

UC Irvine

UC Irvine Electronic Theses and Dissertations

Title

Motives & Elements of Kindness: The Interplay of Personal Traits & Prosocial Behaviors

Permalink

<https://escholarship.org/uc/item/0qs446p6>

Author

Carpenter, Lina

Publication Date

2024

Copyright Information

This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at

<https://creativecommons.org/licenses/by-nc-nd/4.0/>

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA,
IRVINE

Motives & Elements of Kindness:
The Interplay of Personal Traits & Prosocial Behaviors

A DISSERTATION

submitted in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY
in Education

by

Lina Carpenter

Dissertation Committee:
Professor Gustavo Carlo, Chair
Distinguished Professor Jacquelynne Eccles
Professor Lindsey Richland

2024

TABLE OF CONTENTS

LIST OF FIGURES	iv
LIST OF TABLES	v
ACKNOWLEDGEMENTS	vi
VITA	vii
ABSTRACT OF THE DISSERTATION	viii
Chapter 1: INTRODUCTION.....	1
How Social Interactions Unfold.....	4
SIP as a Useful Framework to Understand Prosocial Behaviors	8
One Model, Three Studies	8
Self-Kindness in Parenthood: The Roles of Self-Efficacy and Positive Affect in Self-Compassion	11
Background.....	13
Research Question & Hypothesis	15
Study 1 Methods	15
Participants.....	15
Procedures.....	15
Instruments & measures.....	16
Data Analytic Plan	18
Study 1 Results	19
Study 1 Discussion.....	21
Not My Problem: Examining the Relations Amongst Perspective Taking, Ascription of Responsibility, and Empathic Concern in Prosocial Behavior	24
Background.....	25
Research Question & Hypothesis	30
Study 2 Methods	31
Participants.....	31
Procedure	31
Instruments & measures.....	31
Data Analytic Plan	33
Study 2 Results	34
Study 2 Discussion.....	38

Why Should I Regulate if You’re Being Rude: The Relations Amongst Attribution Bias, Emotion Regulation, and Empathic Concern in Prosocial Behavior.....	41
Background.....	42
Research Question & Hypotheses.....	45
Study 3 Methods	46
Participants.....	46
Procedure	46
Instruments & Measures	46
Data Analytic Plan.....	49
Study 3 Results	49
Study 3 Discussion.....	53
GENERAL CONCLUSIONS.....	55
References.....	60
APPENDIX I	69
APPENDIX II.....	70
APPENDIX III.....	71
APPENDIX IV.....	72
APPENDIX V.....	73
APPENDIX VI.....	74
APPENDIX VII.....	75
APPENDIX VIII.....	78
APPENDIX IX.....	79

LIST OF FIGURES

Revised SIP model by Lemerise & Aresnio (2000).....	5
Simplified version of the SIP with proposed models for the present studies	7
Simplified version of the SIP for Study 1	12
Standardized regression coefficients for self-efficacy, positive affect, & self-compassion	21
Simplified version of the SIP for Study 2	25
Model depicting the interplay of perspective taking, ascription of responsibility, and empathic concern in relation to prosocial behaviors	37
Simplified version of the SIP for Study 3	41
Model depicting the interplay of attribution bias, emotion regulation, and empathic concern in predicting prosocial behaviors	52

LIST OF TABLES

Descriptive statistics for Study 1	19
Pearson's correlations for positive affect, self-efficacy, & self-compassion (Study 1).....	20
Descriptive statistics for Study 2	35
Pearson's correlations for empathic traits & prosocial behaviors (Study 2)	36
Descriptive statistics for Study 3	50
Pearson's correlations for empathic traits & prosocial behaviors (Study 3)	51

ACKNOWLEDGEMENTS

I am profoundly grateful for the support and guidance I have received during my doctoral studies. I extend my deepest thanks to committee chair Dr. Gustavo Carlo, whose willingness to take me on as a student and his continuous, persistent support have been instrumental in my growth and success.

I am also indebted to Dr. Jacquelynne Eccles for sharing her extensive expertise and warm presence on my dissertation committee. She embodies the kind of scholar and educator I aspire to become.

I owe a thank you to committee member Dr. Lindsey Richland for welcoming me into the UCI School of Education as my first PhD advisor. Her early guidance helped set the foundation for my doctoral research and academic path.

Additionally, I would like to acknowledge my peers at the Cultural Resilience & Learning Center for their warm welcome and the supportive research community they provided. Without their encouragement and camaraderie, I would never have reached this place of personal, professional, and academic growth. I am overwhelmingly grateful for how my peers have supported my resilience and persistence throughout the completion of this dissertation – I love you all and hope I communicate how much you all matter to me.

I would also like to thank my parents, who nurtured my intellectual curiosity and growth from an early age. Their wisdom and quiet, generous support have been a keystone of my journey through graduate school.

VITA

Lina Carpenter

Education

- | | |
|------|--|
| 2022 | M.A. in Education (Human Development in Context),
University of California, Irvine |
| 2019 | M.A. in Educational Psychology (Early Childhood Education),
California State University, Northridge |
| 2011 | B.A. in Fine Art,
University of California, Santa Cruz |

Fellowships & Awards

- | | |
|---------|--|
| 2024 | Fellow, California State University Pre-Professor Preparation
(CSU PREPP) Program |
| 2022-23 | Pedagogical Scholar, Division of Teaching Excellence & Innovation,
University of California, Irvine |

Research Experience

- | | |
|---------|---|
| 2022-24 | Research Assistant, Cultural Resilience and Learning Center (CRLC),
University of California, Irvine |
| 2019-22 | Research Assistant, Science of Learning (SoL) Lab,
University of California, Irvine |

Teaching Experience

- | | |
|---------|---|
| 2023-24 | Teaching Assistant, School of Education,
University of California, Irvine |
| 2018-19 | Teaching Assistant, School of Education,
California State University, Northridge |

FIELD OF STUDY

Education: Human Development in Context

ABSTRACT OF THE DISSERTATION

Motives & Elements of Kindness:
The Interplay of Personal Traits & Prosocial Behaviors

by

Lina Carpenter

Doctor of Philosophy in Education

University of California, Irvine, 2024

Professor Gustavo Carlo, Chair

Prosocial behavior (engagement in voluntary helping) and self-compassion (kindness towards oneself) enhance well-being and resilience, supporting mental health and fostering community cooperation, especially important in times of rapid societal changes and increasing challenges. This dissertation examines the multifaceted relationships between social information processing, individual traits, and kindness across three interconnected studies. The overarching aim is to explore how factors such as self-efficacy, empathic concern, perspective-taking, and emotional regulation influence kindness, whether that kindness be directed outward (prosocial behavior) or inwards (self-compassion).

Study 1 explores the impact of self-efficacy and positive affect on self-compassion, demonstrating that higher self-efficacy significantly enhances self-compassion; this suggests that belief in one's own abilities can cultivate empathy towards oneself. Study 2 focuses on the role of perspective-taking, empathic concern, and the ascription of social responsibility in prosocial behaviors. Findings suggest that a strong internal ascription of social responsibility ("we are all responsible for one another") differentiates between altruistic and self-serving motivations for helping behaviors. Study 3 delves into the interactions between attribution bias, self-regulation,

and empathic concern, revealing that self-regulation and empathic concern are positively related to altruism and negatively related to self-serving helping.

The findings underscore the importance of individual emotional and cognitive processes in shaping prosocial actions and suggest practical applications for enhancing such behaviors through targeted educational and psychological interventions. By providing empirical support for these intricate relationships, this research contributes to theoretical advancements in understanding prosocial behavior and offers significant implications for practical applications in educational and therapeutic settings.

Chapter 1: INTRODUCTION

Current educational environments are faced with increasingly prevalent mental health crises and social disconnection, exacerbated by disruptions such as the global COVID-19 pandemic. These challenges necessitate urgent and effective interventions within educational frameworks to not only support the affected individuals but also to foster environments conducive to mental wellness and academic success. The cultivation of self-compassion and prosocial behavior holds transformative, holistic potential. Engagement in prosocial behavior, or voluntary helping behavior towards others, is not only socially desirable but is also associated with improved well-being (Baumsteiger, 2019); as is engagement in self-compassion (kindness towards oneself in times of failure), which also fosters resilience in face of stressors (Neff et al., 2018). These traits support individual mental health and foster collaborative communities, crucial in a time marked by rapid societal shifts and growing interpersonal challenges. Recognizing the potential of these behaviors requires a deeper investigation into their roots and influences; in particular, understanding the motivations driving prosocial behavior.

The motivation behind prosocial behavior will determine in what circumstances an individual helps another actor – public, performative helping requires an audience and is focused on benefit to oneself, while altruistic helping is selflessly motivated and performed even when engaging in the act may “cost” the helper. Work by Dwimahesi & Musthofa (2023) found that altruism is positively related to self-compassion (showing kindness towards oneself); however, results from Pommier, Neff, & Tóth-Király (2013) found that these relations varied across participant groups, suggesting the relations between self-compassion and altruism may be influenced by individual and contextual factors. Production of kind behaviors – towards others or oneself – is an inherently socioemotional process involving a person’s perception, interpretation,

and behavior adaptation. For example, whether an adolescent regards another's intent as hostile or benign (attribution bias) influences behavior – adolescents who more often attribute hostile intent during social interactions are more likely to respond aggressively (Nelson & Crick, 1999) and less likely to act prosocially (Carlo et al., 2010b). Relatedly, an individual's emotion regulation determines to what degree they can contain or manage their negative or positive emotional reactivity (Gross, 2022); given that higher levels of emotion regulation is positively related with prosocial behavior, emotion regulation may enable an individual to generate appropriate (and/or prosocial) responses (Benita, Levkovitz, & Roth, 2017). Additionally, whether or not an individual feels it is their social responsibility to behave prosocially (e.g., helping a stranger who has dropped their groceries) might moderate how perspective-taking relates to empathic concern, thus impacting that individual's prosocial behaviors. Although previous work has indicated that empathy positively relates to prosociality (Eisenberg, Zhou, & Koller, 2001), certain empathic responses can result in personal distress and self-focused attempts to alleviate one's own aversive state (Eisenberg, Fabes, & Spinrad, 2006) suggesting that different empathic traits (e.g. attribution bias and ascription of responsibility) may relate to different types of prosocial behavior.

This raises the question: What personal traits might predict whether an individual will engage in altruism or self-compassion? Underlying motivations for prosocial behavior towards others can be rooted in emotional responses, compliance, desire for approval, or altruistic tendencies (Carlo et al., 2022). However, it should be noted that prosocial behavior rooted in altruism is not inherently “better” than public (self-serving) prosocial behavior – in fact, pathological altruism can be harmful and unsustainable (Kaufman & Jauk, 2020). This work focuses on approval-related and altruistic tendencies as (1) they are inversely related, and (2)

altruism is most likely to happen in the most circumstances. Compassion towards others may be a prerequisite of altruism (Arman, 2023), enabling and motivating altruistic behaviors. Work by Neff et al. (2021) has shown that fostering self-compassion can increase compassion for others, suggesting that more self-compassion is potentially an indicator of more compassion for others. However, research in care-related professions such as nursing have often faced issues of “compassion burnout,” where caregivers experience emotional and physical exhaustion in response to prolonged exposure to suffering of others (Yeşil & Polat, 2023). Interestingly, self-compassion is inversely related to compassion burnout (Nazari et al., 2024; Pereira et al., 2022), suggesting self-compassion may protect against burnout and create a sustainable foundation for compassion. The positive health and social correlates of self-compassion (MacBeth & Gumley, 2012) and its relation to altruism (Arman, 2023) suggests that examining both could illuminate underlying mechanisms of kind behavior.

Social interaction is a complex, multivariable process not only between but also *within* a person. An individual’s perception of another actor’s intent can influence the way an actor’s behavior is interpreted, which can then influence how an individual responds to the situation. This is dependent, however, on what social cues individuals attend to, their interpretation of those cues, and how they assess potential responses (Cooke, 2017). The interrelated nature of these associations suggests a need for more complex modeling to examine the interplay of various traits and prosociality. Given the significant role of empathy in positive social adjustment and well-being (Eisenberg, Fabes, & Spinrad, 2006), empathic traits such as perspective-taking, sympathy, positive affect, or self-efficacy might influence how these socioemotional and cognitive subprocesses lead to positive action towards others (prosocial behaviors) or themselves (self-compassion).

THEORETICAL FRAMEWORK

How Social Interactions Unfold

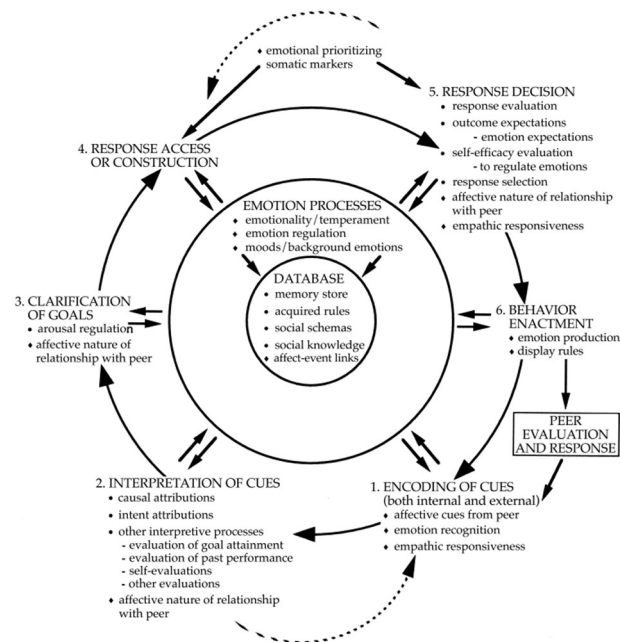
The Social Information Processing (SIP) model provides a comprehensive framework that can be used to understand the process through which an individual comprehends and responds to social situations (Crick & Dodge, 1994; Nelson & Crick, 1999). As interest in children's social competence increased in the 1980s and 90s, the original SIP model emerged from research on aggressive children to examine how maladaptive social processes lead to aggressive behavior (Dodge & Crick, 1990). Although Crick & Dodge (1994) explicitly acknowledged that emotion is a key component of social information processing, the original SIP was a cognitive model that did not sufficiently articulate the role of emotion. Parallel to this, other scholars (e.g., Eisenberg & Fabes, 1992; Eisenberg et al., 1996) sought to investigate the role of emotionality and regulation in social competence; however, there was minimal integration between examinations of emotional processes and social information processing.

To address this gap, a reformulation of the SIP model by Lemerise & Arsenio (2000) emphasized the influence of emotions on social information processing, specifying what emotional processes might correspond to particular sociocognitive steps. In this process, individuals first encode internal and external cues such as recognition of the other actor's emotional state. An individual then interprets these cues to comprehend the situation, identifying potential causes, motivations, and knowledge applicable to the situation. From this interpretation, an individual clarifies their goals for the interaction, regulating their arousal to determine a desired outcome. An individual's social interpretation and goals then influence what potential responses they retrieve from long-term memory or construct using the information at hand. Individuals then select from these potential responses to decide upon their course of action based on evaluation of their response, possible outcomes, and personal self-efficacy. The selected

response is then enacted, to which another party (or parties) react; the individual then encodes this reaction, reinitiating the process. It should be noted that while the reformulated SIP model proposes a path from a stimulus to response through a sequence of steps, it does not suggest that steps are conscious actions occurring in a linear, rigid sequence. Crick & Dodge (1994) acknowledge that processing occurs in simultaneous parallel paths, pointing out, “it is probably more accurate to posit that . . . individuals are perpetually engaging of each of the steps of processing” (p. 77). The SIP model seeks to make sense of the relation between a particular stimulus and behavioral response rather than explain cognition as a whole; in this work, the SIP provides a way to examine the ways in which personal traits may play a role in social information processing. Based upon the emotional processes proposed within each step of the SIP model, this current work proposes to examine how particular empathic traits may correspond to these steps and potentially relate to prosocial behaviors.

Figure 1

Revised SIP model by Lemerise & Aresnio (2000)



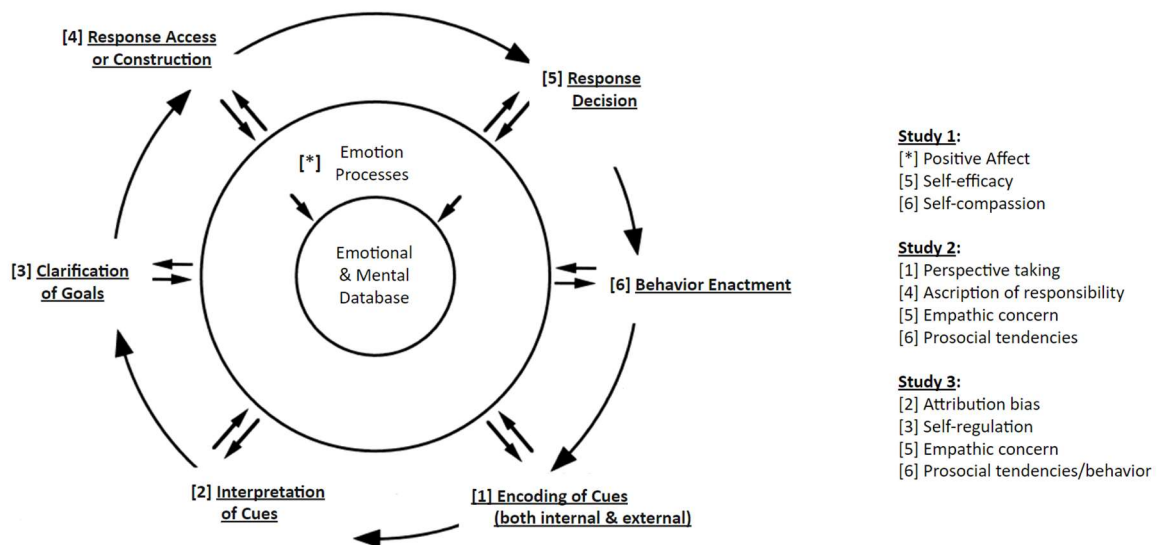
The SIP model approximates an order of steps in social interaction and, based on the emotional processes Lerner & Arsenio (2000) proposed occur within these steps, the present work attempts to explore the interplay of empathic traits and prosociality in adolescence to better explain the production of altruistic prosocial behaviors (that is, a specific *type* of prosocial behavior). Though social interactions are driven by context (and thus benefit from direct observational data collection), examination of traits such as empathy is meaningful as personal traits correlate with socioemotional processes through individual sensitivities to various stimuli/cues and their responses to these interpretations (Friedman et al., 1980). For example, “Big Five” traits like extroversion have been associated with greater sensitivity to positive emotional stimuli in combination with improved recognition of positive facial expressions; in contrast, neuroticism is linked to heightened reactivity to negative emotional cues (Stankov, 2018; Terrien et al., 2015). Correspondingly, I treat trait as a base likelihood for level or frequency of engagement in an emotional state or process.

This work delineates between different motives underlying prosocial behavior, particularly those that are selfless (altruistic prosocial tendencies) and ego-driven (public prosocial tendencies); in doing so, the proposed studies may illuminate reasons for previously inconsistent relations (Sassenrath et al., 2022). Using path analysis, I will test parts of the SIP using traits to examine how emotional processes relate to the types of helping an individual engages in. Doing so could not only identify mechanisms differentiating altruistic versus self-serving helping, but also provide potential targets for interventions to increase prosocial behaviors in youth; a more nuanced understanding of cognitive subprocesses during social interaction might broaden avenues for intervention and reveal mechanisms of effective – or ineffective – interventions. For example, encoding of cues during social interaction (Step 1 of

SIP) is hypothesized to incorporate (1) affective cues from a social peer, (2) emotion recognition, and (3) empathic responsiveness. Scholars in this area of research have proposed that these encoding processes are tied to perspective taking. Following Step 1, Step 2 of the SIP model (interpretation of cues) incorporates causal attributions and intent attributions; correspondingly, I propose that an individual’s attribution biases could reflect these processes. During Step 3 (clarification of goals), individuals must regulate their arousal to respond to the situation, which may draw on an individual’s emotion regulation. Individuals then access or construct their response (Step 4) before deciding upon a response decision (Step 5), during which individuals engage in response evaluation, outcome evaluation, and empathic responsiveness. Finally, during Step 6 (behavior enactment), the process culminates in action or behavior (rooted in emotion production and display rules).

Figure 2

Simplified version of the SIP with proposed models for the present studies



SIP as a Useful Framework to Understand Prosocial Behaviors

Use of the SIP (Crick & Dodge, 1994) in research has centered around aggression and maladaptive behaviors (Bowen et al., 2017; Zajenkowska et al., 2021); in contrast, I am taking a strengths-based approach by using the SIP for prosocial (positive) behavior. By testing parts of the SIP, I aim to expand upon Lemerise & Arsenio's (2000) SIP to articulate the role of emotion processes in social information processing. This work also seeks to explore the complexity of motives behind prosocial behaviors as many moral development models use an overall score to examine prosocial behavior. Instead of viewing behavior enactment as a single score of prosociality, this work differentiates between the various motives behind prosocial behavior, specifically those that are altruistic (selfless prosocial tendencies) and those driven by ego (public prosocial tendencies). Correspondingly, the proposed studies might shed light on why previous relationships have been inconsistent (Sassenrath et al., 2022) and clarify the mechanisms underlying performative or genuine kindness, aiding in the development of interventions that more accurately target altruism, rather than unintentionally promoting self-serving (or performative) helping behaviors.

THE PRESENT PROJECT

One Model, Three Studies

Through self-reported data on emotion-related traits and prosocial behaviors, I aim to test parts of the SIP model based on its predictions for the steps involved in emotional processing (Lemerise & Arsenio, 2000; see Figure 2). The complexity of emotion processing as theorized in the full SIP makes examination of the entire SIP in one study unfeasible – therefore, multiple studies will be carried out to test specific portions of the SIP model. Although the reformulated

SIP model proposes a path from a stimulus to response through a sequence of steps, these steps are not proposed as conscious actions occurring in a linear, rigid sequence. Correspondingly, traits and behaviors in this work will be interrelated with rather than predictive of one another.

To clarify relations between self-efficacy and self-compassion, Study 1 (Self-Kindness in Parenthood: The Roles of Self-Efficacy and Positive Affect in Self-Compassion) poses the question: “What is the interplay amongst self-compassion, self-efficacy, and positive affect?” Study 1 proposes that self-efficacy may influence the relation between positive affect and self-compassion; that is, higher levels of positive affect and self-efficacy could be key components of self-compassion. Correspondingly, Study 1 conceptualizes self-compassion as a produced behavior (SIP step six) influenced by positive affect (an emotional process embedded in within the SIP cycle) and self-efficacy (an emotional process positioned at step five of the SIP).

To clarify inconsistent relations between empathy and prosocial behavior (Sassenrath et al., 2022), Study 2 and Study 3 propose that the interplay of personal traits (which can influence emotional processes) may more strongly explain production of prosocial behaviors than perspective taking and/or empathic concern alone. Study 2 (“Not My Problem: Examining the Relations Amongst Perspective Taking, Ascription of Responsibility, & Empathic Concern in Prosocial Behavior”) poses the question: “Given that perspective taking relates to empathic concern and prosociality, how does inclusion of ascription of responsibility relate to these personality traits and altruistic tendencies?” To investigate the relation between perspective taking and prosocial behavior, Study 2 tests ascription of social responsibility as a moderator of perspective taking on empathic concern.

Study 3 (“Why Should I Regulate if You’re Being Rude: The Relations Amongst Attribution Bias, Emotion Regulation, and Empathic Concern in Prosocial Behavior”) is

similarly structured to Study 2 and poses the question: “Given that attribution bias relates to empathic concern and prosociality, how does inclusion of emotion regulation relate to these personality traits and altruistic behaviors?” To examine the relation between attribution bias and prosocial behavior, Study 3 tests emotion regulation as a moderator of attribution bias on empathic concern.

In addition to clarifying inconsistent relations, Study 2 and Study 3 aim to relate to different *types* of prosocial behaviors rather than prosociality as a general construct, allowing examination of genuinely altruistic behavior and/or performatively kind behavior. In conjunction, the two studies would further validate use of the SIP and better explain the production of particular types of prosocial behaviors (specifically, altruistic and public).

Altogether, the three studies aim to test different portions of the SIP as a theoretical model of *helping* behavior rather than Dodge & Crick’s (1990) original emphasis on aggressive behavior. This dissertation aims to focus on how social processes may contribute to prosocial behavior towards oneself and others; in doing so, these three studies may help target antecedents of prosociality for strengths-based interventions.

Chapter 2: STUDY 1

Self-Kindness in Parenthood: The Roles of Self-Efficacy and Positive Affect in Self-Compassion

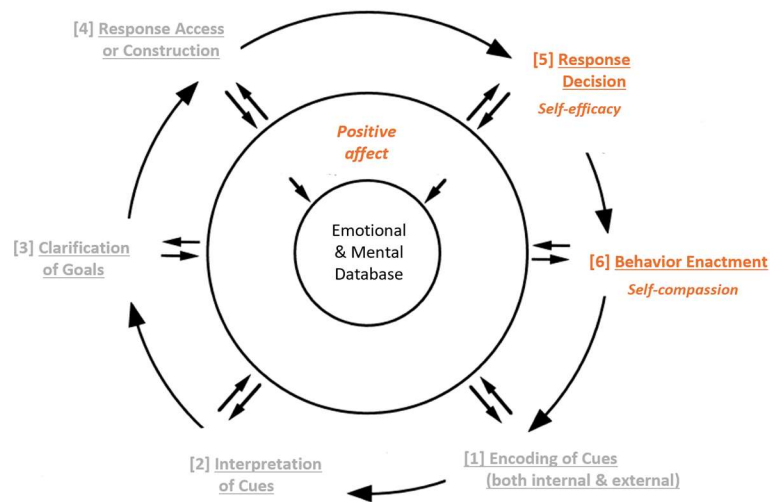
In the words of Neff et al. (2003), “compassion involves being touched by the suffering of others, opening one’s awareness to others’ pain and not avoiding or disconnecting from it, so that feelings of kindness towards others and the desire to alleviate their suffering emerge” (pp 86-87). However, directing these feelings inward is more difficult, particularly when society often emphasizes self-criticism and self-flagellation as ways to prevent failure and achieve success. Self-compassion as a construct “refers to how we relate to ourselves in instances of perceived failure, inadequacy, or personal suffering” (Neff & Tóth-Király, 2022, p. 194). Self-compassion is composed of three parts: (1) Self-kindness (being gentle and understanding with oneself); (2) recognition of common humanity (seeing one’s struggles as within the larger human experience rather than as isolated from it); and (3) mindfulness (holding experiences in balanced awareness) (Neff, 2011). Because of the interconnected and non-judgmental nature of self-compassion, it may counter narcissistic and self-centered tendencies (Neff, 2010), and it has also been associated with an increased likelihood to compromise and lesser likelihood to self-subordinate one’s needs, contributing to higher levels of relational well-being (Yarnell & Neff, 2011). Self-compassion may be particularly meaningful for supporting caregiver and parent experiences as it positively relates to resilience for life challenges such as raising a special needs child (Neff & Faso, 2015), divorce (Sbarra et al., 2012), and coping with prejudice (Vigna et al., 2018).

Higher self-compassion has also been shown to be related to social interconnection (Latheren et al., 2021) and romantic partnerships (Neff & Beretvas, 2013; Zhang et al., 2020),

which could further contribute to positive family dynamics. In addition, people who practice self-compassion are often found to possess a variety of psychological strengths, including positive affect (increased happiness, a more optimistic outlook, elevated positive emotions) and a propensity towards goals that enhance learning (Neff, Kirkpatrick, & Rude, 2007; Akin, 2008). Work with adolescents found that self-compassion was positively associated with prosocial behavior (Yang et al., 2019) and self-efficacy (Liao et al., 2021) – interestingly, associations between self-compassion and self-efficacy were *larger* in non-students than students, suggesting there is merit in examining these variables in non-student populations.

Figure 3

Simplified version of the SIP for Study 1



Note. SIP steps in orange (and traits used to examine these steps) are explored in Study 1. Positive affect is positioned as an aspect of individual temperament through which emotional processes unfold.

Though there are significant relations between self-compassion and self-efficacy, there is a lack of clarity in directionality of relations and potential mediating factors. Correspondingly,

based on the process order outlined in the Social Information Processing (SIP) model alongside social cognitive theoretical views of prosocial behavior, I propose testing Steps 5 and 6 of the SIP (Figure 3) in which an individual's positive affect (as an interrelated trait) is related to self-efficacy and self-compassion.

Background

Belief in one's agency. Self-efficacy is a person's belief in their capacity to successfully perform a particular task (Bandura, 1994). High self-efficacy is associated with less defensive reactions in response to negative feedback (MacBeth & Gumley, 2012). Previous research also indicates that parental self-efficacy (beliefs about one's abilities to be a competent and successful parent) significantly and positively relates with supportive parenting behaviors, which are in turn associated with positive affect (Murdock, 2013). Though self-efficacy is optimally examined through domain-specific measures (such as parent-specific or student-specific surveys), this current study used a general measure of self-efficacy because this work centers on individual psychological processes (rather than processes specific to parent identity or behavior).

A positive attitude. Positive affect is an individual's general disposition in relation to experience of positive emotions across situations and tends to be more enduring than emotional states (Watson & Clark, 1992). Individuals who experience higher levels of positive affect are often perceived as alert and pleasurable to engage, while those exhibiting lower levels of positive affect or negative affect are frequently marked by sadness and lethargy (Sagone & Indiana, 2017). Work by Joshi & Khan (2022) found that a positive psychology intervention related to higher efficacy beliefs, suggesting positive affect may play a role in supporting self-efficacy. In addition, self-compassion has been consistently linked to decreased negative affect (Arimitsu, 2015) and more positive affect (Neff et al., 2007).

Treat oneself as one would treat a friend. Self-compassion is based in Buddhist philosophy and rooted in 3 components: (1) Self-kindness (we are as caring toward ourselves as we are towards others); (2) recognition of common humanity (we are not alone in our struggles and can connect with others to cope with the shared human experience); and (3) mindfulness (being open to the reality of the present moment; acknowledging our suffering without exaggerating it or invalidating it) (Neff, 2022). Common misconceptions about and biases against self-compassion are often rooted in a belief that self-compassion will lead to self-indulgence. However, higher self-compassion does not correspond to more self-pity, weakness, or narcissism – instead, higher self-compassion corresponds to less rumination about misfortune (Raes, 2010); resilience in the face of crises (Ewert et al., 2021); more personal accountability (Breines & Chen, 2012); more emotional stability regardless of praise (Leary et al., 2007); and sustainable caring for others (Neff, 2023).

The constructs of self-compassion, positive affect, and self-efficacy interact in complex ways. It appears that self-compassion may enhance self-efficacy by transforming negative emotions into positive ones, thereby bolstering an individual's belief in their capabilities (Liao et al., 2021). Conversely, the presence of self-efficacy could contribute to nurturing self-compassion by fostering a resilient and positive belief about oneself. This reciprocal influence suggests a dynamic interplay where each construct potentially amplifies the other. Correspondingly, Study 1 proposes using the SIP to examine how positive affect (positioned in the center of the SIP as an interrelated trait) may relate to self-efficacy and self-compassionate behavior.

Research Question & Hypothesis

Study 1 seeks to answer the question: What is the interplay amongst self-compassion, self-efficacy, and positive affect? It is possible that believing in one's capabilities (self-efficacy) and experiencing positive emotions (positive affect) may foster a more compassionate and forgiving attitude towards oneself. Engaging in self-compassion often incorporates emotional regulation strategies and the perceived agency to cope with life's challenges (Neff, 2022). This aligns with the Social Information Processing (SIP) model, which posits that individuals' responses to social cues are influenced by their emotional and cognitive processes (Arsenio & Lemerise, 2000). Correspondingly, I hypothesize that individuals possessing high levels of self-efficacy and experiencing high positive affect are likely to exhibit higher levels of self-compassion.

Study 1 Methods

Participants

Data for this work was drawn from surveys as part of a larger study which took place at a university in the western United States. Participants were 49 parents (38 female) with an average age of 37.13 years (Table 1). The sample was 34.7% White (n=17), 2% Black (n=1), 34.7% Asian (n=17), 24.5% Latine (n=12), and 4.1% Multiracial (n=2).

Procedures

Participants were recruited as part of a larger study on parent-child dyads. Using an iPad, parents were administered NIH Toolbox batteries for psychological well-being, followed by a Qualtrics survey including measures for self-compassion, prosocial tendencies, stress, and demographic information.

Instruments & measures

Self-efficacy. The NIH Toolbox Self-Efficacy Survey (see Appendix I) is designed to assess a person's confidence in their ability to navigate and control situations in their life. The NIH Self-Efficacy Survey for adults employs Computerized Adaptive Testing (CAT) to dynamically adjust the difficulty of questions based on answers to previous questions. Participants respond to items on a 5-point scale ("never" to "very often"), with the survey using Item Response Theory (IRT) for scoring. Responses are converted into an Uncorrected Standard Score (T-Score), and Age- and Gender-Corrected T-Scores are provided to account for developmental and demographic differences. Higher T-Scores ($T \geq 60$) denote greater self-efficacy, indicating a strong belief in one's ability to manage life's challenges; lower scores ($T \leq 40$) highlight areas where individuals may lack confidence. The NIH Toolbox Self-efficacy Survey has demonstrated excellent internal consistency, as indicated by Cronbach's alpha values of .95 for ages 18 and older (Slotkin et al., 2012). Additionally, the survey has shown good test-retest reliability, with intraclass correlation coefficients (ICC) of .69 for adults over a median interval of 16 days (Kupst et al., 2015). These findings affirm the reliability of the Self-Efficacy Survey as a robust instrument for assessing general self-efficacy.

Positive affect. The NIH Toolbox Positive Affect Survey (see Appendix II) measures the range of pleasurable emotions (such as happiness, joy, and contentment) using Computerized Adaptive Testing (CAT) for ages 13-85. This measure captures both high-energy (activated) and calm (unactivated) positive feelings on a 5-point scale from "not at all" to "very much." Scoring is based on Item Response Theory (IRT), resulting in an Uncorrected Standard Score (T-Score), with Age- and Gender-Corrected T-Scores provided. Higher T-Scores ($T \geq 60$) denote greater positive affect, indicating robust pleasurable engagement with the environment; lower scores (T

≤ 40) suggest diminished positive affect. The NIH Toolbox Positive Affect Survey has demonstrated excellent internal consistency, as indicated by Cronbach's alpha values of .95 for ages 18 and older (Salsman et al., 2013). Additionally, the survey has shown good test-retest reliability, with intraclass correlation coefficients (ICC) of .69 for adults over two weeks (Slotkin et al., 2012). These findings affirm the reliability of the Positive Affect Survey as a robust instrument for assessing positive affect.

Self-compassion. The Self-Compassion Scale (SCS), developed by Neff et al. (2021), is a 12-item measure designed to assess the emotional attitude of individuals towards themselves during times of difficulty (see Appendix III). Utilizing a 4-point Likert scale ranging from "Almost Never" (1) to "Almost Always" (4), the SCS evaluates key components of self-compassion including self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification. Items prompt respondents to consider how they react to feelings of inadequacy, manage painful situations, and maintain emotional balance during stressful times. Higher levels of self-compassion (a score of 3.51 or above on the SCS) reflect an individual's ability to treat themselves with kindness, recognize their experiences as part of the larger human experience, and hold a balanced perspective towards their own emotions and failures. Conversely, low levels (a score of 2.49 or below) suggest a critical stance towards oneself, a sense of isolation, and a propensity to over-identify with negative emotions (Raes et al., 2011). The Self-Compassion Scale (SCS) has demonstrated robust reliability, evidenced by excellent internal consistency with Cronbach's alpha values ranging from .92 to .94 in adolescent and adult samples; additionally, the scale shows strong test-retest reliability, maintaining a correlation of .93 over a three-week period in a student sample (Neff & Tóth-Király, 2022). In Study 1, the SCS had a Cronbach's Alpha value of $\alpha = .66$, which is below the typically accepted

threshold for reliability ($\alpha = .7$, Nunnally & Bernstein, 1994). However, the smaller sample size may lead the alpha coefficient to not fully reflect the reliability of the scale, and the exploratory nature of this study accommodates a less-than-optimal alpha (Cho & Kim, 2015). In sum, previously established metrics and contextual factors of Study 1 confirm the SCS as a dependable tool for assessing self-compassion.

Data Analytic Plan

The analysis for Study 1 was conducted using IBM SPSS Statistics (Version 28), focusing on the hypothesized influences of self-efficacy and positive affect on compassion. Prior to analysis, cases with incomplete data on the key variables—self-efficacy, positive affect, and self-compassion—were excluded. The following multiple regression model was employed to examine self-compassion as a dependent variable, with self-efficacy and positive affect as independent variables. The regression analysis aimed to quantify the influence of self-efficacy and positive affect on self-compassion. The analysis included checks for multicollinearity and an evaluation of the model fit through the R^2 statistic, which measures the proportion of variance in self-compassion explained by the independent variables. The overall model significance was assessed using the F-statistic. Regression coefficients, significance levels (p-values), and confidence intervals were reported to interpret the influence of each predictor. Standardized coefficients were examined to compare the effects of self-efficacy and positive affect on self-compassion. This approach allowed for a clear understanding of how personal efficacy beliefs and emotional states contribute to compassionate self-relations, aligning with the broader objectives of the dissertation to elucidate factors influencing psychological well-being.

Study 1 Results

An individual's level of self-efficacy (Step 5 of the SIP, "response decision") in conjunction with their positive affect (drawn from the center "mental & emotional database") might relate to the enactment of self-compassion (Step 6). Correspondingly, I tested these steps of the SIP model to examine the relations amongst positive affect, self-efficacy, and self-compassion.

Table 1

Descriptive statistics for Study 1

	N	Minimum	Maximum	Mean	Std. Deviation
Participant characteristics					
Age	48	26	54	37.13	6.09
Gender	49	1	2	1.22	.42
Personality traits					
Positive affect	48	33	77	49.54	7.04
Self-efficacy	48	28	66	49.81	8.59
Self-compassion					
Self-compassion	49	1.83	4.42	3.44	.59

Note. –Positive affect & self-efficacy are age-corrected scores as per scoring instructions from the National Institute of Health (NIH) Toolbox.

Correlations. Correlations (Table 2) were calculated using IBM SPSS Statistics (Version 28). The correlation table showed that positive affect was positively (but not significantly) correlated with self-efficacy and self-compassion, which is consistent with previous self-compassion literature (Neff, 2007). Notably, self-compassion was positively and significantly related to self-efficacy, aligning with previous research (Liao et al., 2021) and my hypothesis.

Table 2*Pearson's correlations for positive affect, self-efficacy, & self-compassion (Study 1)*

	Positive affect	Self-efficacy	Self-compassion
	<i>Pearson's r</i>	<i>Pearson's r</i>	<i>Pearson's r</i>
Empathic traits			
Positive affect	-		
Self-efficacy	.26	-	
Self-compassion			
Self-compassion	.26	.65***	-

Note. N = 48. ***p ≤ .001.

Regression. Multiple regression (Figure 4) was used to test the hypothesized relations of self-efficacy, positive affect, and self-compassion in IBM SPSS Statistics (Version 28). The results of the regression indicated that positive affect and self-efficacy predicted 47.1% of the variance: $R^2 = .471$, $F(4, 42) = 9.36$, $p \leq .001$. As anticipated, self-efficacy positively and significantly related to self-compassion, with a one-unit increase in self-efficacy associated with a .044 increase in self-compassion ($\beta = .62$, $t(42) = 5.24$, $p < .001$, 95% CI [.027, .061]. However, although positive affect was positively associated with self-compassion, the relation was not statistically significant ($\beta = .16$, $t(42) = 1.35$, $p \leq .19$). Parent age and gender did not significantly relate self-compassion, with t values of .29 ($p \leq .77$) and .81 ($p \leq .42$), respectively.

Figure 4*Standardized regression coefficients for self-efficacy, positive affect, & self-compassion*

	Estimate	SE	95% CI		β	t	p
			LL	UL			
Intercept	.25	.71	-1.17	1.67		.35	.73
Efficacy Score	.04	.01	.03	.06	.62	5.24	.001
Affect Score	.01	.01	-.01	.04	.16	1.35	.19
Age	.00	.01	-.02	.03	.03	.29	.77
Gender	.13	.17	-.20	.47	.09	.81	.42

Notes. N = 48. CI = confidence interval; LL = lower limit; UL = upper limit. $R^2 = .47$

Results. The multiple regression analysis revealed that self-efficacy, alongside positive affect, accounted for a considerable portion of variance in self-compassion (47.1%), supporting the theorization of self-efficacy as a potent predictor of self-compassion. As hypothesized, there was a significant relation between self-efficacy and self-compassion (a unit increase in self-efficacy was associated with a .044 increase in self-compassion). Positive affect was positively (but not significantly) correlated with self-compassion and self-efficacy, but regression analyses did not find the expected relation with self-compassion. The highly significant F-statistic, $F(4, 42) = 9.36, p \leq .001$, further confirms that the model significantly fits the data better than a model with no predictors.

Study 1 Discussion

Previous research on self-compassion has highlighted the importance of self-efficacy in fostering positive self-regard and adaptive emotional responses (Neff, 2003), but findings

regarding the role of positive affect in self-compassion have been more variable.

Correspondingly, I tested part of the SIP model (drawing from the center “database,” Step 5, and Step 6) and hypothesized that self-efficacy and positive affect would be significant predictors of self-compassion. In alignment with my hypothesis, self-efficacy was significantly positively related to self-compassion. By affirming individuals' beliefs in their abilities to persist, self-efficacy may help foster a nurturing and forgiving self-relationship, which is a core component of self-compassion. The observed positive coefficient for self-efficacy in predicting self-compassion underlines its potential as a lever for psychological interventions aimed at cultivating a compassionate self-relationship. While positive affect showed a positive association with self-compassion, it did not achieve statistical significance, which suggests that its role may be less direct or possibly mediated by other factors requiring further exploration. Furthermore, the lack of significant findings regarding parent age and gender in relation to self-compassion adds an intriguing aspect to the overall understanding of these dynamics.

Limitations. While this study provides an initial exploration into relations amongst affect, efficacy, and self-compassion, several limitations should be noted. First, it is essential to consider the extent to which the constructs measured—such as self-efficacy, empathic concern, and attribution bias—are indeed stable, domain-general characteristics that reliably predict real-world behavior. The measurement of global self-efficacy, for instance, may not consistently reflect situation-specific efficacy, which could lead to less reliable or meaningful interpretations of its impact on prosocial behavior (Zulkosky, 2009). Second, all data was collected through self-report measures, contributing to method invariance; the small sample also limits the robustness and external validity of the findings, particularly in establishing strong correlations, effect sizes, and applicability to general populations. Third, it is possible that self-compassion is

not a product of emotional processes but is instead a trait positioned elsewhere in the SIP; deconstruction of self-compassion into its component parts may provide more insight into its relation to self-efficacy. Despite these constraints, the study offers directional cues for future research within the Social Information Processing (SIP) model and self-compassion field. Further studies with larger and more diverse populations are warranted to confirm and expand upon these preliminary findings.

Conclusions. The findings of this study substantiate the theoretical framework positing that self-efficacy is a significant predictor of self-compassion. Findings from Study 1 revealed positive, significant relations between self-efficacy and self-compassion (as hypothesized) but no significant relation between positive affect and self-compassion *or* self-efficacy (contrary to hypotheses). These results underscore the complex interdependencies between emotional states and personal competencies, highlighting how they collectively foster an individual's ability to nurture self-compassion. This exploration not only enriches our understanding of the Social Information Processing (SIP) model but also enhances practical approaches in psychological resilience and well-being interventions. Building on these insights, Study 2 seeks to extend the examination of these constructs into broader contexts and diverse populations, aiming to further validate and expand use of the SIP to investigate positive behaviors.

Chapter 3: STUDY 2

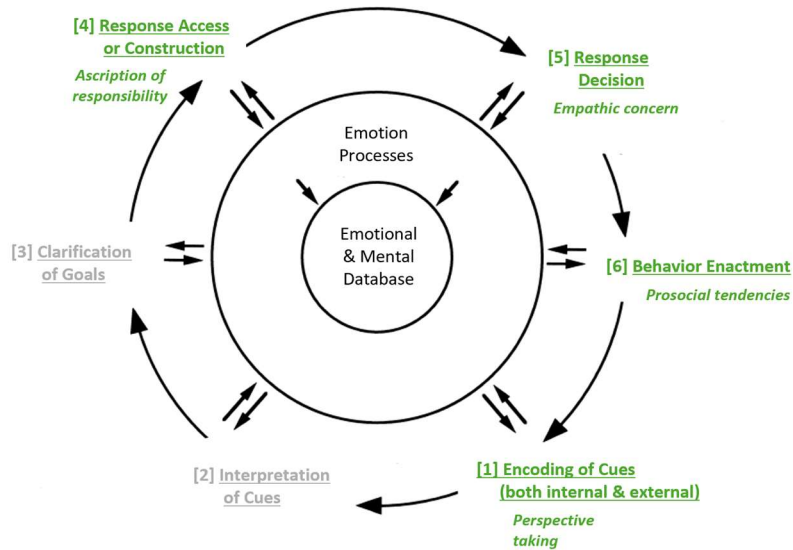
Not My Problem: Examining the Relations Amongst Perspective Taking, Ascription of Responsibility, and Empathic Concern in Prosocial Behavior

While perspective-taking and empathic concern have been connected to prosocial behavior, relations have been inconsistent; some studies have found a positive relation between perspective taking and prosocial behavior, others have found no significant relation or have found that the relation is indirect and moderated by other factors (Sassenrath et al., 2022). The inconsistency in identified relations may suggest that while perspective taking is tied to prosociality, there may be unexamined factors (such as ascription of responsibility, attribution bias, and/or emotion regulation) within social processing that moderate the relation between perspective taking and prosocial behaviors. It is possible that perspective taking affects the probability an individual will take in more and/or different social cues at initial stages of a social interaction; extending from this, it also seems possible an individual's tendency to engage in concern for others (empathic concern) would relate to how their perspective taking influences their prosocial behaviors.

To clarify relations amongst perspective taking, empathic concern, and prosocial behaviors, Study 2 is based around SIP Steps 1, 3, 5, and 6, testing ascription of responsibility as a moderator of perspective taking on empathic concern; that is, I propose a model in which an individual's level of perspective taking relates to both ascription of responsibility and empathic concern during a social interaction, with ascription of responsibility having a moderating relation between perspective-taking and empathic concern.

Figure 5

Simplified version of the SIP for Study 2



Background

Empathy: Taking Another's Perspective and Concern for Others. Eisenberg, Spinrad, and Morris (2014) define empathy as “an affective response that stems from the apprehension or comprehension of another’s emotional state or condition and is similar to what the other person is feeling or would be expected to feel in the given situation” (p. 184). Hoffman (2000) theorizes that the sociocognitive development of self and other interacts with empathic affect to produce a developmental scheme of empathy: (1) reactive crying (newborns), (2) egocentric empathic distress (around one year of age), (3) quasi-egocentric empathic distress (around age two); and (4) veridical empathic distress (between ages two and three). Infants are unable to differentiate between the self and other emotionally, and as a result experience self-distress when exposed to another’s distress. As young children develop a growing awareness of others’ needs, language development enables children to comprehend and express a broader range of emotions. Children

show empathic concern for others, but they provide help based on what would comfort themselves (e.g. handing a favorite stuffed animal to a sibling in distress). Greater cognitive maturity emerges in late childhood, enabling children to empathize with another's general condition or circumstances, as well as grasping the plight of a group or class of people. "People's ability to empathize fully with another is linked to their understanding of what lies behind the others' feelings" (Hoffman, 200, p. 80) and increases across childhood and adolescence (Eisenberg et al., 2006), supporting the argument that the ability to understand another's perspective plays a substantial role in children's increasing ability to empathize with others (Eisenberg et al., 2014; Lagattuta & Weller, 2014).

Although empathy is often a precursor to a sympathetic response (that is, a feeling of concern or sorrow for another), it can also drive personal distress (vicariously induced empathic overarousal) which negatively influences altruistic behavior as individuals prioritize "escaping" the distressing overarousal over selflessly helping another (Eisenberg et al., 2014). Personal distress seems to be unrelated – or negatively related – to prosocial behaviors (Eisenberg et al., 2014); higher levels of personal distress (as measured by increases in heart rate) appear to be related to lower levels of prosocial behavior (Eisenberg et al., 2006). Correspondingly, an individual may enact kind behavior toward a distressed other, but without differentiating empathy, sympathy, or personal distress, it cannot be determined whether an act is selflessly benevolent or a self-focused desire to end the distressing stimuli as easily as possible. Thus, a global measure of empathy that does not differentiate may not fully reflect how aspects of empathy influence social interaction.

Correspondingly, Study 2 draws upon work by Davis (1983) that identifies sociocognitive traits that compose empathy, including (1) perspective taking, (2) empathic

concern, and (3) personal distress. In particular, perspective taking (a tendency to adopt another's point of view) and empathic concern (a tendency to express care for others in need) have demonstrated relations with prosocial behavior (Eisenberg, Fabes, & Spinrad, 2006). Sympathy (or concern for others) has also been associated with more prosocial attitudes and behaviors (Konrath et al., 2011). A tendency towards other-oriented concern may also prime an individual to draw upon preexisting moral schemas reflecting a concern for others; indeed, sympathy appears to be positively related to prosocial reasoning and behavior (Carlo et al., 1992; Eisenberg et al., 2006). Perspective taking has also shown a positive relation to most types of prosocial behavior and prosocial moral reasoning (Eisenberg et al., 2006; Carlo et al., 1992; Padilla-Walker & Carlo, 2014). The particular significance of empathic concern (i.e., sympathy) and perspective taking in prosocial reasoning suggests that these sociocognitive traits may help illustrate the relations between empathy and prosocial behavior.

Ascription of Responsibility: "Is this my problem?" Ascription of responsibility reflects one's assumption of who is socially culpable for an event or outcome (Suedfeld et al., 1985). Schwartz (1967) conceptualized responsibility attribution across three dimensions: (1) Internal responsibility, (2) external responsibility, and (3) no responsibility. Internal ascription of responsibility refers to the tendency to see oneself as the cause of a particular event or outcome, either positive or negative; individuals who tend to attribute outcomes to internal factors are more likely to take personal responsibility for their actions. On the other hand, individuals who tend to attribute outcomes to external factors may feel less control over their lives and be less motivated to take action while individuals who ascribe no responsibility; individuals who tend to attribute no responsibility may perceive events as completely random or beyond anyone's control, potentially adding to feelings of low agency. Correspondingly, the way in which they

ascribe responsibility might also relate to what kind of charitable (or prosocial) behavior an individual engages in – that is, for what reason they engage in prosocial behavior. It should be noted that prosocial behavior is not a single, global construct – rather, it incorporates different types of prosocial behaviors based around how an individual rationalizes behavior towards others in need (Carlo et al., 1992; Carlo & Randall, 2003). Altruistic behaviors (acts done for the benefit of others without any benefit for the self) reflect an orientation towards others (i.e., de-prioritizing one’s own interests) and have been found to relate to perspective taking (Carlo et al., 2010b). The degree to which an individual regards another’s welfare as their obligation might moderate how an individual’s perspective taking relate to their prosocial behaviors.

Previous work by Carlo et al. (2003) found that higher levels of internal ascription of responsibility and sympathy (empathic concern) were linked to higher levels of altruism, indicating there is potential interplay of empathic traits that may relate to prosociality. Tendencies of responsibility attribution reflect an individual’s belief of who is socially responsible in a given situation, which could in turn factor into one’s decision to enact prosocial behavior and assumptions about others. For example, a student (who we shall call Morty) has missed study sessions multiple times and approaches a peer (who we shall call Rick) to request extra help on their coursework. Morty is stressed out, tired, and contrite, but not forthcoming about the reason he needs help. Depending on the social cues Rick attends to (or encodes), Rick may or may not infer that Morty is coping with a personal, stressful situation that he is insecure about sharing. Based off this information, the response Rick constructs is likely driven by whose “responsibility” it is to act – is it Morty’s responsibility to attend study sessions and “pull himself up by the bootstraps” (external ascription), or is it Rick’s responsibility to support a struggling Morty toward academic success (internal ascription)? If Rick tends toward an external ascription

responsibility ethic, he may judge Morty's situation as one Morty is responsible for; in other words, young adults are expected to be self-reliant, and it would be unfair to provide any peer extra help when they are not attending study sessions. On the other hand, with a more diffuse sense of responsibility Rick might feel a personal obligation to help Morty succeed – even if it required more work from Rick – de-emphasizing external standards of merit and prioritizing peer well-being and achievement. What cues Rick tends to perceive, how he tends to interpret those social cues, and how Rick regards social responsibility – as well as Rick's capacity to regulate his emotional reactions to the situation – could determine whether Rick would tend towards feeling of sympathy and whether he acts altruistically towards Morty, even if doing so might require more labor from Rick.

Prosocial Behavior: Forms and Motives of Kindness. Although prosocial behavior is generally defined as “voluntary behavior intended to benefit another” (Eisenberg, Fabes, & Spinrad, 2006, p. 646), this global concept of prosocial behavior does not illuminate what is *motivating* that behavior, which could ultimately be self-serving. Indeed, Carlo and Randall (2002) outline six types of prosocial behaviors, each rooted in different motivations: (1) Altruistic, (2) anonymous, (3) compliant, (4) emotional, (5) dire, and (6) public. For example, altruistic (voluntary helping primarily motivated by concern for another's welfare) and anonymous (helping without seeking acknowledgement) prosocial behaviors are rooted in the expression of sympathy without personal benefit, perhaps even at cost to oneself. Compliant (helping when verbally or nonverbally requested), emotional (helping others in emotionally charged circumstances) and dire (helping in emergency situations) prosocial behaviors involve empathic concern for others but reflect different motivations than altruistic or anonymous helping. In contrast, public prosocial behaviors (performing helping actions in front of an

audience) likely have a more selfish component rooted in a desire to gain respect and approval from others. Supporting this, work by Carlo, Hausmann, Christiansen, & Randall (2003) found that sympathy was related to particular types of prosocial behaviors (e.g., emotional prosocial behaviors) but not others (e.g. public prosocial behaviors). Adolescents who reported more *public* helping “were more likely to be concerned with their own needs, . . . engaged in less sophisticated forms of reasoning and perspective taking and were more likely to ascribe responsibility to others” (Carlo & Randall, 2002). In comparison, adolescents who reported more *anonymous* helping rated themselves as more sympathetic and were more likely to ascribe responsibility to themselves. All in all, these relations suggest that sympathy and perspective taking likely have a role in both prosocial reasoning and prosocial behaviors, particularly those that aren’t publicly displayed (i.e., performative). Correspondingly, different combinations of emotional and personal traits may provide indication of an individual’s prosocial behaviors.

Research Question & Hypothesis

Study 2 seeks to answer the question: Given that perspective taking relates to empathic concern and prosociality, how does inclusion of ascription of responsibility relate to these personality traits and altruistic tendencies? I propose that an individual’s ascription of responsibility is intertwined in this process and will moderate how perspective taking and empathic concern relate to prosocial behavior. An individual may have the ability to put themselves in another’s shoes and have empathy for another actor, but whether or not the individual feels it is their own personal responsibility to act prosocially towards another in a situation may play a significant role in the presence or type of prosocial behavior.

Correspondingly, I hypothesize that more internalized ascription of responsibility will positively relate to altruistic prosocial behavior and negatively relate to public prosocial behavior – that is,

a tendency to see oneself as socially responsible to act in a situation may correspond to feelings of concern for others, which could in turn relate to a higher likelihood of altruistic prosocial behavior in all situations (rather than performatively helping, which requires an audience).

Study 2 Methods

Participants

Data for this work was drawn from a survey-based study conducted at a university in the Midwest United States. Participants were 324 undergraduate students (258 female) with an average age of 19.47 years (Table 1). The sample was 84% White (n=272), 8% Black (n=27), 4% Asian (n=13), 2% other (n=8), and 1% Latine (n=3).

Procedure

Through in-class announcements in Introduction to Psychology undergraduate courses, participants were recruited to complete paper-and-pencil surveys. Survey measures included the Interpersonal Reactivity Index (IRI) (Davis, 1980) to measure empathic traits (perspective taking and empathic concern); the Ascription of Responsibility Scale (ARS) (Schwartz, 1968) to measure ascription of responsibility, and the Prosocial behaviors Measure - Revised (PTM-R) (Carlo & Randall, 2002; Carlo et al. 2003) to measure prosocial behaviors. Because data were deidentified, the study was deemed exempt by the university Internal Review Board (IRB).

Instruments & measures

Empathy and Perspective taking. The Interpersonal Reactivity Index (IRI) (Davis, 1980) is a 28-item measure with four subscales to capture the multidimensionality of empathy (see Appendix IV). Two out of the four subscales were used in this work: Perspective taking (which assesses the tendency to naturally adopt another's psychological point of view) and empathic concern (which measures "other-oriented" feelings like sympathy). For each subscale,

participants use a 5-point Likert scale to indicate to what degree the item describes them (from “does not describe me well” to “describes me very well”). For normally scored items, higher agreement is a higher score value (i.e. “does not describe me well” was 0, while “describes me very well” was 4); for reverse-scoring, the values are swapped (i.e. “does not describe me very well” was 4). The perspective taking (PT) subscale includes seven items and the value for Cronbach’s Alpha for the survey was $\alpha = .74$, indicating adequate internal consistency and reliability. The empathic concern (EC) subscale includes seven items with a Cronbach’s Alpha value of $\alpha = .66$, which suggests further refinement may be necessary (see later discussion). Subscale items are summed based on scoring guidelines, with higher scores in particular subscales reflecting higher levels of particular dimensions of empathy. The IRI has been found to be a reliable and valid measure of empathy across various populations and contexts (De Corte et al., 2007; Lucas-Molina et al., 2017).

Ascription of Responsibility. The Ascription of Responsibility Scale (ARS) is a self-report measure designed to assess an individual's tendency to ascribe responsibility for events or outcomes to themselves or to external factors (Schwartz, 1968; see Appendix V). The ARS used in this current work consists of 28 items with a Cronbach’s Alpha value of $\alpha = .77$, indicating adequate internal consistency and reliability. Items assess three different dimensions of responsibility attribution: Internal responsibility (the tendency to ascribe responsibility to oneself); external responsibility (the tendency to ascribe responsibility to external factors such as luck, fate, or other people); and no responsibility (the tendency to ascribe no responsibility to anyone). Respondents are asked to rate the extent to which they agree or disagree with each statement on a five-point scale ranging from "strongly disagree" to "strongly agree." Each dimension of responsibility attribution is assessed by several items on the ARS, and scores from

items within each dimension are summed to determine the degree of individual's tendency to ascribe responsibility internally, externally, or not at all. The ARS has been found to be a reliable and valid self-report measure of responsibility attribution (Schwartz, 1967).

Prosocial Behavior. The Prosocial Tendencies Measure (PTM) presents individuals with 21 items to measure prosocial behavior (Carlo & Randall, 2002; see Appendix VI). Participants indicate on a 5-point Likert scale how well the statement describes them, with “does not describe me at all” scored as 1 and “describes me greatly” scored as 5; for normally scored items, a higher score value reflected a stronger tendency for a given type of prosocial behavior. The PTM delineates six different types of prosocial behavior: (1) altruistic, (2) compliant, (3) emotional, (4) dire, (5) public, and (6) anonymous. This work focuses on public (performative) prosocial behavior and altruistic (selfless) prosocial behavior. Altruistic actions are rooted in concern for the needs and welfare of others, often driven by sympathy and internalized principles; the altruistic subscale included four items with a Cronbach's Alpha value of $\alpha = .57$, suggesting further refinement may be necessary (see later discussion). In contrast, public types of prosocial behavior are motivated by a desire for recognition; the public subscale included five items with a Cronbach's Alpha value of $\alpha = .87$ indicating very strong internal consistency and reliability. Altruistic and public prosocial behavior have been found to be negatively related to one another (Carlo et al., 2010a), and the PTM has been found to be a reliable and valid measure of prosocial behaviors across various cultural groups and contexts (Carlo & Randall, 2003).

Data Analytic Plan

The analysis for Study 2 was conducted using Mplus (Muthén & Muthén, 1998-2017) to investigate the hypothesized relations between personal traits and prosocial behavior. Prior to analyses, data was screened to only include cases that had complete data on all relevant variables

(perspective taking, ascription of responsibility, empathic concern, and prosocial behavior). Structural Equation Modeling was used to quantify the relations amongst empathic traits and kind behavior; the path analysis model (Figure 6) was tested to examine altruistic and public prosocial behavior as dependent variables, with perspective-taking, ascription of responsibility, and empathic concern as independent variables. Analyses included checks for multicollinearity and an evaluation of model fit through comparative indices and residual analyses. In alignment with widely accepted standards in structural equation modeling (Sahoo, 2019), criteria for acceptable model fit included: (1) a Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) greater than .95; (2) a Root Mean Square Error of Approximation (RMSEA) less than .06; and (3) a Standardized Root Mean Square Residual (SRMR) below .08. Path coefficients, significance levels (p-values), and confidence intervals were reported to interpret the influence of each predictor. Standardized coefficients (STDYX) were examined to assess the relative impact of predictor variables on the outcomes, facilitating a clearer interpretation of the path coefficients to reflect the relative influence of each predictor on the dependent variables. Through the comprehensive evaluation of model fit and the detailed analysis of standardized coefficients, this plan concentrates on the precise testing of the proposed relations.

Study 2 Results

The potential role of perspective-taking in encoding (Step 1), in conjunction with possible influences of ascription in responsibility during assessment of response (Step 4) and empathic concern during response decision (Step 5), might relate to the presence of prosocial behaviors during enactment (Step 6). Correspondingly, I tested these steps of the SIP model to examine the relations amongst perspective-taking, ascription of responsibility, and empathic concern in the production of altruistic and public prosocial behavior.

Table 3*Descriptive statistics for Study 2*

	N	Minimum	Maximum	Mean	Std. Deviation
Participant characteristics					
Age	323	18	27	19.47	1.1
Gender	324	1	2	1.8	.4
Personality traits					
Perspective taking	324	1	5	3.57	.69
Empathy	324	1.2	5	3.95	.57
Ascription of responsibility	324	2.43	4.68	3.41	.38
Prosocial Tendencies (PT)					
Public	324	1	5	1.97	.85
Altruistic	324	1	5	3.64	.75

Note. Empathy = Empathic concern.

Correlations. Correlations (Table 4) were calculated using IBM SPSS Statistics (Version 28). The correlation table showed that perspective taking was significantly positively correlated with empathic concern, which is consistent with the conceptualization of empathy (Davis, 1983). Empathic concern was somewhat significantly negatively and somewhat significantly related to public prosocial behaviors, which aligns with theoretical background of prosocial behaviors that defines public prosociality as more self-focused rather than centering in sympathy (Carlo, Hausmann, Christiansen, & Randall, 2003). Ascription of responsibility was significantly positively correlated with perspective taking and empathic concern. Ascription of responsibility was also significantly correlated with all types of prosocial behaviors – most notably, ascription of responsibility was significantly positively related to altruistic tendencies and significantly negatively related to public tendencies. These relations indicate that ascription responsibility is

strongly connected to prosocial behaviors, supporting my hypothesis that ascription of responsibility may be involved in the production of prosocial behaviors.

Table 4

Pearson's correlations for empathic traits & prosocial behaviors (Study 2)

	Perspective taking	Empathy	Ascription of responsibility	Public	Altruistic
	<i>Pearson's r</i>	<i>Pearson's r</i>	<i>Pearson's r</i>	<i>Pearson's r</i>	<i>Pearson's r</i>
Empathic Traits					
Perspective taking	-				
Empathy	.40***	-			
Ascription of responsibility	.30***	.37***	-		
Prosocial Tendencies (PT)					
Public	-.11	-.13*	-.33***	-	
Altruistic	.07	.10	.37***	-.57***	-

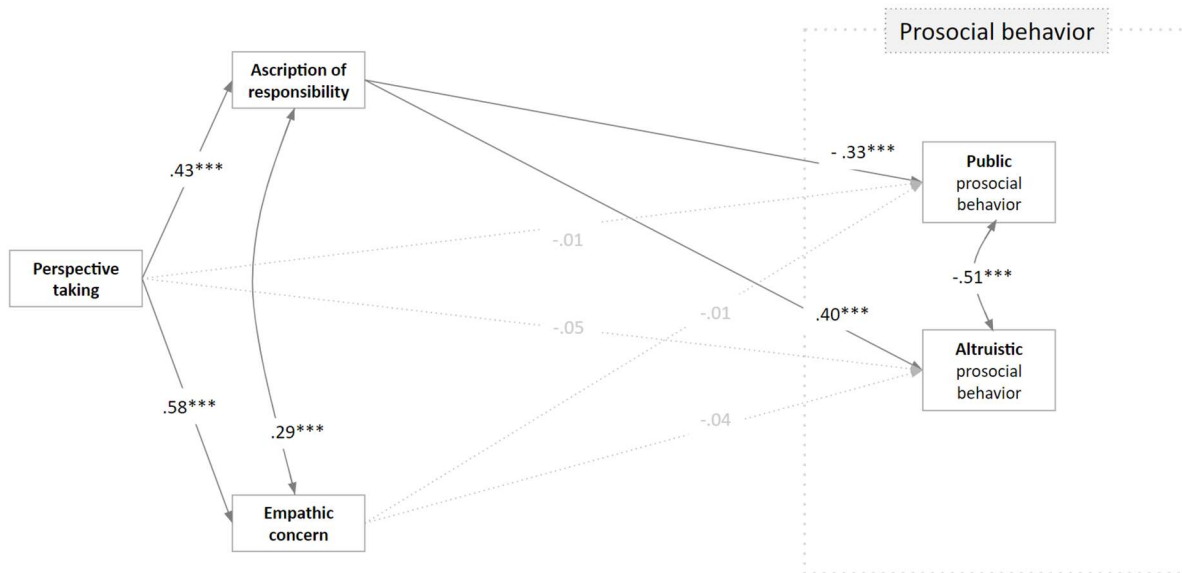
Note. Empathy = Empathic concern. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Path Analysis. The hypothesized relations of ascription of responsibility, empathic concern, perspective taking, and prosocial behaviors (altruistic and public) were tested using ML in Mplus (Figure 3; Muthén & Muthén, 1998-2017). The hypothesized model fit the data extremely well: $N = 323$, $\chi^2(2) = 42.5$, $p = .18$, RMSEA (90% CI) = .04 (0.0, .07), CFI = .99, TLI = .97, SRMR = .06. As anticipated, ascription of responsibility had a significant positive relation to altruistic prosocial behaviors ($\beta = .4$, $SE = .05$, $p \leq .001$) and a significant negative relation to public prosocial behaviors ($\beta = -.33$, $SE = .06$, $p \leq .001$). Perspective taking had a significant positive relation with both ascription of responsibility ($\beta = .4$, $SE = .07$, $p \leq .001$) and empathic concern ($\beta = .58$, $SE = .07$, $p \leq .001$), and ascription of responsibility and empathic concern were significantly, positively related ($\beta = .3$, $SE = .05$, $p \leq .001$). Altruistic and public prosocial

behavior were significantly negatively related ($\beta = -.51$, $SE = .04$, $p \leq .001$), aligning with conceptualizations of the motives behind these types of helping behaviors.

Figure 6

Model depicting the interplay of perspective taking, ascription of responsibility, and empathic concern in relation to prosocial behaviors



Notes. Dashed lines indicate insignificant paths which were included in analyses. Only standardized estimates are depicted in the Figure. Residuals not shown. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Results of the model were not affected by controlling for age (i.e., age was not a significant factor in relations). Although the sample had a small number of men relative to women, multigroup analysis was executed by specifying separate models for men and women. This allowed for a direct comparison of path coefficients across genders to check for potential gender-related differences. There were few significant differences and results showed a consistent relation between the variables independent of gender on all but three paths; two of the

paths were significant but both beta values indicated a consistent direction of relation, while the path with inconsistent beta values was insignificant. Bootstrapping techniques revealed that indirect effects were not significant, indicating the model's direct paths predominately explain the relations. These findings suggest that the observed relations are reliable and trustworthy regardless of gender, and gender differences will not be discussed further.

Results. As anticipated, results from this study indicate that ascription of responsibility strongly relates to perspective taking and empathic concern in the production of altruism. Perspective taking and empathic concern were both positively, significantly related with internal ascription of responsibility ($\beta = .43$, $SE = .07$, $p \leq .001$; $\beta = .29$, $SE = .05$, $p \leq .001$). Findings confirmed hypotheses that more internal ascription of responsibility was positively related to altruistic behavior and negatively related to public prosocial behavior. The chi-squared test indicated that the model does not significantly differ from the observed data ($\chi^2(2) = 42.5$, $p \leq .018$), and strong CFI and TLI values suggest that the model has high validity.

Study 2 Discussion

Previous research on prosocial behavior has found inconsistent relations between perspective taking and prosocial behavior (Sassenrath et al., 2022), and past findings indicate that traits such as ascription of responsibility relate to prosocial behavior (Carlo et al., 2003). In response, I tested part of the SIP model (Steps 1, 4, 5, and 6) and hypothesized that ascription of responsibility would better explain the relations between perspective taking and prosocial behavior. Results from Study 2 indicate that (1) perspective taking significantly positively related to ascription of responsibility and empathic concern, and (2) a more internal view of social responsibility was associated with more altruism and less performative prosocial

behaviors, suggesting that examination of ascription of responsibility alongside perspective taking and empathic concern more strongly explains prosocial tendencies.

Results from Study 2 illuminated the importance of ascription of responsibility in altruism, which might provide improved targets for future prosocial behavior interventions that specifically increase altruism over performative kindness. Findings also clarified previously inconsistent relations between perspective taking, empathic concern, and prosocial behavior, which may provide groundwork for experimental research designs to examine causality amongst traits and altruism. Findings from Study 2 refine previous work around the production of prosocial behavior by testing part of the SIP using personality traits and emotional processes. The relations amongst perspective taking, ascription of responsibility, empathic concern, and prosocial behavior partially validates use of the SIP model to predict positive behavior. A lack of indirect paths indicates that ascription of responsibility and empathic concern may be more accurately placed in other steps – for example, empathic concern might be situated alongside perspective-taking in Step 1 with ascription of responsibility in the “Database” under social schemas. Future work is needed to determine how discrete personal traits and emotional processes are in the SIP, as well as investigating the sequence in which processes occur during processing of social information.

Limitations. The study design does not enable examination of causal relations between traits and behaviors; experimental research is necessary to confirm this work’s findings. In addition, self-presentation bias could have influenced participants to respond in ways that place them in a favorable light. The low Cronbach alpha value of the IRI’s seven-item empathic concern subscale ($\alpha = .66$) also merits further investigation, potentially suggesting a need for refinement of the scale for this work. Similarly, the low Cronbach alpha value of the PTM’s

altruistic subscale ($\alpha = .57$) merits further investigation and/or refinement, which may involve revising questions or including additional items from the PTM.

Conclusions. Results from Study 2 indicate that ascription of responsibility relates to perspective taking and empathic concern in the production of prosocial behavior, and more strongly explains altruism and performative helping than perspective taking and empathic concern alone. Findings supported hypotheses that internal ascription of social responsibility would be positively associated with more altruistic behavior and negatively related to performative helping behavior. These findings partially validate use of the SIP model to examine prosocial behavior and provide groundwork for investigation of other parts of the SIP. However, a study designed to examine a fuller SIP model would provide additional evidence on the usefulness of SIP as an explanatory framework to understand prosocial behaviors. Thus, Study 3 will test another part of the SIP (Steps 2, 3, 5, and 6) using corresponding emotional processes proposed by Lemerise & Arsenio (2000).

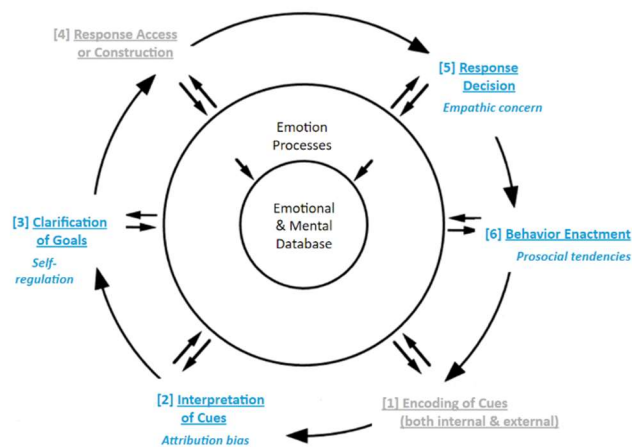
Chapter 4: STUDY 3

Why Should I Regulate if You're Being Rude: The Relations Amongst Attribution Bias, Emotion Regulation, and Empathic Concern in Prosocial Behavior

Parallel to Study 2, Study 3 explores potential roles of attribution bias, emotion regulation, and empathic concern in the production of prosocial behaviors. Based on the process order outlined in the Social Information Processing (SIP) model alongside social cognitive theoretical views of prosocial behavior, I propose testing part of the SIP model (Figure 2) in which attribution bias relates to emotion regulation and empathic concern, with emotion regulation having a moderating relation between attribution bias and empathic concern. I posit that an individual's tendency to attribute intent in ambiguous situations may relate to how much of an emotional reaction they must regulate; in turn, an individual's ability to regulate their emotions may moderate the relation between attribution bias and empathic concern. Additionally, I will measure participant self-presentation bias to control for potential socially desirable response tendencies.

Figure 7

Simplified version of the SIP for Study 3



Background

Benign or Hostile Attribution Bias: “Is this intentional?” Attribution bias reflects an individual’s tendency to assume “the best” or “the worst” of others, particularly in ambiguous situations. Individuals can interpret others’ motives as provocative (hostile attribution bias), indicative of another’s character (instrumental attribution bias), or accidental (benign attribution bias) (Coccaro et al., 2009); this work focuses on hostile and benign attribution bias. Nelson & Crick (1999) speculated that “a benign attributional bias likely predisposes young adolescents to more consistent prosocial behavior, which in turn facilitates more positive peer relationships and greater fulfillment of their social needs” (p. 19); correspondingly, results indicated that more prosocial youth were less likely to demonstrate hostile attribution bias or feel distressed. In contrast, hostile attribution bias has also shown causal relations to aggression in children (De Castro et al., 2002), and children who tend to attribute hostile intent to others are more likely to formulate aggressive responses and favorably anticipate the outcomes of aggressive responses (Crick & Dodge, 1996; Nelson & Crick, 1999). Additionally, Van Bockstaele et al. (2020) found that manipulating hostile attribution bias through training reduced reactive aggression, suggesting that attribution bias also relates to reactivity (which is conceptually related to emotion regulation).

Hostile attribution bias reflects a tendency to assume that others' behaviors are driven by hostile intentions or motivations, even in situations where their behavior may open to multiple interpretations; this might lead to aggressive or defensive responses, which could escalate situations and cause unnecessary conflict. In contrast, benign attribution bias reflects a tendency to assume that others' behaviors are driven by benign or positive intentions or motivations; given its positive relations with prosocial individuals (Nelson & Crick, 1999), this benign interpretation

of encoded cues could relate to the degree and type of emotional reaction, which in turn might relate to an individual's capacity for emotion regulation (that might lead to more or less empathic concern for another actor).

Self-regulation: Controlling Emotions in Social Situations. “Emotion regulation refers to shaping which emotions one has, when one has them, and how one expresses or experiences those emotions” (Gross, 2015, p. 6). Broadly, emotion regulation strategies are either antecedent-focused or response-focused. An antecedent-focused strategy – in this case, cognitive reappraisal – occurs early, thus altering the subsequent emotion trajectory and reducing (or preventing) negative emotion. Emotion suppression – a response-focused strategy – occurs later in the process of emotion generation, functioning mainly to modify the behavioral response after an emotion is underway. Correspondingly, the way in which an individual regulates their response to the social information they've encoded and interpreted relates to both emotional and behavioral responses. Gross & John (2003) found that individuals who utilize cognitive reappraisal experience and express more positive emotion than those who use expressive suppression; additionally, suppressors feel more negative emotions, indicating higher feelings of inauthenticity fueled by the incomplete (or lack of) expression of their emotions. Chronic use of suppression has also predicted weaker future social connections and less close relationships (English et al., 2012).

Though emotion regulation is itself a process, individuals systematically differ in their emotion regulation strategies – specifically, tending towards expressive suppression (denying the emotion) or cognitive reappraisal (reframing their feelings). Gross & John (2003) found that reliance on suppression strategies was associated with less successful mood repair, lower levels of self-esteem, and an increased probability of experiencing negative emotions. In contrast,

individuals who rely on reappraisal strategies were more successful at repairing bad moods, had closer friendships, showed greater self-esteem, and experienced more positive (as well as less negative emotion) than individuals who tended towards suppression strategies. Relatedly, Preece et al. (2021) demonstrated that while cognitive reappraisal was negatively correlated with depressive and anxiety symptoms, expressive suppression was positively correlated with depression and anxiety. This suggests that a tendency to rely on reappraisal or suppression strategies may reflect individual trait differences – indeed, work by Purnamaningsih (2017) found that personality traits predict emotion regulation strategies, indicating that emotion regulation strategies may be indicative of a disposition of responses rooted in traits such as openness, agreeableness, extraversion, conscientiousness, and neuroticism. Correspondingly, an individual’s emotion regulation could reflect categorical tendencies that are more likely to occur during social interaction.

Past findings indicate that self regulation – particularly adaptive regulation (which include reappraisal strategies) – is positively related to empathy (Salazar Kämpf et al., 2023). Findings by Lockwood et al. (2014) indicate that emotion regulation moderates the association between empathy and prosocial behavior. Integrative regulation (a conceptualization that emphasizes maintenance of inner harmony) can be a significant predictor of empathy and that more integrative regulation has been found to predict more prosocial behavior both directly and through empathy (Benita, Levkowitz, & Roth, 2017). Given these relations, individual differences may show varying paths to prosocial behavior depending on interactions with other empathic traits.

Social desirability: Accounting for self-report biases. Social desirability, also known as self-presentation bias, is the tendency of individuals to present themselves in the most socially

desirable way (Crowne & Marlow, 1960). This can manifest itself in various forms – for example, how someone acts during an interview, talks in social settings, or responds to survey questions. Correspondingly, self-desirability can interfere with accurate reporting on surveys on personality traits, as individuals may become more focused on appearing in the best possible light than in honestly representing themselves (King, 2022; Veseley & Klöckner, 2020). Past research has used social desirability in survey-based studies to control for socially desirable response tendencies (Fischer & Fick, 1993, Larson, 2019). This illustrates that social desirability can influence the self-reported results of surveys involving personality traits and behavior, and it is therefore important to consider social desirability when designing surveys and interpreting results.

Research Question & Hypotheses

Study 3 seeks to answer the primary question: Given that attribution bias relates to empathic concern and prosociality, how does inclusion of emotion regulation relate to these personality traits and altruistic behaviors? I propose that emotion regulation is intertwined in this process and could influence how attribution bias and empathic concern explain prosocial behavior. An individual who tends to attribute hostile intent might be less likely to feel sympathy for another actor – and low self-regulation could further diminish an individual’s empathic concern for another actor, decreasing the likelihood of selfless helping (altruism). I hypothesize that higher emotion regulation will positively relate to altruistic prosocial behavior, and that higher levels of emotion regulation are required to moderate the negative relation between hostile attribution bias and empathic concern.

Study 3 Methods

Participants

Data for this work was drawn from an online survey-based study conducted through a private United States survey service. Participants were 360 young adults (165 female) with an average age of 22 years (Table 5). The sample was 55% White (n=198), 22% Black (n=80), 11% Asian (n=39), 8% Latine (n=28), and 4% multiracial or other (n=25).

Procedure

The Qualtrics survey included prompts for demographic information, the IRI (Davis, 1980) to measure empathic traits (perspective taking and empathic concern); the ARS (Schwartz, 1968) to measure ascription of responsibility, the Social Information Processing-Aggression Bias Questionnaire (SIP-AEQ; Coccaro et al., 2009) to measure attribution bias; the Emotion Regulation Questionnaire (ERQ; Novak & Clayton, 2001) to measure emotion regulation, and the PTM-R (Carlo & Randall, 2002; Carlo et al. 2003) to measure prosocial behaviors.

Instruments & Measures

Attribution Bias. The SIP-ABQ (Social Information Processing-Aggression Bias Questionnaire) is a self-report measure designed to assess an individual's social information processing biases related to aggression (Coccaro et al., 2009; see Appendix VII). The SIP-ABQ consists of 24 items nested within eight hypothetical ambiguous social situations. Prompts 1-3 of each situation relate to different types of attribution (hostile, instrumental, and benign, respectively); prompt four assesses the extent to which the participant believes that the outcome of the scenario in the vignette was unintentional. This work adapted the SIP-ABQ to examine what bias individuals tended towards (rather than measuring levels of each type of attribution for each individual). Individuals who attribute hostile intent in vignettes are unlikely to interpret the

provocateur's actions as accidental (benign) or instrumental (reflective of character), and vice versa; similarly, attribution of instrumental intent are unlikely to perceive the other's actions as accidental, and vice versa.

According to Coccaro et al., (2009), item four was originally designed to assess neutral or benign intent (e.g., "This person did this by accident"); however, measure implementation revealed that item four consistently reflected direct hostile intent in our adaptation of the SIP-ABQ. For example, in response to vignette 1, "why do you think your friend shared your secret when you told them not to share it with anyone?" four stated, "my friend wanted me to feel stupid for asking to keep my secret." Given this discrepancy, prompt 4 was omitted from analysis, and attribution bias was scored as categorical data for analysis to accurately capture participants' chosen attributions (reflecting the nature of the response rather than measuring the degree of attribution). Correspondingly, selections of options 1 or 2 were both coded to indicate hostile intent, while option 3 was coded as nonhostile. Response distribution varied across items, particularly for item 4 (co-worker causing coffee to spill on you) and item 6 (co-worker said "no" when you asked to sit with them). Hostile and nonhostile frequency scores were calculated for each item then summed – hostile attribution across all items was normally distributed ($M=4.81$, $SD=1.47$) while overall nonhostile attribution showed concentrated in lower scores ($M=2.73$, $SD=1.48$). From these summed frequencies, proportion of hostile to nonhostile responses were calculated then transformed into an overall attribution score ($M=.64$, $SD=.19$). This overall attribution score reflected an individual's tendency to attribute hostile intent across the SIP-ABQ vignettes, with values closer to 1 reflecting more attributions of hostility.

Emotion Regulation. The Questionnaire on Self-Regulation (QSR) assesses an individual's ability to (1) regulate their negative emotions and disruptive behavior, and (2) set

and attain goals (Novak & Clayton, 2001; see Appendix VIII). In the QSR-13 (a shortened version of the original QSR), respondents are presented with 13 items to rate how true each item is for them using a scale from 1 (never true) to 4 (always true). Items assess three different dimensions of self-regulation in which individuals engage to achieve desired outcomes: Behavior regulation; emotion regulation; and cognition regulation; for this work, an overall regulation score was used as a baseline measurement for emotion regulation in analyses. After reverse coding, higher scores reflect an individual's overall ability to regulate themselves. The original QSR has been found to be reliable and valid with good internal consistency (Büssing et al., 2009; Pekrun et al., 2009); though there is limited research on the reliability of the QSR-13, work by Gouveia et al. (2018) and Giromini et al. (2012) have reported good internal consistency for the scale.

Social desirability. The shortened 10-item Social Desirability Scale (Strahan & Gerbasi, 1972) measures an individual's tendency to present a socially favorable impression of themselves to others (see Appendix IX). The SDS presents participants with 10 true-false prompts describing culturally approved behaviors, with five items reverse-scored. Correspondingly, a higher total SDS score reflects more honest self-presentation – that is, a higher tendency to conform to desirable social norms and stronger desire to present oneself favorably. The 10-item version of the SDS (Strahan & Gerbasi, 1972) is an adaptation of the 33-item Marlowe-Crowne Social Desirability Scale (M-C SDS), which is the most widely used measure of social desirability bias (Crowne & Marlowe, 1960). The 10-item version has shown internal consistency comparable to longer forms of the MC-SDS (Strahan & Gerbasi, 1972; Fischer & Fick, 1993) and requires less time for participant response, which is ideal for survey administration.

Empathic Concern and Prosocial Behavior. As in Study 2, the IRI (Davis, 1980) will be used to measure empathic concern and the PTM (Carlo & Randall, 2002). See Study 2 Methods for more information.

Data Analytic Plan

For Study 3, Mplus (Muthén & Muthén, 1998-2017) was used to explore the hypothesized relations amongst attribution bias, emotion regulation, empathic concern, and prosocial behavior. Data was screened to only include cases that had complete data on all relevant variables. The path analysis model (Figure 5) was tested to examine altruistic and public prosocial as dependent variables, with attribution bias, self-regulation, and empathic concern as independent variables. Analyses included checks for multicollinearity and singularity, and model fit was evaluated using several indices to ensure that the hypothesized model adequately represented the data. As in Study 2, these indices included the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) (both of which were expected to exceed .95 for a model to be considered a good fit); the Root Mean Square Error of Approximation (RMSEA) (with a threshold of less than .06); and a Standardized Root Mean Square Residual (SRMR) below .08 (Sahoo, 2019). Standardized coefficients (STDYX) were examined to assess the relative impact of predictor variables on the outcomes. By thoroughly assessing the model fit and analyzing standardized coefficients, this plan aimed to directly address the hypothesized relations within the data.

Study 3 Results

The potential role of attribution bias in interpretation of cues (Step 2), in conjunction with possible influences of emotion regulation during clarification of goals (Step 3) and empathic concern during response decision (Step 5), might influence the production of prosocial behavior

during enactment (Step 6). Correspondingly, this work examined the relation between attribution bias, emotion regulation, and empathic concern in relation to different types of prosocial behavior (Figure 3) by testing a part of the SIP model.

Table 5
Descriptive statistics for Study 3

	N	Minimum	Maximum	Mean	Std. Deviation
Participant characteristics					
Age	360	18	25	22.15	1.9
Gender	360	0	4	1.62	.65
Personality traits					
Attribution bias	356	0	1	.64	.19
Self-regulation	356	19	48	34.5	5.3
Empathic concern	356	1	5	3.55	.72
Prosocial Tendencies (PT)					
Public	356	1	4.75	2.16	.94
Altruistic	356	1.67	5	3.74	.85

Correlations. Correlations (Table 6) were calculated using IBM SPSS Statistics (Version 28). The correlation table showed that empathic concern was significantly positively correlated with altruistic prosocial behavior and significantly and negatively related to public prosocial behaviors, aligning with theoretical definition of public prosociality as more self-focused rather than centering in sympathy (Carlo, Hausmann, Christiansen, & Randall, 2003). Self-regulation was negatively related to public prosocial behavior and positively associated with altruistic prosocial behavior. These relations indicate that self-regulation is strongly connected to prosocial behaviors, supporting my hypothesis that self-regulation may be involved in the production of prosocial behaviors.

Table 6*Pearson's correlations for empathic traits & prosocial behaviors (Study 3)*

	Attribution Bias	Self-Regulation	Empathic Concern	Public	Altruistic
	<i>Pearson's r</i>	<i>Pearson's r</i>	<i>Pearson's r</i>	<i>Pearson's r</i>	<i>Pearson's r</i>
Empathic Traits					
Attribution bias	-				
Self-regulation	-.02	-			
Empathic concern	.03	-.08	-		
Prosocial Tendencies (PT)					
Public	-.02	-.14**	-.33***	-	
Altruistic	.03	.14**	.46***	-.75***	-

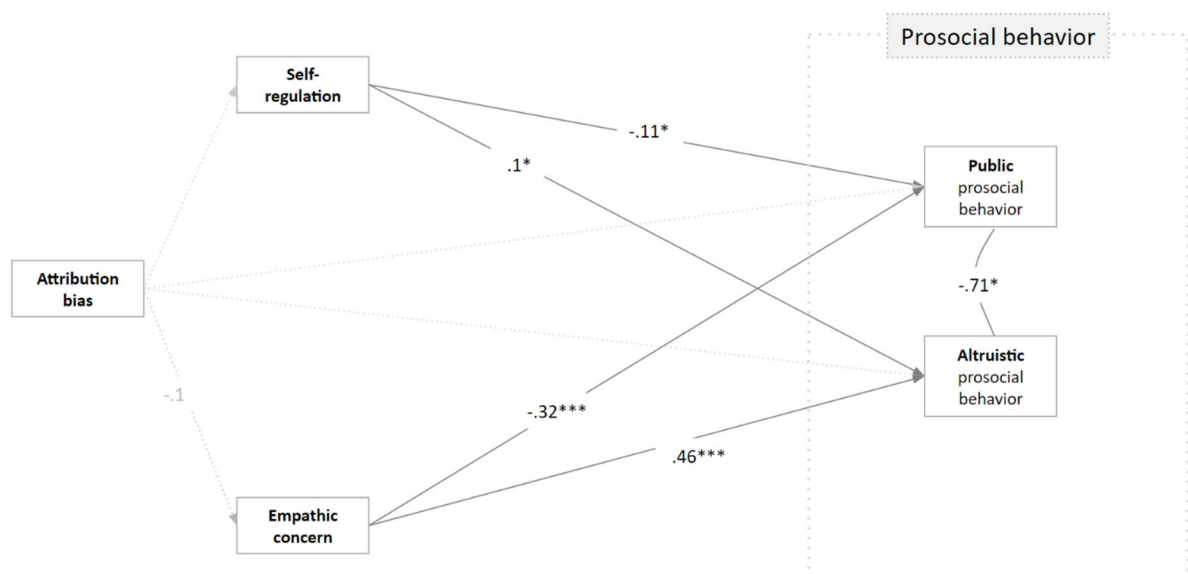
Note. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Path analysis. Similarly to Study 2, we tested the hypothesized model—wherein emotion regulation and empathic concern mediate the relations between attribution bias and prosocial behaviors—using maximum likelihood estimation in Mplus (Muthén & Muthén, 1998-2017; see Figure 5). The hypothesized relations of ascription of responsibility, empathic concern, perspective taking, and prosocial behaviors (altruistic and public) were tested using ML in Mplus (Figure 3). Adjustments for the model, including controlling for social desirability scores on altruism (to account for self-presentation bias) and multigroup analyses by gender (to ensure there were not substantial gender-related differences), showed no significant differences from the presented model. Though not significant, indirect effects were included in the model to reveal any underlying processes that might not be apparent through direct effects. The hypothesized model demonstrated a good fit to the data: $N = 356$, $\chi^2(1) = 2.85$, $p = .09$, RMSEA (90% CI) = .07 (.0, .18), CFI = .99, TLI = .95, SRMR = .03. The model was overidentified (15 knowns: 17 unknowns), implying the parameter estimates and findings from the model can be more reliably trusted.

Attribution bias negatively related to empathic concern ($\beta = -.37$, $SE = .20$, $p \leq .06$, close to the conventional cutoff of .05) but had no significant relation to emotion regulation. Empathic concern was negatively associated with public prosocial behavior ($\beta = -.42$, $SE = .07$, $p \leq .001$) and positively associated with altruism ($\beta = .54$, $SE = .06$, $p \leq .001$). Self-regulation had a negative, significant relation to public prosocial behavior ($\beta = -.54$, $SE = .06$, $p \leq .001$) and a positive, weak relation to altruistic prosocial behavior ($\beta = .02$, $SE = .01$, $p \leq .03$). Altruistic and public prosocial behavior were significantly negatively related ($\beta = -.71$, $SE = .03$, $p \leq .001$), aligning with conceptualizations of the motives behind these types of helping behaviors.

Figure 5

Model depicting the interplay of attribution bias, emotion regulation, and empathic concern in the production of prosocial behaviors



*Notes. (1) Dashed lines indicate insignificant paths which were included in analyses. Only standardized estimates are depicted in the Figure. Residuals not shown. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.*

Results. Unexpectedly, attribution bias had only a marginally significant negative link with empathic concern ($\beta = -.37$, $p \leq .06$) and no significant relation with emotion regulation. As

anticipated, empathic concern was negatively associated with public prosocial behavior ($\beta = -.42, SE$) and positively linked to altruistic behavior ($\beta = .54, p \leq .001$). Aligning with my hypotheses, self-regulation was negatively related to public prosocial behavior ($\beta = -0.11^*, p \leq .001$) and weakly positively associated with altruistic behavior ($\beta = .02, p \leq .03$). The chi-squared test showed no significant difference between the model and the observed data ($\chi^2(1) = 2.85, p = .09$), and robust CFI and TLI values suggest the has high validity.

Study 3 Discussion

Given the positive relations between hostile attribution bias and aggressive responses (De Castro et al., 2002) as well as relations between attribution bias and emotional reactivity (Van Bockstaele et al., 2020), past findings suggest that these traits are involved in the production of social responses. Study 3 tested a portion of the SIP model using emotional processes associated with SIP steps 2, 3, 5, and 6 (as per Lemerise & Arsenio, 2000). I hypothesized that emotion regulation may play a moderating role in how attribution bias and empathic concern explain prosocial behavior. Results from Study 3 indicate that (1) higher self-regulation relates to more altruism, and (2) attribution bias does not significantly relate to self-regulation or empathic concern, suggesting that the examination of alternative pathways or mediators may be necessary. The absence of significant relationships between attribution bias, self-regulation, and empathic concern could imply that other factors, possibly contextual or situational, play critical roles in shaping these dynamics. Future research should explore these potential mediators or moderators to better understand the nuanced interplay of cognitive and emotional factors in social behavior. An expanded perspective will contribute to refining the existing models of social information processing, potentially leading to more targeted interventions that promote prosocial behavior across various settings.

Limitations. In this study, our adaptation of the SIP-ABQ was designed to identify which attribution biases are most frequently adopted by focusing primarily on the presence of various attribution types, rather than measuring the degree or intensity of these biases. This approach, while effective for determining prevalence, did not capture the nuanced intensity of those biases, which could provide deeper insights into their impact on behavior. Future research should consider exploring both the categorical choice of attribution types and their intensity, potentially employing a Likert scale method across all vignette prompts to achieve a more detailed understanding. Similarly, an overall self-regulation score was used due to the low number of items – in future work, the emotion-specific subscale for the QSR could be incorporated into analyses. Lastly, issues related to measurement invariance could lead to inaccuracies in comparing these constructs across different groups or settings, potentially skewing results (Cao & Liang, 2022). While the findings provide valuable insights into the psychological processes underlying prosocial behavior, they should be viewed as indicative rather than definitive.

Conclusions. Findings from Study 3 indicate that empathic concern and self-regulation relate positively to altruistic prosocial behavior and negatively to public prosocial behavior. However, unexpected findings from the study suggest that certain aspects of the relationships modeled may operate differently under varied circumstances or may not align with traditional expectations, indicating complex interdependencies that merit further investigation. For instance, Crick & Dodge (1994) would assert that attribution bias is essential to produce behavior – but findings from Study 3 suggest attribution bias does not have a significant effect on behavior. Correspondingly, these findings *partially* validate the use of the SIP model to examine behavior – both negative and positive prosocial behaviors – expanding potential applicability of the model in psychological research. In conjunction with Study 1 and Study 2, results from Study 3

enhance our understanding of how cognitive and emotional factors interact within the framework of social information processing, offering valuable directions for future research and practical applications in fostering positive social interactions. Future research would benefit from more objective behavioral measures, cross-validating findings across diverse demographic and cultural contexts, and exploring the use of mixed-methods approaches to deepen the understanding of how these psychological constructs operate in real-world settings.

GENERAL CONCLUSIONS

In this dissertation, I explored the intricate relationships between individual psychological traits, social information processing, and kindness across three interconnected studies. The overarching research goal was to elucidate how individual differences in psychological traits such as self-efficacy, empathic concern, and emotion regulation influence the processing of social information and subsequently kind behavior. Study 1 focused on the role of self-efficacy and positive affect in fostering self-compassion (kindness towards oneself). Study 2 and Study 3 further examined the predictive capabilities of perspective taking, empathic concern, attribution bias, and emotion regulation on prosocial behaviors (kindness towards others). Together, these studies aimed to provide a comprehensive understanding of the cognitive and emotional pathways that lead to kindness, contributing valuable insights into the mechanisms of social interaction and personal development.

Key findings. Findings from this dissertation enrich the existing body of knowledge by providing empirical support for the intricate relationships among psychological traits, social information processing, and kindness. Across the three studies, the SIP incorporates emotional processes (not just cognitive processes) and is used to examine positive – rather than aggressive – behavior. Findings from Study 1 highlight the pivotal role of self-efficacy in enhancing self-

compassion, demonstrating that higher levels of self-efficacy relate significantly to the cultivation of self-compassion among individuals. This suggests that self-efficacy is not just crucial for achieving personal goals but is also connected to nurturing a compassionate self-relationship. Study 2 findings reveal that the ascription of social responsibility is a key differentiator between altruistic behavior and actions driven by self-serving motives. This distinction underscores the importance of internal motivational factors in defining the nature of prosocial behavior, suggesting that deeper ethical and moral understandings influence individuals' actions significantly. Results from Study 3 provide insight into the complex interplay between attribution bias, empathic concern, and prosocial behavior. While higher self-regulation is associated with increased altruism, attribution bias showed no significant relation to either self-regulation or empathic concern, indicating that other factors may moderate the relationship between personal biases and prosocial actions.

These results address the aims of the dissertation by partially validating a theoretical framework that connects cognitive and emotional dimensions of social information processing with observable behaviors. Findings revealed relations amongst traits and processes but did not fully illuminate directionality or causality. Across all three studies, evidence shows that individual differences in emotional and cognitive processing can significantly contribute to the propensity for prosocial behavior; this supports my overarching hypothesis and use of the SIP for further exploration of positive behavior. By doing so, this research expands usage of the SIP model and provides theoretical advancements in understanding prosocial behavior. This dissertation also identifies potential target traits and processes to facilitate altruism, contributing to practical applications in educational and therapeutic settings.

Implications. This work expands existing models of socioemotional learning by integrating insights from moral development and psychological theory. It proposes a conceptual framework that views self-compassion and prosocial behavior not as static traits but as capabilities that can be cultivated through targeted interventions. The implications of nurturing self-compassion and prosocial behavior are profound, particularly in education; schools that integrate these practices report not only improved mental health outcomes among students but also enhanced academic performance and reduced bullying (Delavari et al., 2023), creating a more inclusive and supportive learning atmosphere. However, despite their evident benefits these areas remain underexplored in educational policies and curricula. This dissertation seeks to fill this critical gap by empirically examining how these traits can be systematically developed and leveraged to improve educational outcomes. By doing so, it not only informs educational theory but may also offer practical insights that can guide pedagogical training and curriculum design.

The multidirectional nature of SIP steps complicates the positioning of processes or traits, particularly given the additional level in Lemerise & Arsenio's (2000) reformulation of the SIP. In Crick & Dodge's (1994) SIP model, a "Data Base" is positioned in the center of the cycle, which is proposed to include acquired rules, social schemas, and social knowledge -- all of which are involved in moral development and prosocial behavior. Similarly, Lemerise & Arsenio (2000) retain this "Database" and add an additional, middle level of the SIP as "Emotion Processes," which includes temperament and emotion regulation; simultaneously, arousal regulation is placed under Step 3 of the SIP (clarification of goals), and empathic responsiveness is listed under Step 1 (encoding of cues) *and* Step 5 (response decision). The broadness and centrality of the "Database" further contributes to potential murkiness (e.g., arousal regulation in Step 3 and emotion regulation as an emotional sub-process) and uncertain directionality. Indeed, the

“Database” seems to become a “Black Box” in which interrelated processes meet in mysterious ways, providing both a convenient and problematic keystone for the SIP.

Future directions. Results from this dissertation provide paths for future research to explore the specific mechanisms through which these traits interact, aiming to foster a more compassionate and socially responsible society. While some variables directly influence prosocial behavior, others may do so in a more complex, interconnected manner, suggesting future research directions for unpacking these relations further. In work by Soysa & Wilcomb (2015), the introduction of self-judgement caused more self-efficacy to relate to *less* well-being (meaning that the absence of self-compassion makes self-efficacy *inversely* relate to well-being). This intriguing outcome proposes a reevaluation of the roles of self-efficacy and self-compassion, perhaps considering self-compassion not merely as an outcome facilitated by self-efficacy but as an integral component of it. Such an approach could explain the conditions under which self-efficacy enhances or detracts from well-being and prosocial behavior.

Examination of the “Black Box” and deconstruction of traits could be used to further validation (or invalidation) of the SIP as a model for social behavior. Findings from Study 1 indicate that self-efficacy and self-compassion require further investigation – traits may need to be repositioned within the SIP to better illuminate relations. Study 2 results suggest that future examination of altruism and public prosocial behavior would benefit from incorporation of ascription of responsibility. Study 3 findings leave room for further investigation with a deeper dive into emotion regulation and attribution bias. Across studies, there remain questions about the relations between emotional processes and enacted behavior, calling for empirical research and behavioral observation to better disentangle how traits and processes may contribute to prosocial behaviors. Furthermore, future studies could benefit from employing longitudinal

designs to track changes in these psychological traits over time, providing insights into their stability and the long-term effects on behavior. Incorporating experimental methodologies or intervention-based studies could also determine causal relationships more definitively and identify practical strategies to enhance traits like self-compassion and empathy within various populations. Lastly, expanding the demographic and cultural scope of participants would enhance the generalizability of the findings, allowing for a more inclusive understanding of how these traits manifest across different societal contexts. This broader approach will not only deepen our understanding of prosocial behavior but also contribute to the development of tailored interventions that promote resilience, compassion, and social responsibility on a global scale.

References

- Akin, A. (2008). Self-compassion and Achievement Goals: A Structural Equation Modeling Approach. *Eurasian Journal of Educational Research*, 31, 1-15.
- Arimitsu, K., & Hofmann, S. G. (2017). Effects of compassionate thinking on negative emotions. *Cognition and Emotion*, 31(1), 160–167. <https://doi.org/10.1080/02699931.2015.1078292>
- Arman, M. (2023). Empathy, sympathy, and altruism—An evident triad based on compassion. A theoretical model for caring. *Scandinavian Journal of Caring Sciences*, 37(3), 862–871. <https://doi.org/10.1111/scs.13163>
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachandran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press. (Reprinted in H. Friedman [Ed.], *Encyclopedia of Mental Health*. San Diego: Academic Press, 1998).
- Baumert, A., Schlösser, T., & Schmitt, M. (2014). Economic Games: A Performance-Based Assessment of Fairness and Altruism. *European Journal of Psychological Assessment*, 30(3), 178–192. <https://doi.org/10.1027/1015-5759/a000183>
- Baumsteiger, R. (2019). What the World Needs Now: An Intervention for Promoting Prosocial Behavior. *Basic and Applied Social Psychology*, 41(4), 215–229. <https://doi.org/10.1080/01973533.2019.1639507>
- Benita, M., Levkovitz, T., & Roth, G. (2017). Integrative emotion regulation predicts adolescents' prosocial behavior through the mediation of empathy. *Learning and Instruction*, 50, 14–20. <https://doi.org/10.1016/j.learninstruc.2016.11.004>
- Bowen, K.N., Roberts, J.J., Kocian, E.J., & Bartula, A.L. (2017). An Empirical Test of Social Information Processing Theory and Emotions in Violent Situations. *Aktual'nye Problemy Ekonomiki i Prava*, 11, 189-207.
- Büssing, A., Girke, M., Heckmann, C., Schad, F., Ostermann, T., & Kröz, M. (2009). Validation of the self regulation questionnaire as a measure of health in quality of life research. *European Journal of Medical Research*, 14(5), 223–227. <https://doi.org/10.1186/2047-783X-14-5-223>
- Breines, J. G., & Chen, S. (2012). Self-Compassion Increases Self-Improvement Motivation. *Personality and Social Psychology Bulletin*, 38(9), 1133–1143. <https://doi.org/10.1177/0146167212445599>
- Cao, C., & Liang, X. (2022). Sensitivity of Fit Measures to Lack of Measurement Invariance in Exploratory Structural Equation Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 29(2), 248–258. <https://doi.org/10.1080/10705511.2021.1975287>
- Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial Foundations of Children's Academic Achievement. *Psychological Science*, 11(4), 302–306. <https://doi.org/10.1111/1467-9280.00260>
- Carlo, G., Eisenberg, N., & Knight, G. P. (1992). An Objective Measure of Adolescents' Prosocial Moral Reasoning. *Journal of Research on Adolescence*, 2(4), 331–349. https://doi.org/10.1207/s15327795jra0204_3
- Carlo, G., Knight, G. P., McGinley, M., Zamboanga, B. L., & Jarvis, L. H. (2010). The Multidimensionality of Prosocial Behaviors and Evidence of Measurement Equivalence in Mexican American and European American Early Adolescents. *Journal of Research on Adolescence*, 20(2), 334–358. <https://doi.org/10.1111/j.1532-7795.2010.00637.x>

- Carlo, G. (2014). The development and correlates of prosocial moral behaviors. In Killen, M., & Smetana, J. G. (Eds.) *Handbook of Moral Development* (pp. 184-207). Psychology Press.
- Carlo, G., Hausmann, A., Christiansen, S., & Randall, B. A. (2003). Sociocognitive and behavioral correlates of a measure of prosocial tendencies for adolescents. *Journal of Early Adolescence, 23*, 107-134.
- Carlo, G., Knight, G. P., Eisenberg, N., & Rotenberg, K. J. (1991). Cognitive processes and prosocial behaviors among children: The role of affective attributions and reconciliations. *Developmental Psychology, 27*(3), 456–461. <https://doi.org/10.1037/0012-1649.27.3.456>
- Carlo, G., Knight, G. P., McGinley, M., Zamboanga, B. L., & Jarvis, L. (2010a). The multidimensionality of prosocial behaviors: Evidence of measurement invariance in early Mexican American and European American adolescents. *Journal of Research on Adolescence, 20*, 334-358.
- Carlo, G., Mestre, M., Samper, P., Tur, A., & Armenta, B. E. (2010b). Feelings or cognitions? Moral cognitions and emotions as longitudinal predictors of prosocial and aggressive behaviors. *Personality and Individual Differences, 48*(8), 872-877.
- Carlo, G., Padilla-Walker, L. M., & Hastings, P. D. (2022). Prosocial Behaviors and Development. In M. Killen & J. G. Smetana, *Handbook of Moral Development* (3rd ed., pp. 391–407). Routledge. <https://doi.org/10.4324/9781003047247-31>
- Carlo, G., & Randall, B. A. (2002). The Development of a Measure of Prosocial Behaviors for Late Adolescents. *Journal of Youth and Adolescence, 31*(1), 31–44. <https://doi.org/10.1023/A:1014033032440>
- Cho, E., & Kim, S. (2015). Cronbach’s Coefficient Alpha: Well Known but Poorly Understood. *Organizational Research Methods, 18*(2), 207–230. <https://doi.org/10.1177/1094428114555994>
- Coccaro, E. F., Noblett, K. L., & McCloskey, M. S. (2009). Attributional and emotional responses to socially ambiguous cues: Validation of a new assessment of social/emotional information processing in healthy adults and impulsive aggressive patients. *Journal of Psychiatric Research, 43*(10), 915–925. <https://doi.org/10.1016/j.jpsychires.2009.01.012>
- Cooke, T. (2017). Social Information Processing: A Useful Framework for Educational Psychology. *Educational Psychology Research and Practice, 3*(1), p. 50–69. <https://doi.org/10.15123/uel.8870z>
- Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children’s social adjustment. *Psychological Bulletin, 115*(1), 74–101. <https://doi.org/10.1037/0033-2909.115.1.74>
- Crick, N. R., & Dodge, K. A. (1996). Social Information-Processing Mechanisms in Reactive and Proactive Aggression. *Child Development, 67*(3), 993–1002. <https://doi.org/10.2307/1131875>
- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*(4), 349–354. <https://doi.org/10.1037/h0047358>
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology, 10*, 85.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*(1), 113–126. <https://doi.org/10.1037/0022-3514.44.1.113>

- Davis, A. N., Carlo, G., Schwartz, S. J., Unger, J. B., Zamboanga, B. L., Lorenzo-Blanco, E. I., Cano, M. A., Baezconde-Garbanati, L., Oshri, A., Streit, C., Martinez, M. M., Piña-Watson, B., Lizzi, K., & Soto, D. (2016). The longitudinal associations between discrimination, depressive symptoms, and prosocial behaviors in U.S. Latino/a recent immigrant adolescents. *Journal of Youth and Adolescence*, *45*, 457-470.
- De Castro, B. O., Veerman, J. W., Koops, W., Bosch, J. D., & Monshouwer, H. J. (2002). Hostile Attribution of Intent and Aggressive Behavior: A Meta-Analysis. *Child Development*, *73*(3), 916–934. <https://doi.org/10.1111/1467-8624.00447>
- De Corte, K., Buysse, A., Verhofstadt, L. L., Roeyers, H., Ponnet, K., & Davis, M. H. (2007). Measuring Empathic Tendencies: Reliability And Validity of the Dutch Version of the Interpersonal Reactivity Index. *Psychologica Belgica*, *47*(4), 235. <https://doi.org/10.5334/pb-47-4-235>
- Delavari, H., Talebi, M.E., & Delavari, H. (2023). Transforming education: A review of the benefits of integrating mindfulness and meditation techniques in schools. *English Education Journal*. doi.org/10.24815/ej.v14i2.31992
- Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Perimeter (Ed.) *The Minnesota symposium on child psychology: Vol 18. Cognitive Perspectives on Children's Social and Behavioral Development* (p. 77-125). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Dodge, K. A., & Crick, N. R. (1990). Social Information-Processing Bases of Aggressive Behavior in Children. *Personality and Social Psychology Bulletin*, *16*(1), 8–22. <https://doi.org/10.1177/0146167290161002>
- Dwimahesi, N. N., & Musthofa, W. (2023). The Role of Self-Compassion on Muslim Students' Altruistic Behavior during COVID-19 Pandemic. *Jurnal Psikologi Integratif*, *11*(2), 219. <https://doi.org/10.14421/jpsi.v11i2.2803>
- Eisenberg, N., & Fabes, R. A. (1992). Emotion, regulation, and the development of social competence. In M. S. Clark (Ed.), *Emotion and Social Behavior* (pp. 119–150). Sage Publications, Inc.
- Eisenberg, N., Fabes, R. A., Guthrie, I. K., Murphy, B. C., Maszk, P., Holmgren, R., & Suh, K. (1996). The relations of regulation and emotionality to problem behavior in elementary school children. *Development and Psychopathology*, *8*, 141–162.
- Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial Development. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (pp. 646–718). John Wiley & Sons, Inc.
- Eisenberg, N., & Spinrad, T. L. (2014). Multidimensionality of prosocial behavior: Rethinking the conceptualization and development of prosocial behavior. In L. M. Padilla-Walker & G. Carlo (Eds.), *Prosocial development: A multidimensional approach* (pp. 17–39). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199964772.003.0002>
- Eisenberg, N., Spinrad, T. L., & Morris, A. (2014). Empathy-related responding in children. In Killen, M., & Smetana, J. G. (Eds.) *Handbook of Moral Development* (pp. 184-207). Psychology Press.
- Eisenberg, N., Zhou, Q., & Koller, S. (2001). Brazilian Adolescents' Prosocial Moral Judgment and Behavior: Relations to Sympathy, Perspective Taking, Gender-Role Orientation, and Demographic Characteristics. *Child Development*, *72*(2), 518–534. <https://doi.org/10.1111/1467-8624.00294>

- English, T., John, O. P., Srivastava, S., & Gross, J. J. (2012). Emotion regulation and peer-rated social functioning: A 4-year longitudinal study. *Journal of Research in Personality, 46*(6), 780–784. <https://doi.org/10.1016/j.jrp.2012.09.006>
- Ewert, C., Vater, A., & Schröder-Abé, M. (2021). Self-Compassion and Coping: A Meta-Analysis. *Mindfulness, 12*(5), 1063–1077. <https://doi.org/10.1007/s12671-020-01563-8>
- Fischer, D. G., & Fick, C. (1993). Measuring Social Desirability: Short Forms of the Marlowe-Crowne Social Desirability Scale. *Educational and Psychological Measurement, 53*(2), 417–424. <https://doi.org/10.1177/0013164493053002011>
- Forsythe, R., Horowitz, J. L., Savin, N. E., & Sefton, M. (1994). Fairness in Simple Bargaining Experiments. *Games and Economic Behavior, 6*(3), 347–369. <https://doi.org/10.1006/game.1994.1021>
- Friedman, H. S., Riggio, R. E., & Segall, D. O. (1980). Personality and the enactment of emotion. *Journal of Nonverbal Behavior, 5*(1), 35–48. <https://doi.org/10.1007/BF00987053>
- Ghidina, M. (2019). Deconstructing Victim-Blaming, Dehumanization, and Othering: Using Empathy to Develop a Sociological Imagination. *Teaching Sociology, 47*(3), 231–242. <https://doi.org/10.1177/0092055X19843978>
- Giromini, L., Velotti, P., de Campora, G., Bonalume, L., & Cesare Zavattini, G. (2012). Cultural Adaptation of the Difficulties in Emotion Regulation Scale: Reliability and Validity of an Italian Version: Reliability and Validity of the Ders in Italy. *Journal of Clinical Psychology, 68*(9), 989–1007. <https://doi.org/10.1002/jclp.21876>
- Gould, R., & Sigall, H. (1977). The effects of empathy and outcome on attribution: An examination of the divergent-perspectives hypothesis. *Journal of Experimental Social Psychology, 13*(5), 480–491. [https://doi.org/10.1016/0022-1031\(77\)90032-4](https://doi.org/10.1016/0022-1031(77)90032-4)
- Gouveia, V. V., Moura, H. M. de, Oliveira, I. C. V. de, Ribeiro, M. G. C., Rezende, A. T., & Brito, T. R. de S. (2018). Emotional Regulation Questionnaire (ERQ): Evidence of Construct Validity and Internal Consistency. *Psico-USF, 23*(3), 461–471. <https://doi.org/10.1590/1413-82712018230306>
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*(3), 281–291. <https://doi.org/10.1017/s0048577201393198>
- Gross, J. J. (Ed.). (2015). In Gross (Ed.) *Handbook of emotion regulation* (Second edition, paperback edition) (pp. 3-20). The Guilford Press.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348–362. <https://doi.org/10.1037/0022-3514.85.2.348>
- Hoffman, M. L. (2000). *Empathy and moral development: Implications for caring and justice*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511805851>
- IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp.
- Joshi, D. B., & Khan, M. T. (2022). Effectiveness of positive psychology intervention on self-efficacy beliefs among undergraduates. *BSSS Journal of Education, 11*(1), 1–11. <https://doi.org/10.51767/je1101>
- Kaufman, S. B., & Jauk, E. (2020). Healthy Selfishness and Pathological Altruism: Measuring Two Paradoxical Forms of Selfishness. *Frontiers in Psychology, 11*, 1006. <https://doi.org/10.3389/fpsyg.2020.01006>

- Killen, M., & Smetana, J. G. (Eds.) (2014). *Handbook of Moral Development* (2nd Ed.). Psychology Press.
- King, B. M. (2022). The Influence of Social Desirability on Sexual Behavior Surveys: A Review. *Archives of Sexual Behavior, 51*(3), 1495–1501. <https://doi.org/10.1007/s10508-021-02197-0>
- Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in Dispositional Empathy in American College Students Over Time: A Meta-Analysis. *Personality and Social Psychology Review, 15*(2), 180–198. <https://doi.org/10.1177/1088868310377395>
- Kupst, M. J., Butt, Z., Stoney, C. M., Griffith, J. W., Salsman, J. M., Folkman, S., & Cella, D. (2015). Assessment of stress and self-efficacy for the NIH Toolbox for Neurological and Behavioral Function. *Anxiety, Stress, and Coping, 28*(5), 531–544. <https://doi.org/10.1080/10615806.2014.994204>
- Laible, D., Eye, J., & Carlo, G. (2008). Dimensions of conscience in mid-adolescence: Links with social behavior, parenting, and temperament. *Journal of Youth and Adolescence, 37*, 875–887.
- Lagattuta, K. H., Weller, D. (2014). Interrelations between theory of mind and morality: A developmental perspective. In Killen, M., & Smetana, J. G. (Eds.) *Handbook of Moral Development* (pp. 184–207). Psychology Press.
- Larson, R. B. (2019). Controlling social desirability bias. *International Journal of Market Research, 61*(5), 534–547. <https://doi.org/10.1177/1470785318805305>
- Lathren, C. R., Rao, S. S., Park, J., & Bluth, K. (2021). Self-Compassion and Current Close Interpersonal Relationships: A Scoping Literature Review. *Mindfulness, 12*(5), 1078–1093. <https://doi.org/10.1007/s12671-020-01566-5>
- Leary, M. R., Tate, E. B., Adams, C. E., Allen, A. B., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92*(5), 887–904. <https://doi.org/10.1037/0022-3514.92.5.887>
- Lemerise, & Arsenio, W. F. (2000). An Integrated Model of Emotion Processes and Cognition in Social Information Processing. *Child Development, 71*(1), 107–118. <https://doi.org/10.1111/1467-8624.00124>
- Liao, K. Y.-H., Stead, G. B., & Liao, C.-Y. (2021). A Meta-Analysis of the Relation Between Self-Compassion and Self-Efficacy. *Mindfulness, 12*(8), 1878–1891. <https://doi.org/10.1007/s12671-021-01626-4>
- Lockwood, P. L., Seara-Cardoso, A., & Viding, E. (2014). Emotion Regulation Moderates the Association between Empathy and Prosocial Behavior. *PLoS ONE, 9*(5), e96555. <https://doi.org/10.1371/journal.pone.0096555>
- Lucas-Molina, B., Pérez-Albéniz, A., & Ortuño-Sierra, J. (2017). Dimensional structure and measurement invariance of the Interpersonal Reactivity Index (IRI) across gender. *Psicothema, 29.4*, 590–595. <https://doi.org/10.7334/psicothema2017.19>
- MacBeth, A., & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review, 32*(6), 545–552. <https://doi.org/10.1016/j.cpr.2012.06.003>
- Martinelli, A., Ackermann, K., Bernhard, A., Freitag, C. M., & Schwenck, C. (2018). Hostile attribution bias and aggression in children and adolescents: A systematic literature review on the influence of aggression subtype and gender. *Aggression and Violent Behavior, 39*, 25–32. <https://doi.org/10.1016/j.avb.2018.01.005>

- Murdock, K. W. (2013). An examination of parental self-efficacy among mothers and fathers. *Psychology of Men & Masculinity, 14*(3), 314–323. <https://doi.org/10.1037/a0027009>
- Muthén, L.K. and Muthén, B.O. (1998-2017). *Mplus User's Guide*. Eighth Edition. Los Angeles, CA: Muthén & Muthén
- Nazari, A. M., Shahabi, M., Shad, N., Kooreh Khosravi, A. G., & Rafiei, M. (2024). The relationship between self-compassion and burnout in healthcare professionals: A narrative review. *Journal of Nursing Reports in Clinical Practice, 0*(0), 0–0. <https://doi.org/10.32598/JNRCP.2312.1008>
- Neff, K. (2003). Self-Compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself. *Self and Identity, 2*(2), 85–101. <https://doi.org/10.1080/15298860309032>
- Neff, K. D. (2010). *Self-Compassion*. HarperCollins Publishers.
- Neff, K. D. (2023). Self-Compassion: Theory, Method, Research, and Intervention. *Annual Review of Psychology, 74*(1), 193–218. <https://doi.org/10.1146/annurev-psych-032420-031047>
- Neff, K. D., & Beretvas, S. N. (2013). The Role of Self-compassion in Romantic Relationships. *Self and Identity, 12*(1), 78–98. <https://doi.org/10.1080/15298868.2011.639548>
- Neff, K. D., & Faso, D. J. (2015). Self-Compassion and Well-Being in Parents of Children with Autism. *Mindfulness, 6*(4), 938–947. <https://doi.org/10.1007/s12671-014-0359-2>
- Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41*(1), 139–154. <https://doi.org/10.1016/j.jrp.2006.03.004>
- Neff, K. D., Long, P., Knox, M. C., Davidson, O., Kuchar, A., Costigan, A., Williamson, Z., Rohleder, N., Tóth-Király, I., & Breines, J. G. (2018). The forest and the trees: Examining the association of self-compassion and its positive and negative components with psychological functioning. *Self and Identity, 17*(6), 627–645. <https://doi.org/10.1080/15298868.2018.1436587>
- Neff, K. D., & Tóth-Király, I. (2022). Self-Compassion Scale (SCS). In O. N. Medvedev, C. U. Krägeloh, R. J. Siebert, & N. N. Singh (Eds.), *Handbook of Assessment in Mindfulness Research* (pp. 1–22). Springer International Publishing. https://doi.org/10.1007/978-3-030-77644-2_36-1
- Neff, K. D., Tóth-Király, I., Knox, M. C., Kuchar, A., & Davidson, O. (2021). The Development and Validation of the State Self-Compassion Scale (Long- and Short Form). *Mindfulness, 12*(1), Article 1. <https://doi.org/10.1007/s12671-020-01505-4>
- Nelson, D. A., & Crick, N. R. (1999). Rose-Colored Glasses: Examining the Social Information-Processing of Prosocial Young Adolescents. *The Journal of Early Adolescence, 19*(1), 17–38. <https://doi.org/10.1177/0272431699019001002>
- Novak, S. P., & Clayton, R. R. (2001). The influence of school environment and self-regulation on transitions between stages of cigarette smoking: A multilevel analysis. *Health Psychology, 20*(3), 196–207. <https://doi.org/10.1037/0278-6133.20.3.196>
- Nunnally, J.C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Padilla-Walker, L. M., & Carlo, G. (Eds.). (2014). *Prosocial Development: A Multidimensional Approach*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199964772.001.0001>
- Pekrun, R., Elliot, A. J., & Maier, M. A. (2009). Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. *Journal of Educational Psychology, 101*(1), 115–135. <https://doi.org/10.1037/a0013383>

- Pereira, A. T., Brito, M. J., Cabaços, C., Carneiro, M., Carvalho, F., Manão, A., Araújo, A., Pereira, D., & Macedo, A. (2022). The Protective Role of Self-Compassion in the Relationship between Perfectionism and Burnout in Portuguese Medicine and Dentistry Students. *International Journal of Environmental Research and Public Health*, *19*(5), 2740. <https://doi.org/10.3390/ijerph19052740>
- Pommier, E., Neff, K. D., & Tóth-Király, I. (2019). The Development and Validation of the Compassion Scale. *Assessment*, *27*(1), Article 1. <https://doi.org/10.1177/1073191119874108>
- Purnamaningsih, E. H. (2017). Personality and Emotion Regulation Strategies. *International Journal of Psychological Research*, *10*(1), Article 1. <https://doi.org/10.21500/20112084.2040>
- Preece, D. A., Becerra, R., Hasking, P., McEvoy, P. M., Boyes, M., Sauer-Zavala, S., Chen, W., & Gross, J. J. (2021). The Emotion Regulation Questionnaire: Psychometric Properties and Relations with Affective Symptoms in a United States General Community Sample. *Journal of Affective Disorders*, *284*, 27–30. <https://doi.org/10.1016/j.jad.2021.01.071>
- Raes, F. (2010). Rumination and worry as mediators of the relationship between self-compassion and depression and anxiety. *Personality and Individual Differences*, *48*(6), 757–761. <https://doi.org/10.1016/j.paid.2010.01.023>
- Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the Self-Compassion Scale. *Clinical Psychology & Psychotherapy*, *18*, 250-255
- Rasmussen, H. F., Ramos, M. C., Han, S. C., Pettit, C., & Margolin, G. (2018). How discrimination and perspective-taking influence adolescents' attitudes about justice. *Journal of Adolescence*, *62*, 70–81. <https://doi.org/10.1016/j.adolescence.2017.11.005>
- Sagone, E., & Indiana, M. L. (2017). The Relationship of Positive Affect with Resilience and Self-Efficacy in Life Skills in Italian Adolescents. *Psychology*, *08*(13), 2226–2239. <https://doi.org/10.4236/psych.2017.813142>
- Sahoo, M. (2019). Structural Equation Modeling: Threshold Criteria for Assessing Model Fit. In *Methodological Issues in Management Research: Advances, Challenges, and the Way Ahead* (pp. 269–276). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-78973-973-220191016>
- Salazar Kämpf, M., Adam, L., Rohr, M. K., Exner, C., & Wieck, C. (2023). A Meta-Analysis of the Relationship Between Emotion Regulation and Social Affect and Cognition. *Clinical Psychological Science*, *216770262211499*. <https://doi.org/10.1177/21677026221149953>
- Salsman, J. M., Butt, Z., Pilkonis, P. A., Cyranowski, J. M., Zill, N., Hendrie, H. C., Kupst, M. J., Kelly, M. A., Bode, R. K., Choi, S. W., Lai, J. S., Griffith, J. W., Stoney, C. M., Brouwers, P., Knox, S. S., & Cella, D. (2013). Emotion assessment using the NIH Toolbox. *Neurology*, *80*(11 Suppl 3), S76–S86. <https://doi.org/10.1212/WNL.0b013e3182872e11>
- Sassenrath, C., Vorauer, J. D., & Hodges, S. D. (2022). The link between perspective-taking and prosociality—Not as universal as you might think. *Current Opinion in Psychology*, *44*, 94–99. <https://doi.org/10.1016/j.copsyc.2021.08.036>
- Sbarra, D. A., Smith, H. L., & Mehl, M. R. (2012). When Leaving Your Ex, Love Yourself: Observational Ratings of Self-Compassion Predict the Course of Emotional Recovery Following Marital Separation. *Psychological Science*, *23*(3), 261–269. <https://doi.org/10.1177/0956797611429466>
- Schwartz, S. H. (1967). *Moral Orientations and Interpersonal Conduct in Moral Encounters* (Publication No. 6715690) [Doctoral dissertation, University of Michigan]. ProQuest Dissertations Publishing.

- Slotkin, J., Kallen, M., Griffith, J., Magasi, S., Salsman, J., Nowinski, C., & Gershon, R. (2012). *NIH Toolbox Technical Manual*. National Institutes of Health.
- Soysa, C. K., & Wilcomb, C. J. (2015). Mindfulness, Self-compassion, Self-efficacy, and Gender as Predictors of Depression, Anxiety, Stress, and Well-being. *Mindfulness*, *6*(2), 217–226. <https://doi.org/10.1007/s12671-013-0247-1>
- Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the Marlow-Crowne Social Desirability Scale. *Journal of Clinical Psychology*, *28*(2), 191–193.
- Stankov, L. (2018). Low Correlations between Intelligence and Big Five Personality Traits: Need to Broaden the Domain of Personality. *Journal of Intelligence*, *6*(2), 26. <https://doi.org/10.3390/jintelligence6020026>
- Terrien, S., Gobin, P., Coutté, A., Thuaire, F., Iakimova, G., Mazzola-Pomietto, P., & Besche-Richard, C. (2015). Emotional Meaning in Context in Relation to Hypomanic Personality Traits: An ERP Study. *PLOS ONE*, *10*(9), e0138877. <https://doi.org/10.1371/journal.pone.0138877>
- U.S. Department of Education. (2020). *U.S. Department of Education College Scorecard: University of California – Irvine*. Retrieved from <https://collegescorecard.ed.gov/school/?110653-University-of-California-Irvine>
- Van Bockstaele, B., Van Der Molen, M. J., Van Nieuwenhuijzen, M., & Salemink, E. (2020). Modification of hostile attribution bias reduces self-reported reactive aggressive behavior in adolescents. *Journal of Experimental Child Psychology*, *194*, 104811. <https://doi.org/10.1016/j.jecp.2020.104811>
- Vescio, T. K., Sechrist, G. B., & Paolucci, M. P. (2003). Perspective taking and prejudice reduction: The mediational role of empathy arousal and situational attributions. *European Journal of Social Psychology*, *33*(4), 455–472. <https://doi.org/10.1002/ejsp.163>
- Vesely, S., & Klöckner, C. A. (2020). Social Desirability in Environmental Psychology Research: Three Meta-Analyses. *Frontiers in Psychology*, *11*, 1395. <https://doi.org/10.3389/fpsyg.2020.01395>
- Vigna, A. J., Pöhlmann-Tynan, J., & Koenig, B. W. (2018). Does Self-Compassion Facilitate Resilience to Stigma? A School-Based Study of Sexual and Gender Minority Youth. *Mindfulness*, *9*(3), 914–924. <https://doi.org/10.1007/s12671-017-0831-x>
- Watson, D., & Clark, L. A. (1992). On Traits and Temperament: General and Specific Factors of Emotional Experience and Their Relation to the Five-Factor Model. *Journal of Personality*, *60*(2), 441–476. <https://doi.org/10.1111/j.1467-6494.1992.tb00980.x>
- Wu, L.-Z., Zhang, H., Chiu, R. K., Kwan, H. K., & He, X. (2014). Hostile Attribution Bias and Negative Reciprocity Beliefs Exacerbate Incivility's Effects on Interpersonal Deviance. *Journal of Business Ethics*, *120*(2), 189–199. <https://doi.org/10.1007/s10551-013-1658-6>
- Yang, Y., Guo, Z., Kou, Y., & Liu, B. (2019). Linking Self-Compassion and Prosocial Behavior in Adolescents: The Mediating Roles of Relatedness and Trust. *Child Indicators Research*, *12*(6), 2035–2049. <https://doi.org/10.1007/s12187-019-9623-2>
- Yarnell, L. M., & Neff, K. D. (2013). Self-compassion, Interpersonal Conflict Resolutions, and Well-being. *Self and Identity*, *12*(2), 146–159. <https://doi.org/10.1080/15298868.2011.649545>
- Yeşil, A., & Polat, Ş. (2023). Investigation of psychological factors related to compassion fatigue, burnout, and compassion satisfaction among nurses. *BMC Nursing*, *22*(1), 12. <https://doi.org/10.1186/s12912-023-01174-3>

- Zajenkowska, A., Bower Russa, M., Rogoza, R., Park, J., Jasielska, D., & Skrzypek, M. (2021). Cultural Influences on Social Information Processing: Hostile Attributions in the United States, Poland, and Japan. *Journal of personality assessment, 103*(4), 489–497.
<https://doi.org/10.1080/00223891.2020.1774380>
- Zhang, J. W., Chen, S., & Tomova Shakur, T. K. (2020). From Me to You: Self-Compassion Predicts Acceptance of Own and Others' Imperfections. *Personality & Social Psychology Bulletin, 46*(2), 228–242. <https://doi.org/10.1177/0146167219853846>
- Zulkosky, K. (2009). Self-Efficacy: A Concept Analysis. *Nursing Forum, 44*(2), 93–102.
<https://doi.org/10.1111/j.1744-6198.2009.00132.x>

APPENDIX I

NIH Self-efficacy Item Bank/Fixed Form

Participants respond to each question or statement and respond to “Please read the sentence and decide how true it is of you in general” by using a 5-point Likert scale ranging from 1 ("Never") to 5 ("Very Often").

1. I can manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want.
3. It is easy for me to stick to my aims and accomplish my goals.
4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my talents and skills, I know how to handle unexpected situations.
6. I can solve most problems if I try hard enough.
7. I stay calm when facing difficulties because I can handle them.
8. When I have a problem, I can find several ways to solve it.
9. If I am in trouble, I can think of a solution.
10. I can handle whatever comes my way.

APPENDIX II

NIH Positive Affect (Ages 18+) Item Bank

Participants are instructed to indicate how often they have experienced each statement "In the past 7 days:" by using a 5-point Likert scale ranging from 1 ("Not at all") to 5 ("Very much").

- | | | |
|----------------------|--|--|
| 1. I felt cheerful. | 13. I felt enthusiastic. | 24. I felt a sense of harmony within myself. |
| 2. I felt attentive. | 14. I felt determined. | 25. I generally enjoyed the things I did. |
| 3. I felt relaxed. | 15. I felt interested. | 26. I felt lighthearted. |
| 4. I felt delighted. | 16. I felt confident. | 27. I felt satisfied. |
| 5. I felt inspired. | 17. I felt able to concentrate. | 28. I felt good-natured. |
| 6. I felt fearless. | 18. I was thinking creatively. | 29. I felt useful. |
| 7. I felt happy. | 19. I liked myself. | 30. I felt optimistic. |
| 8. I felt joyful. | 20. My future looked good. | 31. I felt interested in other people. |
| 9. I felt excited. | 21. I smiled and laughed a lot. | 32. I felt understood. |
| 10. I felt proud. | 22. I felt peaceful. | 33. I felt grateful. |
| 11. I felt lively. | 23. I was able to reach down deep into myself for comfort. | 34. I felt content. |
| 12. I felt at ease. | | |

APPENDIX III

Self-Compassion Scale (SCS)

Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the Self-Compassion Scale. *Clinical Psychology & Psychotherapy*, 18, 250-255.

How I typically act towards myself in difficult times: Please read each statement carefully before answering. Indicate how often you behave in the stated manner, using the following scale.

5-point Likert scale:

(1) Never, (2) Almost Never, (3) Sometimes, (4) Often, (5) Almost Always

1. When I fail at something important to me I become consumed by feelings of inadequacy.
2. I try to be understanding and patient towards those aspects of my personality I don't like.
3. When something painful happens I try to take a balanced view of the situation.
4. When I'm feeling down, I tend to feel like most people are probably happier than I am.
5. I try to see my failings as part of the human condition.
6. When I'm going through a very hard time, I give myself the caring and tenderness I need.
7. When something upsets me, I try to keep my emotions in balance.
8. When I fail at something that's important to me, I tend to feel alone in my failure.
9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I'm disapproving and judgmental about my own flaws and inadequacies.
12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Note: More information about the scale and scoring can be found at <https://self-compassion.org/self-compassion-scales-for-researchers/>

APPENDIX IV

Interpersonal Reactivity Index (IRI) Measure

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10, 85,

Instructions: The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter on the answer sheet next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

A B C D E

A = DOES NOT DESCRIBE ME WELL

E = DESCRIBES ME VERY WELL

1. I daydream and fantasize, with some regularity, about things that might happen to me. (FS)
2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the "other guy's" point of view. (PT) (-)
4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)
5. I really get involved with the feelings of the characters in a novel. (FS)
6. In emergency situations, I feel apprehensive and ill-at-ease. (PD)
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. (FS) (-)
8. I try to look at everybody's side of a disagreement before I make a decision. (PT)
9. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)
10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
12. Becoming extremely involved in a good book or movie is somewhat rare for me. (FS) (-)
13. When I see someone get hurt, I tend to remain calm. (PD) (-)
14. Other people's misfortunes do not usually disturb me a great deal. (EC) (-)
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)
16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)
17. Being in a tense emotional situation scares me. (PD)
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
19. I am usually pretty effective in dealing with emergencies. (PD) (-)
20. I am often quite touched by things that I see happen. (EC)
21. I believe that there are two sides to every question and try to look at them both. (PT)
22. I would describe myself as a pretty soft-hearted person. (EC)
23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)
24. I tend to lose control during emergencies. (PD)
25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me. (FS)
27. When I see someone who badly needs help in an emergency, I go to pieces. (PD)
28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)

Note: Items marked with (-) are reverse scored.

APPENDIX V

Ascription of Responsibility Scale (ARS) Measure

Schwartz, S. H. (1968). Words, deeds and the perception of consequences and responsibility in action situations. *Journal of Personality and Social Psychology*, 10(3), Article 3. <https://doi.org/10.1037/h0026569>

Instructions (my own): We're interested in how people think about the world. On a scale from "strongly disagree" to "strongly agree," please indicate your response for each item.

1 = Disagree strongly 2 = Disagree somewhat 3 = Neither agree nor disagree 4 = Agree somewhat 5 = Agree strongly

1. It's my duty to stop a friend from injuring an enemy of his/hers	11. When considering how difficult it is for honest businesspeople to get ahead, it's easier to forgive shrewdness in business	21. I wouldn't feel badly about offending someone if my intentions were good
2. Failing to return money when given back too much change, is the same as stealing	12. When a person is pushed hard enough, there comes a point beyond which anything he/she does is justifiable	22. Extenuating circumstances never completely remove one's responsibility for their actions
3. I would not feel I had to do my part, if everyone else was being lazy	13. Even if something you borrow is defective, you should still replace it if it gets broken	23. You cannot expect a person to act much differently from everyone else
4. If I hurt someone unintentionally, I would feel almost as bad as I would if I had done it intentionally	14. You cannot blame good people who are forced by their environment to be inconsiderate of others	24. It doesn't make sense to be concerned about how we act when we are sick and feeling miserable
5. Gossiping is so common, a person who gossips isn't to be blamed	15. No matter how much a person is provoked, he/she is always responsible for whatever he/she does	25. You cannot hold a store clerk responsible for being rude at the end of a long work day
6. When someone is nasty to me, I feel little responsibility to treat them well	16. Being upset does not excuse a person for doing anything he/she would ordinarily avoid	26. Professional obligations can never justify neglecting the welfare of others
7. I would feel less bothered about littering in a dirty park than in a clean one	17. As long as a businessperson does not break laws, he/she should feel free to do his/her business as they see fit	27. If I broke a machine through mishandling, I'd feel less guilty if it was already damaged before I used it
8. No matter what a person has done to us, there's no excuse for taking advantage of him/her	18. Occasionally, a person may be in a situation where he/she has absolutely no control over what he/she does to others	28. When you have a job to do, it is impossible to look out for everybody's best interests
9. When someone is busy doing valuable work, you can't blame him/her for being insensitive to others	19. I would feel obligated to help someone who needed it, even if he/she had not shown gratitude for past favors	
10. If I damaged another's car in an accident that was legally his/her fault, I would still feel guilty	20. With pressure for grades and widespread cheating in schools, a person who cheats is not really at fault	

APPENDIX VI

Prosocial Tendencies Measure (PTM)

Carlo, G., Knight, G. P., *McGinley, M., *Zamboanga, B. L., & Jarvis, L. (2010). The multidimensionality of prosocial behaviors: Evidence of measurement invariance in early Mexican American and European American adolescents. *Journal of Research on Adolescence*.

Instructions: Below are sentences that might or might not describe you. Please indicate HOW MUCH EACH STATEMENT DESCRIBES YOU by using the scale below.

1 = Does not describe me at all
2 = Describes me a little
3 = Somewhat describes me

4 = Describes me well
5 = Describes me greatly

Pub	1. I can help others best when people are watching me.	Pub	12. Helping others when I am being watched is when I work best.
Emot	2. It makes me feel good when I can comfort someone who is very upset.	Dire	13. It is easy for me to help others when they are in a bad situation.
Pub	3. When other people are around, it is easier for me to help others in need.	Anon	14. Most of the time, I help others when they do not know who helped them.
*Alt	4. I think that one of the best things about helping others is that it makes me look good.	Emot	15. I respond to helping others best when the situation is highly emotional.
Dire	5. I tend to help people who are in a real crisis or need.	Comp	16. I never wait to help others when they ask for it.
Com	6. When people ask me to help them, I don't hesitate.	Anon	17. I think that helping others without them knowing is the best type of situation.
Anon	7. I prefer to help others without anyone knowing.	*Alt	18. One of the best things about doing charity work is that it looks good.
Dire	8. I tend to help people who are hurt badly.	Emot	19. Emotional situations make me want to help others in need.
*Alt	9. I believe that giving goods or money works best when I get some benefit.	*Alt	20. I feel that if I help someone, they should help me in the future.
Anon	10. I tend to help others in need when they do not know who helped them.	Emot	21. I usually help others when they are very upset.
Emot	11. I tend to help others especially when they are really emotional.		

Note: * indicates the item is reverse scored.

Pub = Public, Emt = Emotional, Dire = Dire, Anon = Anonymous, Alt = Altruism, Com = Compliant.

APPENDIX VII

Social Information Processing - Attribution Bias Questionnaire (SIP-ABQ)

Coccaro, E. F., Noblett, K. L., & McCloskey, M. S. (2009). Attributional and emotional responses to socially ambiguous cues: Validation of a new assessment of social/emotional information processing in healthy adults and impulsive aggressive patients. *Journal of Psychiatric Research*, 43(10), 915–925.
<https://doi.org/10.1016/j.jpsychires.2009.01.012>

Instructions: Please read these short stories about relationships with other people and answer all questions asked about the story as honestly as possible. Please circle your answers where indicated.

Item instructions: Rate the likelihood of each statement on a scale of 0-3.
0 = Not at all likely, 1 = Unlikely, 2 = Likely, 3 = Very likely

Story. 1

You tell a friend something personal and ask your friend not to discuss it with anyone else. However, a couple of weeks later, you find out that a lot of people know about it. You ask your friend why she/he told other people and your friend says: “Well, I don’t know, it just came up and I didn’t think it was a big deal.”

A. Why do you think your friend shared your secret when you told them not to share it with anyone?

A1. My friend wanted to expose my secret.

A2. My friend wanted to impress other people with their secret knowledge about me.

A3. My friend forgot that this was an important secret for me.

A4. My friend wanted me to feel stupid for asking to keep my secret.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be upset with yourself if this happened to you?

Story. 2

Imagine that you are in a karate class competition and you have to demonstrate your abilities to your instructor. You are matched up to “fight” with someone in the class who you do not know well. While you are being evaluated, your karate classmate hits you in a way other than the way you were taught and you are hurt.

A. Why do you think your karate classmate hit you in a way other than the way you were taught?

A1. My karate classmate wanted to physically hurt me.

A2. My karate classmate wanted to win the match.

A3. My karate classmate did it by accident.

A4. My karate classmate wanted to make me look “bad”.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be embarrassed if this happened to you?

Story. 3

Early one morning (at “rush hour”) you go to a busy local coffee shop to get a cup of coffee. While you are waiting, someone you see at the coffee shop regularly, but do not know personally, cuts in the line in front of you.

A. Why do you think this person cut in line in front of you?

A1. This person wanted to make me wait longer to get my coffee.

A2. This person was in a hurry to get in to work.

A3. This person didn’t realize that he (or she) cut in line in front of me.

A4. This person wanted me to feel unimportant.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be upset with yourself if this happened to you?

Story. 5

You make plans with one of your friends to go on a short trip for the weekend. You’re very excited about these plans and have been looking forward to the trip. However, at the last minute, your friend says that he (or she) no longer wants to go on the trip and has made plans with another friend for the weekend.

A. Why do you think your friend said he/she no longer wanted to go on the trip?

A1. My friend doesn’t want to be with me.

A2. My friend wanted to do something else.

A3. My friend forgot about the plans we made.

Story. 4

Imagine that you and a group of your co-workers went on a business trip. While at the hotel, waiting to meet a customer, you stop to buy a cup of coffee. Suddenly, one of your co-workers bumps your arm and spills your coffee over your shirt. The coffee is hot and your shirt is wet.

A. Why do you think your co-worker bumped your arm making you spill your coffee?

A1. My co-worker wanted to burn me with the hot coffee.

A2. My co-worker was focused on the meeting.

A3. My co-worker did it by accident.

A4. My co-worker wanted to make me look “bad” to the customer.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be embarrassed if this happened to you?

Story. 6

One day at work you decide to go to the cafeteria for lunch. After you purchase your lunch, you notice that the seating area is very crowded and no empty tables are available. You notice one of your co-workers sitting alone at a small table and ask if you can join him (or her) for lunch. Your co-worker says “no”.

A. Why do you think your co-worker said “no”?

A1. My co-worker wanted to exclude me.

A2. My co-worker wanted to be alone at that time.

A3. My co-worker was “lost in thought” and didn’t realize I had asked to join him (or her).

A4. My friend wanted me to feel unimportant.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be upset with yourself if this happened to you?

Story. 7

Imagine that you go to the first meeting of a club you want to join. You would like to make friends with the other people in the club. You walk up to some of the other club members and say, "Hi!" but they don't say anything back.

A. Why do you think the club members didn't say anything back to you?

A1. The club members wanted to ignore me.

A2. The club members were more interested in talking among themselves.

A3. The club members didn't hear me say "Hi".

A4. The club members wanted me to feel unimportant.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be embarrassed if this happened to you?

A4. My co-worker wanted me to feel bad.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be embarrassed if this happened to you?

Story. 8

You are driving in to work one day and just after you pull into a parking space, another car pulls up into the space to your right. As the person in the other car, a co-worker, gets out of his/her car, their car door hits your passenger side door and leaves a scratch on your car. The person walks away as you get out of your car.

A. Why do you think this person acted this way?

A1. This person wanted to damage my car.

A2. This person was in a hurry to get in to work.

A3. This person scratched my car by accident and didn't notice.

A4. This person wanted me to feel unimportant.

B. How likely is it that you would be angry if this happened to you?

C. How likely is it that you would be upset with yourself if this happened to you?

APPENDIX VIII

Questionnaire on Self-Regulation

Novak, S.P., & Clayton, R. R. (2001). The influence of school environment and self-regulation on transitions between stages of cigarette smoking: A multilevel analysis. *Healthy Psychology*, 20, 196-207.

Instructions (my own): Below are a number of statements people sometimes use to describe themselves. On a scale from 1 (never true) to 4 (always true), please rate how true each item is for you.

EMO	*1.	I have a hard time controlling my temper.
EMO	*2.	I get so frustrated I feel ready to explode.
EMO	*3.	I get upset easily.
EMO	*4.	I am afraid I will lose control over my feelings.
EMO	*5.	I slam doors when I am mad.
COG	6.	I develop a plan for all my important goals.
COG	7.	I think about the future consequences of my actions.
COG	*8.	Once I have a goal, I make a plan to reach it.
BEH	9.	I get distracted by little things.
BEH	*10.	As soon as I see things that are not working, I do something about it.
BEH	11.	I get fidgety after a few minutes if I am supposed to sit still.
BEH	*12.	I have a hard time sitting still during important tasks.
BEH	*13.	I find that I bounce my legs or wiggle with objects.

*Note: Items marked with * are reverse scored.*

APPENDIX IX

Social Desirability Scale

Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the Marlow-Crowne Social Desirability Scale. *Journal of Clinical Psychology*, 28(2), 191–193.

Instructions (my own): Below are a number of statements. Please select whether you feel a response is “true” or “false” for you.

T	1.	I’m always willing to admit it when I make a mistake.
T	2.	I always try to practice what I preach.
T	3.	I never resent being asked to return a favor.
T	4.	I have never been irked when people express ideas very different from my own.
T	5.	I have never deliberately said something that hurt someone’s feelings.
F	6.	I like to gossip at times.
F	7.	There have been occasions when I took advantage of someone.
F	8.	I sometimes try to get even rather than forgive and forget.
F	9.	At times I have really insisted on having things my own way.
F	10.	There have been occasions when I felt like smashing things.
