; Shteynberg, 2015), *shared attention* (with awareness, perception of shared experience; Shteynberg, 2018), *group attention* (shared attention within

a group; Shteynberg et al., 2014), and *joint attention* (via communication and coordination; Mundy & Newell, 2007). Evidently, attending to the same event is *different* to experiencing or participating in the same event. However, these concepts often coincide. For instance, participation can involve or elicit attention towards the same object, like co-witnessing an assault. Moreover, shared attention can occur virtually (e.g., watching the news), which could represent a different kind of co-experienced event; an event that is experienced simultaneously with others through a shared *virtual* (vs. *physical/in-person*) presence. Given the overlap between these sharing concepts, I review the research on co-experience (incl. co-presence, shared experiences) and co-attention (incl. shared attention, group attention, joint attention) together.

A handful of experiments have investigated the effects of co-experiencing or co-attending simulated *negative* experiences (e.g., viewing negative images), but evidence arising from these studies is mixed. First, sharing negative events in the presence of others can positively affect social and psychological functioning. For example, co-experiencing failure (e.g., of a lottery task) promotes greater cooperation compared to experiencing failure alone (Miao et al., 2021). Further, believing negative images are being co-attended with others (vs. attended alone) increases positive affect and activates the neural reward system (associated with pleasure and satisfaction; Wagner et al., 2014). Second, people's negative experiences can amplify when co-attending to or co-experiencing the same negative event. For instance, co-experiencing the Cold Pressor Task increases pain intensity and sensory pain characteristics when compared to experiencing the task alone or whilst another person completes a different task (Martin et al., 2015; Nahleen et al., 2019). Similarly, believing negative videos are being co-attended with similar others (vs. alone or with dissimilar others) strengthens negative emotional responses (fear and sadness; Shteynberg et al., 2014). Moreover, reading or viewing negative service encounters (e.g., rude customer service)

involving others (vs. not involving others) exacerbates anger, reduces satisfaction, and increases tendencies to complain (Du et al., 2014; He et al., 2012). Third, people can react similarly when exposed to traumatic experiences in the presence and absence of others. For instance, viewing traumatic content with a partner or a friend does not affect people's psychological functioning (e.g., state anxiety, distress) differently to viewing the content alone (e.g., Woodward et al., 2017; 2024). Thus, experiencing a simulated negative event in the presence of others or when people's attention is simultaneously directed towards the event can influence people's psychological and social functioning in many ways.

Generally, we know people frequently share individual traumatic events through the physical presence of others. However, we know less about the specifics: how often, with whom, and when people share individual traumatic events in this way. Further, current findings on the effects of sharing via the presence of others have emerged in contexts involving other social factors (e.g., harmful interactions, talking). Such findings also reflect negative (i.e., experiences appraised as negative and often impact people's lives; Slotter, 2020), but not necessarily traumatic (i.e., experiences involving exposure to actual or threatened death, serious injury, or sexual violence; APA, 2022), contexts. Thus, the social and psychological effects of sharing an individual *traumatic* event via the *mere presence of others* remains unclear.

Sharing via talking

People can also *socially share* individual traumatic events, as with mass traumatic events. That is, people can talk about their experiences, feelings, and reactions relating to a personal traumatic event with others, both as it is occurring and afterwards. Sharing via talking has been extensively examined across the scientific literature, but—like with sharing via physical presence—many terms for this behaviour have emerged, such as *social sharing* (Rimé et al., 1991), *discussions* (Paterson & Kemp, 2006), *disclosures* (Pennebaker & Beall,

1986), and *expressions* (Seery et al., 2008). People commonly socially share traumatic events, including traffic, domestic, or work accidents (93%), bereavement (97%), childbirth (97%; see Rimé et al., 1998), and crimes (93% of eyewitnesses; Paterson & Kemp, 2006). Further, consistent with mass traumatic events, people socially share individual emotional (including negative/criminal) events to the greatest extent immediately after they have occurred and people tend to socially share emotional events with multiple people, especially people they are close to (e.g., parents, spouses; Davidson & Moss, 2008; Paterson & Kemp, 2006; Rimé, 2009; Rimé et al., 1991; 1998; Skagerberg & Wright, 2008). Moreover, people socially share such events both in-person and virtually (e.g., online messages, phone calls; Choi & Toma, 2014; Gorissen et al., 2023; Smith et al., 2015). Common motives for socially sharing emotional experiences include bonding with others, venting about experiences, rehearsing (or re-experiencing) the event, clarifying one's understanding of the event, finding meaning in the event, and providing and obtaining emotional (e.g., empathy), informational (e.g., advice), and tangible (e.g., practical help) support from others (Duprez et al., 2015; Paterson & Kemp, 2006).

Critically, many social and psychological effects can arise from talking about negative and traumatic events with others. To consolidate evidence for these effects, I consider research from several fields, which have used different terms to describe sharing via talking. In terms of social effects, discussing an emotional event creates an emotional experience for the listener, which can prompt further discussions about the event with other people (i.e., secondary and tertiary social sharing; Christophe & Rimé, 1997; Harber & Cohen, 2005; Rimé et al., 1998). Discussing traumatic events can also elicit social support from others, allowing sharers to feel understood and validated, and maintain and strengthen people's social relationships and connections (e.g., Rimé, 2009; Rimé et al., 2020; Skagerberg & Wright, 2008; Zech & Rimé, 2005). Further, discussing a negative experience

can elicit co-rumination (i.e., excessive and repeated discussion of personal problems between people, mutual encouragement of problem-talk, and an increased focus on negative feelings) which is linked to high quality relationships and social support (Rose, 2002).

This brings me to the psychological effects of sharing via talking. Disclosing traumatic experiences through writing improves general functioning, reduces psychological distress, hopelessness, depression, and unwanted intrusive thoughts, and strengthens positive and resilient self-perceptions (e.g., Frattaroli, 2006; Hemenover, 2003; Pennebaker & Beall, 1986). Further, discussing traumatic events is related to less traumatic stress and complicated grief (Davidson & Moss, 2008; Levi-Bells & Lev-Ari, 2019; Woodward et al., 2024) and discussing emotions in particular can help people gain a sense of understanding and meaning in their emotional experiences (e.g., Rimé, 2009; Duprez et al 2015; Sels et al., 2024). Despite these positive effects, negative effects of sharing via talking can also arise. For instance, talking about emotional experiences tends to reactivate negative feelings (e.g., fear) associated with the emotional experience and amplify negative affect and traumatic stress symptoms (Choi & Toma, 2014; Pennebaker et al., 2001; Woodward et al., 2017). Further, it is well known that co-witnesses' discussions about a crime often cause memory distortion due to witnesses unintentionally incorporating details of others' memories of the event into their own (i.e., memory conformity; e.g., Gabbert et al., 2003; 2004; Garry et al., 2008; Hewitt et al., 2013; Ito et al., 2019; Paterson et al., 2012).

Of note, the psychological effects of sharing via talking can be influenced by social factors. Specifically, sharers adjust better to emotional distress associated with a negative experience when listeners encourage cognitive work (e.g., considering the positive impact of the negative experiences, such as changes in legislation; Lepore et al., 2004; Nils & Rimé, 2012). However, receiving empathy from listeners enhances social integration and the sharer's perceived recovery from the event (Nils & Rimé, 2012). Relatedly, when seeking

support, having positive interactions with listeners—such as experiencing supportive listening—reduces the risk of developing PTSD, whereas having negative interactions—such as victim blaming, minimisation from others—increases this risk (e.g., Wagner et al., 2016). Further, discussing trauma with people who are at risk of developing PTSD can increase the sharer's vulnerability to PTSD development (Hoyt et al., 2010). Moreover, co-rumination involves dwelling on negative feelings and is associated with stress and depression symptomology (see Rose, 2021). Thus, both positive and negative social and psychological consequences emerge from sharing negative and traumatic experiences via talking and some of these effects may vary depending on the responses or experiences of others.

In summary, sharing individual negative and traumatic events via talking is common and is often experienced shortly after events (e.g., Paterson & Kemp, 2006; Rimé et al., 1991). Such sharing can occur virtually and in-person, and typically involves close others (e.g., Choi & Toma, 2014; Rimé, 2009). Many positive and negative social and psychological effects can arise from this sharing experience. However, most research concerning the nature and effects of sharing via talking has emerged in the context of negative and criminal events, rather than traumatic events. Examining these characteristics and effects using a trauma lens compared to a social sharing or eyewitness lens could extend our knowledge on this form of sharing within traumatic contexts.

Sharing via emotion

Again, consistent with mass traumatic events, people can share the *same or similar emotions* to other people about an individual traumatic event. There are several phenomena within the scientific literature that refer to the experience of sharing emotions with others, and may be relevant to individual traumatic events. Broadly, people are motivated to achieve a *shared reality* with others by experiencing common inner states—such as feelings, beliefs, judgements, and evaluations—about various objects, events, and/or experiences they

encounter (Echterhoff et al., 2017; Higgins & Pittman, 2008). Shared realities encompass both true experiences and perceptions of shared inner states. People are often motivated to achieve a shared reality to enhance their understanding of the world (epistemic motives) and foster connections with others (relational motives; Echterhoff et al., 2017; Hardin & Higgins, 1996). For instance, people can be motivated to hold the same opinions and beliefs about current world events (e.g., war) to learn new insights about such issues and feel closer to other people. Similarly, *shared emotion* is considered a social extension of emotion, characterised by the simultaneous expression and/or experience of the same or similar emotions between people (Kruger & Szanto, 2016; León et al., 2019; Thonhauser, 2018). Theorists suggest that shared emotions emerge from an awareness of other people's emotions, the convergence or integration of each other's emotional experiences, and a sense that "we are experiencing an emotion" (vs. "I am experiencing an emotion"; León et al., 2019; Schmid, 2014; Thonhauser, 2018). *Emotional synchronisation* (i.e., actual alignment of emotional states) and *perceived emotional synchronisation* (i.e., perceived alignment of emotional states) are also commonly experienced during social interactions (e.g., Durkheim, 1912; Hatfield et al., 1994; Páez et al., 2015).

Considerable research has investigated characteristics like how (e.g., emotional contagion; Hatfield et al., 2014) and when (e.g., co-experienced events; e.g., Wlodarczyk et al., 2020) people share experiences in these ways and the social and psychological effects of such sharing (e.g., social integration, positive affect; Páez et al., 2015). However, this work typically exists within the context of large-scale positive events (e.g., sports games; e.g., Drewery et al., 2022; Stieler & Germelmann, 2016) and mass traumatic events (e.g., public emergencies; e.g., Pelletier, 2018; Rimé et al., 2010). People likely share or synchronise their emotional states with others during and following individual traumatic events too—such as feeling similarly fearful when witnessing a physical assault. Yet, there is no evidence to date

to suggest that the nature and effects of *shared realities*, *shared emotions, emotional synchronisation,* or *perceived emotional synchronisation* extend to individual traumatic events.

Nevertheless, the more specific emotion-based concepts of *emotional contagion* and *emotional empathy* fit with the notion that individual traumatic events are shared via emotions. These concepts can be considered forms of broader concepts like *shared realities*, *shared emotions*, and *emotional synchronization* that represent distinct mechanisms and processes through which people share trauma via emotions. *Emotional contagion* refers to automatically and unconsciously mimicking and synchronising other people's expressions, vocalizations, postures, and movements, causing a convergence of emotions (Hatfield et al., 1994; 2009). Emotional contagion occurs in-person (e.g., Douglas, 2001) and virtually (e.g., Cheshin et al., 2011). Many negative experiences can elicit emotional contagion. For instance, within hospital settings, doctors and nurses can absorb anger from their colleagues, leaders, and patients, contributing to exhaustion and cynicism in their work (Petitta et al., 2017). Parents grieving their child's death can also absorb one another's emotions (Albuquerque et al., 2018). Additionally, children can "catch" their parents' fear of dentists (Lara, 2012) and people can experience pain from viewing images of potentially painful experiences and expressions of pain (e.g., Derbyshire et al., 2013). Hence, exposure to individual traumatic events may elicit emotional contagion.

Emotional empathy refers to people's ability to exhibit similar feelings to others and show compassion towards others (Cuff et al., 2016; Davis, 1980; Regehr et al., 2002). Importantly, in clinical settings, greater compassion shown towards a client's or patient's experience is associated with greater risk of developing secondary traumatic stress symptoms (e.g., negative beliefs about safety; MacRitchie & Leibowitz, 2010; Ogińska-Bulik et al., 2022; Thomas & Wilson, 2004). These symptoms arise from indirect exposure to trauma

(e.g., witnessing or learning about a traumatic event) via a close or extended contact or a client or patient (Branson, 2019; Figley, 1983; McCann & Pearlman, 1990). Thus, indirect exposure to trauma is linked to a component of emotional empathy and may even be linked to emotional empathy in general—which includes sharing similar feelings to others. Accordingly, indirect exposure to individual traumatic events may encourage people to share the same or similar emotions about the event.

In general, we know people aim to align their feelings about personal experiences and events with other people, to foster understanding and connection (Echterhoff et al., 2017). Further, extant research suggests that people's emotional responses to negative, and potentially traumatic, events can become contagious (Hatfield et al., 1994), and that empathising with others' traumatic experiences can create traumatic reactions in those indirectly exposed (e.g., MacRitchie & Leibowitz, 2010). However, the specific nature and effects of merely sharing emotions relating to an individual traumatic event is yet to be investigated.

Sharing via similar experiences

Finally, people can share traumatic events asynchronously through *similar experiences*. That is, people can know others who have experienced an event similar to their own experience, that took place at a different time and location, such as a sexual assault or accidental injury. Unlike other forms of sharing, sharing via similar experiences seems particularly relevant to individual, rather than mass, traumatic events. People commonly interact with others in their community (e.g., friends, colleagues, family), and in doing so, may learn about traumatic experiences that others have encountered. However, mass traumatic events impact entire communities, meaning sharing via similar experiences may be less common for mass trauma—e.g., learning about overseas family members experiencing a bushfire one year after a bushfire hit your town—than individual trauma—e.g., learning

about a friend's sexual assault. That is, it may be uncommon for people to learn that others have experienced a similar, but not the same, mass traumatic event as them (e.g., bushfires, floods) because most people they know experienced the same mass event. No research to my knowledge has explored this form of sharing within mass traumatic events, but it is important to note that such events could be shared in this way.

Fortunately, there is some evidence for sharing via similar experiences for individual traumatic events, which is generally referred to as *common*, *similar*, or *shared experiences* (Bartone et al., 2019; Konya et al., 2020; van de Ven et al., 2021). People often seek to connect with others who have experienced a similar event to them, via peer support. Specifically, people with similar experiences give and receive support to each other to make sense of, and recover from, their experiences (Mead et al., 2001; Pemberton et al., 2019; Solomon, 2004). Peer support involves discussions of experiences and emotions between peers and is based on principles of respect, trust, shared responsibilities, and mutual support (MacNeil & Mead, 2005; Mead & MacNeil, 2006; Solomon, 2004). It can take many forms, from online groups and forums to in-person groups, lectures, and activities, and can be led by peers or professionals (for reviews, see Bartone et al., 2019 and van de Ven et al., 2021). Peer support groups have emerged amongst sexual assault survivors (Konya et al., 2020), ICU survivors of COVID-19 (Hope et al., 2021), relatives of sexual abuse material offenders (Jones et al., 2023), people experiencing bereavement (e.g., Bartone et al., 2019), and survivors of suicide, crime, and traffic accidents (van de Ven et al., 2021). Most of the effects of participating in peer support groups are positive. For instance, receiving peer support normalises people's experiences and can reduce anxiety, avoidance behaviour, and feelings of isolation, shame, and loneliness as well as increase personal growth, self-respect, and trust in others (Bartone et al., 2019; Konya et al., 2020; van de Ven et al., 2021). In fact, peer support can be perceived by victims as more beneficial than other sources of support (e.g.,

professionals like counsellors or therapists) and can increase victims' satisfaction in helping their peers (Bartone et al., 2019; Konya et al., 2020). Yet, participation in peer support groups can also lead to negative outcomes—such as feeling distressed from hearing about other members' experiences, frustration towards other group members, and poor rapport with group facilitators (Konya et al., 2020; van de Ven et al., 2021).

Similar to peer support, group therapy involves gathering a group of people who have experienced similar events or have similar difficulties (e.g., mental health conditions) to one another. Group therapy is often led by trained clinicians and tends to be more formal than peer support groups (e.g., Linehan, 2015). This style of intervention is used for people with PTSD diagnoses following individual traumatic events like motor vehicle accidents (Beck & Coffey, 2005), sexual assault (Classen et al., 2011), child abuse and neglect (Wallis, 2002), and physical assault, sexual assault, and exposure to community violence (Glodich & Allen, 1998). As with peer support groups, group therapy can facilitate validation, social support, and hope, and improve psychosocial functioning (e.g., Levi et al., 2017; Ford et al., 2009). Further, many group therapies are effective in reducing PTS symptomology (Beck & Coffey, 2005; Kearney et al., 2012). However, similar to peer support, group therapy can also negatively affect members—for instance by eliciting fear and anxiety when other members disclose their traumatic experiences (Ford et al., 2009).

Aside from research on peer support and group therapy, we know that learning about others' similar experiences of trauma is associated with reduced emotional distress and improved wellbeing (Regev & Slonim-Nevo, 2019). Further, Traumatic Brain Injury (TBI) survivors report that communicating with other TBI survivors creates more relaxing interactions, greater felt empathy and understanding, and a greater sense of normality and connection than communicating with close others (Salas et al., 2018). Thus, people share traumatic events asynchronously through similar experiences, and connecting with people

with similar experiences of trauma can be socially and psychologically beneficial. Notably, these benefits may be attributed to the support provided by others or therapy techniques used rather than simply knowing others with similar experiences.

In addition, people may simply *believe* that others have experienced similar events to them without social interaction. People are regularly exposed to traumatic content through virtual means, like viewing photos or videos of perpetrators, victims, and scenes of traumatic events as well as hearing or reading about accounts of traumatic events through social media, news media, podcasts, biographies, and documentaries. Importantly, some of these events may be similar to people's personal traumatic experiences. Therefore, sharing a traumatic event may not only involve *knowing* others with similar experiences, but also *believing* others have had or could have a similar experience. Indeed, people likely believed they were sharing negative experiences—such as difficulties obtaining supplies or unemployment—during the COVID-19 pandemic without necessarily knowing who these people were or whether they were actually experiencing the same difficulties. Moreover, people may take comfort in believing that others they know have likely experienced and overcome the loss of a loved one or a dangerous accident. No research appears to have examined the sharing of individual traumatic events in this way before, making it an interesting and novel avenue for research.

Overall, people experience similar traumatic events to others and connecting with such people can improve people's psychological and social functioning. However, little is known about the nature and effects of such sharing outside of group contexts. Further, while people may believe others have experienced or could experience a similar event to them, this possibility has not yet been explored in scientific research.

Inter-relations of shared experiences – individual traumatic events

As mentioned earlier, many sharing concepts have been examined individually, in specific contexts (e.g., eyewitness and clinical contexts). However, similar to mass traumatic

events, individual traumatic events are likely to be shared in multiple ways. For instance, in the earlier example of the car accident, you and your colleague experienced the same accident simultaneously, discussed your experiences of the event, and expressed similar emotions of terror following the accident.

Indeed, people commonly discuss criminal events they have witnessed with co-witnesses (58-86%; Paterson & Kemp, 2006; Skagerberg & Wright, 2008) and discuss emotional events immediately after they occur, likely with others who were present during the same event (Rimé et al., 1991; 1998). Moreover, co-experiencing an event can elicit similar emotions in people. Schacter (1959) proposed that people faced with the same stressful situation talk to each other to compare their emotions and determine how to respond appropriately to such stressful situations. Similarly, León and colleagues (2019) posit that emotional sharing typically occurs through the physical presence of others, which can extend to virtually shared experiences. Shteynberg (2018) further suggests that shared realities may emerge through experiences of shared attention. Despite these claims, there appears to be no empirical evidence that experiencing the same individual *traumatic* event elicits similar or the same emotions in those exposed to the event. Nevertheless, the extant research indicates that being present during the same individual traumatic event likely involves, or leads to, discussing the event and experiencing the same or similar emotions about the event.

In addition, consistent with Schacter's theory, talking about emotional events is related to experiencing similar emotions about such events. For instance, socially sharing emotional experiences can involve people discussing their emotional reactions to the experience (e.g., fear, shame; Rimé, 2009). Further, people are motivated to talk to others following negative events to provide and receive emotional support, which often involves experiencing similar emotions to others (e.g., Cuff et al., 2016; Derlega et al., 1993; Paterson & Kemp, 2006). Emotions are also rich communicative cues, meaning similar emotional

displays from people (e.g., expressions of fear in trauma victims) can elicit discussions about people's experiences of and feelings about a traumatic event (e.g., Rimé et al., 2020). Moreover, emotional contagion (Hatfield et al., 1994), shared realities (e.g., Echterhoff et al., 2005; 2008), empathy (e.g., Davis, 1996), and social synchronisation (i.e., experiencing the same emotions, attitudes and beliefs; Rimé, 2009; Rimé et al., 2020) can all develop from verbal communication. In fact, social synchronisation can prompt future discussions about emotional events from listeners, meaning the relationship between sharing via talking and sharing via emotion could be bi-directional (Harber & Cohen, 2005; Rimé, 2009; Rimé et al., 1998). Thus, like mass traumatic events, experiencing the same emotional event could elicit similar emotional responses in people, subsequently encouraging discussions about the event and, in turn, greater synchronisation in emotional states.

Finally, knowing others have had similar experiences of trauma is related to talking about and feeling the same or similar emotions about such events. Discussing past traumatic experiences and associated reactions with people who have endured similar experiences is the foundation of peer support and group therapy (e.g., MacNeil & Mead, 2005; Regev & Slonim-Nevo, 2019; Solomon, 2004). Other key components of these groups are providing social support and expressing empathic understanding of others' experiences, which could involve or elicit shared emotions (e.g., Cuff et al., 2016). Further, people come to learn about similar experiences of others through written work (e.g., articles) and verbal communication (e.g., news reader, social media influencers) presented on news and social media. Hence, the discussion of traumatic experiences could create a sense of sharing via similar experiences of trauma amongst people, which could in turn elicit shared emotions.

Therefore, an individual traumatic event can be shared in numerous ways and these shared experiences likely influence and/or involve one another. However, most of the research supporting this claim is theoretical. Little research has explored the inter-relations of

different forms of sharing beyond positive, eyewitness, and mass traumatic contexts, meaning we do not yet have a holistic view of how individual traumatic events are shared amongst people.

Sharing via perception

Different shared experiences could create a *perception* among trauma victims that we often see for mass traumatic events; that the traumatic experience is or was shared with other people. Mass traumatic events are characterised by people's awareness *and* perceptions of shared social identities, attention, experiences, reactions, behaviours, and memories amongst those affected by the event (e.g., Jetten et al., 2020; Páez et al., 2015; Nils & Rimé, 2012). Whilst individual traumatic events are unlikely to create perceptions of a *collective* experience that encompasses large groups or entire societies, such events could create perceptions of a *shared* experience with particular people, such as family members and colleagues. Indeed, people often *believe* they share the same inner states, such as feelings and attitudes, about an experience (i.e., shared reality, perceived emotional synchrony; Echterhoff et al., 2017; Higgins & Pittman, 2008; Páez et al., 2015), which may extend to individual traumatic events. For instance, people may perceive the death of a loved one as shared with distant relatives by *believing* they are sharing the same inner states with these people (e.g., grief). Moreover, victims or witnesses of individual traumatic events, like physical assaults, may experience a *sense of* common fate (i.e., shared threat) with other victims or witnesses. Knowing others who have gone through a similar traumatic experience could also make people *feel* less alone and more connected with others in their experiences of trauma. Thus, perceiving a traumatic event as shared with others may not be exclusive to mass traumatic events.

To my knowledge, no research has directly examined the possibility that individual traumatic events could create a *sense of simply sharing the experience* among people. That is,

whilst we know that people share individual traumatic events in various ways, and some of these shared experiences involve perceptions (e.g., of others' emotions, attitudes, involvement), we do not know whether and to what extent people perceive individual traumatic events as shared in a general sense. These perceptions could broaden our understanding of the nature and effects of shared traumatic experiences. We know cognitive appraisals—which include people's perceptions, evaluations, and interpretations of experiences—play an important role in the development of PTSD. That is, appraising a traumatic event as life-threatening increases people's risk of developing PTSD from the event (Ozer et al., 2003), whereas perceiving positive outcomes from the traumatic event protects against PTSD (Richardson & Gallagher, 2021; Tedeschi & Calhoun, 2004). Further, in terms of social appraisals, perceiving social support from others as available and useful (i.e., perceived support) is a stronger protective factor against PTSD and predictor of mental health than actually receiving social support from others (i.e., enacted/received support) and having larger and higher quality social networks (i.e., embedded/structural support; Streeter & Franklin, 1992; for reviews, see Prati & Pietrantoni, 2010 and Zalta et al., 2021). Additionally, research investigating the nature and effects of collective gatherings demonstrates that *believing* other people are experiencing the same emotions synchronously within a group enhances social integration, group fusion, collective efficacy, positive affect, happiness, overall wellbeing, hope, empowerment, social support, and more positive, benevolent, and just views about the world (Páez et al., 2015).

Thus, it may be common for people to perceive an individual traumatic event as shared, and these perceptions appear important in understanding the social and psychological effects of exposure to traumatic events. Accordingly, investigating whether and to what extent people *perceive* individual traumatic events as shared with others may provide further insight into the nature and effects of sharing such events.

Social and spatial relationships

Of final note, social and spatial relationships are tied to the nature and effects of sharing individual traumatic events. Research has examined the influential role of social and spatial relationships on the nature and effects of shared negative experiences using two concepts: social identification and psychological distance. Social identification refers to the extent to which people associate themselves with a particular social group, community, or category (e.g., gender, ethnicity; Abrams & Hogg, 1988; Tajfel & Turner, 1986; Reicher et al., 2010). Alternatively, psychological distance is categorised into four domains: social (similarity/familiarity), spatial (proximity), hypothetical (likelihood of experience), and temporal (time) distance, reflecting the perceived cognitive or emotional distance between people and others, objects, events, and concepts (Liberman & Trope, 2008). Social and spatial distance are particularly relevant to research on shared traumatic experiences. Despite differences between social identification, social distance, and spatial distance, these concepts are similarly related to shared experiences.

Nature of sharing

People share traumatic and negative experiences with people from their in-group (e.g., age, gender) and people they are socially close to (e.g., friends, family). For instance, interpersonal traumas, which are shared via the physical presence of others, commonly occur within close relationships, such as between family members (e.g., childhood neglect) and partners (e.g., domestic violence; e.g., Alhabib et al., 2010; Finkelhor et al., 2013). People also share negative emotional events via talking most often with close others (e.g., parents, siblings, spouses, friends; Paterson & Kemp, 2006; Rimé, 2009). Moreover, sharing via similar experiences of trauma can help people form a shared social identity (e.g., Buckingham et al., 2013; van de Ven & Pemberton, 2022). Similarly, experiencing a shared reality through shared feelings, practices, coordination, and identities can foster close

relationships with people (Rossignac-Milon & Higgins, 2018) and such closeness can maintain shared realities with close others (Anderson & Przybylinski, 2018). Further, sharing via similar emotions requires some form of social identification between people, in which people perceive their experiences as "ours" rather than "mine" (León et al., 2019). In addition, secondary traumatisation, which is related to components of emotional empathy, is often experienced by those close to trauma victims, such as family members (e.g., Ahmadi et al., 2011; Galovskia & Lyons, 2004). Hence, sharing individual traumatic experiences overall may be most common amongst people who are familiar with or similar to one another.

Little research has explored whether people commonly share individual traumatic events with spatially close others. Yet, many individual traumatic events like vehicle accidents, physical attacks, and critical injuries, are sudden and unexpected, and occur in public places, meaning people are likely often exposed to traumatic events synchronously with others who are *spatially close* (i.e., nearby). People may also commonly discuss or disclose such experiences with nearby others to ask for support or warn them of the incident (e.g., nearby shopkeepers or police in the area). For instance, pedestrians on a busy street could synchronously witness a person jaywalking be hit by a car, and immediately discuss the incident amongst themselves and tell nearby drivers to stop. One form of sharing that we know commonly involves nearby others is sharing via similar experiences. Peer support groups and group therapy programs are usually held within local communities (e.g., mental health clinics) by peers and health professionals (e.g., Campling, 2001; Fortuna et al., 2022; Solomon, 2004). Moreover, people with similar traumas—such as serious medical conditions (e.g., traumatic brain injury)—often meet within community healthcare settings (e.g., rehabilitation centres; e.g., Salas et al., 2018). Therefore, overall, people likely share individual traumatic events with people they are proximally close to as well as people they are familiar with or similar to.

Effects of sharing

Importantly, the effects of sharing individual traumatic events may also be influenced by *who* people share such experiences with. Experiencing a negative event (e.g., Cold Pressor Task) in the physical presence of similar and/or familiar others can amplify people's experiences—making them feel greater pain intensity, sadness, and fear—when compared to experiencing such events in the physical presence of dissimilar and/or unfamiliar others (Martin et al., 2015; Shteynberg et al., 2014). In fact, some of the research investigating these effects (i.e., Martin et al., 2015) had participants co-experience the negative event *whilst* observing one another's responses (e.g., emotional expressions), meaning emotional contagion may also be stronger for familiar (vs. unfamiliar) others. No other work appears to have investigated whether social or spatial relationships influence the effects of experiencing the same or similar emotions during negative events. However, social identification is a requirement for shared emotion. Thus, perhaps the potential effects of sharing the same emotions (e.g., secondary traumatisation) are predominantly relevant to in-group members.

In terms of social sharing, receiving reassurance from an in-group member (e.g., science students) during a negative task (e.g., Cold Pressor Task) can reduce people's physiological arousal (i.e., Galvanic Skin Response indicating pain symptoms) when compared to receiving reassurance from an out-group member (e.g., arts students; Platow et al., 2007). Few other studies have explored the effects of sharing via talking about traumatic experiences with different kinds of people, perhaps because the context of the trauma matters. For instance, it may be most useful to discuss work-related trauma with colleagues (e.g., death of patient) but family-related trauma with family (e.g., death of loved one) or health professionals (e.g., childhood trauma). Finally, some research indicates that social relationships may influence the effects of sharing via similar experiences. That is, within group therapy settings, stronger social identification with treatment group participants elicits

better mental health outcomes for participants (e.g., reduced depression and anxiety; e.g., Cruwys et al., 2014; Meuret et al., 2016). Alternatively, both identification with, and disidentification (i.e., distancing from an existing social identity; Becker & Tausch, 2014; Dean, 2008) from, a disempowered victim group (e.g., sexual assault survivors) is related to greater severity of PTS and dissociative symptoms (Kellezi et al., 2019; Lashkay et al., 2023; Muldoon et al., 2021). Thus, overall, social identification and social closeness between sharers could influence the effects of sharing individual traumatic events.

Unfortunately, little research appears to have investigated the role of spatial distance in the effects of sharing traumatic events. Some work suggests that, similar to social distance, being in close physical proximity to others during an emotional event can amplify people's experience of the event, compared to when others are spatially distant (e.g., in a separate room; Boothby et al., 2016). However, this amplification effect has only been explored in positive contexts (e.g., eating chocolate). Thus, no research to date seems to have investigated how spatial distance influences the effects of sharing *traumatic* events.

Conclusion

Evidently, social relationships concerning the familiarity, similarity, and proximity between people influence with whom, how often, and why people share individual traumatic events. These relationships both positively and negatively influence the consequences of sharing such events with others. Therefore, examining social relationships between people is critical in understanding the nature and effects of sharing individual traumatic events.

Summary

Altogether, existing research on individual traumatic events aligns with the mass trauma literature, suggesting that people can share individual traumatic events in various ways. Many different sharing concepts exist within this research and can be broadly grouped into sharing individual traumatic events through the presence of others, discussions with

others, experiencing similar or the same emotions as others, and experiencing similar traumatic events to others. The nature and effects of these shared experiences have all been examined to some extent within the scientific literature, but more is known about some forms of sharing than others. Critically, sharing individual traumatic events can have both positive and negative social and psychological implications for people and the social and spatial relationships between sharers could influence these effects. Further, people may perceive their experiences of these events are shared with other people. Importantly, however, there are gaps in this research, along with research investigating mass traumatic events.

Limitations of Existing Research

The existing research on sharing mass and individual traumatic events has several limitations that hinder the consolidation of current findings and our understanding of the nature and effects of sharing traumatic events. First, current conceptualisations and research approaches used to investigate shared traumatic experiences are often inconsistent. Many fields of scientific literature have investigated shared traumatic experiences, including social (e.g., Muldoon et al., 2019), cognitive (e.g., Shteynberg, 2018), forensic (e.g., Paterson & Kemp, 2006), and clinical psychology (e.g., Tosone et al., 2012), sociology (e.g., Durkheim, 1912), biology (e.g., Martin et al., 2015), and psychiatry (e.g., Chen et al., 2020). Within each of these fields, there are many distinct aims and questions regarding shared experiences. For instance, in the social psychology literature, some research aims to understand the characteristics and implications of talking about emotional events (e.g., Rimé, 2009; Rimé et al., 2020) whereas other research focuses on how social identities develop and affect recovery from traumatic events (e.g., Craig et al., 2022; Drury, 2012; 2018; van Zomeren et al., 2008). Consequently, as the review above highlights, countless terminologies and conceptualisations have emerged to represent unique experiences of sharing, often based on specific contexts, research directions, or theories. For example, for sharing via emotions, the terms collective

effervescence, perceived emotional synchrony, and collective emotion emerged from investigations of large community gatherings that were not necessarily negative or traumatic (e.g., Durkheim, 1912; von Scheve & Salmella, 2014). These terms represent different phenomena—amplified positive emotions, perceived synchronisation of emotions, and actual synchronisation of emotions. Meanwhile, emotional empathy has been examined more for negative (vs. positive) experiences and involves exhibiting compassion towards others and experiencing the same emotions as others (Cuff et al., 2016; Davis, 1980; Regehr et al., 2002).

In addition to the varying terminology and conceptualisations of sharing, researchers have evaluated sharing concepts using different methodologies and research designs, from theoretical models based on descriptive research (e.g., common fate; Drury, 2012; 2018) to experimental, laboratory-based research (e.g., co-experiencing; Nahleen et al., 2019). Moreover, some researchers have not specified the sharing concepts explored within their work because their research had broader aims (e.g., risk factors for depression following an earthquake; Armenian et al., 2002), making the methods of investigating sharing unknown and findings about sharing incidental. Furthermore, many researchers do not specify whether their findings reflect the unique characteristics and effects of a single sharing concept (e.g., sharing via talking) or the combined effects of multiple sharing concepts (e.g., sharing via talking and via similar emotions). Such diversity across existing investigations of shared traumatic events restricts the generalisability of current research and, in turn, limits our understanding of how people share traumatic experiences with others and the characteristics and effects of such sharing. For instance, can the characteristics and effects of eyewitness discussion extend to mass traumatic events? Is perceived emotional synchrony possible for people who are exposed to individual traumatic events? Do the effects of peer support through similar experiences exist in non-group settings? To answer these questions, we first need to consider broader, more inclusive, conceptualisations of shared traumatic experiences

and explore such concepts across various contexts, using clear methodologies. This approach is critical to gain a more holistic view of the social nature of traumatic experiences and the implications of social factors, like sharing, that emerge from exposure to traumatic events.

Second, limited empirical work has explored the inter-relations between different sharing concepts. Research examining mass traumatic events has predominantly focussed on relationships between social identification and common fate, social sharing, and emotional synchronisation (e.g., Drury, 2012; 2018; Williams & Drury, 2009; Páez et al., 2015). According to several theories, the latter three sharing concepts can influence one another, suggesting they are inter-related (e.g., Durkheim, 1912; Hatfield et al., 1994). However, few researchers have empirically investigated the relationships between common fate, social sharing, and emotional synchronisation independent of social identification (e.g., Bartholomew & Victor, 2004; Garcia & Rimé, 2019; Páez et al., 2015). Similarly, few studies investigating individual traumatic events have examined multiple sharing concepts within the same sample. For instance, whilst theoretical models and the nature of some shared experiences suggest that different sharing concepts are inter-related (e.g., sharing similar traumatic experiences involves discussion; e.g., MacNeil & Mead, 2005; Solomon, 2004), evidence for this overlap is limited. Consequently, we lack knowledge about whether and how different sharing phenomena are interlinked and the unique and combined influence of these sharing phenomena on trauma victims' social and psychological functioning.

Third, the nature and effects of *perceiving* traumatic events as shared with other people has received little attention within the scientific literature. People can perceive mass traumatic events as shared experiences through a sense of common fate (e.g., Drury, 2018; Drury et al., 2019; Fritz & Williams, 1957). To date, limited work has empirically investigated how a sense of common fate arises and uniquely influences psychological outcomes of exposure to traumatic events. Further, although possible, this phenomenon has

not been investigated for individual traumatic events. Indeed, if people are motivated to share the same inner states with others about their experiences, they may be motivated to perceive these experiences as shared with others too (Echterhoff et al., 2017). Considering perceptions of emotional synchrony, social support, shared social identification, and personal coping can all influence social and psychological functioning (e.g., Kearns et al., 2017; Ozer et al., 2003; Páez et al., 2015; Richardson & Gallagher, 2021; Zalta et al., 2021), perhaps perceptions about sharing traumatic events with others could also be important to explore. That is, investigating the extent to which people perceive a traumatic event as shared could deepen our understanding of the nature and effects of shared traumatic experiences.

Finally, the relationship between sharing traumatic events and PTS symptomology requires further investigation. Most research has examined links between sharing and general mental health (e.g., resilience; e.g., Drury, 2012; Williams & Drury, 2009), affective states (e.g., positive affect; e.g., Wagner et al., 2014; Páez et al., 2015), distress (e.g., Hemenover, 2003; Regev & Slonim-Nevo, 2019), and social functioning (e.g., social cohesion; e.g., Drury et al., 2009a; von Scheve & Salmela, 2014). Less research has explored the relationship between sharing traumatic events and PTS symptomology. This research is crucial when examining traumatic contexts considering PTS symptomology arises from exposure to traumatic events and can have dire consequences for people's cognitive (e.g., Brandes et al., 2002), social (e.g., Frueh et al., 2001), and occupational (e.g., Smith et al., 2005) functioning. Currently, it is unknown whether common fate or the physical presence of others influences PTS symptomology. Further, a couple of studies demonstrate that talking about traumatic events is related to PTS symptoms, yet the direction of this relationship remains unclear (Davidson & Moss, 2008; Seery et al., 2008; Woodward et al., 2017; 2024). To date, the only research, to my knowledge, examining the relationship between shared emotions and PTS symptoms suggests that increased emotional empathy in health professionals is associated

with greater risk of developing secondary traumatic stress symptoms and lower perceived resilience towards stressful work experiences (e.g., Crane et al., 2023; Figley, 2002; MacRitchie & Leibowitz, 2010; Ogińska-Bulik et al., 2022; Thomas & Wilson, 2004). Moreover, in terms of knowing others with similar traumatic experiences, group therapy is often effective in reducing PTS symptoms (e.g., Beck & Coffey, 2005; Kearney et al., 2012; Morgan & Cummings, 1999; Wallis, 2002). However, these effects may be related to the therapy itself rather than simply knowing others who have been exposed to similar events. Similarly, social support is associated with reduced PTS symptoms, which can involve talking and shared emotional states (e.g., empathy; e.g., Cuff et al., 2016; Prati & Pietrantoni, 2010). Social support can also arise from co-experiencing the same negative event (Skagerberg & Wright, 2008) and learning about others' similar traumatic experiences (e.g., peer support; Ford et al., 2009). Yet, these shared experiences may not directly explain the link between social support and PTS symptoms. Consistently, developing new, and maintaining and strengthening current, shared social identities following mass traumatic events reduces PTS symptoms whereas the weakening of such identities can increase PTS symptoms (e.g., Craig et al., 2022; Jetten et al., 2020; Muldoon et al., 2019). Again, social identification can influence or be influenced by shared experiences (e.g., common fate; Drury, 2018). However, many social factors likely influence these effects, making it difficult to determine the unique effects of sharing mass traumatic events.

Despite some research exploring the link between sharing and PTS symptomology, few studies have explicitly investigated whether and how merely sharing a traumatic event via the presence of others, talking, experiencing the same or similar emotions as others, knowing others with similar experiences, and perceiving the event as shared, is related to PTS symptomology. Expanding our knowledge on the social factors that influence the development of PTSD is critical to inform future research and client care.

Chapter 2: Overview of Studies

As outlined in Chapter 1, the research that has investigated how people share traumatic events and the effects of such sharing is limited by narrow conceptualisations of sharing and specific contexts used to investigate sharing. No research to date has explored sharing using a broader lens, encompassing a wide variety of shared experiences and traumatic events. I addressed this gap in my thesis. I aimed to develop a holistic understanding of how people share trauma and the potential psychological implications of such sharing. Of note, my thesis chapters are written as separate research articles, meaning there is some unavoidable repetition of concepts and ideas throughout the thesis.

Studies 1a & 1b (Chapter 3)

My first empirical chapter (Studies 1a and 1b) aimed to unpack the *nature* of shared traumatic experiences. To address this aim, I assessed the extent to which people perceive different stressful/traumatic events as shared (Studies 1a & 1b), the unique ways that people can actually share different stressful/traumatic events (Study 1a), and the frequency, inter-relations, and characteristics (e.g., number of people) of these unique shared experiences (Study 1b). In both studies, participants identified their most stressful/traumatic event (e.g., assault) and rated the extent to which they perceived the event as shared. Participants then either provided an explanation for this sharing rating (Study 1a) or details about how they shared this event (e.g., whether they discussed the event, who was present; Study 1b). In Study 1a, most participants (78.5%) perceived their most stressful/traumatic event as shared, which I refer to as subjective sharing. Further, I identified several unique ways people share stressful/traumatic events: physical sharing (i.e., others present during the same event), emotional sharing (i.e., others were emotionally affected in the same/similar way about the event), verbal sharing (i.e., discussing/disclosing the event), and relational sharing (i.e., others have/could experience a similar event). Following Study 1a, I identified attitudinal

sharing as another sharing form (i.e., others held the same/similar attitudes, beliefs, and/or opinions about the event). Consistent with Study 1a, most participants in Study 1b (72.1%) perceived their most stressful/traumatic event as shared. In fact, nearly all participants shared their worst event in some way (98.6%-99.4%). Participants tended to share these events in multiple ways (96.6%), with close others (e.g., family), and with two to five people. Therefore, sharing traumatic events is common and manifests in many unique ways.

Studies 2a & 2b (Chapter 4)

My next empirical chapter (Studies 2a & 2b) aimed to provide preliminary evidence for the *psychological effects* of sharing traumatic events. Drawing upon data collected in Studies 1a and 1b, I determined whether sharing stressful/traumatic events in the different ways identified in Chapter 3 were related to posttraumatic stress (PTS) symptomology, a gap in the existing literature. Establishing whether PTS symptomology is related to different shared stressful/traumatic experiences can provide insights into the social factors that may protect people from, or increase people's risk of, developing Posttraumatic Stress Disorder (PTSD). Sharing traumatic events is related to both positive and negative psychological outcomes. Thus, I had competing hypotheses about whether all sharing forms—i.e., subjective, physical (incl. with a perpetrator), emotional, verbal, relational, and attitudinal— would be related to more or less PTS symptomology. In both Study 2a and Study 2b, subjective sharing (i.e., perceiving the event as shared) was not significantly correlated with PTS symptomology. Yet, sharing stressful/traumatic events verbally, physically, and emotionally were related to *less* severe PTS symptomology. Further, physically sharing these events with a perpetrator (i.e., perpetrator present/involved in the event) was related to *more* severe PTS symptomology. In other words, while perceiving a stressful/traumatic event as shared does not appear to be associated with PTS, sharing the event via talking to others, the presence of others, and expressing the same or similar emotions to others is linked to lower

PTS severity (other than sharing with a perpetrator). Hence, it is possible sharing traumatic events in some ways reduces the severity of PTS symptomology and may even protect people from developing PTSD.

Study 3 (Chapter 5)

A common theme emerging from Studies 1a and 1b was that social relationships play an important role in how we share traumatic events. Whilst we know the social (i.e., familiarity and similarity) and spatial (i.e., physical proximity) distance between people influences the nature (e.g., Paterson & Kemp, 2006; Rimé, 2009) and effects (e.g., Martin et al., 2015) of sharing, existing research is limited by examining few social/spatial distance groups (e.g., family vs. strangers) at once, and focusing on experiences that do not reflect real-world traumatic events (e.g., Cold Pressor Task). My third empirical chapter aimed to address this gap by exploring whether the social and spatial distance between people influences 1) the extent to which people share traumatic events, 2) the relationship between different sharing forms, and 3) the relationship between sharing and psychological functioning. I expected these three factors to be greater/stronger for socially/spatially close (vs. distant) others. The COVID-19 pandemic presented a unique opportunity to test this hypothesis, given it elicited traumatic stress reactions in many people (e.g., Bridgland et al., 2021; Jetten et al., 2020) and the pandemic was physically shared by everyone around the world (e.g., family, neighbours, strangers online). Further, I expanded on my research in the previous chapters in this study by examining mass *and* individual traumatic events—unlike Chapter 3 which mostly assessed individual events—and by measuring *several* areas of psychological functioning—rather than only PTS symptomology as in Chapter 4. Participants identified their worst COVID-19 event, reported whether and/or to what extent they relationally, verbally, and subjectively shared their worst event and/or the pandemic with people of varying social and spatial distances (e.g., close others, strangers), and rated their

psychological functioning during the pandemic (e.g., anxiety). Consistent with expectations, participants subjectively, verbally, and relationally shared the pandemic and their worst COVID-19 event more with close others. Further, the relationships between these sharing forms were stronger amongst socially and spatially close others. Last, whilst subjective and verbal sharing were related to poorer psychological functioning during the pandemic overall, subjectively sharing the pandemic specifically with household members was related to better psychological functioning. Therefore, the nature of sharing COVID-19, relationships between different shared experiences, and relationships between sharing COVID-19 and psychological functioning, differed based on people's social/spatial relationships.

Studies 4a & 4b (Chapter 6)

Based on my earlier findings, we know that 1) traumatic events are shared often, in several ways, and with close others, 2) sharing forms are inter-related, and 3) most sharing forms are related to psychological functioning. Yet, the previous two chapters of my thesis had conflicting results: sharing was related to less severe PTS symptomology in Chapter 4, but related to more severe psychological impairment (e.g., stress, anxiety) in Chapter 5 (aside from household members). Further, relationships between sharing and psychological functioning were small, making it difficult to determine whether these relationships are meaningful. In addition to this discrepancy, there are gaps in existing research regarding the psychological effects of sharing in specific contexts. For instance, we know people commonly view traumatic content (e.g., suicide deaths, terrorist attacks; Crothers & O'Brien, 2020; Wakefield, 2020) online simultaneously with others (i.e., virtual physical sharing). However, the few studies that have examined these experiences lack ecological and internal validity (e.g., Shteynberg et al., 2014). Accordingly, in my final empirical chapter, I experimentally manipulated a specific shared traumatic experience and measured subsequent psychological functioning. I chose *physical sharing* because the effects of physical sharing

are less established compared to verbal sharing (e.g., Choi & Toma, 2014; Levi-Bells & Lev-Ari, 2019; Rose, 2002), likely stronger than relational sharing (based on non-significant correlations in Chapter 4 & 5), and easier to examine with the resources available to me than emotional and attitudinal sharing (i.e., easier to manipulate because physical sharing is more objective and concrete). In both experiments, participants watched a short trauma film either by themselves (alone condition) or at the same time as other participants (shared condition) via a watch party website (Study 4a) or Microsoft Teams (Study 4b). Participants then completed several psychological measures and an intrusion monitoring task to assess their film-related psychological functioning. Given the conflicting results in my previous chapters and in existing research, I had competing hypotheses about whether physically sharing the film would exacerbate or alleviate psychological impairment from watching the film. I found no difference between the shared and alone conditions for most psychological functioning variables, however, in Study 4b, virtually sharing the trauma film reduced participants' PTS symptomology. Therefore, physically sharing traumatic content virtually buffers traumatic stress reactions from online trauma exposure.

Summary

Existing research on the nature and effects of sharing traumatic events does not capture a holistic understanding of shared traumatic experiences. My thesis expands upon the literature by demonstrating that 1) people commonly share traumatic events in many unique ways, 2) shared experiences are highly inter-related and linked to psychological functioning, 3) social/spatial relationships influence links between sharing traumatic events and psychological functioning, and 4) physically sharing traumatic content through virtual mediums buffers traumatic stress reactions. These findings have important theoretical, methodological, and practical implications for how we conceptualise and examine shared traumatic experiences in research and clinical settings.

Chapter 3: Investigating the Nature of Shared Traumatic Experiences: When, how, and how often do we share trauma with others?

Author contributions: I developed the study concept and design with the guidance of MKTT and EFT. I performed data collection, cleaning, analysis, and interpretation. I drafted the manuscript and contributed to critical revisions. MKTT and EFT provided critical revisions to the manuscript. All authors approved the final version of the manuscript for submission.

Abstract

Across two studies, we investigated when, how, and how often people share traumatic events ($N = 1,008$). In Study 1a, most participants (78.5%) perceived their most stressful/traumatic event as shared primarily due to knowing others were present during the event (physical sharing), knowing/believing others had experienced or could experience a similar event (relational sharing), discussing the event with others (verbal sharing), or having the same emotions about the event as others (emotional sharing). In Study 1b, we assessed the frequency and characteristics of these forms of sharing along with attitudinal sharing (same attitudes/beliefs/opinions about the event) and perpetrator sharing (perpetrator involved in the event). Nearly all participants (98.6%-99.4%) shared their most stressful/traumatic event with others in some way. Our findings demonstrate that people *commonly* share a *range of* traumatic events in various *unique* ways. This framework can inform and guide research addressing the impacts of these diverging forms of sharing.

Introduction

Most people (~70%) will experience at least one traumatic event within their lifetime (Bromet et al., 2018); many of these events are likely to be shared. In fact, "sharing" in the most general sense can be experienced in numerous ways and across multiple stages of traumatic events. People can experience traumatic events in the presence of others (e.g., natural disasters; Armenian et al., 2002), be exposed to similar traumatic experiences as others (e.g., sexual assault; Konya et al., 2020), discuss traumatic events with people (e.g., the sudden death of a loved one; Rimé et al., 1998), and experience similar emotions about traumatic events to others (e.g., terrorist attacks; Garcia & Rimé, 2019). Although these experiences are all manifestations of "sharing," they represent distinct forms of sharing. Decades of research across social (e.g., Rimé, 2009), cognitive (e.g., Nahleen et al., 2019), and forensic psychology (e.g., Paterson & Kemp, 2006) has investigated the frequency, characteristics, and effects of different forms of sharing in trauma contexts. However, this research lacks clear and consistent terminology and operationalizations of sharing. Thus, it is difficult to determine how, when, with whom, how often, and why people share traumatic events in different ways. Without an integrated understanding of the nature of these issues, we cannot address major questions about how sharing traumatic events shape psychological functioning.

Here, we aimed to advance conceptual understanding of "shared" traumatic experiences within WEIRD populations (Western, Educated, Industrialised, Rich and Democratic; Henrich et al., 2010). To identify different forms of sharing, we first reviewed existing terminology, operationalizations, and investigations of sharing in the context of traumatic and negative experiences. We then assessed whether people view traumatic and negative events as shared in these ways and explored novel concepts of sharing by thematically analyzing why participants perceived their most stressful/traumatic event as

shared or not. This process allowed us to identify and categorize several unique ways in which traumatic events can be shared (Study 1a) and assess the frequency and characteristics of these forms of sharing (Study 1b). Figure 1.1 provides an overview of the various types of sharing, discussed in detail below.

Figure 1.1

Terminology and Definitions of the Unique Sharing Concepts Developed in the Present Research Based on Existing Research and Study 1a Data

Shared Experiences					
Subjective sharing Perceiving the event as shared with other people	*Physical sharing* Other people were present during the event	*Relational sharing* Knowing/believing other people have or could experience a similar event	*Verbal sharing* Discussing and/or disclosing the event	*Emotional sharing* Knowing/believing other people experienced the same emotions about the event	*Attitudinal sharing* Knowing/believing other people held the same attitudes, beliefs, or opinions about the event

Note. We developed the concept of subjective sharing as a foundation for identifying how people share traumatic events in other, more concrete ways. Attitudinal sharing was a concept that emerged following Study 1a data analysis to distinguish between shared emotions and shared attitudes. All concepts were tested in Study 1b.

Current research on shared traumatic experiences

Broadly speaking, research suggests sharing traumatic events with others may be common, experienced across different stages of these events and in various ways. First, people share traumatic events as they occur through the *presence of other people* (*physical sharing* in Figure 1.1). In research examining real-world traumatic events, events shared via the presence of many people—such as terrorist attacks (e.g., McConnell et al., 2010) and natural disasters (e.g., Armenian et al., 2002)—are often termed "mass traumatic events" (e.g., Shalev et al., 2004). This research also uses the term "interpersonal trauma" to describe events that involve and occur between people, often with one or more people perpetrating harm to another or others (e.g., Mauritz et al., 2013). Interpersonal traumas include events like childhood abuse (e.g., Balch & Golub, 2020) and sexual assault (e.g., Steenkamp et al., 2012). Such interactions may be considered a subform of sharing via the presence of others, whereby people share a traumatic event specifically with a perpetrator (or perpetrators) of the event. Alternatively, in experimental settings, negative experiences (e.g., the Cold Pressor Task) shared via the presence of others have been termed "co-experienced negative events" (i.e., negative events others participate in; e.g., Miao et al., 2021), "shared attention experiences" (i.e., attending to a negative object simultaneously with others; Shteynberg, 2015) or, more generally, "shared negative experiences" (i.e., experiencing negative events simultaneously with others; Nahleen et al., 2019). Although unique, these concepts are clearly linked. Thus, to synthesize current conceptualizations of sharing within the literature, we use the term *physical sharing* hereon to represent instances where multiple people are physically present during an event, simultaneously (Figure 1.1). This term represents similarities in people's exposure to a traumatic event (e.g., people being in the epicentre of the same earthquake) rather than people's physical proximity with others during the same event (e.g., being in the same room as others during an earthquake). Of course, people can be

physically close to others when physically sharing a traumatic event, but this is not essential for such sharing to occur.

Therefore, physical sharing can also encompass situations where multiple people are simultaneously present during the same event, but in a different location. Considerable research has investigated this notion in clinical settings by assessing mental health workers' psychological and behavioral responses to a traumatic event (e.g., 9/11 attacks) which both they and their client have been exposed to ("shared traumatic reality"; Goelitz, 2022; Tosone et al., 2012). However, this form of sharing is not confined to mental health workers. Many people may discover or believe others are experiencing the same event as them while it is occurring (e.g., via virtual live-streamed content) or afterwards (e.g., via discussion), like the COVID-19 pandemic (Muldoon, 2020). These experiences are evidently distinct from occasions where people are consciously aware that others are present during the same event. Nevertheless, we consider these experiences to fit within our conceptualization of physical sharing given they involve multiple people being physically present during the same event, simultaneously or synchronously.

Second, people share traumatic events asynchronously through *similar experiences.* That is, people can know others who have experienced an event similar to their own experience, that took place at a different time and/or location. This form of sharing is generally referred to as "common", "similar", or "shared" experiences (Bartone et al., 2019; Konya et al., 2020). Research exploring the characteristics and effects of peer support suggests people commonly discuss personal trauma—such as suicide survival and sexual assault—with others who have had similar experiences (van de Ven et al., 2021). Moreover, we are often exposed to accounts of traumatic events through social and news media platforms; some of these accounts may be relevant to our own experiences. Thus, people may share traumatic events by simply believing other people have experienced a similar event to

them. Because this form of sharing is distinct from physical sharing (which refers to the same event), we refer to it as *relational sharing*, which we define as knowing or believing others have experienced or could experience a similar event (see Figure 1.1).

Third, people share traumatic events by *talking about these events*. For instance, during a hurricane, people may discuss what they have witnessed with people who are physically present or connected virtually. Further, we know many people discuss traumatic events—including car accidents, terrorist attacks, and crimes—days, weeks, months, and even years after exposure (e.g., Paterson & Kemp, 2006; Rimé, 2009). In fact, this form of sharing has been extensively researched, particularly regarding what (content), when (time/duration), how (modes/methods), how often (frequency), and why people talk about traumatic events with others (e.g., Davidson & Moss, 2008; Duprez et al., 2015; Garcia & Rimé, 2019; Gorissen et al., 2023; Paterson & Kemp, 2006; Rimé et al., 2010; Seery et al., 2008; Skagerberg & Wright, 2008; for a review, see Rimé, 2009). Across this research, operationalizations of sharing have remained relatively consistent, however, terminology varies, with researchers using terms such as "discussions" (e.g., Skagerberg & Wright, 2008), "disclosures" (e.g., Alea & Bluck, 2003), "social sharing" (e.g., Rimé et al., 1998), and "expressions" (e.g., Seery et al., 2008) in their work. Thus, for clarity, hereon we refer to this form of sharing as *verbal sharing*, which we define as discussing an event with, or disclosing an event to, others (see Figure 1.1). We use the term verbal sharing because it encompasses various modes of verbal communication, including oral and written modes (Oxford Reference, n.d.). We included the terms discuss *and* disclose because discussing an event involves generally talking about something whereas disclosing an event refers to specifically revealing something to others, usually for the first time (Oxford University Press, n.d.).

Last, people can share *the same or similar emotions* about a traumatic event. For instance, mass traumatic events, like disasters and terrorist attacks, can elicit a "collective

emotion" or "group affect" in which people within the same group (e.g., survivors) simultaneously experience similar emotional or affective states (e.g., sadness; Barsade & Gibson, 2012; Garcia & Rimé, 2019; Von Scheve & Salmella, 2014). Likewise, people can mirror each other's emotional expressions, causing their emotional states to align (i.e., "emotional synchronisation/convergence"; Durkheim, 1912; Rimé et al., 2020) or simply believe they are experiencing the same emotional states as others (i.e., "perceived emotional synchronisation"; Páez et al., 2015) during such events. To consolidate these different terms and concepts, we refer to this form of sharing as *emotional sharing*, to describe either knowing or believing others are or were emotionally affected in the same or a similar way about an event (see Figure 1.1).

To summarize, existing research indicates that people likely share traumatic events in several ways, including via the physical presence of others, experiencing a similar event to others, talking about events with others, and experiencing the same/similar emotions about an event as others—or, as we term these forms, by *physically*, *relationally*, *verbally*, and *emotionally* sharing events (see Figure 1.1). In fact, there are likely other ways that people share traumatic events, for instance by holding the same attitudes as others about a traumatic event. Unfortunately, other shared traumatic experiences (e.g., shared attitudes) aside from the four discussed here (i.e., physical, relational, verbal and emotional sharing) are less established in scientific literature and require further investigation.

Notably, the various forms of shared traumatic experience anticipated in Figure 1.1 may be inter-related, meaning different forms of sharing may arise from the same traumatic event. For instance, people commonly discuss traumatic events with people who were physically present during the same event (e.g., Paterson & Kemp, 2006; Skagerberg & Wright, 2008; Rimé, 2009). Moreover, discussing and being present during the same traumatic event can elicit similar emotional responses in people (e.g., Bartholomew & Victor,

2004; Garcia & Rimé, 2019; Hatfield et al., 1993; León et al., 2019; Páez et al., 2015; Schacter, 1959; Rimé et al., 2020). Further, people often learn about others' similar experiences of trauma from others' verbal disclosures of the event (e.g., MacNeil & Mead, 2005; Regev & Slonim-Nevo, 2019; Solomon, 2004). However, much of the research examining the link between different shared experiences is theoretical (i.e., has not been empirically tested), does not clearly distinguish and measure different sharing concepts, or only generalizes to certain contexts (e.g., criminal events, mass traumatic).

Defining sharing in the context of traumatic events and identifying how often people share trauma with others in different ways is an important first step to understanding whether, and if so, how, sharing traumatic events impacts people's experiences and memories of the event. Currently, there is evidence that sharing traumatic events with others leads to positive and negative outcomes for people. For instance, sharing negative events (e.g., terrorist attacks) can lead to posttraumatic growth (i.e., positive psychological change from challenging life events; Tedeschi & Calhoun, 2004), positive affect, social support, cooperation, and social integration (Miao et al., 2021; Rimé et al., 2010), improved social and collective resilience (Drury et al., 2009b; Rimé et al., 2010), and a decreased risk of depression (Armenian et al., 2002). Yet, sharing negative events can also lead to increased rumination (Rimé et al., 2010), negative affect (Rimé et al., 2010), posttraumatic stress symptoms (Seery et al., 2008), memory distortion (Gabbert et al., 2004; Paterson & Kemp, 2006) and memory amplification (i.e., remembering the event as more negative overtime; Nahleen et al., 2019; Southwick et al., 1997).

Unfortunately, there are several barriers to consolidating findings concerning how, when, with whom, how often, and why people share traumatic events and the psychological implications of such sharing. Evidently, researchers investigating shared experiences have conceptualized and defined sharing based on different theoretical frameworks and traumatic

contexts. For instance, although *mass traumatic events* (Shalev et al., 2004), *interpersonal trauma* (Mauritz et al., 2013), and *co-experienced events* (Miao et al., 2021) all describe events where numerous people are physically present, they differ conceptually regarding how and how many people are involved in these events. Moreover, researchers have explored the nature and effects of sharing trauma within studies that aimed to address other research questions (e.g., what are the risk factors for depression for 1988 Armenian earthquake survivors?; Armenian et al., 2002), meaning often the operationalization of sharing is unclear, the methodology used to investigate sharing is unclear, and findings are incidental. This lack of clarity makes it difficult to determine whether findings reflect the unique qualities and effects of a singular form of sharing (e.g., verbal sharing) or an accumulation of the qualities and effects of multiple forms of sharing (e.g., verbal and physical sharing). Consequently, we likely cannot generalize existing data on the forms, frequency, characteristics, and effects of sharing traumatic events beyond the specific contexts in which they were examined. Even if these data are generalizable, no research appears to have synthesized work on the varying conceptualizations of sharing all together, or examined the different ways people share traumatic events using inductive methods. As such, here, we used a theoretically agnostic approach to identify and map the unique ways people share trauma without being guided by one theoretical tradition more than another.

To truly understand the implications of sharing traumatic events, we need to have a clear grasp on when, how, how often, and with whom traumatic events are shared in unique ways as well as how and when different forms of sharing are linked. Our study design aimed to overcome these limitations by 1) investigating *all* the unique ways people share traumatic events with others, 2) exploring how people share traumatic events using deductive (i.e., considering current conceptualizations of sharing) *and* inductive (i.e., examining

participants' perceptions and experiences of sharing) approaches, and 3) assessing the frequency and characteristics of different forms of sharing individually *and* together.

Research overview

In Study 1a, we defined a "shared" traumatic event by identifying common reasons why people consider a traumatic event to be shared or not. Participants described the most stressful/traumatic event they had been exposed to, selected the trauma category the event aligned with best (e.g., vehicle accident), and provided details about the event (Carlson et al., 2011). We then asked participants to rate the extent to which they believed the event was shared and to explain their rating. We used thematic analysis to evaluate and code participants' sharing explanations into themes representing different forms of sharing (e.g., physical sharing, verbal sharing). Independent of these data, we identified two additional sharing forms (i.e., perpetrator and attitudinal sharing) which we were interested in exploring further. In Study 1b, we aimed to determine how often and how, when, and with whom people share traumatic events in the different ways we identified in Study 1a. Participants completed the same measures as in Study 1a plus a measure we developed to assess whether and how participants shared their most stressful/traumatic event with other people. We analyzed the frequency of each form of sharing overall and for different kinds of events, and examined the characteristics of each form of sharing individually.

Transparency and Openness

Data Availability

We preregistered Study 1a (https://osf.io/we2pn) and Study 1b (https://osf.io/4d8hv). All de-identified data, materials, and supplementary material can be found at https://osf.io/fn24q/. Relevant supplementary material is presented at the end of this chapter.

Reporting

      We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the studies.

Ethical approval

      Both studies were approved by Flinders University Social and Behavioural Research Ethics Committee (2777) and conducted in accordance with the provisions of the APA Ethical Standards and the World Medical Association Declaration of Helsinki.

Participant Consent

      All participants were required to read an information sheet and provide their written consent prior to participation. Participants were informed of the research aims, nature of the survey tasks, expected duration of their participation, potential risks of participating in this research, and their right to withdraw from the study without penalty. Participation was voluntary and confidential.

Summary of Sharing Concepts

      In both studies, we refer to several concepts of sharing using novel terminology to represent the different ways people share traumatic events with others. We present terminology, definitions, and examples of these concepts in Table 1.1.

Table 1.1

Terminology, Definitions and Examples of Sharing Concepts in Study 1a and Study 1b

Concept	Definition	Examples
Subjective sharing	The extent to which an event is *perceived as* shared	"I would consider the event to be extremely shared with my friend" "I don't think the event was shared at all"
Physical sharing	When another person is (or other people are) physically present during an event simultaneously	"My mum and brother were also there during the event" "I was with my friends"
Relational sharing	Knowing or believing another person (or other people) has experienced, or will/could experience, a similar event	"My friend had a similar experience when they were younger" "This can happen to anyone"
Verbal sharing	Discussing an event with, or disclosing an event to, another person (or other people)	"I talked to other people about what I experienced" "I told my therapist what happened"
Emotional sharing	Knowing or believing another person (or other people) is/was emotionally affected in the same or a similar way about an event	"My brother also felt scared" "The other driver looked upset too"
Attitudinal sharing	Knowing or believing another person (or other people) held the same or similar attitudes, beliefs and/or opinions about an event	"We all knew the other driver was at fault" "My friends also thought his life could be at risk after being shot"
Perpetrator sharing	When a perpetrator is (or perpetrators are) involved in an event	"They robbed the store when I was working at the checkout" "The person attacked multiple people on the street"

Note. Emotional and attitudinal sharing refer to having the same or similar emotions, attitudes, beliefs and/or opinions, based on valence (i.e., positive, negative, neutral) not arousal (i.e., intensity).

We measured "subjective sharing" by asking participants' about their perceptions of how shared they considered their worst event to be (Studies 1a & 1b). We then asked participants' to report specific, often observable, details (i.e., frequency, characteristics) concerning how they shared their worst event in various specific ways (i.e., physical, relational, verbal, emotional, attitudinal, and perpetrator; Study 1b). Notably, two sharing forms (i.e., attitudinal sharing and perpetrator sharing) were not identified from Study 1a data. Nevertheless, we assessed these forms in Study 1b to explore the nature of other possible shared experiences. We also removed unspecified sharing in Study 1b and Table 1.1 because this form was only included to represent codes that did not specify how participants shared their worst event in Study 1a.

Study 1a

Method

Participants

For the magnitude of a correlation to be deemed stable, the typical sample size should approach 260 (Schönbrodt & Perugini, 2013; 2018); even larger numbers narrow the corridor of stability and increase confidence in results. We increased our sample size beyond the recommended 260 participants to what was feasible within our resource limitations (~500 participants). We wanted to capture a broad range of interpretations of what it means for a stressful/traumatic event to be "shared." We also aimed to collect a sample size that would allow us to obtain sharing data about a range of event types, given some event types have relatively low base rates (e.g., military experiences; Bromet et al., 2018).

Thus, we recruited 514 participants from five English-speaking western counties (i.e., Canada, the United States of America [USA], Australia, New Zealand, and the United Kingdom [UK]) with similar socio-economic make-up (Henrich et al., 2010) using two online platforms: Amazon's Mechanical Turk (MTurk; via CloudResearch.com; Litman et

al., 2017; compensated USD$1.27) and Prolific (compensated GBP£1.73-£2.13). We excluded seven responses: five completed the study twice, one failed both attention checks (Berinsky et al., 2014), and one failed to select and describe an event and provide a subjective sharing explanation. Our final sample comprised of 507 participants ($n = 126$ for Canada, USA, and Australia/New Zealand; $n = 129$ for UK) from MTurk ($n = 258$) and Prolific ($n = 249$). Participants were predominately male (58%, female = 40.8%, non-binary = 1.2%) with a mean age of 34.37 (range: 18-74, $SD = 11.42$). Most participants were Caucasian (including "White"; 58.8%) and others were of Asian (13.2%); African (including "Black", 6.3%); European (4.7%); Middle Eastern (1.4%); and Hispanic (1.0%) descent, or Indigenous (0.2%); Pacific Islander (0.2%) and Mixed (3.9%) ethnicity. The remaining participants provided nationality (e.g., "Australian", 10.1%) or no answer (0.2%). Most participants' highest level of education was a college/university undergraduate degree (53.8%; Supplementary Table S1.1).

Trauma History Screen (THS; Carlson et al., 2011). Participants saw a list of events from 14 trauma categories (e.g., Attacked with a gun, knife, or weapon; Sudden death of close family or friend) and were asked to "select the events that had happened to you [them]" and "indicate the number of times" these events had happened to them. Participants then described the event they were most bothered by (i.e., their worst/most stressful or traumatic event), selected the trauma category that best described their worst event (same list as above), and reported several characteristics of their worst event (e.g., age at event). We followed the format of trauma exposure measures that typically ask participants to identify, describe, and report details about the event they have experienced that was the most emotionally bothersome to them—often referred to as their "worst" event (e.g., Carlson et al., 2011; Weathers et al., 2013a). We assessed participants' worst event because asking participants to report sharing-related details about all traumatic events they had experienced

would have been demanding for participants and may have led to inaccurate or less considered responses. The THS has excellent convergent validity (rs = .73-.77) and temporal stability for high magnitude stressor events (i.e., sudden events that cause extreme distress in most people exposed; r = .93), and persisting posttraumatic distress events (i.e., events associated with significant distress lasting longer than a month; r = .73; Carlson et al., 2011).

Subjective Sharing. We asked participants "to what extent do you [they] feel like this [their worst] stressful or traumatic event was a 'shared' event?" (1 = *Not at all*, 5 = *Extremely*), and to explain their answer in an open text box.[1] To avoid influencing their responses, we did not provide participants with definitions or examples of a "shared" event.

Procedure

To prevent bots/non-residents from completing the study, participants had to pass a captcha and score at least 8/10 on an English proficiency test to enter the study (Moeck et al., 2022). After providing consent, participants saw each questionnaire in the order presented above. Considering participants may have experienced discomfort, a link to contact details for support services appeared at the bottom of each survey page. Participants were compensated and debriefed after completing the study.

Results and Discussion

Analysis Strategy

We used a combination of quantitative and qualitative data analysis to explore the nature of shared traumatic experiences in Study 1a. First, we present descriptive information about the characteristics of participants' worst events (i.e., sample characteristics). We then report the extent to which participants perceived their worst event as shared both overall and for different types of traumatic events (i.e., subjective sharing). To determine how people share traumatic experiences with others, we next present the thematic analysis procedure and

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[1] Participants also completed the Posttraumatic Stress Disorder Checklist (PCL-5; Weathers et al., 2013b). Data from this measure are reported in a separate manuscript.

results. This analysis not only allowed us to verify and consolidate existing sharing concepts from the scientific literature but also to identify novel sharing concepts. Last, we report the frequency of different sharing forms so that the relative prevalence of these can be assessed overall and for different types of traumatic events.

Data Cleaning

Our data cleaning process is summarized in Supplementary Material. Consistent with Posttraumatic Stress Disorder (PTSD) Criterion A.1 (DSM-IV), we operationalized traumatic events as "events participants experienced, witnessed, or were confronted with, involving actual or threatened death or serious injury, or a threat to the physical integrity of themselves or others" (American Psychiatric Association [APA], 2000).[2] This operationalization encompasses all THS trauma categories aside from "Some other sudden event that made you feel scared, helpless or horrified" and "Other" (Carlson et al., 2011). Rather than losing data from the 19.3% of our sample who reported events from these two categories, we assessed whether responses differed between these miscellaneous negative events—which we termed *stressful* events—and traumatic events (i.e., THS trauma categories). We found a similar pattern of results for stressful and traumatic events. To provide greater context to these stressful events, we inductively created five additional categories that captured most responses (i.e., Non-sudden death of close family or friend, Stress in everyday activities, Health-related problems for the participant/a close other, Human rights violation, and Relationship issues; Supplementary Table S1.2).

Sample Characteristics

We first examined our sample for prevalence of exposure to traumatic event(s). In most cases, participants' worst event was considered a *high magnitude stressor* event

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[2] Our operationalization of a traumatic event is also relatively consistent with PTSD Criterion A.2 (DSM-IV; i.e., the person's response involved intense fear, helplessness, or horror), given most (97.0%) participants who experienced a traumatic event, reported being really emotionally bothered and/or afraid, hopeless, or horrified from the event).

(80.7%), a *persisting posttraumatic distress* event (54.8%), and a *Criterion A.1* event (90.1%; APA, 2000; Carlson et al., 2011). The most common worst event was the sudden death of a close other (25.6%), followed by vehicle accidents (10.7%), health-related problems (7.1%), and sudden abandonment (5.5%; see Supplementary Tables S1.3-S1.7 for all characteristics data).

Subjective Sharing

We were interested in determining the extent to which participants rated their worst event as shared. Overall, 78.5% of participants rated their worst event as shared to some extent (21.5% = not at all, 12.6% = slightly, 17.8% = moderately, 24.7% = considerably, 23.5% = extremely; total sample: $M = 3.16$, $SD = 1.47$). We ran a one-way between subjects ANOVA for mean subjective sharing ratings by event type to determine which events were most subjectively shared. Participants perceived the non-sudden ($M = 4.25$, $SD = 1.22$) and sudden ($M = 4.06$, $SD = 1.06$) death of a close other, and natural disasters ($M = 3.88$, $SD = 1.12$) as the most shared (Welch's $F[18, 78.58] = 9.17$, $p < .001$, $\eta_p^2 = .261$, 95% CI [0.17, 0.30]; Supplementary Tables S1.8). These types of events appear related because they would almost always affect a significant number of people participants know (e.g., family, community members).

Thematic Analysis

Before conducting our thematic analysis, we analyzed participants' subjective sharing explanations using two computer-based qualitative analysis programs: the Linguistic Inquiry and Word Count program (LIWC2015; Pennebaker et al., 2015) and NVivo 12 (QSR International Pty Ltd, 2018). We used these analyses to explore general categories within participants' subjective sharing explanations, which informed our thematic analyses (i.e., highlighted themes we may have otherwise overlooked). Consistent with current conceptualizations of sharing, we found that participants frequently used words associated

with other people—particularly close others (e.g., family), their mood and emotions, the presence of others, and discussions with others in their subjective sharing explanations (see Supplementary Tables S1.9 & S1.10).

Next, we conducted a more precise qualitative analysis by developing a thematic codebook to identify patterns in our data concerning why participants perceived their most stressful/traumatic event as shared or not shared (Braun & Clark, 2006; Fereday & Muir-Cochrane, 2006; see Supplementary Table S1.11 for final codebook). We included both deductive and inductive components to identify patterns in the data based on pre-existing concepts within the psychological literature and new concepts generated from participants' perceptions and experiences (Figure 1.2; Robert et al., 2019).

Figure 1.2

Process of Theme and Code Development and Application for Thematic Analysis

Initial code sources Research literature Theory Identification of initial themes

Initial code development Preliminary codebook development Review of consistency of existing themes Identification of new codes/themes Formation of general labels, definitions, and examples of themes/codes

Codebook development Formation of clear labels, definitions, descriptions (incl. of inclusions/exclusions), and examples of themes/codes Review of codebook by research team Modification of codebook

Codebook application Application of codebook to all responses by two coders Review of discrepancies between coders Review and modification of codebook Re-application of updated codebook to all responses by two coders Final review of discrepancies between coders and final modification of codebook

First, we developed a preliminary codebook of sharing-related themes based on our literature review (i.e., deductive work). Themes included *physical sharing* (i.e., presence/absence of others during the event), *relational sharing* (i.e., knowing/believing others have/haven't or will/won't experience a similar event), and *verbal sharing* (i.e., discussing/not discussing the event with others). At the time, we were unaware of specific research on *emotional sharing* and therefore did not include this form in the preliminary codebook. One coder (first author) then repeatedly read all subjective sharing explanations to familiarize themselves with the data and note consistencies with themes from the preliminary codebook. Here, the coder also began the inductive work by identifying new themes or codes that emerged. General labels, definitions, and examples of the themes and codes were reviewed after reading the data each time until the coder reached saturation (i.e., no new codes/themes emerged and no changes to codes/themes were needed). All codes and themes were then given clear labels, definitions, descriptions, and examples.

The coder developed new codes for *physical sharing* concerning the participants' and other people's level of involvement in the event, including "same/similar involvement" (including involvement unclear), "others less involved", and "others more involved". The coder also detected new themes of *unspecified sharing* (i.e., vague responses suggesting the event was/wasn't experienced with others), *emotional sharing* (i.e., experiencing the same/different emotions about the event as others), and *kinds of others* (i.e., mentioning certain kinds of other people). *Unspecified sharing* was included as a broad category of sharing reflecting responses where participants did not provide enough information to categorize into existing sharing categories. That is, responses coded under this sharing category mentioned sharing (or not sharing) an experience associated with the traumatic event, but did not specify the nature of what experience was shared (e.g., the same event, emotional experience, the type of event) or how the experience was shared (e.g.,

discussion/disclosure, physical presence). *Emotional sharing* was derived from codes concerning participants' and other people's degree of emotional bother from the event, including "same/similarly affected" (including extent of bother unclear), "others more affected", "others less affected", and "others not affected or affected differently". *Kinds of others* was derived from codes of "close others" (e.g., close friends, family) and "community members" (e.g., people in the same area/country as participants). Themes of *emotional sharing* and *kinds of others* were consistent with findings from our LIWC and NVivo text analyses, and with research suggesting people often share trauma with socially and spatially close others (e.g., Paterson & Kemp, 2006; Rimé, 2009) and experience similar emotions to others about traumatic events (e.g., Durkheim, 1912; Rimé et al., 2020). A final theme of *Unclear* was included to code unclear and absent responses.

The updated codebook was reviewed by the wider research team and modified where needed (e.g., *relational sharing* originally termed *similar event sharing*, *unspecified sharing* discussed as a broad theme of sharing). Following modifications, two coders (author/code developer and independent coder) used the updated codebook to systematically code each subjective sharing explanation into the codes and themes (i.e., responses assessed against each theme/code; 0 = did not include reason consistent with code, 1 = included reason consistent with code). Each sharing explanation could receive numerous codes, based on the reasons participants provided (e.g., "There were more friends involved and we talked it through multiple times." was coded as *kinds of others* – close, *physical sharing* – same/similar involvement, and *verbal sharing* – discussed/disclosed). Agreement between coders was initially poor (43.79%; based on exact matches of codes selected for each response) so the coders met with one another to identify patterns in coding discrepancies and related overarching issues about the coding (e.g., issues with assumptions made about sharing experience). The coders then reviewed the issues with the research team and refined the

codebook without reviewing or coding individual responses. The coders then independently re-coded *all* responses based on these refinements. Subsequent agreement between coders was good (82.84%) and all discrepancies were resolved between the coders in a single meeting. Following our thematic analysis, we re-coded some themes to further clarify subcategories of sharing within our data[3]. Specifically, we separated the *physical sharing* code of "same/similar involvement" (including involvement unclear) into "same/similar involvement" and "others' involvement unclear". Similarly, we recoded the *emotional sharing* code of "same/similarly affected" (including extent of bother unclear) into "same/similarly affected" and "others' affect unclear". Agreement between coders for this recoding process was high (94.7%) and the coders met to resolve any discrepancies.

Forms of Sharing

We addressed our next research aim by assessing the frequency of the different forms of sharing derived from our thematic analysis codebook (i.e., physical, relational, verbal, emotional, and unspecified sharing, and sharing with certain kinds of people).

What forms of sharing do people most often consider when deciding whether a stressful/traumatic event was shared or not? To answer this question, we examined participants' subjective sharing explanations about their worst event. The most common form of sharing participants mentioned in their explanations was emotional sharing, followed by physical, unspecified, verbal, and relational sharing (Table 1.2). Over half of participants mentioned people close to them or people within their community.

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[3] We thank an anonymous reviewer for this coding suggestion.

Table 1.2

Description, Sample Percentage and Count for Each Form and Level of Sharing

Form/Level	Examples	%	N
Unknown	"It was a sad experience" "it was shared" "not sure" no response	**8.9**	**45**
Kinds of others		**52.9**	**268**
Community members	"It was on the news" "other students" "people my age/in the area"	5.5	28
Close others	"Family" "friends"	48.5	246
Physical sharing		**26.2**	**133**
Same/similar involvement	"Others were also there" "I was with…" "My colleagues also witnessed the event"	12.4	63
Others less involved*	"They did not lose a car like I did" "… helped me and catered for me" "… saw it happen to me"	4.3	22
Others more involved	"… was a victim" "… sustained more injuries than me"	0.6	3
Others' involvement unclear	"I wasn't the only one present", "… was witnessed by several people"	4.1	21
No others present	"I was alone", "I was the only one there" "no one else was there"	4.7	24
Relational sharing		**3.4**	**17**
Others have/will experience a similar event	"happens to people regularly" "these kinds of things happen daily" "it can happen to anyone"	3.2	16
Others haven't/won't experience a similar event	"I don't think it's a common experience"	0.2	1
Verbal sharing		**7.7**	**39**
Discussed and/or disclosed	"I told …" "We talked it through multiple times" "I discussed it with …"	3.3	17
Not discussed and/or disclosed	"I was too afraid/ashamed to tell anyone" "I had never really spoken about it"	4.3	22

Emotional sharing		**53.6**	**272**
Same/similarly affected	"… was also affected/impacted" "everyone was stressed"	16.8	85
Others less affected*	"I was more affected than …" , "… was worried for me" "probably not as traumatic for …"	9.5	48
Others more affected	"… was more devastated than I was likely" "… probably felt event worse than I"	2.6	13
Others' affect unclear	"It affected many people in the area", "the sadness was shared among them", "the loss could have been shared but in different ways"	15.0	76
Others not affected or affected differently	"I shared all the burden on my own" "it didn't seem to bother …" "it only impacted me"	9.9	50
Unspecified sharing		**22.9**	**116**
Others experienced the event	"… also experienced it" "I'm not the only one who …" "… and I were stuck in it together"	10.5	53
Others did not experience the event	"only involved me" "was a private/personal experience" "I was the only one to experience it"	12.4	63

Note. * Less physically involved or less intense emotions includes other people finding out about the event and physically supporting or emotionally supporting the participant.

Table 1.3

Sample Percentage (and Count) for Forms and Levels of Sharing Within Each THS Event Category

Form/Level	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Unknown	11.1 (6)	5.3 (1)	12.5 (3)	11.1 (3)	11.8 (2)	8.7 (2)	5.6 (1)	13.0 (3)	-	6.2 (8)	20.8 (5)	12.5 (1)	10.5 (2)	14.3 (4)	-	4.0 (1)	2.8 (1)	-	28.6 (2)
Kinds of others	38.9 (21)	36.8 (7)	87.5 (21)	22.2 (6)	52.9 (9)	30.4 (7)	22.2 (4)	21.7 (5)	33.3 (1)	76.9 (100)	50.0 (12)	12.5 (1)	52.6 (10)	53.6 (15)	83.3 (10)	24.0 (6)	77.8 (28)	80.0 (8)	42.9 (3)
Community	1.9 (1)	-	45.8 (11)	-	-	-	-	4.3 (1)	-	4.6 (6)	12.5 (3)	-	5.3 (1)	-	16.7 (2)	8.0 (2)	-	10.0 (1)	-
Close others	37.0 (20)	36.8 (7)	41.7 (10)	22.2 (6)	52.9 (9)	30.4 (7)	22.2 (4)	17.4 (4)	33.3 (1)	72.1 (94)	37.5 (9)	12.5 (1)	47.4 (9)	53.6 (15)	66.7 (8)	16.0 (4)	77.8 (28)	70.0 (7)	42.9 (3)
Physical	44.4 (24)	31.6 (6)	8.3 (2)	22.2 (6)	70.6 (12)	26.1 (6)	22.2 (4)	47.8 (11)	33.3 (1)	11.5 (15)	54.2 (13)	50.0 (4)	26.7 (4)	8.3 (2)	25.0 (3)	16.0 (4)	25.0 (9)	40.0 (4)	14.3 (1)
Same/similar	29.6 (16)	10.5 (2)	8.3 (2)	11.1 (3)	23.5 (4)	8.7 (2)	5.6 (1)	8.7 (2)	33.3 (1)	5.4 (7)	41.7 (10)	37.5 (3)	5.3 (1)	-	16.7 (2)	12.0 (3)	-	30.0 (3)	-
Less	7.4 (4)	15.8 (3)	-	3.7 (1)	23.5 (4)	-	-	8.7 (2)	-	-	-	12.5 (1)	-	-	-	-	16.7 (6)	10.0 (1)	-
More	1.9 (1)	-	-	-	-	-	-	-	-	-	4.2 (1)	-	-	3.6 (1)	-	-	-	-	-
Unclear	3.7 (2)	-	4.2 (1)	3.7 (1)	11.8 (2)	-	-	8.7 (2)	-	3.8 (5)	4.2 (1)	-	5.3 (1)	3.6 (1)	8.3 (1)	4.0 (1)	5.6 (2)	-	14.3 (1)
No	1.9 (1)	5.3 (1)	-	3.7 (1)	11.8 (2)	17.4 (4)	16.7 (3)	21.7 (5)	-	2.3 (3)	4.2 (1)	-	10.5 (2)	-	-	-	2.8 (1)	-	-
Relational	-	5.3 (1)	-	3.7 (1)	-	8.7 (2)	16.7 (3)	13.0 (3)	33.3 (1)	0.8 (1)	-	-	5.3 (1)	3.6 (1)	8.3 (1)	8.0 (1)	-	-	-
Yes	-	5.3 (1)	-	-	-	8.7 (2)	16.7 (3)	13.0 (3)	33.3 (1)	0.8 (1)	-	-	5.3 (1)	3.6 (1)	8.3 (1)	8.0 (1)	-	-	-
No	-	-	-	3.7 (1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Verbal	**9.3 (5)**	**5.3 (1)**	**-**	**11.1 (3)**	**17.6 (3)**	**26.1 (6)**	**11.1 (2)**	**4.3 (1)**	**-**	**3.8 (5)**	**8.3 (2)**	**12.5 (1)**	**5.3 (1)**	**3.6 (1)**	**-**	**16.0 (4)**	**2.8 (1)**	**-**	**-**
Yes	3.7 (2)	5.3 (1)	-	-	11.8 (2)	8.7 (2)	5.6 (1)	4.3 (1)	-	2.3 (3)	4.2 (1)	-	-	3.6 (1)	-	8.0 (2)	2.8 (1)	-	-
No	5.6 (3)	-	-	11.1 (3)	5.9 (1)	21.7 (5)	5.6 (1)	4.3 (1)	-	1.5 (2)	4.2 (1)	12.5 (1)	5.3 (1)	-	-	12.0 (3)	-	-	-
Emotional	**46.3 (25)**	**52.6 (10)**	**58.3 (14)**	**22.2 (6)**	**41.2 (7)**	**34.8 (8)**	**50.0 (9)**	**34.8 (8)**	**-**	**66.9 (87)**	**41.7 (10)**	**37.5 (3)**	**57.9 (11)**	**67.9 (19)**	**83.3 (10)**	**36.0 (9)**	**69.4 (25)**	**60.0 (6)**	**71.4 (5)**
Same/similar	13.0 (7)	-	8.3 (2)	-	-	-	5.6 (1)	4.3 (1)	-	34.6 (45)	12.5 (3)	-	15.8 (3)	14.3 (4)	33.3 (4)	4.0 (1)	30.6 (11)	20.0 (2)	14.3 (1)
Less	11.1 (6)	31.6 (6)	4.2 (1)	3.7 (1)	5.9 (1)	8.7 (2)	5.6 (1)	8.7 (2)	-	3.1 (4)	4.2 (1)	12.5 (1)	5.3 (1)	25.0 (7)	-	12.0 (3)	25.0 (9)	10.0 (1)	14.3 (1)
More	1.9 (1)	5.3 (1)	4.2 (1)	-	-	4.3 (1)	-	-	-	46 (6)	4.2 (1)	-	-	-	-	-	2.8 (1)	10.0 (1)	-
Unclear	13.0 (7)	5.3 (1)	33.3 (8)	3.7 (1)	5.9 (1)	-	5.6 (1)	8.7 (2)	-	23.1 (30)	12.5 (3)	-	21.1 (4)	21.4 (6)	41.7 (5)	8.0 (2)	5.6 (2)	10.0 (1)	28.6 (2)
No	7.4 (4)	10.5 (2)	8.3 (2)	14.8 (4)	29.4 (5)	21.7 (5)	33.3 (6)	13.0 (3)	-	1.5 (2)	8.3 (2)	25.0 (2)	15.8 (3)	7.1 (2)	8.3 (1)	12.0 (3)	5.6 (2)	10.0 (1)	14.3 (1)
Unspecified	**18.5 (10)**	**36.8 (7)**	**29.2 (7)**	**44.4 (12)**	**5.9 (1)**	**34.8 (8)**	**33.3 (6)**	**13.0 (3)**	**-**	**18.5 (24)**	**-**	**12.5 (1)**	**21.1 (4)**	**25.0 (7)**	**16.7 (2)**	**44.0 (11)**	**25.0 (9)**	**30.0 (3)**	**14.3 (1)**
Yes	9.3 (5)	-	29.2 (7)	3.7 (1)	-	4.3 (1)	-	4.3 (1)	-	17.7 (23)	-	-	21.1 (4)	3.6 (1)	16.7 (2)	8.0 (2)	13.9 (5)	10.0 (1)	-
No	9.3 (5)	36.8 (7)	-	40.7 (11)	5.9 (1)	30.4 (7)	33.3 (6)	8.7 (2)	-	0.8 (1)	-	12.5 (1)	-	21.4 (6)	-	36.0 (9)	11.1 (4)	20.0 (2)	14.3 (1)

Note. THS categories: A = vehicle accident, B = work or home accident, C = natural disaster, D = injured as a child, E = injured as an adult, F = sexual coercion as a child, G = sexual coercion as an adult, H = attack with a weapon, I = military experiences, J = sudden death of close other, K = seeing someone die, hurt or killed, L = other, M = sudden move or loss of home, N = sudden abandonment, O = non-sudden death of close other, P = everyday stressors, Q = health-related problems, R = human rights violation, S = relationship issues.

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Does event type influence which forms of sharing people most often consider when deciding whether a stressful/traumatic event was shared or not? We addressed this question by analyzing participants' subjective sharing explanations for each event type. Emotional sharing was the most common reason for perceiving an event as shared or not for 11/19 events, physical sharing was most common for 4/19 events, unspecified sharing was most common for 2/19 events—with the next most common and more specific form being emotional sharing for the latter two events—and the remaining 2/19 events were equally most commonly shared emotionally and physically, or relationally and physically (Table 1.3). Therefore, although the most common form of sharing participants mentioned varied based on event type, emotional sharing influenced subjective sharing ratings for more event types than any other form of sharing. This finding supports research demonstrating that people's emotions can become, or be perceived as, synchronized during a mass traumatic event (e.g., natural disaster; Durkheim, 1912; Rimé et al., 2020), and expands on this work by highlighting that emotional sharing could occur in individual traumatic events too.

Further, physical sharing was the most common form for the remaining event types, possibly because these events tend to occur in public (e.g., vehicle accidents) and around others (e.g., perpetrators/witnesses of physical assault). Indeed, many eyewitnesses to stressful/traumatic criminal events report physically sharing these events (Paterson & Kemp, 2006; Skagerberg & Wright, 2008). Finally, although not a specific form of sharing, the most common theme that emerged from participants' subjective sharing explanations was sharing with kinds of others, particularly close others. This finding seems logical considering people usually discuss emotional events with close others (Rimé, 2009), people often spend time with friends and family (Ortiz-Ospina et al., 2020), and many of the THS events likely affect or involve close others (e.g., sudden death of close other).

How often do people share stressful/traumatic events in multiple ways? In addition to our planned analyses, we were also interested in determining whether different shared experiences may be related. Thus, we ran exploratory descriptive analyses to determine how often participants mentioned numerous forms of sharing in their subjective sharing explanations. Many participants' responses (62.5%) were coded into more than one sharing category. However, after removing the community members, close others, and unspecified sharing categories—because these categories were not linked to specific shared experiences (see Figure 1.1)—few responses (22.3%) were coded into numerous categories. Amongst these responses, the greatest overlap between different sharing forms was physical and emotional sharing (12.0%), followed by verbal and emotional sharing (4.1%), and verbal and unspecified sharing (3.9%). Thus, whilst we know different shared experiences can emerge from the same stressful or traumatic event (e.g., Bartholomew & Victor, 2004; Paterson & Kemp, 2006; MacNeil & Mead, 2005; Solomon, 2004; Rimé, 2009), most participants seemed to consider one key shared experience they did or did not have when determining the extent to which their worst event was shared.

Summary

Most participants (78.5%) perceived their most stressful/traumatic event as shared to some extent for reasons including, sharing the overall experience with others (unspecified sharing), knowing others were physically present during the event (physical sharing), experiencing the same emotions as others about the event (emotional sharing), discussing and/or disclosing the event with/to others (verbal sharing), knowing others who had experienced a similar event (relational sharing), and sharing the event with close others or their community. The most common reasons for perceiving an event as shared—for all event types—were emotional sharing, physical sharing, and sharing the event with close others. Importantly however, these results reflect the forms of sharing that were most influential or

noticeable for participants when considering whether their worst event was shared or not,

meaning the data do not necessarily capture how often participants actually shared their worst

event with other people in these ways. We aimed to address this gap in Study 1b by

examining how often people share traumatic events with others, using a more structured

questionnaire.

Study 1b

To test our aims, we asked participants about the specific sharing categories we

identified in Study 1a (physical, relational, verbal, and emotional sharing), and two additional

categories we developed (perpetrator and attitudinal sharing). Conceptually, the presence of a

perpetrator during an event could be considered a subform of physical sharing (i.e.,

physically sharing an event specifically with a perpetrator). However, perpetrators are likely

to subjectively experience stressful/traumatic events differently to eyewitnesses and victims

of such events, meaning participants may have emotionally and attitudinally shared their

worst event with non-perpetrators (e.g., feeling scared, blaming the same person), but not

with perpetrators (e.g., feeling scared vs. angry, blaming the perpetrator vs. the victim). Thus,

we included perpetrator sharing as a separate form of sharing to isolate findings relating to

participants' experiences of sharing their most stressful/traumatic event with the

perpetrator(s) and non-perpetrators of the event. We asked participants to not consider the

perpetrator(s) for the other sharing measures.

Recall we considered that there may be other ways that people share trauma that have

not been established in previous research, and may not have been identified from our Study

1a data. Thus, we examined attitudinal sharing in Study 1b to determine whether participants

shared the same attitudes, beliefs, and/or opinions as other people regarding their worst event.

As with emotions, people are often driven to establish common beliefs, judgments, and

evaluations about their experiences (i.e., shared reality) to improve their understanding of the

world, and foster connections with others (see Echterhoff et al., 2009). Some research has even indicated that experiencing a collective trauma can elicit shared values and goals amongst affected groups (e.g., Drury, 2012; 2018; Ntontis et al., 2018; Reicher, 2011). Further, other work suggests that people tend to believe that victims of sexual assault were assaulted and were not responsible for the event occurring, meaning people's attitudes about sexual assault experiences can align (e.g., Acquaviva et al., 2020; Li et al., 2017). Yet, whilst this work suggests that people's attitudes and beliefs about traumatic events may align, it does not explore the nature of these shared experiences in depth, making it difficult to discern whether such experiences truly occur. Despite not considering this sharing form prior to Study 1a, we found some evidence for attitudinal sharing when reanalyzing our Study 1a data: 15 participants reported experiencing the same or different attitudes to others as a reason for their sharing perception rating (e.g., "none of them believed me"). However, attitudinal sharing was often implied rather than explicitly referenced in these explanations (e.g., "other people cared [about the event]"), which may explain why this theme did not emerge in our thematic analysis. Thus, we assessed attitudinal sharing in Study 1b to explore this potential form of sharing further. We differentiated between emotional sharing—representing people's feelings and emotional reactions to an event—and attitudinal sharing—representing people's views and evaluations of an event—because these forms may not always overlap (e.g., experiencing similar emotions of fear, but different attitudes about government restrictions, during the COVID-19 pandemic).

Method

Participants

We recruited 514 participants from the same countries as in Study 1a; they were compensated USD$1.20-USD$1.40 (MTurk) or GBP£1.50 (Prolific). We excluded thirteen responses: three completed the study twice and ten failed both attention checks (Berinsky et

al., 2014). Our final sample was 501 participants (n = 125 for Canada, USA, and

Australia/NZ each; n = 126 for UK) from MTurk (n = 239) and Prolific (n = 262).

Participants were mostly female (51.7%, male = 46.3%, non-binary = 1.6%, preferred not to

say = 0.4%) and with a mean age of 36.09 (range: 18-75, SD = 13.15). Most participants were

Caucasian (including "White", 56.7%) and other participants were of Asian (15.6%);

European (4.2%); African (including "Black", 3.8%); Hispanic (1.0%) and Middle Eastern

(0.6%) descent, or Pacific Islander (0.2%) and Mixed (3.2%) ethnicity. All other participants

either provided nationality (e.g., "Australian", 13.4%) or no answer (1.4%). Roughly half of

the sample had a college/university undergraduate degree (53.3%; Supplementary Table

S1.12).

Materials and Procedure

We used the same materials and procedure as in Study 1a but did not ask participants

to provide an explanation for their subjective sharing ratings, and included a forms of sharing

measure.

Forms of Sharing. We asked participants questions about sharing-related details of

their worst event (see Appendix D). We assessed perpetrator sharing first to ensure

participants only included a perpetrator in their responses for this measure. All other forms of

sharing measures appeared in a randomized order. For each measure—other than perpetrator

and relational sharing—we asked participants whether they shared their worst event in this

way and provided them with options: "Yes", "No", and "Unsure" (i.e., *initial* responses).

Participants who selected "Unsure" then saw a follow-up question asking them to *predict*

whether they shared the event in this way ("Yes", "No"; i.e., *predicted* responses). For

instance, participants were initially asked if they emotionally shared their worst event with

other people (i.e., same/similarly emotionally affected) and participants who selected

"Unsure" were then asked whether they *believed* they emotionally shared the event with

others. We used this procedure to capture shared experiences as inclusively as possible, given reports of these experiences can be subjective and rely on memory accuracy.

Perpetrator Sharing. We provided participants with a definition and an example of a perpetrator and then asked whether a perpetrator was involved in their worst event (*Yes/No*). Participants who selected "Yes" identified how many perpetrators were involved in the event (1 = *1 perpetrator*, 10 = *10+ perpetrators*), identified who the perpetrator(s) were (*Close others, Distant others, Strangers*), and briefly described what the perpetrator(s) did.

Physical Sharing. Participants identified whether other people were present during their worst event (*Yes/No*). Participants who selected "Yes" indicated how many people were present (1 = *1 person*, 8 = *100+ people*), who these people were (*Close others, Distant others, Vocationally-exposed people, Strangers*), and how involved these people were in the event compared to them (*More involved, Same/similarly involved, Less involved, Unsure*).

Relational Sharing. Participants identified whether they knew anyone else who had experienced, or believed someone would experience, a similar (but not the same) event to them (*Yes/No*). Participants who answered "Yes" then selected who these people were or could be (see physical sharing).

Verbal Sharing. Participants identified whether they had discussed their worst event with and/or disclosed their worst event to anyone (*Yes/No*). Participants who selected "Yes" indicated how many people and who they verbally shared the event with (see physical sharing), and whether any of these people were present during the event (*Yes/No*). These participants also reported when they first and last discussed/disclosed the event (1 = *During the event*, 7 = *Longer than 6 months after the event*), how often they discussed/disclosed the event within 24 hours, 1 week, and 6 months of the event occurring (1 = *Never*, 6 = *Almost continuously*), and what they discussed/disclosed (*Event details, Emotions, Attitudes, beliefs*

or opinions, Similar events, Other).[4] Participants identified how they discussed/disclosed the event (*Orally/in-person, Orally/virtually, Written/in-person, Written/virtually*) and whether their discussions/disclosures were public and/or private.

Emotional Sharing. We provided participants with examples (e.g., "did other people seem to have negative feelings and emotions [e.g., sadness] about the event too?") and nonexamples (i.e., an explanation of what we were not asking about, e.g., "were other people emotionally affected about the event but in a different way") of emotional sharing. We asked participants to identify whether other people were emotionally affected in the same or a similar way to them about their worst event (*Yes/No*). Participants who selected "Yes" identified how many people and who they emotionally shared the event with (see physical sharing), how emotionally affected others were about the event compared to them (*More affected, Same/similarly affected, Less affected, Unsure*) and, if others were physically present, whether they believed any of these people were emotionally affected in the same or a similar way to them (*Yes/No*).

Attitudinal Sharing. We provided participants with examples (e.g., "did other people also believe the other driver was at fault") and nonexamples (i.e., an explanation of what we were not asking about, e.g., "did other people feel the same or similar to you about the event") of attitudinal sharing. We asked participants to identify whether other people had the same or similar attitudes, beliefs and/or opinions as them about their worst event (*Yes/No*). Participants who answered "Yes" identified how many people and who they attitudinally shared the event with (see physical sharing), how strong other people's attitudes, beliefs

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[4] We examined the type of information participants verbally shared to explore whether participants may have shared the same emotions, attitudes, and/or similar experiences as others due to verbally sharing the event. These data could suggest that some participants shared their worst event in other ways aside from verbally (e.g., emotionally, attitudinally, relationally). Nevertheless, we kept responses within the verbal sharing category regardless of what participants reported verbally shared. That is, we did not recode other sharing forms based on responses to this question because it was unclear whether participants' emotions, attitudes, or similar experiences aligned with other peoples during such discussions.

and/or opinions were compared to them (*Stronger, Same/similar strength, Weaker, Unsure*) and, if others were present, whether they believed these people had the same or similar attitudes, beliefs and/or opinions as them (*Yes/No*).

Results and Discussion

Analysis Strategy

We used a range of quantitative methods to further examine the nature of shared traumatic experiences in Study 2. As with Study 1, we first report descriptive information about the characteristics of participants' worst events (i.e., sample characteristics) and then report the extent to which participants perceived their worst event as shared both overall and by event type (i.e., subjective sharing). Next, we present data on several unique forms of sharing, including perpetrator, physical, relational, verbal, emotional, and attitudinal sharing. Here, we report how often participants shared their worst events in these ways overall and for different types of stressful/traumatic events. We then provide descriptive information about the characteristics of each sharing form including how, how often, with whom, and when participants shared their most stressful/traumatic event. We next report how often stressful/traumatic events are shared in multiple ways. Finally, we report correlational data on the relationships between subjective sharing and other sharing forms.

Data cleaning

We followed the same data cleaning process as in Study 1a. Further information about this process can be found in Supplementary Martial. We present results from initial responses and note where differences emerged between initial and initial/predicted responses.

Sample characteristics

We analyzed our sample for prevalence of exposure to traumatic event(s). Most participants' worst events were considered a *high magnitude stressor* event (75.5%), a *persisting posttraumatic distress* event (61.1%), and a *Criterion A.1* event (88.6%; APA,

2000; Carlson et al., 2011). The most common worst events were the sudden death of a close

other (22.8%), sudden abandonment (8.8%), and seeing someone die, hurt, or killed (8.6%;

see Supplementary Tables S1.13-S1.17 for all characteristics data).

Subjective Sharing

Similar to Study 1a, 72.1% of participants rated their worst event as shared to some

extent (27.9% = not at all, 14.8% = slightly, 16.2% = moderately, 23.6% = considerably,

17.6% = extremely; total sample: $M = 2.88$, $SD = 1.48$). As with Study 1a, we identified the

most subjectively shared traumatic events in our sample by conducting a one-way between

subjects ANOVA for mean subjective sharing ratings by event type. The event types

participants perceived as shared to the greatest extent were natural disasters ($M = 4.45$, $SD =$

0.82), the sudden death of a close other ($M = 3.75$, $SD = 1.10$), and seeing someone die, hurt,

or killed ($M = 3.47$, $SD = 1.30$; Welch's F [18, 69.58] = 12.47, $p < .001$, $\eta_p^2 = .263$, 95% CI

[0.17, 0.30]; Supplementary Table S1.18).

Forms of Sharing

How often do people share stressful/traumatic events in different ways? We

assessed the frequency of each form of sharing to answer this question. Almost all

participants (initial: 98.6%, initial/predicted: 99.4%) shared their most stressful/traumatic

event with others in some way. Based on initial responses, participants most commonly

shared their worst event verbally (81.0%), followed by relationally (64.7%), emotionally

(57.5%), physically (54.4%), attitudinally (52.7%), and with a perpetrator (36.9%). However,

when including predicted responses (i.e., predictions [Y/N] about whether a shared

experience occurred for participants who initially reported being "unsure") in analyses,

participants most often shared their worst event verbally (82.8%), followed by attitudinally

(74.5%), emotionally (69.7%), relationally (64.7%), physically (57.6%), and with a

perpetrator (36.9%). Therefore, verbal sharing was the most common form of sharing and

perpetrator sharing was the least common but the frequency of attitudinal and emotional sharing increased considerably when including predicted responses in analyses. Perhaps these forms of sharing were less familiar to participants or more difficult for participants to identify or recall, particularly if they had not discussed or observed other people's emotions or attitudes, beliefs and/or opinions about the event.

Does event type influence the frequency of sharing stressful/traumatic events?

Participants across many event types most often shared their worst event verbally and/or with a perpetrator (Supplementary Tables S1.19 & S1.20). The event types with the highest percentage of perpetrator sharing were all interpersonal traumas (e.g., sexual coercion as a child, attacked with a weapon), meaning, by definition, they all would have involved a perpetrator. Thus, we removed perpetrator sharing from these analyses to ascertain other common ways participants who experienced such events shared the event. After removing perpetrator sharing, verbal and physical sharing were the most common ways that these events were shared. We found a similar pattern of results when analyzing sharing frequencies using initial/predicted responses, but attitudinal and emotional sharing became more common than other forms of sharing for some event types (Supplementary Tables S1.21 & S1.22). Although these patterns differ from the overall frequency of each form of sharing, they illustrate that verbal sharing may be the most common form irrespective of the type of event experienced and attitudinal and emotional sharing are more difficult for participants to recognize when first asked. These findings are inconsistent with our Study 1a results, where participants most often mentioned emotional and physical sharing in their subjective sharing explanations. Thus, perhaps discussing and/or disclosing a stressful/traumatic event is the most common way people *actually share* such events with others, but knowing others are present and having the same or similar emotions as others about an event influences whether such events *feel shared*.

What are the common characteristics of each form of sharing in the context of stressful/traumatic events? We analyzed each form of sharing individually to examine how, how often, with whom, and when participants shared their most stressful/traumatic event.

Perpetrator Sharing. At least one perpetrator was involved in 36.9% of participants' worst events. Consistent with homicide research (Roscoe et al., 2012), most often (73.5%) only one perpetrator was involved in the event (2-6 perpetrators: 24.8%; 10+ perpetrators: 1.6%) and perpetrators were typically identified as close others for single-perpetrator events (59.7%; stranger: 25.4%; distant other: 14.9%) and strangers for multiple-perpetrator events (53.1%; close others: 38.8%; distant others: 26.5%). Events that most often involved a perpetrator included human rights violations (100%), sexual coercion as a child (100%) or adult (95.0%), being attacked with a weapon (94.4%), and being injured as an adult (91.7%) or child (88.5%). Despite our expectations that all these events would have involved a perpetrator, 5.3% ($n = 6$) of participants who experienced one of these events did not report perpetrator involvement. Although these responses could be inaccurate due to participant inattention or erroneous responding, participants may have felt reluctant to label these people as perpetrators, particularly if they knew them well (see Gagnon et al., 2017), or were a perpetrator themselves (e.g., reciprocal violence).

Physical Sharing. Between 54.4% (initial responses) and 57.6% (initial/predicted responses) of participants physically shared their worst event. Physical sharing was less frequent in our sample than existing eyewitness samples (86-88%; Paterson & Kemp, 2006; Skagerberg & Wright, 2008), however this difference could have emerged because only a subsection of events we assessed would have been experienced by eyewitnesses (i.e., events involving crime). Approximately half these participants (52.4%) physically shared their worst event with two to five people. Participants most often physically shared their worst event with close others (75.7%; vocationally-exposed people: 29.2%; strangers: 23.3%; distant

others: 21.2%), which may reflect the substantial time people spend with close others (Ortiz-Ospina et al., 2020) and thus the increased likelihood of being exposed to stressful/traumatic events with close others around (e.g., vehicle accident). Participants often reported being involved to the same or a similar extent to others during the event (45.8%; others less involved: 33.0%; others more involved: 26.4%; unsure: 10.8%). Military experiences (100%), the non-sudden death of a close other (100%), and natural disasters (81.8%) were most often physically shared. Interestingly, these events were within the four most subjectively shared events in Study 1a. Thus, as suggested in Study 1a, events involving or affecting many people seem to be perceived as highly shared.

   Relational Sharing. Over half (64.7%) of participants relationally shared their worst event. Participants most often relationally shared their worst event with close others (69.4%; strangers: 60.5%; distant others: 59.1%; vocationally-exposed people: 28.1%; unsure: 15.3%). Natural disasters (81.8%), the non-sudden death of a close other (80.0%), and sexual coercion as a child (76.7%) were most commonly relationally shared, perhaps because these events tend to be verbally shared (e.g., personal discussions or public announcements), enabling people to identify others with similar experiences.

   Verbal Sharing. Between 81.0% (initial responses) and 82.8% (initial/predicted responses) of participants verbally shared their worst event. Most participants verbally shared their worst event with two to five people (55.2%) and nearly all reported verbally sharing their worst event with close others (95.9%; distant others: 28.7%; vocationally-exposed people: 21.5%; strangers: 5.5%). These findings support research indicating that discussing negative emotional events is very common (Rimé et al., 1998; 2010) and often occurs with close others (Rimé, 2009).

   For verbal sharing, we assessed the timing, frequency, content, and modes of participants' discussions/disclosures about their worst event. Initial discussions/disclosures

often occurred shortly after the event (e.g., immediately after: 34.0%; same day: 16.4%; 6 months after: 3.6%) and final discussions/disclosures often occurred long after the event (e.g., >6 months: 73.5%; 1 month: 5.3%; same day: 2.7%). The overall frequency of verbal sharing declined from 24 hours ($M = 3.24$, $SD = 1.86$) to 1 week ($M = 3.18$, $SD = 1.59$), and from 1 week to 6 months ($M = 2.75$, $SD = 1.28$) after participants' worst event. Thus, consistent with existing research (e.g., Paterson & Kemp, 2006; Rimé et al., 2010), participants discussed their worst events shortly after they occurred but these discussions declined over time.

Participants most often verbally shared their worst event orally/in-person (i.e., talking to others; 95.2%), followed by orally/virtually (e.g., video/phone call; 29.9%), written/virtually (e.g., text messages, social media posts; 25.8%), and written/in-person (e.g., letters/cards; 4.3%). Most participants discussed/disclosed the event with others privately (i.e., others couldn't hear or see discussion/disclosure; 69.5%) but some discussed/disclosed the event publicly (i.e., others could hear or see discussion/disclosure; 4.0%) or both privately and publicly (9.2%). Consistent with previous research on co-witness discussions (Paterson & Kemp, 2006; Skagerberg & Wright, 2008), participants most often reported verbally sharing event details with others (e.g., what happened; 89.6%), followed by emotions about the event (e.g., fear; 82.4%), attitudes, beliefs and/or opinions about the event (e.g., aftermath of event; 49.6%), and similar events (e.g., a previous car accident; 16.6%).

Work or home accidents, vehicle accidents, and human rights violations (all 100%) were most commonly verbally shared and even the least commonly verbally shared events were shared often ($\geq 65\%$). Thus, as Rimé and colleagues (2020) suggest, people frequently talk with others following negative emotional events.

Emotional Sharing. Between 57.5% (initial responses) and 69.7% (initial/predicted responses) of participants emotionally shared their worst event with other people, with most of these participants sharing the event with two to five people (54.7%). Most participants

emotionally shared the event with close others (89.1%; distant others: 22.1%; strangers: 15.2%; vocationally-exposed people: 13.8%) and many believed they were emotionally affected by their worst event to the same or a similar extent as other people (61.6%; others less affected: 28.4%; others more affected: 25.5%; unsure: 7.7%). These findings align with research demonstrating that stressful experiences can elicit synchronization of negative affect between partners (Levenson & Gottman, 1983) and friends (Cook, 2020). Natural disasters (90.9%) and the sudden (80.7%) and non-sudden (80%) death of a close other were most frequently emotionally shared. As with physical sharing, these events were perceived as shared to the greatest extent in Study 1a, suggesting events eliciting similar emotional reactions amongst people are highly subjectively shared.

Attitudinal Sharing. Between 52.7% (initial responses) and 74.5% (initial/predicted responses) of participants attitudinally shared their worst event. Nearly half of these participants attitudinally shared their worst event with two to five people (49.3%) and most shared the event with close others (75.4%; vocationally-exposed people: 29.1%; strangers: 23.5%; distant others: 21.1%). Indeed, people often consider the views and beliefs of close others to form a more valid and reliable understanding of their experiences (Andersen, & Przybylinski, 2018; Hardin & Higgins, 1996). Participants most often reported that others had the same or similar attitudes, beliefs and/or opinions about the event as them (65.9%; others weaker attitudes: 20.4%; others stronger attitudes: 14.5%; unsure: 12.4%). Seeing someone die, hurt or killed (72.1%), military experiences (66.7%), and a sudden move or loss of home (64.7%) were most often attitudinally shared, possibly reflecting a moral element of such events whereby commonly held standards were violated in some way (e.g., harming others, damaging property).

How often do people share stressful/traumatic events in multiple ways? We examined this question by 1) calculating the percentage of participants who reported sharing

their worst event in two different ways, and 2) analyzing questions within the forms of sharing measure explicitly designed to assess the overlap of multiple sharing forms.

Our first analyses revealed that verbal sharing had the highest overlap with other forms of sharing (77.3%-88.3%), meaning many participants who shared their worst event physically, relationally, emotionally, attitudinally, and/or with a perpetrator also verbally shared the event at some point (Supplementary Table S1.23). Relational and emotional sharing also frequently overlapped with other forms of sharing (51.4%-75.4%), whereas perpetrator sharing had the lowest overlap with other forms (39.1%-77.3%). Emotional and attitudinal sharing overlapped with other forms of sharing more often when predicted responses were included in analyses (Supplementary Table S1.24).

Our second analyses demonstrated that many participants emotionally (75.4%) and attitudinally (72.1%) shared, but fewer verbally shared (40.5%), their worst event with people they physically shared the event with. Emotional and attitudinal sharing can be inferred by making assumptions about others' feelings and attitudes at any time. Alternatively, verbal sharing is a concrete behavior and often occurs during or shortly after certain traumatic events, such as mass traumatic events (e.g., terrorist attacks), criminal events (e.g., physical assault), and the death of a loved one (e.g., Pelletier & Drozda-Senkowska, 2016; Pennebaker & Harber, 1993; Rimé et al., 1998; 2010). Thus, there may have been greater opportunity for participants to emotionally and attitudinally (vs. verbally) share the event with people who were present during the event. Yet, verbal sharing can be delayed for some traumatic events (e.g., events eliciting shame or guilt such as sexual assault; Rimé, 2009; Rimé et al., 1991), meaning this pattern could have emerged for other reasons. For instance, participants may not have felt the need to verbally share events with people they physically shared the event with because they assumed their knowledge of the event would be similar. Meanwhile, emotional and attitudinal sharing could have arisen naturally, without requiring action from participants

towards others who were present during the event. Moreover, many participants reported discussing and/or disclosing their emotions (82.4%) and attitudes, beliefs, and/or opinions (49.6%) about the event whereas fewer reported discussing and/or disclosing similar events with others (i.e., relational sharing; 16.6%). This finding could indicate that these forms overlapped especially considering discussing the event may have encouraged participants to have, or realize they had, similar or the same emotions, attitudes, and experiences as others.

Our overlap analyses suggest many participants shared their worst event with others in multiple ways. Verbal sharing most often overlapped with the other sharing forms, particularly emotional and attitudinal sharing, which is consistent with research demonstrating that people frequently verbally share their emotions, thoughts, and experiences regarding a stressful/traumatic event with others (e.g., Rimé et al., 2010; Skagerberg & Wright, 2008). Further, perpetrator sharing overlapped with the other sharing factors the least, possibly because events involving a perpetrator are unlikely to occur with others around (e.g., victims or eyewitnesses) and may not be discussed and/or disclosed to others (e.g., due to shame; Rimé, 2009). Consequently, not verbally or physically sharing events involving a perpetrator may reduce the opportunity, and thus the likelihood, of relationally, emotionally, and attitudinally sharing the event with other people too.

Associations Between Subjective Sharing and Forms of Sharing

Finally, we assessed whether perceiving stressful/traumatic events as shared was related to sharing such events in the different ways we examined here. Subjective sharing was positively correlated with physical ($r = .37$, $p < .001$), verbal ($r = .13$, $p = .004$), emotional ($r = .51$, $p < .001$), and attitudinal sharing ($r = .28$, $p < .001$), negatively correlated with perpetrator sharing ($r = -.29$, $p < .001$), and not significantly correlated with relational sharing ($r = .08$, $p = .060$). We also found significant positive correlations between subjective sharing and the number of people events who physically ($r = .14$, $p = .019$), verbally ($r = .22$, $p <$

.001), emotionally (*r* = .27*, p* < .001), and attitudinally (*r* = .17*, p* < .001) shared the event. There was no significant difference for perpetrator sharing (*r* = .07; *p* = .316). Therefore, sharing an event physically, verbally, emotionally, and/or attitudinally with others and sharing with more people in these ways was related to perceiving the event as more shared, yet sharing an event with a perpetrator was related to perceiving the event as less shared.

Summary

Our findings demonstrate that the majority participants (98.6%-99.4%) shared their most stressful/traumatic event with other people in some way, and many shared the event in numerous ways. The most common form of sharing was verbal sharing followed by relational, emotional, physical, attitudinal, and perpetrator sharing, however attitudinal and emotional sharing were more common when participants predicted whether they shared their worst event in these ways. Although participants most often shared their worst event with close others for all forms of sharing, the number of people participants shared their worst event with varied based on *how* the event was shared. Furthermore, sharing stressful/traumatic events physically, verbally, emotionally, and attitudinally was related to perceiving these events as more shared, whereas sharing such events with a perpetrator was related to perceiving the events as less shared.

General Discussion

Across two studies, we examined (a) the unique ways people share traumatic events with others, and (b) the frequency and characteristics of these diverging forms of sharing from WEIRD populations (Henrich et al., 2010). Based on participants' explanations of their subjective sharing ratings (Study 1a), we identified four common forms of sharing: physical sharing (i.e., others present during the event), relational sharing (i.e., knowing/believing others who have/could experience a similar event), verbal sharing (i.e., discussed and/or disclosed the event with/to others), and emotional sharing (i.e., having the same/similar

emotions about the event as others). Independent of these data, we identified two additional forms: perpetrator sharing (i.e., perpetrator/s involved in the event) and attitudinal sharing (i.e., having the same/similar attitudes, beliefs, and/or opinions about the event as others) prior to conducting Study 1b. Most participants (72.1%-78.5%) perceived their most stressful/traumatic event as shared with other people to some extent (Studies 1a & 1b) and, indeed, nearly all participants (98.6%-99.4%) reported having shared the event in some way (Study 1b). Together, these data provide evidence for the idea that people share traumatic events often, and in various ways.

Our findings fit with previous research conducted with similar samples (e.g., Bartone et al., 2019; Garcia & Rimé, 2019; Paterson & Kemp, 2006; Rimé et al, 1998; 2010; Tosone et al., 2012) suggesting that traumatic events can be, and usually are, shared between people physically, relationally, verbally, and emotionally. In our research, the most common form of sharing was verbal sharing, reflecting the high frequency with which people discuss autobiographical (including traumatic) memories with others (e.g., Beike et al., 2016). In addition, verbally sharing autobiographical memories can help form and strengthen social closeness between people by facilitating empathy, social support, and shared knowledge (Alea & Bluck, 2003; Rimé, 2009), and can reinforce a sense of identity (self-continuity) and memory retention (via rehearsal and meaning making; Bluck & Alea, 2008; Wang et al., 2017). Thus, sharing stressful/traumatic events with others may have myriad functional outcomes. Moreover, our findings expand upon existing literature by showing that people share traumatic events attitudinally (i.e., by holding attitudes, beliefs and/or opinions about an event as others) and that people share *a range of traumatic events* in *many unique ways.*

Our research has implications for current conceptual understandings of shared experiences. Here, we provide several broad, umbrella-like definitions of sharing that may encompass various, more specific forms of sharing—associated with time, place, type of

event/people etc.—that are novel in the literature (see Table 1.1). For instance, our conceptualization of physical sharing corresponds with definitions of *mass traumatic events*, *interpersonal traumas*, *co-experienced traumatic events*, *traumatic events involving joint or shared attention*, and *shared traumatic realities* (regarding mental health workers and their clients) by representing sharing via the physical presence of multiple people during an event. However, these pre-existing concepts may reflect subforms of physical sharing, given they all differ based on how, where, and how many people are involved in a traumatic event (Mauritz et al., 2013; Miao et al., 2021; Shalev et al., 2004; Shteynberg, 2015; Tosone et al., 2012). Similarly, the *social sharing of emotions* may represent a subform of verbal sharing specifically concerning the discussion of emotional events (Rimé, 2009) while *collective emotions/group affect, emotional synchronisation/convergence,* and *perceived emotional synchronisation* may represent subforms of emotional sharing that specify with whom (e.g., groups) and how (e.g., perceived or actual, emotional states or behaviour) emotions are shared. We also distinguished between emotional and attitudinal sharing here to evaluate how these inner states of a *shared reality* (i.e., common experiences; Echterhoff et al., 2009) vary for traumatic events and to separate from the term *shared traumatic reality* used within clinical contexts (Tosone et al., 2012).

By categorizing sharing into these broad constructs, we provide a middle ground between sharing and the specific subforms of sharing previous research has examined. Our findings may assist future research on shared traumatic events by highlighting possible areas of interest or importance that are yet to be explored (e.g., how/when people verbally *and* physically share individual stressful/traumatic events). In addition, our research provides insight into the different contexts in which it may be useful to assess the characteristics and effects (e.g., psychopathology) of sharing (e.g., military experiences for physical sharing), and forms of sharing that may be relevant when investigating certain traumatic contexts or

populations (e.g., relational sharing for events involving sexual coercion). Further, our frequency data may allow researchers investigating shared traumatic events to better understand the scope, relevance, and impact of their findings for WEIRD populations (e.g., effects of emotional sharing within western societies may be most relevant to close others). Future research should consider these definitions when identifying and conceptualizing target variables of sharing and when examining the nature and effects of shared traumatic events. Whilst we provide new insights into how people share traumatic events, future research could consider how different perspectives of sharing could be united to form an overarching theoretical framework of shared traumatic experiences.

Our research has limitations. First, due to unequal samples sizes within event types, commonly reported events (e.g., sudden death of loved one: 22.8%-25.6%) may have been overrepresented in, and thus inflated or reduced, the overall sample frequency of different forms of sharing and their characteristics; further, results for uncommon events (e.g., military experiences: 0.6%) may be less accurate because the data were based on few responses. Second, we used self-report measures to assess sharing and thus may not have identified all possible forms of sharing because our participants did not report experiences other samples may have, or only reported the salient ways, rather than *all* the ways, they shared the event. Nevertheless, our large sample sizes may mitigate this issue. Third, it is possible that participants under- or over-reported sharing-related details of their worst event given autobiographical memories are susceptible to change over time (Loftus, 2005), sharing traumatic events with others can distort or amplify people's memories of the event (e.g., Nahleen et al., 2019; Paterson & Kemp, 2006), and processes and strategies used to retrospectively report past behavior and experiences can lead to biased and inaccurate reporting (Schwarz, 2007). Without directly observing traumatic events as they occur and interviewing everyone involved in, affected by, and who discussed, such events we cannot

obtain truly objective data regarding how people share traumatic events. Although beyond the scope of the current study, future research could assess unique forms of sharing individually through observations and interviews to obtain more objective data. Additionally, future research could randomly assign participants to certain event types or assess participants' most recent traumatic event to triangulate data on shared traumatic events. Fourth, we did not assess how often people share traumatic events with others virtually, other than briefly for verbal sharing (i.e., we asked participants whether they verbally shared their worst event with others virtually). Considering this behavior appears to be common—for instance people often express condolences of a loved one's death online, discuss similar experiences of trauma within online support groups, and view live footage of traumatic events (e.g., Christchurch terrorist attack; Crothers & O'Brien, 2020)—future research should examine the frequency and impact of sharing trauma virtually. Fifth, emotional and attitudinal sharing were considered distinct forms of sharing given attitudes involve cognitive evaluations meanwhile emotions are reflected in physiological states and subjective feelings. However, these concepts are likely intertwined given emotions can represent underlying evaluations of an experience. Future research could examine these shared experiences to determine whether these experiences are inherently linked and could be categorised as a single shared experience.

Of final note, we collected a modest sample of participants from WEIRD populations (Western, Educated, Industrialised, Rich and Democratic; Henrich et al., 2010). We chose this sample because considerable work on the conceptualizations, nature, and effects of sharing are based on experiences from WEIRD populations (e.g., Baum, 2010; 2014; Garcia & Rimé, 2019; Drury, 2018; Drury et al., 2015; Paterson & Kemp, 2006; Rimé et al., 1991; 1998; Shetynberg, 2018). Notably, social experiences of trauma have also been explored within other contexts, such as within collectivist societies (Erikson, 1976; 1979; Nils & Rimé,

2012; Rimé et al., 2010). We recognize the importance of investigating shared trauma in such populations, but we did not have the resources to recruit the large and diverse sample that would accurately represent variations in people's shared experiences within and across difference societal structures, or for the processes required to do so (e.g., survey translations). Future research could investigate the nature of shared traumatic experiences using similar a methodology within different populations (e.g., collectivist cultures) to develop a more comprehensive understanding of the nature of shared traumatic experiences globally, and to compare such experiences across populations. We expect our findings regarding the nature of shared traumatic experiences to generalize to subjective perceptions and accounts about sharing highly stressful and traumatic events experienced by adults from western societies, specifically the US, UK, Canada, Australia, and New Zealand (Simons et al., 2017). We acknowledge that our frequency data may vary in replications of our research given our sample size. Nevertheless, we believe our findings suggesting that people share traumatic experiences with others often and most commonly with close others, is generalisable to these populations. Further, we used online crowdsourcing platforms to collect our data because these platforms provide reliable data when appropriate measures are used (e.g., pre-screening; Casler et al., 2013; Moeck et al., 2022; Peer et al., 2017) and more diverse samples than university sourced populations (Casler et al., 2013; Hauser & Schwarz, 2016). Therefore, we believe we captured a wide range of perceptions and experiences of sharing from our sample.

Conclusion

Overall, our research makes a novel contribution to the literature by developing an integrated understanding of "shared" traumatic experiences within WEIRD populations. Our findings demonstrate that people share traumatic events often, and in many ways, including physically, relationally, verbally, emotionally, attitudinally, and with perpetrators. Further, our data suggests that people most often share traumatic events in these ways with close

others, however the frequency of sharing and number of people participants shared traumatic events with varied based on the form of sharing and the type of traumatic event experienced. These results have both conceptual and practical implications for research on shared traumatic experiences. We provide clear terminology, definitions, and evidence for the unique ways in which people share traumatic experiences to support and guide research investigating the psychological consequences of sharing traumatic events. We recommend future research considers these forms of sharing when investigating the characteristics and effects of shared traumatic events to help consolidate our knowledge in this field of research.

Supplementary Material

Data Cleaning Process

Study 1a

We made the following corrections to participants' open-text responses regarding frequency of trauma exposure to ensure data analysis requirements were met: responses with periods/hyphens (e.g., 4.5 or 4-5) were rounded down to the nearest whole number (e.g., 4), plus signs (e.g., 10+) were removed (e.g., 10), responses with no number identified or worded descriptions (e.g., many) were changed to 1.

We checked participants' THS event descriptions and THS trauma category selections for their most stressful/traumatic event and re-matched the event category for event descriptions that were inconsistent with trauma category selections (e.g., description: "I was in Moore, Oklahoma when the f5 tornado hit", category: "Some other sudden event that made you feel scared, helpless or horrified", re-matched category: "Natural disaster"). Some events fit under multiple categories, like seeing a family member die suddenly (i.e., categories: "Sudden death of close other" and "Seeing someone die, hurt, or killed"; see Supplementary Table S3 for all event types and shortened terminology). Thus, we analyzed the data using both a singular event category (i.e., selected/rematched category) and multiple event categories (i.e., where multiple categories applied, one participants' response considered as multiple events). We found a similar pattern of results so we only present results from singular event categories.

Further, the THS categories "Other" and "Some other sudden event that made you feel scared, helpless or horrified" were the third and fourth most common types of events experienced, respectively. Thus, we inductively created five additional categories, reflecting most responses, to provide greater context to these events. One author created the initial event categories, which were discussed with the wider research team. The new categories included

"Non-sudden death of close family or friend", "Stress in everyday activities" (e.g., university/work stress, financial difficulties), "Health-related problems for the participant or a close other", "Human rights violation" (e.g., possessions stolen, wrongful arrest), and "Relationship issues" (e.g., parental divorce, relationship break-up; Supplementary Table S1.2). Some responses could not be grouped or explained by these additional categories, so remained within the "Other" category.

Study 1b

We did not replace missing data for our sharing measures because participants only answered questions applicable to them. We excluded one response from our physical sharing analyses because the participant did not complete all physical sharing questions.

We extended the additional event category of "Relationship issues" to include events with familial conflict involving emotional, physical, and/or verbal abuse and childhood neglect, due to a high number of participants who described such experiences, which did not fit into any other event categories. Only one event description from Study 1a would have been classified into this category if this criterion were used initially, suggesting no substantive changes to our Study 1a findings.

We analyzed variables as in Study 1a. We present results from singular event categories and initial responses and note where differences emerged between singular and multiple event categories and between initial and initial/predicted responses (see additional Supplementary Material at https://osf.io/fn24q/ for data on multiple event categories, initial/predicted responses, and stressful vs. traumatic events).

Of final note, some objective sharing items required participants to "tick all options that apply" to their worst event (e.g., who they shared the event with), meaning the combined total for these data often exceeded 100%.

Supplementary Table S1.1

Study 1a Full Demographics for Participants (N = 507)

Demographics		
Biological sex	Male	58%
	Female	41.8%
	Preferred not to say	0.2%
Gender	Male	58%
	Female	40.8%
	Non-binary	1.2%
	Preferred not to say	0%
Ethnicity	Asian	13.2%
	African ("Black")	6.3%
	Caucasian ("White")	58.8%
	European	4.7%
	Hispanic	1.0%
	Indigenous	0.2%
	Middle Eastern	1.4%
	Mixed	3.9%
	Nationality (e.g., "Australian")	10.1%
	No answer	0.2%
	Pacific Islander	0.2%
Highest level of education	Less than high school	0.4%
	High school	26.8%
	College or university undergraduate degree	53.8%
	College or university postgraduate degree:	18.9%

Supplementary Table S1.2

List of THS Events with Descriptions, Examples, and Number of Participants for Additional THS Event Categories

THS event	Description	Examples
L: Other	- Unknown event - Near death experience	"My relatives never spoke to me due to a joke" "Almost getting into a car accident when I was a boy"
O: Non-sudden death of a close family member or friend	- Death occurring over a week after finding out about issue	"My grandpa was diagnosed with cancer and died within a month of the diagnosis"
P: Stress or trauma in everyday activities	- University or work stress, departure, death, or injury - Money or housing difficulties - Bullied at school	"Leaving a long-term job after it causing depression" "Death at work. Wasn't a close friend but still scary"
Q: Health-related problems for participant or close other	- Personally ill, pregnancy issues, or in psychiatric hospital - Close other ill, in coma, or suicidal - Death of pet	"My Dad was in a serious vehicle accident and was placed in a coma" "I had alopecia areata - hair loss as a child"
R: Human rights violation	- Possessions stolen or almost stolen - Detained at border - Privacy violation - Wrongful arrest or close other arrested	"My bike was stolen. I was bummed about it" "When I was arrested for something I didn't do"
S: Relationship issues	- Relationship difficulties or break up - Parental divorce	"Being in a Long-Distance relationship" "My parents divorce"

Supplementary Table S1.3

Number and Percentage of Participants' Most Stressful or Traumatic Event by Event Type

THS event	Single		Multiple	
	N	*%*	*N*	*%*
A: A really bad car, boat, train, or airplane accident [vehicle accident]	54	10.7	54	10.7
B: A really bad accident at work or home [work or home accident]	19	3.7	19	3.7
C: A hurricane, flood, earthquake, tornado, or fire [natural disaster]	24	4.7	25	4.9
D: Hit or kicked hard enough to injure - as a child [injured as a child]	27	5.3	28	5.5
E: Hit or kicked hard enough to injure - as an adult [injured as an adult]	17	3.4	18	3.6
F: Forced or made to have sexual contact - as a child [sexual coercion as a child]	23	4.5	23	4.5
G: Forced or made to have sexual contact - as an adult [sexual coercion as an adult]	18	3.6	18	3.6
H: Attacked with a gun, knife, or weapon [attacked with a weapon]	23	4.5	23	4.5
I: During military service - seeing something horrible or being badly scared [military experiences]	3	0.6	3	0.6
J: Sudden death of close family or friend [sudden death of close other]	130	25.6	136	26.8
K: Seeing someone die suddenly or get badly hurt or killed [seeing someone die, hurt, or killed]	24	4.7	38	7.5
L: Other	8	1.6	8	1.6
M: Sudden move or loss of home and possessions [sudden move or loss of home]	19	3.7	29	5.7
N: Suddenly abandoned by spouse, partner, parent, or family [sudden abandonment]	28	5.5	31	6.1
O: Non-sudden death of a close family member or friend [non-sudden death of close other]	12	2.4	12	2.4
P: Stress/trauma in everyday activities [everyday stress/trauma]	25	4.9	25	4.9
Q: Health-related problems for participant or a close other [health-related problems]	36	7.1	36	7.1
R: Human rights violation	10	2.0	10	2.0
S: Relationship issues	7	1.4	4	1.4

Note. Single and Multiple refer to events that fit under one or multiple categories. Shortened terminology for event types presented in brackets.

Supplementary Table S1.4

Sample Percentage for Length of Bother from Participants' Worst Event

Length of bother	%
Not at all	1.6
1 week	7.9
2-3 weeks	13.0
A month or more	77.5

Supplementary Table S1.5

Sample Percentage for Extent of Bother from Participants' Worst Event

Extent of bother	%
Not at all	0.8
A little	6.7
Somewhat	15.6
Much	25.4
Very much	51.5

Supplementary Table S1.6

Sample Frequency for Time Since Participants' Worst Event

Time	%
0-10 years	52.3
11-20 years	28.6
21-30 years	9.8
31-60 years	9.3

Supplementary Table S1.7

Sample Frequency for Age at Time of Participants' Worst Event

Age Group	%
Child (i.e., 17 or younger)	34.7
Early adulthood (i.e., 18-39 years)	60
Mid-adulthood (i.e., 40-60 years)	5.3

Supplementary Table S1.8

Means and Standard Deviations for Subjective Sharing Ratings Across Event Types

THS event	Single		Multiple	
	M	SD	M	SD
A: Vehicle accident	2.94	1.14	2.94	1.14
B: Work or home accident	2.26	1.24	2.26	1.24
C: Natural disaster	3.88	1.12	3.80	1.16
D: Injured as a child	2.15	1.49	2.14	1.46
E: Injured as an adult	2.59	1.42	2.61	1.38
F: Sexual coercion as a child	2.04	1.52	2.04	1.52
G: Sexual coercion as an adult	2.28	1.57	2.28	1.57
H: Attacked with a weapon	2.52	1.31	2.52	1.31
I: Military experiences	3.67	1.53	3.67	1.53
J: Sudden death of close other	4.06	1.06	4.04	1.06
K: Seeing someone die, hurt, or killed	3.13	1.39	3.08	1.36
L: Other	2.13	1.55	2.13	1.55
M: Sudden move or loss of home	3.47	1.61	3.48	1.53
N: Sudden abandonment	3.14	1.51	3.10	1.54
O: Non-sudden death of close other	4.25	1.22	4.25	1.22
P: Everyday stress/trauma	1.96	1.21	1.96	1.21
Q: Health-related problems	3.31	1.35	3.31	1.35
R: Human rights violation	3.10	1.29	3.10	1.29
S: Relationship issues	3.43	1.40	3.43	1.40

Note. Sharing ratings: 1 = not at all, 2 = slightly, 3 = moderately, 4 = considerably, 5 = extremely. Single and Multiple refer to events that fit under one or multiple categories. Shortened terminology for event types presented in brackets.

Supplementary Table S1.9

Descriptive (Number of Participants) and Inferential (Spearman's Rank Correlations)

Statistics for Extent of Subjective Sharing by LIWC Categories

LIWC Categories	Inferentials		Descriptives (*n*s)				
	r_s	*p*	1	2	3	4	5
Function words							
1st person sing.	-.172	< .001	96	59	69	87	87
1st person plur.	.253	< .001	1	5	11	32	28
2nd person	-.025	.569	2	1	3	0	2
3rd person sing.	.174	< .001	9	13	6	25	33
3rd person plur.	-.056	.208	14	9	8	10	11
Impersonal	-.028	.535	90	52	66	96	95
Affective words	**.001**	**.980**	**63**	**37**	**45**	**72**	**68**
Positive emotion	.010	.815	16	13	19	27	19
Negative emotion	.013	.770	55	27	38	61	59
Anxiety	.040	.367	7	16	17	16	19
Anger	.006	.889	11	1	7	13	9
Sadness	-.038	.389	30	7	11	33	19
Social words	**.308**	**< .001**	**67**	**51**	**74**	**112**	**114**
Family	.361	< .001	17	27	43	74	81
Friends	.093	.037	9	14	19	25	25
Female ref.	.210	< .001	3	13	18	29	34
Male ref.	.188	< .001	13	9	13	34	37
Cognitive processes	**-.015**	**.745**	**89**	**58**	**68**	**104**	**97**
Insight	-.180	< .001	46	34	23	37	26
Causation	.095	.034	27	20	25	47	43
Discrepancies	-.090	.042	14	9	9	16	5
Tentativeness	-.149	< .001	36	33	18	31	23
Certainty	.123	.005	31	15	17	43	49
Differentiation	-.196	< .001	70	40	41	49	48
Perceptual processes	**-.100**	**.025**	**47**	**25**	**28**	**41**	**35**
Seeing	-.049	.273	7	7	5	5	6
Hearing	-.061	.174	6	1	5	4	2
Feeling	-.104	.020	29	14	11	19	18
Drives and needs	**.341**	**< .001**	**50**	**40**	**62**	**104**	**105**
Affiliation	.425	< .001	24	34	54	92	98
Achievement	.075	.094	12	7	11	25	19

Note. Descriptives 1-5 represent subjective sharing ratings 1 (not at all shared) – 5 (extremely shared).

Supplementary Table S1.10

Descriptive (Number of Participants) and Inferential (Spearman's Rank Correlations)

Statistics for Extent of Subjective Sharing by NVivo Word Frequency

Word Frequency	Extent of Subjective Sharing				
	Not at all	Slightly	Moderately	Considerably	Extremely
1st	One, Ones (36, 4.38%)	One, Ones (15, 2.56%)	Families, Family (26, 4.16%)	Families, Family (48, 4.23%)	Families, Family (58, 5.30%)
2nd	Else (23, 2.80%)	Family (15, 2.56%)	Also (15, 2.40%)	Affected (35, 3.08%)	Affected (30, 2.74%)
3rd	Alone (18, 2.19%)	Feel, Feeling, Feelings (11, 1.88%)	Friend, Friends (12, 1.92%)	Happened, Happening, (21, 1.85%)	Friend, Friends (24, 2.19%)
4th	Anyone (16, 1.95%)	Friend, Friends (10, 1.71%)	Time, Times (11, 1.76%)	Mother (19, 1.67%)	Also (19, 1.74%)
5th	Feel, Feelings (16, 1.95%)	Much (9, 1.54%)	Stress, Stressed, (11, 1.76%)	Friend, Friends (18, 1.58%)	Death (16, 1.46%)
6th	Happened, Happening (15, 1.82%)	Person, Personally (8, 1.37%)	Experience, Experiences (10, 1.60%)	People (18, 1.58%)	Whole (16, 1.46%)
7th	Felt (14, 1.70%)	Affected (8, 1.37%)	People (9, 1.44%)	Time, Times (15, 1.32%)	Father (13, 1.19%)
8th	Person, Personal (13, 1.58%)	Also (8, 1.37%)	Member, Members (8, 1.44%)	Member, Members (12, 1.06%)	Mother (13, 1.19%)
9th	Experienced, Experiencing (10, 1.22%)	People (7, 1.19%)	Affected (8, 1.28%)	One, Ones (12, 1.06%)	Member, Members (12, 1.10%)
10th	Like, Liked (8, 0.97%)	Think, Thinking (7, 1.19%)	Happened, Happens (8, 1.28%)	Also (12, 1.06%)	Close (11, 1.01%)
11th	Affected (8, 0.97%)				Many (11, 1.01%)
12th	Just (8, 0.97%)				People (11, 1.01%)

Note. Number of words listed differs between Extent of Subjective Sharing groups because some words were used by the same number of participants. Words ordered based on NVivo Output.

Supplementary Table S1.11

Final Codebook Used During Thematic Analysis of Participants' Subjective Sharing Explanations

Theme & Code label	Code definition	Code description	Code examples
Unclear	Response unable to be coded	The response cannot be categorized into any theme or code because it is either unclear (i.e., unable to infer what the participant's reason was) or unknown (i.e., participant did not provide a response or response suggested participant did not know how to answer the question)	" " "It was a sad experience" "it was shared" "not sure"
Kinds of others			
Community members	Members of a community involved in, affected by, or somehow implicated in, the event	The response mentions people within the same community or ingroup as participants. Can include people in the neighborhood, area, country or people participants likely identify with such as peer groups or people of the same gender, sexual orientation, ethnicity, or nationality. Does not include specific family members or close friends (as considered "close others").	"It was on the news" "other students" "people my age" "people in the area"
Close others	Close others involved in, affected by, or somehow implicated in, the event	The response mentions people participants are likely close to such as family members or close friends. Can include family members such as children, siblings, parents, partners, aunties/uncles, and grandparents, and friends (incl. housemates, buddy).	"my mother and grandmother" "my spouse" "my brother" "my whole family"
Physical sharing			
Same/similar involvement	Other people physically present during the event and involved to the same or a similar extent to the participant, or involvement was unspecified	The response mentions the presence of other people during the event AND either indicates that the other people were involved in the event to the same or a similar extent to the participant (e.g., both the participant and other people were victims in the event, passengers in a car accident, or similarly injured).	"Others were also there" "I was with…" "His death was witnessed by several people" "There was another passenger in the car with me"

Others less involved	Other people physically present during the event but less involved than the participant	The response mentions the presence of other people during the event AND indicates that the other people were less involved in the event than the participant (e.g., the participant was more victim and other people were witnessed).	"they did not lose a car like I did" "It happened to me, but those around me were impacted as I was basically disabled for about a year" "my daughter saw it"
Others more involved	Other people physically present during the event but more involved than the participant	The response mentions the presence of other people during the event AND indicates that the other people were more involved in the event than the participant (e.g., other people were victims and the participant witnessed the event) Can include helping and/or supporting someone through the event or the aftermath.	"While I was there and witnessed the aftermath, the true horror of it was borne by my wife" "the other driver sustained more injuries than myself"
Others' involvement unclear	Other people physically present during the event but the involvement of the participant and others was unclear or unspecified.	The response mentions that other people were present during the event however it is unclear whether the participant was involved to a different extent to the other people (e.g., response suggests other people were there without explaining their role in the event).	"I wasn't the only one present" "His death was witnessed by several people" "[My family] held his dead hand while he laid there."
No others present	Other people not physically present during the event	The response mentions that other people were not present during the event (i.e., they were alone). Perpetrator not considered other people (i.e., if the participant mentioned that no one other than the perpetrator was present, code as "no others present").	"I was the only one home with her" "There were no other witnesses, and no other victims" "I was alone"
Verbal sharing			
Discussed and/or disclosed	Event discussed with and/or disclosed to other people	The response mentions that the participant discussed and/or disclosed the event with/to other people. Can include other people finding out about the event.	"I had to speak to a doctor to get over it" "we talked it through multiple times" "I discussed it with my cousin"
Not discussed and/or disclosed	Event not discussed with and/or disclosed to anyone	The response mentions that the participant discussed and/or disclosed the event with/to other people. Can include not discussing or disclosing the event to/with other people for a long time, after a certain time, or only with certain people.	"I did not tell anyone about the accident" "no one else knew except my parents" "I didn't tell anyone about this event for a number of years"

Relational sharing

Others have/will experience a similar event	Other people known or believed to have experienced a similar event in the past or expected to experience a similar event in the future	The response indicates that the participant knows other people who have experienced a similar event in the past, believes that other people have experienced a similar event in the past, and/or believes other people will or could experience a similar event in the future. A similar event refers to an event that is of the same nature as participants worst event (e.g., a sexual assault or vehicle accident).	"There are many others who have experienced the same thing" "I believe it happened to some of my cousins as well" "other people might have gone through something similar"
Others haven't/won't experience a similar event	Other people not known or believed to have experienced a similar event in the past or expected to experience a similar event in the future	The response indicates that the participant does not know other people who have experienced a similar event in the past, does not believe that other people have experienced a similar event in the past, and/or does not believe other people will or could experience a similar event in the future (see above for definition of similar event)	"I do not think it is a common experience among my peers even within my ethnic group"

Emotional sharing

Same/similarly affected	Other people emotionally affected to the same or a similar extent to the participant, or extent of emotional bother was unspecified	The response mentions that other people were emotionally affected by the event (i.e., same valence, such as both negatively affected/upset) AND either indicates that other people were emotionally affected in the same or a similar way to participants (e.g., both the participant and other people were upset from the event).	"The motorcyclist will have shared feelings of trauma too" "my partner suffered the loss too" "My sister and mother were with me so they probably felt the same disappointment"
Others less affected	Other people emotionally affected by the event but less affected than the participant	The response mentions that other people were emotionally affected by the event (i.e., same valence, such as both negatively affected/upset) AND indicates that other people were less emotionally affected than the participant (e.g., the participant was more upset or impacted from the event than other people).	"They worried for me and were unable to stay with me in the whole healing process" "I was sad for days and my family were also sad… I blamed myself for it." "it was more stressful for me than it was for them as passengers"
Others more affected	Other people emotionally affected by the event but less affected than the participant	The response mentions that other people were emotionally affected by the event (i.e., same valence, such as both negatively affected/upset) AND indicates that other people were more emotionally affected than the	"I was not the only one who was stressed out some of my family members probably felt even worse than I" "my boyfriend was present and was probably even more affected by it than I was" "I think my sister felt worse than I did"

		participant (e.g., other people were more upset or impacted from the event than the participant).	
Others' affect unclear	Other people emotionally affected by the event but the extent of impact to others relative to the participant was unclear or unspecified.	The response mentions that other people were emotionally affected by the event (i.e., same valence, such as both negatively affected/upset) however it is unclear whether the participant was more or less emotionally impacted by the event compared to others (e.g., participant not relating others' emotions to their own).	"…nor would I say the stress and worry was equally distributed" "It had a major impact on the town" "My children were present and scared"
Others not affected or affected differently	Other people not emotionally affected or not emotionally affected in the same way as participants by the event	The response mentions that other people were not emotionally affected by the event or other people were emotionally affected by the event in a different way to participants (i.e., difference valence, such as the participant negatively affected by/upset about the event, but other people positively affected by/happy about the event).	"nobody else was both enormously affected and completely powerless in the situation" "Only affected me" "No one else seemed to suffer from it"
Unspecified sharing			
Others experienced the event	Other people experienced the event	The response mentions that (broadly) other people also experienced the event.	"it involved two sets of families including five children" "Everybody in the community experienced it" "My siblings all shared the same experience"
Others did not experience the event	Other people did not experience the event	The response mentions that (broadly) other people did not experience the event.	"It only happened to me" "there was no one else involved in the situation" "I am the only one who experienced this directly"

Supplementary Table S1.12

Study 1b Full Demographics for Participants (N = 501)

Demographics		
Biological sex	Male	47.3%
	Female	52.5%
	Preferred not to say	0.2%
Gender	Male	46.3%
	Female	51.7%
	Non-binary	1.6%
	Preferred not to say	0.4%
Ethnicity	Asian	15.6%
	African (incl. "Black")	3.8%
	Caucasian	56.7%
	European	4.2%
	Hispanic	1.0%
	Middle Eastern	0.6%
	Mixed	3.2%
	Nationality (e.g., "Australian")	13.4%
	No answer	1.4%
	Pacific Islander	0.2%
Highest level of education	Less than high school	0.8%
	High school	22.4%
	College or university undergraduate degree	53.3%
	College or university postgraduate degree:	23.6%

Supplementary Table S1.13

Number and Percentage of Participants' Most Stressful or Traumatic Event by Event Type

THS event	Single		Multiple	
	N	%	*N*	%
A: Vehicle accident	33	6.6	41	8.2
B: Work or home accident	7	1.4	7	1.4
C: Natural disaster	11	2.2	12	2.4
D: Injured as a child	26	5.2	27	5.4
E: Injured as an adult	12	2.4	14	2.8
F: Sexual coercion as a child	30	6.0	30	6.0
G: Sexual coercion as an adult	20	4.0	20	4.0
H: Attacked with a weapon	18	3.6	20	4.0
I: Military experiences	3	0.6	3	0.6
J: Sudden death of close other	114	22.8	123	24.6
K: Seeing someone die, hurt, or killed	43	8.6	56	11.2
L: Other	20	4.0	21	4.0
M: Sudden move or loss of home	17	3.4	17	3.4
N: Sudden abandonment	44	8.8	45	9.0
O: Non-sudden death of close other	5	1.0	5	1.0
P: Everyday stress/trauma	21	4.2	21	4.2
Q: Health-related problems	42	8.4	42	8.4
R: Human rights violation	6	1.2	6	1.2
S: Relationship issues	29	5.8	28	5.8

Note. Single and Multiple refer to events that fit under one or multiple categories.

Supplementary Table S1.14

Sample Percentage for Length of Bother from Participants' Worst Event

Length of bother	%
Not at all	1.4
1 week	5.4
2-3 weeks	8.4
A month or more	84.8

Supplementary Table S1.15

Sample Percentage for Extent of Bother from Participants' Worst Event

Extent of bother	%
Not at all	0.4
A little	4.6
Somewhat	12.0
Much	22.8
Very much	60.3

Supplementary Table S1.16

Sample Frequency for Time Since Participants' Worst Event

Time	%
0-10 years	48.2
11-20 years	26.6
21-30 years	14.6
31-60 years	10.8

Supplementary Table S1.17

Sample Frequency for Age at Time of Participants' Worst Event

Age Group	%
Child (i.e., 17 or younger)	40.5
Early adulthood (i.e., 18-39 years)	50.6
Mid-adulthood (i.e., 40-60 years)	8.4
Late adulthood (i.e., 60+ years)	0.6

Supplementary Table S1.18

Means and Standard Deviations for Subjective Sharing Ratings Across Event Types

THS event	Single		Multiple	
	M	*SD*	*M*	*SD*
A: Vehicle accident	3.33	1.16	3.44	1.21
B: Work or home accident	2.86	1.77	2.86	1.77
C: Natural disaster	4.45	0.82	4.33	0.88
D: Injured as a child	2.46	1.56	2.56	1.60
E: Injured as an adult	1.83	1.12	2.00	1.18
F: Sexual coercion as a child	1.57	1.04	1.57	1.04
G: Sexual coercion as an adult	1.50	0.89	1.50	0.90
H: Attacked with a weapon	2.83	1.58	2.80	1.51
I: Military experiences	1.67	1.16	1.67	1.16
J: Sudden death of close other	3.75	1.10	3.75	1.21
K: Seeing someone die, hurt, or killed	3.47	1.30	3.62	1.27
L: Other	2.15	1.35	2.15	1.35
M: Sudden move or loss of home	3.06	1.20	3.06	1.20
N: Sudden abandonment	2.50	1.50	2.53	1.50
O: Non-sudden death of close other	3.60	1.14	3.60	1.14
P: Everyday stress/trauma	2.00	1.18	2.00	1.18
Q: Health-related problems	2.76	1.53	2.76	1.53
R: Human rights violation	2.83	1.60	2.83	1.60
S: Relationship issues	2.45	1.57	2.45	1.57

Note. Sharing ratings: 1 = not at all, 2 = slightly, 3 = moderately, 4 = considerably, 5 = extremely. Single and Multiple refer to events that fit under one or multiple categories. Shortened terminology for event types presented in brackets.

Supplementary Table S1.19

Percentages of Participants Who Objectively Shared Their Worst Event with a Perpetrator,
Physically, Emotionally, Attitudinally, Verbally, and Relationally by Event Type (Singular
Event Category, Initial Responses)

THS event	Physical	Emotional	Attitudinal	Verbal	Relational	Perpetrator
A: Vehicle accident	75.8%	45.5%	57.6%	100%	66.7%	12.1%
B: Work/home accident	42.9%	71.4%	14.3%	100%	42.9%	0%
C: Natural disaster	81.8%	90.9%	45.5%	90.9%	81.8%	0%
D: Injured - child	57.7%	50.0%	53.8%	53.8%	53.8%	88.5%
E: Injured - adult	33.3%	33.3%	41.7%	83.3%	66.7%	91.7%
F: Sexual coercion - child	10.0%	46.7%	46.7%	80.0%	76.7%	100%
G: Sexual coercion - adult	5.0%	35.0%	55.0%	75.0%	60.0%	95.0%
H: Attacked with a weapon	44.4%	77.8%	33.3%	88.9%	55.6%	94.4%
I: Military experiences	100%	33.3%	66.7%	66.7%	33.3%	66.7%
J: Sudden death of close other	51.8%	80.7%	63.2%	79.8%	73.7%	7.0%
K: Seeing someone die, hurt, or killed	79.1%	65.1%	72.1%	88.4%	65.1%	27.9%
L: Other	60.0%	30.0%	35.0%	65.0%	45.0%	35.0%
M: Sudden move or loss of home	70.6%	58.8%	64.7%	58.8%	64.7%	23.5%
N: Sudden abandonment	36.4%	54.5%	56.8%	84.1%	54.5%	38.6%
O: Non-sudden death of close other	100%	80.0%	60.0%	80.0%	80.0%	0%
P: Everyday stress/trauma	57.1%	9.5%	19.0%	71.4%	71.4%	33.3%
Q: Health-related problems	78.6%	52.4%	47.6%	88.1%	54.8%	7.1%
R: Human rights violation	16.7%	50.0%	50.0%	100%	50.0%	100%
S: Relationship issues	58.6%	48.3%	37.9%	82.8%	72.4%	51.7%

Supplementary Table S1.20

Percentages of Participants Who Objectively Shared Their Worst Event with a Perpetrator, Physically, Emotionally, Attitudinally, Verbally, and Relationally by Event Type (Multiple Event Categories, Initial responses)

THS event	Physical	Emotional	Attitudinal	Verbal	Relational	Perpetrator
A: Vehicle accident	75.6%	53.7%	58.5%	97.6%	68.3%	9.8%
B: Work/home accident	42.9%	71.4%	14.3%	100%	42.9%	0%
C: Natural disaster	83.3%	83.3%	50.0%	83.3%	75.0%	0%
D: Injured - child	55.6%	48.1%	51.9%	51.9%	55.6%	88.9%
E: Injured - adult	35.7%	28.6%	42.9%	85.7%	64.3%	92.9%
F: Sexual coercion - child	10.0%	46.7%	46.7%	80.0%	76.7%	100%
G: Sexual coercion - adult	5.0%	35.0%	55.0%	75.0%	60.0%	95.0%
H: Attacked with a weapon	45.0%	80.0%	40.0%	90.0%	60.0%	95.0%
I: Military experiences	100%	33.3%	66.7%	66.7%	33.3%	66.7%
J: Sudden death of close other	54.5%	80.5%	64.2%	81.3%	71.5%	7.3%
K: Seeing someone die, hurt, or killed	75.0%	64.3%	64.3%	85.7%	67.9%	25.0%
L: Other	60.0%	30.0%	35.0%	65.0%	45.0%	35.0%
M: Sudden move or loss of home	70.6%	58.8%	64.7%	58.8%	64.7%	23.5%
N: Sudden abandonment	35.6%	55.6%	57.8%	84.4%	55.6%	40.0%
O: Non-sudden death of close other	100%	80.0%	60.0%	80.0%	80.0%	0%
P: Everyday stress/trauma	57.1%	9.5%	19.0%	71.4%	71.4%	33.3%
Q: Health-related problems	78.6%	52.4%	47.6%	88.1%	54.8%	7.1%
R: Human rights violation	16.7%	50.0%	50.0%	100%	50.0%	100%
S: Relationship issues	58.6%	48.3%	37.9%	82.8%	72.4%	51.7%

Supplementary Table S1.21

Percentages of Participants Who Objectively Shared Their Worst Event with a Perpetrator,
Physically, Emotionally, Attitudinally, Verbally, and Relationally by Event Type (Singular
Event Category, Initial and Predicted Responses)

THS event	Physical	Emotional	Attitudinal	Verbal	Relational	Perpetrator
A: Vehicle accident	75.8%	72.7%	78.8%	100%	66.7%	12.1%
B: Work/home accident	42.9%	85.7%	71.4%	100%	42.9%	0%
C: Natural disaster	90.9%	100%	81.8%	90.9%	81.8%	0%
D: Injured - child	61.5%	57.7%	65.4%	65.4%	53.8%	88.5%
E: Injured - adult	33.3%	41.7%	58.3%	83.3%	66.7%	91.7%
F: Sexual coercion - child	13.3%	46.7%	66.7%	80.0%	76.7%	100%
G: Sexual coercion - adult	10.0%	40.0%	90.0%	75.0%	60.0%	95.0%
H: Attacked with a weapon	44.4%	83.3%	77.6%	88.9%	55.6%	94.4%
I: Military experiences	100%	66.7%	66.7%	66.7%	33.3%	66.7%
J: Sudden death of close other	57.9%	92.1%	81.6%	82.5%	73.7%	7.0%
K: Seeing someone die, hurt, or killed	81.4%	88.4%	88.4%	88.4%	65.1%	27.9%
L: Other	60.0%	40.0%	55.0%	70.0%	45.0%	35.0%
M: Sudden move or loss of home	70.6%	82.4%	82.4%	58.8%	64.7%	23.5%
N: Sudden abandonment	38.6%	61.4%	75.0%	86.4%	54.5%	38.6%
O: Non-sudden death of close other	100%	80.0%	80.0%	80.0%	80.0%	0%
P: Everyday stress/trauma	61.9%	33.3%	61.9%	71.4%	71.4%	33.3%
Q: Health-related problems	81.0%	64.3%	73.8%	88.1%	54.8%	7.1%
R: Human rights violation	33.3%	50.0%	66.7%	100%	50.0%	100%
S: Relationship issues	58.6%	55.2%	48.3%	86.2%	72.4%	51.7%

Supplementary Table S1.22

Percentages of Participants Who Objectively Shared Their Worst Event with a Perpetrator,
Physically, Emotionally, Attitudinally, Verbally, and Relationally by Event Type (Multiple
Event Categories, Initial and Predicted Responses)

THS event	Physical	Emotional	Attitudinal	Verbal	Relational	Perpetrator
A: Vehicle accident	78.0%	78.0%	80.5%	97.6%	68.3%	9.8%
B: Work/home accident	42.9%	85.7%	71.4%	100%	42.9%	0%
C: Natural disaster	91.7%	100%	83.3%	83.3%	75.0%	0%
D: Injured - child	59.3%	55.6%	66.7%	63.0%	55.6%	88.9%
E: Injured - adult	35.7%	42.9%	64.3%	85.7%	64.3%	92.9%
F: Sexual coercion - child	13.3%	46.7%	66.7%	80.0%	76.7%	100%
G: Sexual coercion - adult	10.0%	40.0%	90.0%	75.0%	60.0%	95.0%
H: Attacked with a weapon	45.0%	85.0%	80.0%	90.0%	60.0%	95.0%
I: Military experiences	100%	66.7%	66.7%	66.7%	33.3%	66.7%
J: Sudden death of close other	60.2%	92.7%	82.1%	83.7%	71.5%	7.3%
K: Seeing someone die, hurt, or killed	76.8%	87.5%	83.9%	85.7%	67.9%	25.0%
L: Other	60.0%	30.0%	35.0%	65.0%	45.0%	35.0%
M: Sudden move or loss of home	70.6%	82.4%	82.4%	58.8%	64.7%	23.5%
N: Sudden abandonment	37.8%	62.2%	75.6%	86.7%	55.6%	40.0%
O: Non-sudden death of close other	100%	80.0%	80.0%	80.0%	80.0%	0%
P: Everyday stress/trauma	61.9%	33.3%	61.9%	71.4%	71.4%	33.3%
Q: Health-related problems	81.0%	64.3%	73.8%	88.1%	54.8%	7.1%
R: Human rights violation	33.3%	50.0%	66.7%	100%	50.0%	100%
S: Relationship issues	58.6%	48.3%	37.9%	82.8%	72.4%	51.7%

Supplementary Table S1.23

Frequency of Sharing Factor Co-Occurrence for Initial Responses (i.e., For Participants Who Shared the Event in One Way [Rows], Percentage of Participants Who Also Shared the Event in Other Ways [Columns])

	(Perpetrator)	(Physical)	(Emotional)	(Attitudinal)	(Verbal)	(Relational)
Perpetrator	-	39.1%	51.4%	54.6%	77.3%	59.5%
Physical	26.5%	-	67.3%	58.5%	83.5%	68.4%
Emotional	33.0%	63.8%	-	69.1%	86.5%	69.1%
Attitudinal	38.3%	60.5%	75.4%	-	88.3%	66.7%
Verbal	35.2%	56.0%	61.3%	57.4%	-	67.2%
Relational	34.0%	57.6%	61.4%	54.3%	84.3%	-

Note. Results reflect initial responses of "Yes" or "No". Responses of "Unsure" were removed from these analyses.

Supplementary Table S1.24

Frequency of Sharing Factor Co-Occurrence for Initial and Predicted Responses (i.e., For Participants Who Shared the Event in One Way [Rows], Percentage of Participants Who Also Shared the Event in Other Ways [Columns])

	(Perpetrator)	(Physical)	(Emotional)	(Attitudinal)	(Verbal)	(Relational)
Perpetrator	-	43.5%	58.4%	74.1%	78.9%	59.5%
Physical	27.8%	-	80.6%	79.2%	85.8%	68.1%
Emotional	30.9%	66.7%	-	85.7%	87.7%	69.3%
Attitudinal	36.7%	61.3%	80.2%	-	87.1%	67.8%
Verbal	35.2%	59.7%	73.7%	78.3%	-	67.5%
Relational	34.0%	60.7%	74.7%	78.1%	86.4%	-

Chapter 4: Investigating the Link Between Shared Traumatic Experiences and Posttraumatic Stress Symptomology

Author contributions: I developed the study concept and design with the guidance of MKTT. I performed pilot testing and data collection, cleaning, analysis, and interpretation. I drafted the manuscript and contributed to critical revisions. MKTT provided critical revisions to the manuscript. All authors approved the final version of the manuscript for submission.

Abstract

Social factors influence the development of Posttraumatic Stress Disorder (PTSD). For instance, social support increases people's resilience to trauma (e.g., Ozer, 2003). However, little is known about more basic social experiences like how simply sharing traumatic events is related to PTSD (Hutchison et al., 2024). We aimed to address this gap in the literature by examining whether the different ways people share their most stressful/traumatic experience—i.e., by perceiving the experience as shared (subjective), physical presence (physical incl. with a perpetrator), discussion (verbal), similar emotions (emotional), similar attitudes (attitudinal), and similar experiences (relational)—relates to posttraumatic stress (PTS) symptomology. We examined these relationships within WEIRD populations (Western, Educated, Industrialised, Rich and Democratic; Henrich et al., 2010). Across two studies (Ns = 501-507), perceiving a stressful/traumatic event as shared was unrelated to PTS symptomology. However, sharing a stressful/traumatic event verbally, physically, and emotionally was related to less severe PTS symptomology. Further, having a perpetrator involved in a stressful/traumatic event was related to more severe PTS symptomology. Thus, some experiences of sharing trauma could protect people against PTSD development.

Introduction

Most people will experience a traumatic event in their lifetime and approximately 4-7% will develop Posttraumatic Stress Disorder (PTSD; American Psychiatric Association [APA], 2022). We know that social factors (e.g., social identification, social support) can influence people's vulnerability to developing PTSD (e.g., Muldoon et al., 2019; Ozer, 2003). However, one social factor that has received little attention is people's perceptions and experiences of *sharing* trauma. For instance, we do not know whether perceiving a traumatic event as shared with others (i.e., subjective sharing) or experiencing a traumatic event simultaneously with others (i.e., physically sharing) are protective or risk factors for PTSD development. Our goal was to add to the existing literature on social predictors of PTSD by examining how perceiving and actually sharing a traumatic event in several ways, relates to posttraumatic stress (PTS) symptomology.

Many social experiences that occur during trauma exposure and are established protective (e.g., social support; Ozer, 2003) or risk (e.g., interpersonal trauma; Forbes et al., 2014) factors for developing PTSD *feature sharing*. For instance, interpersonal trauma involves the physical presence of other people during the same event (i.e., physical sharing; Hutchison et al., 2024; Chapter 3). Moreover, social support often involves or arises from discussing traumatic events (i.e., verbal sharing), experiencing similar emotions and attitudes to other people (i.e., emotional/attitudinal sharing), and knowing people who have been exposed to similar experiences (e.g., sexual assault victims; i.e., relational sharing; Cuff et al., 2016; Ntontis et al., 2018; Paterson & Kemp, 2006; Regev & Slonim-Nevo, 2019). Finally, perceiving others' past experiences (e.g., grief) or current situation (e.g., exposure to a mass trauma) as similar to one's own can help form social identities (e.g., Solomon, 2004; Tajfel & Turner, 1979). Therefore, shared traumatic experiences are closely linked to known social predictors of PTS symptomology. But how is *sharing* linked to PTS symptomology?

There is mixed evidence for the relationship between sharing traumatic events and psychological functioning. On the one hand, some research links sharing trauma to improved outcomes. For example, verbally sharing (i.e., discussing) individual traumatic events (e.g., suicide attempts, trauma films) is related to less severe traumatic stress and complicated grief symptoms (Davidson & Moss, 2008; Levi-Bells & Lev-Ari, 2019; Woodward et al., 2024). Further, emotionally sharing (i.e., experiencing the same emotions) traumatic events increases victims' positive affect, sense of empowerment, and positive world views (Páez et al., 2015; Pelletier, 2018). Similarly, physically sharing (i.e., experiencing the same event simultaneously) natural disasters and health emergencies is associated with lower depressive and anxiety symptoms, and increased perceived support (Armenian et al., 2012; Leske et al., 2017; Terzi & Aggelidou, 2008). Finally, relationally sharing (i.e., experiencing similar events) traumatic events through peer support and group therapy programs reduces PTS symptomology, albeit perhaps indirectly via social support or the therapy itself (Bartone et al., 2019; Beck & Coffey, 2005).

Consistent with this evidence, Drury and colleagues' (2012; 2018) social identity model of collective behaviour in emergencies and disasters posits that subjective sharing can indirectly improve psychological outcomes. The model proposes that experiencing a mass traumatic event (e.g., flood) creates a sense of common fate (i.e., subjective sharing) amongst affected communities, which fosters the formation of collective social identities (i.e., trauma victims) and subsequent solidarity, validation, collective action, and wellbeing. Furthermore, the formation and strengthening of social identities in the face of trauma can reduce PTS symptom severity and promote posttraumatic growth (e.g., Craig et al., 2022; Drury, 2018; Muldoon et al., 2019). This process seems logical given that a sense of isolation and loneliness—directly contrasting a sense of sharing—is associated with PTS symptomology (e.g., Dagan & Yager, 2019; Vlachos et al., 2020). Appraising a collective trauma as shared

(i.e., subjective sharing) could also *directly* influence psychological functioning. Indeed, *perceived* social support (i.e., perception of available/useful support) is a stronger protective factor against PTSD than any other form of social support (e.g., enacted support; Streeter & Franklin, 1992; Prati & Pietrantoni, 2010). Further, *appraising* a traumatic event as positive or valuable—for instance by developing new meaningful connections with people—can protect against PTSD development (Muldoon et al., 2019; Richardson & Gallagher, 2021). Altogether, this research demonstrates that sharing traumatic events verbally, emotionally, physically, relationally, and subjectively could protect against traumatic stress reactions.

On the other hand, some research suggests that sharing traumatic events exacerbates negative psychological reactions to trauma. For instance, discussing mass traumatic events (e.g., terrorist attacks) is associated with more severe traumatic stress symptoms, rumination, and negative affect (Rimé et al., 2010; Seery et al., 2008). Further, verbally sharing traumatic content with close others who watched the same content can increase traumatic stress symptoms (e.g., intrusion frequency) relative to not discussing such experiences (Woodward et al., 2017). Similarly, physically sharing negative in-lab tasks (e.g., viewing negative images) can amplify people's negative emotions (e.g., pain) compared to completing the task alone (e.g., Martin et al., 2015; Nahleen et al., 2019). Moreover, clinicians who experience greater emotional empathy towards patients report more severe secondary traumatic stress symptoms (e.g., negative beliefs about safety; MacRitchie & Leibowitz, 2010; Ogińska-Bulik et al., 2022). Thus, in some contexts, sharing traumatic events verbally, physically, and emotionally could exacerbate people's traumatic stress reactions.

In summary, there is evidence that shared traumatic experiences have positive *and* negative psychological implications. These mixed findings make it difficult to determine how appraisals and experiences of sharing traumatic events contribute to PTSD independent of specific social factors (social support, social identification). Further, these findings have

emerged from various research fields (e.g., social/cognitive psychology) that have used a range of methodologies (e.g., observation, experiments), operationalisations of sharing (e.g., emotional sharing: collective emotions, empathy), and contexts (e.g., negative in-lab, mass trauma). Hence, the existing literature on shared traumatic experiences lacks consistency in how the link between sharing trauma and PTS symptomology has been investigated. Moreover, despite perceptions of social identification and social support being recognised as strong protective factors against PTSD, little research has examined whether broadly perceiving trauma as shared is directly linked to PTS symptomology.

Research Overview

To address these gaps, we examined relationships between PTS symptomology and several shared traumatic experiences simultaneously, using a correlational design and clear operationalisations of sharing, across a range of traumatic events. Here, we investigated the strength and direction of the relationship between perceiving a stressful/traumatic event as shared (subjective sharing) and PTS symptomology (Study 2a) and then explored whether and if so, how sharing a stressful/traumatic event physically (incl. with a perpetrator), verbally, emotionally, relationally, and attitudinally was related to PTS symptomology (Study 2b). In both studies, participants identified their most stressful or traumatic event then rated the extent to which they perceived the event as shared (subjective sharing). In Study 2b, participants also reported whether they shared the event with others via physical presence (incl. perpetrator/s), discussion, similar emotions, similar attitudes, and similar traumatic experiences (see Studies 1a and 1b for explanation of sharing forms). Participants then completed the Posttraumatic Stress Disorder Checklist for DSM-5 (Weathers et al., 2013b).

We expected sharing to be related to PTS symptomology. Yet, because sharing could be protective (e.g., Armenian et al., 2012) or a risk (e.g., Seery et al., 2008) for PTSD

development, there are competing hypotheses for the direction of this relationship.[5] If sharing a stressful/traumatic event is protective, then subjectively, verbally, relationally, physically, emotionally, and attitudinally sharing should be negatively associated with PTS symptomology. Yet, if sharing a stressful/traumatic event is a risk, sharing should be positively associated with PTS symptomology. Notably, research on subjective sharing is limited to mass trauma contexts and seems to only indicate that sharing could lead to less severe PTS symptomology. However, the relationship between other sharing forms and PTS symptomology has been examined more extensively (i.e., across several contexts and using various research methods) and evidence for the direction of these relationships is currently mixed. Thus, we had competing hypotheses for subjective sharing to align with predictions for the other sharing forms we assessed. Further, sharing a stressful/traumatic event with a perpetrator should be positively associated with PTS symptomology.

Transparency and Openness

We pre-registered Study 2a (https://osf.io/we2pn) and Study 2b (https://osf.io/4d8hv). All data and materials can be found at https://osf.io/fn24q/. We have reported all measures, conditions, and data exclusions. Both studies were approved by the Flinders University Social and Behavioural Research Ethics Committee (2777) and conducted in accordance with the provisions of the APA Ethical Standards and the World Medical Association Declaration of Helsinki. All participants read an information sheet—outlining the study aims, tasks, potential risks, and participants' rights—and provided written consent prior to participation. Relevant supplementary material is presented at the end of this chapter and in Chapter 3.

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[5] We did not pre-register hypotheses for Study 2a because the research was exploratory. Further, we pre-registered the prediction that all sharing forms would be positively related to PTS symptomology for Study 2b based on experimental cognitive psychology research only. We now present alternative hypotheses based on other research areas, including theoretical and empirical work in trauma and social psychology.

Study 2a

Method

Participants

To establish the stability of a correlation, a typical sample size should approach 260 (Schönbrodt & Perugini, 2013; 2018). Our larger sample size narrows the corridor of stability in our results from 80% to 95%. We recruited 514 participants from five WEIRD (Western, Educated, Industrialised, Rich and Democratic) populations (i.e., Canada, the United States of America [USA], Australia, New Zealand, and the United Kingdom [UK]; Henrich et al., 2010) using Amazon's Mechanical Turk (MTurk; via CloudResearch.com; Litman et al., 2017; compensated USD\$1.27) and Prolific (compensated GBP£1.73-£2.13). Our data draws from the same study reported in Hutchison et al. (2024; Studies 1a and 1b). We excluded data from 11 participants: five completed the study twice, five failed both attention checks and one failed to follow survey instructions (e.g., not selecting and describing an event). Our final sample had 507 participants ($n = 126$ for Canada, USA, and Australia/New Zealand; $n = 129$ for UK) from MTurk ($n = 258$) and Prolific ($n = 249$). Participants' mean age was 34.37 years old (range: 18-74, $SD = 11.42$). Participants predominately identified as male (58%, female: 40.8%, non-binary: 1.2%). Most participants were Caucasian ("White"; 58.8%) and others were of Asian (13.2%); African ("Black", 6.3%); European (4.7%); Middle Eastern (1.4%); and Hispanic (1.0%) descent, or Indigenous (0.2%); Pacific Islander (0.2%) and Mixed (3.9%) ethnicity. The remaining participants provided nationality (10.1%) or no answer (0.2%). Most participants' highest level of education was a college/university undergraduate degree (53.8%), followed by high school (26.8%), a postgraduate degree (18.9%) and less than high school (0.4%).

Procedure

Per our pre-registration, participants had to pass a Qualtrics V2 reCAPTCHA and score at least 8/10 on an English proficiency test upon entering the study to prevent bots/non-residents of the target countries (Moeck et al., 2022). Participants' responses were included in the final sample if they passed at least one of two embedded attention checks (Berinsky et al., 2014). After providing informed consent, participants saw each questionnaire in the order presented below. A link to support services appeared on each survey page. Participants were compensated and debriefed following study completion.

Measures

Trauma History Screen (THS; Carlson et al., 2011). Participants indicated how many times they had been exposed to a list of 14 event types (e.g., natural disasters). Participants then described their most traumatic/stressful event (i.e., worst event), selected the event type that best described the event, and reported event characteristics (e.g., age at event). The THS has excellent convergent validity and temporal stability for persisting posttraumatic distress events and high magnitude stressor events (rs = .73-.93; Carlson et al., 2011).

Subjective Sharing. Participants rated "to what extent [they felt] like [their worst] event was a 'shared' event?" (1 = *Not at all*, 5 = *Extremely*).

Posttraumatic Stress Disorder Checklist (PCL-5; Weathers et al., 2013b). Participants rated how bothered they were by 20 DSM-5 PTSD symptoms related to their worst event—identified on the THS—over the past month (e.g., "Having difficulty concentrating"; 0 = *Not at all*, 4 = *Extremely*; APA, 2013). PTSD symptoms are categorised into four symptom clusters consistent with DSM-5 criteria: re-experiencing, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity. The PCL-5 has excellent internal consistency (α = .96) and test-retest reliability (r = .84; Bovin et al., 2016; current study: α = .87).

Results and Discussion

Data Cleaning

Our data cleaning process is summarized in Chapter 3 Supplementary Material. We aimed to examine traumatic events in our research—operationalized as events people experienced, witnessed, or were confronted with, that involved actual or threatened death or serious injury, or a threat to the physical integrity of themselves or others (APA, 2000). However, 19.3% of our sample reported events inconsistent with this operationalization. Instead of losing these data, we assessed whether our results differed when we included the other events—which we termed stressful events (Supplementary Table S1.2). We found similar results for stressful and traumatic events.

Sample Characteristics

Most participants' worst event was considered a *high magnitude stressor* event (80.7%), a *persisting posttraumatic distress* event (54.8%), and a *Criterion A.1* event (90.1%; APA, 2000; Carlson et al., 2011). About a quarter (25.8%) of participants were PTSD probable (PCL-5 ratings ≥ 33). The most common worst events included the sudden death of a close other (25.6%), vehicle accidents (10.7%), health-related problems (7.1%), and sudden abandonment (5.5%; see Supplementary Tables S1.3-S1.7 for all characteristics data).

Subjective Sharing

Over three-quarters of participants (78.5%) perceived their worst event as shared to some extent (not at all: 21.5%, slightly: 12.6%, moderately: 17.8%, considerably: 24.7%, extremely: 23.5%; total sample: $M = 3.16$, $SD = 1.47$). Events that were perceived as most shared included the non-sudden death ($M = 4.25$, $SD = 1.22$) and sudden death ($M = 4.06$, $SD = 1.06$) of a close other, and natural disasters ($M = 3.88$, $SD = 1.12$; Welch's $F[18, 78.58] = 9.17$, $p < .001$, $\eta_p^2 = .261$, 95% CI [0.17, 0.30]; Supplementary Table S1.8).

Associations Between Subjective Sharing and PTS Symptomology

Inconsistent with our hypothesis, subjective sharing was not significantly related to PTS symptomology overall ($r = -.03$, $p = .446$), to any PTS symptom cluster (all $ps > .05$; Supplementary Table S2.1), or to PTSD classifications (i.e., PTSD-positive: ≥ 33; Bovin et al., 2016; $\chi^2(4) = 1.43$, $p = .840$, $\varphi = .05$).[6]

Therefore, although existing social models propose that subjectively sharing a mass traumatic event is indirectly linked to PTS symptomology, our data suggest that appraising a traumatic event as shared is unrelated to PTS symptomology. Perhaps *how* a traumatic event is shared with other people and *who* sharers are is more central to posttraumatic stress reactions than simply how shared people *perceive* a traumatic event to be. Further, the way we asked about sharing in Study 2a may have led participants to underreport specific types of sharing experiences—for example, if they perceived our question as relating to a narrow personal definition of sharing (e.g., exclusively discussing the event). We therefore explored whether specific sharing forms were related to PTS symptomology in our second study.

Study 2b

To expand on our Study 2a findings, we explored the relationship between PTS symptomology and several specific shared traumatic experiences—physical (i.e., others present during the event), verbal (i.e., discussing/disclosing the event), relational (i.e., believing/knowing others had or could have similar experiences), emotional (i.e., believing/having the same emotions as others), and attitudinal (believing/having the same attitudes, beliefs, and/or opinions as others) sharing—along with subjective sharing (Hutchison et al., 2024). We also assessed a specific sub-form of physical sharing we termed perpetrator sharing (i.e., perpetrator/s involved in the event) to isolate participants'

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[6] We did find significant, mostly negative, correlations between subjective sharing and PTS symptomology for certain event types (e.g., attacked with a weapon; $rs = -.59$-.58, $ps < .05$), but we did not have adequate power to deem these correlations stable and thus generalizable (Supplementary Table S2.2).

experiences of sharing a traumatic event with the perpetrator(s) and non-perpetrator(s). Whilst perpetrators can be present during a traumatic event—meaning the event is physically shared with eyewitnesses/victims and perpetrators—perpetrators' experiences of a traumatic event likely differ from eyewitnesses' and victims' experiences (e.g., emotions: fear vs. anger, attitudes: unjustified vs. deserving). Without separating these experiences, participants may have only considered whether they shared the event in other ways (e.g., emotionally) *with perpetrators*, because perpetrators were actively involved in the event. Such responding could have reduced the frequency of different sharing forms and impacted the stability of our results. We therefore asked participants to report the presence of perpetrators and not consider the perpetrators for the other sharing measures.

Method

Participants

We recruited 514 participants from the same countries as in Study 2a on MTurk (compensated USD$1.20-USD$1.40) and Prolific (compensated GBP£1.50). We excluded data from thirteen participants: three completed the study twice and 10 failed both attention checks (Berinsky et al., 2014). Our final sample had 501 participants ($n = 125$ each for Canada, USA, and Australia/NZ*; n = 126* for UK) from MTurk ($n = 239$) and Prolific ($n = 262$). Participants' mean age was 36.09 years old (range: 18-75, $SD = 13.15$). Participants mostly identified as female (51.7%, male: 46.3%, non-binary: 1.6%, preferred not to say: 0.4%). Most participants were Caucasian ("White"; 56.7%) and other participants were of Asian (15.6%); European (4.2%); African ("Black", 3.8%); Hispanic (1.0%) and Middle Eastern (0.6%) descent, or Pacific Islander (0.2%) and Mixed (3.2%) ethnicity. All other participants either provided nationality (13.4%) or no answer (1.4%). Most participants' highest level of education was a college/university undergraduate degree (53.3%), followed by a postgraduate degree (23.6%), high school (22.4%) and less than high school (0.8%).

Materials and Procedure

We used the same methods as in Study 2a and included a forms of sharing measure.[7]

Forms of Sharing. We asked participants questions about several shared experiences. We assessed perpetrator sharing first and randomized all other sharing measures. For all measures, we asked participants whether they shared their worst event in a particular way and provided participants with options: "Yes", "No", and "Unsure" (i.e., *initial* responses; other than perpetrator and relational sharing[8] which only had "Yes" and "No" options). Participants who selected "Unsure" saw a follow-up question asking them to *predict* whether they shared the event in a particular way ("Yes", "No"; i.e., *predicted* responses).

Perpetrator Sharing. Participants read a definition and example of a perpetrator (i.e., A perpetrator is someone who intentionally or purposely committed an illegal, criminal, or evil/bad act (e.g., a person who attacked or killed someone) and then reported whether a perpetrator was involved in their worst event (*Yes/No*).

Physical Sharing. Participants reported whether other people were present during their worst event (*Yes/No/Unsure-Yes/Unsure-No*).

Relational Sharing. Participants reported whether they knew anyone who had experienced, or whether they believed someone would experience, a similar (but not the same) event to them (*Yes/No*).

Verbal Sharing. Participants reported whether they discussed their worst event with and/or disclosed their worst event to anyone (*Yes/No/Unsure-Yes/Unsure-No*).

Emotional Sharing. Participants read examples (e.g., "did other people also seem to have negative feelings and emotions [e.g., sadness, anger] about the event too?") and non-

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[7] We asked participants additional questions about their sharing behaviour (e.g., how many people and whom they shared their worst event with) that are not presented below because these questions addressed a different aim to the current study (see Studies 1a and 1b).

[8] Our relational sharing measure examined participants' beliefs about whether other people had experienced or would experience a similar event to them, meaning we did not need to separately ask them to predict whether they shared the event.

examples (e.g., "did other people have the same/similar attitudes, beliefs or opinions about the event as you?") of emotional sharing and then reported whether other people were emotionally affected in the same or a similar way to them about their worst event (*Yes/No/Unsure-Yes/Unsure-No*).

Attitudinal Sharing. Participants read examples (e.g., "did other people also believe the other driver was at fault [or] thought badly of the perpetrator") and non-examples (e.g., "did other people feel the same or similar to you about the event") of attitudinal sharing and then reported whether other people held the same or similar attitudes, beliefs and/or opinions as them about their worst event (*Yes/No/Unsure-Yes/Unsure-No*).

Results and Discussion

Data cleaning

We followed the same data cleaning process as in Study 2a (see Chapter 3 Supplementary Material). We present participants' *initial* responses to the above sharing measures and only report data including predicted responses when the results differed.

Sample characteristics

Most participants' worst events were considered a *high magnitude stressor* event (75.5%), a *persisting posttraumatic distress* event (61.1%), and a *Criterion A.1* event (88.6%; APA, 2000; Carlson et al., 2011). About a quarter (25.5%) of participants were PTSD probable (PCL-5 ratings $\geq$ 33). The most common worst events included the sudden death of a close other (22.8%), sudden abandonment (8.8%), and seeing someone die, hurt, or killed (8.6%; see Supplementary Tables S1.13-S1.17 for all characteristics data).

Subjective Sharing

Consistent with Study 2a, most participants (72.1%) rated their worst event as shared to some extent (not at all: 27.9%, slightly: 14.8%, moderately: 16.2%, considerably: 23.6%, extremely: 17.6%; total sample: $M = 2.88$, $SD = 1.48$). Events perceived as the most shared

included natural disasters ($M = 4.45$, $SD = 0.82$), the sudden death of a close other ($M = 3.75$, $SD = 1.10$), and seeing someone die, hurt, or killed ($M = 3.47$, $SD = 1.30$; Welch's F [18, 69.58] = 12.47, $p < .001$, $\eta_p^2 = .263$, 95% CI [0.17, 0.30]; Supplementary Table S1.18).

Associations Between Sharing (Subjective & Forms of Sharing) and PTS Symptomology

Replicating our Study 2a results, subjective sharing was not significantly correlated with PTS symptomology (all ps > .05; Supplementary Table S2.3).[9] Consistent with our predictions, perpetrator sharing was *positively* associated with PTS symptomology overall ($r = .18$, $p < .001$) and with each symptom cluster (rs = .11-.21, ps < .05). Conversely, verbal sharing was *negatively* correlated with PTS symptomology overall ($r = -.17$, $p < .001$)[10] and each symptom cluster (rs = -.10 to -.17, ps < .05), physical sharing was *negatively* correlated with avoidance ($r = -.10$, $p = .029$) and negative alterations in cognition and mood ($r = -.12$, $p = .008$), and emotional sharing was *negatively* correlated with negative alterations in cognition and mood (initial/predicted: $r = -.11$, $p = .011$; initial: $p = .058$).[11]

We wondered whether relationships between sharing and PTS symptomology would be stronger for events that occurred recently (vs. long ago), noting we did not pre-register this idea. Therefore, we re-ran and compared correlations between sharing and PTS symptomology separately for recent events (i.e., ≤ 5 years ago) and distant events (> 5 years ago; Supplementary Tables S2.5 & S2.6). We found the same results as our main data for most sharing forms. Yet, physical sharing was negatively correlated with more PTS symptom clusters when examining only distant events and emotional sharing was negatively correlated with more PTS symptom clusters when examining only recent events. Further, verbal sharing

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[9] We found significant correlations between subjective sharing and PTS symptomology for some events (e.g., health problems) but did not have adequate power to deem these correlations stable (Supplementary Table S2.4).
[10] Verbal sharing was more common for PTSD-negative participants for traumatic events, but not stressful events. However, this pattern may be due to the low *n* for stressful events compared to traumatic events.
[11] As pre-registered, we also conducted chi-square tests of association with probable classifications of clinically significant PTSD (PTSD-positive: ≥ 33; Bovin et al., 2016). We found a similar pattern of results to our correlational findings, so report these findings in Supplementary Table S2.7. Further, as requested by a reviewer, we ran multiple regression analyses to assess the combined effects of different sharing forms on PTS symptomology. We found the same pattern of results as our correlation analyses.

was unrelated to re-experiencing and avoidance symptoms for recent events. Thus, whilst the time since participants' worst event occurred influenced relationships between sharing and PTS symptomology, some relationships strengthened, whilst others weakened, across time. Future research should examine these variables longitudinally to more reliably determine how relationships between sharing trauma and PTS symptomology change over time.

We also considered that different shared experiences can arise for a single traumatic event (Hutchison et al., 2024). Such sharing can co-occur or occur at different times (e.g., discussing natural disaster with other victims during or days after the event) and can be intentional or unintentional (e.g., learning of others' similar experiences and associated grief through group therapy vs. news media). Thus, as another exploratory analysis (not pre-registered), we examined whether the number of ways people shared traumatic experiences (i.e., forms) was related to PTS symptomology. We did not include perpetrator sharing in these analyses because the direction of the relationship between perpetrator sharing and PTS symptomology contrasted all other relationships between sharing and PTS symptomology. Sharing a traumatic event in more ways was related to less severe negative alterations in cognition and mood ($r = -.13$, $p = .004$). Thus, sharing traumatic events in numerous ways may have cumulative effects on PTS symptomology. Future research could evaluate this explanation by assessing the relationship between sharing and PTS symptoms using different combinations of shared experiences, particularly by manipulating shared experiences.

General Discussion

Across two studies, we examined the relationship between sharing trauma and PTS symptomology. Against predictions, *perceiving* a traumatic event as shared was not associated with PTS symptomology. Yet, as expected, verbal, physical, and emotional sharing were related to less severe PTS symptomology meanwhile perpetrator sharing was related to more severe PTS symptomology.

Our results do not support the indirect link between subjective sharing and psychological functioning (e.g., collective resilience) following trauma (via social identification and social support; Drury, 2012; 2018; Ntontis et al., 2018). However, extant research examining subjective sharing focusses on mass traumatic events whereas most events reported here were individual traumatic events (e.g., Craig et al., 2022; Drury, 2018; Muldoon et al., 2019). Indeed, subjective sharing may have greater influence on social identification and subsequent wellbeing in mass traumas because such events require communities to restore and strengthen social unity to proactively overcome threats to the community—such as injuries, rebuilding, and displacement (e.g., Drury, 2018; Thomas et al., 2012). Alternatively, individual traumas may not require collective action, meaning subjective sharing has little influence on people's social identities and subsequent recovery from such events. We only assessed one type of mass traumatic event (i.e., natural disasters) here. Thus, we did not have adequate power to compare the relationship between subjective sharing and PTS symptomology for mass and individual traumatic events. Future research could make this comparison by targeting specific individual and mass trauma.

Our findings for verbal, physical, and emotional sharing were largely consistent with existing social models of PTSD. That is, greater access to social support and group memberships—which can involve and/or lead to verbal, emotional and physical sharing (Cuff et al., 2016; Paterson & Kemp, 2006; Ntontis et al., 2018)—is associated with greater psychological resilience and less severe PTS symptomology (e.g., Haslam et al., 2018; Muldoon et al., 2019; Ozer, 2003; Schumm, 2006). In fact, our findings fit with research suggesting that discussing individual traumatic events is related to less severe PTS symptomology (Davidson & Moss, 2008; Levi-Bells & Lev-Ari, 2019). Whilst negative outcomes can arise from verbally sharing trauma (e.g., co-rumination, memory distortion;

Garry et al., 2008; Rose, 2002), our research suggests the benefits of verbal sharing could outweigh the costs over time (e.g., post-traumatic growth; Rimé et al., 2010).

Further, our results are consistent with research demonstrating that physically sharing mass traumatic events and health emergencies reduce depressive symptoms (e.g., Armenian et al., 2012; Leske et al., 2017). We extend these findings by highlighting that physically sharing traumatic events is related to lower PTS symptomology. Whilst some experimental work suggests that physically sharing traumatic content does not influence immediate physiological or subjective distress (e.g., Woodward et al., 2024), data on the effects of physical sharing on PTS symptomology is confounded by verbal sharing effects. Our work demonstrates that physical sharing is directly linked to lower PTS symptomology for events that occurred, on average 12-15 years ago. Thus, perhaps physically sharing traumatic events affects psychological reactions that develop and persist long after the event (e.g., PTS; APA, 2022), but not immediate psychological reactions (e.g., distress). Future research should assess this explanation by manipulating physical sharing for an analogue trauma and examining PTS symptomology immediately and after a delay. Furthermore, our findings that physically sharing a traumatic event with a perpetrator was related to more severe PTS symptomology align with existing interpersonal trauma research. Indeed, many interpersonal traumas involve perpetrators, and these events are related to more severe PTS symptoms than non-interpersonal traumas (Forbes et al., 2014; Huang et al., 2017).

Our results also support research highlighting that emotional support is associated with reduced psychological distress and PTS symptoms (e.g., Ozer, 2003). Perhaps the emotional support provided to participants explains the relationship between emotional sharing and PTS symptomology. Or perhaps other emotional factors that do not involve direct social support explain some of this relationship. For instance, learning that strangers have experienced similar emotions about the same event (e.g., celebrities' experiences of natural

disaster) via media exposure (e.g., social media) could reduce shame or fear related to these events. Future research should examine whether and if so, why, emotionally sharing a traumatic event influences PTS symptomology.

Notably, the link between sharing trauma and PTS symptomology aligns with known PTSD predictors. Specifically, sharing traumatic events verbally, physically, and emotionally may provide greater opportunity and motivation for people to identify with or receive support from others, meaning these social factors could mediate the relationship between sharing and PTS symptomology. Yet, many shared experiences could represent elements of social support (e.g., empathy, discussions; Cuff et al., 2016) and/or outcomes of social identification (e.g., shared emotions; Drury, 2018). Thus, it is just as likely that sharing mediates the relationship between social support or social identification and PTS. Further research is needed to separate out these social factors to understand how they uniquely contribute to PTSD.

Critically, we used correlational data so we could not determine the direction of the relationship between sharing and PTS symptomology. Thus, it is possible that PTS symptoms (e.g., avoidance, negative affect, and failing to recall key features of trauma) reduced the likelihood that people shared their traumatic event. For instance, participants may have avoided memories, thoughts, and/or feelings about the event which could have reduced verbal and emotional sharing, or had difficulty recalling sharing-related event details (APA, 2013). Future research could expose participants to traumatic stimuli and manipulate different shared experiences to examine the direction of this relationship.

Our research has limitations. First, sample sizes within each trauma type were uneven, meaning some events were overrepresented in our data (e.g., sudden death of a close other = 22.8-25.6%), whilst others were underrepresented (e.g., military deployment experiences = 0.6%). Yet, the frequency of traumatic event types reported here aligned with those from large community samples (e.g., Bromet et al., 2018). Therefore, our data may generalise to a

broader collection of traumatic events that impact the general population. Second, participants reported events that occurred on average 12-15 years ago. Given perceptions about sharing the event could fade or increase over time (e.g., based on interactions with others), participants' current judgments about subjectively sharing the event likely influenced our findings. Third, we included stressful events in our analyses. Notably, most participants (72.4%-80.5%) who reported a stressful event had been exposed to a traumatic event. Thus, many participants chose a stressful (vs. traumatic) event as their worst event, indicating that stressful events may not necessarily be less psychologically harmful. Fourth, we did not control for the severity of the events examined, which may have confounded our results. That is, more severe events may have been shared less frequently and associated with higher PTS symptomology, which could explain associations between sharing and PTS symptomology. However, event severity is subjective. Further, relationships between event severity and sharing likely vary based on both the type of traumatic event and sharing form experienced (e.g., sexual assaults are verbally shared less often whilst criminal events are verbally shared more often; Paterson & Kemp, 2006; Skagerberg & Wright, 2008; Rimé, 2009; Rimé et al., 1991). Thus, controlling for event severity would have been required additional design features (e.g., assessment of event severity) and comprehensive analyses beyond the scope of the current studies. Future research could address this limitation by assessing links between sharing and PTS symptomology within specific event types or sharing forms. Fifth, using a broader lens and examining the links between several sharing forms and PTS symptomology simultaneously may cause underlying mechanisms and explanations for such links to be overlooked. Further research is needed to explore how, why, and when sharing trauma verbally, physically, and emotionally are associated with less PTS symptomology.

Finally, our sample came from WEIRD populations (Henrich et al., 2010) using online crowdsourcing platforms. Hence, our data represents the relationship between sharing

and PTS symptomology within these populations. We used a WEIRD sample to be consistent and comparable with existing research on sharing and psychological functioning (e.g., Davidson & Moss, 2008; Drury, 2018; Seery et al., 2008) and due to resource limitations. We recognize that shared trauma research exists in non-WEIRD contexts (e.g., collectivist cultures; e.g., Rimé et al., 2010) and should be explored further. However, expanding our research to these contexts using the same sample size could have reduced the generalizability of our findings. That is, having greater variability in the demographics (e.g., cultures) assessed would mean fewer participants would have represented experiences of others within these demographics (e.g., from a collective culture), making the data less reliable. In addition, crowdsourced platforms provide more diverse samples than university populations (Casler et al., 2013; Hauser & Schwarz, 2015) and reliable data when following appropriate protocols (e.g., pre-screening; Moeck et al., 2022; Peer et al., 2017). Further, PTS symptom severity in this study (Ms = 20-22) was similar to that of student samples (M = 22; Bedford et al., 2023) and community samples (M = 24; Erwin et al., 2018). Nevertheless, future research should examine links between sharing and PTS symptomology in different populations to determine whether our results generalize beyond our target population.

Conclusion

Despite these limitations, we provide novel contributions to the literature by exploring the relationship between shared traumatic experiences and PTSD. We demonstrate that verbally, physically, and emotionally sharing a traumatic event is linked to less severe PTS symptomology, whereas physically sharing an event with a perpetrator is linked to more severe PTS symptomology. Perceiving a traumatic event as shared was unrelated to PTS symptom severity. These findings highlight that sharing trauma in some ways may protect people against PTSD development. Further research is needed to explore the causal nature of these relationships.

Supplementary Material

Supplementary Table S2.1

Correlations Between Subjective Sharing and PTS Symptomology

	Re-experiencing	Avoidance	Negative alterations in cognition/mood	Alterations in arousal/ reactivity
Subjective sharing	.05	-.02	-.07	-.06

Note. All ps > .05.

Supplementary Table S2.2

Significant Correlations Between Subjective Sharing and PTS Symptomology by Event Type

Event Type	PTS Symptomology				
	Re-experiencing	Avoidance	Negative alterations in cognition/mood	Alterations in arousal/ reactivity	Total
Sexual coercion as an adult		.49		.58	.48
Attacked with a weapon	-.45	-.38		-.59	-.56
Sudden move or loss of home	.62				-.47
Health-related problems			-.33		

Note. All ps < .05

Supplementary Table S2.3

Correlations Between Subjective Sharing and Forms of Sharing Ratings and PTS

Symptomology for Initial and (Initial and Predicted) Responses

	Re-experiencing	Avoidance	Negative alterations in cognition/mood	Alterations in arousal/ reactivity	Total
Subjective sharing	-.04	.04	.08	.01	.03
Perpetrator sharing	.11*	.21**	.17**	.19**	.18**
Physical sharing	.01 (.01)	-.10* (-.09*)	-.12** (-.12**)	-.08 (-.08)	-.08 (-.08)
Emotional sharing	.01 (-.02)	-.02 (-.04)	-.10 (-.11*)	-.01 (-.03)	-.04 (-.07)
Attitudinal sharing	.04 (-.04)	.02 (-.01)	.03 (-.05)	.06 (.01)	.04 (-.03)
Verbal sharing	-.13** (-.13**)	-.10* (-.09*)	-.17** (-.17**)	-.16** (-.16**)	-.17** (-.17**)
Relational sharing	< -.01	.04	.02	.05	.03

Note. $* = p < .05$, $** = p < .01$.

Supplementary Table S2.4

Significant Correlations Between Subjective Sharing and PTS Symptomology by Event Type

Event Type	PTS Symptomology				
	Re-experiencing	Avoidance	Negative alterations in cognition/mood	Alterations in arousal/ reactivity	Total
Military experiences	1.00	1.00	1.00		1.00
Seeing someone die, hurt, or killed				-.33	
Health-related problems	.45				
Human rights violation			.83		
Relationship issues			-.39		

Note. All ps < .05. Military experiences: $n = 3$.

Supplementary Table S2.5

Correlations Between Subjective Sharing and Forms of Sharing Ratings and PTS

Symptomology for Initial and (Initial and Predicted) Responses for Recent Events

	Re-experiencing	Avoidance	Negative alterations in cognition/mood	Alterations in arousal/ reactivity	Total
Subjective sharing	-.02	.06	.06	.01	.03
Perpetrator sharing	-.17*	-.28**	.19**	-.30**	.25**
Physical sharing	-.14 (-.05)	-.15 (-.08)	-.20* (-.17)	-.10 (-.14)	-.17* (-.13)
Emotional sharing	.19* (.10)	.21* (.06)	.17* (.03)	.16 (.10)	.20* (.08)
Attitudinal sharing	.09 (.06)	.13 (.08)	.04 (.005)	.04 (.92)	.07 (.06)
Verbal sharing	.11 (-.10)	-.08 (-.08)	-.21** (-.21*)	-.20** (-.17**)	-.18* (-.17*)
Relational sharing	.07	.06	-.001	.09	.06

Note. * = $p < .05$, ** = $p < .01$.

Supplementary Table S2.6

Correlations Between Subjective Sharing and Forms of Sharing Ratings and PTS

Symptomology for Initial and (Initial and Predicted) Responses for Distant Events

	Re-experiencing	Avoidance	Negative alterations in cognition/mood	Alterations in arousal/ reactivity	Total
Subjective sharing	-.04	.05	.10	.02	.04
Perpetrator sharing	.13*	.25**	.18**	.16**	.19**
Physical sharing	-.05 (.05)	-.15** (-.09)	-.17** (-.10)	-.16** (-.06)	-.15** (-.06)
Emotional sharing	-.09 (-.08)	-.04 (-.09)	-.14** (-.17*)	-.10 (-.09)	-.12* (-.13)
Attitudinal sharing	-.03 (-.08)	-.05 (-.06)	-.07 (-.07)	-.07 (-.02)	-.06 (-.06)
Verbal sharing	-.06 (-.16**)	-.05 (-.11*)	-.11* (-.16**)	-.11* (-.17**)	-.10 (-.18**)
Relational sharing	-.03	.04	.04	.04	.03

Note. * = $p < .05$, ** = $p < .01$.

Supplementary Table S2.7

Chi-Square Tests of Association for PTSD Classifications and Forms of Sharing and Subjective Sharing for Initial Responses

	χ^2	*df*	*p*	Cramér's V (φ_c)
Subjective sharing	5.87	4	.209	.11
Perpetrator sharing	15.81	1	< .001	-.18
Physical sharing	3.37	1	.066	.09
Emotional sharing	0.62	1	.430	.04
Attitudinal sharing	0.06	1	.803	-.01
Verbal sharing	8.83	1	.003	.14
Relational sharing	< 0.01	1	.962	-.002

Note. PTSD-negative: < .32, PTSD-positive: ≥ 33 (Bovin et al., 2016). Perpetrator sharing: PTSD-positive = 51.6%, PTSD-negative: 31.9%; Verbal sharing: PTSD-positive = 75.0%, PTSD-negative = 86.5%)

Chapter 5: Investigating the Role of Psychological Distance in Shared Traumatic Experiences

Author contributions: I developed the study concept and design with the guidance of MKTT and VMEB. I assisted VMEB with data collection and cleaning as part of a larger study, and performed data analysis and interpretation. I drafted the manuscript and contributed to critical revisions. MKTT and VMEB provided critical revisions to the manuscript. All authors approved the final version of the manuscript for submission.

Abstract

Although we know people shared COVID-19, it remains unclear whether psychological distance played a role in the nature or impact of sharing COVID-19. To address this gap, we asked participants ($N = 1,040$) to rate how they subjectively (i.e., perceived as shared), relationally (i.e., knew others with similar experiences), and verbally (i.e., discussed) shared COVID-19 with people of varying social/spatial distances. We also measured psychological functioning (e.g., anxiety). Participants shared COVID-19 more with socially/spatially close (vs. distant) others. The relationships between subjective sharing and verbal and relational sharing were stronger amongst socially/spatially close others. Further, sharing COVID-19 was associated with poorer psychological functioning, except when shared with household members. Thus, the extent to which people shared COVID-19, relationships between different ways of sharing COVID-19, and relationships between sharing COVID-19 and psychological functioning varied based on the psychological distance between people.

Introduction

We share traumatic events with people in various ways, including physically—by being simultaneously present during the same event (e.g., natural disasters; Armenian et al., 2002), verbally—by discussing such events (e.g., loved one's death; Rimé, 2009), relationally—by having similar experiences (e.g., sexual assault; Konya et al., 2020), and subjectively—by perceiving the event as shared (Drury, 2018; Hutchison et al., 2024; Chapter 3). The COVID-19 pandemic was no exception. In fact, the pandemic was a unique experience because it was *physically* shared with everyone around the world. People also *verbally* shared their experiences, attitudes, and emotions about COVID-19 within workplaces (Qin et al., 2021), homes (Tang et al., 2021), and on virtual platforms (Kim et al., 2022). Further, many people—such as healthcare professionals (Cheng et al., 2020) and students (Kazerooni et al., 2020)—*relationally* shared personal experiences of COVID-19 to support one another during the pandemic. Finally, emergency responders *subjectively* shared the threat of the COVID-19 pandemic with their colleagues (Davidson et al., 2023). Thus, like other traumatic events, people shared COVID-19 in many ways.[12] However, we know little about whether verbally, relationally, and subjectively sharing COVID-19 are related to one another, and whether sharing COVID-19 in these ways is related to psychological functioning *differently* based on the *psychological distance between people*—i.e., social, spatial, temporal, and hypothetical distance; Trope & Liberman, 2010. We addressed these gaps in the literature by assessing whether 1) the extent to which people shared COVID-19 (i.e., the COVID-19 pandemic and participants' worst COVID-19 experience), 2) relationships between different ways of sharing COVID-19, and 3) relationships between sharing COVID-19 and psychological functioning varied based on the psychological distance between people.

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[12] The definition of a *traumatic event* ranges from broad experiences (e.g., events that can elicit posttraumatic stress; e.g., Carlson et al., 2013) to specific experiences (e.g., DSM criterion A; American Psychiatric Association [APA], 2013). The COVID-19 pandemic fits within both definitions because it involved direct (personally contracting the virus) and indirect (witnessed, learned about) exposure to actual and threatened death and elicited symptoms consistent with post-traumatic stress (e.g., APA, 2013; Jetten et al., 2020).

Sharing processes are often intertwined. For instance, as the Social Identity Model of Collective Behaviour in Emergencies and Disasters (SIMCBED; Drury, 2012; 2018) suggests, physically sharing a mass traumatic event can elicit subjective sharing amongst victims, characterized by a perceived common threat. Subsequently, subjectively sharing the event can foster social identification amongst victims, which in turn facilitates collaboration and cooperation (involving verbal sharing) amongst these people. Similarly, physically, verbally, and relationally sharing traumatic events evoke perceptions about sharing these events (Bartholomew & Victor, 2004; Hutchison et al., 2024). Thus, sharing a traumatic event in one way (e.g., subjectively) can encourage people to share the event in other ways (e.g., verbally).

Sharing traumatic events can foster social identification and closeness between close others (e.g., family, communities; Drury, 2018) *and* between distant others (e.g., strangers; van de Ven et al., 2021). Yet, sharing such events specifically with familiar others (from pre-existing relationships) enhances trust and collaboration with these people, which may not be the case for distant others (e.g., Haslam et al., 2009). Therefore, psychological distance may influence the strength of relationships between different ways of sharing traumatic events. Consistent with the SIMCBED (Drury, 2012; 2018), a handful of studies have shown that subjective sharing and subsequent social identification among emergency responders during COVID-19 qualitatively improved the effectiveness of their work across multiple agencies (i.e., multiteam collaboration and coordination; Davidson et al., 2023; Radburn et al., 2023). This pattern occurred for local (spatially close) but not national (spatially distant) groups. Further, pre-existing relationships among emergency responders (i.e., social closeness) enhanced initial multiagency work (i.e., early collaboration and coordination). Thus, the social and spatial distance between emergency responders can interact with subjective sharing and, in turn, prompt other shared experiences (e.g., verbal/relational sharing). Unfortunately, these findings are limited to specific groups (e.g., emergency responders;

Davidson et al., 2023; Radburn et al., 2023), meaning inter-relations between different ways of sharing COVID-19 within the general population is not well understood.

Both positive and negative psychological effects emerge from sharing traumatic events. On the one hand, verbally and relationally sharing negative events is associated with reduced depressive, anxiety, and traumatic stress symptoms (Bartone et al., 2019; Davidson & Moss, 2008; Rimé et al., 2010). On the other hand, sharing traumatic events (e.g., terrorist attack) verbally and relationally can lead to distorted and amplified (more negative) memories of these events and increased rumination, negative affect, and posttraumatic stress symptoms (Gabbert et al., 2004; Rimé et al., 2010; Rose, 2002; Seery et al., 2008).

These effects seem particularly relevant to socially and spatially close (vs. distant) others. People often share negative events with socially and spatially close others (e.g., Hutchison et al., 2024; Paterson & Kemp, 2006), and social identification is pivotal to the outcomes of sharing (e.g., Davidson et al., 2023; Drury, 2018). Further, people are more likely to report false memories (indicating memory distortion) after verbally sharing negative events with socially close (vs. distant) others (French et al., 2008). Indeed, spending time with socially close others who have relationally shared a similar event could exacerbate someone's symptoms by frequently reminding them of their negative experience. In addition, sharing negative events with spatially close (vs. distant) others could make those events appear more meaningful or more likely to reoccur (e.g., crime) for those living nearby and subsequently exacerbate symptoms like fear (Romer et al., 2003). However, no research appears to have investigated the role of psychological distance on the relationship between sharing COVID-19 and psychological functioning.

Research Overview

Here, we examined whether the extent to which people shared COVID-19, relationships between different ways of sharing COVID-19, and relationships between sharing COVID-19 and psychological functioning were greater amongst psychologically

close (vs. distant) others. We assessed shared COVID-19 experiences within WEIRD societies (Western, Educated, Industrialised, Rich, and Democratic; Henrich et al., 2010). Participants identified the types of COVID-19 events they had experienced and selected the event that bothered them the most. They then reported whether they relationally shared *their worst COVID-19 event*, how frequently they verbally shared *the pandemic*, and the extent to which they subjectively shared *their worst COVID-19 event and the pandemic*, with people of varying social and spatial distances. We also measured several areas of psychological functioning that were impacted by the COVID-19 pandemic (e.g., anxiety, depression; Magson et al., 2021; Robinson et al., 2022) and are related to greater sharing of traumatic events (e.g., negative affect, traumatic stress symptoms; Davidson & Moss, 2008; Rimé et al., 2010). We collected data during the first wave of the COVID-19 pandemic between the 10th and 21st of April in 2020. We assessed sharing in relation to the COVID-19 pandemic and participants' worst COVID-19 event separately to distinguish between a mass event experienced by most people globally (i.e., all experiences concerning the pandemic) and personal events experienced only by certain people (e.g., testing positive).[13]

At the time of pre-registering our research, we made some broad predictions (https://osf.io/dxhek). However, we also pre-registered some specific analyses that were not reflected in these broad predictions (e.g., assessing the relationship between relational sharing and psychological functioning). Thus, before analyzing our data, we specified additional predictions that better aligned with our pre-registered analyses and the questions we aimed to address in this research.

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[13] We refer to the COVID-19 pandemic and personal experiences of COVID-19 as past events given WHO has declared the pandemic as no longer a public health emergency of international concern (WHO, 2023).

We had the following research questions and hypotheses:

1) Did the extent to which people shared COVID-19 vary based on psychological distance?[14] Participants shared COVID-19 subjective, verbally, and relationally more with people of closer (vs. further) social/spatial distance.

2) Did relationships between different ways of sharing COVID-19 vary based on psychological distance? Relationships between subjective, verbal, and relational sharing will be stronger for closer (vs. further) social/spatial distance groups.

3) Did relationships between sharing COVID-19 and psychological functioning during the pandemic vary based on psychological distance? Relationships between subjective, verbal, and relational sharing and psychological functioning will be stronger for closer (vs. further) social/spatial distance groups.

Transparency and Openness

We pre-registered Study 3 (https://osf.io/dxhek). All de-identified data and supplementary material can be found at https://osf.io/jn7zx. We have reported all measures, conditions, and data exclusions. This study was approved by the Flinders University Social and Behavioural Research Ethics Committee (5366). The study was conducted in accordance with the provisions of the APA Ethical Standards and the World Medical Association Declaration of Helsinki. Written informed consent was obtained from all participants in this study. Relevant supplementary material is presented at the end of this chapter.

Study 3

Method

Participants

We aimed to recruit 260 participants each from five English-speaking western countries with similar socio-economic make-up: United States of America, United Kingdom,

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[14] We did not pre-register hypotheses about differences in social/spatial distance, but reporting these differences provided a foundation for subsequent research questions.

Canada, Australia, and New Zealand (Australia and NZ combined for analysis). We excluded 18 participant responses: five provided answers consistent with bots/farmers (i.e., one-word open-text responses e.g., "interested"), and 13 completed the survey twice (first response included in analyses). Our final sample consisted of 1,040 participants ($n = 260$: US and UK each; $n = 261$: Canada; $n = 259$: Australia/NZ) from Amazon's Mechanical Turk (MTurk; via CloudResearch.com; Litman et al., 2017; $n = 320$) and Prolific ($n = 720$). Our sample size was informed by the requirements of another study drawing upon the same dataset (Bridgland et al., 2021).[15] Nevertheless, typically, sample sizes should approach 260 for the magnitude of a correlation to be deemed stable and larger samples provide greater confidence that correlations have stabilized within a reasonable corridor (Schönbrodt & Perugini, 2013; 2018).

Participants were 18-78 years of age ($M = 35.7$, $SD = 12.3$) and half identified as male (50.7%, female = 48.8%, non-binary = 0.4%; did not answer = 0.2%). Most participants were Caucasian ("White"; 59.9%), employed (70%; students = 19.8%), and had completed a college/university undergraduate degree (54.8%; see Supplementary Table S3.1 for all demographics data). Most participants reported being at high risk of developing COVID-19 (82.6%; e.g., medical condition; high risk = 14.9%, did not know = 2.5%) and had health-care coverage for COVID-19-related problems (88.8%). Participants had a median of three people in their household (including themselves).

Materials

Stress Numerical Rating Scale (SNRS-11: Karvounides et al., 2016). Participants rated their current level of stress (0 = *No stress*, 10 = *Worst stress possible*). We refer to this variable as "current stress" hereon to differentiate between this stress measure and the DASS-21 stress subscale (referred to as "stress symptoms").

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[15] Pre-registered measures unrelated to our research questions (e.g., anticipated COVID-19 events, moral/physical disgust, avoidance, media exposure) are not reported here, but the data and results can be found at https://osf.io/jn7zx.

Negative emotional reactions. Participants rated how intensely they felt various negative emotions (i.e., sad, angry, anxious, frustrated, helpless, fearful, disgusted) when thinking about COVID-19 (0 = *Not at all*, 7 = *Extremely*). We averaged these items (α = .89).

Exposure to COVID-19 experiences. We presented participants with a list of 32 events related to COVID-19 (e.g., testing positive to COVID-19) from nine predetermined categories (e.g., contact with disease). Participants selected the events they had experienced, identified which event bothered them the most (i.e., worst COVID-19 event), and reported how much this event bothered them emotionally (1 = *Not at all*, 5 = *Very much*) and why (open-text). We included an "other" option in the event list and recategorized these events where possible. We added 37 "other" responses to modified or existing items and used seven "other" responses to create three additional items (see Appendix B for modified and new items).

Subjective Sharing (Worst COVID-19 event). Participants rated the extent to which they *felt* like they were sharing their worst COVID-19 event (1 = *Not at all*, 7 = *Very much, Not Applicable*) with people of varying social/spatial distances (*Live with/Close others/Casual others/Distant others/Same area/Same country/World;* Supplementary Table S3.2).[16]

Relational sharing (Worst COVID-19 event). We asked participants whether they knew anyone who had experienced the same event as their worst COVID-19 event, and if so, who these people were (*Live with/Close others/Casual others/Distant others/Strangers*).

Posttraumatic Stress Disorder Checklist (PCL-5; Weathers et al., 2013b). Participants indicated how bothered they were by a list of 20 DSM-5 PTSD symptoms (e.g., "Repeated, disturbing dreams"; 0 = *Not at all*, 4 = *Extremely*; APA, 2013). We measured

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[16] We also examined subjective sharing using an adapted version of the Inclusion of Other in the Self scale (Aron et al., 1992). However, since we found a similar pattern of results for both subjective sharing measures and these measures showed high convergent validity (rs = .09-.77 ps < .01), we only present results from our quantitative subjective sharing measure.

symptoms in relation to COVID-19, specifically, and asked about symptoms from the past

week (vs. month) due to the rapidly changing circumstances. Item scores were based on how

bothered participants were by each symptom[17], which were summed for data analysis as is

typical for the PCL-5 (range 0-80). After rating each symptom on degree of bother using the

0-4 scale, participants checked up to three boxes to indicate whether the symptom related to

past, current, and/or future events. Total scores on this modified measure represent a

combination of pre-, peri-, *and* post-traumatic stress symptoms. We examined these traumatic

stress symptoms together to capture the full extent of participants' traumatic stress,

particularly given the pandemic emerged shortly before data were collected and was an

ongoing event (current study: $\alpha = .92$).

Subjective sharing (Pandemic). Participants rated the extent to which they *felt* like

they were sharing the COVID-19 pandemic (1 = *Not at all*, 7 = *Very much, Not Applicable*)

with people of varying social/spatial distances (*see Subjective sharing above).*

Verbal sharing (Pandemic). Participants identified how often they discussed the

COVID-19 pandemic (1 = *< twice a week*, 6 = *Daily: > 5 hours; Not Applicable*) with people

of varying social/spatial distances (*Live with/Close others/Casual others/Distant*

others/Strangers in-person/Strangers online).

The 5-item World Health Organization Well-Being Index (WHO-5; Bech et al,

1996). Participants rated how often five statements concerning their wellbeing (e.g., "I have

felt active and vigorous") applied to them over the past week (0 = *At no time*, 5 = *All of the*

time). We reverse-scored responses and then multiplied total scores (0-25) by four to provide

percentage scores and to align the scores with all other psychological functioning variables (0

= *Best possible quality of life*, 100 = *Worst possible quality of life*; current study: $\alpha = .90$).

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[17] For each symptom that participants rated > 0, we asked them whether it was related to something that happened in the past, was currently happening, and/or may happen in the future. This additional question was for the purpose of another study drawing from the same dataset (Bridgland et al., 2021) and we did not analyze it here.

Brief Inventory of Psychosocial Functioning (B-IPF; Marx et al., 2019).

Participants rated how much trouble they had with seven impairment domains (e.g., family relationships) over the past week (e.g., "I had trouble with my family relationships"; 0 = *Not at all*, 6 = *Very much*; current study: α = .85). Total scores were calculated by summing all item scores, dividing this number by the maximum possible score for each participant, and multiplying the number by 100. Total scores represent participants' overall functional impairment (range 0-100).

Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995).

Participants individually rated the degree to which 21 statements (e.g., "I found it difficult to relax") applied to them over the past week (0 = *Did not apply to me at all*, 3 = *Applied to me very much*; Depression: α = .92; Anxiety: α = .86; Stress: α = .90). Scores for each subscale (e.g., depression) were summed (ranges 0-14).

Procedure

To prevent "bots"/non-residents from completing the study, participants were required to pass a Qualtrics V2 reCAPTCHA, a simple arithmetic question (in image form), and score at least 8/10 on an English proficiency test to continue with the study (Moeck et al., 2022). Participants were required to pass at least one of three attention check questions embedded in the survey for their responses to be included in the final sample (Hauser & Schwarz, 2015). Participants answered demographic questions and then completed each measure in the order presented above, in a single session. The WHO-5, B-IPF, and DASS-21 appeared in a randomized order. Participants were compensated (Amazon's Mechanical Turk: USD$2.00; Prolific: GBP£5.00 to £6.90) and debriefed upon completion of the study.

Results

Statistical Overview

We replaced missing data for six responses using participants' mean score for the appropriate subscale. We ran analyses using Null-Hypothesis Significance Tests (α = .05) in

SPSS Version 28. Our data violated the normality assumption but transformations did not improve the skew of our data and the same general pattern of results emerged when analyzing our untransformed data using non-parametric (vs. parametric) tests. Thus, we report untransformed data and results from parametric tests. Further, for all correlation analyses involving multiple psychological distance groups, we corrected for the number of groups using familywise Bonferroni corrections (subjective sharing: $p < .007$; verbal sharing: $p < .008$; relational sharing: $p < .01$). Note that we did not run inferential tests to examine differences across psychological distances because participants rated each sharing form separately for each psychological distance group. Thus, we instead identified these differences by comparing means, confidence intervals, and the strength of correlations between these groups.

Did the extent to which people shared COVID-19 vary based on psychological distance? (H1)

Most participants reported subjectively sharing the pandemic to some extent (rated > 1; 99.4%). Overall, participants perceived the pandemic (i.e., the cumulation of all COVID-19 experiences) as reasonably shared (i.e., subjective sharing: $M = 4.2$, $SD = 1.5$) but this perception clearly depended on the psychological distance between people. As shown in Table 3.1, participants perceived the pandemic as most shared with people they lived with (i.e., household members), close others, and casual others. Further, most participants verbally shared the pandemic (99.8%). Participants discussed the pandemic, on average, two to five times a week ($M = 2.1$, $SD = 0.7$) and discussed the pandemic most often with household members and close others, which occurred daily (< 1hr/day vs. weekly for other distance groups; Table 3.1).

Table 3.1

Means (and Standard Deviations) for Subjectively and Verbally Sharing the COVID-19
Pandemic by Psychological Distance

Subjective Sharing	*M* (*SD*)	Verbal Sharing	*M* (*SD*)
Live with	5.99 (1.46)	Live with	3.07 (1.02)
Close others	5.30 (1.58)	Close others	0.43 (1.09)
Casual others	4.13 (1.81)	Casual others	1.86 (1.05)
Distant others	3.27 (1.88)	Distant others	1.41 (0.93)
Same area	3.65 (1.89)	Strangers in-person	1.35 (0.88)
Same country	3.63 (1.90)	Strangers online	1.69 (1.63)
World	3.44 (1.90)		

The most common worst COVID-19 event (i.e., single experience) was being in lockdown (13.1%), followed by having trouble obtaining everyday supplies (11.2%), voluntarily self-isolating (10.8%), and working/studying at home or in a different way (9.2%; Supplementary Table S3.3). Nearly all participants subjectively shared their worst event to some extent (rated > 1; 99.6%). Participants perceived their worst COVID-19 event as slightly more shared than the overall pandemic (i.e., subjective sharing: $M = 4.49$, $SD = 1.38$). Again, these perceptions varied based on psychological distance: participants perceived their worst event to be most shared with people around the world, household members, and close others (Table 3.2). Moreover, most participants (82.8%) relationally shared their worst event in general, and most often with close others, casual others, and household members (Table 3.2).

Table 3.2

Means (and Standard Deviations) for Subjectively Sharing and Frequencies for Relationally Sharing a Worst COVID-19 Event by Psychological Distance

Subjective Sharing	*M* (*SD*)	Relational Sharing	*%*
Live with	5.25 (1.74)	Live with	41.3
Close others	4.46 (1.91)	Close others	65.6
Casual others	3.80 (2.03)	Casual others	56.8
Distant others	4.18 (1.97)	Distant others	31.7
Same area	4.29 (1.95)	Strangers	31.8
Same country	4.10 (1.98)		
World	5.46 (1.86)		

Note. Participants selected each social/spatial distance group they relationally shared their worst event with, so we present frequencies of these data above.

Did relationships between different ways of sharing COVID-19 vary based on psychological distance? (H2)[18]

Overall, subjectively sharing the pandemic was positively correlated with verbally sharing the pandemic ($r = .25$, $p < .001$, 95% CI [0.20, 0.31]). The size of the relationship between subjective and verbal sharing remained small across all matched psychological distance groups (e.g., verbally and subjectively sharing with household members), however these relationships were slightly stronger for more psychologically close groups (rs = .28-.33; distant groups: rs = .16-.21; all ps < .001; Supplementary Table S3.4).[19]

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[18] We were interested in comparing matched psychological distance groups (e.g., verbal and subjective sharing with household members vs. with close others) here to address our hypotheses. However, for completeness, we report correlations between different sharing forms and other combinations of psychological distance groups in Supplementary Table S3.10.

[19] Notably, many confidence intervals for these correlations overlapped, meaning the strength of some correlations between subjective and verbal sharing could be the same across different distance groups.

Subjectively sharing a worst COVID-19 event was positively correlated with relationally sharing the event ($r = .22$, $p < .001$; 95% CI [0.17, 0.28]) overall and for all matched psychological distance groups. Unlike results for sharing the pandemic, these relationships were similar in strength regardless of psychological distance (rs = .11-.24, ps < .007). Yet, subjective sharing with people around the world was not significantly correlated with relational sharing with distant others or strangers (rs = .05-.09; ps = .007-.128; Supplementary Table S3.5).

Did relationships between sharing COVID-19 and psychological functioning during the pandemic vary based on psychological distance? (H3; Supplementary Tables S3.6-3.9)

Subjectively sharing the pandemic was positively correlated with traumatic stress symptoms ($r = .10$; 95% CI [0.04, 0.16]), current stress ($r = .14$; 95% CI [0.08, 0.20]), and negative emotions ($r = .14$; 95% CI [0.08, 0.20]; all ps < .001). These areas of psychological functioning were positively correlated with subjectively sharing the pandemic for all psychological distance groups other than household members (rs = .09-.14), distant others (rs = .08), and for traumatic stress symptoms, casual others ($r = .09$; all ps > .007). Subjectively sharing the pandemic overall was not significantly associated with any other psychological functioning variables (rs = -.02-.05, ps > .007). However, subjectively sharing the pandemic with household members was negatively correlated with psychosocial impairment ($r = -.11$; 95% CI [-0.17, -0.04]), depressive symptoms ($r = -.11$; 95% CI [-0.18, -0.05]), and anxiety symptoms ($r = -.15$; 95% CI [-0.21, -0.08]; all ps < .001).

Verbally sharing the pandemic overall was also positively correlated with traumatic stress symptoms ($r = .25$; 95% CI [0.19, 0.31]), current stress ($r = .18$; 95% CI [0.12, 0.24]), and negative emotions ($r = .23$; 95% CI [0.17, 0.29]), as well as psychosocial impairment ($r = .13$; 95% CI [0.07, 0.19]), anxiety symptoms ($r = .17$; 95% CI [0.11, 0.23]) and stress symptoms ($r = .14$; all ps < .001; 95% CI [0.08, 0.20]). Further, traumatic stress symptoms, psychosocial impairment, and anxiety symptoms were significantly correlated with verbally

sharing the pandemic with each psychological distance group (rs = .09-.26, all ps < .008), other than verbally sharing with strangers online for psychosocial impairment (r = .11, p = .022). Current stress, negative emotions, and stress symptoms were only significantly related to verbally sharing the pandemic with household members, close others, and casual others (rs = .10-.26, all ps < .008). Verbal sharing was only correlated with depressive symptoms when the pandemic was shared with casual others (r = .11, p = .002; 95% CI [0.04, 0.17]) and was not correlated with poor wellbeing (r = .01, p = .744; 95% CI [0.07, 0.19]).

Subjectively sharing a worst COVID-19 event was positively correlated with traumatic stress symptoms (r = .15; 95% CI [0.09, 0.21]), current stress (r = .15; 95% CI [0.09, 0.21]), and negative emotions (r = .14; 95% CI [0.08, 0.20]; all ps < .001). These relationships remained significant across all psychological distance groups, other than people around the world for traumatic stress symptoms and current stress (rs = .08, ps > .007). Subjectively sharing a worst event overall was not significantly correlated with any other psychological functioning variables. However, specifically, anxiety and stress symptoms were related to subjectively sharing a worst event with people living in the same area and country (rs = .09-.11), emotional disturbance was related to subjectively sharing a worst event with household members and people living in the same country (rs = .11-.15), and psychosocial impairment was related to subjectively sharing a worst event with people living in the same country (r = .10; all ps < .007). Further, depressive symptoms were negatively correlated with subjectively sharing a worst event with people around the world (r = -.11, p < .007).

Relationally sharing a worst COVID-19 event was not significantly correlated with any psychological functioning variables except for psychosocial impairment (r = .09, p < .01; 95% CI [0.03, 0.15]). Since we found no other significant relationships between relational sharing and psychological functioning, it is possible this relationship was spurious.

General Discussion

The present study aimed to examine whether 1) the nature of sharing COVID-19, 2) relationships between different ways of sharing COVID-19, and 3) relationships between sharing COVID-19 and psychological functioning varied based on the psychological— particularly social and spatial—distance between people. As hypothesized, participants tended to subjectively, verbally, and relationally share the pandemic and COVID-19-related events with people they were psychologically closer to. Further, the relationship between subjectively and verbally sharing COVID-19 appeared slightly stronger amongst psychologically close others. Finally, subjective and verbal sharing were related to poorer psychological functioning during the pandemic overall but subjectively sharing the pandemic with household members was related to better psychological functioning. Our results demonstrate that psychological distance appeared to play a role in how often people shared COVID-19, inter-relations between different shared COVID-19 experiences, and relationships between sharing COVID-19 and psychological functioning. Hence, it is important we consider the psychological distance between people when examining the nature and impact of sharing COVID-19, along with other traumatic events.

Our findings support research demonstrating that people most often *verbally* share traumatic events with highly familiar and physically proximate others and *relationally* share such events with familiar others (Hutchison et al., 2024; Paterson & Kemp, 2006; Rimé et al., 2020). Adding to this literature, *relational* sharing often occurred amongst spatially close (vs. distant) others and *subjective* sharing was most common amongst socially and spatially close (vs. distant) others. We know people tend to seek support from socially close others and people with similar experiences (e.g., neighbors during the pandemic) following exposure to negative events (Pemberton et al., 2019; Salas et al., 2018). Thus, perhaps people are more inclined to subjectively, verbally, and relationally share traumatic events like COVID-19 with

close others because such sharing fosters social support (e.g., advice, comfort) from these people.

Yet, contrary to our expectations and data on subjectively sharing the pandemic, people subjectively shared their worst COVID-19 event mostly with people around the world. We found little variation in means for subjective sharing across the distance groups (range = 3.80-5.46), meaning psychological distance may not have played a role in the extent to which participants subjective shared their worst COVID-19 event. We only measured whether participants *knew* others with similar experiences however we know *believing* others have or could experience the same event also influences subjective sharing (Hutchison et al., 2024). Therefore, participants may not have *known*, but did *believe*, distant others had experienced the same COVID-19 event (e.g., via media exposure), which encouraged them to perceive the event as similarly shared with all psychological distance groups. Nevertheless, our results broadly suggest that subjectively, verbally, and relationally sharing COVID-19 were more common amongst psychologically close (vs. distant) others.

Overall, our data supports research suggesting different sharing processes are inter-related (Bartholomew & Victor, 2004; Drury, 2018; Hutchison et al., 2024). Here, subjective sharing was related to verbal sharing regarding the pandemic, and relational sharing regarding participants' worst event. Although these correlations were small, they demonstrate that relationships between different sharing forms extend beyond common traumatic events (e.g., natural disasters; Drury, 2018) and certain groups (e.g., emergency responders; Davidson et al., 2023) to the general population during the COVID-19 pandemic. Importantly, consistent with our second hypothesis, the relationship between subjectively and verbally sharing the pandemic and worst COVID-19 event seemed to weaken slightly as psychological groups became more distant.

This pattern is consistent with research on emergency responders during the COVID-19 pandemic, whereby subjectively sharing COVID-19 experiences improved collaboration

and coordination (i.e., verbal sharing) amongst different disciplines for local (spatially close)
teams only and more so for teams with pre-existing relationships (Davidson et al., 2023;
Radburn et al., 2023). If verbal sharing did in fact influence subjective sharing, perhaps this
effect could be explained by the meaning or accessibility of sharing experiences with close
versus distant others. For example, perceiving COVID-19 as shared with family, friends, or
acquainted colleagues could have facilitated many discussions of COVID-19 amongst these
people because they were in similar circumstances, understood the impact the event had on
each other, and could easily contact one another to discuss the event. Alternatively,
perceiving COVID-19 as shared with strangers could prompt some, but not as much,
discussion between strangers due to their differing circumstances, a lack of personal
connection, and limited options for future communication. More work is needed to explore
the directionality of these relationships and why psychological distance might impact these
relationships in the context of events, like COVID-19.

      Last, our psychological functioning results suggest that subjectively and verbally
sharing COVID-19 were associated with greater or more severe traumatic stress symptoms,
current stress, and negative emotions overall. Further, verbally sharing the pandemic was
related to more severe anxiety, stress, and psychosocial impairment. Whilst these correlations
were small, the effects could have accumulated into larger effects as the pandemic progressed
or when considering all areas of psychological functioning (Funder & Ozer, 2019).

      These findings support research demonstrating that verbally sharing traumatic events
is related to poorer psychological functioning (e.g., increase negative affect, memory
distortion; Gabbert et al., 2004; Rimé et al., 2010). Perhaps subjectively and verbally sharing
COVID-19 led to poorer psychological functioning. For instance, sharing COVID-19 may
have increased people's awareness of the negative impact of the pandemic or reactivated their
emotional response to the event, causing them to feel more anxious, stressed, and fearful
(Rimé, 2009). Further, encountering new information about COVID-19 via verbal sharing

could have led people to unintentionally incorporate other people's memories into their own, causing their memories of COVID-19 experiences (e.g., lockdowns) to amplify (i.e., be more negative; Gabbert et al., 2004; Johnson et al., 1993). Notably, we found correlations, rather than effects suggesting causality, meaning psychological functioning may have influenced sharing. Mental health declined during the pandemic (Magson et al., 2021; Robinson et al., 2022). Thus, poorer psychological functioning (e.g., greater anxiety) during the pandemic may have increased curiosity about the impact of COVID-19, prompting people to compare their circumstances, thoughts, and feelings with others and eliciting greater discussion of, and stronger perceptions about sharing, COVID-19. Indeed, people with mental health disorders commonly seek reassurance to reduce uncertainty underlying their distress, which may have occurred via sharing COVID-19 (Rector et al., 2011). Further research is needed to clarify the causal nature of these relationships.

Despite finding similar patterns between sharing COVID-19 and psychological functioning across most psychological distances, subjectively sharing the pandemic specifically with household members was associated with less severe depressive and anxiety symptoms and psychosocial impairment. Perhaps these relationships were influenced by differences in the frequency and types of interactions participants engaged in. For instance, *perceiving* the pandemic as more shared with household members may have encouraged people to interact with household members without discussing COVID-19—e.g., cooking together—which subsequently improved their psychosocial functioning and reduced their anxiety (e.g., Cornell et al., 2022). Because interacting with non-household members in-person was less feasible due to COVID-19 restrictions, the psychological benefits of such positive, non-COVID-19 centred interactions may have only been relevant to household members. Further, participants may have been more likely to receive more and higher-quality social support from household members during the pandemic, and have stronger relationships with such people (vs. distant others). Such social support and relationships may have

contributed to both subjective sharing and psychological functioning, which could explain the link between sharing the pandemic with household members and better psychological functioning.

Alternatively, *discussing* the pandemic with people of any psychological distance could have exacerbated psychosocial impairment and anxiety, for instance by eliciting co-rumination (Rose, 2002). Considering the opposite direction of this relationship, functioning better during the pandemic may have facilitated more positive social interactions between household members, making them *perceive* the pandemic as more shared with such people. Yet better mental health during this time could have reduced COVID-19-related *discussions* with people of all psychological distances because mentally healthy people feel less need to seek reassurance to reduce their distress. Further research should aim to discern whether psychological distance influences the direction and strength of the relationship between sharing a mass traumatic event and psychological functioning during the event.

Our research has limitations. First, we did not assess relational sharing for the pandemic because the pandemic was experienced by everyone around the world, meaning it could not be relationally shared. Further, we did not include a measure of verbal sharing for participants' worst event because we believed participants would have difficulties separating out memories of discussing different COVID-19 events (e.g., overreporting frequency of verbally sharing a worst event by including discussions about COVID-19 experiences unrelated to their worst event). Nevertheless, this decision limited our ability to explore sharing differences for global vs. personal events of COVID-19.

Second, we examined dimensions of psychological distance together and in different ways. That is, we did not separate social distance from spatial distance. Our scale anchors also varied between subjective sharing and verbal and relational sharing measures because participants' ratings concerning the extent to which they subjectively shared COVID-19 with people of varying social and spatial distances merely relied on their perceptions. However,

participants may not have known the location of people they discussed COVID-19 with or had similar COVID-19 experiences to, making it difficult to answer questions about others' spatial distance. Nevertheless, using the same anchors across all sharing measures and distinguishing between social and spatial distance would have been useful to identify differences in sharing for these dimensions of psychological distance.

Third, we collected a large sample in our study, which meant relatively small effects were statistically significant. A critic might question the meaningfulness of some of our small effects. However, we did not expect large differences between psychological distance categories considering we assessed several graded levels of psychological distance ranging from close to distant others. Thus, we may have found greater differences between psychological distance groups if we amalgamated these groups into close vs. distant others (Funder & Ozer, 2019). Therefore, we consider our results demonstrate meaningful small shifts in the nature and potential impact of sharing COVID-19 based on psychological distance.

Finally, we assessed participants during the first wave of the pandemic, meaning we only captured participants' initial responses and experiences and thus could not determine whether their responses and experiences changed over time. Longitudinal research demonstrates that over time, the positive effects of sharing traumatic events can mostly surpass the negative effects (Pennebaker & Harber, 1993; Rimé et al., 2010). Future research could reassess people's psychological functioning and sharing experiences concerning COVID-19 now that the pandemic is largely over to see whether the relationship between sharing and psychological functioning has changed over time.

We collected a large sample of participants from WEIRD populations (Henrich et al., 2010). Whilst participants' demographics may not have aligned with the WEIRD demographics, participants were living within a WEIRD society, meaning their shared experiences may not reflect those of people from non-WEIRD societies. We chose this

sample because work on the conceptualizations, nature, and effects of sharing are predominantly based on experiences from WEIRD populations. Further, data from crowdsourcing populations was easily accessible and did not require material to be translated. Nevertheless, we expect our overall results to generalize to early experiences of COVID-19, particularly during the initial months of the pandemic and for adults living in the US, UK, Canada, Australia, and New Zealand at this time (Simons et al., 2017). Further, data using online crowdsourcing platforms are reliable when appropriate measures are used and these participants are often more socio-economically and culturally diverse than university-sourced populations (e.g., pre-screening, attention checks; Casler et al., 2013; Moeck et al., 2022; Peer et al., 2017).

Conclusion

In summary, our findings demonstrate that 1) the extent to which people subjectively, verbally, and relationally shared COVID-19, 2) relationships between different ways of sharing COVID-19, and 3) relationships between sharing COVID-19 and psychological functioning during the pandemic varied based on the psychological distance between people. Thus, even during global emergencies, our social and spatial relationships may affect how we respond socially to these events and the social and psychological implications of these responses.

Supplementary Material

Supplementary Table S3.1

Full demographics for participants, N = 1,040

Ethnicity		
	Caucasian (incl. "White")	59.9%
	Asian	13.4%
	African (incl. "Black")	4.7%
	European	3.5%
	Hispanic	1.2%
	Middle Eastern (incl. "Eurasian")	0.8%
	Indigenous	0.3%
	Pacific Islander	0.1%
	Mixed	3.3%
	Nationality (e.g., "Australian")	12.8%
	No answer	0.2%
Highest level of education		
	College/university undergraduate degree	54.8%
	College/university postgraduate degree	18.7%
	High school	25.6%
	Less than high school	1.0%
Access to healthcare		
	I have private health insurance that covers COVID-19 related healthcare expenses	15.01%
	I have access to a public healthcare system that covers COVID-19 related healthcare expenses (e.g., NHS [UK], Medicare [Australia], Medicare/Medicaid [USA].	59.96%
	I have access to both private and public healthcare systems that cover COVID-19 related healthcare expenses.	13.86%
	I have no access to private or public healthcare systems that cover COVID-19 related healthcare expenses.	3.08%
	I have access to private and/or public healthcare systems, but I do not know if COVID-19 is covered.	7.80%
	Other	0.29%

Supplementary Table S3.2

Definitions and Examples of Social and Spatial Distance Categories for Sharing The COVID-19 Pandemic and Participants' Worst COVID-19 Event Questions

Social/Spatial Distance Category	Definition/Example
People you live with [Live with]	
Close friends and family [Close others]	
Casual others	People you know through work, hobbies, or other regular commitments
Distant others	People you know but do not contact often or anymore
People in the same area [Same area]	People in the same state, territory, province or region as you
People in the same country [Same country]	People living in the same country as you
People around the world [World]	Everyone
Strangers in-person	People at the airport, in supermarkets
Strangers online	Replying to comments on Facebook from people you do not know
Strangers	People you do not know/have not met before

Supplementary Table S3.3

Percentage of People Who Have Experienced COVID-19 Related Events (Percentage of People Who Nominated Event as Their Worst Event)

COVID-19 Event	US	UK	Canada	AUS/NZ	Total
I have personally tested positive for COVID-19.	0.4	0.4	0.0	0.0	0.2
I think I may have COVID-19 but am awaiting test results/cannot get tested.	0.8 (0.4)	2.3 (0.4)	1.1 (0.8)	0.4	1.2 (0.4)
I think I may have been *exposed* to COVID-19 (e.g., I was in contact with someone who has tested positive for COVID-19, someone at my work has tested positive).	3.5 (0.4)	10.4 (1.2)	6.1 (0.8)	0.4	5.1 (0.6)
I was hospitalized as a result of a suspected or confirmed COVID-19 diagnosis.	0.0	0.0	0.0	0.8	0.2
A close family member/friend has tested positive for COVID-19.	5.4 (0.4)	6.5 (0.8)	3.4 (0.4)	4.6 (1.2)	5.0 (0.7)
A close family member/friend was hospitalized as a result of a suspected or confirmed COVID-19 diagnosis.	2.3 (0.4)	2.3 (0.8)	1.1	2.3 (1.2)	2.0 (0.6)
A close family member/friend has passed away as a result of COVID-19.	1.2 (1.2)	2.3 (1.5)	1.5 (1.1)	1.9 (0.8)	1.7 (1.2)
Someone I know (not close family/friend) has tested positive for COVID-19.	19.6	29.6 (3.1)	20.3 (1.1)	17.4 (0.8)	21.7 (1.3)
Someone I know (not close family/friend) was hospitalized as a result of a suspected or confirmed COVID-19 diagnosis.	7.3 (0.4)	16.9	8.8	6.2 (0.4)	9.8 (0.2)
Someone I know (not close family/friend) has passed away as a result of COVID-19.	4.6 (2.3)	13.1 (4.6)	8.0 (1.5)	3.1 (0.8)	7.2 (2.3)
Personally/partner/income provider/family laid off from place of work and/or not being able to find work.	7.7 (4.2)	5.0 (3.5)	14.2 (8.0)	8.9 (4.2)	8.9 (5.0)
My/my partners/income providers' workplace has reduced hours.	25.0 (11.5)	10.8 (1.5)	18.8 (2.7)	22.0 (6.6)	19.1 (5.6)

My workplace has closed but I am still earning a salary.	16.9 (2.3)	22.3 (1.2)	13.4 (1.5)	12.4 (2.3)	16.3 (1.8)
My/my partners/income providers' workplace has closed and am temporarily not being paid as a result.	8.8 (5.0)	3.8 (1.5)	10.3 (1.9)	7.7 (4.6)	7.7 (3.3)
I am a business owner and I have had to temporarily close.	1.5 (0.4)	4.6 (2.3)	2.3 (0.8)	2.3 (1.5)	2.7 (1.3)
I am a business owner and I have had to permanently close.	0.0	0.0	0.0	0.4	0.1
I have lost freelance work (e.g., arts industry).	8.8 (3.1)	9.6 (4.2)	13.8 (1.1)	12.0 (3.1)	11.1 (2.9)
I have been in mandatory self-quarantine/self-isolation (i.e., cannot leave home/hotel even for essential activities) due to being in potential contact with the virus/returning from overseas.	10.0 (1.2)	6.2 (1.5)	5.7 (0.4)	2.7 (0.4)	6.2 (0.9)
I am in a national/state/local government lockdown (shelter in place) requiring me to stay in my home, except for essential business/activities.	53.8 (11.5)	52.7 (18.1)	37.5 (7.3)	50.2 (15.4)	48.6 (13.1)
I am in a foreign country and I am unable to return to my country of residence/citizenship due to border closures/lockdowns and/or flight unavailability OR my partner is staying/is a citizen of a foreign country and they are unable to return/I am unable to see them due to border closures/lockdowns and/or flight unavailability.	0.8 (0.4)	1.2 (0.4)	2.3 (1.1)	3.9	2.0 (0.5)
My place of education (e.g., school, university) has closed.	3.8 (1.2)	8.5 (3.1)	30.7 (9.6)	24.7 (3.5)	16.9 (4.3)
I have been working/studying from home/have had changes to my workplace.	55.4 (6.9)	50.4 (8.8)	57.5 (8.4)	58.3 (12.7)	55.4 (9.2)
I have been voluntarily self-isolating and have been avoiding leaving the house for non-essential activities.	51.9 (7.7)	43.8 (6.9)	66.3 (18.4)	59.5 (10.0)	55.4 (10.8)
I have delayed or am thinking of delaying travel.	23.8	33.5 (1.5)	27.6 (0.4)	32.8 (1.2)	29.4 (0.8)
I have cancelled travel.	46.5 (5.4)	37.7 (3.1)	37.2 (1.9)	32.8 (3.9)	38.6 (3.6)

I am in my country of residence/citizenship but I am living away from my hometown/family and am unable to return due to state/regional border closures/lockdowns and/or flight unavailability.	2.3	3.8 (0.8)	4.6	6.9 (1.5)	4.4 (0.6)
My child's/children's place of education (e.g., school/kindergarten/university) or care (e.g., kindergarten) has closed.	30.8 (5.8)	27.7 (8.8)	15.3 (3.8)	8.1 (1.2)	20.5 (4.9)
I have chosen to keep my child/children at home.	16.5 (1.5)	6.9	6.1 (0.4)	9.3 (0.8)	9.7 (0.7)
My caring responsibilities (e.g., children, grandchildren, elderly, other family members) have increased and/or living arrangements have changed (e.g., increase in household members).	24.6 (1.9)	25.0 (2.7)	20.7 (1.9)	18.1 (2.7)	22.1 (2.3)
My national/state/local government has closed all "non-essential" businesses (e.g., bars, clubs, cinemas, gyms) and restricted services (e.g., public transport, hairdressing).	68.5 (3.8)	81.9 (3.5)	79.3 (8.0)	78.0 (5.8)	76.9 (5.3)
Normally scheduled events (e.g., sports practice), planned private social gatherings (e.g., weddings), personal appointments (e.g., medical), and public events I was planning on attending have been cancelled.	61.9 (6.2)	73.1 (3.5)	77.0 (6.1)	74.5 (3.1)	71.6 (4.7)
I have had trouble sourcing/buying supplies of everyday items (e.g., food, medications) and/or disinfectants/sanitizers.	48.8 (14.2)	61.2 (10.4)	47.5 (10.3)	60.2 (9.7)	54.4 (11.2)
Concerns about government/society (e.g., government control).	0.4 (0.4)	0.0	0.4	0.4 (0.4)	0.3 (0.2)
Myself/family member working in COVID related occupation (e.g., healthcare worker, aged care)/other essential occupation.	0.0	1.2 (0.4)	0.0	0.4	0.4 (0.1)
Other financial concerns (e.g., pension reduced).	0.0	0.4	0.0	0.0	0.1

Supplementary Table S3.4

Correlations Between Subjective Sharing and Verbal Sharing Ratings for the COVID-19 Pandemic by Social and Spatial Distance Category

	Live with	Close others	Casual others	Distant others	Same area	Same country	World	Subjective (*M*)
Live with	**.333****	.282**	.176**	.088	.095*	.100*	.067	.203*
	[.27, .39]	[.22, .34]	[.11, .24]	[.02, .16]	[.03, .16]	[.03, .17]	[-.001, .14]	[.14, .27]
Close others	.104*	**.296****	.212**	.155**	.134**	.134**	.120**	.214**
	[.04, .17]	**[.24, .35]**	[.15, .27]	[.09, .22]	[.07, .20]	[.07, .20]	[.06, .18]	[.15, .27]
Casual others	-.076	.094*	**.278****	.219**	.194**	.183**	.153**	.210**
	[-.15, -.004]	[.03, .16]	**[.22, .34]**	[.15, .28]	[.13, .26]	[.12, .25]	[.09, .22]	[.15, .27]
Distant others	-.134*	.056	.121	**.203****	.156*	.190**	.173**	.152**
	[-.23, -.04]	[-.03, .14]	[.03, .21]	**[.12, .29]**	[.07, .24]	[.10, .27]	[.09, .26]	[.07, .24]
Strangers	-.177**	-.088	.178**	.190**	**.202****	**.156****	**.208****	.147*
	[-.28, -.07]	[-.08, .27]	[.08, .27]	[.09, .28]	**[.11, .29]**	**[.06, .25]**	**[.11, .30]**	[.05, .24]
Strangers online	-.096	-.006	.108	.190**	**.209****	**.192****	**.239****	.160**
	[-.19, .004]	[-.10, .08]	[.02, .20]	[.10, .28]	**[.12, .29]**	**[.10, .28]**	**[.15, .32]**	[.07, .25]
Verbal (*M*)	.124**	.223**	.221**	.160**	.157**	.165**	.156**	.252**
	[.06, .19]	[.16, .28]	[.16, .28]	[.10, .22]	[.09, .22]	[.10, .23]	[.09, .22]	[.20, .31]

Note. * *p* <.007, ** *p* <.001

Supplementary Table S3.5

Correlations Between Subjective Sharing and Relational Sharing Ratings for a Worst COVID-19 Event by Social and Spatial Distance Category

	Live with	Close others	Casual others	Distant others	Same area	Same country	World	Subjective (*M*)
Live with	**.214****	.200**	.161**	.163**	.131**	.114**	.367**	.231**
	[.15, .27]	[.14, .26]	[.10, .22]	[.10, .22]	[.07, .19]	[.05, .18]	[.31, .42]	[.17, .29]
Close others	.419**	**.242****	.244**	.217**	.187**	.173**	.213**	.256**
	[.37, .47]	**[.18, .30]**	[.18, .30]	[.16, .28]	[.13, .25]	[.11, .23]	[.15, .28]	[.20, .31]
Casual others	.206**	.401**	**.239****	.190**	.147**	.141**	.106*	.237**
	[.15, .26]	[.35, .45]	**[.18, .30]**	[.13, .25]	[.09, .21]	[.08, .20]	[.04, .17]	[.18, .29]
Distant others	.154**	.263**	.305**	**.220****	.199**	.191**	.052	.243**
	[.09, .21]	[.21, .32]	[.25, .36]	**[.16, .28]**	[.14, .26]	[.13, .25]	[-.02, .12]	[.19, .30]
Strangers	.177**	.241**	.278**	.244**	**.224****	**.205****	**.090**	.252**
	[.12, .24]	[.18, .30]	[.22, .34]	[.18, .30]	**[.16, .28]**	**[.15, .26]**	**[.02, .16]**	[.19, .31]
Relational (*M*)	.276**	.287**	.196**	.208**	.175**	.166**	.138**	.244**
	[.22, .33]	[.23, .34]	[.14, .26]	[.14, .27]	[.11, .24]	[.11, .23]	[.07, .20]	[.19, .30]

Note. * $p < .007$, ** $p < .001$

Supplementary Table S3.6

Correlations Between Psychological Functioning Variables and Subjective Sharing Ratings for the COVID-19 Pandemic by Social and Spatial

Distance Category

	Live with	Close others	Casual others	Distant others	Same area	Same country	World	Subjective (*M*)
PCL-5	.022	.100*	.085	.082	.093*	.116**	.114**	.102**
	[-.04, .09]	[.04, .16]	[.02, .15]	[.02, .15]	[.03, .16]	[.05, .18]	[.05, .18]	[.04, .16]
Stress[a]	.089	.133**	.109**	.112**	.107**	.129**	.126**	.141**[a]
	[.02, .15]	[.07, .19]	[.05, .17]	[.05, .18]	[.04, .17]	[.07, .19]	[.06, .19]	[.08, .20]
Neg Emotions	.078	.138**	.106**	.082	.111**	.113**	.102*	.138**
	[.01, .14]	[.08, .20]	[.04, .17]	[.02, .15]	[.05, .17]	[.05, .18]	[.04, .17]	[.08, .20]
WHO-5	-.048	-.049	-.048	-.012	.011	.026	.023	-.022
	[-.11, .02]	[-.11, .01]	[-.10, .01]	[-.08, .05]	[-.05, .07]	[-.04, .09]	[-.04, .09]	[-.08, .04]
B-IPF	-.108**	.021	.044	.067	.064	.073	.067	.045
	[-.17, -.04]	[-.04, .08]	[-.02, .11]	[.002, .130]	[.001, .13]	[.01, .14]	[.004, .13]	[-.02, .11]
DASS-21-D	-.113**	-.040	-.025	-.006	.028	.060	.056	-.013
	[-.18, -.05]	[-.10, .02]	[-.09, .04]	[-.07, .06]	[-.04, .09]	[-.004, .12]	[-.01, .12]	[-.07, .05]
DASS-21-A	-.145**	-.040	.005	.026	.038	.041	.053	.001
	[-.21, -.08]	[-.10, .02]	[-.06, .07]	[-.04, .09]	[-.03, .10]	[-.02, .10]	[-.01, .12]	[-.06, .06]
DASS-21-S	-.060	.027	.017	.008	.056	.081	.081	.041
	[-.13, .01]	[-.03, .09]	[-.05, .08]	[-.06, .07]	[-.10, .20]	[.02, .14]	[.02, .14]	[-.02, .10]

Note. * *p* <.007, ** *p* <.001

Supplementary Table S3.7

Correlations Between Psychological Functioning Variables and Verbal Sharing Ratings for the COVID-19 Pandemic by Social and Spatial Distance Category

	Live with	Close others	Casual others	Distant others	Strangers	Strangers online	Verbal (*M*)
PCL-5	.258**	.254**	.219**	.239**	.236**	.138*	.251**
	[.20, .32]	[.20, .31]	[.16, .28]	[.16, .32]	[.14, .32]	[.05, .23]	[.19, .31]
Stress[a]	.237**	.164**	.148**	.086	.038	.086	.180**
	[.17, .30]	[.10, .22]	[.08, .21]	[-.001, .17]	[-.06, .13]	[-.003, .17]	[.12, .24]
Neg Emotions	.256**	.222**	.180**	.085	.071	.089	.231**
	[.19, .32]	[.16, .28]	[.12, .24]	[-.002, .17]	[-.02, .17]	[-.001, .18]	[.17, .29]
WHO-5	.015	.011	.036	-.028	-.066	.021	.010
	[-.05, .08]	[-.05, .07]	[-.03, .10]	[-.12, .06]	[-.16, .03]	[-.07, .11]	[-.05, .07]
B-IPF	.092*	.131**	.147**	.136*	.190**	.105	.130**
	[.03, .16]	[.07, .19]	[.08, .21]	[.05, .22]	[.10, .28]	[.02, .19]	[.07, .19]
DASS-21-D	.032	.059	.105*	.094	.097	.104	.074
	[-.03, .10]	[-.002, .12]	[.04, .17]	[.01, .18]	[.002, .19]	[.01, .19]	[.01, .13]
DASS-21-A	.124**	.166**	.183**	.217**	.253**	.142**	.171**
	[.06, .19]	[.11, .23]	[.12, .25]	[.13, .30]	[.16, .34]	[.05, .23]	[.11, .23]
DASS-21-S	.119**	.126**	.100*	.090	.120	.110	.137**
	[.05, .18]	[.07, .19]	[.03, .17]	[.004, .18]	[.03, .21]	[.02, .20]	[.08, .20]

Note. * *p* <.008, ** *p* <.001

Supplementary Table S3.8

Correlations Between Psychological Functioning Variables and Subjective Sharing Ratings for Participants' Worst COVID-19 Event by Social and Spatial Distance Category

	Live with	Close others	Casual others	Distant others	Same area	Same country	World	Subjective (*M*)
Emotional Disturbance	.154** [.09, .21]	.073 [.01, .13]	.060 [-.003, .12]	.068 [.01, .13]	.076 [.01, .14]	.111** [.05, .17]	.046 [-.02, .11]	.072 [.01, .13]
PCL-5	.138** [.08, .20]	.087* [.03, .15]	.121** [.06, .18]	.134** [.07, .19]	.156** [.09, .22]	.173** [.11, .23]	.075 [.01, .14]	.148** [.09, .21]
Stress[a]	.136** [.08, .20]	.151** [.09, .21]	.143** [.08, .20]	.117** [.06, .18]	.137** [.08, .20]	.164** [.10, .22]	.083 [.02, .15]	.154** [.09, .21]
Neg Emotions	.125** [.06, .19]	.106** [.05, .17]	.123** [.06, .18]	.119** [.06, .18]	.123** [.06, .18]	.152** [.09, .21]	.092* [.03, .16]	.141** [.08, .20]
WHO-5	.003 [-.06, .07]	.037 [-.03, .10]	.022 [-.04, .09]	.021 [-.04, .08]	.045 [-.02, .11]	.043 [-.02, .11]	-.027 [-.09, .04]	.028 [-.03, .09]
B-IPF	.046 [-.02, .11]	.048 [-.01, .11]	.070 [.01, .13]	.078 [.02, .14]	.077 [.02, .14]	.095* [.03, .16]	-.086 [-.15, -.02]	.065 [.004, .13]
DASS-21-D	.024 [-.04, .09]	.031 [-.03, .09]	.042 [-.02, .11]	.077 [.01, .14]	.075 [.01, .14]	.075 [.01, .14]	-.105* [-.17, -.04]	.031 [-.03, .09]
DASS-21-A	.032 [-.03, .09]	.011 [-.05, .07]	.066 [.003, .13]	.068 [.01, .13]	.090* [.03, .15]	.109** [.05, .17]	-.023 [-.09, .04]	.065 [.01, .13]
DASS-21-S	.064 [.002, .13]	.042 [-.02, .10]	.046 [-.02, .11]	.062 [<.001, .12]	.086* [.02, .15]	.096* [.03, .16]	-.032 [-.10, .03]	.065 [.004, .13]

Note. * $p < .007$, ** $p < .001$

Supplementary Table S3.9

Correlations Between Psychological Functioning Variables and Relational Sharing Ratings for Participants' Worst COVID-19 Event by Social and Spatial Distance Category

	Live with	Close others	Casual others	Distant others	Strangers	Relational (*M*)
Emotional Disturbance	-.007 [-.07, .05]	-.005 [-.07, .06]	.059 [-.002, .12]	.074 [.01, .13]	.050 [-.01, .11]	.021 [-.04, .08]
PCL-5	.042 [-.02, .10]	.059 [-.002, .12]	.025 [-.04, .09]	.044 [-.02, .11]	.045 [-.02, .11]	.013 [-.05, .07]
Stress[a]	.048 [-.01, .11]	.066 [.01, .13]	.054 [-.01, .11]	.040 [-.02, .10]	.065 [.004, .13]	.056 [-.01, .12]
Neg Emotions	.036 [-.03, .10]	.028 [-.03, .09]	.036 [-.03, .10]	.029 [-.03, .09]	.053 [-.01, .11]	.022 [-.04, .08]
WHO-5	.050 [-.01, .11]	.050 [-.01, .11]	.033 [-.03, .09]	.062 [.002, .12]	.074 [.01, .13]	.062 [.01, .12]
B-IPF	.049 [-.01, .11]	.047 [-.01, .11]	.061 [<.001, .12]	.088* [.03, .15]	.057 [-.004, .12]	.054 [-.01, .12]
DASS-21-D	-.004 [-.07, .06]	.014 [-.05, .08]	.021 [-.04, .08]	.044 [-.02, .10]	.040 [-.02, .10]	.026 [-.04, .09]
DASS-21-A	< .001 [-.06, .06]	.021 [-.04, .08]	-.028 [-.09, .03]	.004 [-.06, .07]	.008 [-.05, .07]	-.005 [-.07, .06]
DASS-21-S	.047 [-.01, .11]	.029 [-.03, .09]	.034 [-.03, .10]	.035 [-.03, .10]	.051 [-.10, .11]	.034 [-.03, .09]

Note. * *p* <.01, ** *p* <.001. Total relational sharing refers to whether participants relationally shared their worst event with other people from any social/spatial distance group (0 = No, 1 = Yes). All correlations by social distance group are categorized the same.

Supplementary Table S3.10

Correlations Between Subjective, Verbal and Relational Sharing Ratings

	Sharing a worst COVID-19 event	
	Subjective sharing	Relational sharing
Sharing the COVID-19 pandemic		
Subjective sharing	.482**	.161**
Verbal sharing	.104**	-.004

Note. * $p <.01$, ** $p <.001$

Chapter 6: Investigating the Effects of Physically Sharing Traumatic Experiences Virtually

Author contributions: I developed the study design with the guidance of MKTT. I performed data collection, cleaning, analysis, and interpretation. I drafted the manuscript and contributed to critical revisions. MKTT provided critical revisions to the manuscript. All authors approved the final version of the manuscript for submission.

Abstract

People virtually share traumatic experiences, for instance by viewing the same distressing footage simultaneously with others. Yet, little research has examined the implications of virtually sharing trauma. We addressed this gap by investigating whether virtually sharing traumatic content (vs. experiencing the event alone) influences psychological functioning (e.g., posttraumatic stress, cognitive appraisals). Across two experiments, participants watched a trauma film alone or simultaneously with other participants via a watch party website (Study 4a; Amazon's Mechanical Turk; $N = 102$) or Microsoft Teams (Study 4b; undergraduates; $N = 138$). Participants then completed questionnaires assessing their psychological functioning. We found no difference between the shared and alone conditions for most psychological functioning variables. However, in Study 4b, virtually sharing the trauma film reduced participants' posttraumatic stress symptomology. Thus, viewing traumatic content with others can buffer traumatic stress reactions but does not seem to affect other psychological outcomes differently to viewing such content alone.

Introduction

People often physically share traumatic experiences by being present during the same traumatic event (e.g., natural disasters; Hutchison et al., 2024; Chapter 3). Although such sharing commonly occurs in-person, people also physically share trauma *virtually* by viewing the same content online simultaneously (for simplicity, we refer to these physical sharing subforms as *in person sharing* and *virtual sharing* hereon). Despite the harmful psychological effects of viewing traumatic content (e.g., Pfefferbaum et al., 2019), no studies have examined the psychological impact of *virtually sharing* traumatic experiences. Further, evidence for the psychological effects of sharing *negative* experiences *in-person* is mixed and may or may not generalize to an online context (Armenian et al., 2002; Miao et al., 2021; Nahleen et al., 2019). Therefore, we examined whether virtually sharing traumatic content—compared to viewing the content alone—influences psychological functioning (e.g., posttraumatic stress, cognitive appraisals).

Physical Sharing Online

Over the last decade, media sites have introduced features—such as *livestreaming* (e.g., Facebook, TikTok) and *watch parties* (e.g., Netflix, Disney+)—allowing people to virtually *share* the same content (e.g., videos). However, not all content people view together is positive. For instance, thousands of people livestreamed Ronnie McNutt's suicide (Wakefield, 2020) and the Christchurch terrorist attacks (Crothers & O'Brien, 2020). Other traumatic events like natural disasters (The Sun, 2023), vehicle accidents (Higgins, 2023), and wars (Datalion.com) are also virtually shared (e.g., via live news). We know exposure to such material can cause and exacerbate psychological problems (e.g., anxiety, posttraumatic stress; Holman et al., 2020; Pfefferbaum et al., 2019). Yet, it remains unclear how *virtually sharing* traumatic experiences impacts people's psychological reactions to (e.g., stress) and appraisals of (e.g., intensity) such experiences.

Psychological Effects of Physically Sharing Trauma In-Person

Extant research has focused on events shared *in-person*. Most studies investigating real-world events has found benefits for in-person sharing. For example, being with other people during traumatic events (e.g., earthquakes, medical emergencies) is associated with less severe negative reactions (e.g., anxiety, stress) and improved wellbeing (Armenian et al., 2002; Guo et al., 2020; Leske et al., 2017). However, these positive outcomes may be attributed to how people interact with one another during such events (e.g., providing emotional and practical support), not simply physically sharing the event (i.e., being present during the event). Experimental research provides further evidence—albeit mixed—about the effects of sharing *negative* events in-person.

Some experimental research demonstrates that sharing negative experiences in-person can elicit positive psychological reactions. For instance, believing a friend is simultaneously viewing the same negative images (e.g., car accidents) increases positive affect and activation of the neural reward system (indicating pleasure and satisfaction), compared to believing a friend is completing another task (separate rooms; Wagner et al., 2014). Indeed, research suggests that physically sharing negative events in-person elicits social identification amongst victims, which acts as a "social cure" by promoting positive social (e.g., cooperation, support) and psychological (e.g., resilience, posttraumatic growth) reactions to the event (Drury, 2012; 2018; Haslam & Reicher, 2006; Jetten et al., 2012; Muldoon et al., 2019; Tajfel & Turner, 1979).

However, other experimental work shows that physically sharing negative experiences in-person can amplify negative reactions and appraisals of such experiences. For instance, completing the Cold Pressor Task simultaneously with others (vs. alone or while others complete another task) increases pain intensity, sensory pain characteristics, and stress (Martin et al., 2015; Nahleen et al., 2019). Further, eating unpleasant chocolate with (vs. without) another person strengthens appraisals about being absorbed in and disliking the task

(Boothby et al., 2014). This effect may arise from people simulating others' reactions and appraisals when sharing an event (i.e., mentalizing) and incorporating others' experiences into their own (Nahleen et al., 2019; Smith & Mackie, 2016). Alternatively, physically sharing the same experience can activate a state of shared attention, increasing the cognitive resources people allocate to the shared experience (Shteynberg, 2015).

Only two experimental studies have examined physically sharing *traumatic* (i.e., involving actual/threatened death or serious injury; American Psychiatric Association [APA], 2013), rather than *negative,* events. Although viewing traumatic content in-person with (vs. without) a close other *did not* affect people's psychological reactions (e.g., subjective/physiological distress, anxiety) *during* the experience, shared participants reported more intrusions in the days after the experience in one study (Woodward et al., 2017), but fewer intrusions in the other (Woodward et al., 2024). Yet, only shared participants were given an opportunity to verbally share (i.e., discuss) the experience after viewing the content, meaning the effects of physical and verbal sharing on intrusion frequency were confounded (Hutchison et al., 2024). Hence, it remains unclear whether *physically* sharing *traumatic* experiences in-person affects people's reactions to and appraisals of such experiences.

Psychological Effects of Physically Sharing Trauma Online

Few studies have investigated *virtually* shared negative events. Shteynberg and colleagues (2014) demonstrated that viewing negative content (e.g., scary advertisements) whilst believing similar others (e.g., students) simultaneously viewed the content amplified negative reactions (e.g., fear) compared to viewing the content alone, with dissimilar others, or at a different time to similar others. Relatedly, reading or viewing (cartoon) a negative service experience (e.g., rude employee) that included the presence of others—versus only the participant—increased negative reactions (e.g., anger) and appraisals (e.g., dissatisfaction; Du et al., 2014; He et al., 2012). Thus, this limited research on *virtual* sharing is consistent

with research demonstrating that *in-person* sharing of negative events can amplify negative

psychological outcomes.

However, this research has limitations. The first is low ecological validity; most

research has manipulated virtual sharing using imagined scenarios or survey instructions,

where the presence of others was suggested but not a reality. Second, the internal validity is

unclear, because the studies lack manipulation checks. For example, shared participants may

not have believed they were viewing content simultaneously with others, meaning differences

could be attributed to demand effects (e.g., expectations implied in study instructions), rather

than virtual sharing. Third, whilst sharing negative experiences in-person can amplify

negative reactions after a delay (e.g., 24 hours; Nahleen et al., 2019), the longer-term impacts

of virtual sharing are largely unknown. Last, no research has examined virtual sharing for

traumatic rather than negative experiences. Addressing these limitations will improve

understanding about the real-world implications of virtually sharing traumatic content.

Research Overview

In two experiments, we investigated whether virtually sharing traumatic content (vs.

viewing the content alone) influences psychological functioning. We randomly allocated

participants to watch a trauma film by themselves (alone condition) or simultaneously with

other participants (shared condition), via a watch party website (Study 4a) or Microsoft

Teams (Study 4b). Participants completed psychological functioning measures immediately

(Studies 4a & 4b) and over 3 days (Study 4b). We examined psychological reactions known

to be influenced by physical sharing (e.g., PTS symptomology, stress, state anxiety; Leske et

al., 2017; Nahleen et al., 2019; Wagner et al., 2014). We also examined participants'

appraisals of the experience (e.g., ability to cope) because such judgments can buffer and

exacerbate negative reactions to trauma exposure (Nahleen et al., 2019; Nixon et al., 2009).

To address prior research limitations, we used two realistic online settings, differing in design

features (e.g., user list vs. webcams) and participation pools (i.e., Amazon's Mechanical Turk [MTurk] workers vs. undergraduates).

We expected to find support for our alternative (vs. null) hypothesis: that virtually sharing traumatic content would influence participants' psychological functioning differently to viewing the content alone. We had competing hypotheses due to inconsistencies regarding the effects of in-person and virtual sharing. If virtually sharing negative experiences is beneficial, we expected the alone (vs. shared) condition to report poorer outcomes (e.g., higher stress) immediately (Studies 4a & 4b) and 3 days after (Study 4b) watching the film. Alternatively, if virtually sharing negative experiences is harmful, we expected the shared (vs. alone) condition to report poorer outcomes after watching the film.

Overview

Transparency and Openness

We pre-registered Study 4a (https://osf.io/29wqf) and Study 4b (https://osf.io/qfsdu). All data and supplementary material can be found at https://osf.io/4y9v3. We have reported all measures, conditions, and data exclusions. Both experiments were approved by the Flinders University Social and Behavioural Research Ethics Committee (5347) and conducted in accordance with the APA Ethical Standards and the World Medical Association Declaration of Helsinki. All participants read an information sheet—outlining the study aims, tasks, potential risks, and participants' rights—and provided written consent prior to participation. Relevant supplementary material is presented at the end of this chapter.

Sample size

For each experiment, we aimed to recruit up to 130 participants. This sample size was based on Brysbaert's (2019) recommendations that a between-groups design with two levels, 80% power and an effect size of $d = 0.5$ should include a total of 130 participants. This was the smallest effect size we could target given resource limitations. Nevertheless, this effect size is plausible considering previous experimental research using similar designs (i.e.,

investigating shared vs. unshared conditions on psychological outcomes; Martin et al., 2015; Nahleen et al., 2019; Shteynberg et al., 2014) has found medium (e.g., $d = 0.37\text{-}0.58$; $\eta_p^2 = .048\text{-}.064$) to large (e.g., $t_{15} = 3.3$) effects.

We used the Bayesian stopping rule for data collection to determine when we had adequate evidence for one hypothesis over another to discontinue data collection. This technique is commonly implemented to balance power and feasibility demands based on data rather than a priori power analyses (Giner-Sorolla et al., 2024; Wetzels et al., 2011). The stopping rule was based on results from Bayesian analyses testing our main hypothesis— comparing our shared and alone conditions on key psychological functioning variables (i.e., intrusion frequency, affect, stress, and anxiety)—that we ran each time we collected data from approximately 40 participants.

Study 4a

Method

Participants

We recruited 119 participants from MTurk via CloudResearch (Litman et al., 2017). We excluded data from seventeen participants: one failed a cultural check, one reported experiencing technical issues, two failed more than one film attention check question, two predicted the study's aims, six reported completing another task during the film or missed > 4 minutes of the film, two withdrew from the study, and three started completing the post-film survey questions < 3 minutes into the film.

Our final sample comprised 102 participants (shared: $n = 52$; alone: $n = 50$). Participants were 20-70 years-old ($M = 38.2$, $SD = 11.3$). Half were female (50.0%; male = 49.0%; prefer not to say = 1%) and nearly half identified as a woman (48.0%; men = 49.0%; non-binary = 3.0%). Approximately half of participants were Caucasian ("White"; 48.0%) and had completed a college/university degree (51.0%; see Supplementary Table S4.1 for all demographics data).

Materials

       Trauma Analogue Paradigm (James et al., 2016). Participants watched an 8-minute scene from The Accused (1988), which depicts a gang rape of a female in a bar (e.g., Takarangi et al., 2014b).

       Positive Affect Negative Affect Schedule (PANAS; Watson et al., 1988). Participants rated how they felt on 10 Positive Affect (e.g., interested) and 10 Negative Affect (e.g., upset) items (1 = *Very slightly or Not at all*, 5 = *Extremely*; current study: αs = .81-.87).

       Stress Numerical Rating Scale (SNRS-11: Karvounides et al., 2016). Participants rated their stress level (0 = *No stress*, 10 = *Worst stress possible*).

       Short-form Spielberger State-Trait Anxiety Inventory (STAI-6; Marteau & Bekker, 1992). Participants rated how they currently felt on three anxiety-present items (e.g., "I am worried") and three anxiety-absent items (e.g., "I feel calm"; 1 = *Not at all*, 4 = *Very much*). Scores were summed (range 4-24; current study: αs = .77-.89).

       Overall Experience (Boothby et al., 2014; Nahleen et al., 2019). Participants rated eight items concerning their appraisals of the film (e.g., "How much did you like the film?"; 1 = *Not at all/Extremely dislike/Very bad*, 10 = *Very or A lot/Extremely like/Very good*). We report findings from these ratings in our appraisals analyses, aside from one item ("How do you feel right now?") that represents a psychological reaction to the film.

       Mentalizing (Boothby et al., 2014). Shared participants rated the extent to which they thought about other participant(s)' thoughts and feelings while watching the film (1 = *Not at all*, 6 = *A lot*).

       Autobiographical Memory Questionnaire (AMQ; Rubin et al., 2003). Participants rated five items assessing characteristics of their memory of the film (e.g., "As I remember watching the film, I feel as though I am reliving it."). Items were analyzed individually (1 = *Not at all*, 7 = *Extremely/Completely/Clearly*).

Intrusion Monitoring Task. Participants read brief science articles unrelated to the film (about time and stars) for 5 minutes. We asked participants to press "x" on their computer keyboard if/when they experienced an intrusion about the film during this task and provided them with a definition of an intrusion. Intrusion frequency was measured based on the number of "x" presses during the Intrusion Monitoring Task (for Study 4b, based on surveys they completed within the 3-day period). To reduce potential demand characteristics (Laney et al., 2008), we told participants we were assessing their memory for the articles.

Intrusion Survey. Participants who reported intrusion/s completed questions about their intrusions. Participants rated two items assessing retrieval intent (i.e., "The memory came to mind spontaneously") and retrieval ease (i.e., "The memory came to mind effortlessly"; 0 = *Not at all*, 7 = *Extremely*), to ensure intrusions were retrieved involuntarily.

Intrusion Characteristics. Participants rated each intrusion on six characteristics including distress, vividness, intensity, reliving, unpleasantness, unwantedness (0 = *Not at all*, 7 = *Extremely*), and valence (1 = *Extremely negative*, 7 = *Extremely positive*). Ratings for each intrusion characteristic (e.g., distress) were averaged and analyzed individually.

Maladaptive Responses to Intrusions. Participants rated the extent to which they tried to suppress their intrusions (0 = *Not at all*, 7 = *Extremely*) and completed the Negative Interpretations of Intrusions Scale – Short Version (NIIT; Nixon et al., 2009) by rating the extent to which they agreed/disagreed with three statements (e.g., "My intrusion/memory of the film shows that I am a lousy coper"; 1 = *Totally disagree*, 7 = *Totally agree*). Scores from the NIIT were summed (current study: αs = .62-.69).

Subjective Sharing (Hutchison et al., 2024). Participants rated the extent to which they felt like watching the film was a "shared" event (1 = *Not at all*, 5 = *Extremely*).

Influence (Boothby et al., 2014). Shared participants rated the extent to which they felt like the other participant(s) influenced their ratings on the above measures (0 = *Not at all*, 6 = *A lot*).

Inclusion of Other in the Self Scale (IOS; Aron et al., 1992). The IOS presents seven pairs of progressively overlapping circles, with one circle representing the self (i.e., participant) and the other circle representing others (i.e., other/s). Shared participants selected the pair that best described their relationship with the other participant(s).

Procedure

To disguise our main purpose and reduce demand characteristics, we told participants we were investigating the effects of mood and stressful/traumatic experiences on memory and attention. Participants accepted a Human Intelligence Task (HIT) on MTurk allocated to the alone condition (i.e., completed experiment alone) or shared condition (i.e., completed experiment with 2-7 participants, including a researcher and confederate). The shared and alone HITs were available on MTurk at separate times, creating quasi-experimental conditions. Per our pre-registration, participants had to pass several checks before entering the experiment (Moeck et al., 2022). Participants then completed a demographics questionnaire and baseline measures of affect, stress, and state anxiety.

Next, participants watched the trauma film. Shared participants were redirected to a watch party website (i.e., SyncTube). Once the first participant entered the watch party room, the video started, presenting a black screen with the text: "*Please wait while we find other participants to join the room. The video will automatically play in 5 minutes...*" Participants could view the number of participants present in the watch party room via a user ID list on the screen. All other permissions were disabled so participants could not alter the video, use the chat function, or use webcam features. After the film, participants were redirected to the survey. Alone participants completed the experiment without references to other participants or redirection to another website.

Post-film, participants completed all psychological outcome measures, an article comprehension test, film/attention/technical checks, and a hypothesis guessing measure in the

order above (see Appendices).[20] A link to contact details for support services appeared on each survey page. Participants were debriefed and paid USD$4.50.

Results

Statistical Overview

After collecting data from 79 participants, we found substantial evidence (i.e., BF_{01} = 1-3) for the null hypothesis (i.e., no difference between conditions) relative to the alternative hypothesis (i.e., difference between conditions) on all key variables, other than intrusion frequency. We ran an additional 23 participants and found substantial evidence for the null hypothesis for all key variables. Per our pre-registration and the stopping rule (Giner-Sorolla et al., 2024; Wetzels et al., 2011), we discontinued data collection.

In line with previous experiments (e.g., Nahleen et al., 2019; Woodward et al., 2024), we used a frequentist approach to examine the traumatic nature of the film stimulus, our sharing manipulation, and participants' intrusion ratings. We ran Bayesian analyses to test our main hypothesis (see Table 4.1 for descriptive statistics).[21] We used JASP's default prior (i.e., a Cauchy distribution centered around zero with a width parameter of 0.707 for an 80% probability of an effect size lying between -2 and 2) and followed Wetzels et al.'s (2011) guidelines for interpretation.

We found the same results pattern after excluding data from participants who reported closing their eyes/looking away from/muting the film for > 2 minutes, missed 2-4 minutes of the beginning of the film, reported low attention to the film (at/below scale midpoint), and reported low intrusion retrieval intent/ease (at/below scale midpoint). Further, we found no difference in psychological functioning ratings between participants who had (vs. had not) seen the film and had experience (vs. had no experience) with the topic of the film.

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[20] We also used the Posttest Reactions Questionnaire (Yeater et al., 2012). These data are not reported because they related to a separate research aim.

[21] Some readers may wish to review our results according to more familiar data analysis methods. Thus, we present results using frequentist analyses—which supported our Bayesian results—in Supplementary Material.

Preliminary Analyses

Stimulus Check. As expected, negative affect increased from baseline to post-film (baseline: $M = 13.40$, $SD = 6.12$; post-film: $M = 27.33$, $SD = 10.49$; $t(101) = -14.04$, $p < .001$, $d = -1.39$, 95% CI [-1.66, -1.12]), as did stress (baseline: $M = 2.74$, $SD = 2.33$; post-film: $M = 6.03$, $SD = 2.65$; $t(101) = -13.82$, $p < .001$, $d = -1.37$, [-1.64, -1.10]), and state anxiety (baseline: $M = 10.37$, $SD = 4.05$; post-film: $M = 18.30$, $SD = 4.30$; $t(101) = -17.19$, $p < .001$, $d = -1.70$, [-2.01, -1.40]). Positive affect decreased from baseline ($M = 30.03$, $SD = 8.62$) to post-film ($M = 21.50$, $SD = 6.92$), $t(101) = 10.17$, $p < .001$, $d = 1.01$, [0.77,1.24]).

Manipulation Check. We found no significant difference in subjective sharing between the shared ($M = 2.73$, $SD = 1.25$) and alone ($M = 2.48$, $SD = 1.36$) conditions, $t(101) = -0.97$, $p < .335$, $d = -0.19$, 95% CI [-0.58,0.20]. Thus, shared and alone participants perceived watching the film as similarly shared. Consistently, shared participants did not feel close or connected to other participants by watching the film together, demonstrated by participants' low mentalizing ratings ($M = 2.77$, $SD = 2.29$), influence ratings ($M = 0.73$, $SD = 1.46$), and social identification ratings ($M = 2.77$, $SD = 1.64$).[22]

Intrusion Memory Reporting Check. Participants' retrieval intent ratings ($M = 4.99$, $SD = 1.68$; $t(71) = 25.15$, $p < .001$, $d = 2.96$, 95% CI [4.59, 5.38]) and retrieval ease ratings ($M = 5.14$, $SD = 1.74$; $t(71) = 25.08$, $p < .001$, $d = 2.96$, [4.73,5.55]) were significantly higher than scale anchors (i.e., 0) for deliberate retrieval and retrieval difficulty. Thus, participants' intrusions appeared involuntary.

Main Analyses - Psychological Reactions to the Film

We found substantial evidence for the null hypothesis (i.e., no difference between conditions)—relative to the alternative hypothesis—for intrusion frequency and

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[22] We did not run pre-registered mediation analyses—e.g., whether subjective sharing mediated the relationship between virtual sharing and psychological functioning—because the conditions did not differ on subjective sharing and social ratings were low. This also applied to Study 4b due to low social ratings.

characteristics ($BF_{01}s$ = 3.48 - 4.78; Supplementary Table S4.4)[23] and memory characteristics of reliving (BF_{01} = 3.08), intensity (BF_{01} = 4.74), vividness (BF_{01} = 3.84), perceiving the experience from a personal perspective (BF_{01} = 3.09), and thinking about the film (BF_{01} = 1.98). Similarly, we found substantial evidence for the null (vs. alternative) hypothesis for negative affect (BF_{01} = 4.51), positive affect (BF_{01} = 4.70), stress (BF_{01} = 4.71), state anxiety (BF_{01} = 4.66), and general feelings (BF_{01} = 4.54) after watching the film. We also found anecdotal evidence for the null (vs. alternative) hypothesis for the memory characteristic of believing the memory came out of the blue (BF_{01} = 2.24).

Main Analyses - Appraisals of the Film

Maladaptive responses to intrusions. We found substantial evidence for the null (vs. alternative) hypothesis for negative intrusion interpretations (BF_{01} = 3.98). We found anecdotal evidence that alone participants tried to suppress their intrusions more than shared participants (BF_{01} = 0.88).

Overall experience. We found substantial evidence for the null (vs. alternative) hypothesis for the extent to which participants liked the film (BF_{01} = 4.62), were absorbed in the experience (BF_{01} = 3.08), felt involved in the experience (BF_{01} = 3.77), and perceived the film as intense (BF_{01} = 3.01) and distressing (BF_{01} = 4.33). Further, we found anecdotal evidence for the null (vs. alternative) hypothesis concerning the extent to which participants were willing to rewatch the film (BF_{01} = 1.19). We found no evidence for either hypothesis regarding how much participants wanted to stop watching the film (BF_{01} = 0.90).

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[23] Per pre-registration, we correlated our intrusion variables. We found significant correlations between intrusion characteristics, but not between intrusion characteristics and intrusion frequency (Supplementary Table S4.3).

Table 4.1

Bayesian Independent Samples t-Test Means and Standard Deviations for All Questionnaire Ratings Compared Between Shared and Alone Conditions

Variable	Shared		Alone	
	M	*SD*	*M*	*SD*
Intrusion Frequency	6.04	7.05	5.96	7.05
Intrusion Characteristics				
Distress	4.55	1.90	4.82	1.80
Vividness	4.92	1.91	4.94	1.83
Intensity	4.42	1.86	4.62	2.00
Reliving	4.21	2.22	4.29	2.28
Unpleasantness	5.37	1.82	5.27	1.99
Unwantedness	5.92	1.44	5.88	1.79
Valence	5.97	1.35	6.00	1.44
Memory Characteristics				
Reliving	3.89	2.01	4.28	2.01
Out of the blue	4.64	1.66	4.16	2.00
Intensity	4.69	1.69	4.74	1.83
Vividness	5.56	1.32	5.74	1.31
Thoughts	3.94	2.15	3.34	2.16
Personal perspective	4.25	2.19	4.68	2.20
Negative Affect	26.96	10.04	27.72	11.03
Positive Affect	21.37	7.42	21.64	6.43
Stress	6.08	2.69	5.98	2.63
State Anxiety	18.40	4.13	18.20	4.52
Overall Experience: General feelings	2.65	2.50	2.48	2.60
Maladaptive Responses to Intrusions				
Suppression	5.37	1.76	6.06	1.23
NIIT	6.44	4.14	6.18	3.66
Overall Experience				
Stop watching	8.25	2.60	7.06	3.52
Like	1.12	2.32	1.24	2.19
Willing to rewatch	1.23	2.36	2.10	2.59
Absorbed	6.90	2.78	7.40	2.44
Involved	6.14	3.09	6.58	3.07
Intensity	9.08	1.52	8.74	1.81
Distressing nature	8.77	2.02	8.58	2.01

Discussion

Against predictions, virtually sharing traumatic content did not affect participants'
psychological functioning differently to viewing the content alone. Our findings are
inconsistent with prior work suggesting that physically sharing negative events in-person or
virtually reduces (e.g., Miao et al., 2021; Wagner et al., 2014) or amplifies (e.g., Nahleen et
al., 2019; Shteynberg et al., 2014) negative psychological reactions (e.g., anxiety, stress) and
appraisals (e.g., scariness, dissatisfaction) about the event. Nonetheless, our data align with
experimental research showing that physically sharing traumatic content in-person does not
affect psychological outcomes (e.g., distress; Woodward et al., 2017; 2024).

Importantly, our manipulation appeared unsuccessful: we found no differences in
subjective sharing between the shared and alone conditions. Both conditions perceived the
film as moderately shared, suggesting that shared participants had lower subjective sharing
ratings *and* alone participants had higher ratings than expected. There are several
explanations for this pattern. For shared participants, physically sharing content *online* may
not have elicited strong perceptions of sharing an experience, without other social factors like
communication and social identification (e.g., Bartholomew & Victor, 2004; Drury, 2018).
We did not manipulate verbal communication or social identification because we wanted to
isolate the effects of virtual sharing on psychological outcomes. But perhaps limiting these
social factors dampened shared participants' subjective sharing ratings. Further, participants
were likely experienced in research participation (100-1,000,000 studies; Stirling &
Takarangi, 2024). Therefore, shared participants may have believed we deceived them about
the fact that they virtually shared the film. Meanwhile, alone participants likely knew other
MTurk workers were participating in the same study at a similar time, which could have
increased their sense of sharing the experience.

However, perhaps our manipulation was successful *despite* similarities in subjective
sharing ratings across the conditions. Put differently, participants in both conditions may have

understood that they were watching the film with (shared) or without (alone) others, but perceived the film as moderately shared in both conditions because the online environment created a similar experience for all participants (e.g., knowing other MTurk workers were viewing the content at a similar time and being unable to interact with such people). Potentially then, other factors may explain our null findings on psychological outcomes. For example, previous research found differences in psychological reactions (e.g., pain) *days after the event* between people who shared negative content *in-person* vs. viewed such content alone (e.g., Nahleen et al., 2019). Thus, people's reactions to experiencing a negative event with others and alone may initially align—as we found on our immediate outcome measures—but differ when people recall the event later. Further, shared participants could not observe each other's reactions or attention to the film in our experiment, which could have prevented participants from incorporating others' reactions into their own event memories or from activating a shared attention state (Boothby et al., 2014; Shteynberg, 2015). We explored these explanations in Study 4b by examining psychological functioning after a delay and enabling participants to observe each other's real-time reactions to the film.

Study 4b

Method

Participants

We recruited 152 participants using the Flinders University participation system (SONA). We excluded data from fourteen participants: three did not complete the Phase 3 survey, eight completed the Phase 3 survey late (> 24 hours after link sent), one predicted the study aims, and two withdrew from the study. Our final sample had 138 participants (shared: $n = 70$; alone: $n = 68$), ranging from 17-50 years old ($M = 21.8$, $SD = 6.8$). Most were female (75.4%; male = 23.9%; prefer not to say = 0.7%), identified as women (71.7%; men = 25.4%; non-binary = 2.9%), were Caucasian ("White"; 39.1%), and reported having completed high school (75.4%; see Supplementary Table S4.5 for all demographics data).

Materials

Materials were the same as in Study 4a, along with the measures presented below. We did not use film/attention/technical checks and an article comprehension test here because our cover story did not include participants' attention and the researcher monitored technical issues and participants' attention to the film.

Participant Familiarity. Shared participants reported whether they knew the other participant(s) they completed the experiment with (*Y/N*) and if so, who these participants were (*Acquaintances/Casual friends/Close friends/Romantic relationship/Family*; Supplementary Table S4.6).

Intrusion Monitoring Survey. Over 3 days, participants completed several questions on the phone application SEMA[3] (O'Brien et al., 2024) whenever they experienced an intrusion about the film. Participants first provided a brief description of the content of their intrusion (*Open Text*) to ensure it was about the film. Participants then rated all items described in Study 4a.

Intrusion Monitoring Accuracy (Meyer & Morina, 2022). Participants rated how accurately they believed their intrusion surveys reflected their intrusion frequency about the film over the past 3 days (0 = *Very inaccurately*, 10 = *Very accurately*).

Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Weathers et al., 2013b). Participants rated how bothered they were by 20 DSM-5 PTSD symptoms over the past three days in relation to watching the film (e.g., "Having difficulty concentrating"; 0 = *Not at all*, 4 = *Extremely*; APA, 2013; current study: $\alpha = .92$).

Researcher Awareness. Participants reported how often during Phase 1 they thought about the researcher being present and the extent to which they thought the researcher's presence influenced their film ratings (0 = *Not at all*, 10 = *A lot*).

Procedure

Phase 1. We told participants we were interested in examining the effects of mood and stressful/traumatic experiences on memory performance. Participants were classed as being in the alone condition (i.e., completed by themselves) or the shared condition (i.e., completed with 1-3 other participants) based on how many participants attended the session.[24] Participants first completed a demographics measure and baseline affect, stress, and state anxiety measures. Next, participants watched the trauma film via the researcher's shared screen, with their cameras on and microphones off (researcher's camera and microphone turned off). The researcher monitored participants' wellbeing during the film using a participant welfare protocol. After watching the film, participants completed all psychological outcome measures (incl. Participant Familiarity measure; excl. Subjective Sharing, Influence, IOS, PCL-5) in the same order as Study 4a. The researcher then asked participants to download the SEMA[3] application and provided instructions for Phases 2 and 3.

Phase 2. We asked participants to complete the Intrusion Monitoring Survey via SEMA[3] on their mobile phones (or Qualtrics; $n = 13$) each time they experienced an intrusion about the trauma film for 72 hours following Phase 1. Participants received two daily reminders (9am & 5pm) about the Intrusion Monitoring Survey via the app (or email) to prevent them from forgetting to complete the survey[25].

Phase 3. Participants completed a survey sent via email 72 hours after Phase 1. Participants completed an Intrusion Monitoring Accuracy rating then all psychological outcome measures in the same order as Study 4a (incl. Researcher Awareness rating and PCL-5). Participants were debriefed and granted course credit ($n = 137$) or paid AUD$30 ($n = 1$).

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[24] We initially had randomized timeslots available to one participant (alone timeslot) or up to four participants (shared timeslot). However, after collecting 55 participants, we changed all timeslots to shared timeslots because shared timeslots were not being filled.

[25] The researcher and survey instructions emphasized that participants were not to complete the survey if a reminder prompted a memory about the film because this memory would suggest voluntary recall.

Results

Statistical Overview

We replaced missing data for six PCL-5 ratings using participants' mean score for the appropriate subscale. One participant failed to complete the Phase 1 pre-film survey but these data were not used in our main analyses so we did not exclude this participant. Further, 12 participants did not complete any Intrusion Monitoring Surveys. We kept these participants' data because survey incompletion could indicate that participants did not experience intrusions about the film.

After collecting data from 89 participants, we found anecdotal to very strong evidence (i.e., $BF_{01} = 1\text{-}10$) for the null hypothesis (i.e., no difference between conditions) relative to the alternative hypothesis (i.e., difference between conditions) on all our key variables other than state anxiety and PTS symptomology. Thus, we continued collecting data until we reached just above our target sample of 135 participants.

We used the same data analysis approach as Study 4a (see Table 4.2 for descriptive statistics of main analyses).[26] We initially conducted 2 (condition: shared, alone) x 2 (time: phase 1, phase 3) repeated measures ANOVAs on our psychological functioning variables to determine whether psychological functioning outcomes differed between the two conditions, and whether these differences emerged only after a delay. We did not find evidence for the latter hypothesis in our interaction results for any psychological variables. Thus, for conciseness and to align with Study 4a, we present main effects below and all interaction effects in Table 4.2.

We found the same general results pattern after excluding data from participants who had high Researcher Awareness ratings (i.e., above scale midpoint), reported knowing the

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[26] We report pre-registered longitudinal analyses testing whether psychological functioning ratings were higher for all participants after a delay in Supplementary Material because these data were not central to the aim of the current paper. We also report pre-registered exploratory analyses in Supplementary Material.

other participant/s, and reported low intrusion accuracy or retrieval intent/ease (at/below scale midpoint). Moreover, we found no difference on most psychological functioning ratings when comparing participants who had experience (vs. had no experience) with the topic of the film[27]. People with experience in the topic reported more severe PTS symptomology (intrusion characteristics, suppression, and re-experiencing) compared to people with no experience. However, a similar number of participants reported having topic experience in the alone ($n = 12$; 17.6%) and shared ($n = 16$; 22.9%) conditions, making it unlikely that such experience influenced our findings.

Preliminary Analyses

Stimulus Check. Negative affect increased from baseline to post-film (baseline: $M = 15.1$, $SD = 4.91$; post-film: $M = 26.07$, $SD = 8.67$; $t(137) = -16.74$, $p < .001$, $d = -1.43$, 95% CI [-12.23, -9.64]), as did stress (baseline: $M = 3.31$, $SD = 1.91$; post-film: $M = 5.85$, $SD = 1.88$; $t(137) = -17.56$, $p < .001$, $d = -1.50$, [-2.83, -2.25]), and state anxiety (baseline: $M = 12.16$, $SD = 3.44$; post-film: $M = 18.76$, $SD = 3.09$; $t(137) = -19.64$, $p < .001$, $d = -1.68$, [-7.26, -5.93]). Positive affect decreased from baseline ($M = 25.28$, $SD = 8.04$) to post-film ($M = 17.46$ $SD = 5.29$), $t(136) = 13.76$, $p < .001$, $d = 1.18$, [6.70, 8.94]).

Manipulation Check. Unlike Study 4a, shared participants perceived the experience of watching the trauma film as more shared ($M = 2.53$, $SD = 1.18$) than alone participants ($M = 2.04$, $SD = 1.17$), $t(136) = -2.43$, $p = .008$, $d = -0.41$, 95% CI [-0.88,-0.09]. Thus, our sharing manipulation appeared successful. Like Study 4a, shared participants did not appear to feel close or connected to other participants given mentalizing (Phase 1: $M = 3.01$, $SD = 1.75$; Phase 2: $M = 3.27$, $SD = 1.86$), influence ($M = 0.67$, $SD = 1.33$), and social identification ($M = 1.55$, $SD = 0.89$) ratings were all low.

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[27] We did not run these analyses for film experience because only two participants had seen the film before.

Researcher Awareness Check. Alone participants reported thinking more about the researcher's presence ($M = 4.46$, $SD = 2.99$) than shared participants ($M = 2.69$, $SD = 2.55$; $t(136) = 3.75$, $p < .001$, $d = 0.64$, 95% CI [0.84, 2.70]) and feeling more influenced by the researcher's presence ($M = 4.46$, $SD = 2.99$) than shared participants ($M = 2.69$, $SD = 2.55$; $t(132.7) = 2.94$, $p = .004$, $d = 0.50$, [0.37, 1.87]).

Intrusion Memory Reporting Check. Participants' retrieval intent ratings ($M = 5.43$, $SD = 1.25$; $t(125) = 48.85$, $p < .001$, $d = 4.35$, 95% CI [5.21, 5.65]) and retrieval ease ratings ($M = 5.51$, $SD = 1.30$; $t(125) = 47.77$, $p < .001$, $d = 4.26$, [5.29, 5.74]) were significantly higher than scale anchors (i.e., 0) for deliberate retrieval and retrieval difficulty. Therefore, participants' intrusions appeared involuntary. Further, participants reported that their Intrusion Monitoring Survey entries accurately reflected the number of intrusions they experienced over the 3 days after watching the film ($M = 7.79$, $SD = 2.02$).

Main Analyses – Psychological Reactions to the film.

We found substantial evidence for the null hypothesis—relative to the alternative hypothesis—for intrusion frequency and most intrusion characteristics ($BF_{01}s = 3.01 - 5.20$; Supplementary Table S4.10).[28] Similarly, we found substantial to very strong evidence for the null (vs. alternative) hypothesis for reliving ($BF_{01} = 5.83$), intensity ($BF_{01} > 100$), vividness ($BF_{01} > 100$), and perceiving the experience from participants' own perspective ($BF_{01} = 53.7$). Further, we found substantial to decisive evidence for the null (vs. alternative) hypothesis for positive affect ($BF_{01} = 48.0$), negative affect ($BF_{01} > 100$), stress ($BF_{01} = 5.35$), and state anxiety ($BF_{01} = 19.1$). We found weaker support for this pattern for some psychological reactions: anecdotal evidence for the null (vs. alternative) hypothesis for how positive/negative participants' intrusion/s felt (intrusion characteristic – valence; $BF_{01} =$

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[28] Per our pre-registration, we correlated intrusion characteristics and intrusion frequency and found significant correlations between all intrusion characteristics, but not between intrusion characteristics and intrusion frequency (Supplementary Table S4.9).

2.12), the extent to which participants thought or talked about the film (memory characteristic; $BF_{01} = 1.56$), and participants' overall feelings ($BF_{01} = 2.76$) after the experience. We found no evidence for either hypothesis regarding how much participants felt like their memory of watching the film came out of the blue ($BF_{01} = 1.08$).

Conversely, we found substantial evidence for the *alternative* (vs. null) hypothesis for PTS symptomology overall ($BF_{01} = 0.18$), avoidance ($BF_{01} = 0.18$), and negative alterations in cognition and mood ($BF_{01} = 0.17$). Put differently, alone participants reported more severe PTS symptomology overall, and specifically more severe avoidance and negative alterations in cognition and mood compared to shared participants. We also found anecdotal evidence suggesting that alone participants reported higher arousal and reactivity than shared participants ($BF_{01} = 0.37$). Alternatively, we found anecdotal evidence for the *null* (vs. alternative) hypothesis for re-experiencing ($BF_{01} = 1.98$), which was consistent with our intrusion and memory characteristics findings.

Main Analyses – Appraisals of the film.

Maladaptive Responses to Intrusions. We found substantial evidence for the null (vs. alternative) hypothesis regarding participants' negative interpretations of their intrusions ($BF_{01} = 4.95$) and anecdotal evidence for the null (vs. alternative) hypothesis concerning participants' efforts to suppress their film-related intrusions ($BF_{01} = 2.92$).

Overall Experience. We found substantial to strong evidence for the null (vs. alternative) hypothesis for the extent to which participants liked the film ($BF_{01} > 100$), felt absorbed in the experience ($BF_{01} = 35.9$), felt involved in the experience ($BF_{01} = 4.46$), wanted to stop watching the film ($BF_{01} = 19.8$), and found the film distressing ($BF_{01} = 16.49$). We found anecdotal evidence for the null (vs. alternative) hypothesis regarding the extent to which participants were willing to rewatch the film ($BF_{01} = 2.48$) and the perceived intensity of the film ($BF_{01} = 2.77$).

Table 4.2

Bayesian Repeated Measures ANOVA and Independent Samples t-Test Means, Standard Deviations, and Interaction Effects (BF01) for All Questionnaire Ratings Compared Between Shared and Alone Conditions

Variable	Phase 1				Phase 3				BF_{01}
	Shared		Alone		Shared		Alone		
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	
Intrusion Frequency					3.45	3.34	3.60	2.14	
Intrusion Characteristics									
Distress					3.97	1.68	4.31	1.77	
Vividness					4.45	1.61	4.34	1.68	
Intensity					3.84	1.62	3.80	1.70	
Reliving					2.69	1.90	2.80	1.78	
Unpleasantness					4.71	1.71	4.87	1.74	
Unwantedness					5.32	1.52	5.46	1.65	
Valence					1.23	1.14	1.53	1.29	
Memory Characteristics									
Reliving	3.26	1.67	3.78	1.87	3.00	1.79	3.34	1.77	6.21
Out of the blue	3.31	1.53	3.87	1.89	3.51	1.65	3.85	1.62	33.44
Intensity	4.57	1.61	5.00	1.70	8.84	1.79	7.97	1.80	8.17
Vividness	5.31	1.22	5.57	1.20	4.76	1.51	4.28	1.51	1.00
Thought/Talked	3.01	1.65	3.79	1.87	3.63	1.66	3.99	1.53	3.03
Personal perspective	3.74	1.76	4.06	2.15	3.26	1.94	3.52	2.08	15.96
Total PTS Symptomology					12.5	11.1	18.3	13.5	
Re-experiencing					3.76	3.54	4.71	3.93	
Avoidance					1.93	1.94	3.00	2.57	
Alt. in cognition and mood					3.93	3.69	5.94	4.78	
Alt. in arousal and reactivity					2.93	3.86	4.69	4.58	
Negative Affect	25.2	9.05	27.18	8.25	27.9	10.0	29.4	9.13	8.31
Positive Affect	16.9	4.94	17.99	5.58	18.4	5.60	19.0	5.57	11.83
Stress	5.91	1.93	5.79	1.83	6.07	2.20	6.32	2.15	10.38
State Anxiety	18.6	3.04	18.93	3.16	19.4	3.55	19.3	3.44	10.47
Experience: Gen. feelings	3.03	1.61	3.06	1.64	2.37	1.40	3.03	1.87	1.49

Maladaptive Responses to Intrusions									
Suppression					4.16	1.95	4.55	1.93	
NIIT					5.76	2.88	5.94	2.83	
Overall Experience									
Stop watching	6.89	2.55	6.91	2.68	7.23	2.42	7.56	2.38	12.92
Like	2.21	2.59	3.63	3.84	2.54	2.79	7.37	3.55	1.00
Willing to rewatch	2.20	1.82	2.47	1.94	2.39	1.91	2.67	2.22	35.78
Absorbed	6.57	2.19	6.88	2.03	6.11	2.36	6.24	2.38	18.21
Involved	5.47	2.64	5.50	2.69	4.99	2.68	5.12	2.66	22.21
Intensity	7.70	2.16	8.12	1.97	7.56	1.93	7.60	2.12	26.77
Distressing nature	3.03	1.61	3.06	1.64	2.37	1.40	3.03	1.87	5.81

Discussion

Consistent with Study 4a and inconsistent with our hypothesis, virtually sharing a trauma film led to similar psychological outcomes to viewing the film alone. Yet, in line with our predictions, viewing a trauma film alone led to higher PTS symptomology *three days later* compared to virtually sharing the film. Our PTS symptomology findings support theoretical and empirical research suggesting that physically sharing real-world traumatic events (e.g., natural disasters) in-person is associated with *reduced* negative psychological reactions (PTS, anxiety, and stress symptoms; Armenian et al., 2002; Guo et al., 2020; Leske et al., 2017). Some experimental work demonstrates that physically sharing negative tasks can *amplify* negative reactions (e.g., stress, pain) relative to experiencing the task alone (e.g., Nahleen et al., 2019; Shteynberg et al., 2014). However, existing research has not examined traumatic events and has used *suggestion* to manipulate virtual sharing without assessing the effectiveness of the manipulation. Thus, our findings may more accurately reflect the effects of virtually sharing a traumatic event.

Unlike Study 4a, shared participants subjectively shared the film more than alone participants. Therefore, virtually sharing traumatic content *via a watch party* elicited similar perceptions of a "shared" experience to viewing the content alone, but virtually sharing such content *via video conferencing platforms* increased shared perceptions (vs. viewing alone). Notably, alone participants viewed the film in the survey in Study 4a but on the Microsoft Teams meeting in Study 4b. Thus, alone participants in Study 4b may have reported lower subjective sharing ratings because they were more aware that they did *not share* the film (e.g., not seeing others in the meeting and knowing the researcher did not watch the content). Perhaps in Study 4a we would have found differences between conditions on subjective sharing ratings if alone participants watched the film within the watch party rather than in the survey. We did not use this method because we believed it did not represent how people view traumatic content alone (i.e., using virtual sharing features despite others being absent). Nevertheless, these design differences may have influenced our subjective sharing findings.

Given we found differences between the two conditions on subjective sharing here, we considered whether subjective sharing may have explained the buffering effects for virtual sharing on PTS symptomology. However, scores on our social ratings were low and negatively skewed. Thus, inconsistent with extant research (e.g., Drury, 2018; Muldoon et al., 2019), subjective sharing and other social factors (e.g., social identification) likely did not play a role in the relationship between virtual sharing and PTS symptomology. This discrepancy between our findings and previous research could be attributed to environmental factors relating to trauma exposure. That is, physically sharing trauma through virtual means (vs. in-person) could limit people's recognition or understanding of others' similar experiences because they are separated by distance, in different environments, and viewing others' responses through a screen. Subsequently, this reduced connection could dampen people's perceptions about sharing the traumatic event and prevent people from developing shared social identities. Even so, our findings demonstrate that virtually sharing traumatic

content reduced PTS symptomology relative to viewing the content alone, irrespective of subjective sharing and social identification.

General Discussion

We examined the psychological effects of virtually sharing traumatic content. Across two experiments, we found no differences between viewing a trauma film with others and alone for most psychological reactions to (intrusions, memory characteristics, affect, stress, state anxiety), and appraisals of (intrusions, overall experience) the film. Yet, in Study 4b, virtually sharing the film led to lower PTS symptomology—measured after a delay— compared to viewing the film alone. Thus, virtually sharing traumatic content buffers traumatic stress symptoms but does not influence other psychological outcomes.

Our PTS symptomology findings support our predictions and existing research, suggesting that physically sharing traumatic events may protect against negative psychological consequences of trauma exposure (e.g., Armenian et al., 2002; Guo et al., 2020; Leske et al., 2017). Our results additionally demonstrate that physically sharing traumatic experiences *through virtual means* reduces PTS symptomology, independent of social identification and subjective sharing. However, perhaps other social factors that we did not assess—such as social support, and emotional and attitudinal sharing—better explain our PTS symptomology findings.

First, we know perceived social support protects against PTSD development (Prati & Pietrantoni, 2010; Zalta et al., 2021) and physically sharing traumatic experiences (e.g., witnessing physical assault) can encourage people to support one another following such events (e.g., Drury, 2012; 2018; Paterson & Kemp, 2006). Thus, shared participants may have perceived other participants as sources of social support. Potentially, this perception increased participants' sense of safety and social acknowledgment (i.e., feeling understood by others), and subsequently reduced their traumatic stress symptoms (Woodhouse et al., 2018; Zhen et al., 2018). Indeed, a greater sense of safety could reduce people's hypervigilance

following a traumatic event, and feeling understood by others could dampen negative emotions (e.g., shame) and reduce isolation or negative world perceptions. Meanwhile, alone participants may have believed there was less opportunity to receive adequate social support, causing a limited sense of safety and social acknowledgment, consequently exacerbating their traumatic stress symptoms.

Second, we know people often emotionally and attitudinally share traumatic events—i.e., experience the same emotions/attitudes about an event—with people who were also physically present (Hutchison et al., 2024; León et al., 2019). Perhaps shared participants did not emotionally or attitudinally share the film experience (e.g., feeling distressed whilst observing others' boredom), causing cognitive dissonance with their own film appraisals, and thus leading participants who were more affected by the experience to reappraise the content as "not so traumatic" (Matz & Wood, 2005; Takarangi et al., 2014a; Takarangi & Strange, 2010). These reappraisals may have reduced affected participants' PTS symptomology. In contrast, alone participants had no social reference to influence their film appraisals, which may explain why they were more affected by the experience later. Future research should measure perceived social support and emotional and attitudinal sharing to determine whether these factors contribute to the effects of virtually sharing trauma on PTS symptomology.

Taken together, our PTS symptomology findings indicate that virtually sharing traumatic content through features like livestreaming and watch parties may not be more harmful than viewing the content alone. In fact, viewing such content with others may *protect* people against developing severe PTS symptoms. Thus, messages about the benefits of content sharing may be accurate: watching is always better together (Prince & Harvey, 2021).

But why did we not find differences between the shared and alone conditions for any other psychological outcomes across our experiments? Recall after Study 4a, we considered whether these null findings emerged because our manipulation was unsuccessful. Indeed, existing social models posit that subjective sharing plays a role in the relationship between

physically sharing mass traumatic events and psychological outcomes (Drury, 2012; 2018). However, in Study 4b we found the same pattern as Study 4a—suggesting no differences on most psychological outcomes across the conditions—even though subjective sharing ratings were higher in the shared (vs. alone) condition. Thus, perceiving traumatic content as shared may not explain our null results. Further, we did not find any significant interaction effects, meaning our prediction that psychological reactions to the film would be similar between the two conditions initially, but differ after a delay, was not supported.

Perhaps the shared and alone conditions were similar on all psychological outcomes other than PTS symptomology due to differences in when and how we measured these outcomes. In both experiments, we assessed psychological functioning immediately after participants watched the film. In Study 4b, we separately asked participants to report their psychological symptoms *when they were exposed to the film,* three days later. Thus, participants may have mentally indexed their original responses and tried to replicate these responses at follow up, particularly because our cover story mentioned that we were testing participants' memory of their film experiences. Put differently, perhaps participants focussed on recalling their *original answers* to the measures, rather than their *film experiences* when re-completing these measures in Phase 3. The PCL-5—which participants rated in relation to *the past 3 days after watching the* film—was the only measure that assessed participants' psychological functioning after a delay without being influenced by re-test or demand effects. Future research could test this explanation by using a cover story that does not involve memory recall and by comparing psychological functioning only after a delay.

Our research has limitations. First, we chose not to assess psychological functioning after a delay in Study 4a due to retention difficulties in MTurk samples (e.g., Schleider & Weisz, 2015). Future research should examine psychological outcomes longitudinally to determine whether our Study 4b findings replicate in crowdsourced populations and different online platforms. Second, no true random allocation in Study 4b may have resulted in self-

selection biases influencing results. For example, a socially anxious person may have avoided a timeslot with other people listed. Further, knowing whether others had signed up to the same study could have influenced participants' study expectations and ratings. Future research could use separate study advertisements that do not provide information about other participants to overcome this limitation. Third, the researcher was present throughout Study 4b, which could be considered virtual sharing. Whilst the researcher was present for both experiments, alone participants may have considered they were virtually sharing the film with the researcher. Indeed, alone participants were more aware of, and felt more influenced by, the researcher's presence than shared participants. Future research could use computer-based instructions rather than a researcher. Last, our sample was derived from WEIRD populations (Western, Educated, Industrialised, Rich and Democratic; Henrich et al., 2010) and therefore represents the psychological effects of virtually sharing traumatic content within these populations only. We chose this sample to compare with existing experimental research examining the psychological effects of in-person sharing (e.g., Nahleen et al., 2019; Woodward et al., 2017). Moreover, data from WEIRD populations was easily accessible (crowdsourcing sites, undergraduates) and did not require translating materials. Future research could replicate our design across different populations to assess the generalizability of our results.

Conclusion

Our findings demonstrate that most psychological reactions to and appraisals of traumatic content do not differ when people are exposed to the content simultaneously with others vs. by themselves. Yet, virtually sharing traumatic content reduced PTS symptomology, suggesting virtual sharing can buffer traumatic stress reactions arising from online trauma exposure. Overall, our data suggests that viewing traumatic content through features such as livestreaming and watch parties may be less psychologically harmful—in some ways—than viewing such content without the online presence of others.

Supplementary Material

Supplementary Table S4.1

Experiment 1 Full Demographics for Participants (N = 102)

Demographics		
Biological sex	Male	49.0%
	Female	50.0%
	Preferred not to say	1.0%
Gender	Male	49.0%
	Female	48.0%
	Non-binary	3.0%
	Preferred not to say	0.0%
Ethnicity	Asian	8.8%
	African ("Black")	11.8%
	Caucasian ("White")	48.0%
	European	4.9%
	Hispanic	9.8%
	Middle Eastern	2.0%
	Mixed	10.8%
	Nationality (e.g., "Australian")	1.0%
	No answer	0.0%
	Pacific Islander	1.0%
Highest level of education	Less than high school	0.0%
	High school	34.3%
	College or university undergraduate degree	51.0%
	College or university postgraduate degree:	14.7%

Supplementary Table S4.2

Experiment 1 Frequentist Independent Samples t-Test Means, Standard Deviations, and Inferential Statistics for All Questionnaire Ratings Compared Between the Shared and Alone Condition

Variable	Shared	Alone	
	M (SD)	*M (SD)*	Inferential statistics
Subjective Sharing	2.73 (1.25)	2.48 (1.36)	$t(100) = -.97, p = .335, d = 0.19$
Intrusion Frequency	6.04 (7.05)	5.96 (9.26)	$t(100) = -.05, p = .962, d = 0.01$
Intrusion Characteristics			
Distress	4.55 (1.90)	4.82 (1.80)	$t(70) = .62, p = .538, d = 0.15$
Vividness	4.92 (1.91)	4.94 (1.83)	$t(70) = 0.05, p = .964, d = 0.01$
Intensity	4.42 (1.86)	4.62 (2.00)	$t(70) = 0.43, p = .667, d = 0.10$
Reliving	4.21 (2.22)	4.29 (2.28)	$t(70) = 0.16, p = .875, d = 0.04$
Unpleasantness	5.37 (1.82)	5.26 (1.99)	$t(70) = -0.23, p = .818, d = 0.06$
Unwantedness	5.92 (1.44)	5.88 (1.79)	$t(70) = -0.10, p = .919, d = 0.02$
Valence	1.03 (1.35)	1.00 (1.44)	$t(70) = -0.08, p = .936, d = 0.02$
Memory Characteristics			
Reliving	3.88 (2.01)	4.28 (2.01)	$t(100) = 0.99, p = .323, d = 0.20$
Out of the blue	4.63 (1.66)	4.16 (2.00)	$t(100) = -1.31, p = .195, d = 0.26$
Intensity	4.69 (1.69)	4.74 (1.83)	$t(100) = 0.14, p = .891, d = 0.03$
Vividness	5.56 (1.32)	5.74 (1.31)	$t(100) = 0.70, p = .485, d = 0.14$
Thought/Talked	3.94 (2.15)	3.34 (2.16)	$t(100) = -1.41, p = .161, d = 0.28$
Personal perspective	4.25 (2.19)	4.68 (2.20)	$t(100) = 0.99, p = .324, d = 0.20$

Negative Affect	26.96 (10.04)	27.72 (11.03)	$t(100) = 0.36, p = .717, d = 0.07$
Positive Affect	21.37 (7.42)	21.64 (6.43)	$t(100) = 0.20, p = .842, d = 0.04$
Stress	6.08 (2.69)	5.98 (2.63)	$t(100) = -0.18, p = .854, d = 0.04$
State Anxiety	18.40 (4.13)	18.20 (4.52)	$t(100) = -0.24, p = .812, d = 0.05$
Experience: General feelings	2.65 (2.50)	2.48 (2.60)	$t(100) = -0.35, p = .731, d = 0.07$
Maladaptive Responses to Intrusions			
Suppression	5.37 (1.76)	6.06 (1.23)	$t(70) = 1.91, p = .061, d = 0.45$
NIIT	6.18 (4.14)	6.44 (3.66)	$t(70) = 0.28, p = .782, d = 0.07$
Overall Experience			
Stop watching	8.25 (2.60)	7.06 (3.52)	$t(90.2) = -1.94, p = .854, d = 0.39$
Like	1.12 (2.32)	1.24 (2.19)	$t(100) = 0.28, p = .781, d = 0.56$
Willing to rewatch	1.23 (2.36)	2.10 (2.59)	$t(100) = 1.77, p = .079, d = 0.35$
Absorbed	6.90 (2.78)	7.42 (2.44)	$t(100) = 0.99, p = .322, d = 0.20$
Involved	6.13 (3.09)	6.58 (3.07)	$t(100) = 0.73, p = .467, d = 0.15$
Intensity	9.08 (1.52)	8.74 (1.81)	$t(100) = -1.02, p = .309, d = 0.20$
Distressing nature	8.77 (2.02)	8.58 (2.01)	$t(100) = -0.47, p = .636, d = 0.09$

Supplementary Table S4.3

Correlations Between Intrusion Frequency and Intrusion Characteristics

	Intrusion Frequency	Distress	Vividness	Intensity	Reliving	Unpleasantness	Unwantedness	Valence
Intrusion Frequency	-	-	-	-	-	-	-	-
Distress	.148	-	-	-	-	-	-	-
Vividness	.153	.783**	-	-	-	-	-	-
Intensity	.180	.813**	.696**	-	-	-	-	-
Reliving	.220	.653**	.644**	.774**	-	-	-	-
Unpleasantness	.162	.732**	.781**	.842**	.772**	-	-	-
Unwantedness	.222	.709**	.732**	.710**	.566**	.815**	-	-
Valence	.197	.419**	.352*	.318*	.267	.348*	.299	-

Note. $* = p < .007$, $** = p < .001$. We reverse coded valence to align with the scale anchors for all other intrusion characteristics (i.e., higher scores indicate more negative intrusions).

Supplementary Table S4.4

Bayesian Independent Samples t-Test Results for Intrusion Frequency, Problematic Intrusion Characteristics and Maladaptive Responses to Intrusions Between the Shared and Alone Condition

Variable	Shared		Alone		
	M	*SD*	*M*	*SD*	*BF$_{01}$*
Intrusion Frequency	6.04	7.05	5.96	7.05	4.78
Intrusion Characteristics					
Distress	4.55	1.90	4.82	1.80	3.48
Vividness	4.92	1.91	4.94	1.83	4.11
Intensity	4.42	1.86	4.62	2.00	3.79
Reliving	4.21	2.22	4.29	2.28	4.07
Unpleasantness	5.37	1.82	5.27	1.99	4.02
Unwantedness	5.92	1.44	5.88	1.79	4.02
Valence	5.97	1.35	6.00	1.44	4.10
Maladaptive Responses					
Suppression	5.37	1.76	6.06	1.23	0.88
NIIT	6.44	4.14	6.18	3.66	3.98

Note. NIIT refers to the Negative Interpretations of Intrusions Scale. We reverse coded valence to align with the scale anchors for all other intrusion characteristics (i.e., higher scores indicate more negative intrusions).

Supplementary Table S4.5

Experiment 2 Full Demographics for Participants (N = 138)

Demographics		
Biological sex	Male	23.9%
	Female	75.4%
	Preferred not to say	0.7%
Gender	Male	25.4%
	Female	71.7%
	Non-binary	2.9%
	Preferred not to say	0.0%
Ethnicity	Asian	18.1%
	African ("Black")	0.0%
	Caucasian ("White")	39.1%
	European	8.7%
	Hispanic	2.2%
	Indigenous	1.4%
	Middle Eastern	0.7%
	Mixed	2.2%
	Nationality (e.g., "Australian")	27.5%
Highest level of education	Less than high school	2.2%
	High school	75.4%
	College or university undergraduate degree	22.5%
	College or university postgraduate degree:	0.0%

Supplementary Table S4.6

Relationship Descriptions within Participant Familiarity Measure

Demographics	
Acquaintances	Someone you have met before and who you see by chance rather than making separate plans with, such as a friend-of-a-friend or colleague
Casual friends	Someone you make plans with occasionally, often through mutual interests, such as a gym friend or classmate
Close friends	Someone you have known for some time, frequently make plans with, seek support from and provide support to
Romantic relationship	Someone you are in a mutual, ongoing and intimate relationship with, such as a partner, girlfriend or husband
Family	Someone you are related to, not including by marriage

Supplementary Table S4.7

Experiment 2 Frequentist Independent Samples t-Test Means, Standard Deviations, and

Inferential Statistics for Questionnaire Ratings Assessed at Phase 1

Variable	Shared	Alone	
	M (SD)	*M (SD)*	Inferential Statistics
Subjective Sharing	2.53 (1.18)	2.04 (1.17)	$F(136) = -2.43, p = .016,$ $d = 0.41$
Intrusion Frequency	3.45 (3.34)	3.60 (2.14)	$F(124) = 0.29, p = .775,$ $d = 0.05$
Intrusion Characteristics			
Distress	3.97 (1.68)	4.31 (1.77)	$F(124) = 1.11, p = .269,$ $d = 0.20$
Vividness	4.45 (1.61)	4.34 (1.68)	$F(124) = -0.36, p = .722,$ $d = 0.06$
Intensity	3.84 (1.62)	3.80 (1.70)	$F(124) = -0.15, p = .879,$ $d = 0.03$
Reliving	2.69 (1.90)	2.80 (1.78)	$F(124) = 0.36, p = .723,$ $d = 0.06$
Unpleasantness	4.71 (1.71)	4.88 (1.74)	$F(124) = 0.54, p = .594,$ $d = 0.10$
Unwantedness	5.32 (1.52)	5.46 (1.65)	$F(124) = 0.51, p = .614,$ $d = 0.09$
Valence	1.23 (1.14)	1.53 (1.29)	$F(124) = 1.42, p = .159,$ $d = 0.25$
Total PTS Symptomology	12.54 (11.13)	18.34 (13.49)	$F(129.8) = 2.75, p = .007,$ $d = 0.47$
Re-experiencing	3.76 (3.54)	4.71 (3.93)	$F(136) = 1.50, p = .137, d$ $= 0.26$
Avoidance	1.93 (1.94)	3.00 (2.57)	$F(124.8) = 2.76, p = .007,$ $d = 0.47$
Alt. in cognition and mood	3.93 (3.69)	5.94 (4.77)	$F(126.1) = 2.77, p = .007,$ $d = 0.47$
Alt. in arousal and reactivity	2.93 (3.86)	4.96 (4.58)	$F(130.8) = 2.44, p = .016,$ $d = 0.42$

Supplementary Table S4.8

Experiment 2 Frequentist Repeated Measures ANOVA Means, Standard Deviations, Interaction Effects and Condition Main Effects for Questionnaire

Ratings Assessed at Phases 1 and 2

Variable	Phase 1		Phase 3			
	Shared	Alone	Shared	Alone		
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	Interaction Effect	Condition Main Effect
Memory Characteristics						
Reliving	3.26 (1.67)	3.78 (1.87)	3.00 (1.79)	3.34 (1.77)	$F(1, 136) = 0.53$, $p = .470$, $\eta_p^2 = 0.004$	$F(1, 136) = 2.46$, $p = 119$, $\eta_p^2 = 0.02$
Out of the blue	3.31 (1.53)	3.87 (1.89)	3.51 (1.65)	3.85 (1.62)	$F(1, 136) = 0.44$, $p = .507$, $\eta_p^2 = 0.003$	$F(1, 136) = 3.58$, $p = .060$, $\eta_p^2 = 0.03$
Intensity	4.57 (1.61)	5.00 (1.70)	4.00 (1.75)	3.88 (1.93)	$F(1, 136) = 4.26$, $p = .041$, $\eta_p^2 = 0.03$	$F(1, 136) = 0.34$, $p = .562$, $\eta_p^2 = 0.002$
Vividness	5.31 (1.22)	5.57 (1.20)	4.76 (1.51)	4.28 (1.51)	$F(1, 136) = 7.74$, $p = .006$, $\eta_p^2 = 0.05$	$F(1, 136) = 0.33$, $p = .569$, $\eta_p^2 = 0.002$
Thought/Talked	3.01 (1.65)	3.79 (1.87)	3.63 (1.66)	3.99 (1.53)	$F(1, 136) = 1.39$, $p = .241$, $\eta_p^2 = 0.01$	$F(1, 136) = 6.49$, $p = .012$, $\eta_p^2 = 0.05$
Personal Perspective	3.74 (1.76)	4.06 (2.15)	3.26 (1.94)	3.51 (2.08)	$F(1, 136) = 0.03$, $p = .853$, $\eta_p^2 = 0.00$	$(1, 136) = 0.92$, $p = .339$, $\eta_p^2 = 0.007$
Negative Affect	25.16 (9.05)	27.18 (8.25)	27.86 (10.00)	29.40 (9.13)	$F(1, 136) = 0.21$, $p = .649$, $\eta_p^2 = 0.002$	$F(1, 136) = 1.46$, $p = .230$, $\eta_p^2 = 0.01$

Positive Affect	16.93 (4.94)	17.99 (5.58)	18.40 (5.60)	19.00 (5.57)	$F(1, 136) = 0.36$, $p = .548$, $\eta_p^2 = 0.003$	$F(1, 136) = 0.97$, $p = .327$, $\eta_p^2 = 0.007$
Stress	5.91 (1.93)	5.79 (1.83)	6.07 (2.20)	6.32 (2.15)	$F(1, 136) = 1.47$, $p = .227$, $\eta_p^2 = 0.01$	$F(1, 136) = 0.05$, $p = .832$, $\eta_p^2 = 0.00$
State Anxiety	18.63 (3.04)	18.93 (3.16)	19.36 (3.55)	19.28 (3.44)	$F(1, 136) = 1.02$, $p = .314$, $\eta_p^2 = 0.007$	$F(1, 136) = 0.04$, $p = .836$, $\eta_p^2 = 0.00$
Experience: General Feelings	3.03 (1.61)	3.06 (1.64)	2.37 (1.40)	3.03 (1.87)	$F(1, 136) = 4.26$, $p = .041$, $\eta_p^2 = 0.03$	$F(1, 136) = 2.18$, $p = .142$, $\eta_p^2 = 0.02$
Overall Experience						
Stop Watching	6.89 (2.55)	6.91 (2.68)	7.23 (2.42)	7.56 (2.38)	$F(1, 136) = 0.79$, $p = .377$, $\eta_p^2 = 0.006$	$F(1, 136) = 0.21$, $p = .649$, $\eta_p^2 = 0.002$
Like	2.21 (2.59)	3.63 (3.84)	2.54 (2.79)	7.37 (3.55)	$F(1, 136) = 28.58$, $p < .001$, $\eta_p^2 = 0.17$	$F(1, 136) = 48.77$, $p < .001$, $\eta_p^2 = 0.26$
Willing to Rewatch	2.20 (1.82)	2.47 (1.94)	2.39 (1.91)	2.66 (2.22)	$F(1, 136) = 0.00$, $p = .982$, $\eta_p^2 = 0.00$	$F(1, 136) = 0.76$, $p = .384$, $\eta_p^2 = 0.006$
Absorbed	6.57 (2.19)	6.88 (2.03)	6.11 (2.36)	6.24 (2.38)	$F(1, 136) = 0.28$, $p = .600$, $\eta_p^2 = 0.002$	$F(1, 136) = 0.41$, $p = .522$, $\eta_p^2 = 0.003$
Involved	5.47 (2.64)	5.50 (2.69)	4.99 (2.68)	5.12 (2.66)	$F(1, 136) = 0.06$, $p = .801$, $\eta_p^2 = 0.00$	$F(1, 136) = 0.04$, $p = .843$, $\eta_p^2 = 0.00$
Intensity	7.49 (1.70)	8.25 (1.66)	7.84 (1.79)	7.97 (1.80)	$F(1, 136) = 0.59$, $p = .446$, $\eta_p^2 = 0.004$	$F(1, 136) = 0.64$, $p = .425$, $\eta_p^2 = 0.005$
Distressing Nature	7.70 (2.16)	8.12 (1.97)	7.56 (1.93)	7.60 (2.12)	$F(1, 136) = 2.03$, $p = .157$, $\eta_p^2 = 0.02$	$F(1, 136) = 0.51$, $p = .475$, $\eta_p^2 = 0.004$

Supplementary Table S4.9

Correlations Between Intrusion Frequency and Intrusion Characteristics.

	Intrusion Frequency	Distress	Vividness	Intensity	Reliving	Unpleasantness	Unwantedness	Valence
Intrusion Frequency	-	-	-	-	-	-	-	-
Distress	-.10	-	-	-	-	-	-	-
Vividness	-.241	.626**	-	-	-	-	-	-
Intensity	-.148	.826**	.655**	-	-	-	-	-
Reliving	-.157	.630**	.608**	.668**	-	-	-	-
Unpleasantness	.172	.827**	.676**	.805**	.603**	-	-	-
Unwantedness	.193	.677**	.512**	.679**	.472**	.822**	-	-
Valence	-.168	.514**	.391*	.426*	.226	.574**	.546**	-

Note. * = $p < .007$, ** = $p < .001$. We reverse coded valence to align with the scale anchors for all other intrusion characteristics (i.e., higher scores indicate more negative intrusions).

Supplementary Table S4.10

Bayesian Independent Samples t-Test Results for Intrusion Frequency, Problematic Intrusion Characteristics and Maladaptive Responses to Intrusions Between the Shared and Alone Condition

Variable	Shared		Alone		
	M	*SD*	*M*	*SD*	*BF_{01}*
Intrusion Frequency	3.45	3.34	3.60	2.14	5.07
Intrusion Characteristics					
Distress	3.97	1.68	4.31	1.77	3.01
Vividness	4.45	1.61	4.34	1.68	4.96
Intensity	3.84	1.62	3.80	1.70	5.20
Reliving	2.69	1.90	2.80	1.78	4.97
Unpleasantness	4.71	1.71	4.87	1.74	4.62
Unwantedness	5.32	1.52	5.46	1.65	4.68
Valence	1.23	1.14	1.53	1.29	2.12
Maladaptive Responses					
Suppression	4.16	1.95	4.55	1.93	2.92
NIIT	5.76	2.88	5.94	2.83	4.95

Note. NIIT refers to the Negative Interpretations of Intrusions Scale. We reverse coded valence to align with the scale anchors for all other intrusion characteristics (i.e., higher scores indicate more negative intrusions).

Longitudinal Analyses

In addition to investigating whether *virtually sharing* traumatic content reduces or amplifies people's reactions to and appraisals of the content, we were interested in examining whether participants' psychological reactions to and appraisals of the trauma film amplified *over time.* That is, we tested our prediction that psychological functioning ratings for participants in both the shared and alone conditions would be higher 3 days after watching the film compared to immediately after (Oulton et al., 2016; Southwick et al., 1997; other than positive affect).

Results

Psychological Reactions to the Film. We found anecdotal to substantial evidence for the null hypothesis relative to the alternative hypothesis for memory characteristics of vividness ($BF_{01} = 1.27$), believing the memory came out of the blue ($BF_{01} = 6.60$) and thinking and talking about the film ($BF_{01} = 2.90$). We found no evidence for the alternative or null hypothesis for reliving, intensity, and perceiving the experience from a personal perspective concerning memories about the film (all $BF_{01}s = 1.00$). We also found no evidence for the alternative (vs. null) hypothesis for positive affect, negative affect, stress, state anxiety, and general feelings about the experience (all $BF_{01}s = 1.00$).

Appraisals of the Film. We found substantial to decisive evidence for the null (vs. alternative) hypothesis regarding the extent to which participants liked the film ($BF_{01} < 100$), were willing to rewatch the film ($BF_{01} = 2.58$), and the perceived intensity of the film ($BF_{01} = 2.28$). Further, we found no evidence for the alternative or null hypothesis regarding the extent to which participants wanted to stop watching the film, were absorbed in the experience, felt involved in the experience, and perceived the film as distressing (all $BF_{01}s = 1.00$).

Exploratory Analyses

      As pre-registered, we ran exploratory independent samples *t*-tests comparing subjective sharing ratings for participants who did and did not have experience with the topic of the film (i.e., sexual assault). There was no significant difference between participants who did (*M* = 2.14, *SD* = 1.15) and did not (*M* = 2.33, *SD* = 1.21) have experience with the topic of the film, $t(136) = 0.73$, $p = .467$, $d = 0.16$, 95% CI [-0.32, 0.68]. Thus, we did not run additional exploratory analyses assessing whether subjective sharing mediated the relationship between film topic experience and PTS symptomology.

Chapter 7: General Discussion

My thesis aimed to explore the nature and effects of shared traumatic events. *Sharing* is a broad but common social practice that can involve having the same experiences (incl. thoughts and feelings) as other people and communicating information and personal experiences to others (Oxford University Press, n.d.; Cambridge University Press, n.d.). However, given the breadth in what constitutes *sharing*, the existing literature lacked an integrated understanding of how people share trauma and how such sharing impacts people's lives. My goal was to develop a holistic understanding of how people share traumatic events in different ways and the potential implications of such sharing. This final thesis chapter synthesises the findings from my four empirical chapters (Chapters 3-6), considering previous theories and research. I also highlight theoretical, methodological, and clinical/practical implications of my work. Finally, I consider key limitations of my research and provide suggestions for future research directions.

The Nature of Shared Traumatic Events

My first thesis aim was to better understand the ways in which people share traumatic events with others. Specifically, I addressed the question: When, how, how often, and with whom do people share traumatic events in different ways, and how are shared experiences inter-related (i.e., when do these different shared experiences emerge from the same traumatic event)?

To date, researchers have predominantly examined the nature of shared traumatic experiences individually (i.e., by assessing unique sharing concepts separately) and within specific contexts (e.g., common fate for mass traumatic events; Drury, 2018). Consequently, countless sharing concepts exist across the scientific literature. There are similarities between many of these sharing concepts—for example, collective emotions and emotional empathy both involve experiencing the same emotions as others (Cuff et al.,

2016; Davis, 1980; von Scheve & Salmella, 2014). However, these findings reflect distinct definitions and characteristics of sharing as well as specific traumatic contexts (e.g., collective emotion is only relevant for large groups and occurs during mass traumatic events), meaning we lack a bigger picture about how these different findings articulate together. Therefore, whilst we know people can share traumatic events in different ways—such as by experiencing the same emotions as a group or another person—we do not know how these events are shared in a broader sense. In other words, we do not know what and how traumatic experiences are shared between people (e.g., emotions, discussion of the event), irrespective of factors like who the experiences are shared with (e.g., group vs. individuals) and whether the experiences were in fact shared or simply perceived as shared.

How traumatic events are shared

In my first empirical chapter (Chapter 3), I began examining the nature of sharing traumatic events. This research was the first to investigate different sharing concepts (e.g., sharing via discussion, via similar emotions) within the same sample and across a range of traumatic contexts (e.g., accidents, assault, disasters, the death of a loved one). Here, I examined sharing for stressful events—i.e., negative life events—in addition to traumatic events—i.e., events involving actual or threatened death, serious injury, or a threat to a person's physical integrity (American Psychiatric Association [APA], 2000; 2013)—due to the large number of participants who reported a stressful event as their "worst" event. In Study 1a, I found that people commonly perceive stressful/traumatic events as shared (i.e., subjective sharing), as well as share stressful/traumatic events physically, verbally, emotionally, and relationally. That is, people share stressful/traumatic events through the physical presence of others (including perpetrators), verbal communication, experiencing the same or similar emotional states, and exposure to similar events. Further, I

retrospectively identified that people share stressful/traumatic events attitudinally, meaning people hold the same or similar attitudes, beliefs, and/or opinions as others about a stressful/traumatic event. These propositions were supported by Study 1b, where participants also reported sharing their most stressful/traumatic event in these ways when directly asked (e.g., "Were other people present during the event?").

My findings from Chapter 3 align with prior research on shared experiences. We know people can be present during the same traumatic event given the nature of mass traumatic events—i.e., events experienced simultaneously by large groups of people (see Hoffman & Kruczek, 2011; Shalev et al., 2004)—and interpersonal traumas—i.e., events involving social interaction between at least two people (Lilly & Valdez, 2012; Mauritz et al., 2013). Further, it is well known that people discuss mass and individual traumatic events with other people (e.g., Davidson & Moss, 2008; Garcia & Rimé, 2019; Gorissen et al., 2023; Pennebaker & Harber, 1993; Rimé et al., 1998). Moreover, people's emotional states can synchronise during mass events (Nils & Rimé, 2012; Páez et al., 2015; von Scheve & Ismer, 2013; von Scheve & Salmella, 2014) and emotions like fear and grief can be contagious (Albuquerque et al., 2018; Lara et al., 2012). We also know that people learn about others' similar experiences of trauma in group settings (e.g., peer support groups; MacNeil & Mead, 2005; Mead & MacNeil, 2006; Solomon, 2004) and that exposure to mass traumatic events can elicit perceptions of sharing the experience with other victims (i.e., common fate; Drury, 2012; 2018; Drury et al., 2015; Ntontis et al., 2018).

Yet, Studies 1a and 1b go beyond this knowledge. My findings demonstrate that people share many kinds of traumatic events in several unique ways. For instance, I provide novel evidence that people can be simultaneously physically present during traumatic events that do not involve large groups of people (i.e., mass) or social interaction

(i.e., interpersonal)—such as the sudden death of a loved one and vehicle accidents. In addition, my work shows that people believe and learn that other people have experienced similar traumatic events as them outside of group settings (e.g., from close others) and such sharing occurs for *mass* as well as individual traumatic events. Further, experiencing the same or similar emotions about a traumatic event and perceiving a traumatic event as shared are not exclusive to mass traumatic events; emotional and subjective sharing can arise from *individual* traumatic events too. Finally, my research is the first to demonstrate that people can share traumatic events by holding the same or similar attitudes, opinions, and/or beliefs about the event as others.

How often traumatic events are shared

Whilst identifying how people share traumatic events helps us understand the social facets of trauma (e.g., people respond with similar emotions to the same traumatic event), knowing *how often* people share traumatic events in these ways highlights the extent to which a society can be involved in and affected by such shared experiences. Unfortunately, few studies have examined the frequency of shared traumatic events. Further, no research, to my knowledge, has explored multiple sharing forms within the same study to directly compare the frequency of different shared experiences. Therefore, I assessed the frequency of different sharing forms across various traumatic events in three studies. In Study 1b (Chapter 3), most participants shared stressful/traumatic events in some way (98.6%-99.4%). In fact, more than half of participants shared their most stressful/traumatic event verbally (81.0%-82.8%), relationally (64.7%), emotionally (57.5%-69.7%), physically (54.4%-57.6%; not including with a perpetrator), and/or attitudinally (52.7%-74.5%). Similarly, in Study 3 (Chapter 5), most participants reported verbally (99.8%) and relationally (82.8%) sharing the COVID-19 pandemic or their worst

COVID-19 event (e.g., lockdowns).[29] Additionally, regardless of whether participants reported sharing these events in these specific ways, approximately three quarters of the samples (72.1%-78.5%) in Studies 1a and 1b reported that their most stressful/traumatic event *felt shared* to some extent (rated < 1 [not at all shared])—meaning they subjectively shared the event. Similarly, nearly all participants (99.4-99.5%) reported subjectively sharing the COVID-19 pandemic and their worst COVID-19 event in Study 3 (rated < 1).

My frequency data is somewhat consistent with the small amount research that has explored sharing frequency for trauma. In terms of verbal sharing, prior research suggests that between 84.5% and 98.9% of people verbally share stressful/traumatic events (e.g., bereavement, examinations; e.g., Davidson & Moss, 2008; Rimé et al., 1991; 1998; Zech & Rimé, 2005). Verbal sharing was similarly frequent in Study 3 yet less frequent in Study 1b. This discrepancy could be attributed to the types of events investigated in these studies. Study 3 examined a global health emergency, and the extant research has predominantly explored accidents, bereavement, and acute stressors. By contrast, Study 1b investigated many types of traumatic events, including those assessed in prior research (e.g., accidents) *and* events like natural disasters, sexual coercion, and witnessing harm or death. Therefore, some events that were assessed in Study 1b may rarely be verbally shared—such as events that elicit shame and guilt (e.g., sexual assault; Rimé, 2009; Rimé et al., 1991) and less emotionally intense events (e.g., everyday stressors; Luminet et al., 2000)—and thus reduced the overall frequency of verbal sharing in this study.

Turning to physical sharing, research suggests people commonly co-witness criminal events like assaults and accidents (86%-88%; Paterson & Kemp, 2006; Skagerberg & Wright, 2008). Again, the frequencies identified in prior research are higher

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[29] I classified the COVID-19 pandemic as a traumatic event given it involved direct (personally contracting the virus) and indirect (witnessed, learned about) exposure to actual or threatened death and elicited PTSD-like responses in people (APA, 2022; Bridgland et al., 2021; Shevlin et al., 2020).

than those recorded in my research, however, like verbal sharing, this difference may be attributed to event type. That is, criminal events were only a subset of events in Study 1b and may be physically shared more often than other traumatic events—such as the death of a loved one. In fact, criminal events often occur in public places (e.g., vehicle accidents, mugging), increasing the likelihood that multiple witnesses or victims are present.

No research appears to have examined the frequency of sharing traumatic or negative events emotionally, attitudinally, relationally, or subjectively, making my research the first to investigate how often people share traumatic events in several unique ways. My findings demonstrate that sharing traumatic events with other people—whether the events are smaller or larger in scale, or shared physically (incl. with a perpetrator), verbally, emotionally, relationally, attitudinally, or subjectively—is very common.

How shared experiences are inter-related

To better understand how stressful/traumatic events are shared as a whole, I next investigated whether and how often stressful/traumatic events are shared physically, verbally, emotionally, relationally, attitudinally, *and/or* subjectively—like feeling the same emotions as others who are present during a natural disaster. Existing work provides some evidence for the idea that people share stressful/traumatic events in numerous ways (e.g., Drury, 2018; Garcia & Rimé, 2019; Metzler et al., 2022; Nils & Rimé, 2012; Pennebaker & Harber, 1993; Rimé et al., 2010). However, few studies have directly assessed the relationship between these sharing forms or examined how frequently different kinds of events are shared in different ways. Study 1a (Chapter 3) data provided preliminary evidence for the relationship between different shared experiences by demonstrating that several shared experiences—particularly emotional and physical sharing—appear to elicit a perception that people are sharing the same experience with others (i.e., subjective sharing). Consistently, when measuring shared experiences

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explicitly (using more specific measures of sharing) in Study 1b (Chapter 3), subjective sharing was associated with most sharing forms (aside from relational) and nearly all other sharing forms were inter-related. Further, in Study 3 (Chapter 5), subjective sharing was associated with verbal sharing and relational sharing. Although this overall pattern was mostly consistent across studies—indicating that unique sharing experiences of trauma are inter-related—subjective sharing was associated with relational sharing in Study 3 but not Study 1b. These correlations were small, ranging from .09 (Study 1b) to .22 (Study 3). Therefore, the relationship between subjective and relational sharing may be weaker compared to other shared experiences (e.g., emotional sharing $r = .51$) and weaker for some stressful/traumatic events (e.g., uncommon or distant events like sexual assault; Study 1b) compared to other events (e.g., common or recent events like COVID-19; Study 3).

In addition, most participants reported sharing their most traumatic event in multiple ways (96.6%) in Study 1b. Each form of sharing overlapped with the other forms for 54.3% to 88.3% of participants (e.g., 54.3% of participants shared the event attitudinally and relationally). Verbal sharing most frequently overlapped with other sharing forms, perhaps because verbal sharing was most common overall, or because such sharing can elicit or arise from other sharing forms (e.g., emotional sharing; e.g., Hatfield et al., 1994; Rimé, 2009). Furthermore, when directly asked, many participants reported emotionally (75.4%) and attitudinally (72.1%) sharing their worst event with people who were physically present during the event. Yet, inconsistent with Study 1a, whereby verbal and physical sharing frequently overlapped (83.5%), fewer participants in Study 1b reported verbally sharing (40.5%) the event with people who were physically present. Thus, whilst being in the presence of others during a traumatic event could encourage

discussion with these people, physically sharing a traumatic event may only account for about half of the discussions that surface from exposure to traumatic events.

My data on the relationships between different sharing forms support past research and theory. The limited evidence on subjective sharing suggests that perceiving a mass traumatic event as shared can elicit verbal sharing and vice versa (Bartholomew & Victor, 2004; Paton & Irons, 2016). In addition, we know co-witnesses often discuss criminal events with one another (58-86%; Paterson & Kemp, 2006; Skagerberg & Wright, 2008) and people frequently discuss mass traumatic events shortly after they occur—and thus likely with people who are present (Rimé et al., 2010). Further, theorists suggest emotional states synchronise through the physical (including virtual) presence of others and/or shared attention (e.g., León et al., 2019; Shteynberg, 2018). Moreover, talking about emotional events can involve (e.g., emotional support; Cuff et al., 2016; Derlega et al., 1993; Paterson & Kemp, 2006), elicit (e.g., empathy, emotional contagion; Davis, 1996; Hatfield et al., 1994; 2014), and arise from (e.g., social synchronisation; Harber & Cohen, 2005; Rimé, 2009; Rimé et al., 1998) experiencing similar emotional states as others. Finally, peer support and group therapy programs involve both discussions about traumatic experiences (e.g., MacNeil & Mead, 2005; Regev & Slonim-Nevo, 2019; Solomon, 2004) and empathy (e.g., Cuff et al., 2016), highlighting links between relational, verbal, and emotional sharing.

Not only is my work consistent with this previous research, but it expands upon such research by demonstrating that individual and mass traumatic events are often shared between people in *numerous ways*. As already mentioned, most research has examined sharing in specific contexts. Investigations of the *relationships between* shared experiences are even more limited to specific contexts and some investigations are predominantly theoretical (e.g., *how* emotional sharing can arise). Moreover, little research appears to

have examined *how often* a single stressful/traumatic event is shared in *numerous ways*. My findings highlight that stressful/traumatic events are inherently shared. Accordingly, exploring each sharing form individually does not adequately reflect how stressful/traumatic events are actually experienced. Instead, we need to consider all these shared experiences to gain insight into the social nature of stressful/traumatic events.

Characteristics of sharing traumatic events

My final exploration into the nature of shared traumatic events concerned characteristics such as with whom, when, and with how many people traumatic experiences are shared. We know that people tend to verbally share negative events with people they are highly familiar with (e.g., family, friends; Paterson & Kemp, 2006; Pelletier & Drozda-Senkowska, 2016; Rimé, 2009) and that emotional and verbal sharing often occurs between group members (e.g., victims of collective trauma; León et al., 2019; Rimé, 2007; von Scheve & Salmela, 2014). However, we did not know whether people tend to share traumatic events with people they are socially close to in other ways as well, such as physically, attitudinally, and relationally. Further, no research had compared the frequency of different sharing forms across event types and the only work that seems to have measured how many people we typically share negative events with did not report these data (Rimé et al., 1991; 1998). Thus, I examined these characteristics further to broaden our understanding of the nature of these shared traumatic experiences.

Who we share traumatic events with

Across Studies 1a, 1b, and 3 (Chapters 3 & 5), participants consistently reported sharing stressful/traumatic events most often with socially close others. These findings seem logical. People are motivated to strengthen and maintain bonds with close others, and sharing experiences can enhance these social bonds (e.g., Echterhoff et al., 2017; Hardin & Higgins, 1996; Rimé, 2009; Rimé et al., 2020). Relatedly, people are more

likely to express empathy towards socially close others (e.g., Fowler et al., 2021; Meyer et al., 2013). Therefore, trauma victims may be more inclined to discuss, express emotions, and voice their attitudes about a traumatic event with close (vs. distant) others to strengthen their social bonds with these people, which could in turn elicit subjective sharing. Obviously, not all shared experiences are intentional, like physical sharing. Yet, people spend considerable time with people they are socially close to (Ortiz-Ospina et al., 2020), meaning the opportunity to share their experiences is likely greater for close (vs. distant) others. Similarly, sharing experiences fosters closeness. Theoretical and empirical work indicates that perceiving a mass traumatic event as shared, discussing mass traumatic events, experiencing the same emotions regarding a traumatic event, *and* knowing others who have been exposed to a similar traumatic event can help people strengthen their social identities (e.g., Buckingham et al., 2013; Drury, 2012; 2018; Fritz & Williams, 1957; Nils & Rimé, 2012; Ntontis et al., 2018; 2020; Páez et al., 2015; Pelletier, 2018; Rimé et al., 2010; Walker-Springett et al., 2017; van de Ven & Pemberton, 2022; von Scheve & Ismer, 2013). Thus, it is also possible that sharing was most common amongst socially close others because participants perceived the people they shared their most traumatic event with as close *after* sharing their experiences with them. These findings are important given the effects of sharing negative events can be exacerbated for, or apply predominantly to, close others (e.g., Martin et al., 2015; Shteynberg et al., 2014). Knowing that close others are the most common sources of sharing for stressful/traumatic events and may be most affected by such sharing demonstrates that we need to focus on the nature and effects of sharing traumatic events with socially *close* (vs. distant or all) others.

When we share traumatic events

Additionally, in Studies 1a and 1b (Chapter 3), different sharing forms were more common for certain events. For instance, physical, emotional, relational, and subjective

sharing were most common for mass traumatic events and the death of a loved one, verbal sharing was most common for accidents (e.g., vehicle accidents) and human rights violations, and attitudinal sharing was most common for witnessing harm, military experiences, and suddenly moving or losing a home. Thus, how and the extent to which people share stressful/traumatic events varies depending on event type. Interestingly, some of these data align with the events researchers have used to explore sharing to date. For instance, much of the research on peer support (i.e., relational sharing) has explored bereavement (see Bartone et al., 2019 and Higgins et al., 2022 for reviews) and early work on verbal sharing examined accidents (e.g., Pennebaker & Harber, 1993; Rimé et al., 1991; 1998). Further, mass traumatic events *are* large-scale physically shared events (Shalev et al., 2004), and much of the work assessing subjective and emotional sharing has done so within mass traumatic events (e.g., Drury, 2012; 2018; Garcia & Rimé, 2019; Ntontis et al., 2018; Pelletier, 2018; Williams & Drury, 2009). Nonetheless, my research exposes event types that have received little attention in the sharing literature, but that could provide insight into the nature and effects of certain sharing forms, such as bereavement for physical and subjective sharing and natural disasters for relational sharing.

How many people we share traumatic events with

Finally, in Study 1b, most participants shared individual stressful or traumatic events with 2-5 people and mass traumatic events with 100+ people (except for verbally). However, only 2.8% of participants reported a mass traumatic event, meaning I could not reliably interpret these results for mass traumatic events. Overall, my findings indicate that, despite sharing being common, individual traumatic events are often shared with few people. These data are critical to determine how many people may be affected by a traumatic event via sharing. For instance, we know secondary traumatisation arises for

socially close others and often involves verbal and emotional sharing (e.g., Ahmadi et al., 2011; Figley, 1983; Lev-Wiesel& Amir, 2001; Pillemer et al., 2001). Given most participants in Study 1b verbally and emotionally shared their stressful/traumatic events with 2-5 people who were likely close others, it is possible that approximately 2-5 people who learn about a close other's traumatic experience are at risk of secondary traumatisation. This risk is important considering traumatic stress symptoms impact many areas of functioning (e.g., social; Frueh et al., 2001) and are associated with mental health conditions like depression and substance use disorders (Elhai et al., 2011; Gielen et al., 2012; Hegney et al., 2014; Jacobsen et al., 2001).

Together, these data concerning when, with whom, and with how many people participants shared stressful/traumatic events provide context about the nature with which people experience trauma socially. Gaining insight into the key characteristics of shared traumatic experiences emphasises the importance and scope of research in this area.

Perpetrator sharing

In addition to the above findings, I examined the nature of perpetrator sharing— i.e., experiencing a traumatic event that involved a perpetrator or perpetrators—in Study 1b. I assessed this subform of physical sharing to isolate when people have shared their event(s) with perpetrators and non-perpetrators (e.g., other victims), given these shared experiences may differ (e.g., be less common) when considering people's roles (e.g., perpetrator vs. eyewitness) in a stressful/traumatic event. That is, whilst people can *physically* share traumatic events (e.g., physical assault) with perpetrators, it is unlikely that they would share the event in other ways with perpetrators, such as emotionally (e.g., fear vs. anger) and attitudinally (e.g., unjustified/harmful vs. justified/trivial). Therefore, people may share trauma with a perpetrator in one sense, but the event overall may not be considered as shared with these people. As such, I examined perpetrator sharing separately

to other sharing forms. I found that perpetrators were present for over a third (36.9%) of participants' worst events, with most of these events only involving one perpetrator. These data are consistent with existing research suggesting that many stressful/traumatic events are perpetrated by another person and commonly involve a single perpetrator (Benjet et al., 2016; Carlson et al., 2011; Jewkes et al., 2015; Roscoe et al., 2012). Further, consistent with homicide research, perpetrators were often identified as socially close others for single-perpetrator events and strangers for multiple-perpetrator events (Roscoe et al., 2012).

Interestingly, participants who reported events involving a perpetrator were less likely to report that other people (e.g., victims or eyewitnesses) were present during the event, that they experienced the same/similar emotions to non-perpetrators about the event, and that they perceived the event to be shared with other people in general. We know events perpetrated by another person often involve a single victim (e.g., sexual assault; Jewkes et al., 2015), meaning many of these events are likely not physically shared with other people. Further, interpersonal traumas can lead to negative emotions such as guilt and shame (e.g., Dorahy & Clearwater, 2012; Fowke et al., 2012). These emotions may not be felt amongst others who learned of the event afterwards (e.g., family, friends), or may be felt differently by these people compared to the victim (e.g., a parent's own guilt of not protecting their child). Thus, victims of stressful/traumatic events perpetrated by others may not commonly emotionally share such events with people who learn of these events after they occurred. Considering physical and emotional sharing can elicit subjective sharing (Study 1a; Drury, 2018), a lack of physical and emotional sharing for these events may also reduce subjective sharing of the event.

Together, these data not only highlight how often people are exposed to events involving a perpetrator, and who perpetrators are, but also indicate that other people's

involvement in stressful/traumatic events may influence how people subsequently share these events with other people.

The Effects of Shared Traumatic Events

My second thesis aim was to investigate the psychological effects of sharing traumatic events. In other words, how does sharing traumatic events subjectively, verbally, physically, emotionally, attitudinally, and relationally affect people's psychological functioning?

As with the literature on the nature of shared traumatic events, research exploring the psychological effects of sharing traumatic events has examined sharing concepts within specific contexts. For instance, we know co-witnesses' discussion of criminal events negatively impacts memory accuracy (e.g., Gabbert et al., 2003; 2004; Garry et al., 2008; Hewitt et al., 2013; Ito et al., 2019; Paterson et al., 2012) and connecting with people who have experienced similar traumatic events within group settings can facilitate social support and improve psychosocial functioning (e.g., Ford et al., 2006; Levi et al., 2017). Further, attending to the same negative (simulated) experience as others can increase positive affect, but also pain (Martin et al., 2015; Nahleen et al., 2019; Wagner et al., 2014). However, we do not know whether such effects extend beyond these specific negative contexts to traumatic events overall. Additionally, some research is largely theoretical (e.g., Williams & Drury, 2009) or does not specify the methods used to empirically examine sharing (e.g., Armenian et al., 2002), making the evidence for the effects of sharing unclear and the methods hard to replicate.

It is particularly difficult to decipher whether existing findings reflect the unique effects of one form of sharing or the cumulative effects of numerous forms of sharing. Moreover, many researchers have examined specific sharing concepts that may not extend to broader definitions of sharing or other contexts. For instance, perceived emotional

synchronisation can emerge during mass traumatic events, yet this concept only represents the perceived, not the actually experienced, aspect of emotional sharing (Páez et al., 2015; Pelletier, 2018). Therefore, findings associated with perceived emotional synchronisation may not generalise to the broader concept of emotional sharing (i.e., *knowing* or believing others are emotionally affected in the same/similar way about an event). Furthermore, no work has examined the direct psychological effects of perceiving a traumatic event as shared. Additionally, there is limited existing data regarding how sharing traumatic events influences posttraumatic stress (PTS) symptomology specifically. Hence, I aimed to empirically test the psychological effects, particularly regarding PTS reactions, of different sharing forms to determine how shared traumatic experiences affect people's reactions to and recovery from trauma exposure, in a broader sense. Here, I was again interested in examining factors that may influence these relationships, specifically the social and spatial distance between people and the medium used to share experiences.

Correlations between sharing and psychological functioning

I started exploring the effects of sharing traumatic events by investigating the relationship between sharing and PTS symptomology in Studies 2a and 2b (Chapter 4; using the same dataset as for Studies 1a and 1b). We know that verbally sharing traumatic events is related to PTS symptoms, but the direction of this relationship was unclear (Davidson & Moss, 2008; Seery et al., 2008). Further, social support and group therapy—which involve verbal and emotional sharing—reduce PTS symptomology (e.g., Beck & Coffey, 2005; Cuff et al., 2016; Kearney et al., 2012; Morgan & Cummings, 1999; Wagner et al., 2016) and experiencing empathy as a health professional and experiencing a collective trauma—which involve emotional and physical sharing, respectively— exacerbates PTS symptomology (e.g., Hirschberger, 2018; MacRitchie & Leibowitz, 2010). Yet, few studies have directly investigated PTS outcomes of simply sharing

traumatic events. Understanding which factors contribute to the development of PTS symptoms is important considering these symptoms arise from exposure to traumatic events and can detrimentally affect people's psychological functioning (e.g., APA, 2022; Brandes et al., 2002; Smith et al., 2015).

In Studies 2a and 2b, subjective sharing was not related to PTS symptomology. However, verbal sharing was *negatively* correlated with PTS symptomology overall and with all four symptom clusters, and physical and emotional sharing were *negatively* correlated with specific symptom clusters (i.e., avoidance and negative alterations in cognition and mood, respectively). Therefore, whilst perceiving a traumatic event as shared was unrelated to PTS symptomology, sharing a traumatic event by discussing the event with others, being in the physical presence of others (victims or witnesses) during the event, and experiencing the same emotions as others about the event were related to less severe PTS symptomology. In addition, perpetrator sharing was *positively* correlated with PTS symptomology, suggesting that people exposed to events involving a perpetrator reported more severe PTS symptoms in relation to the event.

Critically, these correlations were small (rs = -.17-.18), indicating that sharing a traumatic event may have had a small impact on people's PTS symptomology, or vice versa. However, physical sharing occurs *during* traumatic events, and verbal sharing of traumatic events dissipates after the event occurs (Study 1a; Paterson & Kemp, 2006; Rimé et al., 2010). Further, whilst trauma exposure can elicit traumatic stress reactions, we know most people recover from traumatic experiences over time (APA, 2022; Bryant et al., 2017; McMillen et al., 2000). Therefore, I wondered whether sharing traumatic experiences is more likely to influence, or be influenced by, PTS symptomology shortly after the event, when people's shared experiences are more recent and people's PTS reactions are stronger. Given participants' worst events occurred on average 12-15 years

ago, I compared the strength of the relationship between sharing and PTS symptomology for recent and distant traumatic events. I found that some relationships were stronger (e.g., emotional sharing) for recent events and other relationships were stronger (e.g., physical sharing) for distant events. Thus, time since a traumatic event did not consistently influence these relationships across different sharing forms, meaning my findings were not explained by how long ago participants' events occurred. Further, I tested whether negative relationships between sharing and PTS symptomology were stronger when considering several shared experiences together (e.g., physical, verbal, emotional, attitudinal). I found that sharing in more ways was related to less severe negative alterations in cognition and mood symptoms, indicating that sharing trauma may have cumulative effects for certain PTS symptoms.

Despite the size of these relationships, my findings broadly align with existing research. For instance, we know that exposure to an interpersonal trauma—events that involve perpetrators such as sexual or physical assault—leads to higher PTS symptomology than a non-interpersonal trauma (e.g., accidents, natural disasters; Forbes et al., 2014; Huang et al., 2017). Further, consistent with my findings, some research indicates that verbally sharing distressing events is related to lower traumatic stress (Davidson & Moss, 2008; Levi-Bells & Lev-Ari, 2019). Moreover, social support—which can involve talking and shared emotional states, and emerge from experiencing a traumatic event in the presence of others—is related to reduced PTS symptoms (e.g., Cuff et al., 2016; Prati & Pietrantoni, 2010). In addition, social identification—which can emerge from and elicit shared experiences—is related to lower PTS symptomology (e.g., Muldoon et al., 2019). Adding to this work, my results demonstrate that sharing *traumatic* events *verbally*, *physically*, and/or *emotionally* are all directly linked to lower PTS symptomology.

I expanded on this work in Study 3 (Chapter 5) by examining the relationship between sharing and PTS symptomology as well as several other psychological functioning variables (e.g., psychosocial functioning, anxiety, stress) for the COVID-19 pandemic. As discussed in Chapter 1, many sharing forms are linked to social identification (e.g., Drury, 2012; 2018; Durkheim, 1912; von Scheve & Salmela, 2014) and social identification plays an important role in people's psychological functioning following exposure to a traumatic event (e.g., Craig et al., 2022; Drury, 2012; 2018; Erikson, 1976; 1979; Muldoon et al., 2017; 2019; Ntontis et al., 2018; Páez et al., 2007; Williams & Drury, 2009). In fact, the social cure approach posits that developing group memberships in the face of a stressful or traumatic event (via social identification) facilitates social support and collective action, which help people cope with and recover from the event and even experience positive psychological change from the event (e.g., posttraumatic growth; Haslam et al., 2012; Jetten et al., 2012; Muldoon et al., 2019). Thus, who we share a traumatic event with may influence the extent to which we share the event, whether we share the event in numerous ways, and how such sharing relates to how we overcome the event. Other social factors such as the psychological distance between sharers may play a similar role to social identification concerning shared traumatic events. For instance, we know from Studies 1a and 1b that people most often share traumatic events with socially close (i.e., familiar) others like friends and family. Sharing such events with socially close others could facilitate social support, prompting close others to share the event in numerous ways and helping people recover from the event more easily than if they shared the event with socially distant others (e.g., strangers). Similarly, spatial distance could influence the nature and impact of shared traumatic experiences, especially because people may relate more to the personal experiences and circumstances of people who are nearby when the event occurs.

Critically, much of the existing research exploring the role of psychological distance in the psychological effects of shared traumatic experiences is limited by examining few social/spatial distance groups (e.g., family vs. strangers) at once, and/or focusing on *stressful* in-lab experiences rather than real-world *traumatic* events (e.g., Cold Pressor Task; Martin et al., 2015). Thus, I also explored whether the relationship between sharing COVID-19 and psychological functioning was stronger for psychologically— particularly socially (familiar) and spatially (nearby)—close (vs. distant) others. Further, to encompass both mass and individual traumatic events, I investigated sharing for participants' worst COVID-19 event (e.g., lockdowns, losing work) and separately for the COVID-19 pandemic as a whole. Subjectively and verbally sharing the pandemic and subjectively sharing a worst COVID-19 event were associated with more severe traumatic stress symptoms, stress, and negative emotions overall. Further, verbally sharing the pandemic was related to more severe anxiety and stress symptoms and psychosocial impairment. Thus, perceiving a global physically shared health emergency and related events as more shared and discussing this global event more often were related to poorer psychological functioning.

Consistent with these results, some research demonstrates that verbally sharing negative events can reactivate and amplify negative emotions (Choi & Toma, 2014; Pennebaker et al., 2001; Rimé, 2007; 2009). Yet, unlike my subjective sharing findings, research examining sharing for mass traumatic events suggests that subjective sharing can indirectly *positively* influence psychological functioning, through increased social identification amongst the affected community, specifically by protecting people against PTSD development and enhancing opportunities for posttraumatic growth (Drury, 2012; 2018; Gasparre et al., 2010; Ozer et al., 2003; Rimé et al., 2010; Schumm et al., 2006; Tedeschi & Calhoun, 2004; Williams & Drury, 2009).

Similarly, my findings were inconsistent with results from Studies 2a and 2b (Chapter 4), whereby most sharing forms were *negatively* associated with PTS symptomology. The sizes of these relationships were similar across Studies 2a and 2b (rs = -.10- to -.17) and Study 3 (rs = .09 to .26), suggesting other factors may explain this discrepancy. Indeed, I assessed sharing and psychological functioning approximately 1 month after the World Health Organisation declared the coronavirus a global pandemic in Study 3 (WHO, 2020) whereas participants' worst event was examined on average 12-15 years later in Studies 2a and 2b. Further, the COVID-19 pandemic was a mass traumatic event (and individual COVID-19 events were related to the mass event) whereas most events assessed in Studies 2a and 2b were individual events. Thus, this discrepancy across my studies could be attributed to differences in the timing and type of events assessed in these studies. Of course, in Studies 2a and 2b, some relationships between sharing and PTS symptomology were stronger, while other relationships were weaker for recent events, meaning the time since traumatic events occurred did not consistently influence these relationships. However, it is possible that the timing of a mass traumatic event does affect the relationship between sharing and psychological functioning. In fact, sharing mass traumatic events verbally and physically can initially negatively affect people's mental health (e.g., reactivate negative emotions; increase negative affect) but over time, can foster social closeness, increase positive affect, and promote posttraumatic growth (e.g., Pennebaker & Harber, 1993; Muldoon et al., 2019; Rimé et al., 2010). Hence, this discrepancy could reflect differences in how sharing individual vs. mass traumatic events influences mental health over time—assuming these correlations point to the possibility that sharing influences psychological functioning (vs. psychological functioning influences sharing). That is, whilst sharing individual traumatic events may positively affect people's psychological functioning overall, sharing mass traumatic events may

initially negatively affect psychological functioning but improve social and psychological functioning as time passes. Perhaps these different outcomes emerge because individual traumatic events are experienced by fewer people, meaning shared experiences manifest as social support from others. Alternatively, mass traumatic events by definition affect large groups of people, meaning sharing such events could initially exacerbate psychological functioning by increasing rumination, catastrophising, and helplessness but over time foster a sense of unity, social support, and recovery. Notably, the positive effects of sharing may not persist indefinitely. For instance, societal and cultural norms may discourage prolonged sharing of trauma (e.g., discussing the event years after it occurred). Consequently, prolonged sharing may lead to burdensome or counterproductive patterns like co-rumination or negative reactions from others (e.g., invalidation), which could have negative psychological effects. Future research is needed to understand temporal dimensions of sharing traumatic events by examining and comparing the effects of shared experiences longitudinally for both individual and mass traumatic events.

Another discrepancy between these studies was that subjective sharing was unrelated to PTS symptomology in Studies 2a and 2b, yet related to more severe psychological impairment in Study 3. Perhaps, as with the above discrepancy, event type (i.e., mass vs. individual) and social identification are important. It is possible social identities are formed or maintained to a greater extent for *mass* traumatic events due to subjectively sharing the same fate and ongoing threats to the community (e.g., displacement) which in turn, influences psychological functioning (e.g., via fear for "us" as a collective; Drury, 2012; 2018; Ntontis et al., 2018; Thomas et al., 2012; Williams & Drury, 2009). Alternatively, subjectively sharing an *individual* traumatic event may not influence social identification as much because the threat is personal or short-lived, meaning subjective sharing has little influence on victims' psychological functioning.

And, these data are correlational, meaning I cannot draw causal conclusions from these findings and it is possible psychological functioning influenced subjective sharing along with other shared experiences.

   Despite these discrepancies, some of my Study 3 findings were consistent with Studies 2a and 2b. Specifically, relational sharing was not associated with psychological functioning. Current research examining the effects of peer support groups and group therapy highlights that connecting with people with similar traumatic experiences can improve mental health such as by reducing PTS symptomology, anxiety, avoidance behaviour, shame, and isolation (e.g., Bartone et al., 2019; Beck & Coffey, 2005; Konya et al., 2020; Levi et al., 2017; van de Ven et al., 2021). Similarly, the few studies that have examined such sharing outside of group settings demonstrate that relational sharing is associated with reduced emotional distress, improved wellbeing, and a sense of normality and connection (Regev & Slonim-Nevo, 2019; Salas et al., 2018). Thus, my work is inconsistent with current research on relational sharing effects. Yet, it is important to note that one of the above studies collected qualitative data from a small sample ($N = 9$; Salas et al., 2018) whilst the other study presumed participants experienced the same traumatic event as their family, friends, and/or community (Regev & Slonim-Nevo, 2019). Therefore, my findings may provide a more reliable or broad depiction of the relationship between relationally sharing a traumatic event and psychological functioning. Furthermore, consistent with Studies 1a and 1b, I found that psychological distance appears important in understanding shared traumatic experiences in Study 3. In particular, although sharing COVID-19 overall was related to poorer psychological functioning, perceiving the pandemic as shared with household members was related to *better* psychological functioning (i.e., better psychosocial functioning and less severe depressive and anxiety symptoms). Perhaps, perceiving mass events like the pandemic as shared with

household members encourages people to spend time with household members and engage in more interactions unrelated to the traumatic event (e.g., cooking) than others, which in turn reduces loneliness, anxiety, and rumination and improves their psychosocial functioning (e.g., Cornell et al., 2022). Again, of course, I examined correlations in this study. Therefore, it is also possible that functioning better during the pandemic increased people's perceptions about sharing the pandemic with people they lived with (e.g., by encouraging positive social interactions within households) and reduced discussions about COVID-19 with people in general (e.g., due to less reassurance seeking).

Altogether, this research demonstrates that sharing traumatic experiences subjectively, physically, verbally, and emotionally is related to psychological functioning. However, factors such as the event type, assessment timing, and social and spatial relationships can influence the strength and direction of these relationships. These data provide unique insight into how sharing traumatic events, overall, in numerous ways may be related to people's mental health following such events.

Effects of physical sharing on psychological functioning

Once I identified that sharing was related to psychological functioning, I aimed to further explore the relationship between *physical* sharing and psychological functioning in two experimental studies (Studies 4a & 4b; Chapter 6). In particular, I was interested in investigating how physically sharing a traumatic event online (termed virtual sharing) influences psychological functioning. As we know from my earlier studies, most traumatic events are shared in multiple ways, meaning the effects are often cumulative. However, the unique effects of physical sharing in trauma contexts are currently unknown and important to investigate given this form of sharing is common. Further, the rise in *virtually* shared traumatic experiences emphasises the need to understand how virtually sharing traumatic content—by knowing other people are watching the same content online—

influences people's mental health (e.g., Chao et al., 2020; Chiaraluce et al., 2024). In fact, no studies have explored how virtually sharing *traumatic* content influences psychological functioning. The limited work that has examined the effects of virtually sharing *negative* content (e.g., negative social interactions, scary advertisements) is limited in ecological validity—by using imagined scenarios (e.g., Du et al., 2014; He et al., 2012)—and internal validity—by leading participants to believe they were sharing the same content without testing the effectiveness of the manipulation (e.g., Shteynberg et al., 2014).

Thus, I developed a new paradigm to assess virtual sharing without using deception methods. Across two experiments, I found that virtually sharing traumatic content—i.e., a clip from a film depicting a gang rape—does not influence people's affect, stress, state anxiety, memory characteristics (e.g., vividness of memories), intrusion symptoms (frequency, characteristics) or cognitive appraisals (e.g., liking the film, maladaptive responses to intrusions) differently to viewing the content alone. However, virtual sharing led to somewhat less severe PTS symptomology compared to viewing the content alone, suggesting that virtual sharing might buffer traumatic stress symptoms that arise from online trauma exposure. Importantly, we know that people can develop PTS symptoms long after trauma exposure (e.g., APA, 2022; Utzon-Frank et al., 2014) and I assessed participants' PTS symptomology only three days after they viewed the trauma film. Therefore, it is possible that I would have found stronger evidence for a difference between the shared and alone conditions if I assessed PTS symptomology after a longer delay (e.g., one week) following trauma exposure. Indeed, in Study 2b, the relationship between physically sharing and PTS symptomology was stronger for distant (vs. recent) events, suggesting that physically sharing a traumatic event may have stronger long-term (vs. short-term) buffering effects against PTS symptomology. Future research could test this theory by assessing PTS symptomology for virtually shared (vs. not shared) traumatic

experiences at several time points (e.g., immediately, days, weeks and months after exposure).

My PTS symptomology findings were partially consistent with existing research examining the effects of physical sharing. On the one hand, my data support research in real-world contexts demonstrating that experiencing a negative event (e.g., health emergency, negative images) simultaneously with others is linked to less PTS, depressive, and anxiety symptoms (e.g., Armenian et al., 2002; Guo et al., 2020; Leske et al., 2017; Terzi & Aggelidou, 2008). On the other hand, my findings do not support experimental studies showing that physically sharing negative tasks virtually and in-person amplifies negative experiences (e.g., sadness; e.g., He et al., 2012; Nahleen et al., 2019; Martin et al., 2015; Shteynberg et al., 2014). However, no experimental research has examined the direct effects of physically sharing traumatic experiences on PTS symptomology. Thus, discrepancies between my findings and existing research may reflect differences in the type of negative experience used and psychological functioning variables assessed. Despite these discrepancies, my experimental findings align with Study 2b's (Chapter 4) correlational results suggesting that physically sharing trauma is related to lower PTS symptomology. In fact, my Study 4b results expand upon Study 2b by demonstrating that physically sharing *online content* reduces PTS symptomology.

Moreover, subjective sharing and social identification ratings were low and negatively skewed in my experiments, indicating that subjective sharing and social identification likely did not explain the relationship between virtual sharing and PTS symptomology. These findings were mostly inconsistent with my earlier findings and existing research, perhaps because the type of event and context in which people physically shared trauma differed in these studies. That is, subjectively sharing COVID-19—a global event that was physically shared both in-person and virtually—was related to

poorer psychological functioning overall and better psychological functioning for household members in Study 3 (Chapter 5; Goelitz, 2022; Ytre-Arne & Moe, 2021). Further, Drury and colleagues' Social Identity Model of Collective Behaviour in Emergencies and Disasters (SIMCBED; Drury, 2012; 2018) posits that physically sharing a mass traumatic event—likely both in-person and through virtual mediums—elicits subjective sharing and social identification amongst victims, which in turn lead to positive social and psychological outcomes. Alternatively, in Studies 4a and 4b, physically sharing an individual trauma analogue through virtual means only did not appear to influence psychological functioning via subjective sharing and social identification. Thus, the type of event and how people physically share traumatic events may influence *why* and/or *the degree to which* subjective sharing and social identification influence psychological functioning. In other words, physically sharing *mass* traumatic events *in-person and virtually* may promote stronger perceptions of sharing the event and social identification amongst victims, which in turn, strongly influence victims' psychological functioning. Meanwhile, physically sharing *smaller-scale* traumatic events *virtually* may have little effect on people's perceptions of sharing the event and subsequent social identification with other people, and consequently have less impact on people's psychological functioning. It is also possible that the traumatic experience employed in Studies 4a and 4b did not reflect real world traumatic experiences. In particular, using a film clip (vs. footage of a real and current trauma) and exposing participants to the content through a survey (vs. natural settings like social or news media) may have hindered participants' ability to foster a strong and enduring sense of identity or sharing with others that apply to real world contexts. Future research should determine how trauma event types and physical sharing contexts influence the relationship between subjective sharing and psychological

functioning. Future research should also explore new methods of examining virtual sharing that may be more ecologically valid.

Overall, these results demonstrate that virtually sharing traumatic content reduces traumatic stress symptoms, but does not influence other psychological reactions related to viewing such content. Therefore, being exposed to traumatic content online simultaneously with other people can mitigate the risks of developing PTS symptoms from online trauma exposure compared to being exposed to the content alone.

Theoretical Implications

My thesis has valuable theoretical implications for how we conceptualise and understand shared traumatic experiences. Existing research examining shared traumatic experiences is limited by the specific contexts (e.g., common fate in mass trauma; e.g., Drury, 2018), people (e.g., collective emotions; von Scheve & Salmella, 2014), and processes (e.g., emotional contagion; e.g., Hatfield et al., 1994) used to conceptualise shared experiences. I addressed this limitation in Studies 1a and 1b by establishing that people share traumatic experiences subjectively, physically, verbally, emotionally, attitudinally, and relationally.

Developing these broader sharing concepts using rigorous methodology has numerous benefits for understanding shared traumatic experiences. First, these concepts enable researchers to distinguish the different ways people can share a traumatic event based on factors like the reality of the shared experience (perception vs. observation/behaviour) and the reaction or event that is shared (beliefs vs. emotions vs. overall experience of trauma). That is, these concepts clarify what exactly researchers are referring to when they say they are investigating "shared trauma". Are researchers referring to having the same traumatic experience? If so, do they mean internal experiences like emotions and attitudes or external experiences like direct exposure to the

same or similar event itself? Or are researchers referring to communicating information about a traumatic experience with others? The sharing forms identified in my research help answer these questions. These broad sharing categorisations also encompass specific sharing concepts that exist within the literature. For instance, emotional sharing encompasses perceived emotional synchronisation (Páez et al., 2015) and collective emotion (von Scheve & Salmella, 2014), and physical sharing encompasses mass traumatic events (e.g., Hoffman & Kruczek, 2011; Shalev et al., 2004) and co-experienced traumatic events (e.g., Miao et al., 2021).

Second, these terms are a valuable resource for determining the significance—particularly the relevance and scope—of research in this field. Whilst specific concepts of sharing indicate *how* people can share traumatic events, broader concepts can provide more general information about *when, with whom,* and *how often* people share traumatic events in these ways. Understanding these characteristics in a broader context (e.g., emotional sharing) could inform all research under this umbrella (e.g., emotional empathy). In particular, the frequency of these shared experiences could highlight the commonness of such social experiences occurring in the past, the likelihood of these experiences emerging in the future, and the number of people who may be affected by the outcomes of such sharing. Similarly, knowing when and with whom people share events broadly can highlight contexts and populations that are relevant to more specific shared experiences, such as relational sharing often emerging for sexual coercion.

Finally, categorising these different sharing forms highlights gaps in our current knowledge of shared traumatic experiences. For instance, despite emotional sharing being extensively investigated in the scientific literature (see von Scheve & Ismer, 2013; von Scheve & Salmella, 2014), attitudinal sharing is less understood. Some research has touched on the possibility that people share the same attitudes as others (e.g., Echterhoff et

al., 2017; Higgins & Pittman, 2008; Rimé, 2009; Rimé et al., 2020; Thomas et al., 2009), but we know little about this experience in trauma contexts and how it influences psychological functioning. Similarly, while we know relational sharing emerges from trauma exposure—based on peer support and group therapy research (e.g., Glodich & Allen, 1998; van de Ven et al., 2021)—the nature and effects of simply believing or knowing others have had similar experiences, particularly outside of therapeutic contexts, is unclear. In fact, my Study 1a, Study 1b, and Study 3 results indicate that people commonly attitudinally and relationally share traumatic events and that attitudinal sharing is related to a reduced risk of developing PTS symptoms from the event. Overall, my work provides a conceptual framework for investigating shared traumatic experiences, enabling researchers to identify and contextualise more specific sharing concepts, highlighting links between different lines of research, and identifying new avenues for future research.

My thesis also has theoretical implications for perceiving a traumatic event as shared. To date, the only research examining perceptions about sharing a traumatic event exists within mass trauma literature, demonstrating that exposure to a mass traumatic event elicits a sense of common fate (or danger, threat, adversity) amongst victims (e.g., Drury, 2012; 2018; Drury et al., 2009b; Drury et al., 2016; Ntontis et al., 2018). We know from this research that subjective sharing (or common fate) is indirectly linked to many sharing forms, such as verbal sharing (social support) and attitudinal sharing (collective action/shared goals; Drury, 2018; Drury et al., 2019; Ntontis et al., 2018; Williams & Drury, 2009). My Study 1a findings support and extend this work by demonstrating that subjective sharing can arise from several shared experiences, including physical, verbal, emotional, attitudinal, and relational sharing. Moreover, my work highlights that subjective sharing is extremely common and emerges for mass traumatic events—like natural disasters, military deployment, and the COVID-19 pandemic—*and* individual

traumatic events—like interpersonal traumas, accidents, and the death of a loved one. Thus, as highlighted in Chapter 1, subjective sharing (or common fate)—an experience that has been largely overlooked in the scientific literature to date—appears to be a critical component of shared traumatic experiences by transforming an event experienced by numerous people into an event that is *shared*.

My research further contributes to our understanding of the effects of *subjective* sharing. Broadly, Drury and colleagues suggest that a sense of common fate (subjective sharing) can have indirect (via social identification) positive outcomes for mass trauma victims' wellbeing by eliciting shared goals, social support, collective action, and ultimately collective resilience (Drury, 2012; 2018; Drury et al., 2019; Ntontis et al., 2018; Williams & Drury, 2009). Consistent with this research, the public seem to assume that sharing negative events is beneficial. For instance, we often hear people say "at least we experienced it together" or "I'm glad I'm not alone in this", alluding to the idea that sharing is protective or at least makes people *feel* like they can cope better. Indeed, "a problem shared is a problem halved" and "misery loves company". But is this really the case? Some of my research supports this notion by demonstrating that sharing trauma verbally, physically and emotionally is linked to lower psychological impairment (e.g., PTS symptomology; Study 2b, Study 4b). However, my empirical findings concerning *subjective* sharing were largely inconsistent with the notion that sharing trauma is beneficial. In Studies 2a, 2b, 4a, and 4b, subjective sharing was not related to PTS symptomology and in Study 3 subjective sharing was related to poorer psychological functioning overall. Thus, I make an important contribution to the literature by demonstrating that whilst sharing trauma in some ways could be beneficial, simply *perceiving* the event as shared does not seem related to psychological functioning, and, if anything, may be more related to negative psychological outcomes.

Unlike existing research that has mostly retrospectively examined mass traumatic events (e.g., floods; e.g., Drury et al., 2009a; 2015; Ntontis et al., 2018), I examined individual traumatic events and current mass traumatic events in my thesis. Therefore, my findings further highlight that context matters when exploring relationships between subjective sharing and psychological functioning. In fact, my work demonstrates that how we share traumatic events *and* the links between sharing trauma and psychological functioning vary based on event type (e.g., subjective and physical sharing higher for mass rather than individual traumatic events). Thus, we cannot simply assume that theories and data concerning sharing for some traumatic experiences (e.g., natural disasters) are generalisable to all trauma contexts (e.g., physical assault) or concerning some sharing forms (e.g., physical sharing) are generalisable to all shared experiences (e.g., subjective sharing). Future research should consider generalisability when conceptualising and examining specific shared traumatic events, and explore numerous kinds of events and sharing forms to overcome such limitations.

Last, my research has important theoretical implications for how researchers and clinicians conceptualise PTSD. Most leading PTSD models are individual-centred—predominantly focussing on a single person's experiences of a traumatic event with minimal attention given to social factors. For instance, many models posit that cognitions, memories, and emotional responses are core components in the development and maintenance of PTSD (e.g., Ehlers & Clark, 2000; Foa et al., 1993; Horowitz, 1986). Whilst these theories acknowledge that cognitions (e.g., "I cannot rely on other people"), emotions (e.g., shame, guilt), and behaviours (e.g., social withdrawal) can be linked to social relationships and interactions, social factors are not considered core components of PTSD. Over the last decade, some social models of PTSD have emerged in the scientific literature. Sharp and colleagues (2012) suggest that trauma exposure activates attachment-

related schemas (based on early caregiving experiences), which influences social-cognitive processing (e.g., trust, mentalising, access to social support), and in turn, PTS symptomology. Woodhouse and colleagues (2018) built upon this model, positing that exposure to an interpersonal (vs. non-interpersonal) trauma reduces the likelihood of emotional disclosure of the event, making people feel less understood by others about their traumatic experience (i.e., low social acknowledgement). Similarly, adults with a fearful attachment style are more likely to have weak group identifications (e.g., family identification), which can contribute to low levels of social acknowledgement. Critically, low social acknowledgment can lead to posttraumatic cognitions (e.g., that people can't be trusted), which in turn predict core trauma symptoms (e.g., intrusions, avoidance). These social models are less established and tested in the scientific literature compared to leading PTSD models. Nevertheless, such models are based on a large body of theoretical and empirical research and emphasise that social experiences are valuable in understanding the development and maintenance of PTSD.

Notably, many components identified in these social models align with broad sharing concepts like emotional sharing (e.g., empathy, social support), physical sharing (e.g., interpersonal trauma), and verbal sharing (e.g., emotional disclosure). My work demonstrates that traumatic events are often shared in many unique ways, and these experiences influence PTS symptomology. Future research should therefore consider how shared experiences could expand existing social models of PTSD. Indeed, some social models (e.g., Woodhouse et al., 2018) identify verbal sharing (emotional disclosure) as protective against PTS symptomology, but my work demonstrates that, in some contexts (e.g., COVID-19), verbal sharing can exacerbate PTS symptomology. Further, emotional and attitudinal sharing may influence social acknowledgement. That is, perceiving or actually experiencing the same emotions and attitudes as others about a traumatic event

could cause victims to believe that others acknowledge and understand their traumatic experiences. Emotional and attitudinal sharing may also affect beliefs about the trauma itself. For instance, a victim believing or knowing a family member felt the same fear about a traumatic event that they were both exposed to (e.g., car accident) could strengthen the victim's beliefs that the event was catastrophic and subsequent assumptions that the world is dangerous. More research is needed to determine how shared experiences are both incorporated in, and distinct from, other social predictors of PTSD.

Methodological Implications

My thesis has methodological implications for how we assess shared traumatic experiences. Aside from research on mass traumatic events, most studies have examined the nature and effects of specific sharing concepts individually, usually in certain traumatic contexts. For instance, research on shared attention (e.g., Shteynberg et al., 2014), social sharing (e.g., Rimé et al., 2010), and peer support (e.g., Konya et al., 2020) predominantly focus on how and when these experiences emerge, with little consideration and measurement of how the experiences interact with other shared experiences (e.g., emotional sharing). Although this approach allows us to delve into the characteristics, frequency, and effects of a certain shared experience, my research demonstrates that different shared experiences often arise for a single traumatic event and some of these experiences even overlap (e.g., talking to someone who is witnessing the same traumatic event). Thus, the inter-relationship between shared experiences warrants investigations that consider multiple sharing forms. In fact, research that has manipulated one sharing experience could be inadvertently manipulating another sharing experience. For example, Nahleen and colleagues (2019) and Martin and colleagues (2015) used a similar experimental manipulation whereby participants completed the Cold Pressor Task simultaneously with another person or alone (or whilst another participant completed a

different task). Participants in the shared condition reported greater pain than the alone (or unshared) condition. However, whilst Nahleen et al. considered these effects to represent the physical presence of others (i.e., physical sharing), Martin et al. suggested their findings reflected emotional contagion (i.e., emotional sharing). Participants may have also perceived the task as shared (i.e., subjective sharing) or believed they shared the same attitudes about the task as each other (i.e., attitudinal sharing). Disentangling these shared experiences can be difficult, especially when some experiences cannot be controlled (e.g., emotional sharing). But it is important that researchers consider these relationships when interpreting their results.

Another key methodological implication of my research is the development of a novel experimental design used to manipulate physical sharing in online contexts. The few studies that examined the effects of physically sharing online negative content have used flawed designs that limit the ecological validity (e.g., imagined scenarios; Du et al., 2014; He et al., 2012) and internal validity (e.g., deception methods without manipulation checks; Drewery et al., 2022; Shteynberg et al., 2014) of results. To overcome these limitations, in Study 4a participants watched the same content as other participants online, using a watch party website. This design not only overcame limitations concerning the internal validity of the manipulation—i.e., participants actually watched the film simultaneously, but also the external validity of the study—i.e., participants watched the film as they would usually, through a popular watch party website. My study makes an important contribution to the literature by providing a new method for investigating the effects of physically sharing traumatic experiences online.

Clinical and Practical Implications

Last, my research highlights the importance of understanding people's social experiences of trauma in clinical settings to inform the conceptualisation and treatment of

PTSD. As mentioned above, current PTSD models consider a limited number of social factors. Therefore, clinicians may not gather data about a client's social experiences when conceptualising their trauma (i.e., when identifying factors that explain how a person's trauma response develops, is experienced, and persists). Consequently, clinicians may miss key information when trying to understand what may have precipitated or perpetuated a client's PTS symptoms. Obtaining this information could deepen a clinician's knowledge of their client's traumatic experiences and help clinicians identify whether and how these shared experiences may have influenced their client's psychological functioning. This information could even highlight areas for intervention, including identifying the benefits and risks of verbally sharing traumatic events (e.g., social support co-rumination; Cuff et al., 2016; Rose, 2002), exploring triggers relating to people who were physically present during the event, and using cognitive or emotional work to challenge the client's *and* the client's close others' thoughts and feelings about the event. Evidently, further exploration is needed to identify the social factors that influence PTSD, and whether sharing may be an important factor to include in theoretical models of PTSD.

Moreover, my findings highlight how sharing may affect people who did not directly experience a traumatic event. Emotional empathy can increase people's risk of developing secondary traumatisation symptoms (e.g., MacRitchie & Leibowitz, 2010; Ogińska-Bulik et al., 2022; Regehr et al., 2002; Thomas & Wilson, 2004). Emotional empathy aligns with emotional sharing given it involves people's ability to exhibit *similar feelings* to others (Cuff et al., 2016; Davis, 1980). Importantly, my findings from Studies 1a and 1b suggest that people experience similar emotions to others about traumatic events often, about various traumatic events, and usually with socially close others. The prevalence of secondary traumatisation is currently unclear but is likely common given the

high prevalence of emotional and verbal sharing and the link between emotional sharing and secondary traumatisation. Further, much of the research investigating secondary traumatisation has focussed on mass traumatic events like war (e.g., Ahmadi et al., 2011) and natural disasters (e.g., Byrne et al., 2006), but my work may suggest that secondary traumatisation could arise from a range of traumatic events. In addition, my findings indicate that many people may be at risk of developing secondary traumatisation from indirect exposure to a close others' traumatic experience. As such, considering how and with whom clients shared a traumatic event could advise whether a client's support network (e.g., friends, family) may benefit from psychological support too.

Finally, my Study 4a and 4b findings have practical implications related to virtually shared traumatic experiences. Specifically, I demonstrate that virtually sharing traumatic content through commonly used features such as live-streaming and watch parties may not be more harmful than viewing the content alone. These features may even alleviate people's PTS symptoms by allowing people to watch traumatic content with others, rather than alone. Considering these benefits, social media sites (e.g., facebook) and streaming services (e.g., Netflix) could recommend that viewers access shared features (e.g., watch parties) to view traumatic content simultaneously with others who are already watching the content (vs. viewing alone). Future research should consider how these recommendations may influence people's PTS symptomology, and thus, whether such a method could be useful in reducing the impact of viewing traumatic content.

Limitations and Future Directions

My thesis has several limitations that could be addressed in future research. First, the samples used in my thesis may have limited the generalisability of findings. I explored sharing across a wide range of potentially traumatic events, meaning event types were unevenly distributed in my study samples. Consequently, the reliability of the sharing

frequency for certain event types—e.g., emotional sharing for military deployment—was low. Further, whilst common events (e.g., sudden death of a close other) may have been overrepresented in the main data and consequently inflated or reduced overall sharing frequencies, less common events may have been underrepresented in the data and therefore unaccounted for in frequency results. Despite this issue, the frequency of event types reported in my data were relatively consistent with other work (e.g., Bromet et al., 2018), suggesting that sharing frequencies were likely representative of the general population. Systematically comparing shared experiences across event types was beyond the scope of my thesis but this topic could be an interesting avenue for future research. Additionally, in my final empirical chapter, I was unable to detect whether small effects of physically sharing an analogue trauma existed—due to the sample size. Thus, future research should consider using larger samples to determine whether smaller effects of physically sharing traumatic content online exist.

Second, I relied on subjective reports to assess sharing and psychological functioning. In Study 1a, participants' subjective sharing explanations were based on judgments about an event that occurred, on average, 12 years ago. Participants were not asked to identify all the ways they shared the event but simply why the event felt shared to them. Therefore, this data likely represented the most salient ways participants shared the event, meaning other less salient shared experiences were potentially not reported and subsequently not identified. This design aimed to overcame limitations of existing research, which is highly theoretical and based on a top-down approach. The large sample size used also helped capture a variety of responses. Nevertheless, these subjective reports undoubtedly influenced the sharing forms developed in Study 1a.

Furthermore, in Studies 1b and 3, participants were asked to report how, when, and with whom they shared their worst traumatic event. This data was based on subjective and

retrospective reports of their shared experiences, meaning the information provided could have been inaccurate. For instance, identifying that a potentially traumatic event was physically shared requires participants to observe, encode, store, and recall that others were present (Atkinson & Shiffrin, 1968) and these processes could have been hindered and in turn affected responses. Indeed, we know that autobiographical memories are susceptible to change over time (Loftus, 2005; Southwick et al., 1997) and that verbally and physically sharing negative events can distort people's memories of those events (e.g., Nahleen et al., 2019; Paterson & Kemp, 2006). Furthermore, retrospectively reporting details of past experiences often requires people to rely on partial recollections and various inference strategies, which may impact the accuracy of the information they provide (Schwarz, 2007). Thus, participants may have over- or under-reported sharing details in my studies. Assessing participants' sharing experiences objectively would not have been feasible, given it would require methods such as direct observation of participants' behaviours during and following their worst event. Nevertheless, assessing participants' experiences shortly after an event occurred may have improved the accuracy of these memories (e.g., through reduced vulnerability to memory distortion; Loftus, 2005). Future research could consider assessing various sharing concepts using longitudinal designs to overcome this limitation.

Moreover, in all studies, participants self-reported their current psychological functioning. Psychological functioning is typically assessed using self-report measures in clinical and research settings. However, unlike my research, these assessments (particularly in clinical settings) tend to be comprehensive, on-going, and allow for clinical judgment of symptoms (e.g., structured clinical interviews; Prusoff et al., 1972). Therefore, the accuracy and reliability of participants' judgments about their current psychological functioning—e.g., the severity of their trauma symptoms—as well as

participants' ability to follow instructions within these measures—e.g., symptoms only relating to their worst event—may have influenced my findings. Further, participants may have been less affected by the event as more time passed, meaning participants' symptoms could have been less frequent, less distressing, and more difficult to recall compared to directly after the event (e.g., Osofsky et al., 2015; Porter & Peace, 2007; Saito et al., 2022). Assessing the relationship between sharing and psychological functioning closer to when the event occurred and using more comprehensive and longitudinal assessments that allow for clinical judgment could improve the accuracy of this data.

Third, some of my studies relied solely on correlations to understand the link between sharing and psychological functioning. Thus, I cannot attribute causal effects from these relationships. Despite this limitation, using correlational designs in Studies 2a, 2b, and 3 enabled me to examine the links between sharing and psychological functioning in naturalistic settings. Further, my correlational findings highlighted that physical sharing was linked to both psychological functioning (Study 3) and other sharing variables, including subjective sharing (Studies 1a and 1b). These correlational findings guided me to experimentally investigate the psychological effects of physical virtual sharing in Studies 4a and 4b. Evidently, only investigating physical sharing in my final thesis chapter means we do not know whether certain shared experiences (e.g., attitudinal sharing) influence psychological functioning. It is also important to note that correlations found in my research were small, which may limit the significance and impact of these findings. Nevertheless, most traumatic events are shared in several ways and could therefore be more related to psychological functioning when these shared experiences are taken together (Funder & Ozer, 2019). I demonstrate that relationships between sharing a potentially traumatic event and psychological functioning exist, which highlights avenues for future research on shared traumatic experiences.

Fourth, my operationalisation of traumatic events may limit the generalisability of my findings. As mentioned in Chapter 1, the definition of a *traumatic event* ranges from broad experiences like events that can negatively impact people's lives (e.g., Carlson et al., 2013) to specific experiences like events that involve "exposure to actual or threatened death, serious injury, or sexual violence" (APA, 2013). For clarity and consistency, I considered these different definitions using the terms *traumatic* and *stressful events* where appropriate in my thesis. Specifically, in Studies 1a, 1b, 2a, and 2b, I examined traumatic events—based on DSM-IV or DSM-5 Criterion A for PTSD (e.g., sexual coercion; APA 2000; 2013)—and stressful events—representing all other events that could elicit posttraumatic stress reactions (e.g., health-related problems; Carlson et al., 2011). Further, in Study 3, I considered the COVID-19 pandemic as a traumatic event because it involved direct (personally contracting the virus) and indirect (witnessed, learned about) exposure to actual or threatened death and elicited symptoms consistent with post-traumatic stress (e.g., APA, 2022; Bridgland et al., 2021; Jetten et al., 2020; Shevlin et al., 2020). Last, I considered an analogue trauma of a film depicting a gang rape scene as a traumatic event, given the film depicted sexual violence and is widely employed in trauma research to elicit PTS symptomology (from the Trauma Film Paradigm; James et al., 2016). Whilst consistent throughout my thesis, my operationalisations of traumatic and stressful events may be inconsistent with other researchers' operationalisations of such events. Thus, my sharing findings may not generalise to all traumatic events and may encompass events that are not considered traumatic in some contexts (e.g., data does not represent sharing for DSM-5 traumatic events only).

Fifth, the populations I collected from within my empirical chapters also limit the generalisability of my findings. I collected data from WEIRD populations (Western, Educated, Industrialised, Rich and Democratic; Henrich, 2010) throughout my thesis

because conceptualisations and examinations of the nature and effects of shared traumatic experiences have predominantly been developed and conducted within these populations (e.g., Durkheim, 1912; Drury, 2018; Nahleen et al., 2019; Paterson & Kemp, 2006; Shteynberg, 2018; Rimé et al., 1991). Further, collectivist cultures (e.g., Asian and African cultures) likely respond differently to traumatic events, and may have had different shared experiences or a different intensity or frequency of shared experiences compared to WEIRD societies. Thus, it was beyond the scope of my thesis to examine sharing for collectivist cultures. Moreover, data from WEIRD populations was easily accessible (via CloudResearch, Prolific, undergraduate students) and did not require material to be translated—which would have required additional resources. Furthermore, participants in my studies were recruited from crowdsourcing platforms (e.g., CloudResearch, Prolific) and a university pool (SONA). These participant populations are commonly assessed in the scientific literature and we know data from such populations can be reliable when appropriate methods are used (e.g., pre-screening; Casler et al., 2013; Moeck et al., 2022; Peer et al., 2017). Yet, these populations represent only a subset of people within the general population. Hence, it is critical to acknowledge that whilst my findings likely generalise to the existing literature on sharing, the data may not accurately represent sharing in the general population.

Sixth, my research was limited by differences and inconsistencies in the measures used across my empirical chapters. Some measures included in my research did not consider all aspects of sharing concepts. For instance, I conceptualised relational sharing as believing or knowing other people have been exposed to a similar potentially traumatic event. However, in Study 3, I did not include the belief aspect when measuring relational sharing because I expected this addition to create a ceiling effect whereby participants believed people of all social/spatial distances have or could experience a similar COVID-

19 related event to their worst event. Yet, only assessing one aspect of relational sharing may have impacted the study findings (e.g., frequency of relational sharing). Future research could consider assessing these different aspects separately to overcome this limitation.

Broader inconsistencies also emerged regarding the sharing forms investigated in each study. I did not assess physical, emotional, or attitudinal sharing in Study 3. The COVID-19 pandemic was physically shared by everyone around the world, such that measuring physical sharing would have been meaningless. Further, I did not assess emotional and attitudinal sharing because I designed and collected data for Study 3 prior to establishing the importance of these shared experiences. Moreover, I did not directly assess verbal, emotional, attitudinal, or relational sharing when manipulating physical sharing in Studies 4a and 4b. These data would have been useful to determine whether sharing the viewing of a trauma film was associated with participants' psychological functioning. However these different approaches are justified based on the appropriateness of the measures, the timing of data collection, and the primary aims of each study.

Last, I examined social closeness using relatively objective measures throughout my empirical work. I considered close others to be family members and friends, casual others to be people known through regular commitments (e.g., work), distant others to be people known but not contacted often or anymore (e.g., old school friends), and strangers to be unknown people. Although this categorisation is commonly used (e.g., Katz & Nguyen, 2016; Paterson & Kemp, 2006; Rimé et al., 1998; Trope & Liberman, 2010), it may not accurately represent social distance and identification. For instance, some participants may not have felt close to family members but felt very close to their colleagues. Thus, when these participants reported sharing the event with casual others but not close others, it appeared as though they did not share the event with people they were

close with when, in fact, they did. Assessing these pre-determined social distance categories along with social identification (i.e., subjective rating of social closeness to these groups) could have overcome this limitation and should be considered in future research.

Conclusion

Existing research on the nature and effects of sharing traumatic events does not capture a holistic understanding of shared traumatic experiences. My findings demonstrate that traumatic events are inherently shared. People commonly share traumatic events in many ways, including subjectively, physically, relationally, verbally, emotionally, and attitudinally. These shared experiences emerge from exposure to a range of traumatic events and are highly inter-related. My research expands upon existing research by revealing a novel holistic framework for investigating shared traumatic experiences, connecting existing fields of sharing research and identifying new questions and avenues to explore. Future research could consider examining these broad sharing experiences using longitudinal designs to comprehensively examine how different shared traumatic experiences intertwine with one another and influence psychological functioning. Furthermore, consistent with previous research, my empirical studies demonstrate that shared experiences implicated in traumatic events are related to and affect people's reactions to and recovery from such events. Although more specific interactions (e.g., social support) are often considered in clinical settings, broader sharing factors appear to be neglected in clinical work. Clinicians and researchers should consider these factors in the future to gain greater insight into people's experiences of trauma.

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Appendices

Appendix A: Trauma History Screen (Carlson et al., 2011; Studies 1a, 1b, 2a & 2b)

The events below may or may not have happened to you. Circle "YES" if that kind of thing has happened to you or circle "NO" if that kind of thing has not happened to you. If you select any events, put a number in the blank box below it indicating the number of times something like that happened.

A. A really bad car, boat, train, or airplane accident	NO	YES	___ times
B. A really bad accident at work or home	NO	YES	___ times
C. A hurricane, flood, earthquake, tornado, or fire	NO	YES	___ times
D. Hit or kicked hard enough to injure - as a child	NO	YES	___ times
E. Hit or kicked hard enough to injure - as an adult	NO	YES	___ times
F. Forced or made to have sexual contact - as a child	NO	YES	___ times
G. Forced or made to have sexual contact - as an adult	NO	YES	___ times
H. Attack with a gun, knife, or weapon	NO	YES	___ times
I. During military service - seeing something horrible or being badly scared	NO	YES	___ times
J. Sudden death of close family or friend	NO	YES	___ times
K. Seeing someone die suddenly or get badly hurt or killed	NO	YES	___ times
L. Some other sudden event that made you feel very scared, helpless, or horrified.	NO	YES	___ times
M. Sudden move or loss of home and possessions.	NO	YES	___ times
N. Suddenly abandoned by spouse, partner, parent, or family.	NO	YES	___ times

If you selected any of the events above, did any of these things really bother you emotionally?

Yes

No

I did not experience any of the events above

Regardless of what you selected on the previous page, briefly describe (in one or two sentences) the event that bothered you the most (i.e., your most stressful or traumatic experience) in the box below. We are going to ask you a number of questions about this event.

Regardless of what you selected on the previous page, briefly describe (in one or two sentences) the most stressful experience of your life in the box below. We are going to ask you a number of questions about this event.

```

```

Please select the category below that best describes the event that bothered you the most.

(Events A-N and "Other event" presented)

How old were you when this event happened?

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When this happened did anyone get hurt or killed?

Yes

No

When this happened, were you afraid that you or someone else might get hurt or killed?

Yes

No

When this happened, did you feel very afraid, hopeless, or horrified?

Yes

No

After this happened, how long were you bothered by it?

Not at all

One week

2-3 weeks

A month or more

How much did it bother you emotionally?

Not at all

A little

Somewhat

Much

Very much

Appendix B: Exposure to COVID-19 Experiences Measure (Study 3)

How have you been affected by the COVID-19 pandemic? Please tick all that apply (*note that participants did not see the category headings and only numbered items were shown to participants with modified/new items included to reflect open-text responses*):

A. Contact with the virus

    1. I have personally tested positive for COVID-19.

    2. I think I may have COVID-19 but am awaiting test results

        o **Modified item** - I think I may have COVID-19 but am awaiting test results/cannot get tested.

    3. I think I may have been *exposed* to COVID-19 (e.g., I was in contact with someone who has tested positive for COVID-19, someone at my work has tested positive).

    4. I was hospitalized as a result of a suspected or confirmed COVID-19 diagnosis.

    5. A close family member/friend has tested positive for COVID-19.

    6. A close family member/friend was hospitalized as a result of a suspected or confirmed COVID-19 diagnosis.

    7. A close family member/friend has passed away as a result of COVID-19.

    8. Someone I know (not close family/friend) has tested positive for COVID-19.

    9. Someone I know (not close family/friend) was hospitalized as a result of a suspected or confirmed COVID-19 diagnosis.

    10. Someone I know (not close family/friend) has passed away as a result of COVID-19.

    • **New item** - Myself/family member working in COVID related occupation (e.g., healthcare worker, aged care)/other essential occupation.

B. Loss of work/income:

    11. I was laid off from my place of work.

        o **Modified item** - Personally/partner/income provider/family laid off from place of work and/or not being able to find work.

    12. My workplace has reduced hours.

        o **Modified item** - My/my partners/income providers' workplace has reduced hours.

    13. My workplace has closed but I am still earning a salary.

    14. My workplace has closed and I am temporarily not being paid as a result.

        o **Modified item** - My/my partners/income providers' workplace has closed and am temporarily not being paid as a result.

    15. I am a business owner and I have had to temporarily close.

    16. I am a business owner and I have had to permanently close.

    17. I have lost freelance work (e.g., arts industry).

    • **New item** - Other financial concerns (e.g., pension reduced).

C. Government lockdown/quarantine directives:

18. I have been in mandatory self-quarantine/self-isolation (i.e., cannot leave home/hotel even for essential activities) due to being in potential contact with the virus/returning from overseas.

19. I am in a national/state/local government lockdown (shelter in place) requiring me to stay in my home, except for essential business/activities.

20. I am in a foreign country and am unable to return to my country of residence/citizenship due to border closures/lockdowns and/or flight unavailability.

   o **Modified item:** I am in a foreign country and I am unable to return to my country of residence/citizenship due to border closures/lockdowns and/or flight unavailability OR my partner is staying/is a citizen of a foreign country and they are unable to return/I am unable to see them due to border closures/lockdowns and/or flight unavailability.

- **New item:** Concerns about government/society (e.g., government control).

D. Changes to work/education:

21. My place of education (e.g., school, university) has closed.

22. I have been working/studying from home.

   o **Modified item:** I have been working/studying from home/have had changes to my workplace.

E. Voluntary self-isolation:

23. I have been voluntarily self-isolating and have been avoiding leaving the house for non-essential activities.

F. Changes to travel:

24. I have delayed or am thinking of delaying travel.

25. I have cancelled travel.

26. I am in my country of residence/citizenship but I am living away from my hometown/family and am unable to return due to state/regional border closures/lockdowns and/or flight unavailability.

G. Changes to children/dependants:

27. My child/children's school/kindergarten/daycare has closed.

   o **Modified item:** My child's/children's place of education (e.g., school/kindergarten/university) or care (e.g., kindergarten) has closed.

28. I have chosen to keep my child/children at home.

29. My caring responsibilities (e.g., children, grandchildren, elderly, other family members) have increased.

   o **Modified item:** My caring responsibilities (e.g., children, grandchildren, elderly, other family members) have increased and/or living arrangements have changed (e.g., increase in household members).

H. Closure of non-essential business and social gatherings:

    30. My national/state/local government has closed all "non-essential" businesses and places (e.g., bars, clubs, cinemas, gyms).

        o **Modified item:** My national/state/local government has closed all "non-essential" businesses (e.g., bars, clubs, cinemas, gyms) and restricted services (e.g., public transport, hairdressing).

    31. Normally scheduled events (e.g., sports practice), planned private social gatherings, and public events I was planning on attending, have been cancelled.

        o **Modified item:** Normally scheduled events (e.g., sports practice), planned private social gatherings (e.g., weddings), personal appointments (e.g., medical), and public events I was planning on attending have been cancelled.

I. Buying supplies:

    32. I have had trouble sourcing/buying supplies of everyday items (e.g., food, medications) and/or disinfectants/sanitisers.

Of all of the options you selected, which one has affected you the most?

(Events participant selected in above list presented)

How much did it bother you/does it bother you emotionally?

    Not at all

    A little

    Somewhat

    Much

    Very much

Please explain your answer in the box below.

Appendix C: Example Image from Trauma Analogue Paradigm (Studies 4a & 4b)

*Image removed due to copyright restriction

Appendix D: Sharing Measures (Studies 1a, 1b, 2a, 2b, 4a & 4b)

Subjective Sharing Measure

To what extent do you feel like this stressful or traumatic event was a "shared" event?

Not at all

Slightly

Moderately

Considerably

Extremely

Please explain your answer to this question. *(Study 1a only)*

Perpetrator Sharing Measure

For the following questions, we will ask you about other people in relation to your worst event. Please do not include the perpetrator as an answer to any of these questions <u>other than</u> the question below and any questions that specifically ask about the perpetrator/s only (see definitions below).

A perpetrator **is** someone who **intentionally or purposely** committed an illegal, criminal, or evil/bad act (e.g., a person who attacked or killed someone).

A perpetrator **is not** someone who **unintentionally or accidentally** committed an illegal, criminal, or evil/bad act (e.g., a person who was at fault in a car accident).

Based on these definitions, were there any perpetrators involved in your worst event?

Yes

No

How many perpetrators were involved in your worst event?

1

2

3

4

5

6

7

8

9

10+

Who was this person/were these people? Please tick all that apply.

Close others (i.e., friends or family)

Distant others (i.e., people you know)

Strangers (i.e., people you don't know or have not met before)

Please explain briefly (i.e., in a few words) what this person/these people did.

Physical Sharing Measure

Were other people present during the event? (**not** including the perpetrator/s, if applicable)

    Yes

    No

    Unsure/I don't know

Do you think other people were present during the event? (**not** including the perpetrator/s)

    Yes

    No

How many other people were present during the event? (**not** including the perpetrator/s, if applicable)

    1

    2-5

    6-10

    11-20

    21-30

    31-50

    51-100

    100+

Who else was present? (**not** including the perpetrator/s, if applicable)

    Close others (i.e., friends or family)

    Distant others (i.e., people you know)

    Vocationally-exposed people (e.g., police officers, paramedics, news reporters, nurses, social workers)

    Strangers (i.e., people you don't know or have not met before)

How involved in the event were these people compared to you? (**not** including the perpetrator/s, if applicable)

    More involved (e.g., driver in vehicle accident compared to you as a passenger)

    Same/similar involvement (e.g., both passengers in vehicle accident)

    Less involved (e.g., passenger in vehicle accident compared to you as the driver)

    Unsure/I don't know

Verbal Sharing Measure

Did you discuss the event with and/or disclose the event to anyone? (**not** including the perpetrator/s, if appliable)

Yes

No

Unsure/I don't know

Do you think you discussed the event with and/or disclosed the event to anyone? (**not** including the perpetrator/s, if applicable)

Yes

No

How many people did you discuss the event with and/or disclose the event to? (**not** including the perpetrator/s, if applicable)

1

2-5

6-10

11-20

21-30

31-50

51-100

100+

Were any of the people you discussed the event with and/or disclosed the event to present during the event? (**not** including the perpetrator/s, if applicable)

Yes

No

Who did you discuss the event with and/or disclose the event to? (**not** including the perpetrator/s, if applicable)

Close others (i.e., friends or family)

Distant others (i.e., people you know)

Vocationally-exposed people (e.g., police officers, paramedics, news reporters, nurses, social workers)

Strangers (i.e., people you don't know or have not met before)

When was the **first time** you remember discussing and/or disclosing the event? (**not** including with/to the perpetrator/s, if applicable)

During the event

Immediately after the event

The same day of the event

Within 1 week of the event

Within 1 month of the event

Within 6 months of the event

More than 6 months after the event

When was the **last time** you remember discussing and/or disclosing the event? (**not** including with/to the perpetrator/s, if applicable)

During the event

Immediately after the event

The same day of the event

Within 1 week of the event

Within 1 month of the event

Within 6 months of the event

More than 6 months after the event

How often did you discuss and/or disclose the event? (**not** including with/to the perpetrator/s, if applicable) - *assessed for within the last day/week/6 months of the event*

Never

Once or twice

Occasionally

Often

Very often

Almost continuously

What did you discuss and/or disclose about the event? (**not** including with/to the perpetrator/s, if applicable)

Event details (i.e., information about the event itself, e.g., *what* happened, *when* the event happened)

Emotions (i.e., your feelings and emotions about the event, e.g., explaining that the event made you upset and/or scared)

Attitudes, beliefs or opinions (i.e., your views about the event, e.g., believing the perpetrator is a bad person, discussing what you think will happen due to the event)

Similar events (i.e., similar events to this event, e.g., talking to friend that was also in a car accident once, discussing other natural disasters that have occurred recently)

Other (please specify)

How did you discuss and/or disclose the event? (**not** including with/to the perpetrator/s, if applicable)

Orally in-person (i.e., talking to others who are physically present)

Orally virtually (e.g., video chat, telephone call)

Written in-person (e.g., handwritten letters or cards)

Written virtually (e.g., text messages, messages/posts through social media)

Did you discuss and/or disclose the event publicly or privately? (**not** including with/to the perpetrator/s, if applicable)

Publicly (i.e., other people able to hear or see discussion, e.g., discussing event in public; publicly shared Facebook post)

Privately (i.e., other people not able to hear or see discussion, e.g., discussing event at private residence or without others around; private messages or letters)

Emotional Sharing Measure

Were other people emotionally affected in the same or a similar way to you about the event? (**not** including the perpetrator/s, if applicable)

For instance, if you had negative feelings and/or emotions (e.g., sadness, anger) about the event, did other people also seem to have negative feelings and emotions about the event too?

We do **not** mean:
- Did other people have the same or similar **attitudes, beliefs or opinions** about the event as you (e.g., believed that the other driver was at fault, thought badly of the perpetrator, believed that they also did not receive enough support from the government regarding the event)?
- Whether other people were **emotionally affected** about the event **but in a different way** (e.g., other people seemed to have positive feelings or emotions (e.g., happiness) about the event when you had negative feelings and/or emotions (e.g., sadness) about the event)

    Yes

    No

    Unsure/I don't know

Do you think other people were emotionally affected in the same or a similar way to you about the event? (**not** including the perpetrator/s)

    Yes

    No

How many people do you believe were emotionally affected in the same or a similar way to you? (**not** including the perpetrator/s, if applicable)

    1

    2-5

    6-10

    11-20

    21-30

    31-50

    51-100

    100+

If others were present during this event, did you believe (through observation, not by discussing the event) that anyone was also emotionally affected in the same or a similar way to you by the event? (**not** including the perpetrator/s, if applicable)

    Yes

    No

Who do you believe was emotionally affected in the same or a similar way to you? (**not** including the perpetrator/s, if applicable)

Close others (i.e., friends or family)

Distant others (i.e., people you know)

Vocationally-exposed people (e.g., police officers, paramedics, news reporters, nurses, social workers)

Strangers (i.e., people you don't know or have not met before)

How emotionally affected do you believe this person/these people were compared to you? (**not** including the perpetrator/s, if applicable)

More affected (e.g., parent of deceased compared to you being a friend)

Same/similarly affected (e.g., both friends of deceased)

Less affected (e.g., friend of deceased compared to you as their partner)

Unsure/I don't know

Attitudinal Sharing Measure

Did other people have the same or similar attitudes, beliefs and/or opinions about the event as you? (**not** including the perpetrator/s, if applicable)

For instance, did other people also believe the other driver was at fault, thought badly of the perpetrator, believed that they did not receive enough support from the government regarding the event, thought that the loved one died too young, or have any other similar or the same attitudes, beliefs or opinions as you?

We do **not** mean:
- Did other people **feel the same or similar** to you about the event (e.g., they were also scared about losing their home, also angry at the other driver, also scared of the perpetrator)?
- Did other people **notice the same details** about the event as you (e.g., they also saw the weapon, remembered what the police officers asked them, knew the time or day that the event occurred)?

    Yes

    No

    Unsure/I don't know

Do you think other people had the same or similar attitudes, beliefs and/or opinions about the event as you? (**not** including the perpetrator/s, if applicable)

    Yes

    No

How many people do you believe had the same/similar attitudes, beliefs and/or opinions about the event as you? (**not** including the perpetrator/s, if applicable)

    1

    2-5

    6-10

    11-20

    21-30

    31-50

    51-100

    100+

If others were present during this event, did you believe (through observation, not by discussing the event) that anyone had the same/similar attitudes, beliefs and/or opinions about the event as you? (**not** including the perpetrator/s, if applicable)

    Yes

    No

Who do you believe was had the same/similar attitudes, beliefs and/or opinions about the event as you? (**not** including the perpetrator/s, if applicable)

    Close others (i.e., friends or family)

    Distant others (i.e., people you know)

    Vocationally-exposed people (e.g., police officers, paramedics, news reporters, nurses, social workers)

    Strangers (i.e., people you don't know or have not met before)

How strong do you believe this person's/these people's attitudes, beliefs and/or opinions were compared to you? (**not** including the perpetrator/s, if applicable)

    Stronger (e.g., the other person/people believe the driver at fault should be jailed when you believe they should just be fined)

    Same/similar strength (e.g., both you and the other person/people believe the driver at fault should be fined)

    Weaker (e.g., the other person/people believe the driver at fault should be fined when you believe they should be jailed)

    Stronger

    Unsure/I don't know

Relational Sharing Measure

Do think or know of anyone else who has experienced or will experience a similar (but not the same) event to you? (**not** including the perpetrator/s, if applicable)

Yes

No

Who else has or do you think will experience a similar event to you? (**not** including the perpetrator/s, if applicable)

Close others (i.e., friends or family)

Distant others (i.e., people you know)

Vocationally-exposed people (e.g., police officers, paramedics, news reporters, nurses, social workers)

Strangers (i.e., people you don't know or have not met before)

Appendix E: Sharing COVID-19 Measures (Study 3)

Subjective Sharing (Worst COVID-19 event)

With your selected event in mind, to what extent do you feel like you are sharing this experience with:

The rating scale is as follows: 1 = *Not at all*, 7 = *Very much*, *Not Applicabl*e.

1. People you live with
2. Close friends and family
3. Casual others (i.e., people you know through work, hobbies, or other regular commitments)
4. Distant others (i.e., people you know but do not contact often or anymore)
5. People living in the same area as you (e.g., people in the same state, territory, province or region as you)
6. People living in the same country as you
7. People around the world (i.e., everyone)

Relational sharing (Worst COVID-19 event)

Do you know of anyone else who has had this same experience (that you selected above)?

Yes

No

Who has had this same experience (that you selected above)? Please tick all that apply.

People you live with

Close friends and family

Casual others (i.e., people you know through work, hobbies, or other regular commitments)

Distant others (i.e., people you know but do not contact often or anymore)

Strangers (i.e., people you do not know/have not met before)

Subjective sharing (Pandemic)

To what extent do you feel like you are sharing the COVID-19 pandemic as a whole with:

The rating scale is as follows: 1 = *Not at all*, 7 = *Very much*, *Not Applicabl*e.

1. People you live with
2. Close friends and family
3. Casual others (i.e., people you know through work, hobbies, or other regular commitments)
4. Distant others (i.e., people you know but do not contact often or anymore)
5. People living in the same area as you (e.g., people in the same state, territory, province or region as you)
6. People living in the same country as you
7. People around the world (i.e., everyone)

Verbal sharing (Pandemic)

How frequently do you discuss the COVID-19 pandemic with?

The rating scale is as follows: *Less than twice a week, 2-5 times a week, Daily: less than an hour, Daily: 1-3 hours, Daily 3-5 hours, Daily: more than 5 hours, Not Applicable.*

1. People you live with
2. Close friends and family
3. Casual others (i.e., people you know through work, hobbies, or other regular commitments)
4. Distant others (i.e., people you know but do not contact often or anymore)
5. Strangers in-person (e.g., at the airport, in supermarkets)People living in the same country as you
6. Strangers online (e.g., replying to comments on Facebook from people you do not know)

Appendix F: Posttraumatic Stress Disorder Checklist (PCL-5; Weathers et al., 2013b)

Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by…
- that event in the past month (Studies 1a-2b)
- that problem in the past 7 days, in response to the COVID-19 pandemic, including the personal impact of the pandemic (Study 3)
- the film you watched in the past 3 days (Studies 4a-4b)

The rating scale is as follows: 0 = *Not at all*, 1 = *A little bit*, 2 = M*oderately*, 3 = *Quite a bit*, 4 = *Extremely*.

1. Repeated, disturbing, and unwanted memories of the stressful experience?

2. Repeated, disturbing dreams of the stressful experience?

3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?

4. Feeling very upset when something reminded you of the stressful experience?

5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?

6. Avoiding memories, thoughts, or feelings related to the stressful experience?

7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?

8. Trouble remembering important parts of the stressful experience?

9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?

10. Blaming yourself or someone else for the stressful experience or what happened after it?

11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?

12. Loss of interest in activities that you used to enjoy?

13. Feeling distant or cut off from other people?

14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?

15. Irritable behaviour, angry outbursts, or acting aggressively?

16. Taking too many risks or doing things that could cause you harm?

17. Being "superalert" or watchful or on guard?

18. Feeling jumpy or easily startled?

19. Having difficulty concentrating?

20. Trouble falling or staying asleep?

Appendix G: Stress Numerical Rating Scale (SNRS-11: Karvounides et al., 2016)

On a scale of 0 to 10, with 0 being no stress and 10 being worst stress possible, what number best describes your level of stress right now [when you were watching the film 3 days ago]?

The rating scale is as follows: 0 = *Not stress*, 10 = *Worst stress possible*.

Appendix H: Negative Emotional Reactions Measure

As you think about the COVID-19 pandemic, at this moment, how intensely do you feel the following emotions?

The rating scale is as follows: 1 = *Not at all*, 7 = *Extremely*.

1. Sad
2. Angry
3. Anxious
4. Frustrated
5. Helpless
6. Fearful
7. Disgusted

Appendix I: The 5-item World Health Organization Well-Being Index (WHO-5;
Bech et al, 1996)

Please indicate for each of the five statements which is closest to how you have been feeling <u>over the last 7 days</u>. Notice that higher numbers mean better well-being

The rating scale is as follows: 0 = *At no time*, 1 = *Some of the time*, 2 = *Less than half of the time*, 3 = *More than half of the time*, 4 = *Most of the time*, 5 = *All of the time*

1. I have felt cheerful and in good spirits

2. I have felt calm and relaxed

3. I have felt active and vigorous

4. I woke up feeling fresh and rested

5. My daily life has been filled with things that interest me

Appendix J: Brief Inventory of Psychosocial Functioning (B-IPF; Marx et al., 2019)

Please indicate how much each of these statements applied to you <u>over the past 7 days</u>.
If these items do not apply to you please select the not applicable option.

The rating scale is as follows: 0 = *Not at all*, 3 = *Somewhat*, 6 = *Very much*, *Not Applicable*.

1. I had trouble in my romantic relationship with my spouse or partner.
2. I had trouble in my relationship with my children.
3. I had trouble with my family relationships.
4. I had trouble with my friendships and socializing.
5. I had trouble at work.
6. I had trouble with my training and education.
7. I had trouble with day-to-day activities, such as doing household chores, running errands and managing my medical care.

Appendix K: Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past 7 days. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows: 0 = *Did not apply to me at all*, 1 = *Applied to me to some degree, or some of the time*, 2 = *Applied to me to a considerable degree or a good part of time*, 3 = *Applied to me very much or most of the time*.

1. I found it hard to wind down
2. I was aware of dryness of my mouth.
3. I couldn't seem to experience any positive feeling at all.
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).
5. I found it difficult to work up the initiative to do things.
6. I tended to over-react to situations.
7. I experienced trembling (e.g., in the hands).
8. I felt that I was using a lot of nervous energy.
9. I was worried about situations in which I might panic and make a fool of myself.
10. I felt that I had nothing to look forward to.
11. I found myself getting agitated.
12. I found it difficult to relax.
13. I felt downhearted and blue.
14. I was intolerant of anything that kept me from getting on with what I was doing.
15. I felt I was close to panic.
16. I was unable to become enthusiastic about anything.
17. I felt I wasn't worth much as a person.
18. I felt that I was rather touchy.
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).
20. I felt scared without any good reason.
21. I felt that life was meaningless.

Appendix L: Positive Affect Negative Affect Schedule (PANAS; Watson et al., 1988)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have feel this way right now, at the present moment [that way when you were watching the film 3 days ago].

The rating scale is as follows: 1 = *Very slightly or not at all*, 2 = *a little*, 3 = *moderately*, 4 = *quite a bit*, 5 = *extremely*.

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined
17. Attentive
18. Jittery
19. Active
20. Afraid

Appendix M: Short-form Spielberger State-Trait Anxiety Inventory (STAI-6; Marteau & Bekker, 1992)

A number of statements which people have used to describe themselves are given below. Read each statement and then select the most appropriate number to indicate how you feel right now, at this moment [felt when you were watching the film 3 days ago]. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best [your feelings from 3 days ago].

The rating scale is as follows: 1= *Not at all*, 2 = *Somewhat*, 3 = *Moderately*, 4 = *Very much*.

1. I feel calm.
2. I feel tense.
3. I feel upset.
4. I feel relaxed.
5. I feel contented.
6. I feel worried.

Appendix N: Overall Experience Measure (Boothby et al., 2014; Nahleen et al., 2019)

Below are questions regarding the experience of watching the film [3 days ago]. Please click on the appropriate number corresponding to the scales.

The rating scale is as follows: 1 = *Not at all/Extremely dislike/Very bad*, 10 = *Very or A lot/Extremely like/Very good*.

1. How much did you want to stop watching the film?
2. How intense was the film?
3. How distressing did you find the film?
4. How much would you be willing to re-watch the film?
5. How absorbed were you in the experience of watching the film?
6. How involved in the film did you feel?
7. How much did you like the film?
8. How do you feel right now?

Appendix O: Autobiographical Memory Questionnaire (AMQ; Rubin et al., 2003)

Below are questions regarding how you remember the experience of watching the film [3 days ago]. Please click on the appropriate number corresponding to the scales.

The rating scale is as follows: 1 = *Not at all*, 7 = *Extremely/Completely/Clearly*.

1. As I remember watching the film, I feel as though I am reliving it.
2. The memory of watching the film has come to me out of the blue, without my trying to think about it.
3. While remembering watching the film, the emotions that I feel are extremely intense.
4. How vivid and clear is your memory for watching the film?
5. Since it happened, I have thought or talked about watching the film.
6. As I remember watching the film, I see it out of my own eyes rather than those of an outside observer.

Appendix P: Intrusion Monitoring Task (Study 4a)

In the next part of the study, we would like you to read two brief articles about science topics. Please do not take photos, screenshots, or notes of these articles because we want to accurately assess your attention to and memory of the articles after you have read each one. It is ok if you cannot remember some details of the articles later in the study. Your answers will not affect your payment. You will be given quite some time to read both articles and then be redirected to questions about the articles.

When reading these articles, please press the "x" key on your computer keyboard if/when you experience an involuntary memory of the film you have just seen (see definition below).

Definition: An involuntary memory is a memory that comes to mind spontaneously without any conscious or intentional attempt to bring it to mind. For instance, you may have memories in the form of images or thoughts about the film that you have just seen which pop into your mind without you expecting them to.

Article 1 - Time

Scientists can't tell you what time it is, only how to measure it. There are two important questions you can ask about time. You can ask what it is, and you can ask how to measure it. The first question is the domain of philosophers, mystics, and others who like dealing with insoluble problems, Physicists only deal with how to measure time. St. Augustine in his Confessions, said "What is time? If no one asks me, I know what it is. If I wish to explain what it is to him who asks me, I do not know." This is probably as good a definition as you're likely to get.

In order to measure time, you must have a regularly occurring phenomenon in nature. The standard is to find something that happens regularly, and then define the unit of time in terms of the reappearance and recurrence of the phenomenon. For example, one unit of time is the "day" – the time between two successive sunrises. All systems for measuring time depend, ultimately, on the recurring phenomenon that is chosen to define the basic standard.

Throughout most of human history the passage of time has been measured in terms of the day (which is related to the time it takes the earth to turn once on its axis) and the year (the time it takes the earth to go once in its orbit around the sun).

The first exercise in measurement of time was the production of the calendar. When human beings began to develop agriculture, it became necessary for them to mark important events like the planting of time for particular crops. In other words, they had to have a calendar. The calendar is really a clock that "ticks" once a year and therefore keeps track of where the earth is in its orbit around the sun. It is this position that determines the seasons.

The basic problem of constructing a calendar is that the number of days in a year is not an even number. The following calendars represent successive approximations to the true length of the year:

Egyptian Calendar
This calendar consisted of twelve months of thirty days each, followed by a five-day party. The problem with the Egyptian calendar arose from the fact that there are approximately 365 ¼ days in a year, not 365. This meant that the calendar would "slip" a quarter day every year. These slippages built up, and, if you had followed things blindly, would eventually have led to a situation where you had the Egyptian equivalent of snow in "August".

Julian Calendar
The calendar introduced by Julius Caesar tried to bring some order into time keeping in the Roman Empire. It solved the problem of the extra quarter day by introducing the leap year. Every four years the year is one day longer, and this makes up for most of the slippage that appeared in the Egyptian calendar. It didn't catch all of it, though, because the year is 11 minutes 14 seconds shorter than 365¼ days. These errors started to accumulate (they amount to 7 days every 1000 yrs) until they begun to mess up the observance of Easter. This led to...

Gregorian Calendar
The Gregorian calendar was introduced by Pope Gregory in 1582 to deal with the accumulated slippage in the Julian calendar. It works by dropping leap years when they fall on centennials except when the centennial is divisible by four. Thus, 200 will retain its leap year while 1700, 1800, and 1900 did not. The Gregorian calendar is the one we use today and the one with which you are familiar.
However, Russia didn't adopt the Gregorian calendar until after the revolution. This, for several centuries, there were two calendars operating in Europe – the Gregorian in most of the west, the Julian in the east. This explains why you often see dates in Russian history given twice – one in modern (Gregorian) terms, the other in "old style" (Julian) terms.

Article 2 - Stars

Stars, like everything else, are born, live out their lives, and die. It was only fairly recently in the history of the human race – the nineteenth century, to be exact – that people realised that stars couldn't last forever. Starts are continually pouring energy into space, and that energy has to come from somewhere. Today, we know that the sun, like most stars, burns hydrogen to produce that energy. But even for a huge body like the sun, that supply is not endless. The sun, like a campfire, will someday stop burning and die.

There were some interesting attempts to explain the energy output of the sun. In the nineteenth century scientists showed that if it were made of pure anthracite coal (the best fuel known at the time) it could only last for 10,000 years at its present rate of energy output.

The energy source of the stars is nuclear fusion. Deep inside the sun, nuclei of hydrogen come together in a series of reactions whose end product is helium and some excess energy. The sun consumes hydrogen at the rate of 700 million tons per second, and it has done so since shortly after it formed. Most other stars generate energy in the same way for most of their lifetimes, only going on to other things when the hydrogen is exhausted.

A star's life is a battle between the nuclear fires and gravity. The force of gravity is always pulling the star in on itself. For a while 0 the star can maintain a precarious equilibrium by using the energy from nuclear reactions to balance in inward pull. The life of every star us a battle between these two competing forces. Eventually, the fuel must run out and gravity will win. It is the victory of gravity that we refer to as the death of the star.

Not all stars are like the sun. If you think of the sun as being roughly the size of a basketball, the range of other stars would go from those the size of a grain of sand to those the size of a large building. Stars come in all brightness's, colours, and many very exotic forms. Amidst all this variety, the sun is a very ordinary star. It is average in its lifetime, its chemical composition and its luminosity. There is absolutely nothing to distinguish it from it brethren in the Milky Way.

The brightness of a star is measured in terms of its "magnitude". Before the invention of the telescope, stars were grouped by what we would today all their apparent magnitude – that is, their brightness as seen from earth. The brightest stars were said to be first magnitude, the next brightest second magnitude, and the dimmest that can be seen with the naked eye sixth magnitude. This scheme was retained by astronomers even after the invention of the telescope.

Each drop in magnitude corresponds to a drop of 2.5 in the brightness of the source as seen from earth. Thus, a sixth magnitude star is approximately 100 times dimmer than the first magnitude. It is not at all unusual today for astronomers using state-of-the-art telescopes to detect twenty-fourth-magnitude objects in the sky.

The apparent brightness of a star depends on how far way it is and on how much energy it is giving odd (its "luminosity"). To eliminate the ambiguity associated with the distance of the star, astronomers have defined the "absolute magnitude" of a star as the brightness it would have if it were seen from a distance of thirty-three light years. The absolute magnitude does not depend on the distance to the star, but measures something intrinsic to the star itself.

Article Comprehension Test

Please answer the following questions about the articles you just read. We are interested in your attention to these articles after watching the negative film so please answer the following questions honestly. If you do not know the answer to a question, please type "I don't know" in the text box. Your answers will not affect your payment.

How well do you think you remembered details in the first article?
   1 = *Not at all well*, 7 = *Extremely well*

How well do you think you remembered details in the second article?
   1 = *Not at all well*, 7 = *Extremely well*

What was the first article about?

What was the first exercise measurement of time?

What was the first calendar discussed in the article?

Who introduced the Gregorian calendar?

How many calendars were operating in Europe before the Russian Revolution?

Appendix Q: Intrusion Monitoring Survey (Studies 4a & 4b)

Intrusion Characteristics

Please rate the following statements and questions as to how well they describe your memory (or memories) of the film coming to mind.

The rating scale is as follows: 0 = *Not at al/Extremely negative,* 10 = *Extremely/Extremely positive*.

1. The memory came to mind spontaneously at the time it occurred.
2. The memory came to mind effortlessly.
3. How distressing was the memory when it came to mind?
4. How vivid was the memory when it came to mind?
5. How intense were the emotions you felt when the memory came to mind?
6. How much did the event feel as though it was happening "right now" when the memory occurred?
7. How unpleasant was the memory when it came to mind?
8. How unwanted was the memory when it came to mind?
9. While having the memories of the film, were the emotions you felt negative or positive?

Maladaptive Responses to Intrusions

Suppression:

Please rate the following statements and questions as to how well they describe your memory (or memories) of the film coming to mind.

The rating scale is as follows: 0 = *Not at al/Extremely negative,* 10 = *Extremely/Extremely positive*.

1. To what extent did you try and suppress/push the thoughts about the film out of your mind?

Negative Interpretations of Intrusions Scale (NIIT; Nixon et al., 2009):

Please read the three statements below and rate the extent to which you agree or disagree with each statement about the meaning of your involuntary memory.

The rating scale is as follows: 1 = *Totally disagree*, 7 = *Totally agree*.

1. I have a psychological problem
2. My intrusion of the film shows I am a lousy coper
3. I will not be able to tolerate my memories of the film, and I will fall apart

Appendix R: Intrusion Monitoring Accuracy Measure (Meyer & Morina, 2022)

How accurately do you believe your thought monitoring survey entries reflected the frequency of involuntary memories you experienced about the film over the past 3 days?

The rating scale is as follows: 0 = *Very inaccurately,* 10 = *Very accurately*.

Appendix S: Mentalising Measure (Boothby et al., 2014)

To what extent were you thinking about what the other participant was thinking and feeling while watching the film?

The rating scale is as follows: 1 = *Not at all*, 10 = *A lot*.

Appendix T: Influence Measure (Boothby et al., 2014)

To what extent do you feel like the other participants influenced your answers to questions about watching the film?

The rating scale is as follows: 0 = *Not at all*, 6 = *A lot*.

Appendix U: Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992).

Below are a series of circles representing you ('self') and the participant/s you completed the first study phase with ('other').

Please choose the picture which best describes your relationship with the other participant/s.

*Image removed due to copyright restriction

Appendix V: Participant Familiarity Measure

Do you know the other participant with whom you are completing the study (i.e., have you met them before)?

    Yes

    No

How would you describe your relationship with the other participant?

    Acquaintance (i.e., someone you have met before and who you see by chance rather than making separate plans with, such as a friend-of-a-friend or colleague)

    Casual friend (i.e., someone you make plans with occasionally, often through mutual interests, such as a gym friend or classmate)

    Close friend (i.e., someone you have known for some time, frequently make plans with, seek support from and provide support to)

    Romantic relationship (i.e., someone you are in a mutual, ongoing and intimate relationship with, such as a partner, girlfriend or husband)

    Family (i.e., someone you are related to, not including by marriage)

Appendix W: Researcher Awareness Measure

How often during the first study session did you think about the researcher being present?

To what extent do you think the researchers' presence influenced your ratings about watching the film?

The rating scale for both items is as follows: 0 = *Not at all*, 10 = *A lot*.

Appendix X: Film, Attention, and Technical Issue Check Measure

Film/Topic Experience

Have you ever seen the film you watched in this study before?
    Yes

    No

Have you ever had any personal experience with the topic of the film you watched in this study?
    Yes

    No

Film Attention Check

Please type your randomly generated user ID from SyncTube below. The ID was shown on the bottom right-hand corner of the website (e.g., PersistentEagle) and your ID was in white text.

Please answer the following questions about the film you just watched.

Where did the event take place?

Were there witnesses at the event? *Open Text*

What outfit was the victim wearing?
    Jeans and Jumper
    Skirt and Top
    Long Dress
    Work Suit

What surface was the victim on when assaulted by the perpetrators?
    Pool Table
    Dining Table
    Bar
    Pinball Machine

Attention and Technical Issues Check

Please answer the following questions about your attention during the study honestly. Your answers will not affect payment.

How closely did you pay attention to the film presented in the previous section?
    1 = *Not at all well*, 7 = *Extremely well*

Did you ever find yourself closing your eyes or looking away from the film?
    Yes
    No

For approximately how many minutes do you estimate that you closed your eyes or looked away?

_____

Did you ever mute the film?
    Yes
    No

For approximately how many minutes do you estimate that you muted the film for?

_____

At any point during the study, did you leave the task and do something else for any period of time?
    Yes
    No

At what point did you leave the study to do something else?
    Before the film
    During the film
    After the film

For approximately how many minutes do you estimate that you left the study?

_____

Please let us know if you had any technical issues with the film, or at any other stage of the survey.

_____

Appendix Y: Hypothesis Guessing Measure

What do you think this study was investigating?

At what point did you start thinking that this is what the study was investigating? (Please check the best answer)
  Study 4a:
      Before the film
      After the film
  Study 4b:
      During the film
      During Phase 1
      During Phase 2
      During Phase 3

Did you hear information about participating in this study beforehand and if so, when?
    Yes
    No

What did you hear?

Who did you hear this information from (e.g., another participant)?