

Winter 3-22-2024

Adult Age Differences in Response to Sociomoral Violations

Alyssa R. Minton
DePaul University, aminton3@depaul.edu

Follow this and additional works at: https://via.library.depaul.edu/csh_etd



Part of the [Psychology Commons](#)

Recommended Citation

Minton, Alyssa R., "Adult Age Differences in Response to Sociomoral Violations" (2024). *College of Science and Health Theses and Dissertations*. 512.
https://via.library.depaul.edu/csh_etd/512

This Dissertation is brought to you for free and open access by the College of Science and Health at Digital Commons@DePaul. It has been accepted for inclusion in College of Science and Health Theses and Dissertations by an authorized administrator of Digital Commons@DePaul. For more information, please contact digitalservices@depaul.edu.

Adult Age Differences in Response to Sociomoral Violations

A Dissertation

Presented in

Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

By

Alyssa Renee Minton

December 2023

Department of Psychology
College of Science and Health
DePaul University
Chicago, Illinois

Dissertation Committee

Joseph A. Mikels, Ph.D., Chair

Linda Camras, Ph.D.

Verena Graupmann, Ph.D.

Geoff Durso, Ph.D.

Leah Bryant, Ph.D.

Dedication

People say it takes a village to raise a child. For me, it took an army. As such, there are many people in my life who have helped me achieve this incredible accomplishment and are deserving of this dedication.

I would like to dedicate this body of work – my adult life’s work – to my wonderful mother Cathy and incredible sister (often presumed twin) Katrina, my two pillars without whom I could not stand. Mom, your unwavering love and unconditional support has carried me throughout my life and throughout the course of this long journey. Thank you for loving me, even when I made it difficult to do so, and for teaching me the virtue of forgiveness. Sissy, you are the sun in my universe, the Katya to my Trixie, the Abbi to my Ilana. Words genuinely cannot express how much I love and adore you and how grateful I am to have you not only as my sister but also my best friend. You have always inspired me to be the best version of myself because that is what you do. You are my absolute favorite person in the entire world. Thank you both for pushing me when I needed it, for believing in me when I didn’t, and for never giving up on me. I hope I’ve made you proud.

I also dedicate this work to my lifelong best friend Joanna Pugh. JoJo, you have been a constant source of love, compassion, support, and fun since we were awkward teenagers navigating middle school together with our super harsh side parts and way too much eyeliner almost 20 years ago. We’ve gone from awkward teenyboppers to wild youngbloods to competent and successful adults, by each other’s side for every step of the way. Your friendship means the world to me, and I hope I never lose you.

I would also like to dedicate this work to Tim and Peg Jones who taught me the value of planning to work and working the plan and to my cousin Kyle Jones who taught me how to work hard and play hard. This work is also dedicated to Patti and Paul Henning who have always provided me with the much-needed respite from the challenges of life and grad school. To the rest of my friends and family – aunts, uncles, cousins, Greg, Paul, and my stepsiblings – thank you for being a part of my life and shaping the person I am today.

Finally, I dedicate this work to my younger self. I don’t know how we did it, but we did it.

Thank you all for helping to give me the life I love today. I am forever grateful.

Acknowledgements

It is with my appreciation that I acknowledge the contribution of my mentor and committee chair, Dr. Joe Mikels, for funding and supporting this work. Thank you for treating me like a junior colleague and for providing me with so many opportunities to grow as a researcher and a person and to be the leader I am.

I would like to acknowledge my debt of thanks to my committee members, Drs. Verena Graupmann, Linda Camras, Geoff Durso, and Leah Bryant for their unending positivity and encouragement throughout this entire process.

I would also like to express my appreciation for my other collaborators and mentors, Drs. Christian Waugh, Claudia Haase, and Susan Charles. It has been an honor to work with and learn from you.

I must express my deepest gratitude and appreciation for Dr. Andy Mienaltowski. M'ski, I honestly would not be here without you. You laid the foundation for me to excel in a doctoral program and beyond, and I am eternally grateful. Thank you for always believing in me and for giving me the skills, confidence, and support I needed to achieve my dreams.

I would also like to acknowledge and thank my most cherished colleague and friend, Dr. Jason Snyder, for all that he's done for me during our time in grad school. Jason, I have to say that my time in this program would have been much less fun and fulfilling without you. We did this together, always on the same wavelength, and I am so grateful to be able to share this with you. Thank you for your friendship.

I would also like to acknowledge and thank my daily dose of sunshine that is David Taullahu, my lab manager and friend. You are so wonderful and have brought me so much peace of mind. Thank you for being you and for all that you do.

I would also like to thank Dr. Nathan Young for taking me under his wing when I first started in this program. Nathan, thank you for teaching me all things R and data analysis and for providing advice and support when I needed it. I would also like to thank all the members, past and present, of JAM Lab; I have had so much fun working with you all. Thank you for enriching my time at DePaul and making it memorable.

Biography

The author was born in Munster, Indiana, on August 6, 1993. She graduated from Munster High School in 2012. She earned her bachelor's degree in psychology with a minor in sociology from Indiana University Northwest in December 2016. After that, she went on to earn her master's degree under the mentorship of Dr. Andrew Mienaltowski at Western Kentucky University in May 2019. She started in the MA/PhD Psychological Science program at DePaul University in May 2019 under the mentorship of Dr. Joe Mikels.

Table of Contents

Dissertation Committee	ii
Dedication	iii
Acknowledgements	iv
Biography	v
List of Tables	ix
List of Figures.....	x
Abstract.....	1
Adult Age Differences in Response to Sociomoral Violations.....	3
Sociomoral Violations, Judgments, and Emotions	5
Aging, Sociomoral Violations, and Emotions	9
Forgiveness.....	14
Aging and Forgiveness	16
The Current Studies	18
Study 1: Adult Age Differences in Response to Intentional but Unsuccessful Harms versus Accidental Harms.....	23
Method	23
Participants	24
Materials	25
Procedure	28
Results	29
Data Analysis Strategy.....	29
Moral Judgments	32
Emotion Ratings.....	35
Discussion.....	38
Study 2: Adult Age Differences in Responses to Sociomoral versus Norm Violations.....	40
Method	41
Participants	41
Materials	42
Procedure	44
Results	45
Data Analysis Strategy.....	45
Manipulation Check	46
Control Variables	47
Moral Judgments	48
Emotion Ratings.....	51
Discussion.....	55

Study 3: Adult Age Differences in Response to Intentional versus Accidental Harms.....	56
Method	57
Participants	57
Materials	58
Procedure	59
Results	60
Data Analysis Strategy.....	60
Control Variables	61
Moral Judgments	61
Emotion Ratings.....	64
Discussion.....	68
Study 4: Adult Age Differences in Reactions to Sociomoral Violations Committed by a Stranger Versus a Close Other Against a Stranger	70
Method	73
Participants and Design.....	73
Materials and Measures.....	74
Procedure	82
Results	83
Data Analysis Strategy.....	83
Close Other Characteristics	84
Scenario Characteristics	85
Control Variables	88
Exploratory Self-Construal Analyses	90
Moral Judgments	91
Emotion Ratings.....	96
Forgiveness	102
Discussion.....	106
Study 5: Adult Age Differences in Response to Sociomoral Violations Committed by A Stranger versus Close Other Against Themselves.....	111
Method	113
Participants and Design.....	113
Materials and Measures.....	115
Procedure	118
Results	119
Data Analysis Strategy.....	119
Close Other Characteristics	119
Scenario Characteristics	120
Control Variables	123
Exploratory Self-Construal Analyses	126
Moral Judgments	126
Emotion Ratings.....	132
Forgiveness	138
Discussion.....	143
General Discussion	146
Implications	158

Limitations and Future Directions.....	162
Conclusions.....	166
References.....	169
Appendix A. Study 1 Scenarios	188
Appendix B. Moral Judgments	192
Appendix C. Three-Domain Disgust Scale (TDDS)	193
Appendix D. Nonverbal Emotion Endorsements Results.....	194
Appendix E. Study 2 Scenarios	195
Appendix F. Study 3 Scenarios.....	201
Appendix G. Measure of Communal Strength	207
Appendix H. Study 4 Scenarios	208
Appendix I. Decisional Forgiveness Scale (DFS)	215
Appendix J. Modified Differential Emotion Scale (mDES)	217
Appendix K. Self-Report Measure of Trait Anger.....	218
Appendix L. Self-Report Measure of Trait Sympathy (TSS)	219
Appendix M. Study 5 Scenarios.....	221

List of Tables

Table 1.	86
Table 2.	121

List of Figures

Figure 1.	5
Figure 2.	34
Figure 3.	37
Figure 4.	50
Figure 5.	54
Figure 6.	63
Figure 7.	67
Figure 8.	87
Figure 9.	94
Figure 10.	95
Figure 11.	100
Figure 12.	101
Figure 13.	103
Figure 14.	105
Figure 15.	122
Figure 16.	123
Figure 17.	130
Figure 18.	131
Figure 19.	136
Figure 20.	137
Figure 21.	141
Figure 22.	142
Figure 23.	149

Abstract

Moral judgments and emotional reactions to sociomoral violations are heavily impacted by a perpetrator's intentions, as malicious intent poses a threat to social harmony. Given that older adults are more motivated to maintain interpersonal harmony relative to younger adults, older adults may be more reactive to malicious intentions. In five studies, I investigated adult age differences in moral judgments and emotional reactions to sociomoral violations. In Studies 1-3, participants read scenarios in which a perpetrator either (a) desired to harm another but nothing happened, or (b) harmed another accidentally without malicious intent. Study 2 incorporated additional scenarios designed to evoke anger and disgust without explicitly implicating another person with the goal of evaluating whether age differences emerge only when sociomoral violations against another are salient. Study 3 examined the combined effects of malicious intent and harmful outcomes by including scenarios in which (a) harmful intentions were coupled with harmful outcomes, and (b) benign intentions were coupled with benign outcomes. Across the first three studies, older adults judged perpetrators who intentionally harmed another more harshly but judged perpetrators who accidentally harmed another more leniently than younger adults. Emotional reactions generally corresponded with the differences in judgments. The findings from Studies 1-3 suggested that malicious intentions more strongly impact older relative to younger adults' judgments and emotional reactions in sociomoral contexts. Studies 4 and 5 built on the previous three studies by introducing a new factor of interest: the

relational closeness of the perpetrator. In Study 4, participants read scenarios in which a perpetrator who is a stranger or a close other either intentionally or accidentally harmed another. In Study 5, participants read the same scenarios, but they were placed on the receiving end of the sociomoral violation. In Study 4, older relative to younger adults reported harsher act judgments and higher anger ratings for intentional harms. For unintentional harms, older adults reported harsher act judgments but comparable anger ratings relative to younger adults. Converging with the findings from the previous four studies, Study 5 found that older adults reported significantly more lenient moral judgments, less negativity, and higher prosocial intentions toward perpetrators who hypothetically harmed them unintentionally compared to younger adults. Conversely, for perpetrators who harmed them intentionally, older adults were only significantly harsher than younger adults in their person judgments. This work, taken together, provides a deeper understanding of how the intentionality of sociomoral violations and the closeness of those committing those sociomoral violations differentially influence older and younger adults' moral judgements and emotional reactions.

Key words: aging; moral judgments; emotions; sociomoral violations

Adult Age Differences in Response to Sociomoral Violations

Questions of morality – what is right or wrong, who is morally responsible for adverse outcomes – have been investigated in the field of moral and social psychology over the past couple of decades (Cushman, 2015; Malle, 2021). These types of questions are consequential for survival and permeate everyday life. Moral judgments and emotional reactions can serve an evolutionary purpose of signaling who should be avoided in future interactions (Cushman, 2015). Without being able to make moral judgments quickly, we may open the door to possible harm. Scholars have demonstrated that the benevolence or malice of a person's intentions – specifically the desire to cause harm to another – is an influential factor in determining moral judgments and emotional reactions (Cushman, 2008; Giner-Sorolla & Chapman, 2017; Hutcherson & Gross, 2011; Malle, 2021; Tangey et al., 2007). Although the influence of perpetrators' intentions on people's moral judgments and emotions is well understood, how this relationship may change into older adulthood is not well understood. As a result of motivational changes across the adult life span, there is good reason to expect age differences in moral judgments and emotions. Here I examined whether individuals of different ages make different moral judgments and/or have different emotional reactions in response to sociomoral violations that vary in the perpetrators' intentions and outcomes.

In five studies, I investigated adult age differences in response to the intentionality of sociomoral violations. Please refer to Figure 1 for a general overview of the five studies included in this dissertation. The first three studies

were completed prior to my dissertation proposal, and Studies 4 and 5 built on the previous three studies and were conducted after my dissertation proposal based on feedback received during the defense. Study 1 investigated age differences in emotional reactions and moral judgments of perpetrators who either: (a) desired to but did not successfully harm another, or (b) did not desire to but accidentally harmed another. Study 2 built on Study 1 by including additional scenarios tapping into more conventional elicitors of anger (e.g., goal blockage) and disgust (e.g., purity/divinity violations) to discern whether age differences in reactions to sociomoral violations emerge when there are clear implications for a social other compared to when they are not. More specifically, in Study 2, we were interested in discovering how older versus younger adults differentially judge perpetrators who elicit anger and disgust in response to scenarios in which a social other is not on the receiving end of the violation. Study 3 built on the previous two studies by parceling out the unique effect of malicious intentions. This was accomplished by including scenarios in which (a) harmful intentions were coupled with harmful outcomes, and (b) benign intentions were coupled with benign outcomes. Study 4 extended the previous studies by including another motivationally relevant factor: the relational closeness of the perpetrator. Participants read scenarios in which a close other and a stranger intentionally or accidentally harm another. Study 5 replicated and extended Study 4 by placing participants on the receiving end of the sociomoral violations. Guided by theory and past research, these studies contribute a deeper understanding of how older and younger adults may differ in their responses to

the intentionality of sociomoral violations and whether or not the relational closeness of the perpetrator plays a role.

Study 1	Intentional without Harm versus Accidental Harms	<u>Design: 2 (age group) × 2 (condition)</u> Age Group: Younger, Older Condition: Intentional without Harm, Unintentional Harm
Study 2	Sociomoral versus Norm Violations	<u>Design: 2 (age group) × 4 (condition)</u> Age Group: Younger, Older Condition: Intentional without Harm, Unintentional Harm, Anger, Disgust
Study 3	Intentional versus Accidental Harms	<u>Design: 2 (age group) × 4 (condition)</u> Age Group: Younger, Older Condition: Intentional without Harm, Unintentional Harm, Intentional Harm, Unintentional without Harm
Study 4	Intentional versus Accidental Harms Committed by a Stranger or Close Other Against a Stranger	<u>Design: 2 (age group) × 2 (condition) × 2 (perpetrator)</u> Age Group: Younger, Older Condition: Intentional Harm, Unintentional Harm Perpetrator: Close other, Stranger <i>*Unknown stranger on receiving end of sociomoral violation</i>
Study 5	Intentional versus Accidental Harms Committed by a Stranger or Close Other Against Themselves	<u>Design: 2 (age group) × 2 (condition) × 2 (perpetrator)</u> Age Group: Younger, Older Condition: Intentional Harm, Unintentional Harm Perpetrator: Close other, Stranger <i>*Participants on receiving end of sociomoral violation</i>

Figure 1. Overview of the five studies included in this dissertation. Age group and condition were always between-subjects factors. Perpetrator was a within-subjects factor.

Sociomoral Violations, Judgments, and Emotions

Emotional reactions and moral judgments to sociomoral violations are influenced by intentionality. Specifically, influential factors in judgments can be broken down into two dimensions: (a) benevolence or malice of the actor's intentions and (b) abilities, skills, and resources of the actor that allow their intentions to be carried out (Hutcherson & Gross, 2011). Researchers have examined how moral judgments (e.g., moral character, blame, punishment) and emotions (e.g., anger, disgust) can change by manipulating a perpetrator's

intentions and actions. Work by Cushman (2008) found that judgments of wrongness and permissibility of action were uniquely linked to perpetrators' intentions, whereas judgments of blame and punishment incorporated both intentions and the causal connection between the harm and the perpetrator who caused it.

Although Cushman (2008) did not measure emotional reactions, other work has explored moral emotions by categorizing them into different groups. Haidt (2003) categorizes contempt, anger, and disgust as other-condemning emotions. These three emotions also constitute the "CAD" triad put forth by Rozin and colleagues (1999), corresponding to violations of ethics of community, autonomy, and divinity, respectively. Other work has found that disgust as well as anger can be elicited when someone desires to harm another versus harms another accidentally (Giner-Sorolla & Chapman, 2017). Specifically, a desire to cause harm with no harmful consequence elicited disgust, whereas a harmful consequence without a desire to cause harm elicited anger (Giner-Sorolla & Chapman, 2017). These findings highlight how disgust can be elicited even when ethics of divinity and purity are not violated, potentially suggesting that disgust serves a more general purpose of responding to indicators of one's moral character.

Experiencing anger in response to accidental harms but experiencing disgust in response to intended but unsuccessful harms sheds light on what can elicit those emotions outside the narrowly defined CAD triad. Furthermore, using open-ended descriptions of anger experiences, researchers have found that

themes of frustration and goal blockage blended with themes revolving around more moral concerns (e.g., being betrayed, insulted, and treated unfairly; Baumeister et al., 1990; Izard, 1977; Shaver et al., 1987). Of note, it seems that anger experiences have two parts. First, a person must perceive actual or potential self-harm (e.g., when one's goal has been blocked or threatened). Second, a person must attribute the offender's behavior as intentional in nature and be causally responsible for doing so. There are instances in which harm can be caused by carelessness, which is more closely linked to feelings of contempt rather than anger (Hutcherson & Gross, 2011).

Moreover, anger serves an important evolutionary function of motivating and preparing the body to respond to immediate threat, and thus is characterized as an approach-related emotion (Carver & Harmon-Jones, 2009). Therefore, anger may likely be the most adaptive function when facing an immediate, direct threat to the self. Feeling anger in response to a moral violation that directly impacts the self may then motivate the individual to engage in some approach-related behavior to address or rectify the situation. However, when the self is not directly affected by the moral violation, would individuals still be angry? There is reason to speculate that they may not be. In situations in which the moral violation does not directly involve the self, feeling disgust may be the more adaptive behavior and lead the individual to engage in avoidant-related behaviors, which is of lower cost to the individual compared to anger (Hutcherson & Gross, 2011; Mohlo et al., 2017).

However, as asserted by the CAD triad (Rozin et al., 1999), anger should result when ethics of autonomy are violated (i.e., when one's personal rights or freedom is disregarded), specifically focusing on the violating act rather than the victim of the act. Other research supports that when a moral offense was personally relevant, participants reported more anger (Batson et al., 2007; 2009). In a younger adult sample, Hutcherson and Gross (2011; Study 2) found that participants reported the highest level of anger when moral offenses directly impacted the self (e.g., "A student steals your exam and copies it") relative to when moral offenses impacted a close friend or another person. Participants endorsed moral disgust comparably across conditions, suggesting that anger may uniquely respond to direct attacks or threats to the self, whereas moral disgust may not (Hutcherson & Gross, 2011). Other work has found similar results, noting that participants reported more anger when they themselves were the target of the moral transgression and reported more direct aggressive action tendencies (e.g., hitting or insulting the perpetrator), which have higher costs to the individual (Mohlo et al., 2017). This hints at the notion that anger (relative to disgust) might be elicited more when motivated by self-interests rather than other-interests (Kupfer & Giner-Sorolla, 2017; Hutcherson & Gross; 2011; Mohlo et al., 2017).

Taken together, these findings are consistent with a social functionalist account of moral emotions (Keltner et al., 2006), which focuses on how an emotion motivates an individual to engage in socially relevant behavior that is advantageous for social relations and how different situations or characteristics

of the situation require sets of changes in behavior, cognition, and/or motivation (Keltner et al., 2006; Hutcherson & Gross, 2011). Feeling disgust in response to a sociomoral violation such as the desire to harm another could serve the critical social function of identifying those who should be avoided. In contrast, feeling anger when a harmful consequence occurs accidentally could signal the social function that punishment is necessary. However, feeling sympathy or concern for someone who accidentally harmed another may signal to observers that the individual does not pose a direct, immediate threat to themselves. Importantly, though, such emotional reactions to sociomoral violations may depend on whether the violations are in direct contrast or even threaten one's goals, values, or priorities, which likely vary with age.

Aging, Sociomoral Violations, and Emotions

Individuals of different ages might judge sociomoral violations differently for a few possible reasons. For instance, older adults might be more concerned about other's malicious intentions compared to younger adults, given life-span changes in motivations, goals, and values posited by socioemotional selectivity theory (SST; Carstensen 1992, 2006). SST considers how advancing age and an awareness of a shrinking future time horizon lead to motivational shifts in goals and values. When one views their future time horizon as vast and expansive, which is common in younger adulthood, individuals tend to prioritize future-oriented goals such as acquiring information or developing extensive social networks. When one views their future time horizon as limited, which is common in older adulthood, there seems to be a shift in goal prioritization to focus on

present-oriented goals, such as sharing meaningful and positive experiences with close others or maintaining one's current affective state.

This motivational shift put forth by SST is reflected in both the emotional and social lives of older individuals. For example, compared to younger adults, older adults generally report experiencing fewer negative emotions but a comparable, and sometimes increased, number of positive emotions (Carstensen et al., 2000; 2011; Charles et al., 2001; Mroczek & Kolarz, 1998). This pattern of results has received a great deal of empirical support, with findings converging across studies using an array of methodologies including cross-sectional and longitudinal studies (Carstensen et al., 2000; 2011; Charles et al., 2001; Mroczek & Kolarz, 1998), retrospective ratings of emotional experiences (Charles et al., 2001), and experience sampling of everyday emotional experiences (Carstensen et al., 2000; 2011).

Moreover, older adults often curate social networks that are conducive for experiencing emotionally meaningful and positive interactions (Carstensen, 2006; Carstensen et al., 1999). For example, older adults prune their social networks of peripheral friends and prioritize close relationships (English & Carstensen, 2014; Lang & Carstensen, 1994). Older adults are also more likely to avoid interpersonal conflicts compared to younger adults (Blanchard-Fields et al., 1995; Holley et al., 2013). Moreover, in social interactions, older adults seek to cultivate social harmony by increasing positivity and minimizing negativity. For instance, when dealing with interpersonal conflict, older adults are more likely to use avoidant and less confrontational strategies relative to younger adults (Birditt &

Fingerman, 2003; Birditt et al., 2005; Blanchard-Fields et al., 2007; Lefkowitz & Fingerman, 2003). In addition, a longitudinal investigation found that positive interpersonal emotional behaviors (e.g., humor) increased with age, whereas negative interpersonal emotional behaviors declined with age (Verstaen et al., 2020). When avoidant strategies cannot be deployed, older adults appear to actively infuse the situation with positive affect (Carstensen et al., 1995; Levenson et al., 1994). Taken together, a greater focus on emotionally fulfilling relationships may be associated with a deep desire to maintain social harmony and to keep the peace within one's social environment, allowing for more positive and fewer negative emotions and social experiences. However, when people pose a threat to such social harmony or peacekeeping, older adults may react more strongly to those violators.

Given the deeply social nature of morality and moral judgments coupled with older adults' socioemotional goals, they might be more sensitive or reactive to sociomoral violations. Work by Hess and colleagues (Hess & Auman, 2001; Hess et al., 1999; 2005) has supported this notion, finding that increased age was associated with greater sensitivity to trait diagnostic cues of morality (i.e., honesty). And when people's behavior is immoral, older adults may be better able to use this information to draw inferences and make judgments about the perpetrator's character and actions (e.g., trustworthiness) compared to younger adults through accrued social expertise. Younger adults do have basic knowledge of trait-diagnostic behaviors (Skowronski & Carlston, 1987), but it seems that older adults are more likely to apply that when making judgments

than younger adults (Hess et al., 1999), even in instances in which additional information moderates the diagnostic value of behaviors (Hess et al., 2005). In fact, when presented with conflicting diagnostic information about a person's trustworthiness, younger adults were less likely than older adults to incorporate information relating to morality when making judgments (Hess et al., 2005).

Taken together, with more social experience, older adults may be more sensitive to indicators of bad moral character, such as those who want to harm others. Additionally, older adults may be more reactive to threats to social harmony as a result of their motivational shifts toward emotionally meaningful social goals (Carstensen et al., 1999; Charles & Carstensen, 2010; Sorkin & Rook, 2006).

However, older and younger adults' emotional reactions to intentional harm (which could be considered a threat to social harmony) may diverge when the perpetrator is a close other/loved one versus a stranger. In pursuit of older adults' socioemotional goals posited by SST (Carstensen, 1992), they may behave in ways that reduce the likelihood of damaging or destroying a close relationship or experiencing negative emotions after a transgression, such as decreasing blame attributions. As such, older adults may judge close others who pose a threat to social harmony less harshly than strangers who pose a threat to social harmony. Within the context of the current work (i.e., Studies 4 and 5), older (relative to younger) adults may respond less negatively to close others who intentionally harmed another than to strangers who intentionally harmed another.

Though no studies to date have investigated age differences in intentional versus accidental harms when the relational closeness of the perpetrator has been manipulated, some research might suggest that older adults would be more inclined to judge a stranger who committed harm intentionally more harshly than a close other who committed harm intentionally. For example, after experiencing a negative situation in the context of an interpersonal relationship, older adults are more likely to attribute blame for the negative situation with that person to situational factors rather than personal characteristics compared to younger adults (Blanchard-Fields, 1994). In addition, if the negative interpersonal situations are perceived to be resolved amicably, older adults are more likely to make attempts to salvage the relationship rather than focus on personal concerns compared to younger adults (Blanchard-Fields & Beatty, 2005). Thus, it seems that, on one hand, older adults are generally more likely to blame a person for a negative situation when they perceive them to have negative personal characteristics. On the other hand, though, they are less likely to blame their social partners for negative situations. As such, it is reasonable to predict that although both strangers and close others who intend to and successfully harm another pose a threat to social harmony, older adults may be more lenient with close others than to strangers compared to younger adults. However, when harm occurs accidentally, older adults may be comparably lenient on close others and strangers.

Forgiveness

Understanding how older and younger adults' moral judgments and emotional reactions differ depending on intentionality and closeness of the perpetrator may shed light onto how individuals navigate the aftermath of a negative situation or interpersonal transgression. The process of forgiveness may play a critical role in managing the negative emotions experienced in response to sociomoral violations or interpersonal transgressions. When one forgives, they become more positively disposed and less negatively disposed toward the person who has harmed them in the past (Baumeister et al., 1998; Fehr et al., 2010; McCullough et al., 2000; Worthington, 2005). There are cognitive and affective processes underlying forgiveness (see Fehr et al., 2010 for review). The cognitive correlates of forgiveness focus on the victim's thoughts and attitudes about the offender and the offense (Fehr et al., 2010). These factors are supported by a sensemaking process by which the victim considers a number of aspects of the transgression to interpret the offense and decide how to judge and treat the offender (Fehr et al., 2010; Weick, 1995). For example, victims will consider the intentions behind the offense and whether they were malicious or benign. Victims will also consider the extent to which the offender was causally responsible for the offense and the severity of the offense. Research has demonstrated that individuals seek to understand the offender's intentions (Struthers et al., 2008) and determine the level of responsibility for the event that is attributable to the offender (Aquino et al., 2006). Individuals also consider how offenders try to make amends for their actions when deciding

whether or not to forgive, finding that individuals' negative perceptions of the offender decrease when the offender apologizes (Fehr & Gelfand, 2010). Put simply, during this sensemaking process, victims reflect on what has happened and decide whether or not to forgive.

Whereas these cognitive correlates focus on the offender, the offense, and the sensemaking process, the affective correlates focus more on the victim's mood and emotional experiences (Fehr et al., 2010; McCullough et al., 2007). Emotions in the wake of an interpersonal transgression can either harm or facilitate one's motivation to forgive. For example, after experiencing an interpersonal transgression, an individual may feel negative offender-directed emotions such as anger or disgust, and thus be demotivated to forgive the offender. However, when victims feel somewhat more positive offender-directed emotions such as empathy, individuals may be more motivated to forgive the offender. Moreover, following an offense, victims may be less motivated to forgive when attributing negative moods to offenders, but positive moods may imply less severe offenses and thus result in greater motivation to forgive. Thus, affective reactions play an important role in encouraging and motivating one to forgive.

However, there are relational and socio-moral constraints on forgiveness (Fehr et al., 2010), which are beyond the offense at hand and focus more on the relational context in which the offense occurred. For example, the extent to which the victim and offender are embedded in the dyad correlates with forgiveness (Mitchell et al., 2001). Embeddedness in the dyad can be evidenced by strong

and satisfying relational ties with the other person and losing that person would be a great sacrifice (Mitchell et al., 2001). Indeed, research has demonstrated that social proximity to the target of forgiveness plays an important role in one's willingness to forgive (Gauché & Mullet, 2005; Girard & Mullet, 1997; McCullough et al., 1998; Mullet & Girard, 2000), as people are more willing to forgive close others because that may be the best way to restore the relationship. In addition to relational closeness, people's motivation to forgive can also be impacted by sociomoral standards or norms. For example, a person's motivation to forgive could be driven by constraints such as religious rules or a desire to save face (Fehr et al., 2010). Thus, the road to forgiveness is paved by making sense of the transgression by considering the offender's intentions, by managing one's negative emotions about the transgressor and transgression, and by the relational and sociomoral constraints of the situation.

Aging and Forgiveness

Understanding how and when one's decision to forgive changes from an adult life-span perspective is incredibly important, as one's ability or decision to forgive may change developmentally, similar to the socioemotional changes that occur in older adulthood described above. Moreover, dealing with interpersonal transgressions is something that individuals of any age have to endure, but they might be easier to manage with more experience. Few studies have investigated how forgiveness changes across the adult lifespan and/or group age differences in forgiveness. Moreover, forgiveness has been conceptualized and measured differently, making understanding age differences in forgiveness challenging to

generalize. Some research has focused on trait-oriented measures of forgiveness, finding that older adults have a greater tendency to forgive (Allemand, 2008) and experience less revenge motivation (Allemand et al., 2013; Ghaemmaghami et al., 2011). Other work has found that in response to hypothetical scenarios, older adults are more willing to forgive after a transgression compared to younger adults (Allemand, 2008; Girard, 1997; Steiner et al., 2012). In Allemand (2008), older adults were more willing to forgive both an acquaintance and a close friend for their transgression, but younger adults were not. Younger adults were only willing to forgive close other/friend but not an acquaintance (Allemand, 2008). Allemand (2008) interpreted these findings in the context of SST (Carstensen, 1992), suggesting that willingness to forgive may be one strategy that older adults employ to maintain social harmony.

These findings point to the notion that older adults are, on average, more forgiving than younger adults, but the exact mechanism underlying these age differences in forgiveness is not quite clear. Moreover, these studies did not manipulate the intentionality of the transgressor nor measure the emotional reactions to and judgments of the transgressor's moral character and actions, which opens the door for new investigations of when and why older adults may be more forgiving. Manipulating whether the transgressor (close other or stranger) desired to and successfully harmed another versus accidentally harmed another may lead to differences in older and younger adults' willingness to forgive or the extent to which they decide to forgive the transgressor. In other words, the extent to which age differences emerge for forgiveness are likely to be

contingent on the intentionality of the harm. Both older and younger adults may be more inclined to forgive a close other and a stranger for accidental harms, but it is unclear whether there would be age differences in forgiveness of close others versus a stranger for intentional harms. It could be the case that older adults' increased forgiveness could be explained by their decreased negativity and more lenient moral judgments in response to close others relative to strangers who desired to and successfully harmed another.

The Current Studies

Though research has explored adult age differences in social judgments (Hess & Auman, 2001; Hess et al., 1999; 2005), research has yet to examine adult age differences in response to sociomoral violations such as the desire to cause harm versus accidental harm. That was the goal of this work. Specifically, the first three studies sought to uncover whether older and younger adults' judgments and emotional reactions to sociomoral violators differed. In Study 1, older and younger adults read scenarios in which a perpetrator either (a) desired to harm someone but nothing happened, or (b) someone was harmed accidentally without malicious intent. Study 2 built upon Study 1 by including additional scenarios designed to evoke anger and disgust without implicating another person to examine whether age differences emerge only when sociomoral implications are salient. Study 3 built on the first two studies by examining the combined effects of malicious intent and harmful outcomes by including scenarios in which (a) harmful intentions were coupled with harmful outcomes, and (b) benign intentions were coupled with benign outcomes.

For Studies 1-3, I had two general hypotheses. First, I expected the desire to cause harm would evoke more anger and disgust but less sympathy coupled with harsher judgments compared to when harm occurred accidentally (i.e., main effect of condition). Second, I predicted that older adults would be differentially reactive to malicious intentions versus accidental harms compared to younger adults based on the following reasoning (i.e., an age group \times condition interaction). Older adults are more sensitive to important behavioral cues and trait diagnostic information when making social judgments than younger adults (e.g., Hess & Auman, 2001; Hess et al., 1999; 2005). Additionally, given older adults' shift toward socioemotional goals and values posited by SST, older adults may be more reactive to a perpetrator's desire to cause harm even if no harm occurred and thus judge them more harshly and report more negative emotions than younger adults. The desire to harm another might represent a potential threat to or violation of older adults' socioemotional goals of maintaining social harmony. Conversely, when a perpetrator harms another accidentally, older adults might report more lenient judgments and less negativity compared to younger adults because the accidental harm was not the result of malicious intentions.

Studies 4 and 5 built on the previous studies by introducing a new factor of interest: the relational closeness of the perpetrator to the participant. Using modified versions of the scenarios in Studies 1-3, participants read hypothetical scenarios in which a stranger and a close other either intended to and successfully harmed a stranger (i.e., intentional harm condition) or did not intend

to but harmed a stranger accidentally (i.e., unintentional harm condition). Prior to reading the scenarios, participants were asked to report the name of a close other to be used in the scenarios. Only the intentional harm and unintentional harm versions of the scenarios were used in Studies 4 and 5, as both of these conditions include a harmful outcome but only one condition includes malicious intentions. This allowed me to isolate the unique effect of the desire to cause harm versus harm occurring accidentally. Participants provided their judgments of perpetrators' moral character and actions as well as their emotional reactions. A new addition to these studies was the measure of forgiveness. Participants indicated the extent to which they would decide to forgive and behave differently toward perpetrators described in the scenarios in terms of their prosocial intentions and inhibitions of harmful intentions (e.g., revenge).

In Study 5, I sought to replicate and extend Study 4 by placing participants on the receiving end of a sociomoral violation/transgression. Study 5 included the same measures and scenarios, but the scenarios were modified such that they – the participants – were on the receiving end of the sociomoral violation. Research has found that negative emotions (i.e., anger) are experienced to a greater extent when a moral offense was personally relevant (Batson et al., 2007; 2009). Moreover, in a younger adult sample, Hutcherson and Gross (2011; Study 2) found that participants reported the highest level of anger when moral offenses directly impacted the self (e.g., “A student steals your exam and copies it”) relative to when moral offenses impacted a close friend or another person. Other work has found similar results, noting that participants reported more anger when

they themselves were the target of the moral transgression. Thus, it could be the case that older adults' negative emotions and judgments of perpetrators may be more similar to younger adults when they are on the receiving end of the sociomoral violation.

There were four main hypotheses for Studies 4 and 5. As with Studies 1-3, I expected intentional harms to elicit more negativity and harsher judgments than accidental harms (i.e., a main effect of condition). Second, I predicted that participants would respond more negatively to strangers relative to close others (i.e., a main effect of perpetrator) based on past research (Gauché & Mullet, 2005; Girard & Mullet, 1997; Mullet & Girard, 2000; McCullough et al., 1998). Third, I predicted that older adults would respond more negatively to perpetrators who desired to and successfully caused harm relative to younger adults (i.e., an age group \times condition interaction). Moreover, I predicted that the extent to which older and younger adults forgive transgressors will be contingent on the intentionality of the harm. Older adults may be more forgiving of accidental harms compared to younger adults, but I predicted that they would be less forgiving of intentional harms compared to younger adults. Conversely, and consistent with the previous studies, I predicted that older adults would respond less negatively to perpetrators who cause harm accidentally relative to younger adults.

Finally, I predicted that the relationship between age group and intentionality would be impacted by the relational closeness of the offender (i.e., an age group \times condition \times perpetrator interaction). Given older adults' socioemotional goals of maintaining social harmony and avoiding negativity,

older adults may be more motivated to behave in ways (e.g., being more lenient or more forgiving) that repair or maintain close, meaningful relationships. Thus, they may respond less negatively to close others who desired to and successfully caused harm compared to younger adults. However, older adults may not be motivated to be less harsh or more forgiving of strangers with whom they do not share a deep, meaningful interpersonal relationship. Instead, older adults may judge strangers who intentionally harm them more harshly and be less forgiving. Conversely, older adults may respond similarly to strangers and close others who accidentally harm another or them, but younger adults may be harsher on strangers relative to close others who accidentally harm another or them. This is supported by past research demonstrating that older adults are generally more forgiving of close others and acquaintances (Allemand, 2008). This finding also tracks with older adults' socioemotional goals posited by SST (Carstensen, 2006; Carstensen et al., 1999) and the findings from the previous studies suggesting that accidental harms are not as egregious for older relative to younger adults. By manipulating the social closeness of the perpetrators, Studies 4 and 5 had great potential to contribute a better understanding of how and when both younger and older adults respond more harshly or more leniently to social violators, depending on the relational closeness and the intentionality (or lack thereof) of harm.

Study 1: Adult Age Differences in Response to Intentional but Unsuccessful Harms versus Accidental Harms

The desire to cause harm to another and harm occurring accidentally can both be seen as violations, but it is unclear whether older and younger adults judge them in the same way. The goal of Study 1 was to determine whether older and younger adults differentially respond to these sociomoral violations. Participants read scenarios in which a perpetrator either (a) desired to harm someone but nothing happened (i.e., the intentional without harm condition), or (b) someone was harmed accidentally without malicious intent (i.e., the unintentional harm condition). After each scenario, participants made judgments about the perpetrator's moral character and their actions. They also indicated how much anger, disgust, and sympathy they felt toward the perpetrator described in the scenario. The results from Study 1 were intended to be a starting point from which we could further explore age differences in judgments and emotional reactions within a sociomoral domain.

Method

Transparency and Openness

Studies 1-3 were completed prior to my dissertation proposal. I spearheaded this work with support from Drs. Mikels and Graupmann. For all studies (when applicable), I report on how the sample size was determined, all data exclusions, all manipulations and measures in the study. For Studies 1-3, all de-identified data, analysis scripts, and study materials are available on the Open Science Framework (OSF): <https://osf.io/hcw5u/>. Data were analyzed using R,

version 4.0.2 (R Core Team, 2019). Studies 1-3 were not preregistered, but Studies 4 and 5 were preregistered.

When I first started working on these projects, we borrowed heavily from Giner-Sorolla and Chapman (2017) in terms of their materials, but it was not intended to be a direct replication. Specifically, in their work, participants were instructed to focus on *either* the person or the act, whereas we did not include this manipulation in the current studies. Moreover, because this work has rarely been applied to older adults, we wanted to learn more about how older and younger adults differentially respond to the desire to cause harm versus harm occurring accidentally. In pursuit of that goal, we included a number of dependent measures in an exploratory manner. Thus, all the measures that were included are mentioned here, but some of the results regarding those materials are not directly included in this dissertation and instead are available on the OSF page for Studies 1-3.

Participants

Appropriate sample size was estimated using a power analysis in G*Power (Faul et al., 2007) based upon the interaction effect found in Giner-Sorolla and Chapman (2017). Because little work using similar methodologies have incorporated an older adult sample, we decided to base our effect size estimate on available data rather than arbitrarily estimating an interaction effect size. Thus, we understand that the effect size in this power analysis does not reflect potential age differences. The power analysis used the following parameters: an alpha level of .05, 95% power to detect a difference between

groups of $f = .25$ ($d = 0.5$). This power analysis indicated that we needed 210 total participants. To accommodate participants who failed attention checks¹ ($N = 25$, $n_{YA} = 21$; $n_{OA} = 4$), we collected data from 250 participants who were either 18-30 years old or 60-79 years old.

Younger ($n = 112$; $M_{age} = 26.23$, $SD_{age} = 2.54$; 72% female) and older ($n = 113$; $M_{age} = 66.42$, $SD_{age} = 4.90$; 51% female) adults were recruited to participate in this study via Amazon Mechanical Turk (MTurk). Participants were compensated \$3.00 for participating in this 30-minute online survey. This study was reviewed by a university Institutional Review Board (IRB). All participants were required to provide informed consent.

Materials

Scenarios. We used the 16 moral scenarios² in Giner-Sorolla and Chapman's (2017) Study 3. For each scenario, there was a perpetrator and a target who was on the receiving end of the perpetrator's actions. As in Giner-Sorolla and Chapman (2017), there were two conditions: (1) the *intentional without harm* condition, in which there was desire to cause harm to the target, but no harm occurred; and (2) the *unintentional harm* condition, in which there was

¹ Two attention checks were included for data quality purposes. Within two scenarios, participants were asked if a person named Tim was in the scenario (yes/no response), and if anyone was harmed in the scenario (yes/no response). No scenario contained a character named Tim, and correct answers to whether anyone was harmed varied by condition (with 'yes' being correct in the unintentional harm condition and 'no' being correct in the intentional without harm condition). Participants who did not accurately answer these attention checks were assumed to not be paying attention.

² We edited one of the scenarios. We felt that the "Poison" scenario did not clearly convey the intention to cause harm. To that end, we added a sentence to make the intentionality more salient (i.e., "Steve hands Pat the cookies to hold while he cleans the counter"). See Appendix A.

no desire to cause harm, but harm accidentally occurred.³ [Appendix A](#) contains all of the scenarios, and an example scenario for each condition is presented below.

Intentional without Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny wants to burn her partner's hand. Jenny starts welding the metal together, but her partner happens to let go and is not burned at all.

Unintentional Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny does not want to burn her partner's hand. Jenny only wants to weld together the metal. Jenny welds the metal, and her partner's hand is burned.

Moral judgments. Borrowed from Giner-Sorolla and Chapman (2017), participants provided judgments about the perpetrator's moral character and their actions. Each measure is described in detail below, and both can be found in [Appendix B](#). We used the same 7-point scale (1 = *Not at all*, 7 = *Extremely*) for the following measures unless otherwise stated.

Person judgments. Participants evaluated the perpetrators' moral character on 10 items (e.g., how sick and twisted the perpetrator was, how screwed up the perpetrator was, how sadistic the perpetrator was). Responses were averaged across scenarios. Person judgments were comparably reliable for older ($\alpha^4 = .99$) and younger ($\alpha = .96$) adults.

³ Previous researchers have termed these scenarios differently than we do here. In this work, we are referring to Giner-Sorolla and Chapman's (2017) consequences/no-desire and desire/no-consequence as unintentional harm condition and intentional without harm condition, respectively, instead.

⁴ For all dependent measures except nonverbal emotion endorsements, we calculated Cronbach's alpha by averaging responses to individual items across the eight scenarios (e.g., averaging responses to item 1 of the person judgments across all scenarios), and then alphas were computed using each item's composite average across the scenarios.

Act judgments. Participants evaluated the perpetrators' actions on 10 items (e.g., how responsible the perpetrator was for their actions, how much blame the perpetrator deserved, to what extent the act was the perpetrator's fault). Responses were averaged across scenarios. Act judgments were comparably reliable for older ($\alpha = .95$) and younger ($\alpha = .90$) adults.

Emotion endorsements. Emotion endorsements were broken down into nonverbal endorsements and emotion ratings, as in Giner-Sorolla and Chapman (2017). Each are described in detail below.

Nonverbal emotion endorsements. Nonverbal emotion endorsements were measured by presenting participants with three angry, three neutral, and three disgusted faces (2 male actors, 1 female actor) borrowed from the NimStim Set of Facial Stimuli (Tottenham et al., 2009). Using a forced-choice question, participants indicated which set of faces best described their feelings towards the perpetrator. Additionally, participants indicated how much each set of faces corresponded to how they were feeling towards the perpetrator. These responses were averaged across scenarios to provide separate composite averages for anger ($\alpha = .89$), disgust ($\alpha = .91$), and neutral ($\alpha = .88$), with higher scores indicating greater endorsement of that particular emotion.

Emotion ratings. Participants indicated how much they felt particular emotions toward the perpetrator. Emotion endorsements for anger (i.e., outraged, furious, angry) and for disgust (i.e., revolted, disgusted, sickened) were averaged across scenarios to create anger ($\alpha = .97$) and disgust ($\alpha = .98$) composite averages. We also included verbal ratings of sympathy (i.e.,

sympathy, concern, and compassion; $\alpha = .74$), borrowed from the Modified Differential Emotion Scale (mDES; Fredrickson et al., 2003). In adding sympathy, we reasoned that the accidental condition could potentially elicit feelings of sympathy, considering that harm occurred accidentally but, importantly, without harmful intent. Higher scores indicate a greater endorsement of that particular emotion.

Trait disgust. We also included the 21-item Three-Domain Disgust Scale (TDDS; Tybur, Lieberman, & Griskevicius, 2009) as a measure of trait disgust for control purposes (see [Appendix C](#)). Participants read each item and indicated to what extent it was disgusting. Responses were averaged ($\alpha = .92$), with higher scores indicating more trait disgust. In addition to a composite average of trait disgust, we also created separate composite averages for the subscales. This 21-item scale has three subscales: pathogen disgust (e.g., “stepping on dog poop”, $\alpha = .84$), sexual disgust (e.g., “hearing two strangers have sex”, $\alpha = .88$), and moral disgust (e.g., “shoplifting a candy bar from a convenience store”, $\alpha = .92$). I explored age differences in the composite average for general trait disgust as well as trait moral disgust in all studies and trait pathogen disgust in Study 2 which is the study for which it was most relevant to the manipulation (i.e., disgust condition).

Procedure

The current study employed a 2 (age group: younger, older) \times 2 (condition: unintentional harm, intentional without harm) design, with age group and condition as between-subjects factors. Participants were randomly assigned

to the intentional without harm ($n = 104$; $n_{YA} = 51$, $n_{OA} = 53$) or the unintentional harm ($n = 121$; $n_{YA} = 61$, $n_{OA} = 60$) condition. After providing informed consent, participants were randomly presented with the eight scenarios. For each scenario and in the following order, participants: (1) indicated which of the face sets (anger, neutral, disgust) best described their feelings toward the perpetrator (i.e., forced choice nonverbal endorsement); (2) indicated how well each of the face sets best described their feelings toward the perpetrator (i.e., scaled nonverbal emotion endorsement); (3) provided moral judgments ratings; (4) provided emotion ratings; and (5) indicated the extent to which they were compelled by aggressive action tendencies⁵. After all of the scenarios were presented, participants completed measures of trait disgust and trait aggression, and a self-construal scale⁶. Then participants completed a demographic questionnaire. Finally, participants were thanked and compensated for their participation.

Results

Data Analysis Strategy

We conducted multi-level regressions for all of our analyses to account for nesting of scenarios within participant and for intercept variability between participants. We examined the intraclass correlation coefficients (ICCs) for the

⁵ For exploratory purposes, we included a measure of direct (e.g., insulting or hitting someone) and indirect (e.g., spreading negative information) aggressive action tendencies (Mohlo et al., 2017) as well as a measure of trait aggression in Studies 1 and 2. The results for aggressive action tendencies do not substantively contribute to the theoretical or empirical basis of this work, and thus will not be discussed further. Please refer to our OSF page for the results related to this measure.

⁶ For exploratory purposes, we included a measure of self-construal (D'Amico & Scrima, 2016; Singelis, 1994). The results from this measure do not contribute to the theoretical or empirical basis of this work, and thus will not be discussed further. The results can be found on our OSF page.

five dependent variables of interest, which is the ratio of variance explained by the multilevel structure and the variance of the outcome variable. ICCs ranged from .50-.85, suggesting that participants' responses across the scenarios were highly dependent and that the multilevel framework is preferred. As such, we included a random intercept for scenario and a random intercept for participant for each analysis, unless there were model convergence issues. We explicitly note these cases as they occurred below and specify the random effect structure that we used instead. For each outcome, we included dummy coded age (ref = older adults), dummy coded condition (ref = unintentional harm), and the Age group x Condition interaction. For disgust ratings, we included trait moral disgust as a covariate to account for observed age differences. For all analyses, sex was included as a covariate.

For all studies, data were analyzed using R Version 4.0.2 (R Core Team, 2019). Models were estimated using the "lmer()" function in the *lmerTest* package (Kuznetsova et al., 2017). Significance tests for main effects and interactions were summarized using the "anova()" function in the *car* package (Fox & Weisberg, 2019). Effect size estimates were generated via the "anova_stats()" function in the *sjstats* package (Lüdtke, 2020). Post hoc comparisons for the main effect of condition were computed using the "emmeans()" function in the *emmeans* package (Lenth, 2020), and *p*-values were adjusted for multiple comparisons using Holm corrections. I decomposed significant interactions with a simple slopes analysis with the "sim_slopes()" function in the *interactions* package (Long, 2019). A positive estimate indicates

that younger adults had a higher rating on that particular outcome variable than older adults. A negative estimate indicates that older adults had a higher rating for that particular outcome variable than younger adults. All test statistics can be reproduced via our R script available on our OSF page.

To streamline the analyses and avoid overwhelming readers, the results from the nonverbal emotion endorsements can be found in [Appendix D](#). The findings generally indicated that anger and disgust endorsements were higher, but neutral endorsements were lower, when the perpetrator desired to harm another even though no harm occurred (relative to when harm occurred accidentally without malicious intent). Moreover, older adults endorsed neutral expressions less than younger adults – especially when there was a desire to cause harm to another, even though no harm occurred. There were no age differences in endorsements of anger or disgust facial expressions by condition. Importantly, based on literature examining age difference in emotion recognition, older adults (relative to younger adults) struggle to detect negative emotional facial expression (e.g., anger, sadness; Mill et al., 2009; Ruffman et al., 2008) especially at low expressive intensities and/or with shared overlapping facial cues (Mienaltowski et al., 2013; 2019; Minton & Mienaltowski, 2021). In light of these findings, any observed null findings on this dependent measure may be subject to alternative interpretations and are discussed sparingly in this manuscript.

Control Variables

Trait disgust. Trait disgust was measured using the TDDS (Tybur et al., 2009). Older adults ($M = 4.78$, $SD = 1.42$, 95% CI [4.51, 5.04]) reported higher trait moral disgust than younger adults ($M = 3.63$, $SD = 1.54$, 95% CI [3.35, 3.92]), $F(1, 221) = 33.62$, $p < .001$, $\eta_p^2 = .132$. As such, trait moral disgust was included in the analyses for disgust below.

Moral Judgments

Person judgments. Regardless of condition, older adults ($M = 4.37$, $SD = 1.94$, 95% CI [4.01, 4.73]) reported harsher person judgments compared to younger adults ($M = 4.10$, $SD = 1.57$, 95% CI [3.80, 4.39]), $F(1, 220) = 5.10$, $p = .025$, $\eta_p^2 = .003$.

Moreover, regardless of age group, participants reported harsher person judgments in the intentional without harm condition ($M = 5.87$, $SD = 0.94$, 95% CI [5.69, 6.06]) compared to the unintentional harm condition ($M = 2.82$, $SD = 0.85$, 95% CI [2.67, 2.98]), $F(1, 220) = 538.07$, $p < .001$, $\eta_p^2 = .253$.

These main effects were qualified by a significant two-way interaction, $F(1, 220) = 30.30$, $p < .001$, $\eta_p^2 = .019$. Specifically, in the intentional without harm condition, older adults reported harsher person judgments compared to younger adults, $b = -0.87$, $SE = 0.17$, $t = -5.25$, $p < .01$. Conversely, in the unintentional harm condition, older adults reported more lenient judgments of moral character than younger adults, $b = 0.36$, $SE = 0.15$, $t = 2.32$, $p = .020$ (see Panel A of Figure 2).

Act judgments. Participants reported higher act judgments in the intentional without harm condition ($M = 5.36$, $SD = 0.84$, 95% CI [5.19, 5.52])

compared to the unintentional harm condition ($M = 3.55$, $SD = 0.74$, 95% CI [3.41, 3.68]), $F(1, 220) = 197.91$, $p < .001$, $\eta_p^2 = .110$. This main effect of condition was qualified by a significant two-way interaction, $F(1, 220) = 6.54$, $p = .011$, $\eta_p^2 = .004$. Specifically, in the intentional without harm condition, older adults reported harsher act judgments than younger adults, $b = -0.44$, $SE = 0.16$, $t = -2.81$, $p = .01$, but older and younger adults' act judgments were not significantly different from each other in the unintentional harm condition ($p = .50$; see Panel B of Figure 2).

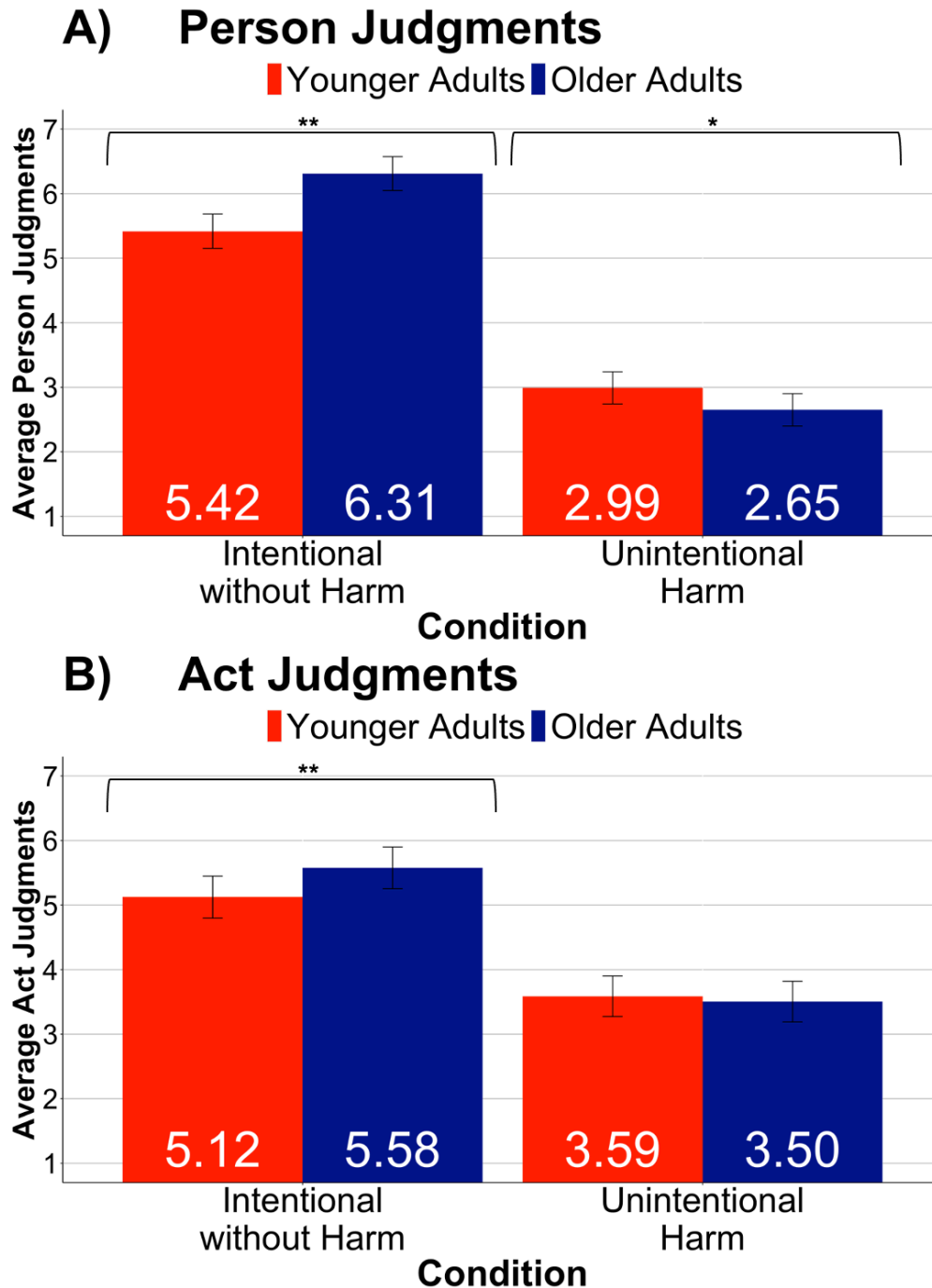


Figure 2. Mean person judgments (Panel A) and act judgments (Panel B) for older and younger adults in each condition in Study 1. Responses for both person and act judgments ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed.
* $p < .05$. ** $p < .01$.

Emotion Ratings

Anger. Participants' anger ratings were significantly higher in the intentional without harm condition ($M = 4.80$, $SD = 1.86$, 95% CI [4.67, 4.92]) compared to the unintentional harm condition ($M = 2.65$, $SD = 1.86$, 95% CI [2.53, 2.77]), $F(1, 220) = 83.81$, $p < .001$, $\eta_p^2 = .050$. Neither the main effect of age group ($p = .726$) nor the interaction ($p = .071$) were significant. Older and younger adults' mean anger ratings in each condition are presented in Panel A of Figure 3.

Disgust. For this analysis, sex was not included as a covariate due to model convergence issues. Only trait moral disgust was included as a covariate. Participants' disgust ratings were significantly higher in the intentional without harm ($M = 4.82$, $SD = 1.54$, 95% CI [4.52, 5.12]) compared to the unintentional harm ($M = 2.49$, $SD = 1.29$, 95% CI [2.26, 2.72]) condition, $F(1, 220) = 146.90$, $p < .001$, $\eta_p^2 = .085$. Although the main effect of age group was not significant ($p = .302$), the two-way interaction was, $F(1, 220) = 11.88$, $p < .001$, $\eta_p^2 = .007$. In the unintentional harm condition, older adults reported significantly lower disgust ratings than younger adults, $b = 0.78$, $SE = 0.25$, $t = 3.17$, $p < .001$, but there were no significant age differences in the intentional without harm condition ($p = .12$; see Panel B of Figure 3).

Sympathy. Regardless of condition, younger adults ($M = 3.03$, $SD = 1.35$, 95% CI [2.77, 3.28]) reported more sympathy for the perpetrator than older adults ($M = 2.68$, $SD = 1.10$, 95% CI [2.47, 2.88]), $F(1, 220) = 3.91$, $p = .050$, $\eta_p^2 = .002$. Participants' sympathy ratings were significantly lower in the intentional without

harm condition ($M = 2.54$, $SD = 1.10$, 95% CI [2.23, 2.66]) compared to the unintentional harm condition ($M = 3.20$, $SD = 1.25$, 95% CI [2.97, 3.43]), $F(1, 220) = 17.91$, $p < .001$, $\eta_p^2 = .011$. The two-way interaction was not significant ($p = .217$; see Panel C of Figure 3).

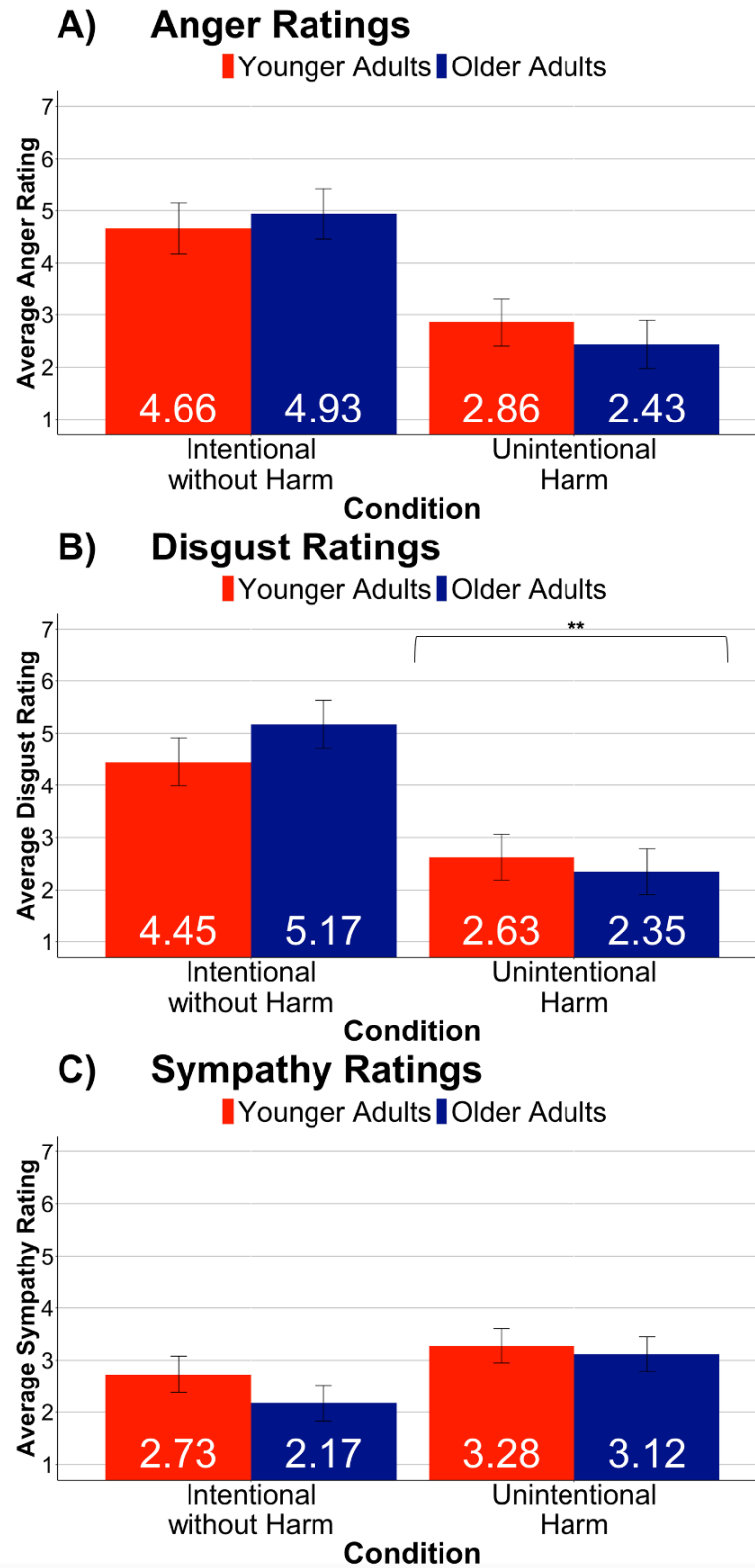


Figure 3. Mean anger (Panel A), disgust (Panel B), and sympathy (Panel C) ratings in Study 1. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed. Note that the two-way interaction was not significant for anger or sympathy ratings.

** $p < .01$.

Discussion

Consistent with our first hypothesis, the desire to cause harm was particularly egregious for participants of both age groups. Participants reported harsher person and act judgments as well as more anger and disgust but less sympathy for perpetrators who intended to but did not successfully harm another compared to perpetrators who accidentally harmed another. However, some of these effects differed for older versus younger adults. Specifically, when perpetrators desired to but did not succeed at harming another, older adults judged their moral character and their actions more harshly than younger adults. Specifically, older adults' average person judgment ratings approached the ceiling of our scale (6.31 on a 7-point scale) in the intentional without harm condition, potentially suggesting that the malicious intent of the perpetrators signaled poor moral character to older adults to a greater extent than it did for younger adults. In contrast, when perpetrators accidentally harmed another, older adults judged the perpetrators' moral character less harshly and felt less disgusted than younger adults.

One way to interpret these findings is that older adults may be more reactive to the sociomoral violation of the desire to harm another. This dovetails with past work that has found that older adults are more sensitive to trait-diagnostic behavioral cues (e.g., honesty) when making morality-based inferences (e.g., trustworthiness) compared to younger adults (Hess & Auman, 2001; Hess et al., 1999; 2001). The results from this study contribute to the existing literature by demonstrating another influential factor in older adults'

judgments within a moral domain: the desire to cause harm. When perpetrators desired to but did not harm another, older adults judged them as having worse moral character and reported harsher judgments of their actions compared to younger adults. This is evident in older adults harsher act judgments compared to younger adults when harm was intended by the perpetrator but not successfully achieved. However, when harm occurred accidentally but was not the result of malicious intentions, older adults reported less disgust and less harsh judgments of moral character compared to younger adults. Reasoning from SST (Carstensen, 1992, 2006), benign accidental harms are not as morally violating to older adults' socioemotional goals and values, leading them to evaluate the perpetrators' moral character less harshly and feel less disgust toward them compared to younger adults because, after all, the perpetrators did not actually want to harm another. Taken together, it seems that older adults are more reactive to harmful intentions than to accidental outcomes.

Given that both of the conditions contained a violation against an explicit social other (e.g., Jenny's partner), we designed a second study to investigate specifically how a clear social component (or lack thereof) contributes to the observed pattern of age differences in moral judgments and emotional reactions. Past work by Hess et al. (2005) has also explored how age differences in moral judgments differ when behaviors had primary implications for the self versus others. When observing behaviors directed towards others instead of towards oneself, older adults display a greater inclination than do younger adults to consider these behaviors to reflect something about the moral character of the

actor instead of reflecting something about the actor's competence. This may contribute to older adults' sensitivity to people's behaviors that impact others within moral domains. In Study 2, we included additional scenarios designed to evoke anger and disgust without including an explicit social other. We reasoned that older adults might have been particularly sensitive to the fact that there was a direct social target in the scenarios in Study 1 and that older adults may not display this same sensitivity when explicit social others are removed from the scenarios. Could it be the case that when a social other and sociomoral content is limited, age differences in character judgments and emotion ratings would be reduced or eliminated?

Study 2: Adult Age Differences in Responses to Sociomoral versus Norm Violations

The goal of Study 2 was to replicate and extend our findings from Study 1 to explore scenarios with sociomoral or norm violations. The violations committed in the scenarios for Study 1 could be categorized as more sociomoral in nature because they included an explicit other (e.g., Jenny's partner whose hand either was or was not burned). How would older adults respond to and judge a perpetrator who did not desire to harm another but whose actions were still evocative of anger and disgust? The goal of Study 2 was to answer this question.

In Study 2, we added two scenario conditions designed to evoke anger and disgust while limiting the sociomoral context of the norm violations. In the anger condition, perpetrators acted negligently (but not maliciously), and consequences ensued (e.g., starting a fire out of curiosity that damages a

classroom). In the disgust condition, perpetrators acted in a conventionally disgusting manner (e.g., eating a French Fry out of a dirty ashtray). Importantly, when designing these scenarios, we focused on key appraisals of anger and disgust, such as goal blockage (Hutcherson & Gross, 2011; Kuppens et al., 2003) and purity violations (e.g., contaminants entering the body; Rozin et al., 2008), respectively. Older and younger adults were randomly assigned to one of four conditions: intentional without harm, unintentional harm, anger, disgust. After each scenario, participants provided person and act judgments and then reported how much anger, disgust, and sympathy they felt toward the perpetrators described in the scenarios. Based on our findings from Study 1, we predicted that older adults would be particularly sensitive to sociomoral violations, specifically the desire to harm another. In the new scenarios with limited sociomoral context (i.e., no explicit social target on the receiving end of the perpetrator's actions), older and younger adults may not differ in their moral judgments and emotional reactions. If perceptions of sociomoral violations are a contributing factor to older adults' experience of negative emotions and moral judgments, then we should see age differences in either the unintentional harm or intentional without harm conditions but not necessarily in the anger or disgust conditions.

Method

Participants

Prior to conducting this study, appropriate sample size was determined using a power analysis in G*Power (Faul et al., 2007) and was based on the smallest interaction effect size for person judgments that we found in Study 1.

This analysis indicated that we needed 434 total participants (roughly 54 per group) to detect differences between eight groups of $f = .20$ ($d = 0.4$) with 95% power and at an alpha level of .05. To accommodate participants who failed the attention checks ($n_{OA} = 55$, $n_{YA} = 107$), we collected data from 629 participants who were either 18-30 years old or 55-79 years old. The attention checks were the same as the ones used in Study 1.

Younger ($n = 249$; $M_{age} = 25.38$, $SD_{age} = 2.38$, age range: 18-30 years, 38% female) and older ($n = 218$; $M_{age} = 62.43$, $SD_{age} = 4.49$, age range: 55-77 years, 53% female) adults were recruited to participate in this study via Mturk. Participants were compensated \$3.00 for participating in this 30-minute online survey. This study was reviewed by a university IRB. This work was not preregistered. All participants were required to provide informed consent.

Materials

Scenarios. Study 2 included the same 16 scenarios used in Study 1. In addition, we created eight disgust and eight anger scenarios. When creating these scenarios, we focused on appraisals of goal divinity/purity and goal blockage, respectively. The new anger and disgust scenarios contained the same perpetrator in the intentional without harm and unintentional harm scenarios in Study 1. For the anger scenarios, we focused on appraisals of goal blockage in that goal blockage is likely to result in anger (Hutcherson & Gross, 2011; Kuppens et al., 2003). For the disgust scenarios, we focused on appraisals and violations of purity, as these are the most common elicitors of core disgust (Rozin et al., 2008). Importantly, the anger and disgust scenarios did not

explicitly include a social other like the intentional without harm and unintentional harm scenarios. The scenarios are included in [Appendix E](#), but examples of the newly created anger and disgust scenarios using the same protagonist (i.e., Jenny) as the example scenarios provided in Study 1 are presented below.

Anger Condition

Jenny is taking a class in sculpture. She is using a brand-new torch to weld together pieces of metal. Jenny decides to use the torch on a nearby desk to see if it will burn. The desk catches on fire very quickly and the fire gets out of control. The fire destroys all of the welding equipment in the classroom and all sculpture classes get cancelled for the rest of the year due to the damage.

Disgust Condition

Jenny is taking a class in sculpture. She is using a brand-new torch to weld together pieces of metal. Jenny decides to use the torch on her arm to see if it will burn. Jenny moves the torch closer to her arm and singes her skin, making the whole classroom smell like burning flesh. Smelling her burnt skin in the air, Jenny wonders what it would taste like, so she licks the blistering spot on her arm.

Dependent variables. For Study 2, person judgments and act judgments were measured in the same manner as Study 1 (see [Appendix B](#)). Person judgments were comparably reliable for older ($\alpha = .94$) and younger ($\alpha = .90$) adults. Similarly, act judgments were comparably reliable for older ($\alpha = .79$) and younger ($\alpha = .77$) adults.

Regarding emotion endorsements, we decided to assess only emotion ratings of anger, disgust, and sympathy. We did not include the nonverbal emotion endorsements as we did in Study 1 based on the rationale provided in Study 1 (i.e., older adult difficulties in nonverbal emotion detection). Ratings of disgust ($\alpha = .95$) and sympathy ($\alpha = .85$) were measured in the same manner as

in Study 1. In creating the novel anger scenarios, we decided to adjust the way verbal endorsements of anger were measured in Study 2. In Study 1, participants indicated how “angry,” “outraged,” and “furious” they were at the perpetrator. This triad conflates anger and outrage, with the latter carrying connotations of morality (Hechler & Kessler, 2018; Salerno & Peter-Hagene, 2013). Therefore, we decided to separately measure “anger” with the triad “anger,” “annoyed,” and “irritated” ($\alpha = .95$; from the mDES, Fredrickson et al., 2011) and “outrage” with the triad “outraged,” “furious,” and “appalled” ($\alpha = .97$). I did not explore the measure of outrage further here in Study 2 or any of the studies. Participants indicated to what extent they felt a particular emotion toward the perpetrator on a 7-point scale (1 = *Not at all*, 7 = *Extremely*).

Control variables. As in Study 1, we included the same trait aggression (BAQ; Webster et al., 2014; $\alpha = .89$) and trait disgust (TDDS; Tybur et al., 2009; $\alpha = .92$) measures. These measures were included to serve as control variables to determine if there were pre-existing differences in trait aggression and trait disgust between conditions.

Procedure

The current study employed a 2 (age group: younger, older) \times 4 (condition: unintentional harm, intentional without harm, anger, disgust) design, with age group and condition as between-subjects factors. After providing informed consent, participants were randomly assigned to either the intentional without harm ($n = 121$, $n_{YA} = 62$, $n_{OA} = 59$), unintentional harm ($n = 111$, $n_{YA} = 64$, $n_{OA} = 47$), anger ($n = 114$, $n_{YA} = 51$, $n_{OA} = 63$), or disgust ($n = 121$, $n_{YA} = 60$, n_{OA}

= 61) condition. For each scenario and in the following order, participants (1) provided moral judgments, (2) provided emotion ratings, and (3) indicated aggressive action tendencies⁷. After all of the scenarios were presented, participants completed the TDDS, BAQ, and the same demographic questionnaire as in Study 1. Lastly, participants were thanked and compensated for their participation.

Results

Data Analysis Strategy

As in Study 1, we conducted multi-level regressions for all of our analyses to account for nesting of scenarios within participant and for intercept variability between participants. ICCs ranged from .53-.71, suggesting that participants' responses across the scenarios were highly dependent and that the multilevel framework is preferred. As such, we included a random intercept for scenario and a random intercept for participant for each analysis. For each outcome, we included dummy coded age (ref = older adults), dummy coded condition (ref = unintentional harm) and the Age group × Condition interaction. For disgust ratings, we included trait moral disgust and trait pathogen disgust as covariates to account for observed age differences (see below). In addition, sex was included as a covariate in the analyses because of the unbalanced sex distribution for older and younger adults.

⁷ We decided to include a measure of aggressive action tendencies in Study 2 to be consistent with Study 1. As in Study 1, we do not feel that the results from the aggressive action tendencies contribute significantly to this work, and thus we have not included them here. Instead, they can be found on our OSF page.

The same functions and packages used in Study 1 were also used in Study 2. To streamline the reporting of the results, we do not report the full test statistics for the post hoc comparisons for the main effect of condition if there was a significant age group by condition interaction. We mainly chose to focus on reporting age group by condition interactions rather than main effects of condition because of our predictions regarding age differences in specific conditions. All test statistics can be reproduced via our R script available on OSF, though we do report means, standard deviations, and 95% confidence intervals (95% CI [lower, upper]) here to highlight the condition differences.

Manipulation Check

To ensure that our anger and disgust conditions appropriately elicited anger and disgust, respectively, regardless of age, we conducted a 4 (condition) \times 3 (emotion) mixed factorial ANOVA with condition as a between-subject factor and emotion as a within-subject factor. The analysis revealed main effects of condition, $F(3, 463) = 17.48, p < .001, \eta_p^2 = .197$, and emotion, $F(2, 926) = 95.34, p < .001, \eta_p^2 = .171$, which were qualified by a Condition \times Emotion interaction, $F(6, 926) = 51.16, p < .001, \eta_p^2 = .249$. To probe the significant interaction, we conducted pairwise comparisons to determine which emotion was rated most highly in each condition – specifically within the anger and disgust conditions. In the anger condition, anger ratings ($M = 4.07, SD = 1.58, 95\% CI [3.77, 4.36]$) were significantly higher than disgust ratings ($M = 3.48, SD = 1.68, 95\% CI [3.17, 3.79]$), $t(926) = 0.58, p = .001$, and sympathy ratings ($M = 3.14, SD = 1.56, 95\% CI [2.66, 3.43]$), $t(926) = 0.92, p < .001$. In the disgust condition,

disgust ratings ($M = 4.86$, $SD = 1.34$, 95% CI [4.62, 5.10]) were significantly higher than anger ratings ($M = 3.64$, $SD = 1.59$, 95% CI [3.35, 3.92]), $t(926) = 1.22$, $p < .001$, and sympathy ratings ($M = 3.27$, $SD = 1.37$, 95% CI [3.02, 3.51]), $t(926) = 1.91$, $p < .001$. Importantly, these results indicate that anger was elicited to a greater extent than disgust and sympathy in the anger condition. Likewise, disgust was elicited to a greater extent than anger and sympathy in the disgust condition. Taken together, these results indicate that the anger and disgust conditions were appropriately evocative of the intended emotions.

Control Variables

Trait disgust. Older adults ($M = 4.57$, $SD = 1.47$, 95% CI [4.37, 4.76]) reported higher trait moral disgust than younger adults ($M = 4.17$, $SD = 1.47$, 95% CI [3.99, 4.36]), $F(1, 459) = 8.64$, $p = .003$, $\eta_p^2 = .018$. The two-way interaction was significant, $F(3, 459) = 4.80$, $p = .003$, $\eta_p^2 = .030$. In the anger condition, older adults ($M = 5.02$, $SD = 1.34$, 95% CI [4.64, 5.41]) reported higher trait moral disgust than younger adults ($M = 3.96$, $SD = 1.52$, 95% CI [3.58, 4.34]), $t_{\text{Welch}}(111.05) = 3.96$, $p < .001$. In the disgust condition, older adults ($M = 4.57$, $SD = 1.43$, 95% CI [4.21, 4.94]) reported higher trait moral disgust than younger adults ($M = 4.02$, $SD = 1.54$, 95% CI [3.62, 4.42]), $t_{\text{Welch}}(118.04) = 2.05$, $p = .043$. No age differences emerged in the intentional without harm ($p = .128$) or unintentional harm ($p = .175$) conditions. In addition, younger adults ($M = 4.57$, $SD = 1.23$, 95% CI [4.41, 4.72]) reported higher trait pathogen disgust than older adults ($M = 4.11$, $SD = 1.30$, 95% CI [3.93, 4.28]), $F(1, 459) = 15.47$, $p < .001$, $\eta_p^2 = .033$.

Moral Judgments

Person judgments. Participants' person judgments varied significantly by condition, $F(3, 458) = 83.52, p < .001, \eta_p^2 = .070$. Participants reported the harshest person judgments in the intentional without harm condition ($M = 5.37, SD = 1.18, 95\% CI [5.16, 5.58]$), followed by the disgust condition ($M = 4.48, SD = 0.90, 95\% CI [4.32, 4.64]$), and then the anger condition ($M = 3.77, SD = 0.76, 95\% CI [3.63, 3.91]$). Person judgments were lowest in the unintentional harm condition ($M = 3.02, SD = 0.89, 95\% CI [2.86, 3.19]$).

Although the main effect of age group was not significant ($p = .298$), the two-way interaction was, $F(3, 458) = 4.71, p = .003, \eta_p^2 = .004$. Older adults reported harsher person judgments than younger adults in the intentional without harm condition, $b = -0.47, SE = 0.17, t = -2.72, p = .01$. However, older adults reported more lenient person judgments compared to younger adults in the unintentional harm condition, $b = 0.42, SE = 0.18, t = 2.31, p = .02$. Older and younger adults' person judgments did not significantly differ in the disgust ($p = .86$) or the anger ($p = .11$) conditions (see Panel A of Figure 4).

Act judgments. Act judgments varied significantly by condition, $F(3, 458) = 38.86, p < .001, \eta_p^2 = .034$. Act judgments in the intentional without harm condition ($M = 4.90, SD = 0.89, 95\% CI [4.63, 4.89]$) were significantly higher than act judgments in both the anger ($M = 4.76, SD = 0.69, 95\% CI [4.63, 4.89]$) and disgust ($M = 4.48, SD = 0.58, 95\% CI [4.37, 4.58]$) conditions, which were not significantly different. Act judgments were significantly lower in the

unintentional harm condition ($M = 3.72$, $SD = 0.89$, 95% CI [3.55, 3.88]) compared to the other three conditions.

Although the main effect of age group was not significant ($p = .861$), the two-way interaction was, $F(3, 458) = 5.96$, $p = .001$, $\eta_p^2 = .005$. Older adults reported harsher act judgments compared to younger adults in the anger condition, $b = -0.36$, $SE = 0.14$, $t = -2.47$, $p = .01$. However, older adults reported more lenient act judgments than younger adults in the unintentional harm condition, $b = 0.43$, $SE = 0.15$, $t = 2.95$, $p < .001$. Older and younger adults' act judgments did not vary in the intentional without harm ($p = 0.26$) or the disgust ($p = .19$) conditions (see Panel B of Figure 4).

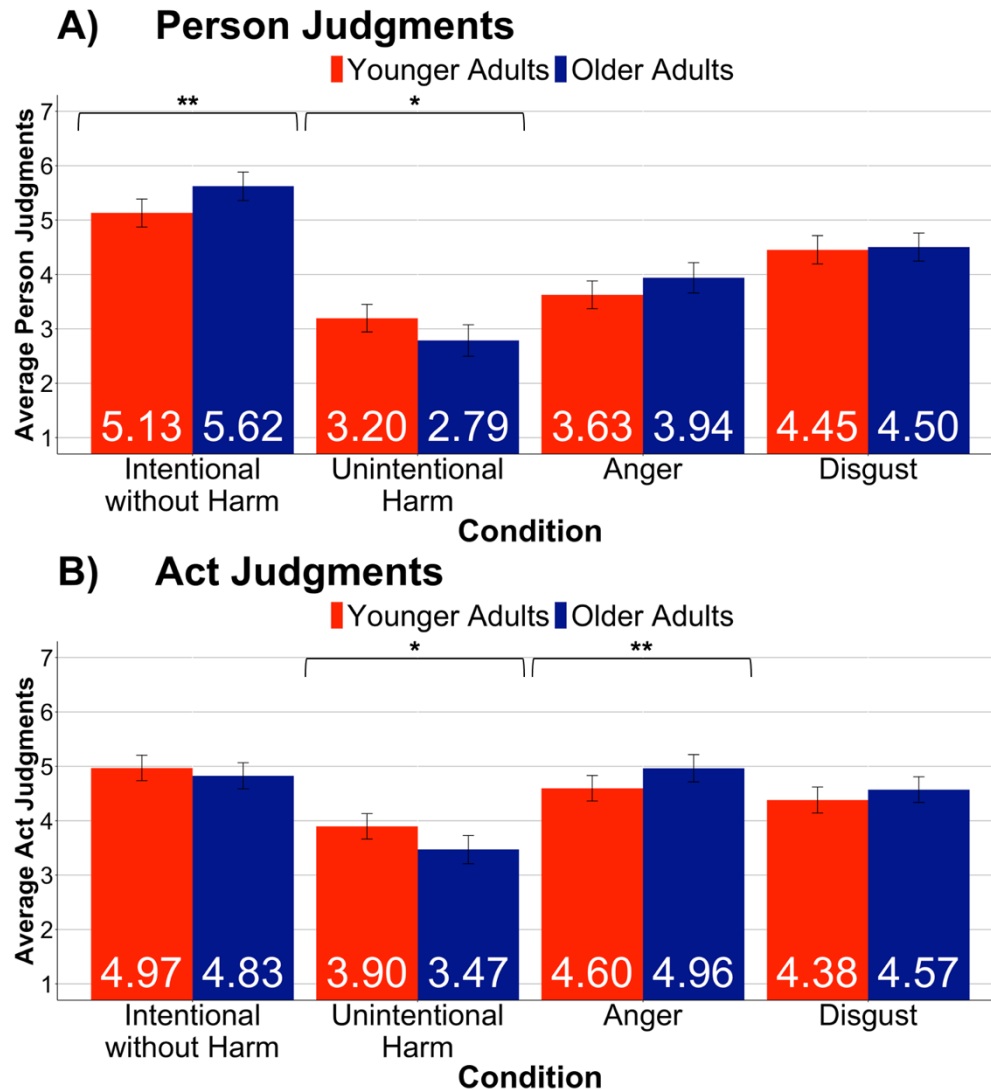


Figure 4. Mean person judgments (Panel A) and act judgments (Panel B) for older and younger adults in each condition in Study 2.

Responses for both person and act judgments ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed.

* $p < .05$. ** $p < .01$.

Emotion Ratings

Anger.⁸ Participants' anger ratings varied significantly by condition, $F(3, 458) = 19.68, p < .001, \eta_p^2 = .018$. Specifically, anger ratings in each condition were significantly different from each other, with anger ratings being the highest in the intentional without harm condition ($M = 4.81, SD = 1.46, 95\% CI [4.55, 5.07]$), followed by the anger condition ($M = 4.07, SD = 1.58, 95\% CI [3.77, 4.36]$) and then the disgust condition ($M = 3.64, SD = 1.59, 95\% CI [3.35, 3.92]$). Anger ratings were lowest in the unintentional harm condition ($M = 3.08, SD = 1.46, 95\% CI [2.80, 3.35]$).

Although the main effect of age group was not significant ($p = .917$), the two-way interaction was, $F(3, 458) = 4.10, p = .007, \eta_p^2 = .004$. In the unintentional harm condition, older adults reported significantly lower anger ratings than younger adults, $b = 0.84, SE = 0.29, t = 2.88, p < .001$. However, older and younger adults' anger ratings did not significantly differ in the anger ($p = .25$), disgust ($p = .10$), or the intentional without harm ($p = .98$) conditions (see Panel A of Figure 5).

Disgust. Participants' disgust ratings varied significantly by condition, $F(3, 456) = 47.77, p < .001, \eta_p^2 = .042$. Specifically, disgust ratings in the intentional without harm ($M = 4.82, SD = 1.47, 95\% CI [4.55, 5.08]$) and disgust ($M = 4.86, SD = 1.34, 95\% CI [4.62, 5.10]$) conditions did not significantly differ from each other, but both were significantly higher than disgust ratings in the anger ($M =$

⁸ We re-ran the same analysis with the old composite anger from Study 1. The pattern of results was the same. Statistics can be found in the R script available on our OSF page.

3.48, $SD = 1.68$, 95% CI [3.17, 5.79]) condition. Disgust ratings were lowest in the unintentional harm condition ($M = 2.78$, $SD = 1.63$, 95% CI [2.46, 3.08]).

Although the main effect of age group was not significant ($p = .383$), the two-way interaction was, $F(3, 456) = 3.77$, $p = .011$, $\eta_p^2 = .003$. Older adults reported significantly lower disgust ratings than younger adults in the unintentional harm condition, $b = 0.59$, $SE = 0.27$, $t = 2.17$, $p = .03$. However, older adults reported significantly higher disgust ratings than younger adults in the disgust condition, $b = -0.65$, $SE = 0.26$, $t = -2.50$, $p = .01$. Older and younger adults' disgust ratings did not significantly differ in the intentional without harm ($p = .39$) or the anger ($p = .47$) conditions (see Panel B of Figure 5).

Sympathy. A main effect of condition emerged for sympathy ratings, $F(3, 558) = 3.76$, $p = .011$, $\eta_p^2 = .003$. However, pairwise comparisons with Holm corrections applied to account for six comparisons did not reveal any significant differences between the conditions (p 's $> .168$). Sympathy ratings were non-significantly higher in the unintentional harm condition ($M = 3.34$, $SD = 1.49$, 95% CI [3.06, 3.62]) compared to the anger ($M = 3.15$, $SD = 1.56$, 95% CI [2.86, 3.43]), disgust ($M = 3.27$, $SD = 1.37$, 95% CI [3.02, 3.51]), and intentional without harm ($M = 2.90$, $SD = 1.33$, 95% CI [2.67, 3.14]) conditions.

Regardless of condition, younger adults ($M = 3.36$, $SD = 1.43$, 95% CI [3.18, 3.53]) had higher sympathy for the perpetrator compared to older adults ($M = 2.94$, $SD = 1.43$, 95% CI [2.75, 3.13]), $F(1, 458) = 8.59$, $p = .004$, $\eta_p^2 = .003$. This main effect was qualified by a significant two-way interaction, $F(3, 458) = 2.82$, $p = .037$, $\eta_p^2 = .003$. Older adults reported significantly lower sympathy

ratings than younger adults in the intentional without harm condition, $b = 0.76$, $SE = 0.26$, $t = 2.95$, $p < .001$, and in the unintentional harm condition, $b = 0.59$, $SE = 0.27$, $t = 2.19$, $p = .03$, but were no different in the anger ($p = .11$) or disgust ($p = 0.37$) conditions (see Panel C of Figure 5).

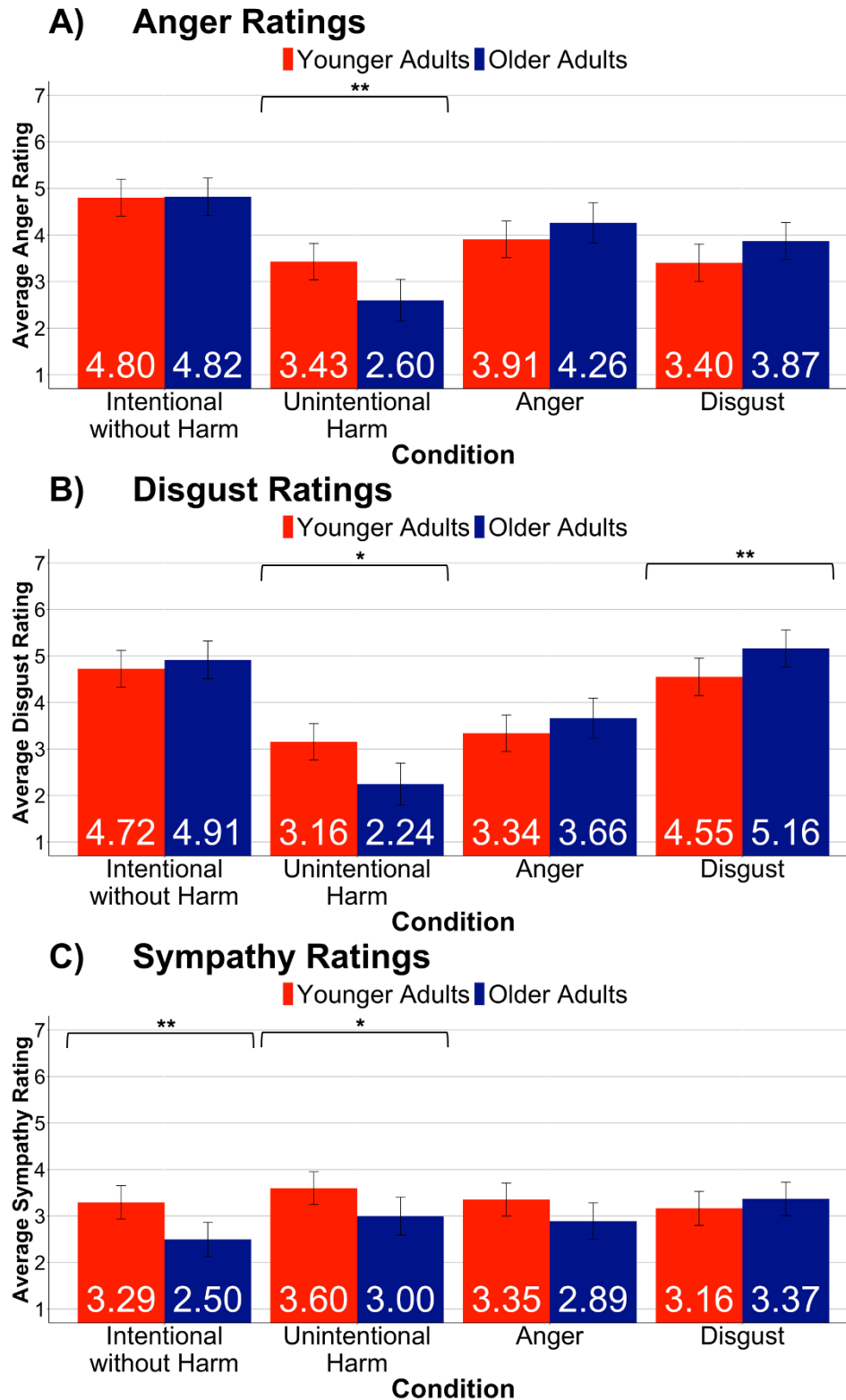


Figure 5. Mean anger (Panel A), disgust (Panel B), and sympathy (Panel C) ratings for older and younger adults in each condition in Study 2. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed.

* $p < .05$ ** $p < .01$

Discussion

In Study 2, we examined how younger and older adults differentially responded to and judged perpetrators who committed sociomoral violations or norm violations. Replicating Study 1, older adults (relative to younger adults) made harsher judgments of moral character when a perpetrator desired to harm another even though no harm actually occurred but made more lenient judgments of moral character when harm occurred accidentally. In addition, though not a direct replication of Study 1, older (relative to younger) adults reported less disapproval of the act when harm occurred accidentally. Although older and younger adults' act judgments did not significantly differ in the intentional without harm condition, the pattern of mean differences in that condition is still consistent with our interpretation that older adults are more sensitive to the desire to cause harm than they are to harmful consequences that occurred without malicious intentions.

As in Study 1, older adults reported less disgust and sympathy than younger adults in the unintentional harm condition. Interestingly, older adults also reported less anger than younger adults in the unintentional harm condition, which we did not find in Study 1 (though older adults' anger ratings were non-significantly lower than younger adults). Generally, this pattern is consistent with our interpretation that harmful outcomes (but not harmful intentions) may be less important for older adults' emotional reactions than for younger adults' emotional reactions. When perpetrators harm another accidentally, younger adults reported significantly more disgust, anger, and sympathy than older adults. Also of note,

here we observed higher levels of disgust in the disgust condition for older relative to younger adults when controlling for age differences in trait pathogen disgust. The extant literature indicates that older adults experience comparable levels of disgust relative to younger adults in their daily lives (Gross et al., 1997). In this study, however, the disgust condition involved social norm violations, to which older adults may be more sensitive.

Study 3: Adult Age Differences in Response to Intentional versus Accidental Harms

The results from Studies 1 and 2 suggest that older adults may be less concerned about harmful outcomes and instead, they may be more attuned to harmful intentions. However, the designs of Studies 1 and 2 do not necessarily allow us to make such claims, given that we did not examine malicious intentions with a harmful outcome. Thus, we conducted a third experiment to examine the effects of harmful intent *and* harmful outcome on older and younger adults' moral judgments and emotional reactions.

Specifically, in Study 3, we added a condition in which the perpetrators either intended to and successfully harmed another (i.e., the intentional harm condition) or did not intend to and did not harm another (i.e., the unintentional without harm condition). The primary focus of Study 3 was the comparison of older and younger adults' moral judgments and emotional reactions to perpetrators who intentionally versus unintentionally harmed another. We predicted that, consistent with the previous studies, older adults would judge perpetrators who harm others accidentally more leniently than younger adults.

However, when that same harm was paired with malicious intent, older adults might report much harsher judgements of moral character and actions, and greater negative emotions (i.e., anger or disgust) compared to younger adults. We did not expect to see age differences in the outcomes of interest when perpetrators did not intend to and did not harm others.

Method

Participants

Appropriate sample size was determined using a power analysis in G*Power (Faul et al., 2007) and was based on the smallest interaction effect size for person judgments that we found in Study 1. This analysis indicated that we needed 434 total participants (roughly 54 per group) to detect differences between eight groups of $f = .20$ ($d = 0.4$) with 95% power and at an alpha level of .05. To accommodate participants who failed the attention checks⁹ ($n = 185$), we collected data from 618 participants who were either 18-30 years old or 55-80 years old.

The final sample ($N = 433$) used in the following analyses included 217 older adults ($M = 71.37$, $SD = 5.21$, 55-80 years; 65% female) and 216 younger adults ($M = 25.48$, $SD = 3.14$, 18-30 years; 60% female). Participants were recruited from MTurk and Prolific and were compensated \$3.00 or \$4.25, respectively, for completing this 30-minute online survey, respectively. Note that

⁹ The first attention check was: "In the scenarios you just read, did someone desire to harm another person?" (yes/no). The second attention check was: "In the scenarios you just read, was someone harmed?" (yes/no). The correct answer to these questions depends on the condition to which the participants were randomly assigned.

the results did not differ by platform. This work was not preregistered. All participants were required to provide informed consent.

Materials

Scenarios. The intentional without harm and unintentional harm scenarios in Studies 1 and 2 were also included in Study 3. We also added two conditions in which the desire to cause harm and the accidental outcome were fully crossed. Specifically, we manipulated (a) whether the perpetrator desired to harm another person, and (b) whether there was a harmful outcome. In the intentional without harm condition, there was a desire to cause harm but no harm occurred. In the unintentional harm condition, there was no desire to cause harm but a harmful consequence occurred accidentally. In the intentional harm condition, there was a desire to cause harm and harm occurred. In the unintentional without harm condition, there was no desire to cause harm and no harm occurred. Examples of the new conditions using the same protagonist (i.e., Jenny) as the example scenarios provided in Studies 1 and 2 are presented below. All scenarios can be found in [Appendix F](#).

Intentional Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny wants to burn her partner's hand. Jenny welds the metal and the heat from the torch travels up the metal rod and her partner's hand is burned.

Unintentional without Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny does not want to burn her partner's hand. Jenny only wants to weld together the metal. Jenny starts welding the metal together and the heat from the torch travels up the metal rod, but her partner happens to let go and is not burned at all.

Dependent variables. Ratings of anger ($\alpha = .97$), disgust ($\alpha = .98$), and sympathy ($\alpha = .71$) were measured the same way as Study 2. Participants indicated to what extent they felt a particular emotion toward the perpetrator on a 7-point scale (1 = *Not at all*, 7 = *Extremely*). Person judgments and act judgments were measured in the same manner as Studies 1 and 2 (see [Appendix B](#)). Person judgments were comparably reliable for older ($\alpha = .98$) and younger ($\alpha = .96$) adults. Similarly, act judgments were comparably reliable for older ($\alpha = .95$) and younger ($\alpha = .93$) adults. Aggressive action tendencies were not measured in Study 3. Trait disgust was measured using the same measure as in the previous studies (i.e., TDDS; Tybur et al., 2009; see [Appendix C](#)).

Procedure

Study 3 employed a 2 (age group: younger, older) \times 4 (condition: intentional without harm, unintentional harm, intentional harm, unintentional without harm) design, with age group and condition as between-subjects factors. After providing informed consent, participants were randomly assigned to one of four possible conditions: (a) intentional harm ($n = 112$, $n_{YA} = 54$, $n_{OA} = 58$), (b) unintentional harm ($n = 105$, $n_{YA} = 54$, $n_{OA} = 51$), (c) intentional without harm ($n = 107$, $n_{YA} = 53$, $n_{OA} = 54$), or (d) unintentional without harm ($n = 109$, $n_{YA} = 55$, $n_{OA} = 54$). For each scenario, participants provided person and act judgments and emotion ratings. After all of the scenarios were presented, participants completed the trait disgust measure (TDDS; Tybur et al., 2009), and the same demographic questionnaire as Studies 1 and 2. Lastly, participants were thanked and compensated for their participation.

Results

Data Analysis Strategy

As in Studies 1 and 2, we conducted multi-level regressions for all of our analyses to account for nesting of scenarios within participant and for intercept variability between participants. ICCs ranged from .71-.86, suggesting that participants' responses across the scenarios were highly dependent and that the multilevel framework is preferred. As such, we included a random intercept for scenario and a random intercept for participant for each analysis. For each outcome, we included dummy coded age (ref = older adults), dummy coded condition (ref = unintentional harm), and the Age group x Condition interaction. For disgust ratings, I included trait moral disgust as a covariate to account for observed age by condition differences (see below).

The same functions and packages used in Studies 1 and 2 were also used in Study 3. To streamline the reporting of the results, I do not report the full test statistics for the post hoc comparisons for between condition differences if there was a significant age group by condition interaction. As in Study 2, we mainly chose to focus on reporting age group by condition interactions rather than main effects of condition because of our predictions regarding age differences in specific conditions, but also because fully-crossed investigations of intent and outcome in moral scenarios are already well studied (Cushman, 2015). All test statistics can be reproduced via our R script available on OSF, though we do report means, standard deviations, and 95% confidence intervals (95% CI [lower, upper]) here to highlight the condition differences.

Control Variables

Trait disgust. Although neither the main effects of age group ($p = .076$) nor condition ($p = .212$) were significant, the two-way interaction was significant, $F(3, 425) = 3.07, p = .028, \eta_p^2 = .007$. In the unintentional without harm condition, older adults ($M = 3.66, SD = 1.56, 95\% CI [3.24, 4.09]$) reported higher trait moral disgust than younger adults ($M = 3.17, SD = 1.31, 95\% CI [2.82, 3.52]$), $t_{\text{Welch}}(98.46) = 2.23, p = .028$. In addition, in the unintentional harm condition, older adults ($M = 3.53, SD = 1.74, 95\% CI [3.04, 4.01]$) reported higher trait moral disgust than younger adults ($M = 3.15, SD = 1.74, 95\% CI [2.77, 3.52]$), $t_{\text{Welch}}(94.43) = 2.44, p = .016$. No age differences in the intentional harm ($p = .673$) or the intentional without harm ($p = .419$) conditions.

Moral Judgments

Person judgments. Participants' person judgments significantly varied by condition, $F(3, 425) = 230.23, p < .001, \eta_p^2 = .184$. Although participants' person judgments were not significantly different between the intentional harm condition ($M = 5.54, SD = 1.30, 95\% CI [5.30, 5.79]$) and the intentional without harm condition ($M = 6.02, SD = 0.89, 95\% CI [5.85, 6.19]$), they were both significantly higher than person judgments in the unintentional harm condition ($M = 3.02, SD = 0.82, 95\% CI [2.86, 3.18]$) and the unintentional without harm condition ($M = 2.76, SD = 0.84, 95\% CI [2.60, 2.92]$).

Although the main effect of age group was not significant ($p = .058$), the two-way interaction was, $F(3, 425) = 14.28, p < .001, \eta_p^2 = .011$. In the intentional harm condition, older adults reported significantly harsher person judgments

compared to younger adults, $b = -1.11$, $t = -6.25$, $p < .001$. Conversely, in the unintentional harm condition, older adults reported more lenient person judgments compared to younger adults, $b = 0.47$, $t = 2.58$, $p = .010$. Older and younger adults' person judgments did not significantly differ in the intentional without harm condition ($p = .34$) or the unintentional without harm ($p = .50$; see Panel A of Figure 6).

Act judgments. Participants' act judgments varied significantly by condition, $F(3, 425) = 132.25$, $p < .001$, $\eta_p^2 = .114$. Participants' act judgments were highest in the intentional harm ($M = 5.53$, $SD = 1.05$, 95% CI [5.33, 5.73]) and intentional without harm ($M = 4.43$, $SD = 0.94$, 95% CI [5.25, 5.61]) conditions, followed by the unintentional harm condition ($M = 3.73$, $SD = 0.73$, 95% CI [3.58, 3.87]), and then the unintentional without harm condition ($M = 3.06$, $SD = 0.95$, 95% CI [2.88, 3.24]).

Although the main effect of age group was not significant ($p = .429$), these condition differences were qualified by an age group by condition interaction, $F(3, 425) = 7.23$, $p < .001$, $\eta_p^2 = .007$. In the intentional harm condition, older adults reported harsher act judgments compared to younger adults, $b = -0.75$, $SE = 0.17$, $t = -4.35$, $p < .001$. However, older and younger adults' act judgments did not significantly differ in the intentional without harm ($p = .91$), unintentional harm ($p = .08$), or the unintentional without harm ($p = .42$) conditions (see Panel B of Figure 6).

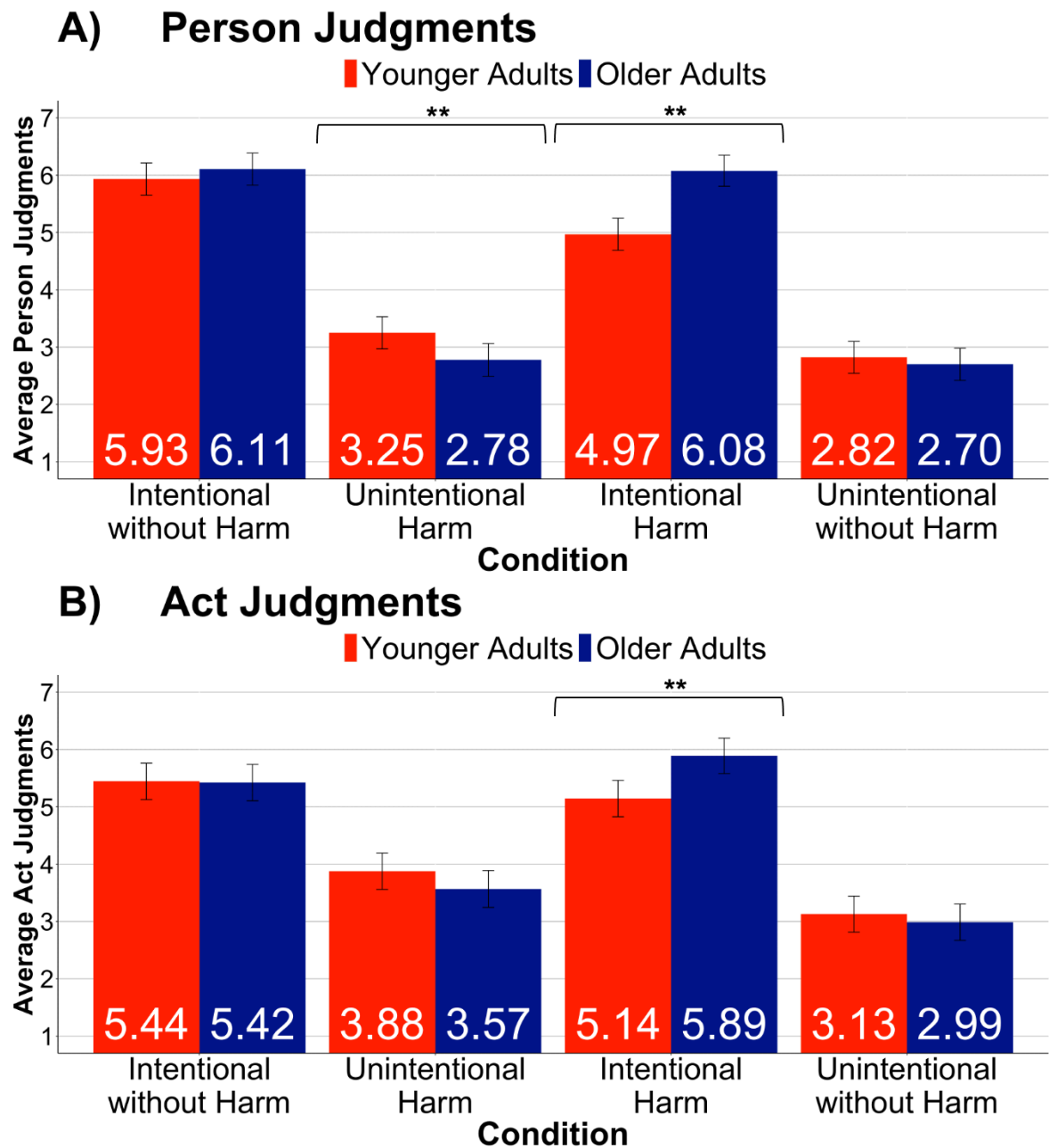


Figure 6. Mean person judgments (Panel A) and act judgments (Panel B) for older and younger adults in each condition in Study 3. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed.

** $p < .01$.

Emotion Ratings

Anger. Participants' anger ratings varied significantly by condition, $F(3, 425) = 54.69, p < .001, \eta_p^2 = .051$. Specifically, anger ratings were highest in the intentional harm condition ($M = 4.97, SD = 1.46, 95\% CI [4.69, 5.24]$) but were not significantly different from participants' anger ratings in the intentional without harm condition ($M = 4.59, SD = 1.70, 95\% CI [4.27, 4.92]$). Anger ratings in both these conditions were significantly higher than anger ratings in the unintentional harm condition ($M = 2.91, SD = 1.25, 95\% CI [2.67, 3.15]$), which were significantly higher than participants' anger ratings in the unintentional without harm condition ($M = 2.23, SD = 1.21, 95\% CI [2.00, 2.46]$).

Although the main effect of age group was not significant ($p = .401$), the two-way interaction was significant, $F(3, 425) = 2.65, p = .048, \eta_p^2 = .003$. Older adults' anger ratings were significantly higher than younger adults' anger ratings in the intentional harm condition, $b = -0.72, SE = 0.27, t = -2.71, p = .010$. Older and younger adults' anger ratings did not significantly differ in the intentional without harm condition ($p = .37$), unintentional harm condition ($p = .55$), or the unintentional without harm condition ($p = .59$; see Panel A of Figure 7).

Disgust. Although the main effect of age group was not significant ($p = .437$), participants' disgust ratings varied significantly by condition, $F(3, 425) = 85.60, p < .001, \eta_p^2 = .078$. Specifically, disgust ratings were higher in the intentional harm condition ($M = 5.03, SD = 1.46, 95\% CI [4.76, 5.30]$) compared to the unintentional harm condition ($M = 1.91, SD = 1.19, 95\% CI [1.68, 2.14]$), $t(425) = -2.67, p_{adj} < .001$, and the unintentional without harm condition ($M =$

2.33, $SD = 1.29$, 95% CI [2.08, 2.58]), $t(425) = 3.11$, $p < .001$. The same pattern held for the intentional without harm condition ($M = 4.83$, $SD = 1.70$, 95% CI [4.51, 5.16]) compared to the unintentional harm, $t(425) = -2.57$, $p < .001$, and unintentional without harm conditions, $t(425) = 3.00$, $p < .001$. Disgust ratings in the intentional without harm and intentional harm conditions did not significantly differ ($p = .326$) nor did disgust ratings in the unintentional harm and unintentional without harm conditions ($p = .064$). These condition differences did not vary by age group ($p = .310$; see Panel B of Figure 7).

Sympathy. Participants' sympathy ratings varied significantly by condition, $F(3, 425) = 4.441$, $p = .004$, $\eta_p^2 = .004$. Surprisingly, sympathy ratings were significantly higher in the intentional harm condition ($M = 3.02$, $SD = 1.52$, 95% CI [2.73, 3.30]) compared to the intentional without harm condition ($M = 2.46$, $SD = 1.11$, 95% CI [2.25, 2.67]) and to the unintentional without harm condition ($M = 2.39$, $SD = 1.16$, 95% CI [2.17, 2.61]) but were not significantly different from sympathy ratings in the unintentional harm condition ($M = 2.69$, $SD = 1.12$, 95% CI [2.47, 2.90]).

Although the main effect of age group was not significant ($p = .434$), the two-way interaction was significant, $F(3, 425) = 11.24$, $p < .001$, $\eta_p^2 = .011$. Younger adults reported higher sympathy ratings than older adults in the intentional harm condition ($b = .95$, $SE = 0.23$, $t = 4.16$, $p < .001$) and the intentional without harm condition ($b = 0.52$, $SE = 0.23$, $t = 0.52$, $p = .03$). However, in the unintentional harm condition, older adults had significantly higher

sympathy ratings than younger adults ($b = -0.72$, $SE = 0.23$, $t = -3.08$, $p < .001$; see Panel C of Figure 7).

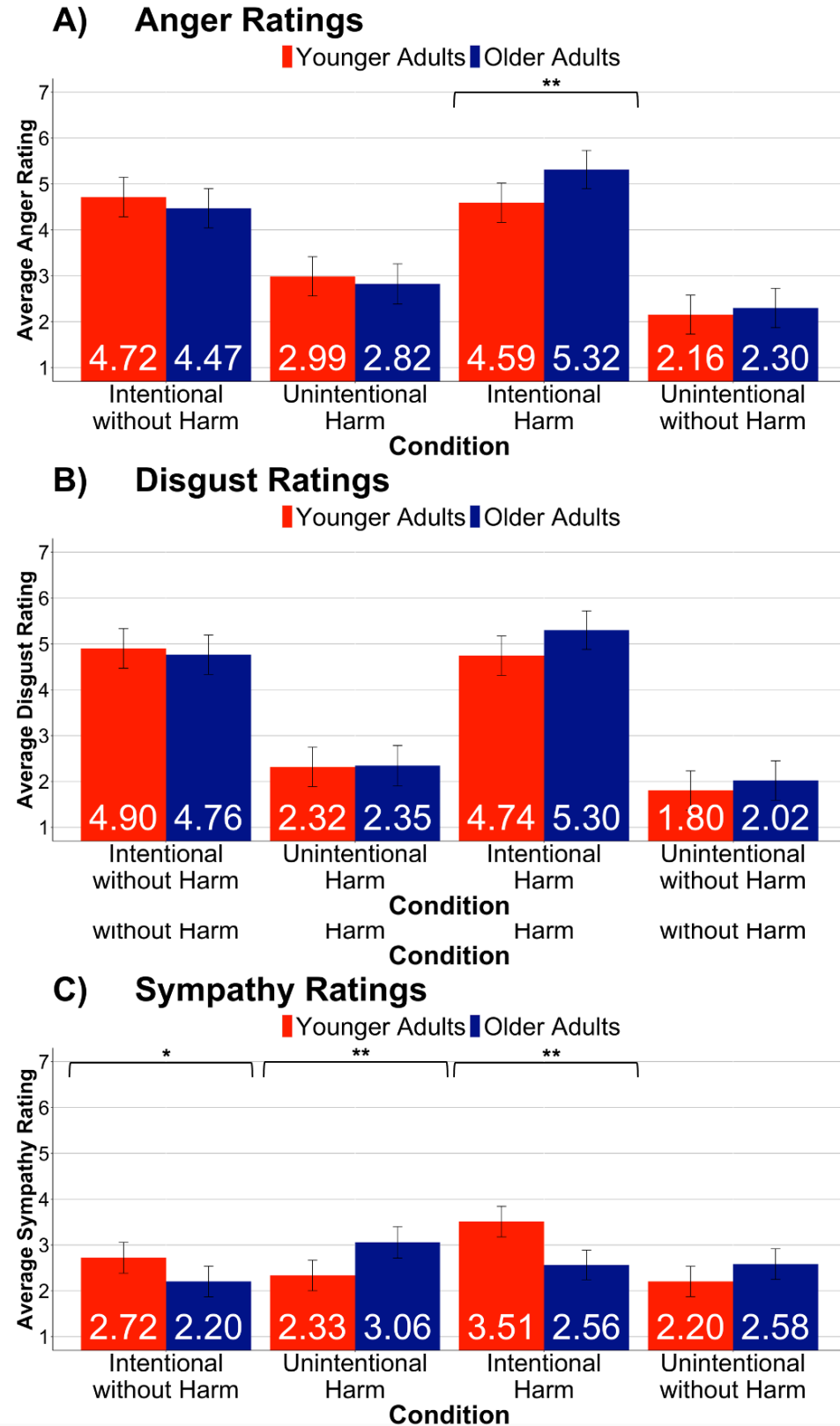


Figure 7. Mean anger (Panel A), disgust (Panel B), and sympathy (Panel C) ratings for older and younger adults in each condition in Study 3. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed.

* $p < .05$. ** $p < .01$.

Discussion

In Study 3, we aimed to parcel out the effects of malicious intent and harmful outcomes on older and younger adults' moral judgments and emotional reactions. The age differences in moral judgments and emotional reactions to perpetrators who intended to harm another and succeeded at doing so (i.e., intentional harm condition) and perpetrators who did not intend to but accidentally harmed another (i.e., the unintentional harm condition) allowed us to parcel out the unique effect of the desire to harm another in older adults' judgments and emotions. Compared to harming another accidentally and unsuccessfully harming another despite malicious intentions, desiring to *and* successfully harming another is particularly egregious for older relative to younger adults, leading them to judge perpetrators' moral character and actions more harshly with greater anger than their younger adult counterparts. Another way to look at it is that younger adults actually had less harsh moral judgments for intentional harms not only compared to older adults but also compared to intentional harms that were unsuccessful (i.e., in the intentional without harm condition). Moreover, younger adults were oddly more sympathetic toward the perpetrator who intentionally harmed another compared to older adults, but they were generally low across the board with respect to anchor interpretation (i.e., the means fall generally around "somewhat" on the response options for younger adults).

Conversely, when perpetrators harm another accidentally, older adults judged them more leniently than younger adults. Regarding the emotion ratings,

older and younger adults' disgust ratings were no different in any of the conditions. Interestingly, older adults were significantly less sympathetic to and more angry at perpetrators who intended to and successfully harmed another person compared to younger adults, which runs contrary to evidence for an age-related reduction in experiences of anger in later adulthood (Kunzmann & Grühn, 2005; Lawton et al., 1992; Magai, 1999; Tsai et al., 2000). Thus, it seems that younger and older adults' moral judgments and emotional reactions are impacted by both perpetrator's intentions and outcomes, but malicious intentions are particularly egregious for older relative to younger adults.

However, all of these harms – intended or not – were committed by a stranger with whom the participants have no relationship. This is true not only for the perpetrator but also for the victim of the perpetrators' intentions and actions. The person who is committing the harm may play a critical role in how older and younger adults judge them and their actions when they commit intentional or unintentional harms. Specifically, participants may be harsher on strangers who harm another and easier on close others who harm another, given that they lack a relationship with the stranger perpetrator but have a presumably strong bond with their close other. Study 4 aimed to further explore how the perpetrator's relational closeness to the participant may play a role in how they are judged and evaluated.

Study 4: Adult Age Differences in Reactions to Sociomoral Violations Committed by a Stranger Versus a Close Other Against a Stranger

Though these studies are some of the few investigating adult age differences in responses to sociomoral violations, there are other motivationally relevant factors that may contribute to differences in how older and younger adults react to and judge sociomoral violators that need to be considered. Specifically, the previous three studies included a perpetrator (e.g., Jenny) and a stranger (e.g., Jenny's partner). It is still unclear, though, whether older and younger adults' moral judgments and emotional reactions to perpetrators would be similar if the perpetrators were a close other. Study 4 builds on the previous three studies by including another motivationally relevant factor: relational closeness of the perpetrators. Older adults' socioemotional goals of maintaining social harmony and deepening close, meaningful interpersonal relationships may be pitted against each other when asked to judge close others who pose a threat to social harmony. Would older (relative to younger) adults judge close others who intended to and successfully harm another less harshly than strangers who also intended to and successfully harm another?

Older and younger adults' emotional reactions to intentional harm (which could be considered a threat to social harmony) may diverge when the perpetrator is a close other or a stranger. As described earlier, individuals experience changes in motivations, goals, and priorities across the adult life span. Socioemotional selectivity theory (SST; Carstensen, 2006; Carstensen et al., 1999) posits that with advancing age and an awareness of a shrinking future

time horizon, older adults focus more on emotionally fulfilling experiences and meaningful social relationships relative to younger adults. In pursuit of older adults' socioemotional goals posited by SST, they may behave in ways that reduce the likelihood of damaging or destroying a relationship or experiencing negative emotions after a transgression, such as decreasing blame attributions. As such, older adults may judge close others who pose a threat to social harmony less harshly than strangers who pose the same threat. Within the context of the current study, older (relative to younger) adults may respond less negatively to close others who intentionally harmed than to strangers who intentionally harmed another.

There were four main preregistered hypotheses for Study 4. First, I predicted that participants would respond more negatively (in terms of higher negative emotion ratings, harsher moral judgments, and less forgiveness) to perpetrators who intend to and successfully harm others relative to perpetrators who harm accidentally (i.e., a main effect of condition), which would be consistent with the findings from the previous three studies (Hypothesis 1). Second, I predicted that participants would respond more negatively to strangers relative to close others based on past research (i.e., a main effect of perpetrator; Gauché & Mullet, 2005; Girard & Mullet, 1997; Mullet & Girard, 2000; McCullough et al., 1998; Hypothesis 2). Third, I predicted that older adults would respond more negatively to perpetrators intentionally who harmed another relative to younger adults (i.e., an age group \times condition interaction; Hypothesis 3). Conversely, and consistent with the previous studies, I predicted that older

adults would respond less negatively to perpetrators who accidentally harmed another relative to younger adults.

Finally, I predicted that this relationship would be influenced by the relational closeness of the perpetrator (Hypothesis 4; i.e., an age group \times condition \times perpetrator interaction). Specifically, given older adults' socioemotional goals of maintaining interpersonal harmony and avoiding negativity, older adults may be more motivated to engage in behaviors (e.g., being more lenient and/or forgiving) that repair their deeply valued and meaningful interpersonal relationships. Conversely, older adults may not be motivated to be less harsh or more forgiving of strangers with whom they do not share a deep, meaningful interpersonal relationship. As such, they be more lenient on close others relative to strangers who intentionally harm another. Younger adults may also be more forgiving of close others relative to strangers, but the difference may be smaller compared to older adults. In other words, this smaller difference would suggest that younger adults are not disproportionately more forgiving of close others relative to strangers, whereas a larger difference for older adults would suggest that they are (Hypothesis 4A). For accidental harms, however, older adults may respond similarly to strangers and close others who harmed another accidentally, but younger adults may respond more harshly to strangers than to close others (Hypothesis 4B). This stems from past research finding that older adults are generally more forgiving of close others and acquaintances (Allemand, 2008). This is also consistent with older adults' socioemotional goals posited by SST (Carstensen, 2006; Carstensen et al.,

1999) and the findings from the previous studies suggesting that accidental harms are not as egregious for older relative to younger adults.

Method

Participants and Design

Study 4 employed a 2 (age group: younger, older) × 2 (condition: intentional harm, unintentional harm) × 2 (perpetrator: stranger, close other) mixed factorial design. Age group and condition served as between-subjects factors, and perpetrator served as a within-subjects factor. To determine adequate sample size, I conducted a power analysis using G*Power (Faul et al., 2007). I based this analysis on the critical comparisons of younger versus older adults' emotional reactions, character judgments, and forgiveness depending on whether the perpetrator is a stranger or a close other in the intentional harm or unintentional harm conditions. I took a conservative approach to estimate the number of participants for this study based on the justification for a relatively small effect size given the study's design and required resources (Lakens et al., 2018). Assuming a small to medium effect size of 0.20 ($f = .10$), an alpha of 0.05, a total sample size of 280 was needed to detect differences between four groups with two repeated measures with 80% power. To account for potential data exclusion for not passing attention checks¹⁰, I aimed to recruit roughly 320 participants (160 older adults, 160 younger adults; roughly 80 participants per group) from the Prolific online participant system. Only 6% of the sample needed

¹⁰ The first attention check was: "In the scenarios you just read, did someone desire to harm another person?" (yes/no). The second attention check was: "In the scenarios you just read, was someone harmed?" (yes/no). The correct answer to these questions will depend on the condition to which the participants are randomly assigned.

to be dropped for not passing the attention checks ($n = 18$). Participants were compensated roughly \$6.50/hr for completing this 45-minute online study. This study was approved by the IRB, and all participants were required to provide informed consent prior to participation. This work was preregistered (<https://doi.org/10.17605/OSF.IO/UGPR3>), and data, materials, and analysis script can be found on our OSF page (<https://osf.io/627xc>).

The final sample size consisted of 147 older adults ($M_{\text{age}} = 66.07$ years, $SD_{\text{age}} = 4.32$, range: 60-79 years; 50% female, 49% male, 1% preferred not to answer) and 152 younger adults ($M_{\text{age}} = 25.78$ years, $SD_{\text{age}} = 3.29$, range: 18-30 years; 50% female, 49% male, 1% preferred not to answer).

Materials and Measures

Selecting a close other. Because I manipulated whether the perpetrator is a stranger (named Jordan) or a close other, participants were asked to provide the name of a close other prior to reading the scenarios. Participants were asked to provide only one name of a close other to be inserted in all four scenarios to reduce unnecessary variability when considering the closeness and nature/type of relationship. Participants' responses to the scenarios may differ for a partner, parent, sibling, and best friend because those relationships may be qualitatively different and carry different expectations. Prior to the scenarios, participants were presented with the following instructions: "For this next task, we would like you to think of one person to whom you feel very close. This person could be your spouse or partner, sibling, or longtime friend. This is a person to whom you feel so close that it is hard to imagine life without them. Please provide their name

below”. The language used to emphasize the closeness is modeled from Antonucci’s convoy model of social relations (Antonucci et al., 2019; Fuller et al., 2020). Participants typed the name in a separate entry box in Qualtrics and was inserted into the scenarios and questions.

I collected additional information about the participants’ close other for descriptive purposes. Specifically, participants were asked to describe the nature of the relationship by selecting one of the following options: (1) spouse/partner, (2) boyfriend/girlfriend, (3) sibling (e.g., sister, brother), (4) parent, (5) child, (6) friend, (7) other (please specify in a free-response question). Participants also reported the number of years they have known their close other in a text entry box. Participants were asked to indicate the quality of their relationship with their close other on a 6-point bipolar scale (-3 = *Very bad*, 3 = *Very good*). Finally, participants completed a measure of “communal strength” (i.e., strength of the relationship; Mills et al., 2004; see [Appendix G](#)). Specifically, communal strength is a measure of one’s degree of responsibility and motivation to respond to another’s needs and welfare (Mills et al., 2004). Participants responded to 10 questions assessing the communal strength of their relationship with their close other (e.g., how happy do you feel when you do something for your close other?) on an 11-point scale (0 = *Not at all*, 10 = *Extremely*). Responses were averaged to create one composite average of communal strength ($\alpha = .85$). After all the scenarios, participants also indicated whether they knew a Jordan, the name of the stranger, personally (yes/no) and whether or not the Jordan was the name of

their close/other (yes/no). Roughly 10% of the total sample knew a Jordan personally. Only 4 total participants' close others were named Jordan.

Scenarios. For Study 4, I used only the intentional and unintentional harm conditions from the previous studies, as these two scenarios better isolate the effect of intentional (versus accidental) harm. Half of the scenarios included a perpetrator who is a stranger, and the other half included a perpetrator who is a close other described above. The perpetrators were counterbalanced by creating two separate groups. In the first group, scenarios 1-4 contained a stranger perpetrator and scenarios 5-8 contained a close other perpetrator. In the second group, scenarios 1-4 contained a close other perpetrator, and scenarios 5-8 contained a stranger perpetrator. The groupings were randomized, and the scenarios within each group were randomized. In the previous studies, the perpetrators were different in each scenario. In this study, all the scenarios contained the same perpetrator named Jordan. Having the same perpetrator in all four stranger scenarios was done to reduce variability across the stranger scenarios and to be more comparable to the close other scenarios who have the same perpetrator. See an example below with the offender being a stranger (i.e., Jordan) or close other (e.g., close other named Katrina) in the unintentional harm and intentional harm conditions. All scenarios can be found in [Appendix G](#).

Unintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is taking a class in sculpture. Jordan is assigned to work with a partner to weld together pieces of metal. Jordan does not want to burn their partner's hand. Jordan only wants to weld together the metal. Jordan welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is taking a class in sculpture. Jordan is assigned to work with a partner to weld together pieces of metal. Jordan wants to burn their partner's hand. Jordan welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other Katrina is taking a class in sculpture. Katrina is assigned to work with a partner to weld together pieces of metal. Katrina does not want to burn their partner's hand. Katrina only wants to weld together the metal. Katrina welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other Katrina is taking a class in sculpture. Katrina is assigned to work with a partner to weld together pieces of metal. Katrina wants to burn their partner's hand. Katrina welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Prior to reading the scenarios, participants were informed that they will read scenarios about a stranger whom they have never met named Jordan and their close other that they just indicated. They were instructed to envision how they would feel about and judge the people described in the scenarios. They were asked to answer each question as if the situation actually happened, and they were asked to judge the person described in the scenario for what they did. They were reminded that I am interested in how they would react in real life if the situations were to happen. After each scenario, participants were asked to indicate their perceived severity of harm in the scenario on a 7-point scale (1 = *Not at all*, 7 = *Extremely*). In addition, participants were asked to indicate how easily they were able to envision what was happening in the situations involving

a close other and the stranger named Jordan (two separate items) on a 7-point scale (1 = *Not at all*, 7 = *Extremely*).

Comprehension check. To ensure that participants were reading the instructions, I included a comprehension check. Participants were instructed to select all statements that were true of the task they are about to complete. There were four total statements: (1) “I will read scenarios about a stranger and a close other and answer a few questions about each scenario,” (2) “I am to read each scenario and imagine how I would feel if the situation described in the scenario were to happen in real life,” (3) “The scenarios will appear for at least 15 seconds before I am able to proceed on,” and (4) “None of these statements are true of the task I am about to complete.” If participants answered incorrectly, they were redirected to the general instructions.

Moral judgments. Person and act judgments were measured in the same way as in Studies 1-3. Please refer to [Appendix B](#).

Emotion ratings. Ratings of anger, disgust, and sympathy were measured in the same way as Studies 2 and 3. Participants indicated to what extent they feel each emotion toward the perpetrator on a 7-point scale (1 = *Not at all*, 7 = *Extremely*). Responses were averaged to create separate composite averages for anger, disgust, and sympathy ratings.

Forgiveness. For each scenario, participants completed the Decisional Forgiveness Scale (DFS; Worthington et al., 2007). The DFS is an 8-item scale that measures the extent to which one has decided to forgive the offender and

behave differently toward that person. There are two subscales comprised of four items each: (1) Prosocial Intentions (e.g., “If I see him or her, I will act friendly”), and (2) Inhibition of Harmful Intentions (e.g., “I will not seek revenge upon him or her”). Study 4 only used the prosocial intentions subscale, as the inhibition of harmful intentions subscale items are framed in terms of seeking revenge for what the perpetrator did to the participant. In Study 4, there is an unknown stranger on the receiving end of the sociomoral violation. As such, Study 4 used only the 4 prosocial intentions items. In addition, because participants completed this measure in response to hypothetical scenarios, the statements used the conditional tense (e.g., “If I see Jordan, I would act friendly”) rather than the future tense as in the original version. Also, the perpetrator’s names were inserted in the statements for each scenario (see [Appendix H](#)). Responses were made on a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*) and were averaged, with higher scores indicating higher prosocial intentions. This measure has been demonstrated to have good internal consistency (Cronbach’s alpha ranged from .80 to .83) and test-retest reliability over three weeks ($r = .73$; Worthington et al., 2007).

Control variables. I included 5 control variables and one exploratory variable. Each are described below.

Current state affect. I measured current state affect to control for any potential baseline differences in positive and negative affect prior to the scenarios. Current positive and negative state affect was measured the using the Modified Differential Emotion Scale (mDES; Fredrickson et al., 2003; see

[Appendix J](#)). This 20-item scale measured how much participants felt 12 positive emotion triads (amusement, awe, compassion, contentment, gratitude, hope, interest, joy, love, pride, surprise, flirtatious) and 8 negative emotion triads (anger, contempt, disgust, embarrassment, fear, guilt, sadness, shame) in the current moment (e.g., “To what extent are you currently feeling angry, irritated, annoyed?” for anger). Participants responded to each item on a 5-point scale (0 = *Not at all*, 4 = *Extremely*). Responses to positive and negative items were averaged to create positive ($\alpha = .91$) and negative ($\alpha = .91$) affect subscales, with higher scores indicating greater levels of positive and negative affect.

Trait disgust. Participants completed the measure of trait disgust (i.e., TDDS; Tybur et al., 2009; see [Appendix C](#)). This is the same measure used in Studies 1-3.

Trait anger. Trait anger was assessed using the angry temperament subscale of the Trait Anger subscale of the State Trait Anger Expression Inventory (STAXI; Spielberger, 1999). The STAXI measures the experience of anger, the tendency to express anger, and the tendency to control anger (Spielberger, 1999) and has been validated in clinical and nonclinical populations (Lievaart et al., 2016). The angry temperament subscale contains four items and assesses the disposition to experience anger without provocation (e.g., “I am a hotheaded person”; see [Appendix K](#)). Participants read each statement and indicated the extent to which each statement is true of them. Responses were made on a 4-point Likert scale (1 = *Almost never*, 2 = *Sometimes*, 3 = *Often*, 4 =

Almost always). Responses were averaged ($\alpha = .86$), with higher scores indicating higher trait anger.

Trait sympathy. A new addition to Study 4 was a measure of trait sympathy (Lee, 2009). This 18-item questionnaire assessed trait sympathy and contained three subscales (see [Appendix L](#)). The first subscale is sympathy for the disempowered (Items 1-6), which focuses on the plight of individuals perceived as helpless or disadvantaged, included children, the elderly, or disabled (e.g., “It breaks my heart to know that there are children out there being abused by their own flesh and blood”). The second subscale is sympathy for the feelings of others (Items 7-12), which focuses on sympathetic reactions of the negative affective experiences (e.g., “I’m inclined to feel really troubled when someone I know is crying”). The third subscale is sympathy for animals (Items 13-18), which focuses on the suffering of animals (e.g., “It really disturbs me to know that some people are cruel and abusive to their pets”). Responses were made on a 7-point Likert Scale (1 = *Strongly disagree*, 7 = *Strongly agree*). Responses were averaged ($\alpha = .90$), with higher scores indicating more trait sympathy.

Dispositional forgiveness. Participants completed a measure of dispositional forgiveness with three items (Ng et al., 2018): (1) “I am almost always willing to give people a second chance when they make a mistake”, (2) “I try to forgive others when they hurt me”, and (3) “I forgive people who wrong me.” Participants responded on a 5-point Likert scale (1 = *Strongly disagree*, 5 =

Strongly agree) and were averaged ($\alpha = .89$), with higher scores indicating higher dispositional forgiveness.

Self-construal. Participants also completed a measure of self-construal. Self-construal can be operationalized as reflecting a person's view of the self that emphasizes separateness, internal attributes, and uniqueness of the individual (i.e., independent self-construal) or emphasizes connectedness and relationships (i.e., interdependent self-construal). Many Westerners have independent self-construal whereas many non-Westerners have interdependent self-construal (Singelis, 1994). Participants will complete five interdependent (e.g., "My happiness depends on those around me" and five independent (e.g., "I do my own thing, regardless of what others think") self-construal items. Responses were made on 7-point Likert scales (1 = *Strongly disagree*, 4 = *Neither disagree nor agree*, 7 = *Strongly agree*). Responses were averaged across to create composite averages for interdependent ($\alpha = .75$) and independent ($\alpha = .79$) self-construal. The relationship between interdependent self-construal and forgiveness was analyzed in an exploratory manner.

Procedure

After providing informed consent, participants were randomly assigned to either the intentional harm condition ($n_{\text{total}} = 152$, $n_{\text{OA}} = 74$, $n_{\text{YA}} = 78$) or the unintentional harm condition ($n_{\text{total}} = 147$, $n_{\text{OA}} = 73$, $n_{\text{YA}} = 74$). Prior to reading the scenarios, participants were asked to report their close other and complete the control measures of trait disgust, trait anger, trait sympathy, dispositional forgiveness, and self-construal. Next participants were presented with the

scenarios. Participants were instructed to try to envision how they would feel about and judge the people described in the scenarios. Participants were asked to answer each question as if that situation actually happened and if they were asked to judge the person described in the scenario. Participants were reminded that we want to know how they would react in real life if the situations were to happen. The scenarios were displayed for at least 15 seconds before they could move on, and they had an unlimited amount of time to read the scenario. Participants completed the comprehension check described above before reading and evaluating the scenarios. For each scenario and in the following order, participants provided person and act judgments, emotion ratings, and decisional forgiveness. After all of the scenarios are presented, participants completed the same demographic questionnaire as the previous studies. Lastly, participants were thanked and compensated for their participation.

Results

Data Analysis Strategy

As in the previous studies, I conducted multi-level regressions for all of the analyses to account for nesting of scenarios within participant and for intercept variability between participants. After excluding participants who did not pass the attention checks, I examined the ICCs, which ranged from .665-.881, suggesting that participants' responses across scenarios are dependent and, therefore, the multilevel framework is preferred. I included a random intercept for scenario and a random intercept for participant for each analysis unless there were model convergence issues. I explicitly note these cases as they occur and specify the

random effect structure that I used instead. For each outcome, I included dummy coded age (ref = older adults), dummy coded condition (ref = unintentional harm), dummy coded perpetrator (ref = stranger), and the interactions therein.

Significant two-way interactions were decomposed with simple slopes analyses.

Significant three-way interactions involving age group, perpetrator, and condition were decomposed by examining the age group \times perpetrator two-way interaction in the intentional harm and unintentional harm condition separately.

Close Other Characteristics

There were significant age differences in the types of relationships with participants' close others, $\chi^2(6) = 76.62, p < .001$. For older adults, 43% were spouse/partners ($n = 63$), 1% were boyfriend/girlfriend ($n = 2$), 12% were sibling ($n = 17$), 2% were a parent ($n = 3$), 9% were a child, ($n = 13$), 26% were a friend ($n = 38$), and 7% ($n = 11$) were other (e.g., cousin). For younger adults, 14% were spouse/partners ($n = 21$), 14% were boyfriend/girlfriend ($n = 21$), 12% were sibling, ($n = 190$), 6% were a parent ($n = 9$), 0% were a child ($n = 0$), 53% were a friend ($n = 81$), and less than 1% ($n = 1$) were other (e.g., cousin).

There were significant age differences in the number of years participants have known their close others, $t(297) = 16.76, p < .001$, Cohen's $d = 1.94$.

Unsurprisingly, older adults ($M = 36.02$ years, $SD = 16.46$, range: 3-71 years) reporting knowing their close other for longer than younger adults ($M = 11.22$ years, $SD = 7.72$, range: 0-30 years).

Older and younger adults, however, did not differ in their reported quality of the relationship with their close others, $t(297) = 1.35, p = .177$, Cohen's $d =$

0.16. Both older ($M = 2.68$, $SD = 0.62$, 95% CI [2.58, 2.78]) and younger ($M = 2.57$, $SD = 0.75$, 95% CI [2.45, 2.69]) adults reported perceiving the quality of their relationship very positively.

Older and younger adults did differ significantly in their reported communal strength, $t(297) = 5.82$, $p < .001$, Cohen's $d = 0.67$, with older adults ($M = 8.87$, $SD = 1.26$, 95% CI [8.67, 9.08]) reporting higher communal strength than younger adults ($M = 7.92$, $SD = 1.53$, 95% CI [7.67, 8.17]). As such, I included the measure of communal strength as a covariate in the analyses below.

Scenario Characteristics

I conducted a 2 (age group) \times 2 (condition) \times 8 (scenario) analysis of variance on the severity of harm question that participants responded to after each scenario. The main effect of age group was significant, $F(1, 2360) = 25.20$, $p < .001$, $\eta_p^2 = .011$, indicating that older adults ($M = 5.01$, $SD = 1.58$, 95% CI [4.91, 5.11]) reported higher severity of harm in the scenarios on average compared to younger adults ($M = 4.74$, $SD = 1.67$, 95% CI [4.64, 4.83]). The main effect of condition was also significant, $F(1, 2360) = 670.46$, $p < .001$, $\eta_p^2 = .181$, indicating that participants reported higher severity of harm in the intentional harm condition ($M = 5.55$, $SD = 1.38$, 95% CI [5.47, 5.63]) than in the unintentional harm condition ($M = 4.16$, $SD = 1.58$, 95% CI [4.07, 4.25]), even though the same harm occurred in both conditions. The scenarios also differed in their perceived harm, $F(7, 2360) = 7.99$, $p < .001$, $\eta_p^2 = .148$. Means, standard deviations, and confidence intervals by scenario are displayed in Table 1.

Table 1.
Severity of harm ratings for each scenario in Study 4

Scenario	<i>M</i>	<i>SD</i>	95% CI
Scenario 1: Burn	4.51	1.67	[4.31, 4.69]
Scenario 2: Construction	5.83	1.78	[5.71, 5.97]
Scenario 3: Darts	4.21	1.57	[4.02, 4.38]
Scenario 4: Dentist	5.00	1.61	[4.82, 5.18]
Scenario 5: Hair	5.21	1.51	[5.04, 5.38]
Scenario 6: Poison	5.69	1.34	[5.54, 5.81]
Scenario 7: Stand	4.45	1.60	[4.27, 4.64]
Scenario 8: Train	4.07	1.52	[3.89, 4.24]

Note. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*).

Neither the age group × condition interaction ($p = .904$) nor the age group × scenario condition interaction ($p = .180$) were significant. The condition × scenario interaction was significant, $F(7, 2360) = 12.19, p < .001, \eta_p^2 = .023$. Follow-up comparisons using Holm's corrections indicated that severity of harm ratings were significantly different between conditions in all of the scenarios except for Scenario 2 (Construction), $t(297) = 2.18, p = .472, \text{Cohen's } d = 0.28$. In all the other scenarios, participants reported higher severity of harm ratings in the intentional harm condition compared to the unintentional harm condition: S1 Burn, $t(297) = 13.74, p < .001, \text{Cohen's } d = 1.59$, S3 Darts, $t(297) = 9.81, p < .001, \text{Cohen's } d = 1.08$, S4 Dentist, $t(297) = 12.35, p < .001, \text{Cohen's } d = 1.43$, S5 Hair, $t(297) = 9.77, p < .001, \text{Cohen's } d = 1.13$, S6 Poison, $t(297) = 7.10, p < .001, \text{Cohen's } d = 0.87$, S7 Stand, $t(297) = 9.62, p < .001, \text{Cohen's } d = 1.02$, and S8 Train, $t(297) = 8.66, p < .001, \text{Cohen's } d = 0.95$. It seems that this two-way interaction is driven by the non-significant difference in the second scenario. Please refer to Figure 8 for means and confidence intervals. The three-way

interaction was not significant ($p = .763$). Given the significant effects, I included the severity of harm rating in the analyses below.

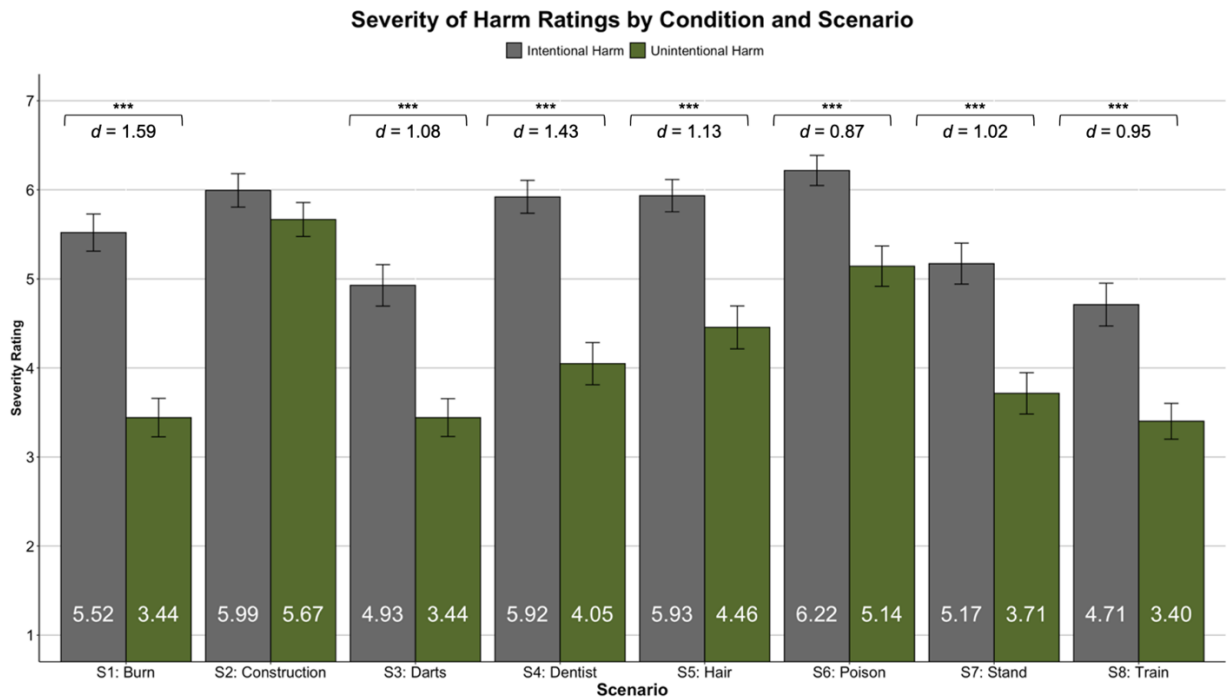


Figure 8. Means, confidence intervals, and Cohen's d for the condition by scenario interaction for severity of harm ratings.

*** $p < .001$.

Participants were also asked to report how easily they were able to envision what was happening in the scenarios involving their close others and the scenarios involving a stranger named Jordan as two separate items. With respect to the scenarios involving a close other, an independent samples t-test (two-tailed) indicated that younger adults ($M = 5.61$, $SD = 1.46$, 95% CI [5.36, 5.83]) reported it being easier to envision what was happening in the scenarios involving a close other compared to older adults ($M = 5.13$, $SD = 1.81$, 95% CI [4.84, 5.42]), $t(297) = -2.48$, $p = .014$, Cohen's $d = -0.29$. I ran the analyses below with this as a covariate. It was not a significant covariate, and it did not change

the pattern of results. As such, I retained a simpler model and did not include it in the reported analyses below.

Older adults ($M = 5.81$, $SD = 1.06$, 95% CI [5.64, 5.98]) and younger adults ($M = 5.84$, $SD = 1.02$, 95% CI [5.68, 6.01]) reported comparable ratings for how easily they were able to envision what was happening in the scenarios involving a stranger named Jordan ($p = .787$).

Control Variables

Current state affect. Current state affect was measured using the Modified Differential Emotion Scale (mDES; Fredrickson et al., 2003), which contains two separate subscales for positive and negative state affect. Older adults ($M = 1.88$, $SD = 0.79$, 95% CI [1.75, 2.01]) reported significantly higher positive state affect compared to younger adults ($M = 1.58$, $SD = 0.22$, 95% CI [1.45, 1.71]), $t(297) = 3.23$, $p = .001$, Cohen's $d = 0.37$. Conversely, older adults ($M = 0.23$, $SD = 0.47$, 95% CI [0.16, 0.31]) reported significantly lower negative state affect compared to younger adults ($M = 0.43$, $SD = 0.69$, 95% CI [0.32, 0.54]), $t(297) = -2.92$, $p = .004$, Cohen's $d = -0.34$. These patterns are consistent with age-related differences in positive and negative affect across varying methodologies (Carstensen et al., 2000; 2011; Charles et al., 2001; Mroczek & Kolarz, 1998). I ran the analyses below with and without positive and negative state affect and including them as covariates did not change the pattern of results. As such, I retained a simpler model without these two covariates.

Trait disgust. Trait disgust was measured using the Three Domain Disgust Scale (TDDS; Tybur et al., 2009), which contains three subscales: moral

disgust, pathogen disgust, and sexual disgust. Of importance to the current work, I examined age differences in the total TDDS scores as well as the scores for moral disgust specifically. For total trait disgust, older adults ($M = 4.05$, $SD = 1.01$, 95% CI [3.88, 4.21]) reported higher trait disgust compared to younger adults ($M = 3.61$, $SD = 0.91$, 95% CI [3.46, 3.75]), $t(297) = 4.01$, $p < .001$, Cohen's $d = 0.46$. For trait moral disgust specifically, older adults ($M = 4.56$, $SD = 1.39$, 95% CI [4.33, 4.78]) reported higher trait moral disgust compared to younger adults ($M = 3.53$, $SD = 1.37$, 95% CI [3.31, 3.75]), $t(297) = 6.42$, $p < .001$, Cohen's $d = 0.74$. Given this age difference in the trait moral disgust subscale, I included it as a covariate in the analysis for disgust ratings.

Trait anger. Trait anger was assessed using the angry temperament subscale of the Trait Anger subscale of the State Trait Anger Expression Inventory (STAXI; Spielberger, 1999). Younger adults ($M = 1.44$, $SD = 0.48$, 95% CI [1.36, 1.52]) reported higher trait anger compared to older adults ($M = 1.27$, $SD = 0.43$, 95% CI [1.20, 1.34]), $t(297) = -3.15$, $p = .002$, Cohen's $d = -0.36$. As such, I included trait anger as a covariate in the analysis for anger ratings.

Trait sympathy. Trait sympathy was measured using an 18-item questionnaire (Lee, 2009). Older adults ($M = 5.85$, $SD = 0.71$, 95% CI [5.74, 5.97]) reported higher trait sympathy compared to younger adults ($M = 5.46$, $SD = 0.91$, 95% CI [5.74, 5.97]), $t(297) = 4.19$, $p < .001$, Cohen's $d = 0.49$. As such, I included trait sympathy scores as a covariate in the analysis for sympathy ratings.

Dispositional forgiveness. Dispositional forgiveness was measured with three items (Ng et al., 2018). Older adults ($M = 3.94$, $SD = 0.80$, 95% CI [3.81, 4.07]) reported higher dispositional forgiveness compared to younger adults ($M = 3.66$, $SD = 0.85$, 95% CI [3.52, 3.79]), $t(297) = 2.92$, $p = .004$, Cohen's $d = 0.34$. As such, I included dispositional forgiveness as a covariate in the analysis for forgiveness ratings.

Self-construal. Interdependent and independent self-construal was measured with five items each (Singelis, 1994). Older ($M = 4.05$, $SD = 1.09$, 95% CI [3.88, 4.24]) and younger ($M = 4.14$, $SD = 1.14$, 95% CI [3.98, 4.35]) did not differ significantly in their reported interdependent self-construal ($p = .417$). Conversely, older adults ($M = 5.19$, $SD = 0.96$, 95% CI [5.03, 5.34]) did report higher independent self-construal than younger adults ($M = 4.73$, $SD = 1.25$, 95% CI [4.53, 4.93]), $t(297) = 3.51$, $p < .001$, Cohen's $d = 0.41$.

Exploratory Self-Construal Analyses

To explore the relationship between interdependent self-construal and forgiveness for older and younger adults, I conducted a series of correlations using the “`diffcor.two()`” function in the *diffcor* package in R (Blötner, 2023), which tests whether the correlation between two variables differs across two independent studies/samples. The output provides the compared correlations, test statistic as z-score, p-values, confidence intervals of the empirical correlations, and the effect size Cohen's q . Across the total sample, interdependent self-construal and forgiveness were weakly but positively correlated with each other ($r = .10$, $p < .001$). Interestingly, this relationship was

stronger for older adults ($r = .16, p < .001$) compared to younger adults ($r = .06, p = .053$), $z = 1.91, p = .029$, Cohen's $q = .221$. Thus, although older and younger adults' mean-level interdependent self-construal were not significantly different from each other, interdependent self-construal was more closely linked to forgiveness for older relative to younger adults, at least when an unknown other is on the receiving end of the harm.

Moral Judgments

Person judgments. In this analysis, the covariates of communal strength, $F(1, 292.88) = 4.26, p = .041, \eta_p^2 = .002$, and severity of harm, $F(1, 2373.01) = 379.75, p < .001, \eta_p^2 = .150$, were significant. With respect to the main effects, the main effect of age group was not significant ($p = .584$). Consistent with Hypothesis 1, participants reported harsher person judgments in the intentional condition ($M = 5.89, SD = 1.40, 95\% CI [5.73, 5.88]$) compared to the unintentional condition ($M = 2.42, SD = 1.06, 95\% CI [2.36, 2.49]$), $F(1, 451.23) = 458.97, p < .001, \eta_p^2 = .176$. Consistent with Hypothesis 2, participants reported harsher judgments for stranger perpetrators ($M = 4.31, SD = 2.05, 95\% CI [4.19, 4.43]$) than for close other perpetrators ($M = 3.98, SD = 2.14, 95\% CI [3.85, 4.11]$), $F(1, 2082.06) = 48.95, p < .001, \eta_p^2 = .022$.

Although I predicted a significant age group \times condition two-way interaction (Hypothesis 3), it did not reach significance in this study ($p = .446$). However, for the sake of consistency with the previous three studies and the dependent variables to follow, means for the age group by condition interaction are displayed in Panel A of Figure 9.

The condition \times perpetrator interaction was significant, $F(1, 2080.92) = 19.66, p < .001, \eta_p^2 = .009$. In the unintentional harm condition, participants reported harsher person judgments for stranger perpetrators relative to close other perpetrators, $b = -0.48, SE = 0.05, t = -8.82, p < .01$. In the intentional harm condition, however, participants reported comparably harsh person judgments for stranger and close other perpetrators, $b = -0.08, SE = 0.05, t = -1.43, p = .15$. Please refer to Panel A of Figure 10.

Neither the age group \times perpetrator two-way interaction ($p = .284$) nor the three-way interaction ($p = .318$) were significant. Thus, Hypothesis 4 was not supported.

Act judgments. In this analysis, the covariate of severity of harm was significant, $F(1, 2368.01) = 955.65, p < .001, \eta_p^2 = .283$, whereas the covariate of communal strength was not significant ($p = .413$). With respect to the main effects, older adults ($M = 4.72, SD = 1.72, 95\% CI [4.62, 4.82]$) reported harsher act judgments compared to younger adults ($M = 4.71, SD = 1.62, 95\% CI [4.62, 4.80]$), $F(1, 423.26) = 4.58, p = .033, \eta_p^2 < .002^{11}$. Consistent with Hypothesis 1, participants reported harsher judgments in the intentional harm condition ($M =$

¹¹ The fact that the effect was significant may be surprising, given that older and younger adults' mean act judgments – collapsed across condition and perpetrator – are incredibly close. However, significance tests do not speak to the strength of the effect. The main effect of age group account for only .2% of the variance, so although it is significant, it is not entirely meaningful, especially when this factor is included in higher order interactions. Moreover, although the standard deviations are similar, standard deviations are not the only estimate used in significance tests. Standard deviations are used to estimate standard errors (standard deviation divided by the square root of the sample size), and the standard errors are used to calculate the t-values. Thus for standard error, when sample size increases, the denominator increases, and the standard error gets smaller. Taken together, when the standard error is smaller with more observations, the significance test (t test) can be significant with even a small coefficient, so long as the standard error is smaller.

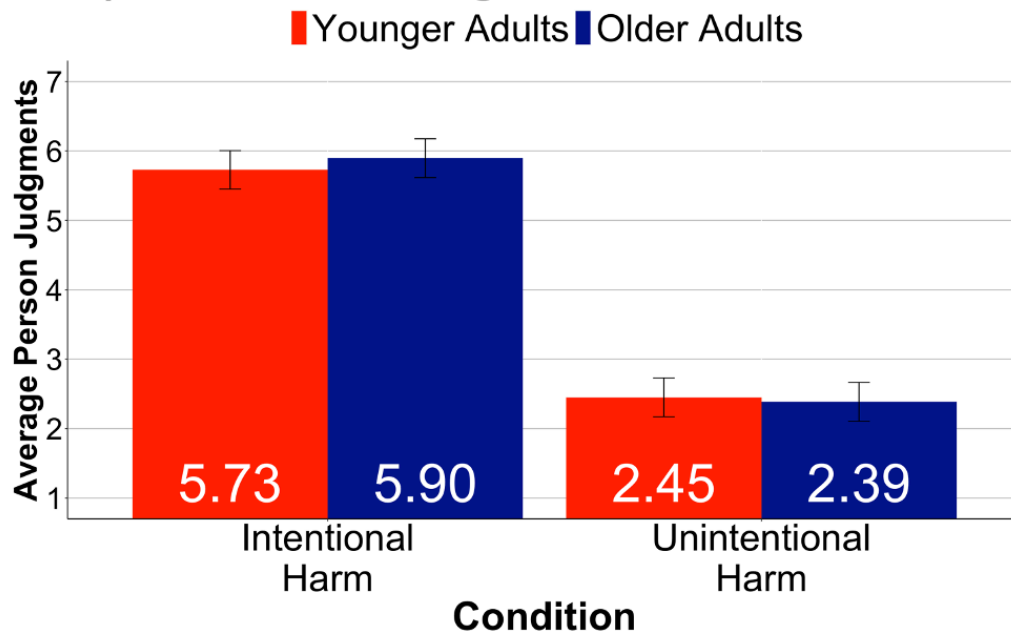
5.88, $SD = 1.15$, 95% CI [5.82, 5.94]) compared to the unintentional harm condition ($M = 3.51$, $SD = 1.24$, 95% CI [3.44, 3.58]), $F(1, 449.06) = 243.20$, $p < .001$, $\eta_p^2 = .102$. In addition and consistent with Hypothesis 2, participants reported harsher judgments for stranger perpetrators ($M = 4.76$, $SD = 1.65$, 95% CI [4.67, 4.86]) compared to close other perpetrators ($M = 4.67$, $SD = 1.69$, 95% CI [4.57, 4.77]), $F(1, 2083.79) = 9.58$, $p = .002$, $\eta_p^2 = .004$.

Consistent with Hypothesis 3, the age group \times condition interaction was significant, $F(1, 429.09) = 4.99$, $p = .026$, $\eta_p^2 = .001$. In the unintentional harm condition, older adults reported less harsh act judgments compared to younger adults, $b = 0.27$, $SE = 0.10$, $t = 2.66$, $p = .01$. Conversely, in the intentional harm condition, older and younger adults' act judgments were comparably harsh, $b = -0.12$, $SE = 0.10$, $t = -1.17$, $p = .24$. Means by age group and condition can be found in Panel B of Figure 9.

The condition by perpetrator interaction was significant, $F(1, 2081.97) = 13.91$, $p < .001$, $\eta_p^2 = .004$. In the unintentional harm condition, participants reported harsher person judgments for stranger perpetrators relative to close other perpetrators, $b = -0.17$, $SE = 0.05$, $t = -3.67$, $p < .01$. In the intentional harm condition, participants reported harsher act judgments for close other perpetrators than for stranger perpetrators, $b = 0.13$, $SE = 0.05$, $t = 2.80$, $p = .01$, though the mean difference is small. Please refer to Panel B of Figure 10.

As with person judgments, neither the age group \times perpetrator interaction ($p = .483$) nor the three-way interaction ($p = .471$) were significant. Hypothesis 4 was not supported.

A) Person Judgments



B) Act Judgments

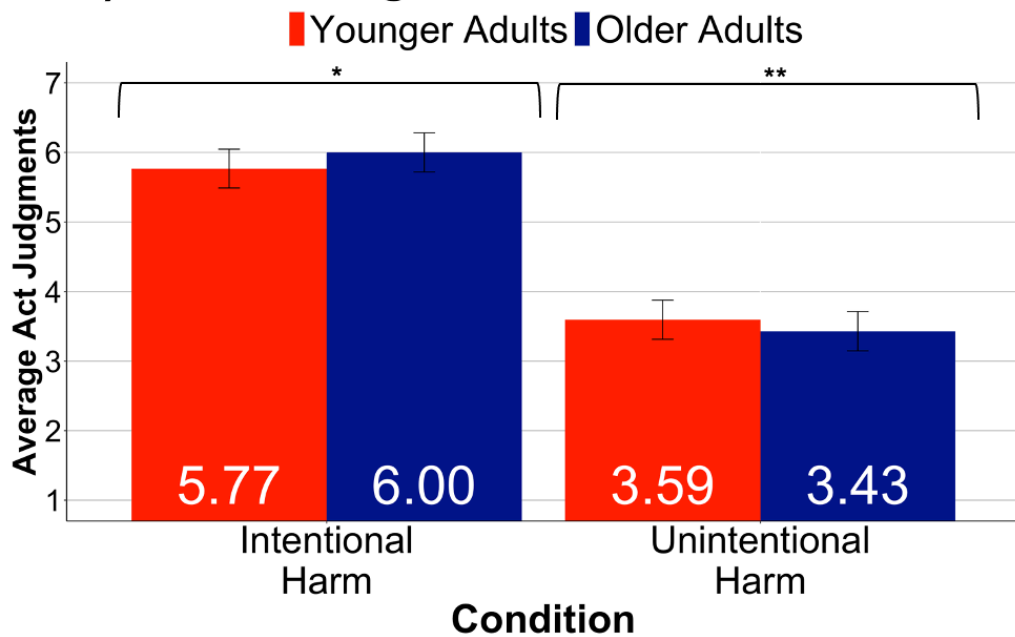


Figure 9. Mean person (Panel A) and act (Panel B) judgments for older and younger adults in each condition in Study 4. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed. Note that the age group \times condition interaction was not significant for person judgments.

* $p < .05$. ** $p < .01$.

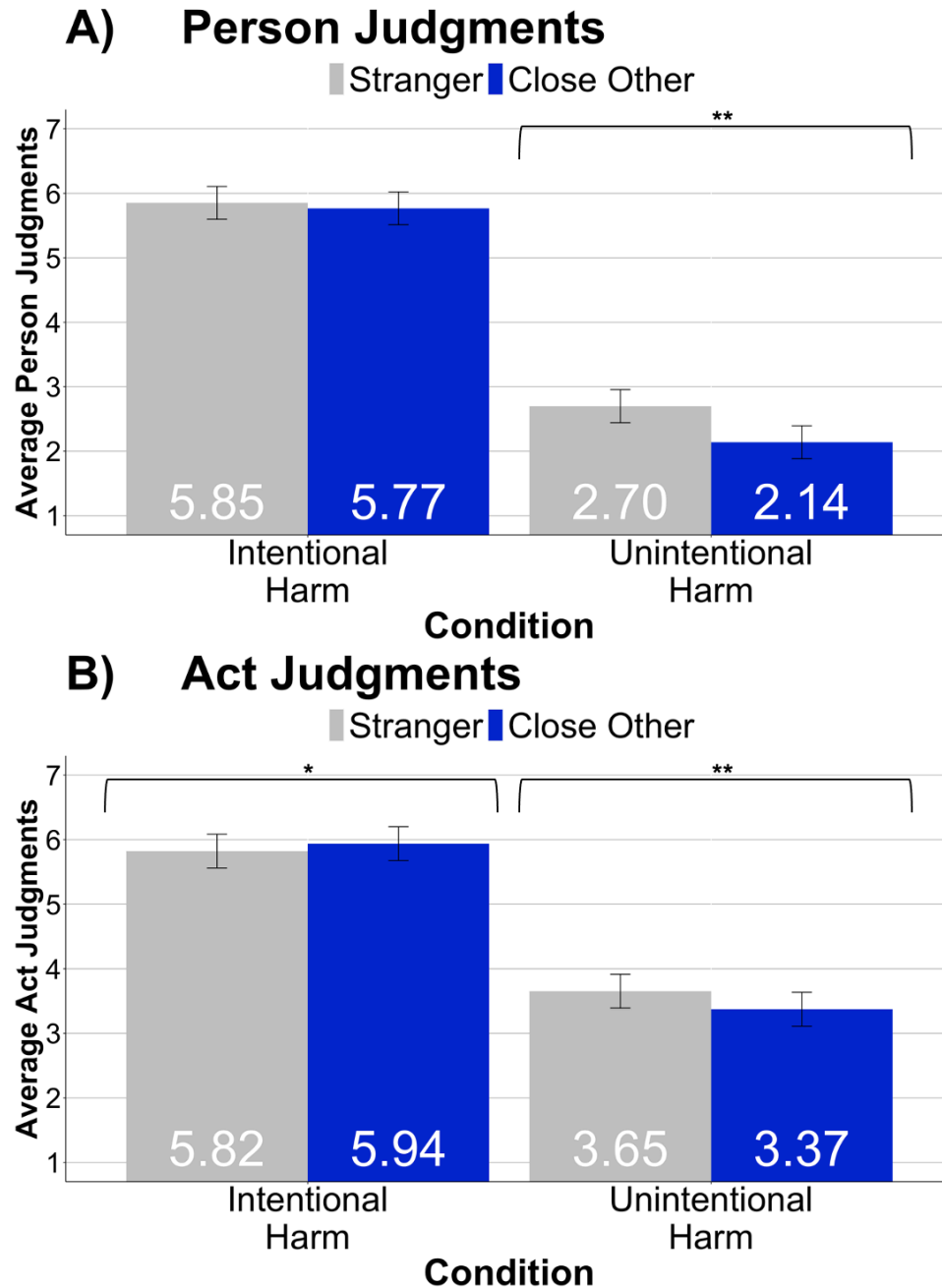


Figure 10. Mean person (Panel A) and act (Panel B) judgments for close other and stranger perpetrators in each condition in Study 4. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed.

* $p < .05$. ** $p < .01$.

Emotion Ratings

Anger ratings. In this analysis, the covariates of trait anger, $F(1, 292.95) = 7.77, p = .006, \eta_p^2 = .004$, and severity of harm, $F(1, 2318.29) = 480.91, p < .001, \eta_p^2 = .185$, were significant. The covariate of communal strength was not significant ($p = .452$). With respect to the main effects, the main effect of age group was not significant ($p = .498$). Consistent with Hypothesis 1, participants reported higher anger ratings in the intentional harm condition ($M = 5.22, SD = 1.81, 95\% CI [5.12, 5.32]$) compared to the unintentional harm condition ($M = 2.23, SD = 1.53, 95\% CI [2.15, 2.32]$), $F(1, 376.80) = 143.69, p < .001, \eta_p^2 = .064$. In addition and consistent with Hypothesis 2, participants reported higher anger ratings for stranger perpetrators ($M = 3.79, SD = 2.19, 95\% CI [3.66, 3.91]$) relative to close other perpetrators ($M = 3.72, SD = 2.29, 95\% CI [3.57, 3.85]$), $F(1, 2083.15) = 10.90, p < .001, \eta_p^2 = .005$.

Consistent with Hypothesis 3, the age group \times condition interaction was significant, $F(1, 364.20) = 4.76, p = .031, \eta_p^2 = .002$. In the unintentional harm condition, older and younger adults' anger ratings were not significantly different from each other, $b = 0.12, SE = 0.19, t = 0.63, p = .53$. In the intentional harm condition, older adults reported significantly higher anger ratings compared to younger adults, $b = -0.56, SE = 0.19, t = -3.00, p < .01$. Please refer to Panel B of Figure 11 for means separated by age group and condition.

The condition \times perpetrator interaction was significant, $F(1, 2082.02) = 31.35, p < .001, \eta_p^2 = .011$. In the unintentional harm condition, participants reported higher anger ratings for stranger perpetrators relative to close other

perpetrators, $b = -0.31$, $SE = 0.06$, $t = -4.93$, $p < .01$. Interestingly, however, in the intentional harm condition, the opposite was true. Participants reported higher anger ratings for close other perpetrators relative to stranger perpetrators, $b = 0.30$, $SE = 0.06$, $t = 4.90$, $p < .01$. Please refer to Panel A of Figure 12 for means.

Neither the age group \times perpetrator two-way interaction ($p = .80$) nor the three-way interaction ($p = .312$) were significant. Thus, Hypothesis 4 was not supported.

Disgust ratings. In this analysis, the covariates of trait moral disgust, $F(1, 293.32) = 14.50$, $p < .001$, $\eta_p^2 = .005$, and the severity of harm, $F(1, 2345.98) = 583.28$, $p < .001$, $\eta_p^2 = .194$, were significant. The covariate of communal strength was not significant ($p = .886$). With respect to main effects, the main effect of age group was not significant ($p = .448$). Similar to anger ratings, participants reported higher disgust ratings in the intentional harm condition ($M = 5.27$, $SD = 1.83$, 95% CI [5.17, 5.38]) compared to the unintentional harm condition ($M = 1.68$, $SD = 1.31$, 95% CI [1.61, 1.76]), $F(1, 394.83) = 260.04$, $p < .001$, $\eta_p^2 = .087$, which is consistent with Hypothesis 1. In addition and consistent with Hypothesis 2, participants reported higher disgust ratings for stranger perpetrators ($M = 3.52$, $SD = 2.37$, 95% CI [3.38, 3.65]) compared to close other perpetrators ($M = 3.49$, $SD = 2.43$, 95% CI [3.36, 3.64]), $F(1, 2082.59) = 4.23$, $p = .041$, $\eta_p^2 = .001$.

Although I expected the age group \times condition two-way interaction to be significant (Hypothesis 3), it was not ($p = .175$). For the sake of consistency, means are presented in Panel B of Figure 11.

The condition \times perpetrator interaction was significant, $F(1, 2081.26) = 16.71, p < .001, \eta_p^2 = .06$. In the unintentional harm condition, participants reported higher disgust ratings for stranger perpetrators relative to close other perpetrators, $b = -0.27, SE = 0.07, t = -3.92, p < .01$. In the intentional harm condition, however, participants reported higher disgust ratings for close other perpetrators relative to stranger perpetrators, $b = 0.26, SE = 0.07, t = 3.76, p < .01$. Please refer to Panel B of Figure 12.

Neither the age group \times perpetrator interaction ($p = .705$) nor the three-way interaction ($p = .369$) were significant. Thus, Hypothesis 4 was not supported.

Sympathy ratings. In this analysis, the covariate of severity of harm was significant, $F(1, 2184.20) = 8.53, p = .004, \eta_p^2 = .004$, whereas the covariates of trait sympathy ($p = .099$) and communal strength ($p = .220$) were not significant. With respect to main effects, the main effect of age group was not significant ($p = .085$). Consistent with Hypothesis 1, participants reported higher sympathy ratings in the unintentional condition ($M = 3.32, SD = 1.84, 95\% \text{ CI } [3.22, 3.43]$) compared to the intentional harm condition ($M = 2.73, SD = 1.48, 95\% \text{ CI } [2.65, 2.82]$), $F(1, 343.61) = 5.83, p = .016, \eta_p^2 = .003$. In addition and consistent with Hypothesis 2, participants reported higher sympathy ratings for close other perpetrators ($M = 3.34, SD = 1.75, 95\% \text{ CI } [3.24, 3.44]$) relative to stranger perpetrators ($M = 2.70, SD = 1.57, 95\% \text{ CI } [2.61, 2.79]$), $F(1, 2081.76) = 123.06, p < .001, \eta_p^2 = .055$.

Only the condition \times perpetrator interaction was significant, $F(1, 2080.06) = 11.51, p < .001, \eta_p^2 = .005$. In the unintentional harm condition, participants reported higher sympathy ratings for close other perpetrators relative to stranger perpetrators, $b = 0.82, SE = 0.06, t = 14.21, p < .01$. In the intentional harm condition, participants also reported higher sympathy ratings for close other perpetrators relative to stranger perpetrators, $b = 0.42, SE = 0.06, t = 7.41, p < .01$. Please refer to Panel C of Figure 12.

No other effects were significant: age group \times condition interaction ($p = .081$), the age group \times perpetrator interaction ($p = .141$), the three-way interaction ($p = .891$). Thus, neither Hypothesis 3 nor Hypothesis 4 were supported for sympathy ratings. However, for the sake of consistency, means for the age group \times condition interaction are displayed in Panel C of Figure 11.

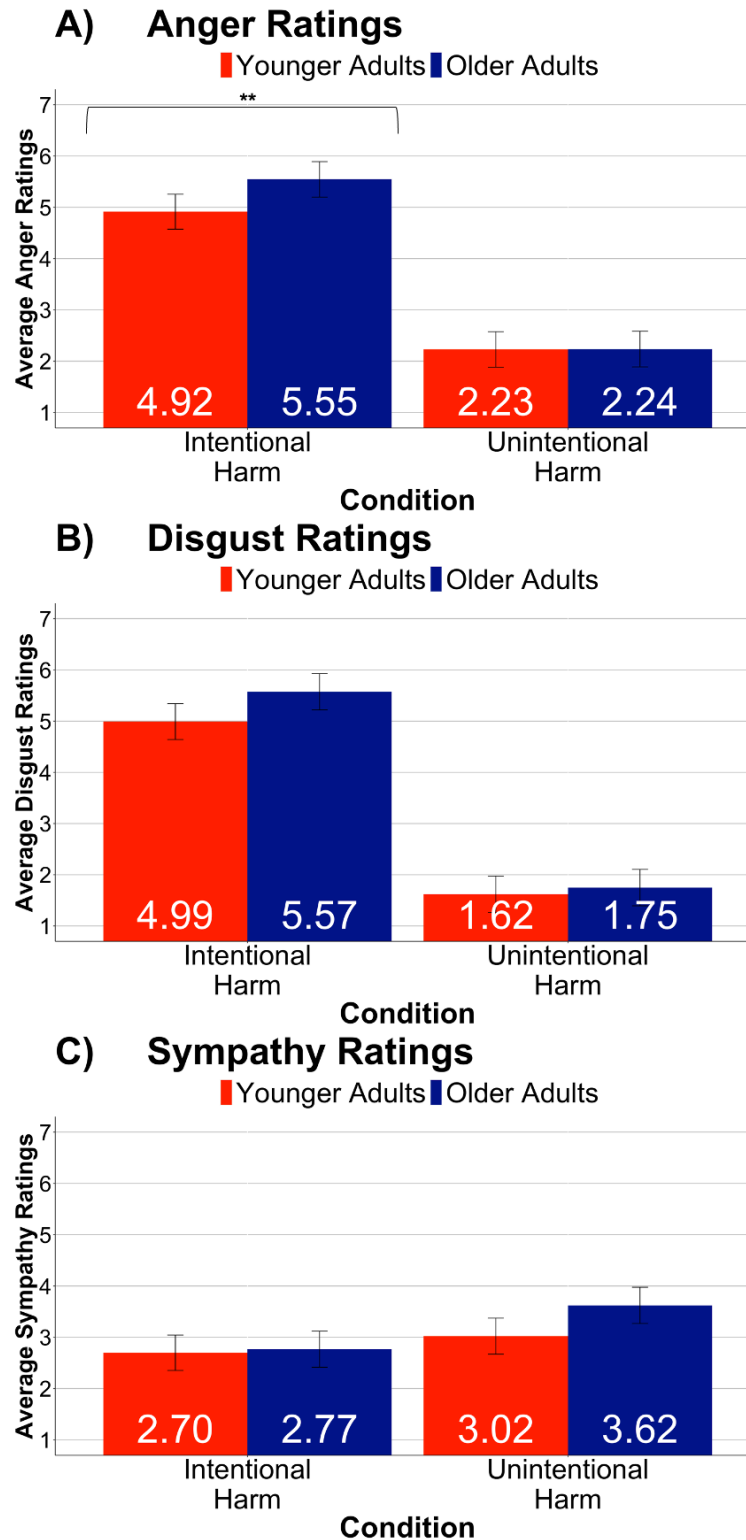


Figure 11. Mean anger (Panel A), disgust (Panel B), and sympathy (Panel C) ratings for older and younger adults in each condition in Study 4. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed. Note that the age group \times condition interaction was not significant for disgust or sympathy ratings.

** $p < .01$.

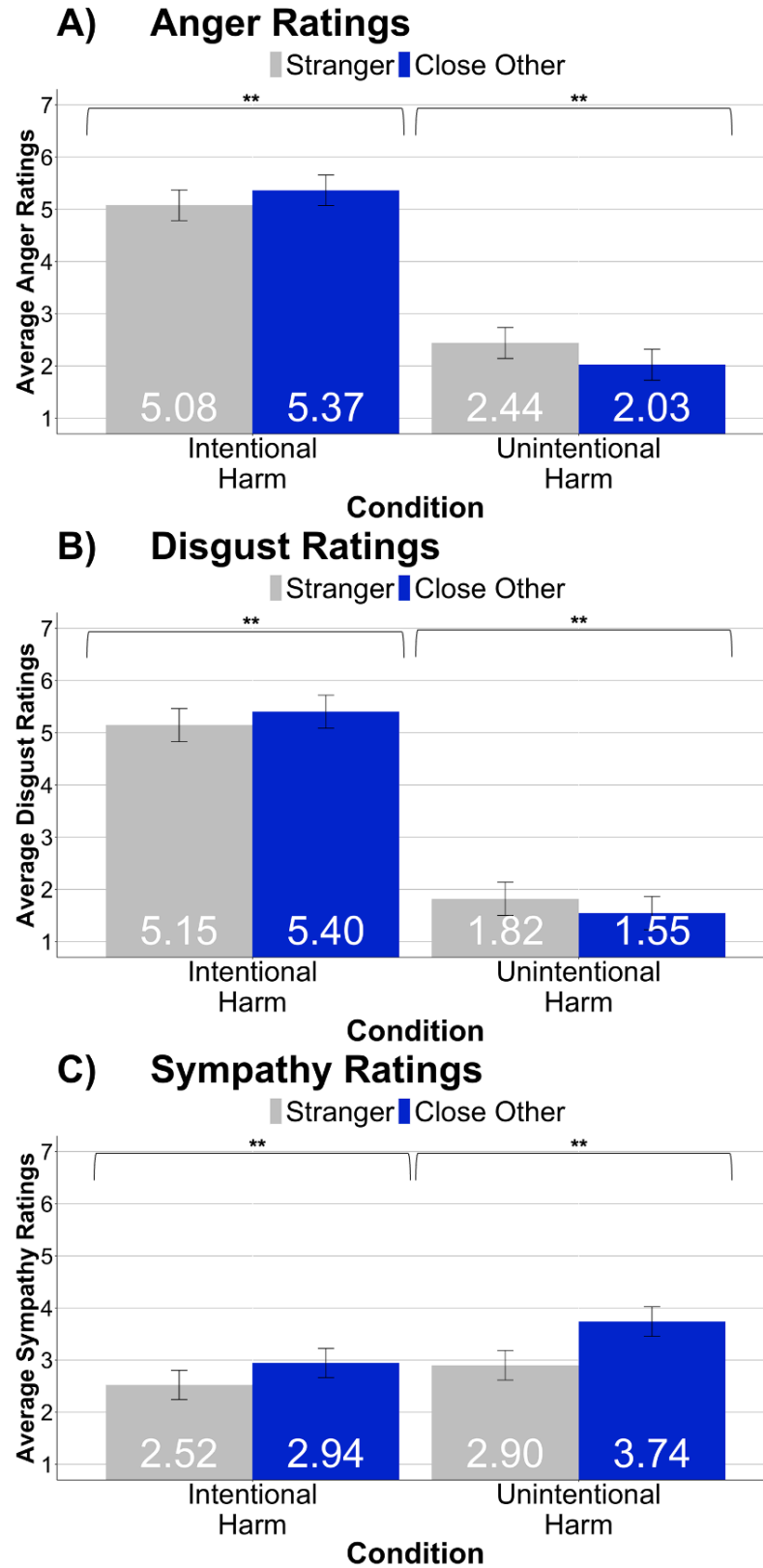


Figure 12. Mean anger (Panel A), disgust (Panel B), and sympathy (Panel C) ratings for close other and stranger perpetrators in each condition in Study 4. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed.
 ** $p < .01$.

Forgiveness

Prosocial intentions. In this analysis, the covariates of dispositional forgiveness, $F(1, 292.58) = 13.34, p < .001, \eta_p^2 = .006$, communal strength, $F(1, 292.26) = 4.11, p = .044, \eta_p^2 = .002$, and severity of harm, $F(1, 2309.98) = 271.24, p < .001, \eta_p^2 = .100$, were significant. With respect to the main effects, older adults ($M = 3.47, SD = 1.22, 95\% CI [3.41, 3.54]$) reported higher prosocial intentions ratings compared to younger adults ($M = 3.21, SD = 1.29, 95\% CI [3.14, 3.28]$), $F(1, 393.50) = 4.29, p = .039, \eta_p^2 = .002$. Consistent with Hypothesis 1, participants reported higher prosocial intentions ratings in the unintentional harm condition ($M = 4.11, SD = 0.87, 95\% CI [4.06, 4.16]$) compared to the intentional harm condition ($M = 2.59, SD = 1.11, 95\% CI [2.52, 2.65]$), $F(1, 414.49) = 129.69, p < .001, \eta_p^2 = .057$. In addition and consistent with Hypothesis 2, participants reported higher prosocial intentions ratings for close others ($M = 3.71, SD = 1.19, 95\% CI [3.65, 3.78]$) relative to strangers ($M = 2.96, SD = 1.22, 95\% CI [2.89, 3.03]$), $F(1, 2082.71) = 134.42, p < .001, \eta_p^2 = .059$.

Neither the age group \times condition ($p = .731$) nor the age group \times perpetrator ($p = .068$) interactions were significant. The condition \times perpetrator interaction was significant, $F(1, 2081.21) = 4.03, p = .045, \eta_p^2 = .002$. In the unintentional harm condition, participants were more forgiving of close others relative to strangers, $b = 0.73, SE = 0.04, t = 18.28, p < .01$. In the intentional harm condition, participants were also more forgiving of close others relative to strangers, $b = 0.71, SE = 0.04, t = 18.17, p < .01$, but to a lesser degree than in

the unintentional harm condition. Please refer to Figure 13 for means separated by condition and perpetrator.

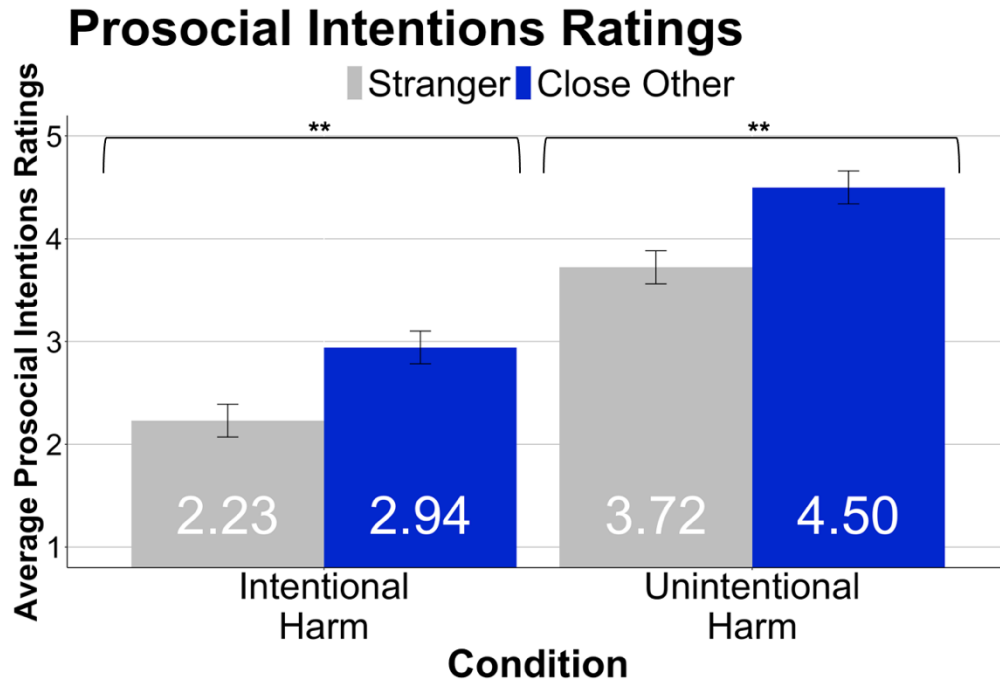


Figure 13. Mean prosocial intentions ratings for close other and stranger perpetrators in each condition in Study 4. Responses ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Confidence intervals are displayed.
** $p < .01$.

Consistent with Hypothesis 4, the three-way interaction was significant, $F(1, 2080.28) = 10.01, p = .002, \eta_p^2 = .005$. As indicated earlier, any significant three-way interaction would be broken down by examining the age group \times perpetrator interaction in each condition separately.

Focusing on the intentional harm condition only, the main effect of perpetrator was significant, $F(1, 1054.55) = 177.73, p < .001, \eta_p^2 = .141$, but the main effect of age group was not significant ($p = .069$). The two-way interaction between age group and perpetrator was significant, $F(1, 1055.29) = 7.11, p =$

.008, $\eta_p^2 = .005$. Younger adults reported higher prosocial intentions ratings for close others relative to stranger, $b = 0.59$, $SE = 0.06$, $t = 9.81$, $p < .01$. Older adults did, too, but to a greater degree compared to younger adults, $b = 0.82$, $SE = 0.06$, $t = 13.33$, $p < .01$. Please refer to Panel A of Figure 14 for means separated by age group and perpetrator within the intentional harm condition.

Focusing on the unintentional harm condition, the main effect of perpetrator was significant, $F(1, 1021.48) = 203.20$, $p < .001$, $\eta_p^2 = .163$, whereas the main effect of age group was not significant ($p = .121$). The two-way interaction between age group and perpetrator was significant in the unintentional harm condition, $F(1, 1018.79) = 4.82$, $p = .028$, $\eta_p^2 = .004$. Older adults reported higher forgiveness ratings for close others relative to stranger others, $b = 0.68$, $SE = 0.05$, $t = 14.25$, $p < .01$. Younger adults did, too, but to a greater degree, $b = 0.83$, $SE = 0.05$, $t = 17.46$, $p < .01$. Means and confidence intervals are displayed in Panel B of Figure 14.

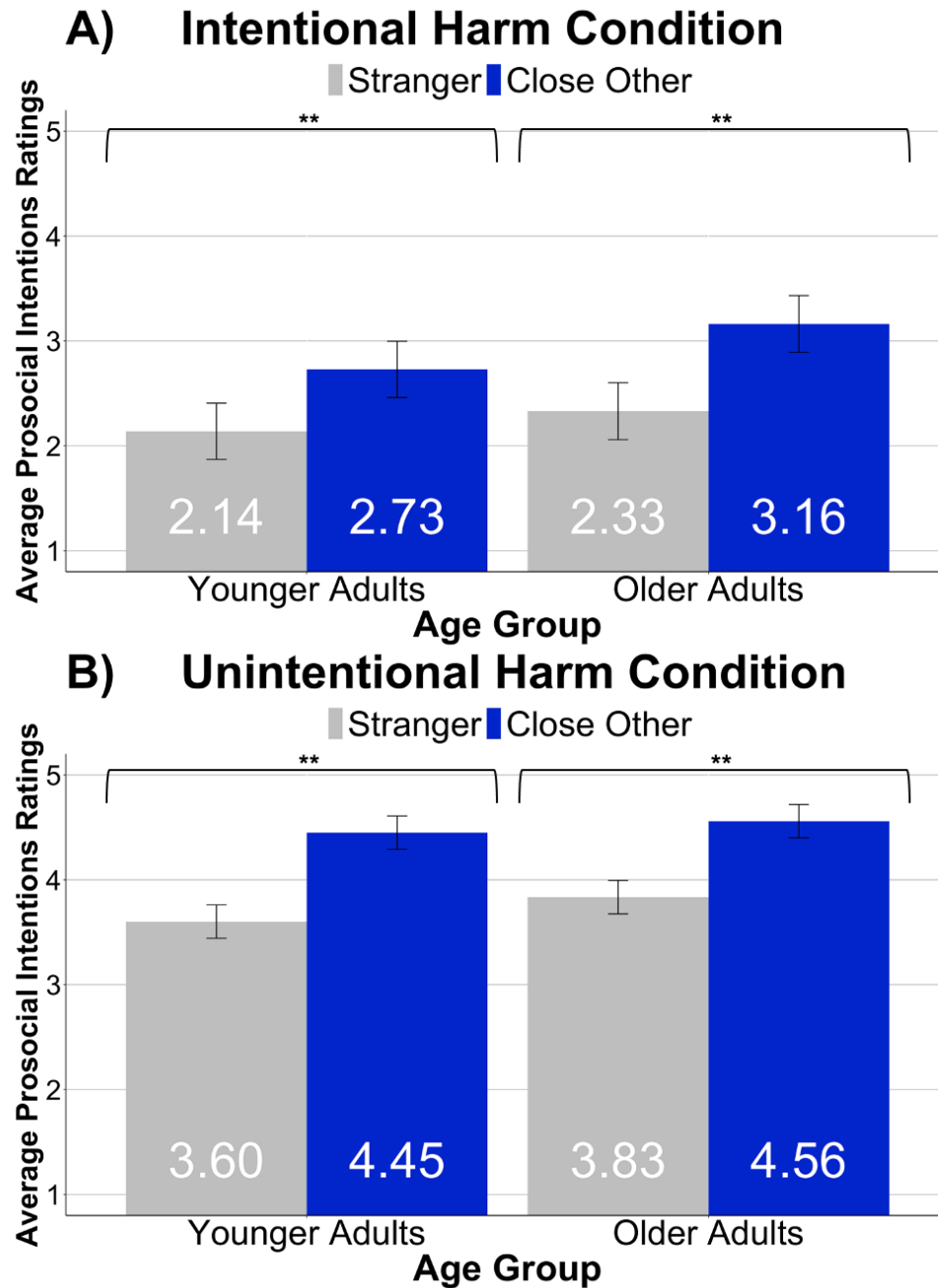


Figure 14. Mean forgiveness ratings for the breakdown of the age group by perpetrator interaction in the intentional harm condition (Panel A) and the unintentional harm condition (Panel B). Responses ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Confidence intervals are displayed.

** $p < .01$.

Discussion

In Study 4, I aimed to build on my previous three studies by examining how older and younger adults respond to intentional and unintentional harms when the perpetrator is either an unknown stranger or a close other. There was robust evidence to support my first prediction that intentional harms would be perceived as more egregious than unintentional harms. Participants reported harsher person and act judgments as well as higher anger and disgust ratings in the intentional harm condition relative to the unintentional harm condition. Conversely, participants reported less sympathy and lower prosocial intention ratings in the intentional relative to unintentional harm condition. These findings track with past research demonstrating that intentional harms are perceived more harshly than accidental ones (Cushman, 2008; Giner-Sorolla & Champan, 2017; Knobe, 2005; Young et al., 2007).

There was also robust evidence for my second hypothesis that participants would respond more harshly and with more negativity to stranger relative to close other perpetrators. Participants reported harsher person and act judgments as well as higher anger and disgust ratings for stranger relative to close other perpetrators. Conversely, participants reported more sympathy and prosocial intention ratings for close other relative to stranger perpetrators. This supports past work highlighting the important role that social proximity plays in one's willingness to forgive (Gauché & Mullet, 2005; Girard & Mullet, 1997; Mullet & Girard, 2000; McCullough et al., 1998).

There was partial support for my third hypothesis that focused on the age group \times condition interaction. I predicted that older adults would respond more harshly to intentional harms compared to younger adults, but older adults would respond less harshly to unintentional harms compared to younger adults. This pattern of results was seen in Studies 1-3 on some level, and I expected to see it here, too. Surprisingly, the age group \times condition interaction was significant for act judgments and anger ratings only. In the unintentional harm condition, older adults reported harsher act judgments but comparable anger ratings relative to younger adults. In the intentional harm condition, older adults reported harsher act judgments and higher anger ratings compared to younger adults. It might be the case that perpetrator is taking up more variance and thus washing out the age group \times condition effect for some of the dependent variables.

Although not included in my preregistered hypotheses, the condition \times perpetrator two-way interaction was significant across all the dependent variables. Specifically, in the unintentional harm condition, participants reported more lenient person and act judgments as well as lower anger and disgust ratings for close other relative to stranger perpetrators. Participants also reported higher sympathy and prosocial intention ratings for close other relative to stranger perpetrators who harmed another accidentally. In the intentional harm condition, participants reported harsher act (but no different person) judgments as well as higher anger, disgust, and sympathy ratings for close other relative to stranger perpetrators. Participants also reported higher prosocial intention ratings for close other relative to stranger perpetrators who intentionally harmed another.

The findings in the intentional harm condition run slightly counter to my theoretical foundation. Given past work finding that participants are more forgiving of close others (Gauché & Mullet, 2005; Girard & Mullet, 1997; McCullough et al., 1998; Mullet & Girard, 2000), the findings from the current study suggest that there are caveats to the extent one is willing to forgive, judge less harshly, and respond with less negativity towards their close others when they intentionally harm someone. It appears that participants were only more forgiving and less harsh and negative toward close others relative to strangers when they harmed another accidentally.

Why might we see that participants are not exceptionally more forgiving or lenient on a close other relative to a stranger for intentional harms? If past research suggests that social proximity plays an important role in forgiveness (Gauché & Mullet, 2005; Girard & Mullet, 1997; Mullet & Girard, 2000; McCullough et al., 1998), then one would expect this might apply to intentional harms. However, it did not in the current work. One possible reason for this is that perhaps the intentionality of the harm is more important than the person who is doing it. Individuals may use their close others as a point of reference for how they evaluate their own moral character and actions. Our close others' thoughts and behaviors may serve as a mirror for our own. Moreover, participants may even call into question their decision to have such a close relationship with their close other if they are intentionally harming another. Thus, when a close other does something egregious like intentionally harming another, individuals may be harsher on them and hold them to a higher standard than strangers.

Furthermore, participants may believe that they know their close others better than a stranger and presumably assume them to know better than to intentionally harm another, thus leading them to have harsher anger and disgust ratings and act judgments. But if the harm occurred accidentally, then participants may be more lenient on close others than strangers because the accidental harms may not be as morally violating.

However, the finding that participants were harsher on close others relative to strangers who both intentionally harm another may not be entirely surprising when looking through the lens of expectancy violations theory (Burgoon, 1993; Burgoon et al., 1984; Le Poire & Burgoon, 1994), which was brought up by a committee member during my defense. Expectancy violations theory focuses on how arousal can be heightened when a person violates what is expected of them within the context of an interpersonal relationship (Burgoon, 1993; Burgoon et al., 1984; Le Poire & Burgoon, 1994), which is prominent here in Study 4. The theory contends that violations of expectancies result in arousal changes, which is evidenced here in Study 4. Specifically, by including a close other as the perpetrator who harmed another, I am presumably forcing violations of what participants expect their close other to do or not to do, which could explain why participants reported higher levels of anger and disgust for their close others relative to strangers who intentionally harm another. Moreover, the theory contends that situations that have relatively clear-cut violations (relative to ambiguous ones) that have implicit social meaning should result in clear behavioral interpretations and evaluations (Burgoon et al., 1984; Le Poire &

Burgoon, 1994), which might alternatively explain why participants were harsher on their close others relative to strangers for intentional harms. In that condition, the desire to cause harm was clearly stated in the scenarios, and thus clear behavioral implications and judgments were made for their close others who violated their expectations relative to strangers.

Of central focus to Study 4 was the age group \times condition \times perpetrator three-way interaction (preregistered Hypothesis 4), which was only significant for forgiveness (i.e., prosocial intention ratings). When considering older adults' socioemotional goals of maintaining social harmony and avoiding negativity posited by socioemotional selectivity theory (SST; Carstensen, 2006), I predicted that older adults would respond less harshly and less negativity to and be more forgiving of close others relative strangers who intentionally harm another compared to younger adults. This could be the result of older adults' motivation to behave in ways that repair or maintain that meaningful relationship with their close other. In contrast, older adults may not be as motivated to do so for strangers with whom they do not share said meaningful relationship. This hypothesis (Hypothesis 4A) was supported: older adults were more forgiving of close other perpetrators relative to stranger perpetrators (mean difference = 0.83) who intentionally harm another compared to younger adults (mean difference = 0.59).

Conversely, in the unintentional harm condition, I predicted that older adults might respond similarly to strangers and close others, but younger adults may be harsher on strangers relative to close other perpetrators who accidentally

harm another (Hypothesis 4B). This stemmed from past research finding that older adults were generally more forgiving of close others and acquaintances whereas younger adults were more likely to forgive a close other than an acquaintance (Allemand, 2008). This also tracks with the findings from Studies 1-3 that accidental harms are not as egregious for older relative to younger adults. Here in Study 4, both older and younger adults were more forgiving of close other relative to stranger perpetrators who harmed another accidentally. But the difference between forgiveness ratings for close other relative to stranger perpetrators was slightly larger for younger (mean difference = 0.85) relative to older adults (mean difference = 0.73). Thus, Hypothesis 4B is not fully supported. One reason for why Hypothesis 4B was not support may be the type of harms included in this work relative to others. In the current work, the harms were very severe, whereas other work has looked at less severe harms like talking badly about someone (Allemand, 2008).

Study 5: Adult Age Differences in Response to Sociomoral Violations Committed by A Stranger versus Close Other Against Themselves

Although these studies are some of the few investigating age differences in reactions to sociomoral violations, it is still not clear if there would be age differences in moral judgments and emotional reactions when older and younger adults are on the receiving end of the sociomoral violation (compared to hypothetical strangers in the previous four studies). Would older adults still judge perpetrators who hypothetically harm them by accident less harshly compared to younger adults? Would older and younger adults judge perpetrators who

hypothetically intended to and succeeded at harming them similarly? Study 5 sought to answer these questions.

Past research has examined negative emotions in response to sociomoral violations when manipulating the personal relevance of the violating act. Specifically, research has found that anger is reported more when the moral offense was personally relevant (Batson et al., 2007; 2009). Moreover, Hutcherson and Gross (2011; Study 2) found that younger adult participants reported the highest level of anger when moral offenses directly impacted the self (e.g., “A student steals your exam and copies it”) relative to when moral offenses impacted a close friend or another person. Participants endorsed moral disgust comparably across conditions, suggesting that anger may uniquely respond to direct attacks or threats to the self, whereas moral disgust may not (Hutcherson & Gross, 2011).

Study 5 examined if both older and younger adults report similarly high levels of anger and possibly disgust and harsher moral judgments when they are on the receiving end of the sociomoral violation of intentional or accidental harms. By having participants on the receiving end of the scenario, I am increasing the personally relevance of the unintentional or intentional harm. Having the ability to respond to intentional and direct harms is important for our survival (Keltner et al., 2006), and Study 5 offers insight into how older and younger adults respond to harms committed by strangers and close others. If older and younger adults respond comparably, it would suggest that this is one adaptive response that remains intact with age. If not, it might suggest that there

are boundary conditions for when older and younger adults respond more harshly to harms and it may depend on who is doing the harm.

Study 5 used the same materials and methodology as Study 4, with the only exception being that participants were on the receiving end of the sociomoral violation. As with Study 4, I hypothesized that older adults would judge close others (relative to strangers) who hypothetically desire to and successfully harm them less harshly compared to younger adults and report less negativity as a result. Given older adults socioemotional goals of reducing negative emotions and maintaining social harmony, older adults (relative to younger adults) may be more inclined to judge close others who harmed them intentionally more leniently than strangers who harmed them intentionally. If older adults are less concerned about relationships with peripheral others, they may not feel the need to regulate their negative emotions towards and judgments of strangers who harm them intentionally for the sake of repairing or maintaining the relationship. However, they may be more inclined to regulate their negative emotions and judgments toward close others who harm them intentionally or accidentally for the sake of maintaining that relationship.

Method

Participants and Design

Study 5 employed a 2 (age group: younger, older) × 2 (condition: intentional harm, unintentional harm) × 2 (perpetrator: stranger, close other) mixed factorial design. Age group and condition served as between-subjects factors, and perpetrator served as a within-subjects factor. To determine

adequate sample size, I conducted a power analysis using G*Power (Faul et al., 2007). As with Study 4, I based this analysis on the critical comparisons of younger versus older adults' emotional reactions, character judgments, and forgiveness depending on whether the transgressor was a stranger or a close other in the intentional harm or unintentional harm conditions. Assuming a small to medium effect size of 0.20 ($f = .10$), an alpha of 0.05, a total sample size of 280 was needed to detect differences between four groups with two repeated measures with 80% power. To account for potential data exclusion for not passing attention checks¹², I aimed to recruit roughly 320 participants (160 older adults, 160 younger adults; roughly 80 participants per group) from Prolific online participant system. Participants who participated in Study 4 were not eligible to participate in Study 5. Only 6% of the sample needed to be dropped for not passing the attention checks ($n = 20$). Participants were compensated roughly \$6.50/hr for completing this 45-minute online study. This study was approved by the IRB, and all participants were required to provide informed consent prior to participation. This work was preregistered (<https://osf.io/26gmp>), and data, materials, and analysis script can be found on our OSF page (<https://osf.io/sabgk/>).

The final sample size consisted of 152 older adults ($M_{\text{age}} = 65.71$ years, $SD_{\text{age}} = 4.80$, range: 60-80 years; 50% female, 50% male) and 149 younger

¹² The first attention check was: "In the scenarios you just read, did someone desire to harm another person?" (yes/no). The second attention check was: "In the scenarios you just read, was someone harmed?" (yes/no). The correct answer to these questions depended on the condition to which the participants were randomly assigned.

adults ($M_{\text{age}} = 25.08$ years, $SD_{\text{age}} = 3.22$, range: 18-30 years; 50% female, 48% male, 2% preferred not to answer).

Materials and Measures

Selecting a close other. As in Study 4, I manipulated whether the perpetrator was a stranger (i.e., Jordan) or a close other. The method for participants selecting a close other was the same as Study 4. Specifically, participants indicated the name of their close other, the nature of their relationship, the length of their relationship, quality of their relationship, and a measure of communal strength. Each are described in greater detail in the Method section of Study 4. Only 9% of the sample ($n = 20$) reported knowing a Jordan personally, and .66% of the sample ($n = 2$) reported a Jordan as their close other.

Scenarios. As in Study 4, only the intentional harm and unintentional harm scenarios were used. These two conditions allowed me to isolate the effect of intentional (versus accidental) harm, as both conditions contain a harmful outcome, but the intentional harm condition contains harmful intentions whereas the unintentional harm condition does not. Half of the scenarios included a perpetrator who was a stranger, and the other half included a perpetrator who was a close other described above. Counterbalancing was done in the same manner as Study 4. Also as in Study 4, the stranger scenarios contained the same perpetrator (i.e., Jordan) to reduce variability across the stranger scenarios and to be more comparable to the close other scenarios who have the same perpetrator.

These scenarios were modified such that the participants were on the receiving end of the sociomoral violations rather than an unknown person (e.g., Jenny's partner) as in the previous studies. See an example below with the perpetrator being a stranger (i.e., Jordan) or close other (e.g., Katrina) in the unintentional harm and intentional harm conditions. All scenarios can be found in [Appendix M](#).

Unintentional Harm Condition – Stranger Perpetrator

Imagine you are taking a class in sculpture. You are assigned to work with a random stranger named Jordan to weld together pieces of metal. Jordan does not want to burn your hand. Jordan only wants to weld together the metal. Jordan welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Intentional Harm Condition – Stranger Perpetrator

Imagine you are taking a class in sculpture. You are assigned to work with a random stranger named Jordan to weld together pieces of metal. Jordan wants to burn your hand. Jordan welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you are taking a class in sculpture with your close other Katrina. You are assigned to work with Katrina to weld together pieces of metal. Katrina does not want to burn your hand. Katrina only wants to weld together the metal. Katrina welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Intentional Harm Condition – Close Other Perpetrator

Imagine you are taking a class in sculpture with your close other Katrina. You are assigned to work with Katrina to weld together pieces of metal. Katrina wants to burn your hand. Katrina welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Prior to reading the scenarios, participants were informed that they will read scenarios about a stranger whom they have never met named Jordan and

their close other that they just indicated. They were instructed to envision how they would feel about and judge the people described in the scenarios. They were asked to answer each question as if the situation actually happened, and they were asked to judge the person described in the scenario for what they did. They were reminded that I am interested in how they would react in real life if the situations were to happen. After each scenario, participants indicated the severity of harm that occurred in that scenario on a 7-point scale (1 = *Not at all*, 7 = *Extremely*).

Comprehension check. To ensure that participants were reading the instructions, I included a comprehension check as in Study 4 (see above). If participants answer incorrectly, they were redirected to the general instructions.

Dependent variables. For each scenario, participants provided moral judgments, emotion ratings, and decisional forgiveness ratings the same way as in previous studies. For moral judgments, participants provided person and act judgments on a 7-point scale (1 = *Not at all*, 7 = *Extremely*; see [Appendix B](#)). For emotion ratings, participants indicated to what extent they felt each emotion toward the perpetrators described in the scenarios on a 7-point scale as in Studies 2-4 (1 = *Not at all*, 7 = *Extremely*). For decisional forgiveness ratings, participants indicated the extent to which one has decided to forgive the offender and behave differently toward that person in terms of their prosocial intentions and inhibitions of harmful intentions (Worthington et al., 2007; see [Appendix I](#)).

Responses were made on a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*) and averaged across their respective subscales.

Control variables. I included the same 5 control variables as in Study 4. Specifically, participants completed a measure of current state affect (i.e., the mDES; Fredrickson et al., 2003; see [Appendix J](#)), trait disgust (i.e., the TDDS; Tybur et al., 2009; see [Appendix C](#)), trait anger (i.e., the angry temperament subscale of the STAXI (Spielberger, 1999; see [Appendix K](#)), trait sympathy (i.e., the TSS; Lee, 2009; see [Appendix L](#)), dispositional forgiveness (Ng et al., 2018), and self-construal (Singelis, 1994). Each are described above in the Method section of Study 4.

Procedure

The procedure for Study 5 was the same as the procedure for Study 4. After providing informed consent, participants were randomly assigned to either the intentional harm condition ($n_{\text{total}} = 155$, $n_{\text{OA}} = 76$, $n_{\text{YA}} = 79$) or the unintentional harm condition ($n_{\text{total}} = 146$, $n_{\text{OA}} = 76$, $n_{\text{YA}} = 70$). Prior to reading the scenarios, participants were asked to report their close other and complete the control measures of trait disgust, trait anger, trait sympathy, dispositional forgiveness, and self-construal. Next participants were presented with the scenarios. For each scenario and in the following order, participants provided person and act judgments, emotion ratings, and decisional forgiveness. After all of the scenarios were presented, participants completed the same demographics questionnaire as the previous studies. Lastly, participants were thanked and compensated for their participation.

Results

Data Analysis Strategy

The same data analysis strategy in Study 4 was used in Study 5. I examined the intraclass correlations (ICCs), which ranged from .578 to .839, suggesting that a multi-level framework is preferred. As such, I conducted multi-level regressions for all analyses to account for nesting of scenarios within participants and for intercept variability between participants. For each outcome, I included dummy coded age (ref = older adults), dummy coded condition (ref = unintentional harm), dummy coded perpetrator (ref = stranger), and the interactions therein. Trait anger, disgust, sympathy, and forgiveness were included as covariates in their respective analyses. I also included severity of harm ratings and communal strength ratings as covariates. Significant two-way interactions were decomposed with simple slopes analyses. Significant three-way interactions involving age group, perpetrator, and condition were decomposed by examining the age group \times perpetrator two-way interaction in the intentional harm and unintentional harm condition separately.

Close Other Characteristics

There were significant age differences in the types of relationships with participants' close others, $\chi^2(6) = 36.81, p < .001$. For older adults, 39% were spouse/partners ($n = 60$), 5% were boyfriend/girlfriend ($n = 8$), 10% were sibling ($n = 15$), 2% were a parent ($n = 3$), 13% were a child, ($n = 19$), 26% were a friend ($n = 40$), and 5% ($n = 7$) were other (e.g., cousin). For younger adults, 21% were spouse/partners ($n = 31$), 12% were boyfriend/girlfriend ($n = 18$), 11% were

sibling ($n = 17$), 5% were a parent ($n = 8$), 1% were a child ($n = 2$), 46% were a friend ($n = 68$), and less than 4% ($n = 5$) were other (e.g., aunt, cousin).

There were significant age differences in the number of years participants have known their close others, $t(298)^{13} = 12.78$, $p < .001$, Cohen's $d = 1.47$. Unsurprisingly, older adults ($M = 32.41$ years, $SD = 18.25$, range: 1-78 years) reported knowing their close other for longer than younger adults ($M = 11.52$ years, $SD = 8.12$, range: 1-33 years).

There were no age differences in the reported quality of the relationship ($p = .829$). Older adults ($M = 2.57$, $SD = 0.76$, 95% CI [2.45, 2.69]) and younger adults ($M = 2.59$, $SD = 0.71$, 95% CI [2.48, 2.70]) reported similar quality of the relationship, with both means approaching the high-end of the scale at 3 (very positively).

Finally, there were age differences in communal strength, $t(299) = 3.85$, $p < .001$, Cohen's $d = 0.44$. Older adults ($M = 8.61$, $SD = 1.43$, 95% CI [8.38, 8.84]) reported higher communal strength compared to younger adults ($M = 7.98$, $SD = 1.41$, 95% CI [7.45, 8.21]). As such, I included communal strength as a covariate in the analyses below.

Scenario Characteristics

I measured a few characteristics of the scenarios: (a) severity of harm, (b) ability to envision the scenarios involving the stranger named Jordan, and (c)

¹³ Note that one participant reported "112" in the number of years they have known their close other, which is not possible because their reported age was 63 years old. As such, I excluded that participant from this analysis.

ability to envision the scenarios involving their close other. I conducted a 2 (age group) \times 2 (condition) \times 8 (scenario) ANOVA.

For severity of harm ratings, the analysis did not reveal a significant main effect of age group ($p = .764$), but it did reveal significant main effects of condition, $F(1, 2376) = 454.63, p < .001, \eta_p^2 = .159$, and scenario, $F(7, 2376) = 110.97, p < .001, \eta_p^2 = .242$. Means, standard deviations, and 95% confidence intervals for each scenario are displayed in Table 2.

Table 2.
Severity of harm ratings for each scenario in Study 5

Scenario	<i>M</i>	<i>SD</i>	95% CI
Scenario 1: Burn	4.25	1.67	[4.06, 4.44]
Scenario 2: Construction	6.27	1.02	[6.16, 6.39]
Scenario 3: Darts	4.14	1.57	[3.96, 4.32]
Scenario 4: Dentist	4.91	1.66	[4.71, 5.08]
Scenario 5: Hair	5.15	1.50	[4.98, 5.32]
Scenario 6: Poison	5.77	1.30	[5.62, 5.92]
Scenario 7: Stand	4.66	1.43	[4.51, 4.82]
Scenario 8: Train	3.97	1.51	[3.80, 4.14]

Note. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*).

This analysis also revealed significant two way-interactions: age group \times condition, $F(1, 2376) = 15.96, p < .001, \eta_p^2 = .006$, age group \times scenario, $F(7, 2376) = 2.04, p = .047, \eta_p^2 = .003$, and condition \times scenario, $F(7, 2376) = 5.46, p < .001, \eta_p^2 = .013$. Follow up comparisons using Holm's corrections indicated that participants' severity of harm ratings in each scenario significantly differed by condition: S1 Burn, $t(299) = 11.38, p < .001$, Cohen's $d = 1.24$, S2 Construction, $t(299) = 4.94, p < .001$, Cohen's $d = 0.81$, S3 Darts, $t(299) = 8.91, p < .001$,

Cohen's $d = 0.97$, S4 Dentist, $t(299) = 9.91$, $p < .001$, Cohen's $d = 1.05$, S5 Hair, $t(299) = 5.52$, $p < .001$, Cohen's $d = 0.59$, S6 Poison, $t(299) = 5.47$, $p < .001$, Cohen's $d = 0.68$, S7 Stand, $t(299) = 6.81$, $p < .001$, Cohen's $d = 0.78$, S8 Train, $t(299) = 7.24$, $p < .001$, Cohen's $d = 0.78$. Thus, it seems that the two-way interaction is driven by the largest difference in harm ratings by condition for the first scenario. Please refer to Figure 15 for means and confidence intervals by condition for each scenario. With respect to the age group \times scenario interaction, follow up comparisons did not reveal any significant age difference between the scenarios. However, please refer to Figure 16 for older and younger adults' severity ratings for each scenario. The three-way interaction was not significant ($p = .586$). Given these findings, I included severity of harm ratings in the analyses below.

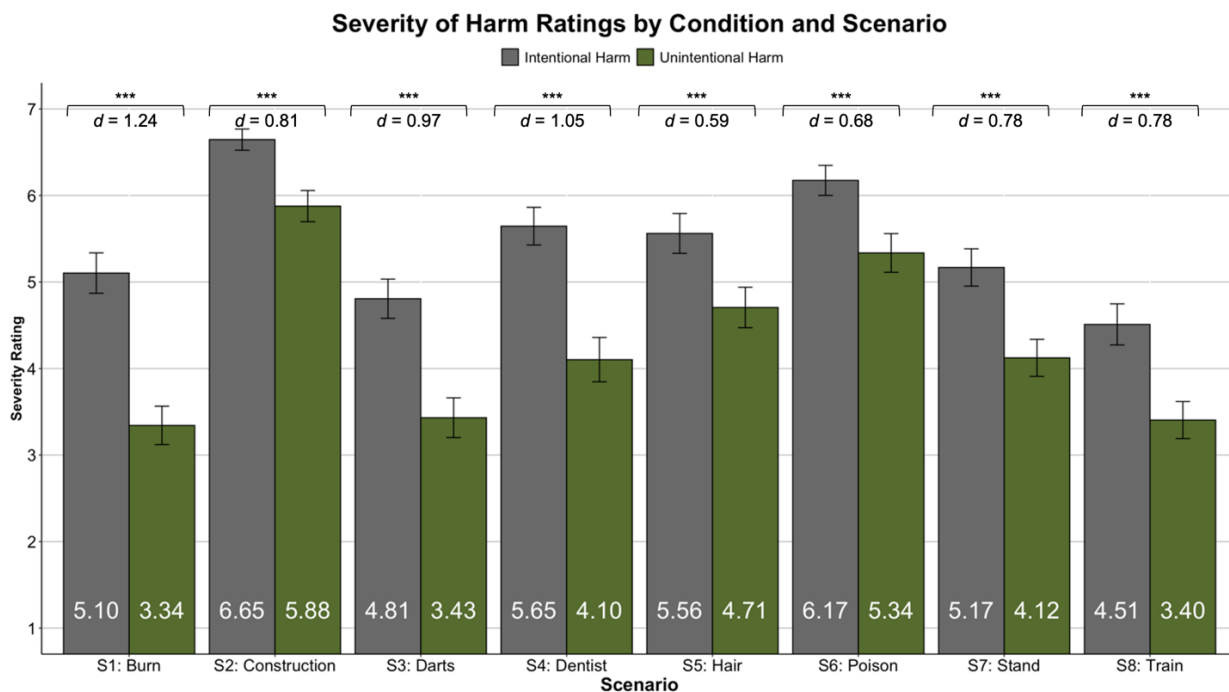


Figure 15. Means, confidence intervals, and Cohen's d for the condition by scenario interaction for severity of harm ratings.

*** $p < .001$.

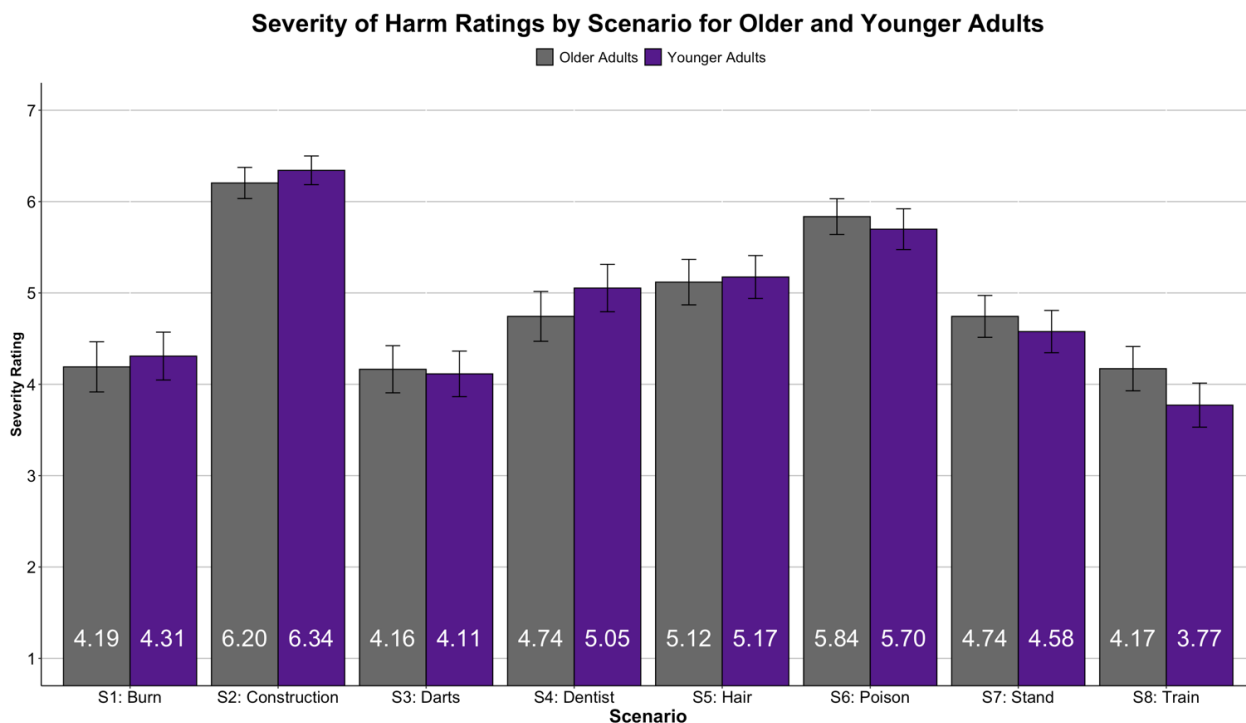


Figure 16. Means and confidence intervals for the age group by scenario interaction. Follow up comparisons did not indicate any significant differences by age group in each condition.

For envisioning the scenarios involving the stranger, older ($M = 5.92$, $SD = 1.05$, 95% CI [5.75, 6.09]) and younger ($M = 5.82$, $SD = 1.25$, 95% CI [5.72, .02]) adults did not significantly differ in their reported ability to envision what was happening in the scenarios involving the stranger ($p = .442$). Older ($M = 5.00$, $SD = 2.01$, 95% CI [5.68, 5.32]) and younger ($M = 5.38$, $SD = 1.60$, 95% CI [5.12, 5.63]) adults also did not significantly differ in their reported ability to envision what was happening in the scenarios involving a close other ($p = .074$).

Control Variables

Current state affect. Participants completed a measure of current positive and negative state affect using the mDES (Fredrickson et al., 2003).

With respect to positive state affect, older adults ($M = 1.77$, $SD = 0.80$, 95% CI

[1.64, 1.90]) reported higher ratings compared to younger adults ($M = 1.44$, $SD = 0.87$, 95% CI [1.31, 1.58]), $t(299) = 3.46$, $p < .001$, Cohen's $d = 0.41$. Conversely, older adults ($M = 0.24$, $SD = 0.44$, 95% CI [0.17, 0.31]) reported lower negative state affect compared to younger adults, ($M = 0.51$, $SD = 0.71$, 95% CI [0.40, 0.63]), $t(299) = -4.06$, $p < .001$, Cohen's $d = -0.47$. These findings track with past research demonstrating age-related differences in positive and negative affect across varying methodologies (Carstensen et al., 2000; 2011; Charles et al., 2001; Mroczek & Kolarz, 1998).

Trait disgust. Participants completed a measure of trait disgust using the TDDS (Tybur et al., 2009), which contained three subscales: moral disgust, pathogen disgust, and sexual disgust. Of importance to the current work, I examined age differences in the total TDDS scores as well as the scores for moral disgust specifically. For total trait disgust, older ($M = 3.97$, $SD = 1.12$, 95% CI [3.79, 4.15]) and younger adults' ($M = 3.75$, $SD = 0.89$, 95% CI [3.60, 3.89]) total disgust ratings were not significantly different from each other, $t(299) = 1.94$, $p = .053$, Cohen's $d = 0.22$. For trait moral disgust, older adults ($M = 4.57$, $SD = 1.39$, 95% CI [4.34, 4.79]) reported higher trait moral disgust compared to younger adults ($M = 3.71$, $SD = 1.22$, 95% CI [3.52, 3.91]), $t(299) = 5.66$, $p < .001$, Cohen's $d = 0.65$. Trait moral disgust was included as a covariate in the disgust analyses below.

Trait anger. Trait anger was assessed using the angry temperament subscale of the Trait Anger subscale of the State Trait Anger Expression Inventory (STAXI; Spielberger, 1999). Younger adults ($M = 1.54$, $SD = 0.50$, 95%

CI [1.46, 1.62]) reported higher trait anger compared to older adults ($M = 1.31$, $SD = 0.46$, 95% CI [1.24, 1.39]), $t(299) = -4.06$, $p < .001$, Cohen's $d = -0.47$. As such, I included trait anger as a covariate in the analysis for anger ratings.

Trait sympathy. Trait sympathy was measured using an 18-item questionnaire (Lee, 2009). Older ($M = 5.75$, $SD = 0.69$, 95% CI [5.64, 5.75]) and younger adults ($M = 5.57$, $SD = 0.81$, 95% CI [5.45, 5.71]) sympathy ratings were not significantly different from each other, $t(299) = 1.96$, $p = .051$, Cohen's $d = 0.23$. However, I still included trait sympathy scores as a covariate in the analysis for sympathy ratings.

Dispositional forgiveness. Dispositional forgiveness was measured with three items (Ng et al., 2018). Older adults ($M = 3.82$, $SD = 0.78$, 95% CI [3.69, 3.94]) reported higher dispositional forgiveness compared to younger adults ($M = 3.51$, $SD = 0.91$, 95% CI [3.36, 3.65]), $t(299) = 3.23$, $p = .002$, Cohen's $d = 0.37$. As such, I included dispositional forgiveness as a covariate in the analysis for forgiveness ratings.

Self-construal. Interdependent and independent self-construal was measured with five items each (Singelis, 1994). Older ($M = 4.02$, $SD = 1.23$, 95% CI [3.82, 4.22]) and younger ($M = 4.23$, $SD = 1.17$, 95% CI [4.05, 4.43]) did not differ significantly in their reported interdependent self-construal ($p = .117$). Conversely, older adults ($M = 5.27$, $SD = 1.06$, 95% CI [5.10, 5.44]) did report higher independent self-construal than younger adults ($M = 4.50$, $SD = 1.23$, 95% CI [4.31, 4.70]), $t(299) = 5.82$, $p < .001$, Cohen's $d = 0.67$.

Exploratory Self-Construal Analyses

As in Study 4, I explored the relationship between interdependent self-construal and forgiveness ratings for older and younger adults. Across the total sample, interdependent self-construal was not significantly correlated with prosocial intentions ratings ($r = .01, p = .563$) or inhibitions of harmful intentions ratings ($r = .01, p = .591$). For older adults, the relationship between prosocial intentions and interdependent self-construal was not significant ($r = -.04, p = .253$), and neither was inhibitions of harmful intentions and interdependent self-construal ($r = .00, p = .910$). Interestingly, however, the relationship between prosocial intentions and interdependent self-construal was significant for younger adults but still weakly correlated ($r = .09, p = .010$). But the relationship between interdependent self-construal and inhibition of harmful intentions ratings was not significant for younger adults ($r = .04, p = .211$). Thus, it appears that when participants are on the receiving end of the harm, there was no relationship between forgiveness and interdependent self-construal for older adults. However, there was a positive but weak relationship for younger adults.

Moral Judgments

Person judgments. In this analysis, the covariates of communal strength, $F(1, 295.67) = 7.86, p = .005, \eta_p^2 = .004$, and severity of harm, $F(1, 1256.68) = 433.57, p < .001, \eta_p^2 = .122$, were significant. With respect to main effects, younger adults ($M = 4.51, SD = 2.02, 95\% CI [4.39, 4.62]$) reported harsher person judgments than older adults ($M = 4.34, SD = 2.18, 95\% CI [4.22, 4.47]$), $F(1, 410.06) = 6.36, p = .012, \eta_p^2 = .003$. Consistent with Hypothesis 1,

participants reported harsher person judgments in the intentional condition ($M = 6.12$, $SD = 1.13$, 95% CI [6.06, 6.18]) relative to the unintentional condition ($M = 2.62$, $SD = 1.20$, 95% CI [2.56, 2.69]), $F(1, 433.51) = 812.35$, $p < .001$, $\eta_p^2 = .274$. Consistent with Hypothesis 2, participants reported harsher person judgments for stranger perpetrators ($M = 4.78$, $SD = 1.98$, 95% CI [4.67, 4.89]) relative to close other perpetrators ($M = 4.07$, $SD = 2.16$, 95% CI [3.95, 4.19]), $F(1, 2099.28) = 812.35$, $p < .001$, $\eta_p^2 = .059$.

Consistent with Hypothesis 3, the age group \times condition two-way interaction was significant, $F(1, 414.27) = 10.92$, $p = .001$, $\eta_p^2 = .005$. In the intentional harm condition, older adults reported harsher person judgments than younger adults, $b = -0.25$, $SE = 0.11$, $t = -2.37$, $p = .020$. Conversely, older adults reported less harsh person judgments than younger adults in the unintentional harm condition, $b = 0.32$, $SE = 0.11$, $t = 2.91$, $p < .01$. Please refer to Panel A of Figure 17 for older and younger adults' mean person judgments in each condition.

Consistent with Hypothesis 4, the condition \times perpetrator two-way interaction was significant, $F(1, 2096.79) = 5.57$, $p = .018$, $\eta_p^2 = .003$. In the intentional harm condition, participants reported harsher person judgments for stranger relative to close other perpetrators, $b = -0.54$, $SE = 0.05$, $t = -12.05$, $p < .01$. This was also true for the unintentional harm condition but to a larger degree, $b = -0.73$, $SE = 0.05$, $t = -15.60$, $p < .01$. Please refer to Panel A of Figure 18 for participants' mean person judgments by perpetrator in each condition.

Neither the age group \times perpetrator two-way interaction ($p = .682$) nor the three-way interaction ($p = .665$) were significant. Thus, Hypothesis 5 was therefore not supported.

Act judgments. In this analysis, the covariate of severity of harm was significant, $F(1, 2090.19) = 979.36, p < .001, \eta_p^2 = .313$, whereas communal strength was not a significant covariate ($p = .675$). With respect to the main effects, younger adults ($M = 4.85, SD = 1.57, 95\% CI [4.76, 4.94]$) reported harsher act judgments compared to older adults ($M = 4.67, SD = 1.68, 95\% CI [4.57, 4.76]$), $F(1, 407.49) = 5.57, p = .019, \eta_p^2 = .003$. Consistent with person judgments and Hypothesis 1, participants reported harsher act judgments in the intentional condition ($M = 5.91, SD = 1.01, 95\% CI [5.85, 5.96]$) relative to the unintentional condition ($M = 3.47, SD = 1.22, 95\% CI [3.47, 3.61]$), $F(1, 430.98) = 361.73, p < .001, \eta_p^2 = .144$. Consistent with Hypothesis 2, participants reported harsher act judgments for stranger perpetrators ($M = 5.00, SD = 1.57, 95\% CI [4.81, 5.09]$) relative to close other perpetrators ($M = 4.52, SD = 1.65, 95\% CI [4.42, 4.61]$), $F(1, 2098.14) = 73.58, p < .001, \eta_p^2 = .033$.

Supporting Hypothesis 3, the age group \times condition two-way interaction was marginally significant, $F(1, 411.61) = 3.86, p = .050, \eta_p^2 = .002$. Older and younger adults' act judgments did not significantly differ in the intentional harm condition, $b = -0.03, SE = 0.09, t = -0.34, p = .73$. Conversely, older adults reported more lenient act judgments compared to younger adults in the unintentional harm condition, $b = 0.30, SE = 0.10, t = 3.04, p < .01$. Please refer

to Panel B of Figure 17 for older and younger adults' mean act judgments in each condition.

The perpetrator × condition two-way interaction almost reached significance ($p = .057$). Participants' mean act judgments by perpetrator in each condition can be found in Panel B of Figure 18. Neither the age group × perpetrator two-way interaction ($p = .252$) nor the three-way interaction ($p = .458$) were significant. Thus, Hypothesis 4 and Hypothesis 5 were not fully supported for act judgments.

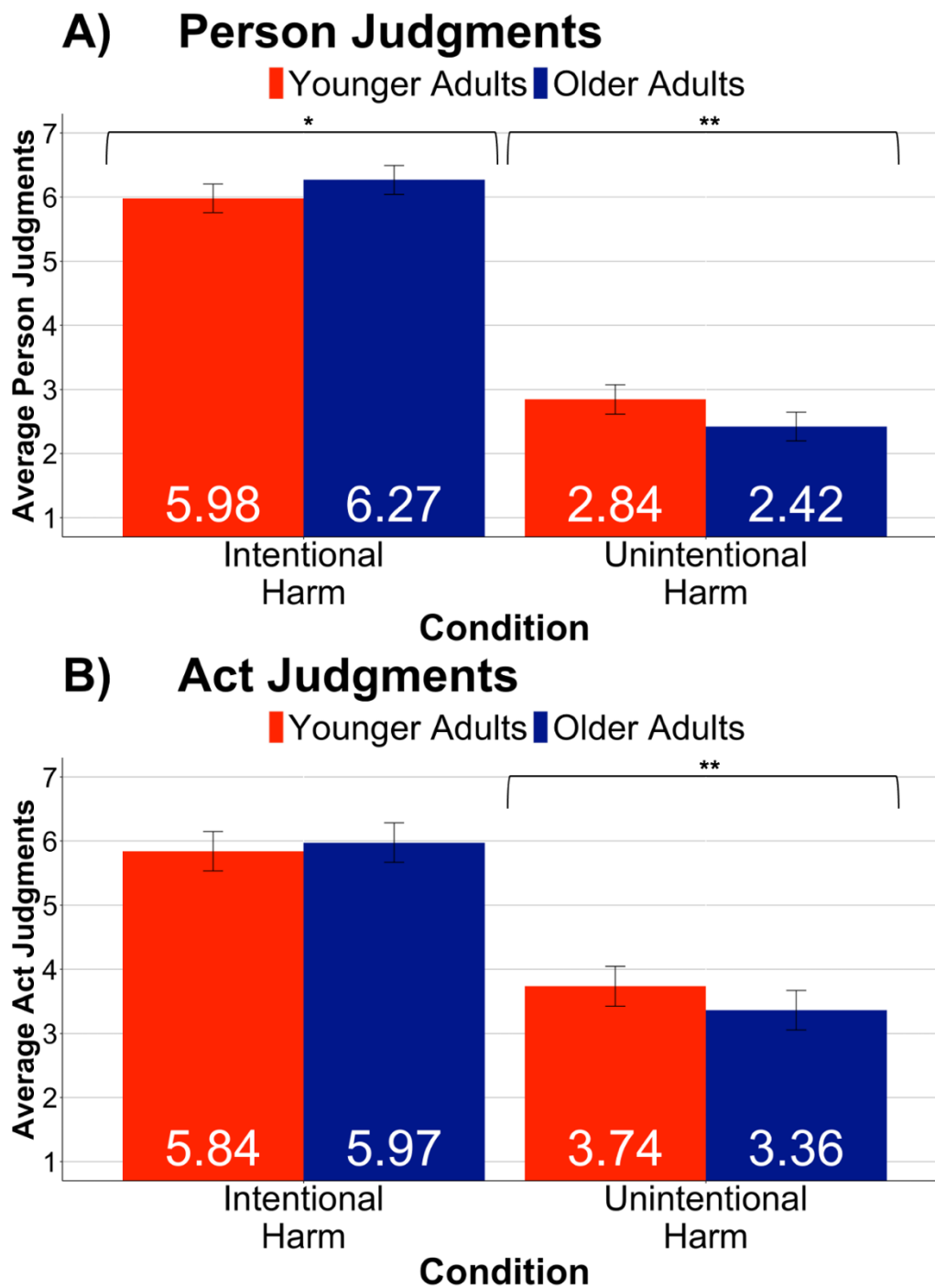


Figure 17. Mean person (Panel A) and act (Panel B) judgments for older and younger adults in each condition in Study 5. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed. Note that the age group \times condition interaction was marginally significant for act judgments ($p = .050$).

* $p < .05$. ** $p < .01$.

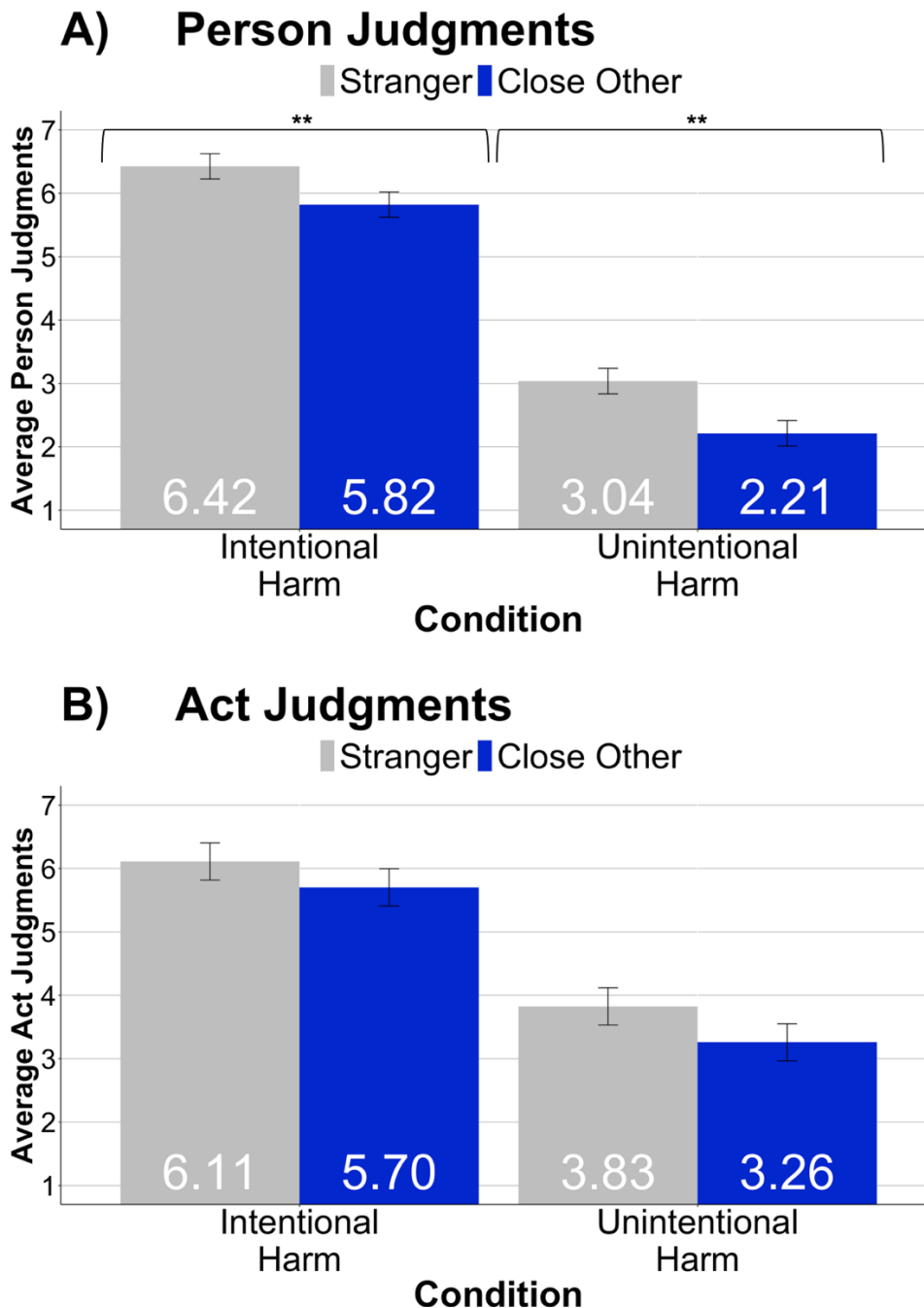


Figure 18. Mean person (Panel A) and act (Panel B) judgments for stranger and close other perpetrators in each condition in Study 5. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed. Note that the perpetrator \times condition interaction was not significant for act judgments.

** $p < .01$.

Emotion Ratings

Anger. In this analysis, the covariate of severity of harm rating was significant, $F(1, 1660.80) = 724.31, p < .002, \eta_p^2 = .254$, whereas the covariates of trait anger ($p = .054$) and communal strength ($p = .164$) were not significant. With respect to the main effects, younger adults ($M = 5.14, SD = 1.88, 95\% CI [5.04, 5.25]$) reported higher anger ratings compared to older adults ($M = 4.96, SD = 2.07, 95\% CI [5.04, 5.08]$), $F(1, 369.06) = 3.90, p = .049, \eta_p^2 = .002$. Consistent with Hypothesis 1, participants reported higher anger ratings in the intentional harm condition ($M = 6.19, SD = 1.19, 95\% CI [6.13, 6.26]$) compared to the unintentional harm condition ($M = 3.84, SD = 1.92, 95\% CI [3.73, 3.95]$), $F(1, 387.22) = 108.06, p < .001, \eta_p^2 = .048$. In addition and consistent with Hypothesis 2, participants reported higher anger ratings for stranger perpetrators ($M = 5.30, SD = 1.83, 95\% CI [5.20, 5.41]$) compared to close other perpetrators ($M = 4.81, SD = 2.09, 95\% CI [4.68, 4.92]$), $F(1, 2097.96) = 66.29, p < .001, \eta_p^2 = .030$.

Consistent with Hypothesis 3, the age group \times condition two-way interaction was significant, $F(1, 373.53) = 4.57, p = .033, \eta_p^2 = .002$. In the intentional harm condition, older and younger adults' anger ratings were not significantly different from each other, $b = -0.17, SE = 0.16, t = -1.04, p = .30$. However, in the unintentional harm condition, older adults reported significantly lower anger ratings compared to younger adults, $b = 0.43, SE = 0.17, t = 2.53, p = .01$. Please refer to Panel A of Figure 19 for older and younger adults' mean anger ratings in each condition.

Consistent with Hypothesis 4, the perpetrator \times condition two-way interaction was significant, $F(1, 2096.03) = 18.67, p < .001, \eta_p^2 = .009$. In the intentional harm condition, participants reported higher anger ratings for strangers relative to close others, $b = -0.17, SE = 0.06, t = -2.95, p < .01$. This was also true for the unintentional harm condition but to a greater degree, $b = -0.58, SE = 0.06, t = -9.95, p < .01$. Please refer to Panel A of Figure 20 for participants' mean anger ratings for stranger and close other perpetrators in each condition.

Neither the age group \times perpetrator interaction ($p = .200$) nor the three-way interaction ($p = .348$) were significant. Thus, Hypothesis 5 was not supported.

Disgust. In this analysis, the covariates of trait moral disgust, $F(1, 296.31) = 6.90, p = .009, \eta_p^2 = .003$, and severity of harm, $F(1, 1812.27) = 703.27, p < .001, \eta_p^2 = .248$, were significant. The covariate of communal strength was not significant ($p = .893$). With respect to the main effects, younger adults ($M = 4.12, SD = 2.36, 95\% CI [3.98, 4.25]$) reported higher disgust ratings compared to older adults ($M = 3.91, SD = 2.45, 95\% CI [3.76, 4.03]$), $F(1, 372.08) = 12.02, p < .001, \eta_p^2 = .006$. Consistent with Hypothesis 1, participants reported higher disgust ratings in the intentional condition ($M = 5.68, SD = 1.65, 95\% CI [5.58, 5.77]$) compared to the unintentional condition ($M = 2.23, SD = 1.71, 95\% CI [2.13, 2.33]$), $F(1, 390.29) = 305.71, p < .001, \eta_p^2 = .125$. Consistent with Hypothesis 2, participants reported higher disgust ratings for stranger perpetrators ($M = 4.24, SD = 2.35, 95\% CI [4.11, 4.38]$) compared to close other

perpetrators ($M = 3.77$, $SD = 2.44$, 95% CI [3.63, 3.90]), $F(1, 2097.54) = 22.75$, $p < .001$, $\eta_p^2 = .011$.

Supporting Hypothesis 3, the age group \times condition two-way interaction was significant, $F(1, 376.82) = 7.73$, $p = .006$, $\eta_p^2 = .004$. In the intentional harm condition, older and younger adults' disgust ratings did not significantly differ from each other, $b = -0.09$, $SE = 0.17$, $t = -0.53$, $p = .59$. In the unintentional harm condition, however, older adults reported lower disgust ratings than younger adults, $b = 0.60$, $SE = 0.17$, $t = 3.48$, $p < .01$. Please refer to Panel B of Figure 19 for older and younger adults' mean disgust ratings in each condition.

Neither the perpetrator \times condition interaction ($p = .139$) nor the perpetrator \times age group interaction ($p = .583$) nor the three-way interaction ($p = .993$) were significant. Thus, neither Hypothesis 4 nor Hypothesis 5 were supported for disgust ratings. However, for the sake of consistency, means for the perpetrator \times condition interaction are displayed on Panel B of Figure 20.

Sympathy. In this analysis, the severity of harm covariate was significant, $F(1, 1056.95) = 12.03$, $p = .001$, $\eta_p^2 = .006$, whereas the covariates of communal strength ($p = .630$) and trait sympathy ($p = .372$) were not significant. With respect to the main effects, the main effects of age group ($p = .391$) and condition ($p = .716$) were not significant. However, participants did report higher sympathy ratings for close other perpetrators ($M = 2.71$, $SD = 1.54$, 95% CI [2.61, 2.79]) relative to stranger perpetrators ($M = 2.16$, $SD = 1.24$, 95% CI [2.09, 2.23]), $F(1, 2096.25) = 65.33$, $p < .001$, $\eta_p^2 = .030$.

No other effects were significant: age group \times condition two-way interaction ($p = .572$), age group \times perpetrator two-way interaction ($p = .143$), condition \times perpetrator two-way interaction ($p = .858$), and the three-way interaction ($p = .772$). For the sake of consistency, means for the age group \times condition two-way interaction and the condition \times perpetrator two-way interaction can be found in Panel C of Figures 19 and 20, respectively. Thus, only Hypothesis 2 was supported for sympathy ratings.

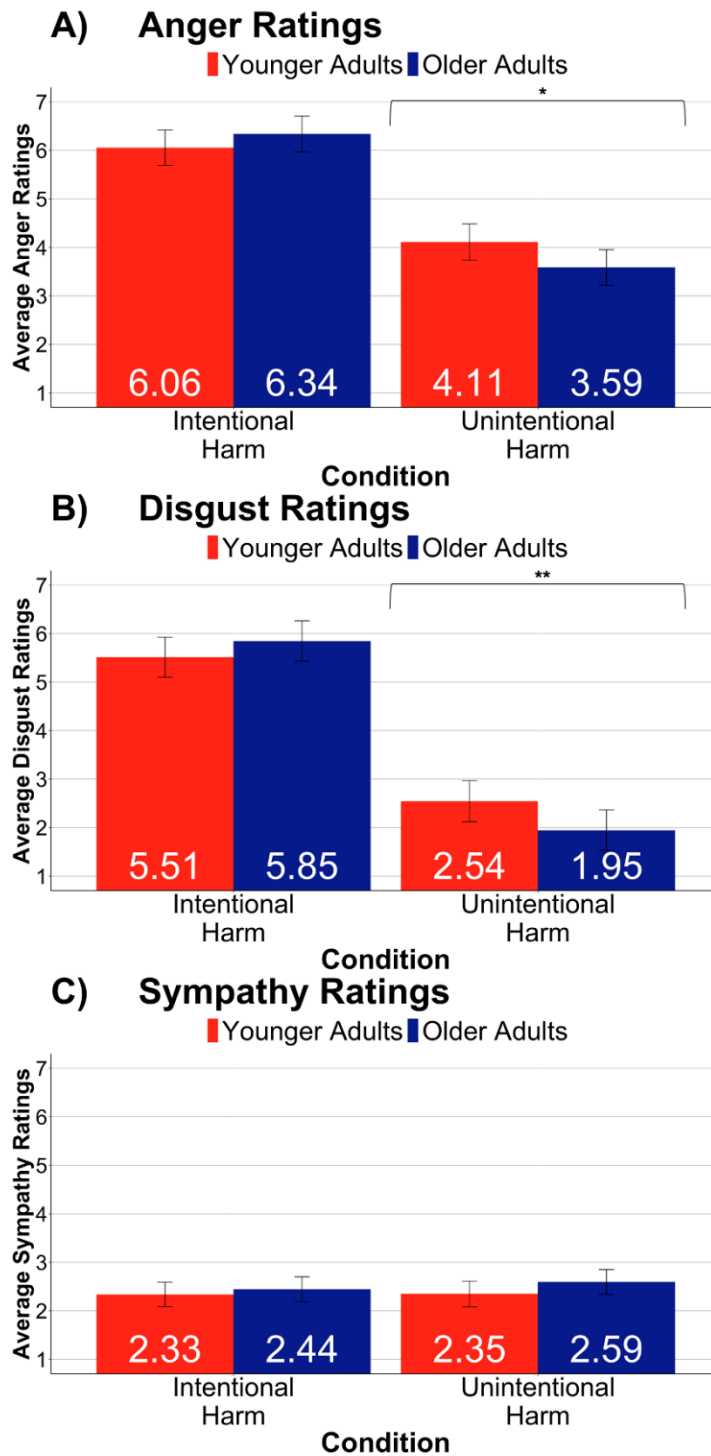


Figure 19. Mean anger (Panel A), disgust (Panel B), and sympathy (Panel C) ratings for older and younger adults in each condition in Study 5. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed. Note that the age group \times condition interaction was not significant for sympathy ratings.

* $p < .05$. ** $p < .01$.

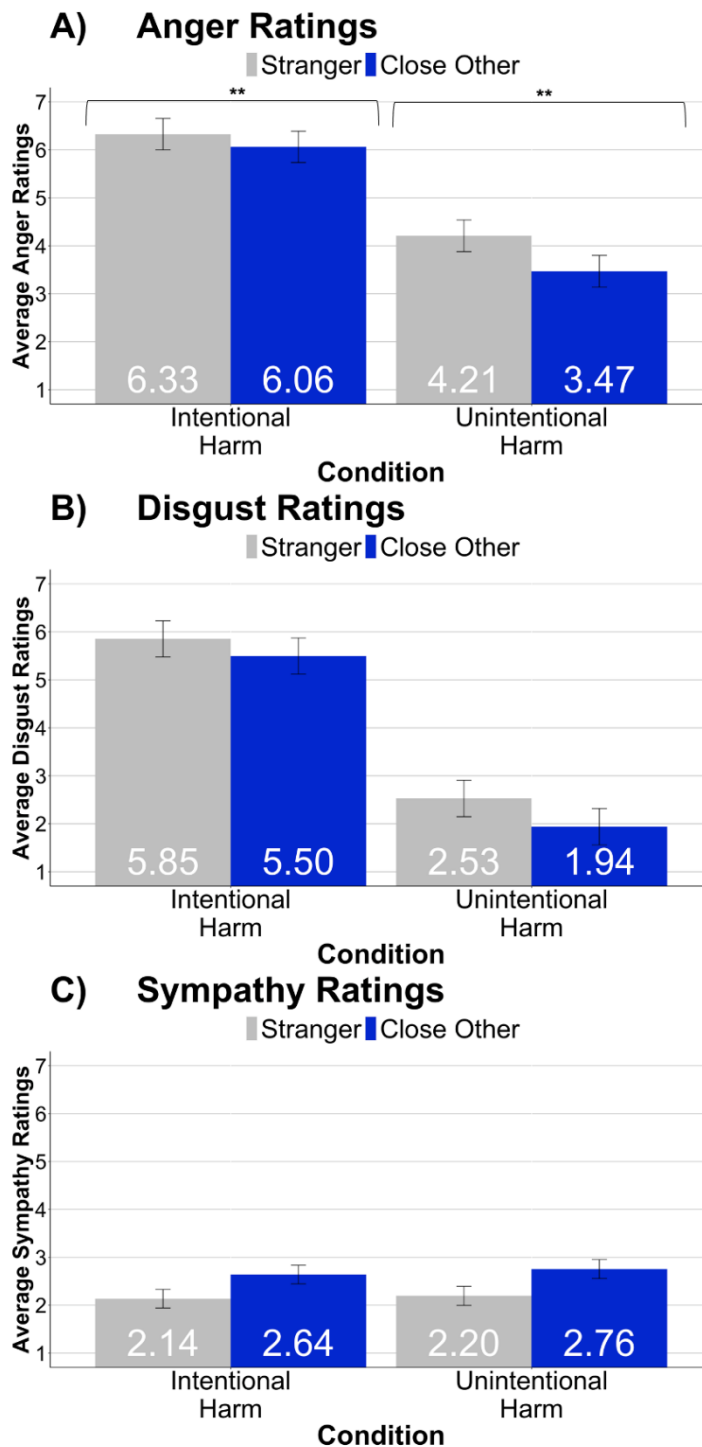


Figure 20. Mean anger (Panel A), disgust (Panel B), and sympathy (Panel C) ratings for stranger and close other perpetrators in each condition in Study 5. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*). Confidence intervals are displayed. Note that the perpetrator \times condition interaction was not significant for disgust and sympathy ratings.

** $p < .01$.

Forgiveness

Prosocial intentions. In this analysis, the covariates of severity of harm, $F(1, 886.83) = 324.07, p < .001, \eta_p^2 = .111$, communal strength, $F(1, 295.01) = 12.35, p = .001, \eta_p^2 = .004$, and dispositional forgiveness, $F(1, 295.21) = 8.19, p = .005, \eta_p^2 = .003$, were significant. With respect to the main effects, older adults ($M = 3.16, SD = 1.31, 95\% CI [3.08, 3.23]$) reported higher prosocial intention ratings compared to younger adults ($M = 2.79, SD = 1.33, 95\% CI [2.71, 2.86]$), $F(1, 376.09) = 14.28, p < .001, \eta_p^2 = .007$. Consistent with Hypothesis 1, participants reported higher prosocial intention ratings in the unintentional harm condition ($M = 3.87, SD = 1.01, 95\% CI [3.81, 3.92]$) compared to the intentional harm condition ($M = 2.13, SD = 0.99, 95\% CI [2.08, 2.19]$), $F(1, 394.03) = 218.81, p < .001, \eta_p^2 = .093$. Consistent with Hypothesis 2, participants reported higher prosocial intentions for close other perpetrators ($M = 3.34, SD = 1.32, 95\% CI [3.27, 3.42]$) relative to stranger perpetrators ($M = 2.60, SD = 1.22, 95\% CI [2.53, 2.67]$), $F(1, 2099.29) = 192.97, p < .001, \eta_p^2 = .083$.

Supporting Hypothesis 3, the age group \times condition two-way interaction was significant, $F(1, 379.63) = 5.71, p = .017, \eta_p^2 = .003$. In the intentional harm condition, older and younger adults' prosocial intention ratings were not significantly different from each other, $b = -0.13, SE = 0.10, t = -1.35, p = .18$. However, in the unintentional harm condition, older adults reported higher prosocial intention ratings than younger adults, $b = -0.34, SE = 0.10, t = -3.32, p < .01$. Please refer to Panel A of Figure 21 for older and younger adults' mean prosocial intention ratings in each condition.

Neither the age group \times perpetrator ($p = .053$) nor the condition \times perpetrator ($p = .625$) were significant. Consistent with Study 4 and Hypothesis 5, the three-way interaction was significant, $F(1, 2095.08) = 8.54, p = .004, \eta_p^2 = .004$. I decomposed this three-way interaction by examining the age group \times perpetrator two-way interaction in each condition separately. Please refer to Figure 22 for means and confidence intervals.

In the intentional harm condition, the main effect of perpetrator was significant, $F(1, 1078.11) = 180.81, p < .001, \eta_p^2 = .142$, whereas the main effect of age group was not significant ($p = .386$). The age group \times perpetrator two-way interaction was significant, $F(1, 1077.23) = 4.81, p = .029, \eta_p^2 = .004$. Older adults reported higher prosocial intention ratings for close others relative to stranger perpetrators, $b = 0.67, SE = 0.05, t = 13.45, p < .01$. Younger adults did, too, but to a lesser degree, $b = 0.52, SE = 0.05, t = 10.59, p < .01$.

In the unintentional harm condition, the main effects of age group, $F(1, 198.52) = 14.27, p < .001, \eta_p^2 = .014$, and perpetrator, $F(1, 1015.42) = 185.97, p < .001, \eta_p^2 = .152$, were significant. The two-way interaction was not significant ($p = .063$).

Inhibition of harmful intentions. In this analysis, the covariates of dispositional forgiveness, $F(1, 294.97) = 8.37, p = .004, \eta_p^2 = .004$, communal strength, $F(1, 294.86) = 22.99, p < .001, \eta_p^2 = .010$, and severity of harm, $F(1, 426.31) = 35.70, p < .001, \eta_p^2 = .016$, were significant. With respect to the main effects, the main effect of age group was not significant ($p = .375$). However, consistent with Hypothesis 1, participants reported significantly higher inhibition

of harmful intentions ratings in the unintentional harm condition ($M = 4.49$, $SD = 0.70$, 95% CI [4.45, 4.53]) compared to the intentional harm condition ($M = 3.75$, $SD = 1.14$, 95% CI [3.68, 3.81]), $F(1, 345.81) = 25.51$, $p < .001$, $\eta_p^2 = .012$. In addition and consistent with Hypothesis 2, participants reported higher inhibition of harmful intention ratings for close other perpetrators ($M = 4.25$, $SD = 0.95$, 95% CI [4.21, 4.30]) relative to stranger perpetrators ($M = 3.97$, $SD = 1.08$, 95% CI [3.91, 4.03]), $F(1, 2099.92) = 10.46$, $p = .001$, $\eta_p^2 = .005$.

Only the age group \times perpetrator two-way interaction was significant, $F(1, 2096.21) = 5.73$, $p = .017$, $\eta_p^2 = .003$. Older adults reported higher inhibition of harmful intention ratings for close others ($M = 4.37$, $SD = 0.80$, 95% CI [4.31, 4.43]) relative to strangers ($M = 4.15$, $SD = 0.94$, 95% CI [4.08, 4.23]), $b = .20$, $SE = 0.03$, $t = 6.44$, $p < .01$. Younger adults did as well, but to a larger degree (close other: $M = 4.13$, $SD = 1.06$, 95% CI [4.04, 4.21]; stranger: $M = 3.78$, $SD = 1.18$, 95% CI [3.69, 3.88]), $b = 0.33$, $SE = 0.03$, $t = 10.12$, $p < .01$.

No other effects were significant: age group \times condition interaction ($p = .311$), condition \times perpetrator interaction ($p = .069$), nor the three-way interaction ($p = .467$). For the sake of consistency, means for the age group \times condition interaction can be found in Panel B of Figure 21. Thus, Hypotheses 3-5 were not supported for inhibition of harmful intention ratings.

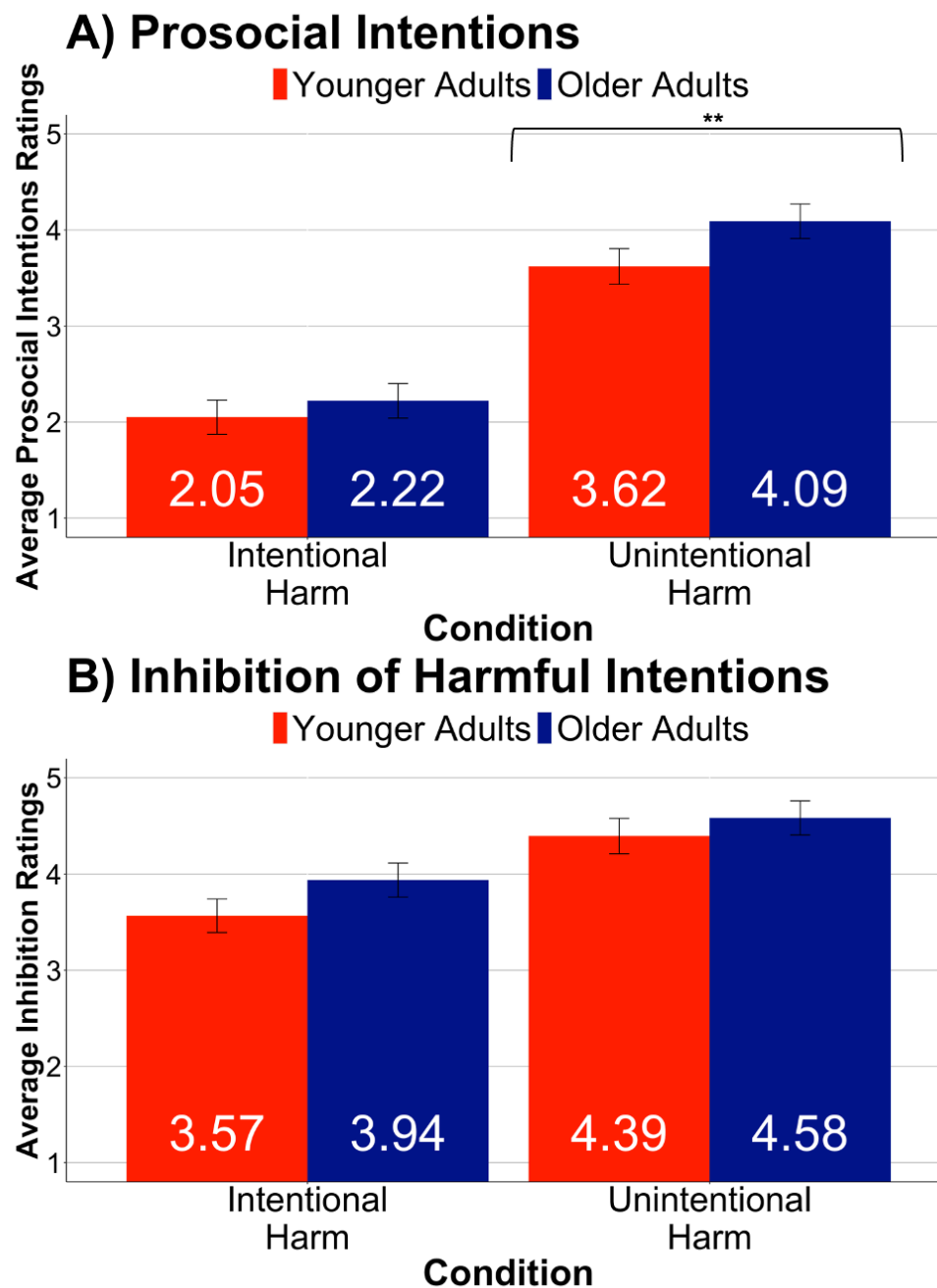


Figure 21. Mean prosocial intention ratings (Panel A) and inhibition of harmful intention ratings (Panel B) for older and younger adults in each condition in Study 5. Responses ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Confidence intervals are displayed. Note that the age group \times condition interaction was not significant for inhibition of harmful intentions ratings. ** $p < .01$.

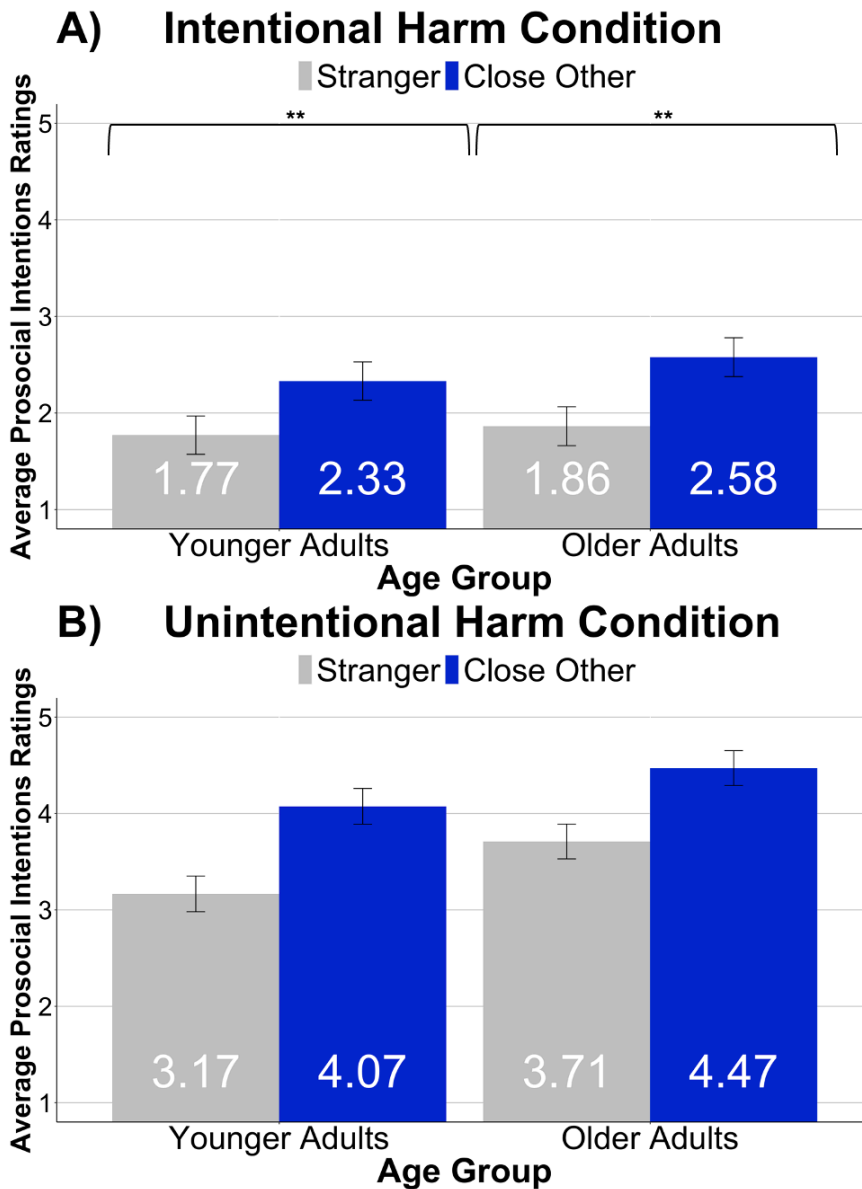


Figure 22. Breakdown of the three-way interaction for prosocial intention ratings. The age group by perpetrator was examined separately in the intentional harm (Panel A) and unintentional harm (Panel B) conditions in Study 5. Responses ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Confidence intervals are displayed. Note that the age group \times perpetrator interaction was not significant in the unintentional harm condition.

** $p < .01$.

Discussion

In Study 5, I explored whether older and younger adults' judgments and emotional reactions differed toward close other and stranger perpetrators who either intentionally or unintentionally harmed them hypothetically. There were five preregistered hypotheses for Study 5. First, I predicted that participants would respond more harshly, with more negativity, and less forgiveness towards perpetrators who intentionally relative to unintentionally harmed them. This hypothesis was consistently and robustly supported and converges with other research demonstrating that intentional harms are judged worse than accidents, even if the accidents have severe consequences (Cushman, 2008; Knobe, 2005; Young et al., 2007). Second, I predicted that participants would respond more harshly, with more negativity, and less forgiveness for stranger relative to close other perpetrators. Again, this hypothesis was consistently and robustly supported.

I also predicted an age group \times condition interactions for some but perhaps not all of my dependent variables (Hypothesis 3), given that this interaction was only significant for act judgments and anger ratings in Study 4 when an unknown other was on the receiving end of the accidental or intentional harm. In Study 5, when participants were on the receiving end of the harm, the age group \times condition was consistently significant across the majority of my dependent variables: person judgments, marginally significant for act judgments, anger and disgust ratings, and prosocial intentions. Converging with the findings from the previous four studies, older adults reported significantly less harsh moral

judgments and negativity and higher prosocial intentions toward perpetrators who hypothetically harmed them unintentionally compared to younger adults.

Conversely, for perpetrators who harmed them intentionally, older adults were only significantly harsher than younger adults in their person judgments. Older and younger adults' act judgments, emotion ratings, and inhibition of harmful intentions ratings were not significantly different from each other in the intentional harm condition. This might suggest that when the harm is desired by the perpetrator, older and younger adults are functionally and comparably responding to the harm.

Based on the findings from Study 4, I predicted significant and consistent condition \times perpetrator two-way interactions across my dependent variables (Hypothesis 4). In Study 5, this interaction was significant for person judgments and anger ratings. Participants reported harsh person judgments and higher anger ratings for stranger relative to close other perpetrators who harmed them intentionally. This was also true for perpetrators who harmed them accidentally, reporting harsher judgments and more anger for strangers relative to close others, but the mean difference was larger for accidental compared to intentional harms. In other words, in both conditions, participants were harsher on and more negative towards strangers relative to close others. However, the degree of difference was smaller for intentional (mean difference = 0.60 for person judgments and 0.27 for anger) compared to accidental (mean difference = 0.83 for person judgments and 0.74 for anger) harms. What is interesting though, is that in Study 4, participants were harsher on close others relative to strangers

who harmed another accidentally. Here in Study 5, the reverse was true: participants were harsher on strangers than close others when they were the others being harmed hypothetically. Thus, it seems that when comparing Studies 4 and 5, participants are more forgiving for close others when they are harmed them intentionally but not when the close others harmed another person intentionally.

In Study 4 when another person was harmed, participants were harsher on and more negative towards their close others who intentionally harmed another compared to strangers who intentionally harmed another. This was surprising initially, but after considering expectancy violations theory which was brought up by a committee member (Burgoon, 1993; Burgoon et al., 1984; Le Poire & Burgoon, 1994), it made sense. According to that theory, individuals may experience heightened arousal when their close other or partner does something outside of what is expected of them – i.e., when they violate expectations. That was prominent in both Studies 4 and 5 when participants' close others intentionally harmed another, but only in Study 4 did participants respond more harshly to their close others who intentionally harmed another but not when they were (hypothetically) harmed here in Study 5. It appears that the violations of expectations lead to harsher judgments and more negativity when *another person* is harmed intentionally but not when *they are* harmed intentionally. Perhaps participants have expectations that their close others should not or would not harm another intentionally, but they may not necessarily extend to how they expect their close others to treat them. Thus, it seems that participants may

be more lenient on their close others who harm them compared to when their close others harm another person.

My fifth hypothesis focused on the age group \times condition \times perpetrator interaction for forgiveness ratings (note that in Study 5, I used prosocial intentions and inhibition of harmful intention ratings). In Study 5, for only the prosocial intentions ratings was the three-way interaction significant. Consistent with Study 4, when harm occurred intentionally, younger adults were more forgiving of close others relative to stranger perpetrators who hypothetically harmed them intentionally. Older adults did, too, but the difference was larger compared to younger adults. Unlike in Study 4 where the age group \times perpetrator interaction was significant in the unintentional harm condition, it was not here in Study 5. This might suggest that older adults are comparably forgiving, or at least prosocial, toward close other and stranger perpetrators who harm them accidentally relative to younger adults.

General Discussion

The goal of this work was to understand how older and younger adults feel about and judge perpetrators who harm another intentionally or unintentionally. The overall pattern across the studies suggests that older adults are more sensitive to intentions, as they judge perpetrators with malicious intentions more harshly than younger adults but more leniently when harm is inflicted accidentally. Specifically, in Studies 1 and 2, when no harm occurred but perpetrators desired to do so, older adults reported harsher judgments of moral character compared to younger adults. In contrast, older adults judged

perpetrators who accidentally harmed another more leniently than younger adults (in Studies 1-3). Moreover, older adults reported significantly less disgust than younger adults when perpetrators harmed another accidentally (in Studies 1 and 2). In Study 3, we found that when perpetrators both desired to and successfully harmed another, older adults judged them more harshly and experienced greater anger but less sympathy, than younger adults.

Studies 1-3 were conducted prior to my dissertation proposal defense and informed the predictions and designs for Studies 4 and 5. The findings from the first three studies overall suggested that older adults are sensitive to motives to a greater extent than younger adults. What I wanted to further understand with Studies 4 and 5 was whether older adults' motivations to maintain and deepen close interpersonal relationships would triumph over their motivations to maintain social harmony and keep the peace (Carstensen, 1992, 2006; Carstensen et al., 1999; Lang & Carstensen, 1994; Sorkin & Rook, 2006) when a close other versus a stranger caused harm. This was not necessarily borne out in the data, as age group did not interact with the relational closeness of the perpetrator in Studies 4 and 5. Instead, albeit less consistently in Study 4 but consistently in Study 5, older adults reported more lenient judgments and less negativity than younger adults for unintentional harms, regardless of whether a close other or stranger inflicted the accidental harm. Throughout the current work, older adults were less judgmental of and reactive toward actors causing accidental harms than were younger adults. Please refer to Figure 23 for a summary of results from Studies 1-5 with respect to the recurring main effects of age group and

condition and the interaction between them, which was included in all five studies.

The distinction between Studies 4 and 5 was who is being intentionally or unintentionally harmed: an unknown other (Study 4) or the participant (Study 5). This minor change in methodology allows us to investigate whether older and younger adults respond similarly when the moral offense was personally relevant to them. It is functionally and socially important to respond to harm in general but the need to respond to intentional harm is vital to protect oneself (Keltner et al., 2006). Past studies demonstrate that negative emotions like anger are experienced to a greater extent when a moral offense is personally relevant (Batson et al., 2007, 2009; Hutcherson & Gross, 2011). The difference in participant reports when faced with a personal harm in Study 5 versus when observing harm directed toward someone else in Study 4 is striking. The average ratings are generally at least half a point higher in Study 5 compared to Study 4, with some even approaching the ceiling end of the scale (e.g., person judgments, anger ratings). Again, older adults are less reactive to accidental harms compared to younger adults; however, when the same harm occurred as a result of malicious intentions, older adults' judgments and reactivity increased.

Study 1: Intentional without Harm versus Accidental Harms

Dependent Variable	Main effect of age group	Main effect of condition	Interaction
Person Judgments	✓ OA > YA	✓ Intentional w/o harm > unintentional harm	✓ <u>Intentional w/o harm:</u> OA > YA <u>Unintentional harm:</u> OA < YA
Act Judgments	✗ OA ≈ YA	✓ Intentional w/o harm > unintentional harm	✓ <u>Intentional w/o harm:</u> OA > YA <u>Unintentional harm:</u> OA ≈ YA
Anger Ratings	✗ OA ≈ YA	✓ Intentional w/o harm > unintentional harm	✗ <i>Interaction not significant</i>
Disgust Ratings	✗ OA ≈ YA	✓ Intentional w/o harm > unintentional harm	✓ <u>Intentional w/o harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA
Sympathy Ratings	✓ OA < YA	✓ Intentional w/o harm < unintentional harm	✗ <i>Interaction not significant</i>

Study 2: Sociomoral versus Norm Violations

Dependent Variable	Main effect of age group	Main effect of condition	Interaction
Person Judgments	✗ OA ≈ YA	✓ Intentional w/o harm > disgust > anger > unintentional harm	✓ <u>Intentional w/o harm:</u> OA > YA <u>Unintentional harm:</u> OA < YA
Act Judgments	✗ OA ≈ YA	✓ Intentional w/o harm > anger and disgust > unintentional harm	✓ <u>Intentional w/o harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA
Anger Ratings	✗ OA ≈ YA	✓ Intentional w/o harm > anger > disgust > unintentional harm	✓ <u>Intentional w/o harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA
Disgust Ratings	✗ OA ≈ YA	✓ Intentional w/o harm and disgust > anger > unintentional harm	✓ <u>Intentional w/o harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA
Sympathy Ratings	✓ OA < YA	<i>No significant differences between conditions</i>	✓ <u>Intentional w/o harm:</u> OA < YA <u>Unintentional harm:</u> OA < YA

Study 3: Intentional versus Accidental Harms

Dependent Variable	Main effect of age group	Main effect of condition	Interaction
Person Judgments	✗ OA ≈ YA	✓ Intentional w/o harm and intentional harm > unintentional harm and unintentional w/o harm	✓ <u>Intentional w/o harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA <u>Intentional harm:</u> OA > YA
Act Judgments	✗ OA ≈ YA	✓ Intentional w/o harm and intentional harm > unintentional harm and unintentional w/o harm	✓ <u>Intentional w/o harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA ≈ YA <u>Intentional harm:</u> OA > YA
Anger Ratings	✗ OA ≈ YA	✓ Intentional w/o harm and intentional harm > unintentional harm and unintentional w/o harm	✓ <u>Intentional w/o harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA ≈ YA <u>Intentional harm:</u> OA > YA
Disgust Ratings	✗ OA ≈ YA	✓ Intentional w/o harm and intentional harm > unintentional harm and unintentional w/o harm	✗ <i>Interaction was not significant</i>
Sympathy Ratings	✗ OA ≈ YA	✓ Intentional harm > intentional w/o harm > unintentional harm > unintentional w/o harm	✓ <u>Intentional w/o harm:</u> OA < YA <u>Unintentional harm:</u> OA > YA <u>Intentional harm:</u> OA < YA

Study 4: Intentional versus Accidental Harms Committed by a Stranger or Close Other Against a Stranger

Dependent Variable	Main effect of age group	Main effect of condition	Interaction
Person Judgments	✗ OA ≈ YA	✓ Intentional harm > unintentional harm	✗ Interaction not significant
Act Judgments	✓ OA > YA	✓ Intentional harm > unintentional harm	✓ <u>Intentional harm:</u> OA > YA <u>Unintentional harm:</u> OA < YA
Anger Ratings	✗ OA ≈ YA	✓ Intentional harm > unintentional harm	✓ <u>Intentional harm:</u> OA > YA <u>Unintentional harm:</u> OA ≈ YA
Disgust Ratings	✗ OA ≈ YA	✓ Intentional harm > unintentional harm	✗ Interaction not significant
Sympathy Ratings	✓ OA < YA	✓ Intentional harm < unintentional harm	✗ Interaction not significant
Prosocial Intentions	✓ OA > YA	✓ Intentional harm < unintentional harm	✗ Interaction not significant

Study 5: Intentional versus Accidental Harms Committed by a Stranger or Close Other Against Themselves

Dependent Variable	Main effect of age group	Main effect of condition	Interaction
Person Judgments	✓ OA < YA	✓ Intentional harm > unintentional harm	✓ <u>Intentional harm:</u> OA > YA <u>Unintentional harm:</u> OA < YA
Act Judgments	✓ OA < YA	✓ Intentional harm > unintentional harm	✓ <u>Intentional harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA
Anger Ratings	✓ OA < YA	✓ Intentional harm > unintentional harm	✓ <u>Intentional harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA
Disgust Ratings	✓ OA < YA	✓ Intentional harm > unintentional harm	✓ <u>Intentional harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA < YA
Sympathy Ratings	✗ OA ≈ YA	✗ Intentional harm ≈ unintentional harm	✗ Interaction not significant
Prosocial Intentions	✓ OA > YA	✓ Intentional harm < unintentional harm	✓ <u>Intentional harm:</u> OA ≈ YA <u>Unintentional harm:</u> OA > YA
Inhibition of Harmful Intentions	✗ OA ≈ YA	✓ Intentional harm < unintentional harm	✗ Interaction not significant

Figure 23. Overview of the results regarding the main effects of age group and condition as well as the age group by condition interaction across all five studies. Note that For Studies 2 and 3, there were four conditions total. However, I only included the conditions that were either consistent across all the studies (i.e., intentional without harm, unintentional harm) or relevant to compare (i.e., intentional harm). See the individual results sections for more information. Also, please note that the independent variable of perpetrator was only included in Studies 4 and 5, and therefore, I did not include it here. Finally, in Studies 1-4, an unknown other is on the receiving end of the sociomoral violation. In Study 5, participants were placed on the receiving end of the sociomoral violation.

YA = Younger adults. OA = Older adults.

Though these findings suggest that malicious relative to benign intentions have greater impact on older versus younger adults, some effects did not replicate across the studies but are still generally consistent with these patterns. In Study 1, when harm was intended but not caused and when harm occurred unintentionally, older adults reported harsher person and act judgments than younger adults in the condition where harm was intended. When harm occurred accidentally, however, older adults reported less harsh person judgments and less disgust than younger adults. In Study 2 with the intentional without harm condition, older adults again reported harsher person judgments and less sympathy than younger adults. In the unintentional harm condition, though, we again see that older adults reported less harsh person as well as act judgments and less anger, disgust, and sympathy than younger adults. In Study 3 with malicious intent and harmful outcomes fully crossed, we again see that older adults reported less harsh person judgments than younger adults in the unintentional harm condition, though the difference in the intentional without harm condition was not significant. With the exception of this one condition in Study 3, age differences were driven by the harm with the intention but not harm as the outcome absent the intention.

What is interesting, though, is that when the perpetrator factor was introduced in Study 4, most of the disparate findings between younger and older adults observed when harm was intentional versus accidental were washed out. In Study 4, the impact of intentionality only differentially impacted older and younger adults' act judgments and anger ratings. Specifically, older adults

reported harsher act judgments and higher anger ratings when harm occurred intentionally. Conversely, when harm occurred accidentally, older adults reported more lenient act judgments, but not different anger ratings compared to younger adults. However, when personal relevance of the sociomoral violation was increased by placing participants on the receiving end of it, the impact of intentionality on older and younger adults' responses emerged more consistently in Study 5. Thus, when focusing on the conditions that were included in the studies (i.e., intentional without harm, unintentional harm, intentional harm conditions), the interaction between age group and condition for person judgments was significant for four out of the five studies, which is consistent with what we predicted and indicates that older adults are more sensitive to motives. This follows past research conducted by Hess (Hess & Auman, 2001; Hess et al., 1999; 2005), finding evidence to suggest that advancing age is associated with greater sensitivity to trait diagnostic cues of morality (i.e., honesty).

Taking a granular look at what might contribute to these age differences in social judgments and emotional reactions, SST posits that older adults value meaningful interpersonal connections with close others, maintaining interpersonal harmony, and preserving goodwill towards others (Carstensen, 1992, 2006; Carstensen et al., 1999; Lang & Carstensen, 1994; Sorkin & Rook, 2006). This in turn produces positivity in the social and emotional lives of older adults. However, deeply valuing certain aspects of social life do not come cost-free; holding certain values predisposes someone to being sensitive to and aware of contexts where they are violated (Blanchard-Fields et al., 2012).

Indeed, a number of studies conducted by Hess and his colleagues (e.g., Hess & Auman, 2001; Hess et al., 1999; 2005) have supported the claim that older adults are attentive to important behavioral cues and trait diagnostic information when making morality-based judgments. In this work, older adults were particularly sensitive to the desire to cause harm. Conversely, when a perpetrator harms another accidentally, older adults reported more lenient judgments and less negativity (generally) compared to younger adults because the accidental harm was not the result of malicious intentions.

However, inconsistent with what I predicted, this effect did not vary significantly by the relational closeness of the perpetrator. In both Studies 4 and 5, I expected older adults to be disproportionately lenient on and/or forgiving of close others relative to strangers compared to their younger adult counterpart. Given the tenets of SST (Carstensen, 1992), older adults' motivation and desire to maintain close interpersonal relationships might lead them to be less harsh on their close others compared to strangers who commit a sociomoral violation.

However, the impact of relational closeness did not differentially impact older versus younger adults' responses. Instead, it consistently mattered when the harm that the close other or stranger committed was intentional or unintentional (i.e., the condition by perpetrator two-way interaction). Specifically, in Study 4, participants were harsher on and felt more negative towards their close others who intentionally harmed another compared to a stranger who intentionally harmed another. I did not have a preregistered prediction in Study 4, but I was surprised to have that pattern of results. However, a committee

member brilliantly suggested that these data are not that surprising when interpreting them through the lens of expectancy violations theory (Burgoon, 1993; Burgoon et al., 1984; Le Poire & Burgoon, 1994). According to this theory, individuals feel a heightened arousal when their close others or partners do something that is outside of – i.e., violates – what they expect them to do or how they expect them to behave. This is quite clear in the manipulations included here in Studies 4 and 5 considering that participants' close others are intentionally harming another person and them, respectively. But what is interesting is that this is only seen in Study 4 and not in Study 5 when participants are hypothetically and intentionally harmed. Thus, it seems to be the case that expectancy violations theory offers support for the finding in Study 4 when another is hypothetically and intentionally harmed but those expectations may not be extended to the participants in Study 5 when they are intentionally harmed.

This relationship was only moderated by the intentionality of harm for prosocial intention ratings. Thus, for moral judgments and emotional reactions, SST may not generally extend to these types of sociomoral violations that involve severe harm. However, in terms of prosocial intentions ratings, younger adults were more forgiving of close others relative to stranger perpetrators who hypothetically harmed them intentionally. Older adults were, too, and the difference was larger compared to younger adults in Studies 4 and 5. In Study 4, when harm occurred unintentionally to an unknown other, older adults were more lenient on their close others relative to strangers. Younger adults were too, but to

a larger degree. In Study 5, however, older and younger adults' prosocial intentions ratings were not impacted by whether the perpetrator who harmed them accidentally was a close other or stranger. This might suggest that older adults are comparably forgiving, or at least prosocial, toward close other and stranger perpetrators who harm them accidentally relative to younger adults.

Research has found that the size of social networks decreases from younger to older adulthood (Carstensen et al., 2003; Lang & Carstensen, 1994). Scholars interpret this change to reflect a shift in prioritization of close interpersonal relationships in older adulthood relative to acquiring contacts in preparation for an uncertain future in younger adulthood (Carstensen, 1992; Carstensen et al., 1999). Having a high number of social contacts can allow for more opportunities for resource and knowledge acquisition in younger adulthood, but having fewer social contacts can allow for more opportunities for positivity and meaning in older adulthood. In the current work, older adults disproportionately selected a spouse/partner as their close other, whereas younger adults disproportionately selected a friend as their close other. There were also clear and expected differences in the number of years participants have known their close others. Although older adults have been found to judge their spouses' behavior during a negative conflict more favorably than objective codes may support (Luong et al., 2011; Story et al., 2007), here in Studies 4 and 5, older adults were not disproportionately easier on close other perpetrators relative to stranger perpetrators for either accidental or intentional harms. In fact, older adults were harsher on perpetrators who harmed another intentionally

relative to younger adults, regardless of the relational closeness. But older adults were generally more lenient on perpetrators who harmed another or them accidentally compared to younger adults. Thus, despite selecting a spouse/partner that they have known for longer, older adults were no more harsh or lenient on their close others with whom they share a stronger relationship compared to younger adults who were more likely to select a friend (an arguably weaker connection).

One reason for the lack of age differences could be that the dynamic of the relationships between romantic close others for older adults and between non-romantic close others for younger adults is not entirely accounted for in the analyses. The motivations behind maintaining relationships are not measured here and may matter to participant judgments. Consider that younger adults could also deeply value close relationships like older adults but for different reasons. Younger adults may value and maintain friendships for social support, resources, and companionship. This is not to say that older adults do not as well, but perhaps the outcome of more positivity and meaning is more salient and prominent in older adulthood.

To further explore that, I re-analyzed the data from Studies 4 and 5 and coded perpetrator to have three levels: romantic close other, non-romantic close other, stranger. Age group did not interact with the revised perpetrator factor, but condition did. In Study 4, regardless of age group, participants' ratings for romantic and non-romantic close others and strangers did not vary greatly in the intentional harm condition, but participants' ratings were generally harsher for

strangers, followed by non-romantic close others, and then were lowest for romantic close others in the unintentional harm condition. Interestingly, in Study 5, when participants were on the receiving end of the hypothetical harm, participants' morality ratings for intentional harms committed by strangers, non-romantic close others, and romantic close others reflected gradual decline in harshness. But for accidental harms, participants' ratings for romantic and non-romantic close others were comparable but lower than their ratings for strangers. Again, this did not vary significantly by age, which might potentially suggest that the particular type of relationship with a close other does not play a moderating role in judging the intentional versus unintentional harms for older and younger adults in this work. Instead, it could be the case that sociomoral violations involving the intent to cause harm and that threaten social harmony may be paramount, regardless of the interpersonal relationship closeness for older relative to younger adults.

One possible reason for this lack of an age difference could be that these scenarios did not actually occur, whereas the majority of literature examining age differences in conflict involve participants discussing actual conflicts that occurred. Moreover, the scenarios included in this study also involved moderate to severe harm. Conflicts experienced during everyday life may be more subtle and irritating than the extreme and severe harms included in this work. In the current work, the harm was clearly severe: legs were broken, hands were burned, and ears were cut. Perhaps the severity of the harm trumped the closeness of those committing the harm, leading older adults to be harsher on

intentional harms compared to younger adults, even though theory suggests they would like to avoid feeling negatively about and harshly judging their close others. Had this work focused on using more realistic intentional and accidental harms (see Limitations section) such as intentionally forgetting to wish a spouse luck before an important interview or accidentally embarrassing a spouse in front of their work colleagues, we may see a more nuanced pattern of results, tracking with past research finding that older adults were less likely to focus on motivations for negative comments about them whereas younger adults were (Charles & Carstensen, 2008; Luong et al., 2011). This offers a fruitful area of future research and may be more representative of how older and younger adults perceive intentional and unintentional harms committed by strangers versus close others.

Implications

This work highlights age differences in judgments and emotional reactions in response to people who have committed moral transgressions, which has implications for how legal decisions are made within a courtroom. Our work in combination with other work highlights the role of emotion in jury decisions within a court room and how people evaluate a person who has committed a moral transgression (Bright & Goodman-Delahunty, 2006; Salerno & Peter-Hagene, 2013). Second, our manipulation of the desire to cause harm and harm occurring accidentally highlights the importance of intentionality, which is a central component in the distinction in the severity of criminal offenses. Intentions differentiate first-degree and second-degree murder, and our work importantly

demonstrates how the desire to cause harm impacts both older and younger adults' moral judgments and emotional reactions. Malicious intentions with and without outcomes are particularly egregious for older relative to younger adults, which has important implications for punishment recommendations, which could vary by age.

Moreover, this work can lend insight into misinformation and political polarization, given that there is a great deal of research demonstrating that older adults are heavily impacted by online misinformation (Brashier & Schachter, 2020). Given that cues and stimuli used to perpetuate misinformation are often viciously emotionally negative and morally charged, this work suggests that older adults may be more sensitive to information that speaks to someone's (bad) moral character and may be more likely to act on their attitudes and judgments. This interpretation is consistent with work conducted by Hess and Auman (2001), suggesting that increased age was associated with using negative moral information to a greater extent when forming impressions of others.

The designs and results from Studies 4 and 5 may also open the door for more research on relationships. In Studies 4 and 5, older and younger adults did not differentially differ in their judgments for close others and strangers. Rather participants' judgments of close others and strangers depended on whether the harm was intentional or unintentional. Participants, regardless of age group, were harsher on strangers relative to close other perpetrators but the difference was smaller in the unintentional versus the intentional harm condition. What is missing from the current work is how older and younger adults' judgments and

emotions may change down the road after the harm occurs, especially with respect to close others. Older and younger adults may experience harsher judgments and more negativity toward intentional harms, but it is unclear how that might change when perpetrators try to make amends for their harms. Past research suggests that older adults do well resolving conflict with others by using avoidant and less confrontational strategies relative to younger adults (Birditt & Fingerman, 2003; Birditt et al., 2005; Blanchard-Fields et al., 2007; Lefkowitz & Fingerman, 2003) or actively infusing the situation with positive affect (Carstensen et al., 1995; Levenson et al., 1994). It would be interesting for researchers to connect moral judgments with conflict resolution strategies after intentional and accidental harms for older and younger adults. It could be the case that although older adults may feel more negative and be harsher towards intentional harms, they may be more effective at recovering from the harm compared to younger adults.

Moreover, considering that older and younger adults were differentially more forgiving for close others relative to stranger perpetrators, there could be something uniquely special about forgiveness as a way of maintaining and preserving close interpersonal relationships. Older and younger adults' emotional reactions and moral judgments did not interact specifically with the relationship closeness of the perpetrator by intentionality (i.e., no age group \times perpetrator \times condition interaction), but it did for forgiveness ratings. Both older and younger adults were more forgiving of a close other relative to stranger perpetrator who intentionally harmed another or them, but the degree of difference was larger for

younger relative to older adults. It could be something specific about forgiveness as a way of coping with the intentional harm, despite feeling more negative and harsher towards the perpetrator. In a similar line of thought, participants may have not been more forgiving of close other relative to a stranger for intentional harms another or they experienced for the sake of preserving the relationship or coping with the intentional harm. Rather participants may have felt that deciding to forgive them was done to avoid any further conflict or perceived antagonization because they still had to interact with the close others. Future research should explore in a more mechanistic way the influence of forgiveness along with the process of making amends for older and younger adults.

Relatedly, research has explored the role of forgiveness seeking in the process of forgiveness, specifically the nature of forgiveness-seeking communication (Kelley & Waldron, 2005, 2012). After assessing an interpersonal transgression, individuals who have been harmed may communicate new relational conditions and standards to prevent the transgressions from occurring in the future (e.g., "I forgive you as long as it does not happen again"; Kelley, 1998). Emmers and Canary (1996) have used another approach to understand communicating forgiveness through an uncertainty reduction framework in young couples, finding that seeking forgiveness is one way for partners to cope with the uncertainty within the relationship after a transgression. For example, an individual might be more likely to forgive their partner for a transgression if the partner was genuine and sincere when they apologize. This would help inform the aggrieved individual's perception of the likelihood that their partner would

harm them again. The mechanism of seeking forgiveness was not measured or manipulated in this work, and only the decision to forgive the perpetrators was measured. Thus, investigating how older and younger adults evaluate forgiveness seeking behavior may provide a more nuanced understanding of why we see both older and younger adults being more forgiving of their close others relative to strangers for intentional harms committed against another (in Study 4) and them (in Study 5). Future research should be devoted to investigating these types of questions.

Limitations and Future Directions

Although these studies were some of the first to explore age differences in moral judgments of harm, there are a number of ways this program of research can be built upon. First and foremost, these scenarios need to be validated and paid special attention. In Studies 4 and 5, I incorporated a measure of severity of harm that was answered after each scenario. In both studies, there were clear statistical differences in how participants perceived the severity of harm across conditions and across scenarios. It is important to have the scenarios at least comparable in how severe the harm is, but it might be a bigger challenge standardizing the harm across conditions. Intentional harms are generally worse than accidental ones (Cushman, 2008; Knobe, 2005; Young et al., 2007), so future researchers need to closely consider how to measure severity of harm and other characteristics of the harm itself regardless of the whether it was desired or undesired. Researchers could attempt to validate the scenarios by asking participants to judge and evaluate the intentions portion of the scenario separate

from the outcome portion of the scenario as a within-subjects variable. This might provide greater insight into the unique role of intentions when judging harms and whether researchers can fully disentangle the influence of intentions/desires on how severely the outcome is judged.

Although the scenarios used in the current study have been used in other work (Cushman, 2008; Giner-Sorolla & Chapman, 2017), some may not consider them entirely naturally occurring in everyday life. Future research should replicate this work and incorporate real-life examples analogous to our experimental conditions to determine if these findings only hold for the scenarios used in the current and previous research. Using real-life court examples would help to establish the generalizability of our findings beyond what is observed here using self-report and hypothetical scenarios, especially because the findings from all three studies were generally consistent but not a direct replication. Relatedly, future research could explore how intentions and outcomes contribute to older and younger adults' punishment recommendations using real-life court examples. It would be interesting to explore how older and younger adults incorporate character judgments when determining whether or not a perpetrator who desired to and successfully harmed another (versus who harmed another accidentally) should be placed on parole. Though one might expect harsher character judgments to be positively and strongly associated with harsher punishment judgments or recommendations, some work, however, has found that older adults who judged criminal transgressions more strongly recommended parole and expected less future crime than younger adults (Rankin, 2000). Even more

interesting, researchers could examine how older and younger adults update their punishment judgments when presented with new diagnostic information about the perpetrators, such as their good (or bad) behavior exhibited when serving their time.

One element missing from the current work is the connection between the perpetrator's intentions (benign or malicious) and the outcomes (harm or no harm) is that perpetrators' *belief* or foreseeability of their actions carrying out their intentions. Past research has explored this (i.e., Cushman, 2008) and found that people rely on the harm doer's beliefs a great deal when making judgments of wrongness and blame (Study 1), generally to a greater degree than desires and consequences, respectively. However, beliefs and desires were comparably influential in judgments of punishment. Future researchers could replicate the current work and incorporate a beliefs manipulation. It could be the case that older adults may be particularly reactive to scenarios in which a perpetrator desired to harm another, believe that their actions would bring about that harm, and actually harm them.

Another interesting future direction would be to explore older and younger adults' emotional reactions and moral judgments when the target of the harm is either a close other or a stranger. Participants' moral judgments could be even greater in response to moral violations against a close other. Future work should explore the closeness of the target and examine how younger and older adults' responses to sociomoral violations could differ when the social closeness of the target is manipulated (e.g., the perpetrator intends to cause harm to a

spouse/partner versus a stranger). Moreover, past research found that the age of the transgressor (young versus old) influences the level of blame and forgiveness, with less blame and greater forgiveness assigned to older transgressors (Miller et al., 2009). As such, future research could use the scenarios in the current study and manipulate the age of the transgressor and examine how younger and older adults differentially react to social transgressions committed by either a younger or older adult.

This work speaks to the importance of replicability, as the findings did not directly replicate. For Studies 1-3, we used Amazon's Mechanical Turk (MTurk), and for some of Study 3 and Studies 4 and 5, we used Prolific. Some researchers (e.g., Aguinis et al., 2020) have noted that there are some strengths to using MTurk for data collection (e.g., a large and diverse participant pool), but one of the biggest weaknesses of using MTurk is participant inattentiveness. Using MTurk participants may have contributed to the lack of replicability across the first three studies at least. Work is needed to clearly determine whether or not these findings occur across people of different demographics and locations.

Moreover, the extent to which participants' moral judgments were impacted by the intentionality of harm may not be generalizable, given that across the five studies, my samples were predominately white U.S. citizens. There is research demonstrating that cultural variability in moral judgments when intent was manipulated in non-Western, education, industrial, rich, and democratic (WEIRD) samples (Barrett et al., 2016) and when comparing Japanese and American participants (Hamilton et al., 1983). In small-scale

societies, they found mixed support for the role that intentions play in forming moral judgments, with intentions being more important in some societies (e.g., Los Angeles, Storozhnitsa, with urban and rural-agriculturist cultures, respectively) and little to none in others (Hadza, Himba, and Yasawa, with hunter-gatherer, pastoralist, and fishing-horticulturist cultures, respectively). One important finding in that work and relevant to the current work is that intentions play an important role when morally judging extreme harms (e.g., poisoning a whole village) appear to be universal. Given findings from the current work, intentionally and severely harming another person seems particularly important for the way people evaluate the perpetrator's moral character. Future research could build on this and investigate further the underlying role affect and affective reactions to harm may influence moral judgments cross-culturally, as only badness of the action, punishment, and reputation was measured in Barrett et al. (2016).

Conclusions

Across five studies, the findings suggest that older adults are less reactive to and judgmental of accidental harms compared to younger adults. When someone harms another accidentally, older adults were more lenient and less reactive compared to younger adults. However, when harm occurred intentionally, older adults generally reported harsher moral judgments compared to younger adults. This work contributes to the existing literature by highlighting an important influential factor – the desire to cause harm – in understanding age differences in moral judgments and emotional reactions.

This work was guided by socioemotional selectivity theory (SST; Carstensen, 1992), which focuses on how older and younger adults' goals, priorities, and motivations changed with shifting time horizons. Older adults generally focus on maintaining and deepening close interpersonal relationships when presented with a limited future time horizon. As such, a greater focus on emotionally fulfilling relationships may be associated with a deep desire to maintain social harmony and to keep the peace within one's social environment, allowing for more positive and fewer negative emotions and social experiences. However, when people pose a threat to such social harmony or peacekeeping, older adults may react more strongly to those violators. This was the guiding framework for the current work, but the data in the current work may not entirely support SST.

Although I predicted that the relationship closeness of the perpetrator would play a critical role in how older and younger adults respond to harms, it did not matter as much as the intentionality of the harm. Regardless of age group, participants were harsher on strangers relative to close other perpetrators. But this work also involved severe harms. Thus, there may be boundary conditions for what older adults are willing to forgive, and it may not extend to the severe harms included in this work. The lack of age differences by relationship closeness suggests that researchers need to be mindful of the types of harms and sociomoral violations that are being manipulated. SST may have been supported to a greater extent had we used more benign or even interpersonal harms (e.g., forgetting an anniversary) that may be more likely to occur in

everyday relationships. Ultimately, this work does suggest that older adults are less reactive and judgmental of accidental harms. Intentional harms, however, lead older adults to be more harsh and more negative than their younger adult counterpart.

References

- Allemand, M. (2008). Age differences in forgivingness: The role of future time perspective. *Journal of Research in Personality, 42*, 1137–1147. doi: 10.1016/j.jrp.2008.02.009
- Allemand, M., Steiner, M., & Hill, P. L. (2013). Effects of a forgiveness intervention for older adults. *Journal of Counseling Psychology, 60*, 279-286. doi: 10.1037/a0031839
- Aguinis, H., Villamor, I., & Ramani, R. S. (2021). MTurk research: Review and recommendations. *Journal of Management, 47*(4), 823-837.
- Antonucci, T. C., Ajrouch, K. J., & Webster, N. J. (2019). Convoys of social relations: Cohort similarities and differences over 25 years. *Psychology and Aging, 34*, 1158–1169. doi: 10.1037/pag0000375
- Aquino, K., Tripp, T. M., & Bies, R. J. (2006). Getting even or moving on? Power, procedural justice, and types of offense as predictors of revenge, forgiveness, reconciliation, and avoidance in organizations. *Journal of Applied Psychology, 91*, 653–668. doi:10.1037/0021-9010.91.3.653
- Barrett, H. C., Bolyanatz, A., Crittenden, A. N., Fessler, D. M. T., Fitzpatrick, Si., Gurven, M... & Laurence, S. (2016). Small-scale societies exhibit fundamental variation in the role of intentions in moral judgment. *Proceedings of the National Academy of Sciences, 113*, 4688-4693. doi: 10.1073/pnas.1522070113

- Batson, C. D., Chao, M. C., & Givens, J. M. (2009). Pursuing moral outrage: Anger at torture. *Journal of Experimental Social Psychology, 45*, 155–160. doi: 10.1016/j.jesp.2008.07.017
- Batson, C. D., Kennedy, C. L., Nord, L. A., Stocks, E. L., Fleming, D. A., Marzette, C. M., . . . Zenger, T. (2007). Anger at unfairness: Is it moral outrage? *European Journal of Social Psychology, 37*, 1272–1285. doi: 10.1002/ejsp.434
- Baumeister, R. F., Stillwell, A., & Wotman, S. R. (1990). Victim and perpetrator accounts of interpersonal conflict: Autobiographical narratives about anger. *Journal of Personality and Social Psychology, 59*, 994–1005. doi: 10.1037/0022-3514.59.5.994
- Baumeister, R. F., Tice, D. M., & Hutton, D. G. (1989). Self-presentational motivations and personality differences in self-esteem. *Journal of Personality, 57*, 547–579.
- Birditt, K. S., & Fingerman, K. L. (2003). Age and gender differences in adults' descriptions of emotional reactions to interpersonal problems. *Journal of Gerontology, 58*, 237–245. doi: 10.1093/geronb/58.4.P237
- Birditt, K. S., Fingerman, K. L., & Almeida, D. M. (2005). Do we get better at picking our battles? Age group differences in descriptions of behavioral reactions to interpersonal tensions. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 60*, 121–128. doi: 10.1093/geronb/60.3.P121

- Blanchard-Fields, F. (1994). Age differences in causal attributions from an adult developmental perspective. *Journal of Gerontology*, 49, 43-51. doi: 10.1093/geronj/49.2.P43
- Blanchard-Fields, F., & Beatty, C. (2005). Age differences in blame attributions: The role of relationship outcome ambiguity and personal identification. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 60(1), 19-26. doi: 10.1093/geronb/60.1.P19
- Blanchard-Fields, F., Hertzog, C., & Horhota, M. (2012). Violate my beliefs? Then you're to blame! Belief content as an explanation for causal attribution biases. *Psychology and Aging*, 27(2), 324–337. doi: 10.1037/a0024423
- Blanchard-Fields, F., Mienaltowski, A., & Seay, R. B. (2007). Age differences in everyday problem-solving effectiveness: Older adults select more effective strategies for interpersonal problems. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 62(1), 61-64. doi: 10.1093/geronb/62.1.P61
- Blötner, C. (2023). diffcor: Fisher's z-tests concerning difference of correlations. R package version 0.8.0, <<https://CRAN.R-project.org/package=diffcor>>.
- Brashier, N. M., & Schacter, D. L. (2020). Aging in an era of fake news. *Current Directions in Psychological Science*, 29(3), 316-323. doi: 10.1177/0963721420915872

- Bright, D., & Goodman-Delahunty, J. (2006). Gruesome evidence and emotion: Anger, blame, and jury decision-making. *Law and Human Behavior, 30*, 183–202. doi: 10.1007/s10979-006-9027-y
- Burgoon, J. K. (1993). Interpersonal expectations, expectancy violations, and emotional communication. *Journal of Language and Social Psychology, 12*(1-2), 30-48.
- Burgoon, J. K., Buller, D. B., Hale, J. L., & deTurck, M. A. (1984). Relational messages associated with nonverbal behaviors. *Human Communication Research, 20*, 351-378.
- Carstensen, L. L. (1992). Social and emotional patterns in adulthood: Support for socioemotional selectivity theory. *Psychology and Aging, 7*, 331-338. doi: 10.1037/0882-7974.7.3.331
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science, 312*, 1913-1915. doi: 10.1126/science.1127488
- Carstensen, L. L., Fung, H. H., Charles, S. T. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion, 27*, 103–123.
- Carstensen, L. L., Gross, J., & Fung, H. (1997). The social context of emotion. In M. P. Lawson & K. W. Schaie (Eds.), *Annual review of geriatrics and gerontology* (pp. 325-352), New York: Springer.
- Carstensen, L. L., Gottman, J. M., & Levenson, R. W. (1995). Emotional behavior in long-term marriage. *Psychology and Aging, 10*(1), 140–149. doi: 10.1037/0882-7974.10.1.140

- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*, 165-181. doi: [10.1037/0003-066X.54.3.165](https://doi.org/10.1037/0003-066X.54.3.165)
- Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality and Social Psychology*, *79*, 644-655. doi: 10.1037/0022-3514.79.4.644
- Carstensen, L. L., Turan, B., Scheibe, S., Ram, N., Ersner-Hershfield, H., Samanez-Larkin, G. R., ... Nesselroade, J. R. (2011). Emotional experience improves with age: Evidence based on over 10 years of experience sampling. *Psychology and Aging*, *26*, 21–33. doi: 10.1037/a0021285
- Charles, S. T., & Carstensen, L. L. (2008). Unpleasant situations elicit different emotional responses in younger and older adults. *Psychology and Aging*, *23*, 495–504.
- Charles, S. T., Reynolds, C. A., & Gatz, M. (2001). Age-related differences and change in positive and negative affect over 23 years. *Journal of Personality and Social Psychology*, *80*, 136-151. doi: 10.1037//0022-3514.80.1.136
- Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: Evidence and implications. *Psychological Bulletin*, *135*, 183-204. doi: 10.1037/a0013965

- Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analyses of moral judgment. *Cognition, 108*, 353-380. doi: 10.1016/j.cognition.2008.03.006
- Cushman, F. (2015). Deconstructing intent to reconstruct morality. *Current Opinions in Psychology, 6*, 97-103. doi: 10.1016/j.copsyc.2015.06.003
- D'Amico, A., & Scrima, F. (2016). The Italian validation of Singelis's Self-Construal Scale (SCS): A short 10-item version shows improved psychometric properties. *Current Psychology, 35*, 159-168. doi: 10.1007/s12144-015-9378-y
- Emmers, T. M., & Canary, D. J. (1996). The effect of uncertainty reducing strategies on young couples' relational repair and intimacy. *Communication Quarterly, 44*, 166-182.
- English, T., & Carstensen, L. L. (2014). Selective narrowing of social networks across adulthood is associated with improved emotional experience in daily life. *International Journal of Behavioral Development, 38*, 195-202. doi: 10.1177/0165025413515404
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.
- Fehr, R., & Gelfand, M. J. (2010). When apologies work: How matching apology components to victims' self-construals facilitates forgiveness. *Organizational Behavior and Human Decision Processes, 113*, 37-50. doi: 10.1016/j.obhdp.2010.04.002

- Fehr, R., Gelfand, M. J., & Nag, M. (2010). The road to forgiveness: A meta-analytic synthesis of its situational and dispositional correlates. *Psychological Bulletin, 1136*, 894-914. doi: 10.1037/a0019993
- Fingerman, K. L., & Charles, S. T. (2010). It takes two to tango: Why older people have the best relationships. *Current Directions in Psychological Science, 19*, 172-176. doi: 10.1177/0963721410370297
- Fingerman, K. L., Hay, E. L., & Birditt, K. S. (2004). The best of ties, the worst of ties: Close, problematic, and ambivalent relationships across the lifespan. *Journal of Marriage and Family, 66*, 792-808. doi: 10.1111/j.0022-2445.2004.00053.x
- Fox, J., & Weisberg, S. (2019). *An {R} companion to applied regression*, Third Edition. Thousand Oaks, CA: Sage.
<https://socialsciences.mcmaster.ca/jfox/Books/Companion/>
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology, 84*, 365–376. doi: 10.1037/0022-3514.84.2.365
- Folkman, S., Lazarus, R. S., Pimley, S., & Novacek, J. (1987). Age differences in stress and coping processes. *Psychology and Aging, 23*, 171-184. doi: 10.1037/0882-7974.2.2.171

- Fuller, H. R., Ajrouch, K. J., & Antonucci, T. C. (2020). The convoy model and later-life family relationships. *Journal of Family Theory and Review, 12*, 126-146. doi: 10.1111/jftr.12376
- Gauché, M., & Mullet, E. (2005). Do we forgive physical aggression in the same way that we forgive psychological aggression? *Aggressive Behavior, 31*, 559–570. doi: 10.1002/ab.20108
- Ghaemmaghami, P., Allemand, M., & Martin, M. (2011). Forgiveness in younger, middle-aged and older adults: Age and gender matters. *Journal of Adult Development, 18*, 192–203. doi:10.1007/s10804-011-9127-x
- Giner-Sorolla, R., & Chapman, H. A. (2017). Beyond purity: Moral disgust toward bad character. *Psychological Science, 28*, 80-91. doi: 10.1177/0956797616673193
- Gross, J. J., Carstensen, L. L., Pasupathi, M., Tsai, J., Go ðestam Skorpen, C., & Hsu, A. (1997). Emotion and aging: Experience, expression and control. *Psychology and Aging, 12*, 590–599. doi: 10.1037/0882-7974.12.4.590
- Gutierrez, R., Giner-Sorolla, R., & Vasiljevic, M. (2012). Just an anger synonym? Moral context influences predictors of disgust word use. *Cognition and Emotion, 26*, 53-64. doi: 10.1080/02699931.2011.567773
- Girard, M., & Mullet, E. (1997). Propensity to forgive in adolescents, young adults, older adults, and elderly people. *Journal of Adult Development, 4*, 209–220.
- Haase, C. M., Seider, B. H., Shiota, M. N., & Levenson, R. W. (2012). Anger and sadness in response to an emotionally neutral film: Evidence for age-

specific associations with well-being. *Psychology and Aging*, 27, 305–317.
doi:10.1037/a0024959

Haidt, J. (2003). The moral emotions. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 852–870). Oxford, England: Oxford University Press.

Hamilton, V. L., Sanders, J., Hosoi, Y., Ishimura, Z., Matsubara, N., Nishimure, H., ... & Tokoro, K. (1983). Universals in judging wrongdoing: Japanese and Americans compared. *American Sociological Review*, 48, 199-211.
doi: 10.2307/2095105

Hechler, S., & Kessler, T. (2018). On the difference between moral outrage and empathic anger: Anger about wrongful deeds or harmful consequences. *Journal of Experimental Social Psychology*, 76, 270-282. doi: 10.1016/j.jesp.2018.03.005

Henry, J. D., Phillips, L. H., Ruffman, T., & Bailey, P. E. (2013). A meta-analytic review of age differences in theory of mind. *Psychology and Aging*, 28, 826-839. doi: 10.1037/a0030677

Hess, T. M., & Auman, C. (2001). Aging and social expertise: The impact of trait-diagnostic information on impressions of others. *Psychology and Aging*, 16, 497-510. doi: 10.1037//0882-7974.16.3.497

Hess, T. M., Bolstad, C. A., Woodburn, S. M., & Auman, C. (1999). Trait-diagnosticity versus behavioral consistency as determinants of impression change in adulthood. *Psychology and Aging*, 14, 77–89. doi: 10.1037/0882-7974.14.1.77

- Hess, T. M., Osowski, N. L., & Leclerc, C. M. (2005). Age and experience influences the complexity of social inferences. *Psychology and Aging, 20*, 447-459. doi: 10.1037/0882-7974.20.3.447
- Holley, S. R., Haase, C. M., & Levenson, R. W. (2013). Age-related changes in demand-withdraw communication behaviors. *Journal of Marriage and Family, 75*, 822-836. doi: 10.1111/jomf.12051
- Hutcherson, C. A., & Gross, J. J. (2011). The moral emotions: A social-functional account of anger, disgust, and contempt. *Journal of Personality and Social Psychology, 100*, 719-737. doi: 10.1037/a0022408
- Izard, C. E. (1977). *Human emotions*. New York, NY: Plenum Press.
- Kelley, D. L. (1998). The communication of forgiveness. *Communication Studies, 49*, 255-271.
- Kelley, D. L., & Waldron, V. R. (2005). An investigation of forgiveness-seeking communication and relational outcomes. *Communication Quarterly, 53*(3), 339-358.
- Kelley, D. L., & Waldron, V. R. (2012). Forgiveness: Communicative implications for social relationships. In *Communication yearbook 30* (pp. 258-289). Routledge.
- Keltner, D., Haidt, J., & Shiota, M. N. (2006). Social functionalism and the evolution of emotions. In M. Schaller, J. Simpson, & D. Kenrick (Eds.), *Evolution and social psychology* (pp. 115–142). New York, NY: Psychology Press.

- Knobe, J. (2005). Theory of mind and moral cognition: Exploring the connections. *Trends in Cognitive Sciences*, 9, 357-359. doi: 10.1016/j.tics.2005.06.011
- Kunzmann, U., & Grühn, D. (2005). Age differences in emotional reactivity: The sample case of sadness. *Psychology and Aging*, 20, 47–59. doi: 10.1037/0882-7974.20.1.47
- Kunzmann, U., Little, T., & Smith, J. (2002). Perceiving control: A double-edged sword in old age. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 57, 484-491. doi: [10.1093/geronb/57.6.P484](https://doi.org/10.1093/geronb/57.6.P484)
- Kuppens, P., Mechelen, I. V., Smits, D. J. M., & De Boeck, P. (2003). The appraisal basis of anger: Specificity, necessity, and sufficiency of components. *Emotion*, 3, 254-269. doi: 10.1037/1528-3542.3.3.254
- Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2017). lmerTest package: Tests in linear mixed effects models. *Journal of Statistical Software*, 82(13), 1-26. doi: 10.18637/jss.v082.i13
- Lakens, D., Scheel, A. M., & Isager, P. M. (2018). Equivalence testing for psychological research: A tutorial. *Advances in Methods and Practices in Psychological Science*, 1(2), 259-269. doi: 10.1177/2515245918770963
- Lang, F. R., & Carstensen, L. L. (1994). Close emotional relationships in late life: Further support for proactive aging in the social domain. *Psychology and Aging*, 9, 315-324. doi: 10.1037/0882-7974.9.2.315

- Lawton, M. P., Kleban, M. H., & Dean, J. (1993). Affect and age: Cross-sectional comparisons of structure and prevalence. *Psychology and Aging, 8*, 165–175. doi: 10.1037/0882-7974.8.2.165
- Lee, S. A. (2009). Measuring individual differences in trait sympathy: Instrument construction and validation. *Journal of Personality Assessment, 91*, 568–583. doi: 10.1080/00223890903228620
- Le Poire, B. A., & Burgoon, J. K. (1994). Two contrasting explanations of involvement violations: Expectancy violations theory versus discrepancy arousal theory. *Human Communication Research, 20*(4), 560-591.
- Lefkowitz, E. S., & Fingerman, K. L. (2003). Positive and negative emotional feelings and behavior in mother-daughter ties in late life. *Journal of Family Psychology, 17*, 607-617. doi: 10.1037/0893-3200.17.4.607
- Lenth, R. (2020). *emmeans: Estimated marginal means, aka least-squares means*. R package version 1.4.8. <https://CRAN.R-project.org/package=emmeans>
- Levenson, R., Carstensen, L., & Gottman, J. (1994). The influence of age and gender on affect, physiology and their interrelations: A study of long-term marriages. *Journal of Personality and Social Psychology, 67*, 56–68. doi: 10.1037/0022-3514.67.1.56
- Lievaart, M., Franken, I.H.A. and Hovens, J.E. (2016), Anger assessment in clinical and nonclinical populations: Further validation of the State–Trait Anger Expression Inventory-2. *Journal of Clinical Psychology, 72*, 263-278. doi: 10.1002/jclp.22253

- Long, J. A. (2019). *interactions: Comprehensive, user-friendly toolkit for probing interactions*. R package version 1.1.0, <https://cran.r-project.org/package=interactions>
- Lüdtke, D. (2020). *sjstats: Statistical functions for regression models* (Version 0.18.0). doi: 10.5281/zenodo.1284472
- Luong, G., Charles, S. T., & Fingerman, K. L. (2011). Better with age: Social relationships across adulthood. *Journal of Social and Personal Relationships, 28*, 9-23. doi: 10.1177/0265407510391362
- Magai, C. (1999). Affect, imagery, and attachment: Working models of interpersonal affect and the socialization of emotion. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 787–802). The Guilford Press.
- Magai, C., Consedine, N. S., Krivoshekova, Y. S, Kudadjie-Gyamfi, E., & McPherson, R. (2006). Emotion experience and expression across the adult life span: Insights from a multimodal assessment study. *Psychology and Aging, 21*, 303-317. doi: 10.1037/0882-7974.21.2.303
- Malle, B. F. (2021). Moral judgments. *Annual Review of Psychology, 72*, 292-318. doi: 10.1146/annurev-psych-072220-104358
- McCullough, M. E., Pargament, K. I., & Thoresen, C. E. (2000). The psychology of forgiveness: History, conceptual issues, and overview. In M. E. McCullough, K. I. Pargament, & C. E. Thoresen (Eds.), *Forgiveness: Theory, research, and practice* (pp. 1–14). New York, NY: Guilford Press.

- McCullough, M. E., Rachal, K. C., Sandage, S. J., Worthington, E. L., Jr., Wade Brown, S., & Hight, T. L. (1998). Interpersonal forgiving in close relationships: II—Theoretical elaboration and measurement. *Journal of Personality and Social Psychology, 75*, 1586–1603.
- Mienaltowski, A., Johnson, E. R., Wittman, R., Wilson, A., Sturycz, C., & Norman, J. F. (2013). The visual discrimination of negative facial expressions by younger and older adults. *Vision Research, 81*, 12-17. doi: 10.1016/j.vsres.2013.01.006
- Mienaltowski, A., Lemerise, E. A., Greer, K., & Burke, L. (2019). Age-related differences in emotion matching are limited to low intensity expressions. *Aging, Neuropsychology, and Cognition*. doi: 10.1080/13825585.2018.1441363
- Mill, A., Allik, J., Realo, A., & Valk, R. (2009). Age-related differences in emotion recognition ability: A cross-sectional study. *Emotion, 9*, 619-630. doi: 10.1037/a0016562
- Mills, J., Clark, M. S., Ford, T. E., & Johnson, M. (2004). Measurement of communal strength. *Personal Relationships, 11*, 213-230.
- Miller, L. M., Charles, S. T., & Fingerman, K. L. (2009). Perceptions of social transgressions in adulthood. *Journal of Gerontology: Psychological Sciences, 64B*, 551-559. doi:10.1093/geronb/gbp062
- Minton, A. R., & Mienaltowski, A. (2021). More than face value: Context and age differences in negative emotion discrimination. *Journal of Nonverbal Behavior*. Advanced online publication. doi: 10.1007/s10919-021-00369-z

- Molho, C., Tybur, J. M., Güler, E., Balliet, D., & Hofmann, W. (2017). Disgust and anger relate to different aggressive responses to moral violations. *Psychological*
- Mroczek, D. K., & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality, 75*(5), 1333–1349. doi: 10.1037/0022-3514.75.5.1333
- Mullet, E., & Girard, M. (2000). Developmental and cognitive points of view on forgiveness. In M. E. McCullough, K. I. Pargament, & C. E. Thoresen (Eds.), *Forgiveness: Theory, research, and practice* (pp. 111–132). New York: Guilford.
- Ng, V., Tay, L., & Kuykendall, L. (2018). The development and validation of a measure of character: The CIVIC. *Journal of Positive Psychology, 13*, 346-372. doi: 10.1080/17439760.2017.1291850
- Patil, I. (2018). *ggstatsplot: "ggplot2" Based Plots with Statistical Details*. doi: [10.5281/zenodo.2074621](https://doi.org/10.5281/zenodo.2074621), <https://CRAN.R-project.org/package=ggstatsplot>.
- R Core Team. (2019). R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from <http://www.R-project.org/>
- Rankin, J. L. (2000). Age/cohort differences in judgments about criminal transgressions. *Journal of Adult Development, 7*(3), 1-11.

- Revelle, W. (2020). *psych: Procedures for Psychological, Psychometric, and Personality Research*. Northwestern University, Evanston, Illinois. R package version 2.0.9, <https://CRAN.R-project.org/package=psych>.
- Rozin, P., Haidt, J., & McCauley, C. R. (2008). Disgust. In M. Lewis, J. M. Harmon-Jones, & L. F. Barrett (Eds). *Handbook of emotions* (3rd edition). New York, NY: Guilford Press.
- Rozin, P., Lowery, L., Imada, S., & Haidt, J. (1999). The CAD triad hypothesis: A mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *Journal of Personality and Social Psychology*, *76*, 574-586. doi: 10.1037/0022-3514.76.4.574
- Ruffman, T., Henry, J. D., Livingstone, V., & Phillips, L. H. (2008). A meta-analytic review of emotion recognition and aging: Implications for neuropsychological models of aging. *Neuroscience and Biobehavioral Review*, *1023*, 1-20. doi: 10.1016/j.neubiorev.2008.01.001
- Salerno, J. M., & Peter-Hagene, L. C. (2013). The interactive effect of anger and disgust on moral outrage and judgments. *Psychological Science*, *24*, 2069-2078. doi: 10.1177/0956797613486988
- Shaver, P., Schwartz, J., Kirson, D., & O'Connor, C. (1987). Emotion knowledge: Further exploration of a prototype approach. *Journal of Personality and Social Psychology*, *52*, 1061-1086.
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, *20*, 580-591. doi: 10.1177/0146167294205014

- Sorkin, D. H., & Rook, K. S. (2006). Dealing with negative social exchanges in later life: Coping responses, goals, and effectiveness. *Psychology and Aging, 21*, 715-725. doi: 10.1037/0882-7974.21.4.715
- Skowronski, J. J., & Carlston, D. E. (1987). Social judgment and social memory: The role of cue diagnosticity in negativity, positivity, and extremity biases. *Journal of Personality and Social Psychology, 52*, 689–699. doi: 10.1037/0022-3514.52.4.689
- Spielberger, C. D. (1999). *State-Trait Anger Expression Inventory*. Lutz, FL: Psychological Assessment Resources.
- Steiner, M., Allemand, M., & McCullough, M. E. (2012). Do agreeableness and neuroticism explain age differences in the tendency to forgive others? *Personality and Social Psychology Bulletin, 38*, 441–453. doi: 10.1177/0146167211427923
- Story, T. N., Berg, C. A., Smith, T. W., Beveridge, R., Henry, N. J. M., & Pearce, G. (2007). Age, marital satisfaction, and optimism as predictors of positive sentiment override in middle-aged and older married couples. *Psychology and Aging, 24*, 719–727.
- Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology, 58*, 345–372. doi: 10.1146/annurev.psych.56.091103.070145
- Tottenham, N., Tanaka, J. W., Leon, A. C., McCarry, T., Nurse, M., Hare, T. A.,... Nelson, C. (2009). The NimStim set of facial expressions: Judgments from

- untrained research participants. *Psychiatry Research*, 168, 242-249. doi: 10.1016/j.psychres.2008.05.006
- Tsai, J. L., Levenson, R. W., & Carstensen, L. L. (2000). Autonomic, subjective, and expressive responses to emotional films in older and younger Chinese Americans and European Americans. *Psychology and Aging*, 15(4), 684–693. doi: 10.1037/0882-7974.15.4.684
- Tybur, J. M., Lieberman, D., & Griskevicius, V. (2009). Microbes, mating, and morality: Individual differences in three functional domains of disgust. *Personality Processes and Individual Differences*, 97, 103-122. doi: 10.1037/a0015474
- Verstaen, A., Haase, C. M., Lwi, S. J., & Levenson, R. W. (2020). Age-related changes in emotional behavior: Evidence from a 13-year longitudinal study of long-term married couples. *Emotion*, 20, 149–163. doi: 10.1037/emo0000551.44
- Webster, G. D., DeWall, C. N., Pond, R. S., Deckman, T., Jonason, P. K., Le, B. M., & Bator, R. J. (2014). The Brief Aggression Questionnaire: Psychometric and behavioral evidence for an efficient measure of trait aggression. *Aggressive Behavior*, 9999, 1-20. doi: 10.1002/ab.21507
- Weick, K. E. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage.
- Worthington, E. L., Jr. (Ed.). (2005). *Handbook of forgiveness*. New York, NY: Routledge.
- Worthington, E. L., Van Oyen Witvliet, C., Pietrini, P., & Miller, A. J. (2007). Forgiveness, health, and well-being: A review of evidence for emotional

versus decisional forgiveness, dispositional forgivingness, and reduced forgiveness. *Journal of Behavioral Medicine*, 30, 291-302. doi:

10.1007/s10865-007-9105-8

Young, L., Cushman, F., Hauser, M., & Saxe, R. (2007). The neural basis of the interaction between theory of mind and moral judgment. *Proceedings of the National Academy of Sciences*, 104, 8235-8240. doi:

10.1073/pnas.0701408104

Appendix A. Study 1 Scenarios

Scenario 1: Burn

Intentional without Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny wants to burn her partner's hand. Jenny starts welding the metal together, but her partner happens to let go and is not burned at all.

Unintentional Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny does not want to burn her partner's hand. Jenny only wants to weld together the metal. Jenny welds the metal, and her partner's hand is burned.

Scenario 2: Construction

Intentional without Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom wants to throw the beam onto his supervisor and break his legs. Tom drops the beam, the supervisor walks beneath the beam, and the beam happens to miss Tom's supervisor, who is just fine.

Unintentional Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom does not want to drop the beam on his supervisor and break his legs. Tom only wants to put the beam where it belongs. Tom drops the beam, the supervisor walks beneath the beam, and the beam hits the supervisor and breaks his legs.

Scenario 3: Darts

Intentional without Harm Condition

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin wants to hit the man's hand with a dart and pierce it. Kevin throws his dart, the man reaches out, but the dart happens to miss the man and hits the board harmlessly.

Unintentional Harm Condition

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin does not want to hit the man's hand with a dart and pierce it. Kevin only wants to hit the dart board. Kevin throws his dart, the man reaches out, and Kevin hits his hand and pierces it.

Scenario 4: Dentist

Intentional without Harm Condition

Bruce is a dentist filling in a patient's cavity. He must drill into the patient's tooth just above a major nerve. Bruce wants to hit the patient's nerve in order to cause the patient excruciating pain. Bruce switches the drill to a higher speed and starts drilling, but misses the nerve. The patient undergoes no pain at all.

Unintentional Harm Condition

Bruce is a dentist filling in the cavity of his patient. He must drill into the patient's tooth just above a major nerve. Bruce does not want to hit the patient's nerve, nor to cause the patient excruciating pain. Bruce only wants to drill out the cavity. Bruce switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Scenario 5: Hair

Intentional without Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is one more piece of hair to trim, and it is right beside the customer's ear. Maria wants to cut a piece of the customer's ear. Maria goes to trim the last piece of hair at a sharp angle, but just then the customer sneezes and Maria misses the ear. The haircut is finished and the customer is perfectly fine.

Unintentional Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is only one more piece of hair to trim, and it is right beside the customer's ear. Maria does not want to cut off a piece of the customer's ear. Maria only wants to cut the hair and finish the job. Maria trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Scenario 6: Poison

Intentional without Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve wants to poison Pat and make him very ill. Steve hands Pat the cookies to hold while he cleans the counter, but Pat is distracted and leaves the cookie untouched.

Unintentional Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve does not want Pat to eat the cookie and become very ill. Steve thinks Pat knows not to eat the cookie and will leave it untouched. In fact, Steve is wrong, and Pat has no idea about the poison. Steve hands Pat the cookies to hold while he cleans the counter, and Pat eats a cookie and becomes very ill.

Scenario 7: Stand

Intentional without Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target and win a prize. The owner of the stand happens to be squatting beneath the target. John wants to hit the owner and break his nose. John punches towards the target, the owner stands up, and John happens to miss the owner, who is just fine.

Unintentional Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target to win a prize. The owner of the stand happens to be squatting beneath the target. John does not want to hit the owner and break his nose. John only wants to hit the target. John punches towards the target, the owner stands up, and John hits the owner and breaks his nose.

Scenario 8: Train

Intentional without Harm Condition

Amy is sitting in a crowded train station on her way to a job interview. She is about to put her feet up on the seat across her to relax. Just then she notices a passenger rushing to catch his train. Amy wants the passenger to trip and break his ankle. Amy puts her feet up on the seat across from her to trip the passenger, but the passenger happens to run by without tripping at all.

Unintentional Harm Condition

Amy is sitting in a crowded train station. She is about to put her feet up on the seat across from her to relax. Just then she notices a passenger rushing to catch his train. Amy does not want the passenger to trip and twist his ankle. Amy only wants to put her feet up. Amy puts her feet up, and the passenger trips over her and twists his ankle.

Appendix B. Moral Judgments

Person Judgments

1. How sick and twisted is *perpetrator*?
2. How sadistic is *perpetrator*?
3. How screwed up is *perpetrator*?
4. How likely is *perpetrator* to enjoy other peoples' suffering?
5. How likely is *perpetrator* to have normal human feelings?*
6. How likely is *perpetrator* to feel sorry for a homeless person?*
7. How likely is *perpetrator* to feel empathy for a stranger who is suffering?*
8. How moral is *perpetrator*?*
9. How trustworthy is *perpetrator*?*
10. Do you think that *perpetrator* is mainly a good person?*

Act Judgments

1. How much blame does *perpetrator* deserve considering what happened?
2. How much should *perpetrator* be punished?
3. How wrong was *perpetrator*'s behavior?
4. How right was *perpetrator*'s behavior?*
5. To what extent is the act *perpetrator*'s fault?
6. How acceptable is *perpetrator*'s behavior?*
7. How much should *perpetrator*'s friends and family reprimand him/her?
8. How responsible is *perpetrator* for their actions?
9. How much do you think that *perpetrator* should be cautioned by police?
10. How much do you think that *perpetrator* should be sent to prison for 6 weeks?

Note. Asterisks indicate reverse coded items. Responses were/will be made on a 7-point scale (1 = *Not at all*, 7 = *Extremely*). Responses were/will averaged to create person and act composite scores, with higher scores indicating harsher judgments of moral character and greater disapproval of the act, respectively.

Appendix C. Three-Domain Disgust Scale (TDDS)

Instructions: Psychologists are often interested in emotions. For these questions, we are interested in the emotion *disgust*. Now we would like you to rate how *disgusting* you find the concepts described in the following items, from not at all disgusting to extremely disgusting.

Items

1. Shoplifting a candy bar from a convenience store ^M
2. Hearing two strangers having sex ^S
3. Stepping on dog poop ^P
4. Stealing from a neighbor ^M
5. Performing oral sex ^S
6. Sitting next to someone who has red sores on their arm ^P
7. A student cheating to get good grades ^M
8. Watching a pornographic video ^S
9. Shaking hands with a stranger who has sweaty palms ^P
10. Deceiving a friend ^M
11. Finding out that someone you don't like has sexual fantasies about you ^S
12. Seeing some mold on old leftovers in your refrigerator ^P
13. Forging someone's signature on a legal document ^M
14. Bringing someone you just met back to your room to have sex ^S
15. Standing close to a person who has body odor ^P
16. Cutting to the front of a line to purchase the last few tickets to a show ^M
17. A stranger of the opposite sex intentionally rubbing your thigh in an elevator ^S
18. Seeing a cockroach run across the floor ^P
19. Intentionally lying during a business transaction ^M
20. Having anal sex with someone of the opposite sex ^S
21. Accidentally touching a person's bloody cut ^P

Note. M = trait moral disgust. S = trait sexual disgust. P = trait pathogen disgust. Responses were/will be made on a 7-point unipolar scale (1 = *Not at all disgusting*, 7 = *Extremely disgusting*). Responses were/will be averaged across their respective subscales, with higher scores indicating higher trait disgust.

Appendix D. Nonverbal Emotion Endorsements Results

Nonverbal Emotion Endorsements

Anger. Participants endorsed angry facial expressions to a greater extent in the intentional without harm condition ($M = 4.86$, $SD = 1.24$, 95% CI [4.62, 5.10]) compared to the unintentional harm condition ($M = 3.20$, $SD = 1.41$, 95% CI [2.94, 3.45]), $F(1, 220) = 53.64$, $p < .001$, $\eta_p^2 = .032$. Neither the main effect of age group ($p = .494$) nor the interaction ($p = .334$) was significant.

Disgust. Participants endorsed disgust facial expressions to a greater extent in the intentional without harm condition ($M = 4.02$, $SD = 1.46$, 95% CI [3.73, 4.30]) compared to the unintentional harm condition ($M = 3.20$, $SD = 1.56$, 95% CI [2.92, 3.48]), $F(1, 220) = 16.74$, $p < .001$, $\eta_p^2 = .010$. Neither the main effect of age group ($p = .755$) nor the interaction ($p = .095$) was significant.

Neutral. Participants endorsed neutral facial expressions to a lesser extent in the intentional without harm condition ($M = 2.64$, $SD = 1.60$, 95% CI [2.33, 2.95]) compared to the unintentional harm condition ($M = 3.60$, $SD = 1.26$, 95% CI [3.37, 3.82]), $F(1, 220) = 28.02$, $p < .001$, $\eta_p^2 = .017$. Older adults ($M = 2.78$, $SD = 1.35$, 95% CI [2.53, 3.04]) endorsed neutral expressions less than younger adults ($M = 3.53$, $SD = 1.55$, 95% CI [3.24, 3.82]), $F(1, 220) = 15.17$, $p < .001$, $\eta_p^2 = .009$. The two-way interaction was significant, $F(1, 220) = 5.56$, $p = .019$, $\eta_p^2 = .003$. Specifically, the mean-level age difference in the intentional without harm condition was significantly different from the unintentional harm condition, estimate = 0.86, $SE = 0.37$, $t(220) = 2.36$, $p = .019$. Results from the simple slopes analysis indicated that younger adults ($M = 3.26$, $SD = 1.71$, 95% CI [2.77, 3.74]) endorsed neutral facial expressions significantly more than older adults ($M = 2.05$, $SD = 1.22$, 95% CI [1.72, 2.39]) in the intentional without harm condition, $b = 1.16$, $SE = 0.27$, $t = 4.27$, $p < .001$, but not in the unintentional harm condition ($p = .23$).

Summary. The patterns generally indicate that anger and disgust endorsements were higher, but neutral endorsements were lower, when the perpetrator desired to harm another even though no harm occurred (relative to when harm occurred accidentally without malicious intent). Interestingly, older adults endorsed neutral expressions less than younger adults – especially when there was a desire to cause harm to another, even though no harm occurred.

Appendix E. Study 2 Scenarios

Scenario 1: Burn

Intentional without Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny wants to burn her partner's hand. Jenny starts welding the metal together, but her partner happens to let go and is not burned at all.

Unintentional Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny does not want to burn her partner's hand. Jenny only wants to weld together the metal. Jenny welds the metal, and her partner's hand is burned.

Anger Condition

Jenny is taking a class in sculpture. She is using a brand-new torch to weld together pieces of metal. Jenny decides to use the torch on a nearby desk to see if it will burn. The desk catches on fire very quickly and the fire gets out of control. The fire destroys all of the welding equipment in the classroom and all sculpture classes get cancelled for the rest of the year due to the damage.

Disgust Condition

Jenny is taking a class in sculpture. She is using a brand-new torch to weld together pieces of metal. Jenny decides to use the torch on her arm to see if it will burn. Jenny moves the torch closer to her arm and singes her skin, making the whole classroom smell like burning flesh. Smelling her burnt skin in the air, Jenny wonders what it would taste like, so she licks the blistering spot on her arm.

Scenario 2: Construction

Intentional without Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom wants to throw the beam onto his supervisor and break his legs. Tom drops the beam, the supervisor walks beneath the beam, and the beam happens to miss Tom's supervisor, who is just fine.

Unintentional Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom does not want to drop the beam on his supervisor and break his

legs. Tom only wants to put the beam where it belongs. Tom drops the beam, the supervisor walks beneath the beam, and the beam hits the supervisor and breaks his legs.

Anger Condition

Tom works at a construction site. He is holding a 50-pound steel beam and wonders how quickly it will fall to the ground. Tom drops the beam, which falls onto the ground and breaks a brand-new forklift, suspending all construction work for the entire day. In all, the damages and delay to the project cost about \$75,000.

Disgust Condition

Tom works at a construction site. He is holding a 50-pound steel beam and wonders how quickly it will fall to the ground. Tom drops the beam, which falls onto the ground below. Tom goes to retrieve the beam and notices some worms on the ground next to the beam. Tom picks up one of the worms, bites into it, and its guts squish out into his mouth and down his chin.

Scenario 3: Darts

Intentional without Harm Condition

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin wants to hit the man's hand with a dart and pierce it. Kevin throws his dart, the man reaches out, but the dart happens to miss the man and hits the board harmlessly.

Unintentional Harm Condition

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin does not want to hit the man's hand with a dart and pierce it. Kevin only wants to hit the dart board. Kevin throws his dart, the man reaches out, and Kevin hits his hand and pierces it.

Anger Condition

Kevin is eating at a diner and decides to play a game of darts. Kevin decides to throw a dart with his eyes closed to see if he can still hit the target. Kevin throws his dart, misses the dartboard, and the dart ricochets off the wall hitting an expensive, antique mirror, shattering it. Some of the glass shards spray out towards a few tables and all of the food at those tables needs to be thrown away for safety reasons.

Disgust Condition

Kevin is eating at a diner and decides to play a game of darts. Kevin decides to throw a dart with his eyes closed to see if he can still hit the target. Kevin throws

his dart, misses the dartboard, and the dart ricochets off the wall and onto the floor across the room. Kevin goes to pick up the dart and notices a French fry in an ash tray on a nearby table. Kevin takes the fry out of the ash tray and eats it.

Scenario 4: Dentist

Intentional without Harm Condition

Bruce is a dentist filling in a patient's cavity. He must drill into the patient's tooth just above a major nerve. Bruce wants to hit the patient's nerve in order to cause the patient excruciating pain. Bruce switches the drill to a higher speed and starts drilling but misses the nerve. The patient undergoes no pain at all.

Unintentional Harm Condition

Bruce is a dentist filling in the cavity of his patient. He must drill into the patient's tooth just above a major nerve. Bruce does not want to hit the patient's nerve, nor to cause the patient excruciating pain. Bruce only wants to drill out the cavity. Bruce switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Anger Condition

Bruce is a dentist filling the cavity of his patient. Bruce goes into the storage closet to grab a drill that he needs to fill the cavity. Bruce takes the drill from the storage closet and decides to try to flip the drill in the air and catch it. Bruce flips the drill and it falls quicker than he is expecting. As a result, Bruce drops the drill, breaking the drill and badly damaging the floor. The office must limit their scheduling until they are able to replace the drill.

Disgust Condition

Bruce is a dentist filling the cavity of his patient. Bruce goes into the storage closet to grab a drill that he needs to fill the cavity. As Bruce is heading out of the storage closet, he accidentally drops the drill on the floor. He goes to pick up the drill, but sees a discarded bloody rubber glove next to the trash can. Bruce picks up the rubber glove, pulls down his face mask, and sucks the dried blood off of the glove.

Scenario 5: Hair

Intentional without Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is one more piece of hair to trim, and it is right beside the customer's ear. Maria wants to cut a piece of the customer's ear. Maria goes to trim the last piece

of hair at a sharp angle, but just then the customer sneezes and Maria misses the ear. The haircut is finished and the customer is perfectly fine.

Unintentional Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is only one more piece of hair to trim, and it is right beside the customer's ear. Maria does not want to cut off a piece of the customer's ear. Maria only wants to cut the hair and finish the job. Maria trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Anger Condition

Maria is a hairdresser practicing styling hair on a mannequin. Maria is almost finished styling and just needs to blow-dry the hair. Maria notices that the plug for the blow-dryer is wet, but she decides to plug in the blow-dryer anyway. The outlet short circuits from the wet plug and starts an electrical fire. The fire quickly spreads to the rest of the salon and causes \$500,000 worth of damage to the building and styling equipment.

Disgust Condition

Maria is a hairdresser practicing styling hair on a mannequin. Maria is almost finished styling and just needs to blow-dry the hair. Maria plugs in the blow-dryer and causes the outlet to short circuit, starting an electrical fire. Maria quickly puts out the fire but notices a piece of hair on her workstation that got burned. She wonders what the burnt hair tastes like, so Maria picks up the smoldering piece of hair, rolls it into a ball, and chews into the wiry, burnt hairball.

Scenario 6: Poison

Intentional without Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve wants to poison Pat and make him very ill. Steve hands Pat the cookies to hold while he cleans the counter, but Pat is distracted and leaves the cookie untouched.

Unintentional Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve does not want Pat to eat the cookie and become very ill. Steve thinks Pat knows not to eat the cookie and will leave it untouched. In fact, Steve is wrong, and Pat has no idea about the poison. Steve hands Pat the cookies to hold while he cleans the counter, and Pat eats a cookie and becomes very ill.

Anger Condition

Steve lives by himself. There is a rat in his apartment, and he wants to make some cookies to kill the rat before leaving for the weekend. As he is making the cookies, Steve decides to also put rat poison on the kitchen counters and all over the carpet in his living room, ignoring the warning on the container that states to not use the poison on surfaces. Steve leaves for the weekend, and when he returns, he sees that the counter and carpet have been badly damaged from the poison. The countertops, carpets, and the floor underneath need to be completely replaced at great expense.

Disgust Condition

Steve lives by himself. There is a rat in his apartment, and he wants to make some cookies to kill the rat before leaving for the weekend. As he is making the cookies, Steve decides to also put rat poison on the kitchen counters and all over the carpet in his living room. Steve leaves for the weekend, and when he returns, he sees the rat dead on the kitchen floor. Steve picks up the dead rat and sees some maggots on it. He picks a couple of maggots off of the dead rat, places them under his tongue, and sucks on them for a while before spitting them out on the floor.

Scenario 7: StandIntentional without Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target and win a prize. The owner of the stand happens to be squatting beneath the target. John wants to hit the owner and break his nose. John punches towards the target, the owner stands up, and John happens to miss the owner, who is just fine.

Unintentional Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target to win a prize. The owner of the stand happens to be squatting beneath the target. John does not want to hit the owner and break his nose. John only wants to hit the target. John punches towards the target, the owner stands up, and John hits the owner and breaks his nose.

Anger Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target to win a prize. The game is designed for children, but John wants to win the prize. John punches the target so hard that he breaks it. As a result, the stand has to be shut down for the rest of the carnival.

Disgust Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target to win a prize. John punches the target and wins a small stuffed animal as a prize. As John is walking away from the stand, he drops the stuffed animal by accident. John picks up the stuffed animal but realizes that it has fallen into a pile of vomit on the ground. He doesn't have anything to clean the vomit, so John wipes the vomit off of the stuffed animal with his bare hands – licking his hand after each wipe.

Scenario 8: Train

Intentional without Harm Condition

Amy is sitting in a crowded train station on her way to a job interview. She is about to put her feet up on the seat across her to relax. Just then she notices a passenger rushing to catch his train. Amy wants the passenger to trip and break his ankle. Amy puts her feet up on the seat across from her to trip the passenger, but the passenger happens to run by without tripping at all.

Unintentional Harm Condition

Amy is sitting in a crowded train station. She is about to put her feet up on the seat across from her to relax. Just then she notices a passenger rushing to catch his train. Amy does not want the passenger to trip and twist his ankle. Amy only wants to put her feet up. Amy puts her feet up, and the passenger trips over her and twists his ankle.

Anger Condition

Amy is in a crowded train station. As she comes to the top of the escalator up to the train platform, the heel of her shoe gets stuck in the escalator, jamming it. The train arrives at just that moment and Amy runs for her train without picking up her shoe, even though missing the train and taking the next one would only set her back a couple of minutes. As a result, the shoe gets pulled under the escalator, completely destroying the motor, and puts the escalator out of order for two weeks.

Disgust Condition

Amy is in a crowded train station. As she comes to the top of the escalator up to the train platform, the heel of her shoe gets stuck in the escalator. Amy takes her shoe off and pulls it out of the escalator. As she's walking to the bench to put her shoe back on, Amy steps in a puddle of urine. Amy sits down and wrings out her urine-soaked sock, puts it back on her foot, wipes her hands on her pants, and without washing her hands, takes a bag of granola out of her purse and begins eating it.

Appendix F. Study 3 Scenarios

Scenario 1: Burn

Intentional without Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny wants to burn her partner's hand. Jenny starts welding the metal together, and the heat from the torch travels up the metal rod, but her partner happens to let go and is not burned at all.

Unintentional Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny does not want to burn her partner's hand. Jenny only wants to weld together the metal. Jenny welds the metal and the heat from the torch travels up the metal rod, and her partner's hand is burned.

Intentional Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny wants to burn her partner's hand. Jenny welds the metal and the heat from the torch travels up the metal rod, and her partner's hand is burned.

Unintentional without Harm Condition

Jenny is taking a class in sculpture. She is assigned to work with a partner to weld together pieces of metal. Jenny does not want to burn her partner's hand. Jenny only wants to weld together the metal. Jenny starts welding the metal together and the heat from the torch travels up the metal rod, but her partner happens to let go and is not burned at all.

Scenario 2: Construction

Intentional without Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom wants to throw the beam onto his supervisor and break his legs. Tom drops the beam as the supervisor walks beneath it, and the beam happens to miss Tom's supervisor, who is just fine.

Unintentional Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom does not want to drop the beam on his supervisor and break his legs. Tom only wants to put the beam where it belongs. Tom drops the beam as the supervisor walks beneath it, and the beam hits the supervisor and breaks his legs.

Intentional Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom wants to throw the beam onto his supervisor and break his legs. Tom drops the beam as the supervisor walks beneath it, and the beam hits the supervisor and breaks his legs.

Unintentional without Harm Condition

Tom works at a construction site. He is holding a 50-pound steel beam that belongs on the ground below. Tom's supervisor is on the ground below, taking a break. Tom does not want to drop the beam on his supervisor and break his legs. Tom only wants to put the beam where it belongs. Tom drops the beam as the supervisor walks beneath it, and the beam happens to miss Tom's supervisor, who is just fine.

Scenario 3: DartsIntentional without Harm Condition

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin wants to hit the man's hand with a dart and pierce it. Kevin throws his dart as the man reaches out to collect the darts from the dart board, but the dart happens to miss the man and hits the board harmlessly.

Unintentional Harm Condition

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin does not want to hit the man's hand with a dart and pierce it. Kevin only wants to hit the dart board. Kevin throws his dart as the man reaches out to collect the darts from the dart board, and Kevin hits his hand and pierces it.

Intentional Harm Condition

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin wants to hit the man's hand with a dart and pierce it. Kevin throws his dart as the man reaches out to collect the darts from the dart board, and Kevin hits his hand and pierces it.

Neutral

Kevin is eating at a diner when a man challenges him to a game of darts. The man throws his darts very well and gets a very high score. Kevin does not want to hit the man's hand with a dart and pierce it. Kevin only wants to hit the dart board. Kevin throws his dart as the man reaches out to collect the darts from the dart board, but the dart happens to miss the man and hits the board harmlessly.

Scenario 4: Dentist

Intentional without Harm Condition

Bruce is a dentist filling in a patient's cavity. He must drill into the patient's tooth just above a major nerve. Bruce wants to hit the patient's nerve in order to cause the patient excruciating pain. Bruce switches the drill to a higher speed and starts drilling but misses the nerve. The patient undergoes no pain at all.

Unintentional Harm Condition

Bruce is a dentist filling in the cavity of his patient. He must drill into the patient's tooth just above a major nerve. Bruce does not want to hit the patient's nerve, nor to cause the patient excruciating pain. Bruce only wants to drill out the cavity. Bruce switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Intentional Harm Condition

Bruce is a dentist filling in a patient's cavity. He must drill into the patient's tooth just above a major nerve. Bruce wants to hit the patient's nerve in order to cause the patient excruciating pain. Bruce switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Unintentional without Harm Condition

Bruce is a dentist filling in the cavity of his patient. He must drill into the patient's tooth just above a major nerve. Bruce does not want to hit the patient's nerve, nor to cause the patient excruciating pain. Bruce only wants to drill out the cavity. Bruce switches the drill to a higher speed and starts drilling but misses the nerve. The patient undergoes no pain at all.

Scenario 5: Hair

Intentional without Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is one more piece of hair to trim, and it is right beside the customer's ear. Maria wants to cut off a piece of the customer's ear. Maria goes to trim the last piece of hair at a sharp angle, but just then the customer sneezes and Maria misses the ear. The haircut is finished, and the customer is perfectly fine.

Unintentional Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is only one more piece of hair to trim, and it is right beside the customer's ear. Maria does not want to cut off a piece of the customer's ear. Maria only

wants to cut the hair and finish the job. Maria trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Intentional Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is one more piece of hair to trim, and it is right beside the customer's ear. Maria wants to cut off a piece of the customer's ear. Maria trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Unintentional without Harm Condition

Maria is a hairdresser cutting a customer's hair. The haircut is almost finished. There is only one more piece of hair to trim, and it is right beside the customer's ear. Maria does not want to cut off a piece of the customer's ear. Maria only wants to cut the hair and finish the job. Maria goes to trim the last piece of hair at a sharp angle, but just then the customer sneezes and Maria misses the ear. The haircut is finished, and the customer is perfectly fine.

Scenario 6: Poison

Intentional without Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve wants to poison Pat and make him very ill. Steve hands Pat the cookies to hold while he cleans the counter, but Pat is distracted and leaves the cookie untouched.

Unintentional Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve does not want Pat to eat the cookie and become very ill. Steve thinks Pat knows not to eat the cookie and will leave it untouched. In fact, Steve is wrong, and Pat has no idea about the poison. Steve hands Pat the cookies to hold while he cleans the counter, and Pat eats a cookie and becomes very ill.

Intentional Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve wants to poison Pat and make him very ill. Steve hands Pat the cookies to hold while he cleans the counter, and Pat eats a cookie and becomes very ill.

Unintentional without Harm Condition

Steve, Ken, and Pat are roommates. There is a rat in their apartment, and Ken made some cookies with rat poison to kill the rat before leaving for the weekend. Steve sees the cookies on the counter. Steve does not want Pat to eat the cookie and become very ill. Steve thinks Pat knows not to eat the cookie and will leave it untouched. In fact, Steve is wrong, and Pat has no idea about the poison. Steve hands Pat the cookies to hold while he cleans the counter, but Pat is distracted and leaves the cookie untouched.

Scenario 7: Stand

Intentional without Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target and win a prize. The owner of the stand happens to be squatting beneath the target. John wants to hit the owner and break his nose. John punches towards the target as the owner stands up in the way of the target, and John happens to miss the owner, who is just fine.

Unintentional Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target to win a prize. The owner of the stand happens to be squatting beneath the target. John does not want to hit the owner and break his nose. John only wants to hit the target. John punches towards the target as the owner stands up in the way of the target, and John hits the owner and breaks his nose.

Intentional Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target and win a prize. The owner of the stand happens to be squatting beneath the target. John wants to hit the owner and break his nose. John punches towards the target as the owner stands up in the way of the target, and John hits the owner and breaks his nose.

Unintentional without Harm Condition

John is walking through a carnival. He comes to a stand where you can punch a mechanical target to win a prize. The owner of the stand happens to be squatting beneath the target. John does not want to hit the owner and break his nose. John only wants to hit the target. John punches towards the target as the owner stands up in the way of the target, and John happens to miss the owner, who is just fine.

Scenario 8: Train

Intentional without Harm Condition

Amy is sitting in a crowded train station on her way to a job interview. She is about to put her feet up on the seat across her to relax. Just then she notices a passenger rushing to catch his train. Amy wants the passenger to trip and break his ankle. Amy puts her feet up on the seat across from her to trip the passenger, but the passenger happens to run by without tripping at all.

Unintentional Harm Condition

Amy is sitting in a crowded train station. She is about to put her feet up on the seat across from her to relax. Just then she notices a passenger rushing to catch his train. Amy does not want the passenger to trip and twist his ankle. Amy only wants to put her feet up. Amy puts her feet up on the seat across from her, and the passenger trips over her and twists his ankle.

Intentional Harm Condition

Amy is sitting in a crowded train station on her way to a job interview. She is about to put her feet up on the seat across her to relax. Just then she notices a passenger rushing to catch his train. Amy wants the passenger to trip and break his ankle. Amy puts her feet up on the seat across from her to trip the passenger, and the passenger trips over her and twists his ankle.

Unintentional without Harm Condition

Amy is sitting in a crowded train station. She is about to put her feet up on the seat across from her to relax. Just then she notices a passenger rushing to catch his train. Amy does not want the passenger to trip and twist his ankle. Amy only wants to put her feet up. Amy puts her feet up on the seat across from her, but the passenger happens to run by without tripping at all.

Appendix G. Measure of Communal Strength

Instructions

Keeping in mind the specific person you just wrote about, please read and answer the following questions.

Items

1. How far would you be willing to go to visit _____?
2. How happy do you feel when doing something that helps _____?
3. How large a benefit would you be likely to give _____?
4. How large a cost would you incur to meet a need of _____?
5. How readily can you put the needs of _____ out of your thoughts? *
6. How high a priority for you is meeting the needs of _____?
7. How reluctant would you be to sacrifice for _____? *
8. How much would you be willing to give up to benefit _____?
9. How far would you go out of your way to do something for _____?
10. How easily could you accept not helping _____? *

Note. The name of participant's close other will be inserted into the question stem. Asterisks indicate reverse-coded items. Responses will be made on a 11-point scale (0 = *Not at all*, 10 = *Extremely*). Responses will be averaged to create a composite average of communal strength.

Appendix H. Study 4 Scenarios

Scenario 1: Burn

Unintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is taking a class in sculpture. Jordan is assigned to work with a partner to weld together pieces of metal. Jordan does not want to burn their partner's hand. Jordan only wants to weld together the metal. Jordan welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is taking a class in sculpture. Jordan is assigned to work with a partner to weld together pieces of metal. Jordan wants to burn their partner's hand. Jordan welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is taking a class in sculpture. **Close other** is assigned to work with a partner to weld together pieces of metal. **Close other** does not want to burn their partner's hand. **Close other** only wants to weld together the metal. **Close other** welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is taking a class in sculpture. **Close other** is assigned to work with a partner to weld together pieces of metal. **Close other** wants to burn their partner's hand. **Close other** welds the metal and the heat from the torch travels up the metal rod, and their partner's hand is burned.

Scenario 2: Construction

Unintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan works at a construction site. Jordan is holding a 50-pound steel beam that belongs on the ground below. Jordan's supervisor is on the ground below, taking a break. Jordan does not want to drop the beam on their supervisor and break his legs. Jordan only wants to put the beam where it belongs. Jordan drops the beam as the supervisor walks beneath it, and the beam hits the supervisor and breaks his legs.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan works at a construction site. Jordan is holding a 50-pound steel beam that belongs on the ground below. Jordan's supervisor is on the ground below, taking a break. Jordan wants to throw the beam onto their

supervisor and break his legs. Jordan drops the beam as the supervisor walks beneath it, and the beam hits the supervisor and breaks his legs.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** works at a construction site. **Close other** is holding a 50-pound steel beam that belongs on the ground below. **Close other's** supervisor is on the ground below, taking a break. **Close other** does not want to drop the beam on his supervisor and break his legs. **Close other** only wants to put the beam where it belongs. **Close other** drops the beam as the supervisor walks beneath it, and the beam hits the supervisor and breaks his legs.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** works at a construction site. **Close other** is holding a 50-pound steel beam that belongs on the ground below. **Close other's** supervisor is on the ground below, taking a break. **Close other** wants to throw the beam onto their supervisor and break his legs. **Close other** drops the beam as the supervisor walks beneath it, and the beam hits the supervisor and breaks his legs.

Scenario 3: Darts

Unintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is eating at a diner when a man challenges them to a game of darts. The man throws his darts very well and gets a very high score. Jordan does not want to hit the man's hand with a dart and pierce it. Jordan only wants to hit the dart board. Jordan throws their dart as the man reaches out to collect the darts from the dart board, and Jordan hits his hand and pierces it.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is eating at a diner when a man challenges them to a game of darts. The man throws his darts very well and gets a very high score. Jordan wants to hit the man's hand with a dart and pierce it. Jordan throws their dart as the man reaches out to collect the darts from the dart board, and Jordan hits his hand and pierces it.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is eating at a diner when a man challenges them to a game of darts. The man throws his darts very well and gets a very high score. **Close other** does not want to hit the man's hand with a dart and pierce it. **Close other** only wants to hit the dart board. **Close other** throws his dart as the man reaches out to collect the darts from the dart board, and **close other** hits his hand and pierces it.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is eating at a diner when a man challenges them to a game of darts. The man throws his darts very well and gets a very high score. **Close other** wants to hit the man's hand with a dart and pierce it. **Close other** throws his dart as the man reaches out to collect the darts from the dart board, and **close other** hits his hand and pierces it.

Scenario 4: DentistUnintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is a dentist filling in the cavity of their patients. Jordan must drill into the patient's tooth just above a major nerve. Jordan does not want to hit the patient's nerve, nor to cause the patient excruciating pain. Jordan only wants to drill out the cavity. Jordan switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is a dentist filling in the cavity of their patients. Jordan must drill into the patient's tooth just above a major nerve. Jordan wants to hit the patient's nerve in order to cause excruciating pain. Jordan switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is a dentist filling in the cavity of their patients. **Close other** must drill into the patient's tooth just above a major nerve. **Close other** does not want to hit the patient's nerve, nor to cause the patient excruciating pain. **Close other** only wants to drill out the cavity. **Close other** switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is a dentist filling in the cavity of their patients. **Close other** must drill into the patient's tooth just above a major nerve. **Close other** wants to hit the patient's nerve in order to cause excruciating pain. **Close other** switches the drill to a higher speed, hits the nerve, and causes the patient excruciating pain.

Scenario 5: HairUnintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is a hairdresser cutting a customer's hair. The haircut is almost finished. There is only one more piece of hair to trim, and it is right beside the customer's ear. Jordan does not want to cut off a piece of the customer's ear. Jordan only wants to cut the hair and finish the job. Jordan trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is a hairdresser cutting a customer's hair. The haircut is almost finished. There is one more piece of hair to trim, and it is right beside the customer's ear. Jordan wants to cut off a piece of the customer's ear. Jordan trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is a hairdresser cutting a customer's hair. The haircut is almost finished. There is only one more piece of hair to trim, and it is right beside the customer's ear. **Close other** does not want to cut off a piece of the customer's ear. **Close other** only wants to cut the hair and finish the job. **Close other** trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is a hairdresser cutting a customer's hair. The haircut is almost finished. There is one more piece of hair to trim, and it is right beside the customer's ear. **Close other** wants to cut off a piece of the customer's ear. **Close other** trims the hair at a sharp angle and cuts off a piece of the customer's ear.

Scenario 6: Poison

Unintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan just moved into a new apartment with a random roommate. There is a rat in their apartment, and Jordan made some cookies with rat poison to kill the rat before leaving for the weekend. Jordan's roommate sees the cookies on the counter. Jordan does not want their roommate to eat the cookie and become very ill. Jordan thinks that their roommate knows not to eat the cookie and will leave it untouched. In fact, Jordan is wrong, and their roommate has no idea about the poison. Jordan hands their roommate the cookies to hold while they clean the counter, and their roommate eats a cookie and becomes very ill.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan just moved into a new apartment with a random roommate. There is a rat in their apartment, and Jordan made some cookies with rat poison to kill the rat before leaving for the weekend. Jordan's

roommate sees the cookies on the counter. Jordan wants their roommate to eat the cookie and become very ill. Jordan hands their roommate the cookies to hold while they clean the counter, and their roommate eats a cookie and becomes very ill.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** just moved into a new apartment with a random roommate. There is a rat in their apartment, and **close other** made some cookies with rat poison to kill the rat before leaving for the weekend. **Close other's** roommate sees the cookies on the counter. **Close other** does not want their roommate to eat the cookie and become very ill. **Close other** thinks that their roommate knows not to eat the cookie and will leave it untouched. In fact, **close other** is wrong, and their roommate has no idea about the poison. **Close other** hands their roommate the cookies to hold while they clean the counter, and their roommate eats a cookie and becomes very ill.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** just moved into a new apartment with a random roommate. There is a rat in their apartment, and **close other** made some cookies with rat poison to kill the rat before leaving for the weekend. **Close other's** roommate sees the cookies on the counter. **Close other** wants their roommate to eat the cookie and become very ill. **Close other** hands their roommate the cookies to hold while they clean the counter, and their roommate eats a cookie and becomes very ill.

Scenario 7: Stand

Unintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is walking through a carnival. Jordan comes to a stand where you can punch a mechanical target to win a prize. The owner of the stand happens to be squatting beneath the target. Jordan does not want to hit the owner and break his nose. Jordan only wants to hit the target. Jordan punches towards the target as the owner stands up in the way of the target, and Jordan hits the owner and breaks his nose.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is walking through a carnival. Jordan comes to a stand where you can punch a mechanical target and win a prize. The owner of the stand happens to be squatting beneath the target. Jordan wants to hit the owner and break his nose. Jordan punches towards the target as the owner stands up in the way of the target, and Jordan hits the owner and breaks his nose.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is walking through a carnival. **Close other** comes to a stand where you can punch a mechanical target to win a prize. The owner of the stand happens to be squatting beneath the target. **Close other** does not want to hit the owner and break his nose. **Close other** only wants to hit the target. **Close other** punches towards the target as the owner stands up in the way of the target, and **close other** hits the owner and breaks his nose.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is walking through a carnival. **Close other** comes to a stand where you can punch a mechanical target and win a prize. The owner of the stand happens to be squatting beneath the target. **Close other** wants to hit the owner and break his nose. **Close other** punches towards the target as the owner stands up in the way of the target, and **close other** hits the owner and breaks his nose.

Scenario 8: Train

Unintentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is sitting in a crowded train station. They are about to put their feet up on the seat across from them to relax. Just then they notice a passenger rushing to catch his train. Jordan does not want the passenger to trip and twist his ankle. Jordan only wants to put her feet up. Jordan puts their feet up on the seat across from them, and the passenger trips over their feet and twists his ankle.

Intentional Harm Condition – Stranger Perpetrator

Imagine a stranger named Jordan is sitting in a crowded train station. They are about to put their feet up on the seat across from them to relax. Just then they notice a passenger rushing to catch his train. Jordan wants the passenger to trip and twist his ankle. Jordan puts their feet up on the seat across from them, and the passenger trips over their feet and twists his ankle.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is sitting in a crowded train station. They are about to put their feet up on the seat across from them to relax. Just then they notice a passenger rushing to catch his train. **Close other** does not want the passenger to trip and twist his ankle. **Close other** only wants to put her feet up. **Close other** puts their feet up on the seat across from them, and the passenger trips over their feet and twists his ankle.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is sitting in a crowded train station. They are about to put their feet up on the seat across from them to relax. Just then

they notice a passenger rushing to catch his train. *Close other* wants the passenger to trip and twist his ankle. *Close other* puts their feet up on the seat across from them, and the passenger trips over their feet and twists his ankle.

Appendix I. Decisional Forgiveness Scale (DFS)

Instructions

Think about your current intentions toward **perpetrator** who hurt you. Indicate the degree to which you agree or disagree with the following statements.

1. I would intend to try to hurt **perpetrator in the same way **perpetrator** hurt me. ***

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

2. I would not try to help **perpetrator if **perpetrator** needs something. ***

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

3. If I saw **perpetrator, I would act friendly.**

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

4. I would try to get back at **perpetrator ***

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

5. I would try to act toward **perpetrator the same way I did before **perpetrator** hurt me.**

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

6. If there was an opportunity to get back at **perpetrator, I would take it. ***

- 1 = Strongly disagree
- 2 = Disagree

- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

7. I would not talk with **perpetrator. ***

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

8. I would not seek revenge upon **perpetrator.**

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

Note. The Decisional Forgiveness Scale (DFS) measures the extent to which one has made a decision to forgive an offender and behave differently toward the person. Asterisks indicate reverse coded items. Subscales are Prosocial Intentions (Items 2, 3, 5, 7) and Inhibition of Harmful Intentions (1, 4, 6, 8).

Note that Study 4 will use only the prosocial intentions items. For Study 4, item 5 will be changed to “I would try to act toward **perpetrator** the same way I did before **perpetrator** hurt someone else.” Study 5 will use both the prosocial intentions and inhibition of harmful intentions items.

Appendix J. Modified Differential Emotion Scale (mDES)

Instructions

In any given circumstance, people often have a number of different feelings. Please indicate how much of each emotion you are feeling **right now**, at this moment.

Use the following 0 to 4 scale to make your ratings:

- 0 = Not at all**
- 1 = A little bit**
- 2 = Moderately**
- 3 = Quite a bit**
- 4 = Extremely**

1. To what extent are you currently feeling amused, fun-loving, silly? ^P
2. To what extent are you currently feeling angry, irritated, annoyed? ^N
3. To what extent are you currently feeling ashamed, humiliated, disgraced? ^N
4. To what extent are you currently feeling awe, wonder, amazement? ^P
5. To what extent are you currently feeling contemptuous, scornful, disdainful? ^N
6. To what extent are you currently feeling content, serene, peaceful? ^P
7. To what extent are you currently feeling disgust, distaste, revulsion? ^N
8. To what extent are you currently feeling embarrassed, self-conscious, blushing? ^N
9. To what extent are you currently feeling glad, happy, joyful? ^P
10. To what extent are you currently feeling grateful, appreciative, thankful? ^P
11. To what extent are you currently feeling hopeful, optimistic, encouraged? ^P
12. To what extent are you currently feeling interested, alert, curious? ^P
13. To what extent are you currently feeling love, closeness, trust? ^P
14. To what extent are you currently feeling proud, confident, self-assured? ^P
15. To what extent are you currently feeling repentant, guilty, blameworthy? ^N
16. To what extent are you currently feeling sad, downhearted, unhappy? ^N
17. To what extent are you currently feeling scared, fearful, afraid? ^N
18. To what extent are you currently feeling sexual, desiring, flirtatious? ^P
19. To what extent are you currently feeling surprised, amazed, astonished? ^P
20. To what extent are you currently feeling sympathy, concern, compassion? ^P

Note. P = Positive; N = Negative. Responses to the items are averaged across to create separate subscales for positive and negative emotions, with higher scores indicating higher levels of emotions experienced.

Appendix K. Self-Report Measure of Trait Anger

Instructions

Please read each statement below carefully and indicate the extent to which each statement is true of you.

1. I am quick tempered.

- 1 = Almost never
- 2 = Sometimes
- 3 = Often
- 4 = Almost ways

2. I have a fiery temper.

- 1 = Almost never
- 2 = Sometimes
- 3 = Often
- 4 = Almost ways

3. I am a hotheaded person.

- 1 = Almost never
- 2 = Sometimes
- 3 = Often
- 4 = Almost ways

4. I fly off the handle.

- 1 = Almost never
- 2 = Sometimes
- 3 = Often
- 4 = Almost ways

Note. Responses will be averaged to create one composite average of trait anger.

Appendix L. Self-Report Measure of Trait Sympathy (TSS)

Instructions

Please read each statement below carefully and indicate the extent to which you agree or disagree with each statement being true of you.

Use the following 1 to 7 scale to make your ratings:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Slightly disagree
- 4 = Neither disagree nor agree
- 5 = Slightly agree
- 6 = Agree
- 7 = Strongly agree

1. It breaks my heart to hear about people with disabilities getting made fun of for their disabilities.
2. I would probably become teary eyed or close to crying if I were to see a homeless child eating out of a trash can.
3. It breaks my heart to know that there are children out there being abused by their own flesh and blood.
4. To see an elderly person fall down and get hurt would really break my heart.
5. It would break my heart to see an elderly person humiliated because he or she accidentally urinated on him or herself.
6. I can't help but feel sorry for victims of child abuse.
7. I really don't get emotional when I see people crying. *
8. It's common for me to become teary eyed or close to crying when I see others crying.
9. I don't tend to have feelings of sorrow or concern when I see others crying. *
10. I don't usually get emotional when others around me feel embarrassed or ashamed. *
11. I'm inclined to feel really troubled when someone I know is crying.
12. It doesn't bother me very much when sensitive people get their feelings hurt. *
13. It would really disturb me to see a wounded animal suffering in pain.
14. It really disturbs me to know that some people are cruel and abusive to their pets.
15. Seeing animals get hurt doesn't bother me very much. *
16. I often feel bad for animals when I know that they are in pain.
17. I feel really sorry for animals that get teased or taunted at zoos and circuses.
18. I tend to feel bad for the animals I see on TV that are attacked by predators such as lions, tigers, etc.

Note. Asterisks indicate reverse-scored items. There are three subscales: (1) Sympathy for Disempowered (SDS; Items 1-6), (2) Sympathy for the Feelings of Others (SFS; Items 7-12), and (3) Sympathy for Animals (SAS; Items 13-18).

Appendix M. Study 5 Scenarios

Scenario 1: Burn

Unintentional Harm Condition – Stranger Perpetrator

Imagine you are taking a class in sculpture. You are assigned to work with a random stranger named Jordan to weld together pieces of metal. Jordan does not want to burn your hand. Jordan only wants to weld together the metal. Jordan welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Intentional Harm Condition – Stranger Perpetrator

Imagine you are taking a class in sculpture. You are assigned to work with a random stranger named Jordan to weld together pieces of metal. Jordan wants to burn your hand. Jordan welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you are taking a class in sculpture with your close other **close other**. You are assigned to work with **close other** to weld together pieces of metal. **Close other** does not want to burn your hand. **Close other** only wants to weld together the metal. **Close other** welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Intentional Harm Condition – Close Other Perpetrator

Imagine you are taking a class in sculpture with your close other **close other**. You are assigned to work with **close other** to weld together pieces of metal. **Close other** wants to burn your hand. **Close other** welds the metal and the heat from the torch travels up the metal rod, and your hand is burned.

Scenario 2: Construction

Unintentional Harm Condition – Stranger Perpetrator

Imagine you are a supervisor at a construction site and manage a new employee named Jordan. Jordan is holding a 50-pound steel beam that belongs on the ground below. You are on the ground below, taking a break. Jordan does not want to drop the beam on you and break your legs. Jordan only wants to put the beam where it belongs. Jordan drops the beam as you walk beneath it, and the beam hits you and breaks your legs.

Intentional Harm Condition – Stranger Perpetrator

Imagine you are a supervisor at a construction site and manage a new employee named Jordan. Jordan is holding a 50-pound steel beam that belongs on the ground below. You are on the ground below, taking a break. Jordan wants to

throw the beam onto you and break your legs. Jordan drops the beam as you walk beneath it, and the beam hits you and breaks your legs.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you are a supervisor at a construction site and manage your close other **close other**. **Close other** is holding a 50-pound steel beam that belongs on the ground below. You are on the ground below, taking a break. **Close other** does not want to drop the beam on you and break your legs. **Close other** only wants to put the beam where it belongs. **Close other** drops the beam as you walk beneath it, and the beam hits you and breaks your legs.

Intentional Harm Condition – Close Other Perpetrator

Imagine you are a supervisor at a construction site and manage your close other **close other**. **Close other** is holding a 50-pound steel beam that belongs on the ground below. You are on the ground below, taking a break. **Close other** wants to drop the beam on you and break your legs. **Close other** drops the beam as you walk beneath it, and the beam hits you and breaks your legs.

Scenario 3: Darts

Unintentional Harm Condition – Stranger Perpetrator

Imagine you are eating at a diner, and you challenge a stranger named Jordan to a game of darts. You throw the darts very well and get a very high score. When it's Jordan's turn to throw, Jordan does not want to hit your hand with a dart and pierce it. Jordan only wants to hit the dart board. Jordan throws his dart as you reach out to collect the darts from the dart board, and Jordan hits your hand with the dart and pierces it.

Intentional Harm Condition – Stranger Perpetrator

Imagine you are eating at a diner, and you challenge a stranger named Jordan to a game of darts. You throw the darts very well and get a very high score. When it's Jordan's turn to throw, Jordan wants to hit your hand with a dart and pierce it. Jordan throws his dart as you reach out to collect the darts from the dart board, and Jordan hits your hand with the dart and pierces it.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you are eating at a diner with your close other **close other**, and you challenge **close other** to a game of darts. You throw the darts very well and get a very high score. When it's **close other's** turn to throw, **close other** does not want to hit your hand with a dart and pierce it. **Close other** only wants to hit the dart board. **Close other** throws his dart as you reach out to collect the darts from the dart board, and **close other** hits your hand with the dart and pierces it.

Intentional Harm Condition – Close Other Perpetrator

Imagine you are eating at a diner with your close other **close other**, and you challenge **close other** to a game of darts. You throw the darts very well and get a very high score. When it's **close other's** turn to throw, **close other** wants to hit your hand with a dart and pierce it. **Close other** throws his dart as you reach out to collect the darts from the dart board, and **close other** hits your hand with the dart and pierces it.

Scenario 4: Dentist

Unintentional Harm Condition – Stranger Perpetrator

Imagine you are at the dentist to get a cavity filled by a new dentist named Jordan. Jordan must drill into your tooth just above a major nerve. Jordan does not want to hit your nerve, nor to cause you excruciating pain. Jordan only wants to drill out your cavity. Jordan switches the drill to a higher speed, hits your nerve, and causes you excruciating pain.

Intentional Harm Condition – Stranger Perpetrator

Imagine you are at the dentist to get a cavity filled by a new dentist named Jordan. Jordan must drill into your tooth just above a major nerve. Jordan wants to hit your nerve in order to cause you excruciating pain. Jordan switches the drill to a higher speed, hits your nerve, and causes you excruciating pain.

Unintentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is a dentist who is going to fill your cavity. **Close other** must drill into your tooth just above a major nerve. **Close other** does not want to hit your nerve, nor to cause you excruciating pain. **Close other** only wants to drill out your cavity. **Close other** switches the drill to a higher speed, hits your nerve, and causes you excruciating pain.

Intentional Harm Condition – Close Other Perpetrator

Imagine your close other **close other** is a dentist who is going to fill your cavity. **Close other** must drill into your tooth just above a major nerve. **Close other** wants to hit your nerve in order to cause you excruciating pain. **Close other** switches the drill to a higher speed, hits your nerve, and causes you excruciating pain.

Scenario 5: Hair

Unintentional Harm Condition – Stranger Perpetrator

Imagine you are getting your haircut by a new hairdresser named Jordan. Jordan is almost finished with your haircut. There is only one more piece of your hair to trim, and it is right behind your ear. Jordan does not want to cut a piece of

your ear in the process. Jordan only wants to cut your hair and finish the job. Jordan trims your hair at a sharp angle and cuts off a piece of your ear.

Intentional Harm Condition – Stranger Perpetrator

Imagine you are getting your haircut by a new hairdresser named Jordan. Jordan is almost finished with your haircut. There is only one more piece of your hair to trim, and it is right behind your ear. Jordan wants to cut a piece of your ear in the process. Jordan trims your hair at a sharp angle and cuts off a piece of your ear.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you are getting your haircut by your close other **close other** who is a hairdresser. **Close other** is almost finished with your haircut. There is only one more piece of your hair to trim, and it is right behind your ear. **Close other** does not want to cut a piece of your ear in the process. **Close other** only wants to cut your hair and finish the job. **Close other** trims your hair at a sharp angle and cuts off a piece of your ear.

Intentional Harm Condition – Close Other Perpetrator

Imagine you are getting your haircut by your close other **close other** who is a hairdresser. **Close other** is almost finished with your haircut. There is only one more piece of your hair to trim, and it is right behind your ear. **Close other** wants to cut a piece of your ear in the process. **Close other** trims your hair at a sharp angle and cuts off a piece of your ear.

Scenario 6: Poison

Unintentional Harm Condition – Stranger Perpetrator

Imagine you just moved into a new apartment with a random roommate named Jordan. There is a rat in your apartment, and Jordan made some cookies with rat poison to kill the rat before leaving for the weekend. Jordan leaves the cookies on the counter. Jordan does not want you to eat the cookies and become very ill. Jordan thinks you will not eat the cookies, but you have no idea about the poison. Jordan hands you the cookies to hold while they clean off the counter, and you eat the cookie and become very ill.

Intentional Harm Condition – Stranger Perpetrator

Imagine you just moved into a new apartment with a random roommate named Jordan. There is a rat in your apartment, and Jordan made some cookies with rat poison to kill the rat before leaving for the weekend. Jordan leaves the cookies on the counter. Jordan wants you to eat the cookies and become very ill. Jordan hands you the cookies to hold while they clean off the counter, and you eat the cookie and become very ill.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you just moved into a new apartment with your close other **close other**. There is a rat in your apartment, and **close other** made some cookies with rat poison to kill the rat before leaving for the weekend. **Close other** leaves the cookies on the counter. **Close other** does not want you to eat the cookies and become very ill. **Close other** thinks you will not eat the cookies, but you have no idea about the poison. **Close other** hands you the cookies to hold while they clean off the counter, and you eat the cookie and become very ill.

Intentional Harm Condition – Close Other Perpetrator

Imagine you just moved into a new apartment with your close other **close other**. There is a rat in your apartment, and **close other** made some cookies with rat poison to kill the rat before leaving for the weekend. **Close other** leaves the cookies on the counter. **Close other** wants you to eat the cookies and become very ill. **Close other** hands you the cookies to hold while they clean off the counter, and you eat the cookie and become very ill.

Scenario 7: StandUnintentional Harm Condition – Stranger Perpetrator

Imagine you work at a carnival and own stand where people can punch a mechanical target to win a prize. A stranger named Jordan comes up to play as you are squatting beneath the target. Jordan does not want to hit you and break your nose. Jordan only wants to hit the target to win a prize. Jordan punches towards the target as you stand up in the way of the target, and Jordan hits you and breaks your nose.

Intentional Harm Condition – Stranger Perpetrator

Imagine you work at a carnival and own stand where people can punch a mechanical target to win a prize. A stranger named Jordan comes up to play as you are squatting beneath the target. Jordan wants to hit you and break your nose. Jordan punches towards the target as you stand up in the way of the target, and Jordan hits you and breaks your nose.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you work at a carnival and own stand where people can punch a mechanical target to win a prize. Your close other **close other** comes up to play as you are squatting beneath the target. **Close other** does not want to hit you and break your nose. **Close other** only wants to hit the target to win a prize. **Close other** punches towards the target as you stand up in the way of the target, and **close other** hits you and breaks your nose.

Intentional Harm Condition – Close Other Perpetrator

Imagine you work at a carnival and own stand where people can punch a mechanical target to win a prize. Your close other **close other** comes up to play as you are squatting beneath the target. **Close other** wants to hit you and break your nose. **Close other** punches towards the target as you stand up in the way of the target, and **close other** hits you and breaks your nose.

Scenario 8: Train

Unintentional Harm Condition – Stranger Perpetrator

Imagine you are in a crowded train station trying to catch the train home that is about to leave the station. A stranger named Jordan is sitting down and is about to put their feet up on the bench across from them to relax. Just then Jordan notices you rushing to catch your train. Jordan does not want you to trip and twist your ankle. Jordan only wants to put their feet up to relax. Jordan puts their feet up on the bench across from them, and you trip over their feet and twist your ankle.

Intentional Harm Condition – Stranger Perpetrator

Imagine you are in a crowded train station trying to catch the train home that is about to leave the station. A stranger named Jordan is sitting down and is about to put their feet up on the bench across from them to relax. Just then Jordan notices you rushing to catch your train. Jordan wants you to trip and twist your ankle. Jordan puts their feet up on the bench across from them, and you trip over their feet and twist your ankle.

Unintentional Harm Condition – Close Other Perpetrator

Imagine you are in a crowded train station trying to catch the train home that is about to leave the station. Your close other **close other** is sitting down and is about to put their feet up on the bench across from them to relax. Just then **close other** notices you rushing to catch your train. **Close other** does not want you to trip and twist your ankle. **Close other** only wants to put their feet up to relax. **Close other** puts their feet up on the bench across from them, and you trip over their feet and twist your ankle.

Intentional Harm Condition – Close Other Perpetrator

Imagine you are in a crowded train station trying to catch the train home that is about to leave the station. Your close other **close other** is sitting down and is about to put their feet up on the bench across from them to relax. Just then **close other** notices you rushing to catch your train. **Close other** wants you to trip and twist your ankle. **Close other** puts their feet up on the bench across from them, and you trip over their feet and twist your ankle.
