

ABSTRACT

BECKER, WHITNEY Y. Do Mindsets and Attributions Shape Managers' Compassion for Employees' Burnout Behavior? (Under the direction of Dr. Jeni L. Burnette).

The COVID-19 pandemic exacerbated workplace challenges, creating a strain on managers and contributing to employee burnout. Compassion in the wake of employee burnout behavior can benefit the organization and the employee. In the current work, drawing on mindset and attribution theory, I explore how these two cognitive processes relate to manager's responses to burnout behavior. Specifically, I investigated if managers' growth mindsets of people predict more compassion and if attributions serve as a key underlying psychological mechanism. In Study 1 ($N=499$), I find evidence for statistical mediation regarding the growth mindset to compassion link via unstable attributions. However, in Study 2 ($N=475$), using a manipulate-the-mediator design, I find no evidence of attributions serving a causal role linking growth mindsets to compassion. In addition to discussing practical implications for organizations, I highlight the need to utilize research designs that test for mediators through causal approaches.

Do Mindsets and Attributions Shape Managers' Compassion for Employees' Burnout Behavior?

by
Whitney Yvonne Becker

A dissertation or thesis submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Psychology

Raleigh, North Carolina
2024

APPROVED BY:

Dr. Jeni L. Burnette
Committee Chair

Dr. Laura Widman

Dr. Kelly-Lynn Mulvey

Dr. Brad Kirkman

BIOGRAPHY

Whitney Becker was born in St. Louis Park, Minnesota. She completed her bachelor's and master's degrees in education at Furman University in 2014 and 2016. Before pursuing her PhD at North Carolina State University, Whitney spent six years teaching elementary school. She has been able to apply her research skills in a variety of settings throughout her time in the program, including the Center for Educational Improvement, Research-to-Policy Collaboration, and The Jed Foundation.

ACKNOWLEDGMENTS

First, I would like to thank my partner, Tony, for his steadfast support over the past four years. Thank you for being my voice of reason and calming presence when I needed it most.

I'd also like to thank my family. Mom and dad, thank you for instilling a sense of purpose and a drive—you both taught me to dream big. To Eric, Regan, Luisa, and Caro---thank you all for the adventures and for your feedback and support throughout this process. Bernardo and Arthur, thank you for centering me and being a reminder of what is most important in this life. You both fill my days with joy and laughter.

I'd also like to thank my committee members for their support, kindness, and encouragement. In particular, I'd like to thank Dr. Jeni Burnette for taking a chance on me four years ago and for her guidance, empathy, and patience while I challenged myself and grew in new ways.

I am also grateful for my peers in the Applied Social Psychology program for their support, friendship, and community who have made this journey even more enjoyable. I'd especially like to thank my lab mate and kayak-riding/cycle buddy, Sydney, for her encouragement and willingness to always lend a listening ear.

TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES	viii
Introduction	1
Mindset Theory	4
Attribution Theory	7
Study 1	7
Methods	7
Participants.....	7
Procedure & Measures	9
Results	12
Study 1 Discussion	15
Study 2	16
Methods	16
Participants	16
Procedure & Measures	18
Results	19
Study 2 Discussion	22
General Discussion	22
Theory-Based & Practical Implications	23
Limitations	25
Directions for Future Research	25
Psychological Mechanisms	25
Organizational Context and Mindsets.....	26
Conclusion	26
References	28
APPENDICES	57

LIST OF TABLES

Table 1	Study 1 Demographic Characteristics of Participants	46
Table 2	Study 1 Means, Standard Deviations, Alphas, and Correlations Among Variables Of Interest.....	47
Table 3	Study 1 Regression Analyses Showing Predictors of Emotional Compassion	48
Table 4	Study 1 Regression Analyses Showing Predictors of Behavioral Compassion	49
Table 5	Study 2 Demographic Characteristics of Participants	53
Table 6	Study 2 Means, Standard Deviations, Alphas, and Correlations Among Variables Of Interest.....	54

LIST OF FIGURES

Figure 1	Hypothesized Mediation Model	50
Figure 2	Study 1 Mediation Model for Indirect Effect of Mindsets of People on Emotional and Behavioral Compassion via Situation-Centered Attributions.....	51
Figure 3	Study 1 Mediation Model for Indirect Effect of Mindsets of People on Emotional And Behavioral Compassion via Unstable Attributions	52
Figure 4	Study 2 Mediation Model for Indirect Effect of Mindsets of People on Behavioral Compassion via Unstable Attributions	55
Figure 5	Study 2 Mediation Model for Indirect Effect of Mindsets Condition on Behavioral Compassion via Self-Reported Mindsets	56

Introduction

Imagine this scenario: You are the manager of an employee who is consistently struggling to complete tasks on time. They often miss deadlines and are unproductive. What decision should you make? Would you discipline them or support them? Although managers often face these difficult decisions, COVID-19 created a host of additional related challenges, including record high levels of turnover, the Great Resignation, quiet quitting, and more (Buscaglia, 2022; Cohen, 2021; Serenko, 2022). This trend is likely to continue, with close to half the workforce estimated to consider leaving their current position, globally (The Work Trend Index, 2021). Accordingly, any evidence-based insights we—as scholars—can provide managers regarding how to engage in the best course of action, when interacting with employees who are struggling, could have immediate practical use.

Compassion, which consists of emotional (e.g., empathizing) and behavioral (e.g., giving feedback, providing support) elements, cultivates healthy, supportive work environments, with implications for a host of organizational outcomes (e.g., Sull et al., 2022). Compassion can help buffer against some of the long-lasting, negative effects of the COVID-19 pandemic (Hirsch, 2021; Taylor, 2020). For example, quiet quitting (i.e., the idea that individuals will only perform duties assigned in their role description and no longer go above and beyond), is rooted in “...the failure of many managers and supervisors to honor their fundamental leadership responsibilities required to engage, empower, and inspire employees with whom they work” (Mahand & Caldwell, 2023, p. 9). If managers signal that they value and prioritize employees by being supportive, especially during challenging times, employees will be more engaged, creative, and loyal to their company (Mahand & Caldwell, 2022; Worline & Dutton, 2017).

Considering the implications of compassion for both organizations and employees, an important empirical question becomes: “What predicts when managers decide to be compassionate when responding to an employee’s burnout behaviors?” Existing research outlines a few potential explanations including organizational aspects such as resources and training, as well as interpersonal processes such as trust which can contribute to a prosocial work climate that promotes managers’ noticing employees’ struggles and responding with compassion (Dutton et al., 2014; Kanov et al., 2017; Paakkanen et al., 2021; Yoon, 2017). Furthermore, individual differences that managers bring to the situation are key predictors. For example, trait empathy, agreeableness, and emotional intelligence (e.g., Dutton et al., 2014; Di Fabio & Saklofske, 2021; Graziano & Eisenberg, 1997; Paakkanen et al., 2021; Shiota et al., 2006) all foster greater compassion.

I propose and test a theoretically-driven process model that outlines how growth mindsets of people predict attributions that in turn impact emotional and behavioral compassion. I test this model across two studies. The first is correlational and controls for other related individual differences predictors (Dutton et al., 2014). For example, trait empathy, agreeableness, and emotional intelligence are strong correlates of compassion (e.g., Di Fabio & Saklofske, 2021; Goldman, 2011; Yaden et al., 2023).; Graziano & Eisenberg, 1997; (Monemi, 2009; Shiota et al., 2006). In the second study, I incorporate a manipulate-the-moderator approach, which offers a more robust causal test of mediation models. This approach manipulates not only the independent variable, but also the mediator (Pirlott & MacKinnon, 2016). This approach provides a causal test, which is missing in statistical mediation approaches that allow individuals to choose their own level of the mediator rather than being assigned to a high or low condition (Pirlott & MacKinnon, 2016).

In the current work, I aim to advance theory in three key ways. First, I move beyond organization and personality predictors, which are a typical focus in past work seeking to foster better manager-employee relations but that can be hard to alter (Dietz & Kleinlogel, 2013; Lordan & Almeida, 2022; Scott et al., 2010). Instead, I build on and extend mindset theory, which highlights the power of individuals' lay beliefs about the nature of human attributes and characteristics to shape experiences (e.g., Dweck & Leggett, 1988). Mindsets can be shifted through one-shot experiments (Dweck & Yeager, 2019) and longer-term interventions (e.g., Lipsey et al., 2023). Second, I merge the mindset perspective with the longstanding literature on attributions to test an overall process model that can contribute to intervention development to facilitate compassion. Although work has linked mindsets to managers' interactions with employees, (e.g., Heslin & VandeWalle, 2008; Keating & Heslin, 2015), I begin in Study 1 with an exploration of whether attributions are a key theoretical process. Then, to offer a more robust test of attributions as a mediator, in Study 2 I employ a methodological approach that allows for greater causal clarity and can aid in the development of more targeted interventions in which both the predictor (i.e., mindsets) and the mediator (i.e., attributions) are levers on which to intervene in order to foster more compassion in the workplace. Third, I focus specifically on responses to burnout-related behavior, which is often ambiguous, yet can be attributed to character flaws such as laziness (Maija & Katri, 2019; Ptáček et al., 2019). These behaviors are also especially relevant to many of the issues plaguing the current U.S. workforce, (e.g., Canning et al., 2020). In doing so, I look beyond previous literature examining mindsets and attributions in terms of trait-related behavior and test a theory exploring the role of managers' mindsets and attributions in fostering or inhibiting compassion for employees who are exhibiting burnout-related behavior (Chiu et al., 1997).

Overall, managers' decisions when their employees struggle matter a great deal. Given that punitive approaches are linked to more negative employee and organizational outcomes, finding ways to encourage managerial compassion when employees struggle with burnout is paramount. In the current work, I suggest that growth mindsets are one potential predictor of emotional and behavioral compassion as these beliefs encourage attributions or judgments that are more situationally-based and less focused on underlying stable innate characteristics.

Mindset Theory

Mindsets fall along a continuum from fixed or unalterable to growth or the belief that with time, effort, and the right strategies, people can change. Individual's beliefs, or mindsets, about the nature of people are critical for making sense of experiences, including interpreting the social world and making judgments (Dweck, 1999). For example, stronger fixed, relative to growth, mindsets of people predicted stronger inferences that someone's behavior is indicative of their underlying traits, and expectations that the person would exhibit the same behavior in other similar contexts (Chiu et al., 1997). In addition to believing in the stability of traits and behavior, individuals with stronger fixed, relative to growth, mindsets are more likely to make more negative social judgments when a person errs, and they are more likely to recommend punishment (Erdley & Dweck, 1993). In contrast, individuals with a stronger growth, relative to fixed, mindset are more likely to see the misbehavior or setback as an opportunity for learning and growth, leading them to provide feedback that encourages improvement and smarter strategy choice. These attributions and strategies tend to encourage helping behavior (Chiu et al., 1997; Heslin et al., 2008; Heyman & Dweck, 1998, Karafantis & Levy, 2004; Zhang & Zhang, 2008). Stronger growth mindsets, relative to stronger fixed mindsets, also predict less stereotyping and stigma and thus tend to predict restorative approaches rather than punitive ones (Hoyt et al.,

2019; 2022; Levy et al., 1998). Overall, mindsets, especially beliefs about the fundamental nature of people, set up the meaning assigned to the situation and guide whether a person recommends a punitive action, a compassionate approach, or avoids the issue altogether.

Related research, specifically in a work context, finds a similar pattern of results with outcomes focused on manager's mindsets and their willingness to coach (Heslin et al., 2006). For example, managers who hold stronger growth mindsets, relative to those with stronger fixed mindsets, are more likely to notice both improvements and reductions in an employee's performance, whereas individuals with a stronger fixed mindset were more likely to see their employee's performance as stable (Heslin et al., 2005). Additionally, managers who participated in a growth mindset intervention, relative to those in the control condition, were more likely to report willingness to coach an employee who was struggling and to acknowledge employee's gains in performance (Heslin et al., 2006).

I seek to conceptually replicate this work and extend it by investigating the mediating mechanism linking mindsets to compassion. First, I look at emotional compassion, which involves emotional concern for another's plight (Mandliya & Pandey, 2023) and is similar to empathy. Early work suggests growth mindsets are positively linked to greater empathy (e.g., Erdley & Dweck, 1993; Schumann et al., 2014). Additionally, growth mindsets of people also predict more support and coaching, the behavioral element of compassion (Heslin et al., 2006). They do so, in part, because they set up a pattern of thinking as a person tries to make sense of another individual's behavior (Dweck, 1999; Dweck, 2016). In other words, growth mindsets inform attributions, or explanations individuals use to explain another person's behavior (Chiu et al., 1997; Erdley & Dweck, 1993). Namely, individuals with stronger growth mindsets are more likely to make external, unstable attributions that rely on explanations outside of the individual

and instead consider the dynamics of the situation (Yeager & Dweck, 2020). This goes hand-in-hand with compassion, and whether they choose to provide it may depend on whether a person believes a person can improve and grow.

Hypothesis 1: I hypothesize a positive link between growth mindsets and both emotional and behavioral compassion (see Figure 1, Path C’).

Attribution Theory

I also test attributions as a mediator linking mindsets to compassion. Explanations for poor employee performance are often ambiguous and, thus, managers must make meaning of the situation and whether it warrants compassion (Weick, 2012; Weick et al., 2005). The individual must formulate a cause of the event, which is termed an attribution. Attribution theory is comprised of three elements: locus of causality, control, and stability (Weiner, 1985). Locus of causality refers to internal (i.e., dispositional) and external (i.e., situational) explanations (Weiner, 1985). Controllability is the extent to which the situation or behavior is deemed as within the person’s control or outside of the person’s control (Weiner, 1985). Stability refers to whether the event or someone’s behavior is attributable to a stable or unstable factor (Weiner, 1985). Attributions focused on individual traits, culpability and stability predict less compassion, whereas situational, external, and unstable attributions predict more compassion, helping, and support (e.g., Cushman, 2008; Goetz & Halgren, 2020; Weiner, 1993, 1995).

Although most individuals are prone to making internal attributions (e.g., traits, character), rather than external (e.g., situational) when judging other people’s behaviors, this fundamental attribution error (Ross, 1977) is less prominent for individuals with growth, relative to fixed, mindsets. A related judgment is referred to in mindset theory as lay dispositionism (Erdley & Dweck, 1993; Chiu et al., 1997) and is the tendency to attribute the causes of an

individual's behavior to their internal, stable traits (Ross & Nisbett, 1991). Individuals with stronger growth mindsets of people, relative to those with stronger fixed mindsets, are less likely to engage in lay dispositionalism. More specifically, they are unlikely to conclude that a particular behavior is indicative of the person's future actions—the attribution is typically unstable (Chiu et al., 1997).

Hypothesis 2: I expect growth mindsets to relate positively to unstable attributions and these to relate positively to compassion (see Figure 1; Paths A and B).

Study 1 Methods

In this pre-registered work, I test causal relationships from Study 1. Additional supplementary materials, including the manipulations can be found at

https://osf.io/m7vck/?view_only=6f92c2a6f7e041309440799f20660c4a.

Participants

In Study 1, I incorporated an online Qualtrics survey. I recruited participants via CloudResearch Connect, an online data platform with rigorous data quality and carelessness checks, such as their SENTRY system, which requires each participant complete a short pre-survey to determine eligibility, attention, and more. (Litman & Abberbock, 2017). Individuals who are 18 years or older, currently reside in the United States, and identify as a manager (i.e., an individual who supervises other employees in a work setting) were eligible to participate. Of the 500 who passed the eligibility requirements, 499 ($M_{age} = 40.37$, age range = 21-76, $SD = 10.96$) provided quality data for analysis (e.g., completing a RECAPTCHA, passing a filter question asking participants to select the year “2018” on the next page, answering “FOUR” when asked to write the middle number in a sequence in all capital letters).

During the survey, participants were also asked to complete an Instructed Response Item (i.e., “To show you are paying attention, please leave the following text box blank”) and a bogus item (i.e., “I see myself as someone who did not read this statement, 1=totally disagree, 7=totally agree, Brühlmann et al., 2020). Participants who didn’t answer “totally disagree” or “disagree” were flagged for a total of 63 participants. Finally, participants completed three self-reported responding tendencies questions on a 7-point Likert-type scale (1=never, 7=all the time) (Brühlmann et al., 2020). A sample item includes, “How often do you read each question?” ($\alpha=.78$). Items were reverse coded so a higher score indicates more carelessness or problematic responding tendencies, with average scores of 4 or higher being flagged. No participants had an average score of 4 or higher and therefore participants were only flagged on the bogus item for a total of 63 respondents who were filtered out during secondary analyses to see whether data carelessness may be inflating or reducing effect sizes (Brühlmann et al., 2020).

Participants could select more than one racial and ethnic identity; therefore, the racial and ethnic identity composition is as follows: 388 White, Caucasian, 57 Black, African American, 9 Native American or Eskimo, Aleut, 40 Asian or Pacific Islander, 49 Hispanic or Latinx, and 10 identifying as Biracial/Multiracial. The gender identification was 293 men and 203 women. As for managerial experiences, the largest number of participants worked in information technology (18.2%), although I sample from multiple fields including business, healthcare, retail, and more (see Table 1 for percentages). Additionally, the majority of participants have worked as a manager for one to three years (33.3%) followed by 4-6 years (27.7%, see Table 1 for additional percentages). Almost all of them worked in-person (48.9%) or in a hybrid format (41.7%), with only 9.4% reporting being fully virtual. Participants managed up to 1500 employees. Nearly half of the participants (45.7%) reported having a college degree, although education levels ranged

from high school graduates to graduate degrees. Annual salaries and annual household income ranged from less than \$20,000 to over \$150,000.

Procedures and Measures

I conducted a cross-sectional study with self-reported online measures. To avoid recent concerns regarding online data collection (e.g., bots, inattentive responding, and survey farms), I included measures of data quality and carelessness in our survey to eliminate responses from bots and survey farms and to allow us to better understand how the effect sizes might change based on inattentive or careless responding (Brühlmann et al., 2020; Meade & Craig, 2012; Ward & Meade, 2023). These safeguards are specified in more detail in the participants section above.

Mindsets of People. This 8-item measure (Dweck, 1999) assessed participants' beliefs about the malleability of people. The scale reflects the degree to which individuals believe people can change (e.g., Everyone, no matter who they are, can significantly change their basic characteristics, 1=strongly disagree, 7=strongly agree). There are four fixed mindset items and four growth mindset items. The four fixed mindset items were recoded so a higher score indicates a stronger growth mindset of people ($\alpha=.95$).

Attributions. To assess attributions, participants read a scenario about a hypothetical employee who is disengaged at work. I first asked participants to elaborate on what they thought about the scenario before they completed a self-report measure adapted from previous literature to examine situational attributions (relative to person-centered attributions) as well as stability attributions (Johnston & Kim, 1994). Sample items included, "To what extent is the cause of the employee's behavior the employee's fault versus being driven by the situation" and "The cause of the employee's disengagement is permanent/temporary (7-point Likert-type scale). I coded

such that a higher score indicates more situation-centered evaluations ($\alpha=.95$) and more unstable attributions ($\alpha=.71$)¹.

Compassion. To assess compassion, I incorporated both the Organizational Compassion Scale (OCS; Simpson & Farr-Wharton, 2017), which included 16-items and was measured on a 6-point Likert-type scale (1=strongly disagree, 6=strongly agree) and the Coaching Behavior Scale, which was slightly adapted by asking participants to think about the scenario with the employee before launching into each question (Heslin et al., 2006).

The OCS examines four aspects of compassion: noticing (e.g., “If an employee working with me is disengaged at work, missing deadlines, and failing to be productive, I would tend to recognize the struggle”), empathizing (e.g., “If an employee working with me is disengaged at work, missing deadlines, and failing to be productive, I would tend to connect with their pain”), assessing (e.g., “If an employee working with me is disengaged at work, missing deadlines, and failing to be productive, I would tend to assess the prior circumstances leading to the co-worker’s struggles”), and responding items (e.g., “If an employee working with me is disengaged at work, missing deadlines, and failing to be productive, I would tend to take action”).

The Coaching Behavior Scale is measured on a 5-point Likert scale (1=not at all, 5=to a very great extent). Sample items include, “Thinking about the scenario above (i.e., your employee is disengaged at work, missing deadlines, and failing to be productive), to what extent would you provide guidance regarding performance expectations?” and “Thinking about the

¹ They were also asked to rate how much of the behavior is attributable to the person and the situation, with percentages adding up to 100%. We focus on the measures described above—analyses using this assessment can be found in supplemental.

scenario above (i.e., your employee is disengaged at work, missing deadlines, and failing to be productive), to what extent do you encourage your employee to continuously develop and improve?”

Because prior literature suggests there are both emotional and behavioral facets of compassion, I ran an exploratory factor analysis to examine whether the compassion and support measures could be combined in a way that captured both (Worline & Dutton, 2017). See supplemental materials for details regarding the analysis.² This led to a two-factor solution with four items capturing emotional compassion and fourteen items capturing behavioral compassion such as taking action, providing feedback, and providing support.³ Items 5-8 on the compassion scale (i.e., the empathizing facet of compassion) loaded on one factor to create the emotional compassion measure, with a higher score indicating more emotional compassion for an employee ($\alpha=.91$). Items 13-16 on the compassion scale (i.e., the responding facet of compassion) and all ten items on the support scale were combined to create a behavioral compassion measure, with a higher score indicating more behavior compassion for an employee ($\alpha=.91$). Because these measures used different scales, I created a z-score to standardize and combine.

Covariates

Trait Empathy. To assess trait empathy, participants completed two measures. The first measure was a single item, face-valid measure called SITES (Konrath et al., 2018). The second

² While there are other aspects of compassion, which involves assessing and noticing, we chose to focus on emotional and behavioral compassion because of the previous links to growth mindsets. While assessing and noticing are behaviors, these are more passive behaviors and we had greater interest in active behaviors.

³ An examination of these factors revealed both measures are reliable, and each are independent outcomes because they are only correlated at .04.

measure is the Interpersonal Reactivity Index (Davis, 1980), which was measured on a 5-point Likert-type scale (0=does not describe me well, 4=describes me well). It consists of four constructs: perspective taking, fantasy, empathic concern, and personal distress. A higher score indicates more perspective taking ($\alpha=.84$), fantasy ($\alpha=.80$), empathic concern ($\alpha=.89$), and personal distress ($\alpha=.85$). For analyses, I used the face-valid measure to mitigate the chances of a Type II error that may occur when including more variables in an analysis and to preserve statistical power (Busk, 2010).

Emotional Intelligence. To assess emotional intelligence, participants completed a measure examining self-emotions appraisal, others-emotions appraisal, use of emotion, and regulation of emotion on a 7-point Likert-type scale (1=totally disagree, 7=totally agree, Wong & Law, 2002). A composite score of emotional intelligence was created so that a higher score indicates more emotional intelligence ($\alpha=.92$).

Agreeableness. To assess agreeableness, participants completed two items from the Big 5 Personality Trait Short Questionnaire a 7-point Likert-type scale (1=extremely poorly, 7=extremely well, Debell et al., 2022). Item two was recoded and a mean score was created so that a higher score indicates more agreeableness ($\alpha=.36$). Prior research indicates that attention to the reliability of a measure is paramount, given that the reliability matters for effect sizes (Henson, 2001; Thompson, 1994). Low reliability scores reduce effect sizes and can lead to misinterpretation of findings (Thompson, 1994). Thus, I exclude this measure from analyses.

Study 1 Results

See Table 2 for means, standard deviations, and correlations. Stronger growth mindsets were significantly and positively related to emotional ($r(497)=.19, p<.001$) and behavioral ($r(497)=.20, p<.001$) compassion. Stronger growth mindsets were also significantly and

positively related to situation-centered ($r(497)=.10, p=.021$) and unstable ($r(497)=.32, p<.001$) attributions. Additionally, situation-centered attributions were significantly and positively correlated with emotional compassion ($r(497)=.21, p<.001$) but not behavioral compassion ($r(497)=.02, p=.725$), whereas unstable attributions were significantly and positively correlated with both emotional ($r(497)=.15, p<.001$) and behavioral ($r(497)=.20, p<.001$) compassion.

Hypothesis 1: Growth Mindsets Predicting Compassion

To examine whether growth mindsets predict compassion, I ran two hierarchical linear regressions. In the first hierarchical linear regression testing predictors of emotional compassion, I included trait empathy and emotional intelligence as covariates in Model 1. In Model 2, I added our primary predictor of growth mindsets of people. With both the covariates and mindsets of people in the model, mindsets of people were significantly related to emotional compassion ($\beta=.11, t(495)=2.75, p=.006$, see Table 3 for full model and statistics). In the second hierarchical linear regression with behavioral compassion as the outcome, I again included trait empathy and emotional intelligence in Model 1. In Model 2, I added our primary predictor of growth mindsets of people. With both the covariates and mindsets of people in the model, mindsets of people remained significantly related to behavioral compassion ($\beta=.10, t(495)=2.52, p=.012$, see Table 4 for full model and statistics).

Hypothesis 2: Mediation Model

To test for mediation, I used Hayes' PROCESS Model 4 (Hayes, 2018).

Mindsets, Situation-Centered Attributions and Compassion. Stronger growth mindsets were related to more situation-centered attributions ($B=.10, t(497)=2.31, p=.021, 95\%$ CI [.02, .19]). Situation-centered attributions ($B=.15, t(497)=4.43, p<.001, 95\%$ CI [.09, .22]) were related to more emotional compassion. There was a significant indirect effect of growth

mindsets on emotional compassion through situation-centered attributions ($B=.02$, 95% CI [.00, .04]). There was also a significant total effect ($B=.16$, $p<.001$, 95% CI [.09, .23]) and direct effect ($B=.14$, $p<.001$, 95% CI [.07, .21]).

However, situation-centered attributions were not related to more behavioral compassion ($B=.00$, $t(496)=-.10$, $p=.912$, 95% CI [-.04, .04]). Additionally, there was no significant indirect effect of growth mindsets on behavioral compassion through situation-centered attributions ($B=.00$, 95% CI [-.01, .01]). Finally, there was also a significant total effect ($B=.09$, $p<.001$, 95% CI [.05, .13]) and direct effect ($B=.09$, $p<.001$, 95% CI [.05, .13]). See Figure 2 for these two models.

Mindsets, Unstable Attributions, and Compassion. Stronger growth mindsets were related to greater unstable attributions ($B=.24$, $t(497)=7.46$, $p<.001$, 95% CI [.18, .31]). Unstable attributions were related to more emotional compassion ($B=.11$, $t(496)=2.18$, $p=.030$, 95% CI [.01, .20]). There was no significant indirect effect of growth mindsets on emotional compassion through unstable attributions ($B=.03$, 95% CI [-0.001, 0.06]). There was also a significant total effect ($B=.16$, $p<.001$, 95% CI [.09, .23]) and direct effect ($B=.13$, $p<.001$, 95% CI [.06, .20]).

Stronger growth mindsets were related to greater unstable attributions ($B=.24$, $t(497)=7.46$, $p<.001$, 95% CI [.18, .31]). Unstable attributions were related to more behavioral compassion ($B=.09$, $t(496)=3.36$, $p=.001$, 95% CI [.04, .15]). Additionally, there was a significant indirect effect of growth mindsets on behavioral compassion through unstable attributions ($B=.02$, 95% CI [.01, .04]). Finally, there was also a significant total effect ($B=.09$, $p<.001$, 95% CI [.05, .13]) and direct effect ($B=.07$, $p=.001$, 95% CI [.03, .11]). See Figure 3 for these two models.

Adding Control Variables. Controlling for trait empathy and emotional intelligence did not significantly change the outcomes of the models, although some effect sizes were slightly smaller when controlling for these variables. For emotional compassion, none of the mediation analyses with situation-centered attributions changed significantly and there was still no significant effect of growth mindsets on emotional compassion via unstable attributions. For behavioral compassion, there was still a significant effect of growth mindsets on behavioral compassion via unstable attributions, although the effect size was slightly smaller ($B=.01$, 95% CI [.00, .03]). A similar pattern emerges for the link between unstable attributions and behavioral compassion ($B=.06$, $t(494)=2.27$, $p=.024$, 95% CI [.01, .10]).

Exploratory Data Quality & Carelessness Analyses

As a sensitivity analysis, I examined data quality and carelessness. Specifically, I ran analyses with the 436 participants who had high data quality and no careless responding. Excluding those who failed the data carelessness items (i.e., IRI and bogus item) resulted in minimal changes in simple correlations and no statistically meaningful changes in regression analyses.

Study 1 Discussion

Overall, results replicated past work linking mindsets and attributions and extended past work by linking mindsets to compassion. It also provided preliminary evidence of statistical mediation regarding the effect of growth mindsets on compassion via attributions. Namely, growth mindsets are positively linked to situation-focused attributions, unstable attributions, and compassion. These attributions, which were correlated with compassion, and statistical analyses provided initial evidence for an indirect effect of growth mindsets on compassion via attributions. However, although situation-centered attributions mattered for emotional

compassion, only unstable attributions mattered for both types of compassion. These results held even when conducting sensitivity analyses, examining covariates and data without low-quality responders. Given that the situation-centered attributions didn't correlate with behavioral compassion, I instead focus on stability attributions in Study 2. This is in line with prior research, which suggests stronger growth mindsets may lead to negative outcomes (e.g., reduced forgiveness) when the behavior is consistent, removing the belief that improvement or change is possible (Ryazanov & Christenfeld, 2018). Also, in Study 2, our goal is to offer a more robust methodological test of mediation. Specifically, I examine if I can manipulate the mediator, in addition to manipulating the independent variable.

Hypothesis 3: Both mindsets and attributions can be manipulated.

These manipulation checks have important implications and applications for organizations, as they provide an initial test of whether the psychological processes of mindsets and attributions can serve as levers for fostering managers' compassion for employees experiencing work-related setbacks.

Study 2 Methods

Participants

I again recruited participants via CloudResearch Connect, an online data platform with rigorous data quality and carelessness checks, such as their SENTRY system, which requires each participant complete a short pre-survey to determine eligibility, attention, etc. (Litman & Abberbock, 2017). I recruited 500 participants based on a power analysis, using 80% power to detect a regression coefficient of .02, with an alpha of .05 (Faul et al., 2009). Individuals who are 18 years or older, currently reside in the United States, and identify as a manager (i.e., an individual who supervises other employees in a work setting) were eligible to participate. Of the

500 who passed the eligibility requirements, 475 ($M_{age} = 40.67$, age range = 22-77, $SD = 10.83$) provided quality data for analysis (e.g., completing a RECAPTCHA, answering “FOUR” when asked to write the middle number in a sequence in all capital letters, and only completing the study one time).

During the survey, participants were also asked to complete an Instructed Response Item (i.e., “To show you are paying attention, please leave the following text box blank”) and a bogus item (i.e., “I see myself as someone who did not read this statement, 1=totally disagree, 7=totally agree, Brühlmann et al., 2020). Participants who didn’t answer “strongly disagree” or “disagree” were flagged for a total of 19 participants. Finally, participants completed three self-reported responding tendencies questions on a 7-point Likert-type scale (1=never, 7=all the time) (Brühlmann et al., 2020). A sample item includes, “How often do you read each question?” Items were reverse coded so a higher score indicates more carelessness or problematic responding tendencies, with average scores of 4 or higher being flagged. No participants had an average score of 4 or higher and therefore participants were only flagged on the bogus item for a total of 19 respondents who were filtered out during secondary analyses to see whether data carelessness may be inflating or reducing effect sizes (Brühlmann et al., 2020).

Participants could select more than one racial and ethnic identity; therefore, the racial and ethnic identity composition is as follows: 364 White, Caucasian, 66 Black, African American, 8 Native American or Eskimo, Aleut, 28 Asian or Pacific Islander, 51 Hispanic or Latinx, 10 identifying as Biracial/Multiracial, and 1 participant who selected Other. The gender identification was 283 men and 190 women. As for managerial experiences, the largest number of participants worked in information technology (22.5%), although I sample from multiple fields including business, healthcare, retail, and more (see Table 5 for percentages). Additionally,

the majority of participants have worked as a manager for one to three years (33.7%) followed by 4-6 years (27.2%, see Table 5 for additional percentages). Almost all of them worked in-person (48.2%) or in a hybrid format (38.7%), with only 13.1% reporting being fully virtual. Participants managed up to 2,800 employees. About half of the participants (51.2%) reported having a college degree, although education levels ranged from high school graduates to graduate degrees. Annual salaries and annual household income ranged from less than \$20,000 to over \$150,000.

Procedures and Measures

Study 2 utilized a manipulate-the-mediator design. This procedure can help to establish temporal precedence of the mediator (i.e., M comes before Y) and help to account for potential confounds (Pirlott & MacKinnon, 2016). In this design, I manipulated the mediator (e.g., stable vs. unstable attributions), rather than allowing the individual to self-select the level of the mediator (Pirlott & MacKinnon, 2016). Given Study 1 results, I did not assess situational attributions in Study 2 and chose to focus on behavioral compassion as the dependent variable, given that it assessed actions that managers may take to support their employees.

Mindset manipulation. I randomly assigned participants to one of two mindset conditions: growth or fixed mindsets of people using similar procedures to past work (e.g., Lipsey et al., 2023). In the growth mindset condition, participants watched a video that discussed how people can change when the neurons in their brain form new connections. This was followed up by research supporting the idea people can change and the use of examples. The fixed mindset condition mirrored the growth mindset condition, except the messaging focused on how people can't really change when the neurons in their brains form connections, followed up

by research and examples supporting the idea that people don't really change. The fixed mindsets condition was coded as 0 and the growth mindset condition was coded as 1.

Attribution manipulation. I randomly assigned participants to one of two attribution conditions: stable or unstable. The stable condition asked participants to imagine their employee was consistently missing deadlines and unproductive. In the unstable condition, the scenario focused on an employee who recently missed a project deadline and declined in productivity. See supplemental online materials for exact wording of the scenarios.

Mindsets of People. Participants completed the same mindset measure from Study 1 as a manipulation check. The four fixed mindset items were recoded so a higher score indicates a stronger growth mindset of people ($\alpha=.96$).

Unstable Attributions. Participants completed the same stability attribution measures from Study 1 with higher numbers representing more unstable attributions ($\alpha=.86$).

Behavioral Compassion. Participants completed the same behavioral compassion measure created from the exploratory factor analysis in Study 1. Higher scores indicate more behavioral compassion for an employee ($\alpha=.93$).

Results

Correlations

See Table 6 for correlations among the variables.

Hypothesis 3: Manipulation Checks

I ran independent sample t-tests to determine if the manipulations were successful in shifting participants mindsets and attributions. Participants in the growth mindset condition reported significantly stronger growth mindsets of people ($M=5.08$, $SD=1.27$) than participants in the fixed mindset condition ($M=3.77$, $SD=1.51$, $t(465)=10.13$, $p<.001$, $d = .93$). Participants in

the unstable attribution condition ($M=5.86$, $SD=1.51$) reported significantly more unstable attributions for the employee relative to participants in the stable attributions condition ($M=3.90$, $SD=1.52$, $t(422)=16.48$, $p<.001$, $d = 1.30$). Therefore, both manipulations were successful in shifting mindsets and attributions in expected ways.

Hypotheses 1-2: Mediation by Moderation Analyses

I used Hayes' PROCESS Model 1 to explore our hypotheses. I used a moderation analysis, rather than a mediation analysis, because in this case I was manipulating the level of the mediator (i.e., high stability or low stability), rather than allowing participants to self-select the level of the mediator (Pirlott & MacKinnon, 2016). In doing so, it allows for the illustration of a causal relationship between the mediator and the dependent variable, which is not possible with statistical mediation approaches (Pirlott & MacKinnon, 2016). Therefore, I can better understand how behavioral compassion may differ not only based on one's mindset, but also their attributions. For example, individuals in the growth mindset plus unstable attribution condition are expected to exhibit greater compassion compared to individuals in the growth mindset and stable attribution condition. That is, the growth mindset to compassion link depends on the attribution condition.

The model used mindset condition as the independent variable (0=fixed mindset condition, 1=growth mindset condition), attributions condition as the moderator (0=stable attribution condition, 1=unstable attribution condition), and behavioral compassion as the dependent variable. There was no significant main effect of condition on behavioral compassion ($b=.05$, $t(471)=.79$, $p=.430$). There was, however, a significant main effect of attributions on behavioral compassion ($b=-.15$, $t(471)=-.2.62$, $p=.009$) such that managers in the unstable attributions condition, relative to managers in the stable attributions condition, reported

significantly less behavioral compassion for employees. There was also no significant interaction between mindset and attribution condition on behavioral compassion ($b=-.03$, $t(471)=-.23$, $p=.818$). When filtering out participants with high data carelessness, the results were still not significant.

Exploratory Statistical Mediation Analyses. In this model, I used self-reported mindsets as the independent variable, self-reported attributions as the mediator, and behavioral compassion as the dependent variable using Hayes' PROCESS Model 4 (Hayes, 2018). This is a replication of the analysis in Study 1. Stronger growth mindsets were related to greater unstable attributions ($B=.34$, $t(473)=7.44$, $p<.001$, 95% CI [.25, .43]) but unstable attributions were not related to more behavioral compassion ($B=.01$, $t(472)=0.49$, $p=.622$, 95% CI [-.03, .05]). Thus, there was no significant indirect effect of growth mindsets on behavioral compassion through unstable attributions ($B=.00$, 95% CI [-.01, .02]). Finally, there was a significant total effect of growth mindsets ($B=.08$, $p<.001$, 95% CI [.05, .12]) and a direct effect ($B=.08$, $p<.001$, 95% CI [.04, .12]). See Figure 4.

I also ran an additional Hayes' PROCESS Model 4 (Hayes, 2018) to see whether the manipulation impacted compassion, indirectly, via the shift in growth mindsets. This model used mindset condition as the independent variable, self-reported mindsets as the mediator, and behavioral compassion as the dependent variable using Hayes' PROCESS Model 4 (Hayes, 2018). Mindset condition was related to self-reported mindsets ($B=1.30$, $t(473)=10.09$, $p<.001$, 95% CI [1.05, 1.55]). Self-reported mindsets were related to more behavioral compassion ($B=.09$, $t(472)=4.53$, $p<.001$, 95% CI [.05, .13]). There was a significant indirect effect of mindset condition on behavioral compassion through self-reported mindsets ($B=.12$, 95% CI

[.07, .18]). Finally, there was no significant total effect of mindset condition ($B=.05$, $p=.442$, 95% CI [-.07, .16]) or direct effect ($B=-.08$, $p=.233$, 95% CI [-.20, .05]). See Figure 5.

Study 2 Discussion

I incorporated a robust test of mediation using a manipulate-the-mediator design. Our manipulations affected the variables, but only attributions affected the dependent variable. As stated above, the effect sizes of the manipulations are quite large (mindsets $d=1.40$, attributions $d=1.30$), especially compared to the summary effect size of mindset interventions impact of changing mindsets which is $d=0.46$ (Burnette et al., 2023). However, when running the mediation model with self-reported mindsets and attributions, there was a significant relation between growth mindsets and behavioral compassion. Additionally, the growth mindset manipulation was positively and indirectly related to compassion via the shift in growth mindsets. Surprisingly, attributions affected behavioral compassion in the opposite direction of my hypothesis, but I was not able to illustrate an indirect effect of mindsets on behavioral compassion via attributions in our causal approach. Thus, future work may be better served looking at different mechanisms. For example, other attributions such as controllability may play a more active role in fostering or inhibiting compassion, due to its focus on whether an individual has the power over the cause of an outcome (Weiner, 1985). Likewise, managerial efficacy, or managers' beliefs that they can act in a way to reduce the employee's stressor, may also be a mechanism that could foster compassion (Dutton et al., 2014).

General Discussion

These two studies provide mixed results regarding our predictions that growth mindsets could foster compassion via attributions. Although self-reported growth mindsets seem to relate to compassion, I get mixed results for attributions. In Study 1, situation-centered attributions

only predicted emotional, but not behavioral compassion, whereas unstable attributions related to both. However, In Study 2, I find evidence of stability attributions predicting compassion in the opposite direction of what I hypothesized when using a manipulate-the-mediator design.

However, I did see an indirect effect of growth mindset trainings or manipulations on compassion via their self-reported growth mindset. I also replicated the correlation between growth mindsets and compassion in Study 2. Thus, growth mindsets may provide a potential avenue for fostering compassion with a better understanding of the theoretically relevant mechanisms.

Theory-Based & Practical Implications

First, this work investigated psychological mechanisms linking mindsets to compassion in the wake of burnout-related behaviors. While stability attributions mediated the relationship between mindsets and behavioral compassion in Study 1, I did not find causal evidence of the same relationship in Study 2. Although prior work has illustrated the importance of attributions linking mindsets to various outcomes, it may be that other attributional processes, such as controllability, are integral in managers' choices to be compassionate toward their employees (Erdley & Dweck, 1993; Chiu et al., 1997; Ryazanov & Christenfeld, 2018). Controllability, defined as the extent to which a person can exercise control over the cause of something, is increasingly important in linking growth mindset to stigma-related outcomes (Babij et al., 2023; Corrigan et al., 2000; Weiner, 1985). Similarly, it seems likely that growth mindsets may be able to foster greater compassion in contexts where controllability is lower—this is often not the case with worker burnout behavior. Such future explorations are in line with the heterogeneity revolution which highlights the importance of understanding the boundary conditions that undergird many failed replications (Bryan et al., 2021; Yeager & Dweck, 2020).

Second, this work highlights why it is important to move beyond simple statistical tests of mediation before designing interventions for applied settings, such as workplaces.

Interventions can be costly in terms of time, effort, and money, and therefore it is important to delineate replicable mediating effects before implementing them in real-world settings. In addition, interventions that are based on little or weak evidence have the potential to harm participants, so it is imperative to use causal approaches that replicate findings (Allen-Scott et al., 2014; Shrout & Rodgers, 2018).

Third, this work illustrates links between mindsets, attributions, and compassionate responses to burnout behavior. Although I do find evidence of relationships among these variables, unlike prior work in other domains, I don't find causal evidence of mindsets fostering more compassion for employees through attributions. Given that I replicated the link between growth mindsets and compassion in both studies and our exploratory analysis revealed an indirect effect of the growth mindset condition on compassion via participants' self-reported mindset, mindsets trainings in the organizational context, paired with the correct psychological mechanisms, may be a cost-effective way to encourage managerial compassion for employees who are experiencing work-related challenges. Prior research has illustrated the efficacy of low-cost mindset interventions in the academic context, which could be adapted to the organizational setting (Bostwick & Becker-Blease, 2018). In addition to trainings, it may also provide an opportunity for organizations to evaluate and re-design their organizational systems and policies to foster a growth mindset culture and encourage compassionate behavior. However, future work is needed to tease apart mechanisms that promote managerial compassion during employee setbacks before this can and should be implemented in workplace settings.

Limitations

One limitation of the study is that I did not include a control group, therefore limiting the evidence to differences between growth and fixed mindsets and stable versus unstable attributions. Adding a control group in future work would provide a comparison group receiving a treatment unrelated to mindsets and attributions, providing further evidence for the effects of these variables. Furthermore, generalizability is limited as across both studies I recruited participants from the United States and over half identified as White men. While I intentionally recruited participants from the United States given that workplace practices and beliefs may differ based on culture, future work should recruit a more diverse sample to explore for whom, when, and under what conditions mindsets might predict managers' compassion.

Directions for Future Research

Psychological Mechanisms

Future work should explore other possible processes linking mindsets and managers' behavior compassion. For example, controllability and responsibility are both attributional processes that have previously been shown to mediate the relationship between growth mindsets and outcomes such as blame and weight stigma (Hoyt et al., 2019; Ryazanov & Christenfeld, 2018). In addition to attributions, there seem to be other psychological mechanisms at play in linking mindsets and behavioral compassion. For example, efficacy, or one's belief in their ability to help another individual, may be a relevant mediator (Dutton et al., 2014). Future work should explore other potential mechanisms that mediate the relationship between mindsets and behavioral compassion, as understanding the mechanisms is critical when designing interventions that are effective in promoting positive outcomes for individuals.

Organizational Context and Mindsets

Future work should also consider both the organizational context and organizational mindsets in promoting or inhibiting managerial compassion. For example, Walton & Yeager (2020) outline the importance of considering the context upon which one intervenes, stating that growth mindsets (and therefore positive outcomes such as compassion) can only take root in organizations that encourage growth mindset beliefs and compassionate behavior toward one another. Therefore, although managers may hold a growth mindset themselves, if they work in an organization that doesn't promote growth, learning, and development or emphasize compassion, the manager may act in ways that contradict their personal beliefs, similar to work in the classroom that has shown the importance of the teacher in creating a growth mindset culture (Canning et al., 2020; Yeager et al., 2022). Similarly, organizational compassion matters not only for self-compassion, but also workplace compassion (Mandliya & Pandey, 2023). Therefore, exploring how organizational contexts may impact managers' compassionate behaviors may also be a viable option for future inquiry.

Conclusion

Compassion is an important outcome especially in the wake of increased pressures on workers (Abramson, 2022). I sought to investigate the role of growth mindsets in fostering compassion and although I find consistent correlations, I failed to find causal evidence. Additionally, results regarding attributions as a potential mediator were inconsistent. Accordingly, future work is needed to examine possible mechanisms linking mindsets and compassion. Our findings also illuminate the need for methodological approaches that go beyond statistical mediation to identify psychological mechanisms linking mindsets to positive outcomes

in the workplace. I hope that our theory-driven integration of mindsets and attribution research, and our initial elaboration with regards to compassion, fosters such future explorations.

References

- Abramson, A. (2022). Burnout and stress are everywhere. *Monitor on Psychology, 53*(1), 72.
<https://www.apa.org/monitor/2022/01/special-burnout-stress>
- Allen-Scott, L. K., Hatfield, J. M., & McIntyre, L. (2014). A scoping review of unintended harm associated with public health interventions: Towards a typology and an understanding of underlying factors. *International Journal of Public Health, 59*(1), 3-14. <https://doi.org/10.1007/s00038-013-0526-6>
- Atkins, P., & Parker, S. (2012). Understanding individual compassion in organizations: The role of appraisals and psychological flexibility. *Academy of Management Review, 37*, 524–546.
- Babij, A. D., Earl, S., Becker, W., Hoyt, C. L., Burnette, J. L., Marston, A., & Crispin, K. (2023). Mindsets of mental illness: What are the implications for stigma? *Stigma and Health (Washington, D.C.)*, <https://doi.org/10.1037/sah0000482>
- Baldassare, M., & Katz, C. (1992). The personal threat of environmental problems as predictor of environmental practices. *Environment and Behavior, 24*(5), 602-616.
<https://doi.org/10.1177/0013916592245002>
- Becker, W., Burnette, J. L., & Hoyt, C. L. (2023). Coping in the time of COVID-19: Mindsets and the stories we tell. *Journal of Applied Social Psychology, 53*(2), 153-165. <https://doi.org/10.1111/jasp.12936>
- Biddle, S., Goudas, M., & Page, A. (1994). Social-psychological predictors of self-reported actual and intended physical activity in a university workforce sample. *British Journal of Sports Medicine, 28*(3), 160-163. <https://doi.org/10.1136/bjism.28.3.160>

- Bostwick, K. C. P., & Becker-Blease, K. A. (2018). Quick, easy mindset intervention can boost academic achievement in large introductory psychology classes. *Psychology Learning and Teaching, 17*(2), 177-193. <https://doi.org/10.1177/1475725718766426>
- Braun, S., & Turner, R. A. (2014). Attitudes and company practices as predictors of managers' intentions to hire, develop, and promote women in science, engineering, and technology professions. *Consulting Psychology Journal, 66*(2), 93-117. <https://doi.org/10.1037/a0037079>
- Burnette, J. L., Billingsley, J., Banks, G. C., Knouse, L. E., Hoyt, C. L., Pollack, J. M., & Simon, S. (2023). A systematic review and meta-analysis of growth mindset interventions: For whom, how, and why might such interventions work? *Psychological Bulletin, 149*(3-4), 174–205. <https://doi.org/10.1037/bul0000368>
- Burnette, J. L., Billingsley, J., & Hoyt, C. L. (2022). Harnessing growth mindsets to help individuals flourish. *Social and Personality Psychology Compass, 16*(3). <https://doi.org/10.1111/spc3.12657>
- Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: a meta-analytic review of implicit theories and self-regulation. *Psychological bulletin, 139*(3), 655.
- Burnette, J. L., Knouse, L. E., Vavra, D. T., O'Boyle, E., & Brooks, M. A. (2020). Growth mindsets and psychological distress: A meta-analysis. *Clinical Psychology Review, 77*, 101816.
- Buscaglia, M. (2022, September 4). *A Quick Look at the Origins and Outcomes of the Trendy Term*. Chicago Tribune. <https://www.pressreader.com/usa/chicago-tribune-Sunday/20220904/282226604550365>

- Busk, P. (2010). Statistical conclusion validity. In E. Baker, P. Peterson, & B. McGaw (Eds.), *International Encyclopedia of Education (3rd ed.)*. London: Elsevier.
- Brühlmann, F., Petralito, S., Aeschbach, L. F., & Opwis, K. (2020). The quality of data collected online: An investigation of careless responding in a crowdsourced sample. *Methods in Psychology*, 2, 100022.
- Bryan, C. J., Tipton, E., & Yeager, D. S. (2021). Behavioural science is unlikely to change the world without a heterogeneity revolution. *Nature Human Behaviour*, 5(8), 980-989. <https://doi.org/10.1038/s41562-021-01143-3>
- Canning, E. A., Murphy, M. C., Emerson, K. T., Chatman, J. A., Dweck, C. S., & Kray, L. J. (2020). Cultures of genius at work: Organizational mindsets predict cultural norms, trust, and commitment. *Personality and Social Psychology Bulletin*, 46(4), 626-642.
- Chiu, C.-y., Hong, Y.-y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology*, 73(1), 19–30. <https://doi.org/10.1037/0022-3514.73.1.19>
- Cohen, A. (2021), “*How to quit your job in the great post-pandemic resignation boom*”, Bloomberg Businessweek, available at: www.bloomberg.com/news/articles/2021-05-10/quit-your-job-how-to-resign-after-covid-pandemic
- Corrigan, P. W., River, L. P., Lundin, R. K., Wasowski, K. U., Campion, J., Mathisen, J., Goldstein, H., Bergman, M., Gagnon, C., & Kubiak, M. A. (2000). Stigmatizing attributions about mental illness. *Journal of Community Psychology*, 28(1), 91-102. [https://doi.org/10.1002/\(SICI\)1520-6629\(200001\)28:1<91::AID-JCOP9>3.0.CO;2-](https://doi.org/10.1002/(SICI)1520-6629(200001)28:1<91::AID-JCOP9>3.0.CO;2-M)

M

- Crum, A. J., Akinola, M., Martin, A., & Fath, S. (2017). The role of stress mindset in shaping cognitive, emotional, and physiological responses to challenging and threatening stress. *Anxiety, Stress, and Coping*, *30*(4), 379-395.
<https://doi.org/10.1080/10615806.2016.1275585>
- Crum, A. J., Salovey, P., & Achor, S. (2013). Rethinking stress: The role of mindsets in determining the stress response. *Journal of Personality and Social Psychology*, *104*(4), 716-733. <https://doi.org/10.1037/a0031201>
- Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analyses in moral judgment. *Cognition*, *108*(2), 353-380.
- Davis, M. H. (1980). *Interpersonal Reactivity Index (IRI)* [Database record]. APA PsycTests.
<https://doi.org/10.1037/t01093-000>
- DeBell, M., Maisel, N., Brader, T., Wilson, C., & Jackman, S. (2022). Improving the measurement of “Big five” personality traits in a brief survey instrument. *European Journal of Psychological Assessment: Official Organ of the European Association of Psychological Assessment*, *38*(2), 150-161. <https://doi.org/10.1027/1015-5759/a000653>
- Di Fabio, A., & Saklofske, D. H. (2021). The relationship of compassion and self-compassion with personality and emotional intelligence. *Personality and Individual Differences*, *169*, 110109-110109. <https://doi.org/10.1016/j.paid.2020.110109>
- Dietz, J., & Kleinlogel, E. P. (2014). Wage cuts and managers’ empathy: How a positive emotion can contribute to positive organizational ethics in difficult times. *Journal of Business Ethics*, *119*(4), 461-472. <https://doi.org/10.1007/s10551-013-1836-6>

- Dryden, R. P., Perry, R. P., Hamm, J. M., Chipperfield, J. G., Clifton, R. A., Parker, P. C., & Krylova, M. V. (2021). An attribution-based motivation treatment to assist first-generation college students reframe academic setbacks. *Contemporary Educational Psychology, 64*, 101938. <https://doi.org/10.1016/j.cedpsych.2020.101938>
- Dutton, J. E., Workman, K. M., & Hardin, A. E. (2014). Compassion at work. *Annual Review of Organizational Psychology and Organizational Behavior, 1*(1), 277-304. <https://doi.org/10.1146/annurev-orgpsych-031413-091221>
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Psychology Press. <https://doi.org/10.4324/9781315783048>
- Dweck C. S. (2016). *Mindset: The new psychology of success* (Updated). Random House.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*(2), 256–273. <https://doi.org/10.1037/0033-295X.95.2.256>
- Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A view from two eras. *Perspectives on Psychological Science, 14*(3), 481-496. <https://doi.org/10.1177/1745691618804166>
- Erdley, C. A., & Dweck, C. S. (1993). Children's implicit personality theories as predictors of their social judgments. *Child Development, 64*(3), 863–878. <https://doi.org/10.2307/1131223>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses using Gpower 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149-1160. <https://doi.org/10.3758/BRM.41.4.1149>

- Fournier, J. C., DeRubeis, R. J., Hollon, S. D., Dimidjian, S., Amsterdam, J. D., Shelton, R. C., & Fawcett, J. (2010). Antidepressant drug effects and depression severity: A patient-level meta-analysis. *JAMA: The Journal of the American Medical Association*, *303*(1), 47-53. <https://doi.org/10.1001/jama.2009.1943>
- Goetz, J. L., & Halgren, S. (2020). Closeness or compassion? Relatedness and causal control influence helping via distinct pathways. *The Journal of Social Psychology*, *160*(4), 479-495. <https://doi.org/10.1080/00224545.2019.1681352>
- Goetz, J. L., Keltner, D., & Simon-Thomas, E. (2010). Compassion: an evolutionary analysis and empirical review. *Psychological bulletin*, *136*(3), 351–374. <https://doi.org/10.1037/a0018807>
- Goldman A. I. (2011). “Two routes to empathy: insights from cognitive neuroscience,” in *Empathy: Philosophical and Psychological Perspectives*, eds Coplan A., Goldie P. (New York, NY: Oxford University Press), 31–44.
- Good, C., Aronson, J., & Inzlicht, M. (2003). Improving adolescents' standardized test performance: An intervention to reduce the effects of stereotype threat. *Journal of Applied Developmental Psychology*, *24*(6), 645-662.
- Graziano, W. G., Habashi, M. M., Sheese, B. E., & Tobin, R. M. (2007). Agreeableness, empathy, and helping: A person × situation perspective. *Journal of Personality and Social Psychology*, *93*(4), 583-599. <https://doi.org/10.1037/0022-3514.93.4.583>
- Gu, J., Baer, R., Cavanagh, K., Kuyken, W., & Strauss, C. (2020). Development and psychometric properties of the Sussex-Oxford compassion scales (SOCS). *Assessment (Odessa, Fla.)*, *27*(1), 3-20. <https://doi.org/10.1177/1073191119860911>

- Frost, P. J., Dutton, J. E., Worline, M. C., & Wilson, A. (2000). Narratives of compassion in organizations. In S. Fineman (Ed.), *Emotion in organizations* (pp. 25-45). Sage.
- Hayes, A. F. (2018). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach (Methodology in the Social Sciences)* (2nd ed.). The Guilford Press.
- Health Equity & Policy Lab (n.d.). Human flourishing: Ability to live a good life.
<https://www.healthequityandpolicylab.com/human-flourishing>
- Henson, R. K. (2001). Understanding internal consistency reliability estimates: A conceptual primer on coefficient alpha. *Measurement and Evaluation in Counseling and Development, 34*(3), 177-189. <https://doi.org/10.1080/07481756.2002.12069034>
- Heslin P.A., Latham G.P., VandeWalle D. (2005). The effect of implicit person theory on performance appraisals. *Journal of Applied Psychology, 90*, 842–856.
- Heslin P.A., VandeWalle D., Latham G.P. (2006). Keen to help? Managers' IPTs and their subsequent employee coaching. *Personnel Psychology, 59*, 871–902.
- Heslin, P. A., & VandeWalle, D. (2008). Managers' implicit assumptions about personnel. *Current Directions in Psychological Science : A Journal of the American Psychological Society, 17*(3), 219-223. <https://doi.org/10.1111/j.1467-8721.2008.00578.x>
- Heyman, G. D., & Dweck, C. S. (1998). Children's thinking about traits: Implications for judgments of the self and others. *Child Development, 69*(2), 391-403.
<https://doi.org/10.1111/j.1467-8624.1998.tb06197.x>
- Hirsch, P. B. (2021). The Great Discontent. *Journal of Business Strategy, 42*, 439-442.
<https://doi.org/10.1108/JBS-08-2021-0141>

- Hoomans, J. (2015, March 20). *35,000 Decisions: The Great Choices of Strategic Leaders*. Leading Edge. <https://go.roberts.edu/leadingedge/the-great-choices-of-strategic-leaders>
- Hoyt, C. L., Billingsley, J., Burnette, J. L., Becker, W., & Babij, A. D. (2022). The implications of mindsets of poverty for stigma against those in poverty. *Journal of Applied Social Psychology*, <https://doi.org/10.1111/jasp.12947>
- Hoyt, C. L., Burnette, J. L., Thomas, F. N., & Orvidas, K. (2019). Public health messages and weight-related beliefs: Implications for well-being and stigma. *Frontiers in Psychology*, *10*, 2806-2806. <https://doi.org/10.3389/fpsyg.2019.02806>
- Hoyt, C. L., Burnette, J. L., Nash, E., Becker, W., & Billingsley, J. (2021). Growth mindsets of anxiety: Do the benefits to individual flourishing come with societal costs? *The Journal of Positive Psychology*, <https://doi.org/10.1080/17439760.2021.2006762>
- Hoyt, C. L., d'Almeida, A., Forsyth, R. B., & Burnette, J. L. (2022). Mindsets of criminality: predicting punitive and rehabilitative attitudes. *Psychology, Crime & Law*, 1-18.
- Huang, C. (2017). Time spent on social network sites and psychological well-being: A meta-analysis. *Cyberpsychology, Behavior and Social Networking*, *20*(6), 346-354. <https://doi.org/10.1089/cyber.2016.0758>
- Hudley, C., & Graham, S. (1993). An attributional intervention to reduce peer-directed aggression among African-American boys. *Child Development*, *64*(1), 124-138. <https://doi.org/10.1111/j.1467-8624.1993.tb02899.x>
- Jesse, D. M., & Gregory, W. L. (1986-1987). A comparison of three attribution approaches to maintaining first year college GPA. *Educational Research Quarterly*, *11*(1), 13-25.
- Johnston, W. J., & Kim, K. (1994). Performance, attribution, and expectancy linkages in personal selling. *Journal of Marketing*, *58*(4), 68-81. <https://doi.org/10.2307/1251917>

- Kanov, J., Powley, E. H., & Walshe, N. D. (2017). Is it ok to care? How compassion falters and is courageously accomplished in the midst of uncertainty. *Human Relations*, 70(6), 751-777.
- Karafantis, D. M., & Levy, S. R. (2004). The role of children's lay theories about the malleability of human attributes in beliefs about and volunteering for disadvantaged groups. *Child Development*, 75(1), 236-250. <https://doi.org/10.1111/j.1467-8624.2004.00666.x>
- Kassam, K. S., Koslov, K., & Mendes, W. B. (2009). Decisions under distress: Stress profiles influence anchoring and adjustment. *Psychological Science*, 20(11), 1394-1399. <https://doi.org/10.1111/j.1467-9280.2009.02455.x>
- Keating, L. A., & Heslin, P. A. (2015). The potential role of mindsets in unleashing employee engagement. *Human Resource Management Review*, 25(4), 329-341.
- Kelly, J. (2022, October 25). Soul-crushing, dead-end jobs are the reason behind the great resignation and quiet quitting trends. *Forbes*.
<https://www.forbes.com/sites/jackkelly/2022/10/25/soul-crushing-dead-end-jobs-are-the-reason-behind-the-great-resignation-and-quiet-quitting-trends/?sh=5549847f37f9>
- Keyes, C. L. M. (2006). Subjective well-being in mental health and human development research worldwide: An introduction. *Social Indicators Research*, 77(1), 1-10. <https://doi.org/10.1007/s11205-005-5550-3>
- Kite, M. E., Whitley, Jr., Bernard E., author, & Taylor & Francis. (2018). *Principles of research in behavioral science* (Fourth ed.). Routledge, an imprint of Taylor and Francis. <https://doi.org/10.4324/9781315450087>

- Konrath, S., Meier, B. P., & Bushman, B. J. (2018). Development and validation of the single item trait empathy scale (SITES). *Journal of Research in Personality, 73*, 111-122. <https://doi.org/10.1016/j.jrp.2017.11.009>
- Kyler, E. N. and Moscicki, M. K. (2022). *Understanding Mindset Structure to Improve Growth Mindset Intervention Efficacy: A Review of Mindset Domains and Factors* [Manuscript Submitted for Publication]. Department of Psychology, MacEwan University.
- Levy S.R., Stroessner S.J., Dweck C.S. (1998). Stereotype formation and endorsement: The role of implicit theories. *Journal of Personality and Social Psychology, 74*(6), 1421–1436. <https://doi.org/10.1037/0022-3514.74.6.1421>
- Lipsey, N. P., Burnette, J. L., Becker, W., Baker, L. R., McCrimmon, J., & Billingsley, J. (2023). A growth mindset intervention to improve mental health in adolescents during COVID-19. *Social and Personality Psychology Compass, https://doi.org/10.1111/spc3.12894*
- Litman, L., Robinson, J., & Abberbock, T. (2017). TurkPrime.com: A versatile crowdsourcing data acquisition platform for the behavioral sciences. *Behavior Research Methods, 49*(2), 433-442. <https://doi.org/10.3758/s13428-016-0727-z>
- Lordan, G., & Almeida, T. (2022). How empathy and competence promote a diverse leadership culture. *MIT Sloan Management Review, 63*(4), 1-4.
- Mahand, T., & Caldwell, C. Quiet Quitting—Causes and Opportunities. *Business and Management Research, 12*(1). https://www.researchgate.net/profile/Cam-Caldwell/publication/366990489_Quiet_Quitting_-_Causes_and_Opportunities/links/63bd727b097c7832caa6b182/Quiet-Quitting-Causes-and-Opportunities.pdf

- Maija, K., & Katri, K. (2019). The moral orders of work and health: A case of sick leave due to burnout. *Sociology of Health & Illness*, *41*(2), 219-233. <https://doi.org/10.1111/1467-9566.12816>
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, *17*(3), 437-455. <https://doi.org/10.1037/a0028085>
- Mendes, W. B., Blascovich, J., Hunter, S. B., Lickel, B., & Jost, J. T. (2007). Threatened by the unexpected: Physiological responses during social interactions with expectancy-violating partners. *Journal of Personality and Social Psychology*, *92*(4), 698-716. <https://doi.org/10.1037/0022-3514.92.4.698>
- Miller, J. M., & Krosnick, J. A. (2004). Threat as a motivator of political activism: A field experiment. *Political Psychology*, *25*(4), 507-523. <https://doi.org/10.1111/j.1467-9221.2004.00384.x>
- Mandliya, A., & Pandey, J. (2023). The development and validation of multidimensional workplace compassion scale: Linking its conceptualization and measurement. *Frontiers in Psychology*, *14*, 1142309-1142309. <https://doi.org/10.3389/fpsyg.2023.1142309>
- Narratives of compassion in organizations. (2000). In Stephen Fineman (Ed.), *Emotion in organizations* (2nd ed.). SAGE Publications Ltd. <https://doi.org/10.4135/9781446219850.n2>
- Özduran, A., & Tanova, C. (2017). Manager mindsets and employee organizational citizenship behaviours. *International Journal of Contemporary Hospitality Management*, *29*(1), 589-606. <https://doi.org/10.1108/IJCHM-03-2016-0141>

- Paakkanen, M., Martela, F., Hakanen, J., Uusitalo, L., & Pessi, A. (2021). Awakening compassion in Managers—a new emotional skills intervention to improve managerial compassion. *Journal of Business and Psychology, 36*(6), 1095-1108.
<https://doi.org/10.1007/s10869-020-09723-2>
- Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. *Psychological Science, 26*(6), 784-793. <https://doi.org/10.1177/0956797615571017>
- Perry, R. P., Chipperfield, J. G., Hladkyj, S., Pekrun, R., & Hamm, J. M. (2014). Attribution-based treatment interventions in some achievement settings. *Motivational interventions* (pp. 1-35). Emerald Group Publishing Limited. <https://doi.org/10.1108/S0749-742320140000018000>
- Pirlott, A. G., & MacKinnon, D. P. (2016). Design approaches to experimental mediation. *Journal of Experimental Social Psychology, 66*, 29-38. <https://doi.org/10.1016/j.jesp.2015.09.012>
- Ptáček, R., Vnukova, M., Raboch, J., Smetackova, I., Sanders, E., Svandova, L., Harsa, P., & Stefano, G. B. (2019). Burnout syndrome and lifestyle among primary school teachers: A 39zech representative study. *Medical Science Monitor, 25*, 4974-4981. <https://doi.org/10.12659/MSM.914205>
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10). Academic Press.

- Ross, L., & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. McGraw-Hill Book Company
- Rudolph, U., Roesch, S., Greitemeyer, T., & Weiner, B. (2004). A meta-analytic review of help giving and aggression from an attributional perspective: Contributions to a general theory of motivation. *Cognition and emotion*, 18(6), 815-848.
- Ryazanov, A. A., & Christenfeld, N. J. S. (2018). Incremental mindsets and the reduced forgiveness of chronic failures. *Journal of Experimental Social Psychology*, 76, 33-41. <https://doi.org/10.1016/j.jesp.2017.12.003>
- Scott, B. A., Colquitt, J. A., Paddock, E. L., & Judge, T. A. (2010). A daily investigation of the role of manager empathy on employee well-being. *Organizational Behavior and Human Decision Processes*, 113(2), 127-140. <https://doi.org/10.1016/j.obhdp.2010.08.001>
- Seo, E., Lee, H.Y., Jamieson, J.P., Reis, H., Josephs, R.A., Beevers, C.G., Yeager, D.S. (2020). Trait attributions and threat appraisals explain why an entity theory of personality predicts greater internalizing symptoms during adolescence. *Development and Psychopathology*, 1-11. <https://doi.org/10.1017/S0954579420001832>
- Serenko, A. (2022). The great resignation: The great knowledge exodus or the onset of the great knowledge revolution? *Journal of Knowledge Management*, <https://doi.org/10.1108/JKM-12-2021-0920>
- Schumann, K., Zaki, J., & Dweck, C. (2014). Addressing the Empathy Deficit: Beliefs about the Malleability of Empathy Predict Effortful Responses when Empathy is Challenging. *Journal of Personality and Social Psychology* 107(3), 475-493.

- Shiota, M. N., Keltner, D., & John, O. P. (2006). Positive emotion dispositions differentially associated with Big Five personality and attachment style. *The Journal of Positive Psychology, 1*(2), 61–71. <https://doi.org/10.1080/17439760500510833>
- Shrout, P. E., & Rodgers, J. L. (2018). Psychology, science, and knowledge construction: Broadening perspectives from the replication crisis. *Annual Review of Psychology, 69*(1), 487-510. <https://doi.org/10.1146/annurev-psych-122216-011845>
- Simpson, A. V., and Farr-Wharton, B. (2017). *The NEAR Organizational Compassion Scale: Validity, Reliability and Correlations*. Creative Disruption: Managing in a Digital Age. RMIT, Melbourne Australia.
- Singh, R., & Lin, X. (2011). Severity effect on compensation and imprisonment recommendations: Deterrence as a mediator in Singapore. *Asian Journal of Social Psychology, 14*(1), 36-49. <https://doi.org/10.1111/j.1467-839X.2010.01324.x>
- Sull, D., Sull, C., Cipolli, W., & Brighenti, C. (2022, March 16). *Why every leader needs to worry about toxic culture*. MIT Sloan Management Review. <https://sloanreview.mit.edu/article/why-every-leader-needs-to-worry-about-toxic-culture/>
- Taylor, J. (2020). Remote Work and an Equity Time Bomb. *HR Magazine, 65*, 6.
- The Work Trend Index (2021). *Microsoft WorkLab. The next great disruption is hybrid work – are we ready?* www.microsoft.com/en-us/worklab/work-trend-index/hybrid-work.
- Thompson, B. (1994). (1994b). Guidelines for authors. *Educational and Psychological Measurement, 54*, 837-847.
- VanderWeele, T. J. (2017). On the promotion of human flourishing. *Proceedings of the National Academy of Sciences – PNAS, 114*(31), 8148-8156. <https://doi.org/10.1073/pnas.1702996114>

- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92(1), 82-96. <https://doi.org/10.1037/0022-3514.92.1.82>
- Ward, M. K., & Meade, A. W. (2023). Dealing with careless responding in survey data: Prevention, identification, and recommended best practices. *Annual Review of Psychology*, 74(1), 577-596. <https://doi.org/10.1146/annurev-psych-040422-045007>
- Weick, K. E. (2012). Organized sensemaking: A commentary on processes of interpretive work. *Human Relations*, 65, 141–153.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16, 409–421.
- Weiner, B. (1980). A cognitive (attribution)-emotion-action model of motivated behavior: An analysis of judgments of help-giving. *Journal of Personality and Social Psychology*, 39(2), 186-200. <https://doi.org/10.1037/0022-3514.39.2.186>
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92(4), 548–573. <https://doi.org/10.1037/0033-295X.92.4.548>
- Weiner, B. (1993). On sin versus sickness: A theory of perceived responsibility and social motivation. *American psychologist*, 48(9), 957.
- Weiner, B. (1995). *Judgments of responsibility: A foundation for a theory of social conduct*. Guilford Press.

- Wilson, T. D., Damiani, M., & Shelton, N. (2002). Chapter 5 - improving the academic performance of college students with brief attributional interventions. *Improving academic achievement* (pp. 89-108). Academic Press. <https://doi.org/10.1016/B978-012064455-1/50008-7>
- Wilson, T. D., & Gilbert, D. T. (2003). Affective forecasting. *Advances in experimental social psychology* (pp. 345-411). Elsevier Science & Technology. [https://doi.org/10.1016/S0065-2601\(03\)01006-2](https://doi.org/10.1016/S0065-2601(03)01006-2)
- Wilson, T. D., & Linville, P. W. (1982). Improving the academic performance of college freshmen: Attribution therapy revisited. *Journal of Personality and Social Psychology*, 42(2), 367-376. <https://doi.org/10.1037/0022-3514.42.2.367>
- Wilson, T. D., & Linville, P. W. (1985). Improving the performance of college freshmen with attributional techniques. *Journal of Personality and Social Psychology*, 49(1), 287-293. <https://doi.org/10.1037/0022-3514.49.1.287>
- Wong, C., & Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The Leadership Quarterly*, 13(3), 243-274. [https://doi.org/10.1016/S1048-9843\(02\)00099-1](https://doi.org/10.1016/S1048-9843(02)00099-1)
- Worline, M. C., & Dutton, J. E. (2017). *Awakening Compassion at Work: The Quiet Power that Elevates People and Organizations*. Berrett-Koehler Publications.
- Yaden, D. B., Giorgi, S., Jordan, M., Buffone, A., Eichstaedt, J. C., Schwartz, H. A., Ungar, L., & Bloom, P. (2024). Characterizing empathy and compassion using computational linguistic analysis. *Emotion*, 24(1), 106–115. <https://doi.org/10.1037/emo0001205>
- Yeager, D. S., Bryan, C. J., Gross, J. J., Murray, J. S., Krettek Cobb, D., H. F. Santos, P.,

- Gravelding, H., Johnson, M., & Jamieson, J. P. (2022). A synergistic mindsets intervention protects adolescents from stress. *Nature (London)*, *607*(7919), 512-520. <https://doi.org/10.1038/s41586-022-04907-7>
- Yeager, D. S., Carroll, J. M., Buontempo, J., Cimpian, A., Woody, S., Crosnoe, R., Muller, C., Murray, J., Mhatre, P., Kersting, N., Hulleman, C., Kudym, M., Murphy, M., Duckworth, A. L., Walton, G. M., & Dweck, C. S. (2022). Teacher mindsets help explain where a growth-mindset intervention does and doesn't work. *Psychological Science*, *33*(1), 18-32. <https://doi.org/10.1177/09567976211028984>
- Yeager, D. S., & Dweck, C. S. (2020). What can be learned from growth mindset controversies? *American Psychologist*, *75*(9), 1269–1284. <https://doi.org/10.1037/amp0000794>
- Yeager, D. S., Hanselman, P., Walton, G. M., Murray, J. S., Crosnoe, R., Muller, C., Tipton, E., Schneider, B., Hulleman, C. S., Hinojosa, C. P., Paunesku, D., Romero, C., Flint, K., Roberts, A., Trott, J., Iachan, R., Buontempo, J., Yang, S. M., Carvalho, C. M., . . . Dweck, C. S. (2019). A national experiment reveals where a growth mindset improves achievement. *Nature (London)*, *573*(7774), 364-369. <https://doi.org/10.1038/s41586-019-1466-y>
- Yeager, D. S., Johnson, R., Spitzer, B. J., Trzesniewski, K. H., Powers, J., & Dweck, C. S. (2014). The far-reaching effects of believing people can change: Implicit theories of personality shape stress, health, and achievement during adolescence. *Journal of Personality and Social Psychology*, *106*(6), 867-884. <https://doi.org/10.1037/a0036335>

- Yeager, D. S., Miu, A. S., Powers, J., & Dweck, C. S. (2013a). Implicit theories of personality and attributions of hostile intent: A meta-analysis, an experiment, and a longitudinal intervention. *Child Development, 84*(5), 1651-1667. <https://doi.org/10.1111/cdev.12062>
- Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2013b). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child development, 84*(3), 970-988.
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research, 81*(2), 267-301. <https://doi.org/10.3102/0034654311405999>
- Yeager, D. S., Walton, G. M., Brady, S. T., Akcinar, E. N., Paunesku, D., Keane, L., Kamentz, D., Ritter, G., Duckworth, A. L., Urstein, R., Gomez, E. M., Markus, H. R., Cohen, G. L., & Dweck, C. S. (2016). Teaching a lay theory before college narrows achievement gaps at scale. *Proceedings of the National Academy of Sciences - PNAS, 113*(24), E3341-E3348. <https://doi.org/10.1073/pnas.1524360113>
- Yoon, D. J. (2017). Compassion momentum model in supervisory relationships. *Human Resource Management Review, 27*(3), 473-490. <https://doi.org/10.1016/j.hrmr.2017.02.002>
- Zhang, Z., & Zhang, J. (2008). Lay theories of personality and helping among Chinese undergraduates. *Social Behavior and Personality, 36*(9), 1189-1190. <https://doi.org/10.2224/sbp.2008.36.9.1189>

Table 1*Study 1: Demographic Characteristics of Participants*

	Number	%
Job Sector		
Information Technology (IT)	91	18.2%
Business	67	13.4%
Healthcare	59	11.8%
Retail	54	10.8%
Education	48	9.6%
Government	26	5.2%
Construction	25	5.0%
Food Service	17	3.4%
Real Estate	9	1.8%
Other	103	20.6%
Number of years in managerial role		
Less than 1 year	20	4.0%
1-3 years	166	33.3%
4-6 years	138	27.7%
7-9 years	64	12.8%
10+ years	110	22.2%
Don't know/not sure	1	0.2%
Work environment		
In-person	244	48.9%
Hybrid	208	41.7%
Virtual	47	9.4%
Company type		
Corporation	289	57.9%
Private foundation	110	22.0%
Nonprofit	70	14.0%
Religious Organization	3	0.6%
Other	27	5.4%

Table 2*Study 1: Means, Standard Deviations, Alphas, and Correlations Among Variables of Interest*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Mindsets of people	4.48	1.46	--	--	--	--	--	--	--
2. Situation-centered attributions	4.14	1.48	.10*	--	--	--	--	--	--
3. Unstable attributions	4.98	1.12	.32***	.41***	--	--	--	--	--
4. Emotional Compassion	3.93	1.18	.19***	.21***	.15***	--	--	--	--
5. Behavioral Compassion	0.00	0.68	.20***	.02	.20***	.36***	--	--	--
6. Trait Empathy	4.15	0.94	.17***	.19***	.15**	.48***	.34***	--	--
7. Emotional Intelligence	5.68	0.78	.17***	-.03	.15**	.29***	.47***	.31***	--

***Correlation is significant at the $p < .001$ level (2-tailed)**Correlation is significant at the $p < .01$ level (2-tailed)

Table 3*Study 1: Regression Analyses Showing Predictors of Emotional Compassion*

	Model 1			Model 2		
	β	<i>SE</i>	<i>t</i>	β	<i>SE</i>	<i>t</i>
(Constant)		.36	2.86**		.82	2.27*
Mindsets of People	--	--	--	.11	.03	2.75*
Trait Empathy	.46	.05	11.17***	.45	.05	10.80***
Emotional Intelligence	.06	.06	1.41	.04	.06	1.06
R			.48			.49
Adjust R squared			.23			.25
R Square Change			--			.01

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4*Study 1: Regression Analyses Showing Predictors of Behavioral Compassion*

	Model 1			Model 2		
	β	<i>SE</i>	<i>t</i>	β	<i>SE</i>	<i>t</i>
(Constant)		.20	-12.97***		.21	-13.28***
Mindsets of People	--	--	--	.10	.02	2.52*
Trait Empathy	.22	.03	5.38***	.21	.03	5.04***
Emotional Intelligence	.40	.04	9.77***	.38	.04	9.43***
R				.51		.52
Adjust R squared				.26		.27
R Square Change				--		.01

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 1

Hypothesized Mediation Model

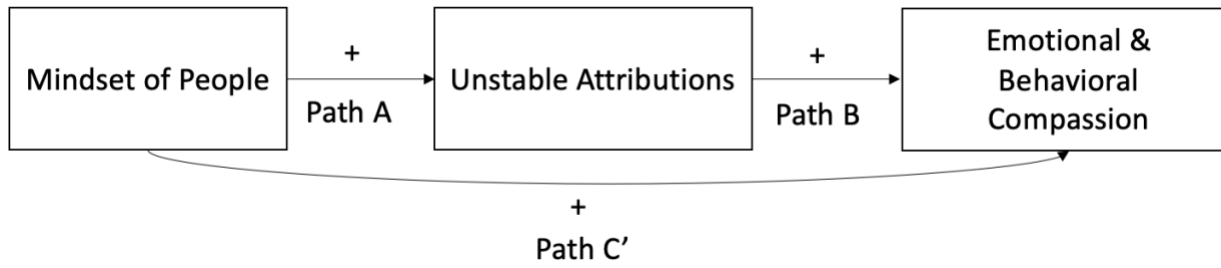
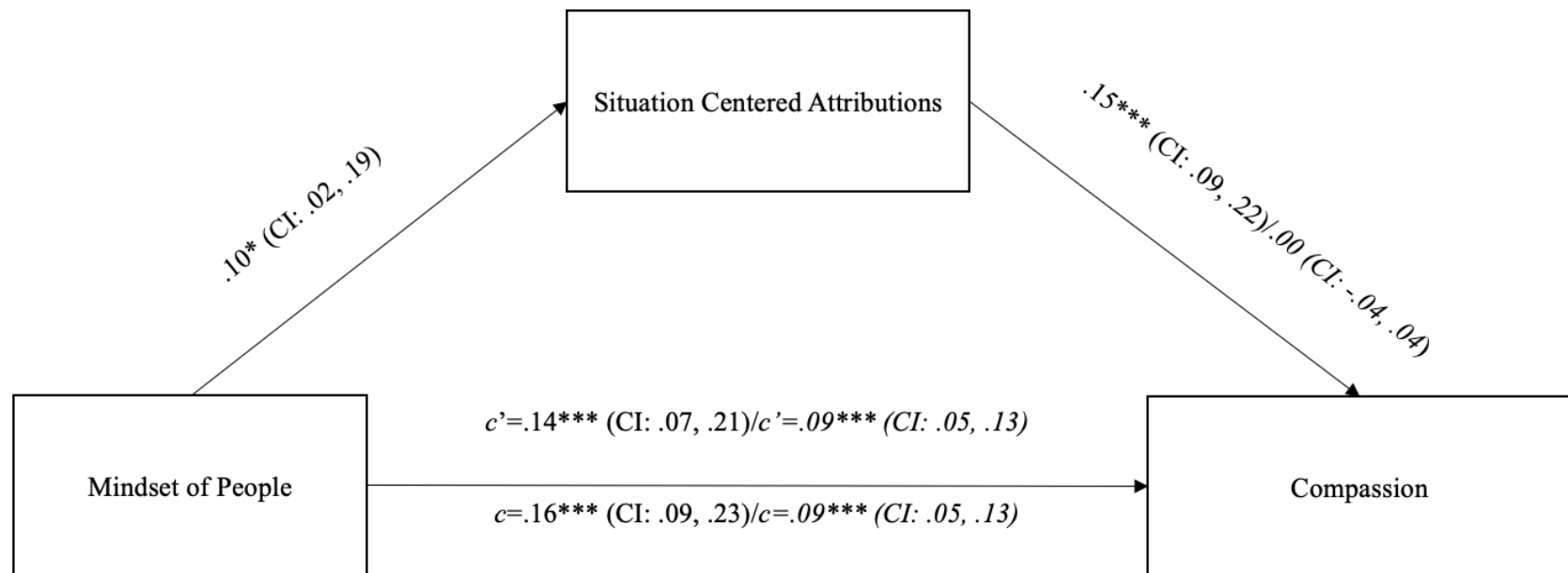


Figure 2

Study 1: Mediation Model for Indirect Effect of Mindsets of People on Emotional and Behavioral Compassion via Situation-Centered Attributions

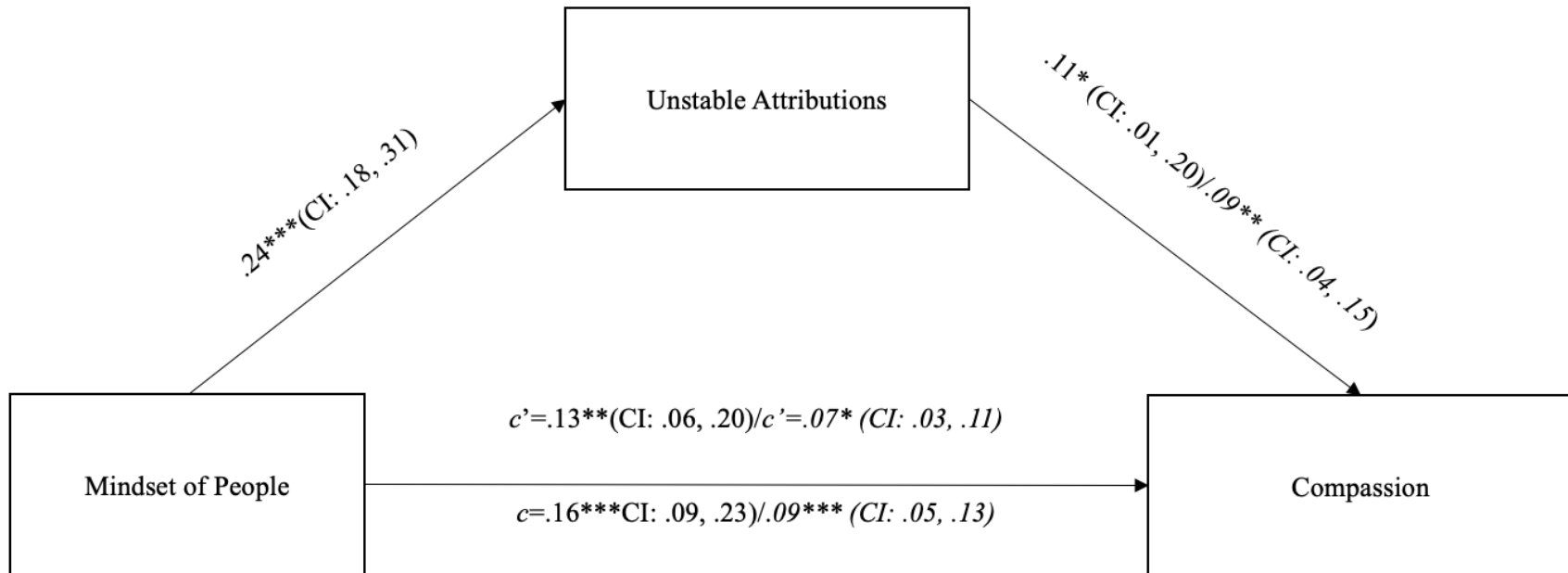


Indirect Effect: .02 (CI: .00, .04) / *Indirect Effect: .00 (CI: -.01, .01)*

Note. The values in italics refer to behavioral compassion.

Figure 3

Study 1: Mediation Model for Indirect Effect of Mindsets of People on Emotional and Behavioral Compassion via Unstable Attributions



Indirect Effect: $.03 (CI: -.001, .06)$ / *Indirect Effect: $.02 (CI: .01, .04)$*

Note. The values in italics refer to behavioral compassion.

Table 5*Study 2: Demographic Characteristics of Participants*

	Number	%
Job Sector		
Information Technology (IT)	107	22.5%
Business	69	14.5%
Healthcare	54	11.4%
Retail	46	9.7%
Education	45	9.5%
Government	22	4.6%
Construction	14	2.9%
Food Service	15	3.2%
Real Estate	11	2.3%
Other	92	19.4%
Number of years in managerial role		
Less than 1 year	10	2.1%
1-3 years	160	33.7%
4-6 years	129	27.2%
7-9 years	63	13.3%
10+ years	113	23.8%
Work environment		
In-person	229	48.2%
Hybrid	184	38.7%
Virtual	62	13.1%
Company type		
Corporation	278	58.5%
Private foundation	104	21.9%
Nonprofit	57	12.0%
Religious Organization	3	0.6%
Other	33	6.9%

Table 6

Study 2: Means, Standard Deviations, Alphas, and Correlations Among Variables of Interest

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Mindset Condition ^a	N/A	N/A	--	--	--	--	--
2. Attribution Condition ^b	N/A	N/A	.01				
3. Self-reported growth mindset	4.41	1.54	.42***	.03	--	--	--
4. Self-reported unstable attributions	4.87	1.63	.17***	.60***	.32**	--	--
5. Behavioral Compassion	4.07	0.64	.04	-.12*	.20***	.09	--

***Correlation is significant at the $p < .001$ level (2-tailed)

**Correlation is significant at the $p < .01$ level (2-tailed)

*Correlation is significant at the $p < .05$ level (2-tailed)

^a The fixed mindsets condition was coded as 0 and the growth mindset condition was coded as 1.

^b The stable attributions condition was coded as 0 and the unstable attributions condition was coded as 1.

Figure 4

Study 2: Mediation Model for Indirect Effect of Mindsets of People on Behavioral Compassion via Unstable Attributions

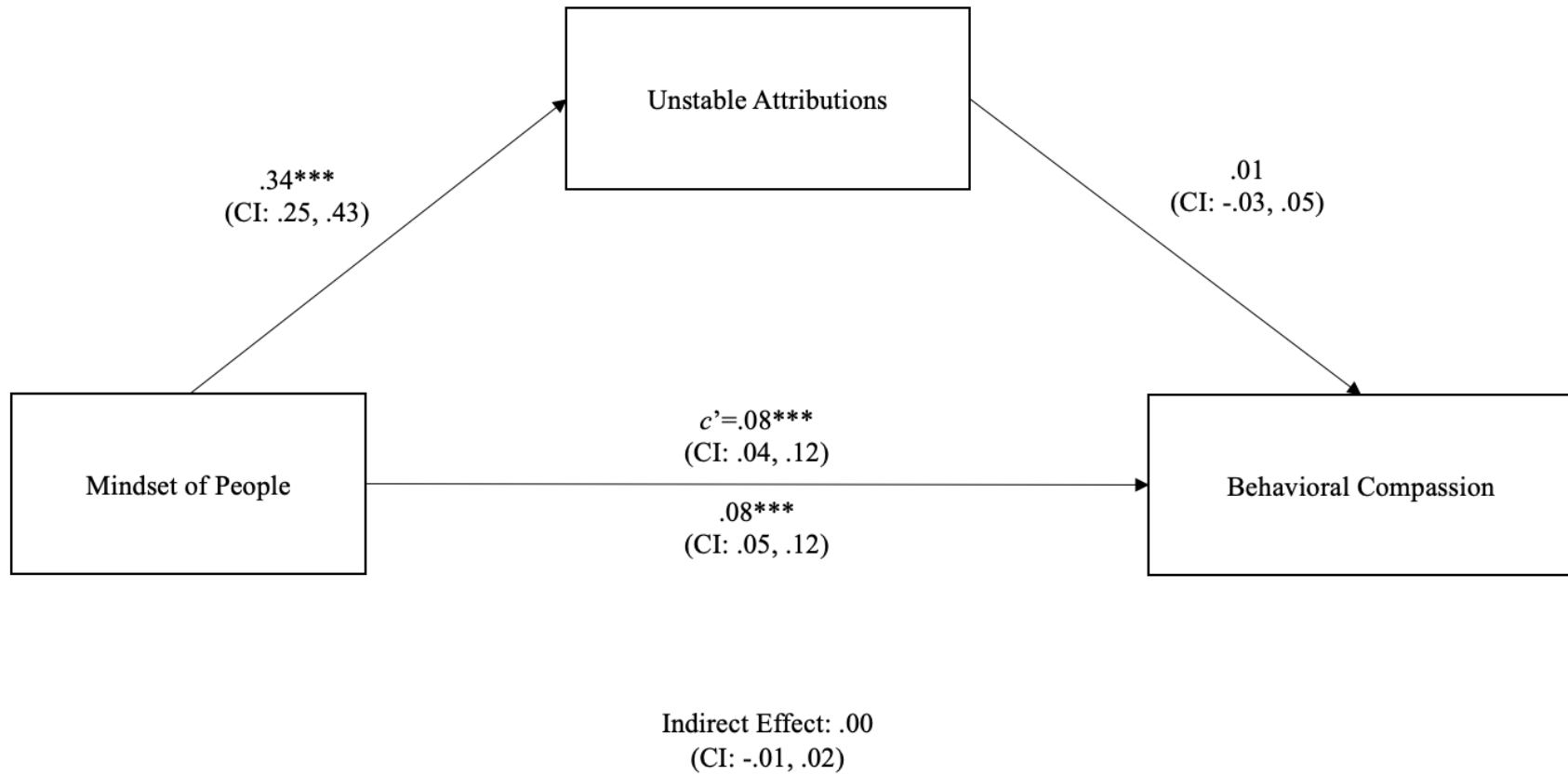
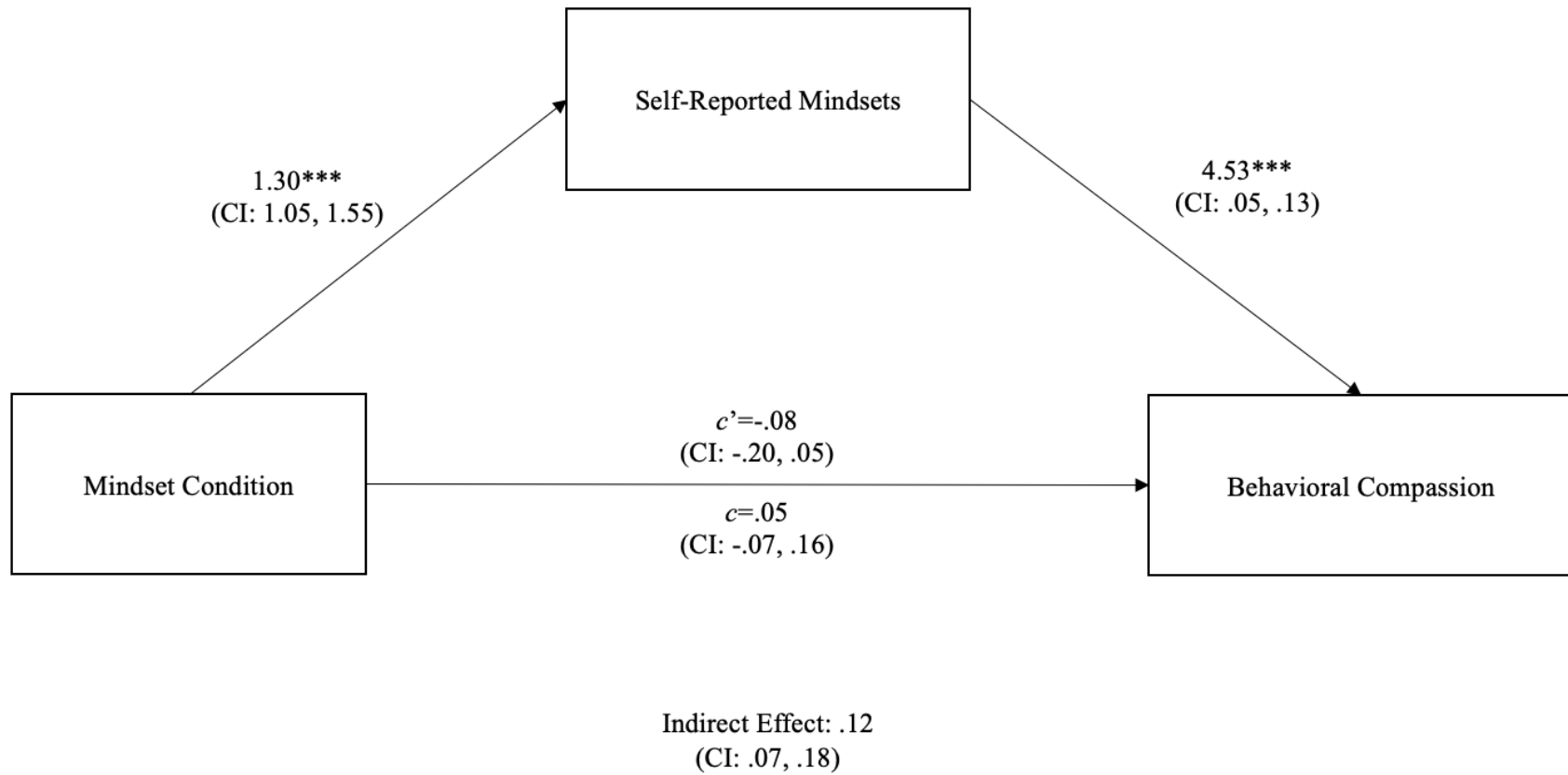


Figure 5

Study 2: Mediation Model Examining the Indirect Effect of Mindset Condition on Behavioral Compassion Via Self-Reported Mindsets



APPENDICES

Appendix A

Data Quality Supplemental Results

Supplemental Table 1

Study 1: Means, Standard Deviations, Alphas, and Correlations Among Variables of Interest (Data Quality Version)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Mindsets of people	4.48	1.59	--	--	--	--	--	--	--
2. Situation-centered attributions	4.08	1.49	.12*						--
3. Unstable attributions	5.03	1.13	.34***	.42***	--	--	--	--	--
4. Emotional Compassion	3.90	1.19	.22***	.20***	.15**	--	--	--	--
5. Behavioral Compassion	0.06	0.64	.19***	.01	.15**	.40***	--	--	--
6. Trait Empathy	4.14	0.95	.18***	.20***	.17***	.50***	.36***	--	--
7. Emotional Intelligence	5.71	0.76	.16**	-.05	.11*	.19***	.40***	.29***	--

Note: No statistically significant changes. Green indicates effect size increased, but not significantly Red indicates effect size decreased, but not significantly.

***Correlation is significant at the $p < .001$ level (2-tailed)

**Correlation is significant at the $p < .01$ level (2-tailed)

*Correlation is significant at the $p < .05$ level (2-tailed)

Supplemental Table 2*Study 1: Regression Analyses Showing Predictors of Emotional Compassion (Data Quality Version)*

	Model 1			Model 2		
	β	<i>SE</i>	<i>t</i>	β	<i>SE</i>	<i>t</i>
(Constant)		.39	2.44*		.40	1.85
Mindsets of People	--	--	--	.13	.03	2.99*
Trait Empathy	.49	.06	11.12***	.47	.06	10.68***
Emotional Intelligence	.05	.07	1.08	.03	.07	0.76
R			.50			.51
Adjust R squared			.25			.26
R Square Change			--			.02

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Supplemental Table 3*Study 1: Regression Analyses Showing Predictors of Behavioral Compassion (Data Quality Version)*

	Model 1			Model 2		
	β	SE	<i>t</i>	β	SE	<i>t</i>
(Constant)		.21	-10.47***		.22	-10.76***
Mindsets of People	--	--	--	.10	.02	2.31*
Trait Empathy	.26	.03	5.94***	.25	.03	5.56***
Emotional Intelligence	.32	.04	7.38***	.32	.04	7.11***
R						.47
Adjust R squared						.23
R Square Change						--
						.48
						.23
						.01

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Supplemental Table 4

Study 2: Means, Standard Deviations, Alphas, and Correlations Among Variables of Interest (Data Quality Version)

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Mindset Condition	N/A	N/A	--	--	--	--	--
2. Attribution Condition	N/A	N/A	.02				
3. Self-reported growth mindset	4.42	1.57	.43***	.04	--	--	--
4. Self-reported unstable attributions	4.89	1.65	.19***	.61***	.33**	--	--
5. Behavioral Compassion	4.09	0.64	.04	-.12*	.21***	.08	--

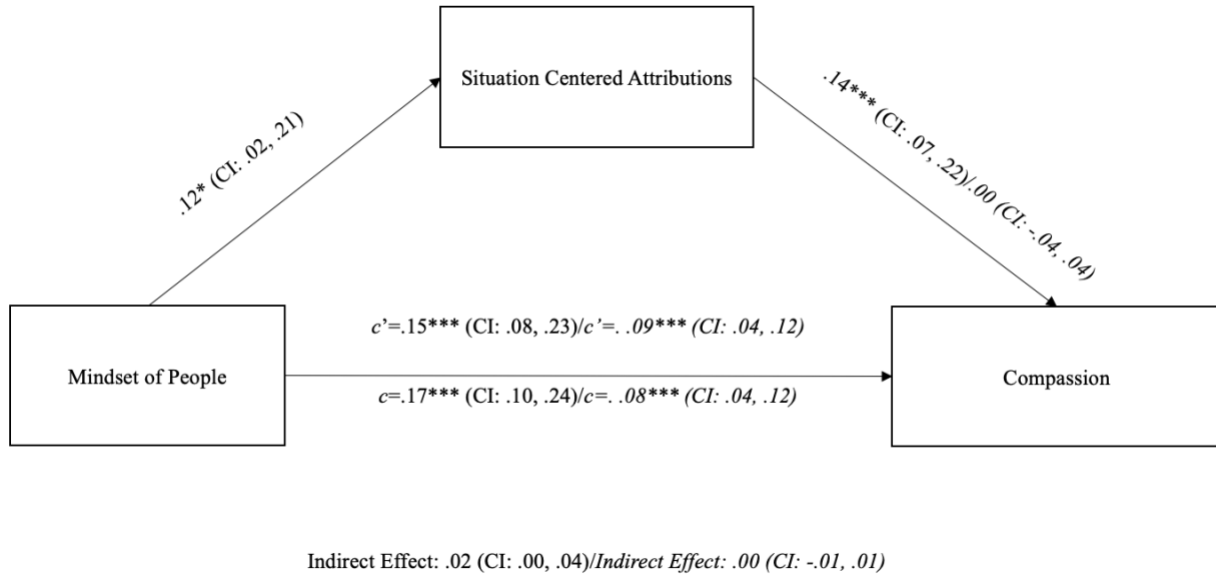
***Correlation is significant at the $p < .001$ level (2-tailed)

**Correlation is significant at the $p < .01$ level (2-tailed)

*Correlation is significant at the $p < .05$ level (2-tailed)

Supplemental Figure 1

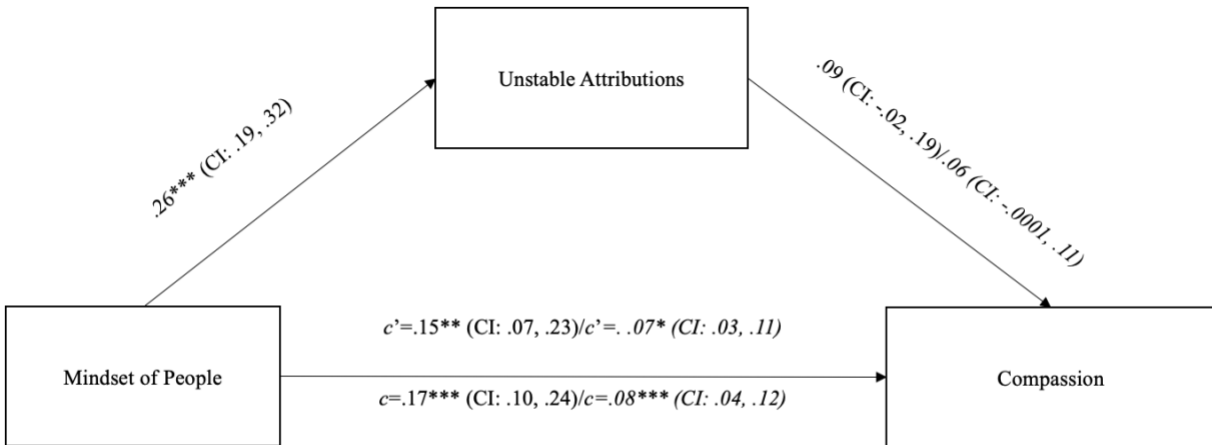
Study 1: Mediation Model for Indirect Effect of Mindsets of People on Emotional and Behavioral Compassion via Situation-Centered Attributions



Note. The values in italics refer to behavioral compassion.

Supplemental Figure 2

Study 1: Mediation Model for Indirect Effect of Mindsets of People on Emotional and Behavioral Compassion via Unstable Attributions



Indirect Effect: .03 (CI: -.01, .06) / Indirect Effect: .01 (CI: .00, .03)

Note. The values in italics refer to behavioral compassion.

Appendix B

Study 1 Supplemental Measures and Compassion Exploratory Factor Analysis

Supplemental Measures (Open-Ended)

Attributions: I coded the open-ended items on a scale from 0 (trait) to 2 (situation). Two independent coders coded the first 10 together and coded 90 more separately. There were 11 responses were coded as N/A because they did not provide enough information to code into one of the existing codes (e.g., “I don't know without talking to them” and “It would be disingenuous for me to guess what is driving them as there are just too many possibilities”). The intraclass correlation coefficient was .82. Higher scores indicate more situation-centered attributions. Second, I created a difference score by subtracting the “person” percentage from the “situation” percentage.

Behavioral Compassion: Additionally, I coded the open-ended items on a scale from 0 (punishment) to 4 (compassion/support). Two independent coders coded the first 10 together and coded 90 more separately. There were 38 responses were coded as N/A because they did not provide enough information to code into one of the existing codes (e.g., “Talk with them privately” and “I would have a face-to-face conversation with them”). The intraclass correlation coefficient was .85. Higher scores indicate more compassion/support for the employee.

Supplemental Analyses

Supplemental Table 5

I conducted an exploratory factor analysis. Using Maximum Likelihood Model and direct oblim rotation and suppressing loadings less than .40. This analysis revealed five factors. The noticing items did not load on any factors. The empathizing, assessing, and responding items from the compassion measure each loaded on their own factor. Additionally, the support measure loaded on two factors. I took the three behavior-focused factors to create an overall behavioral compassion measure centered around taking action, providing feedback, and providing support.

Results From a Factor Analysis of the Compassion and Support measures

Item	Factor loading				
	1	2	3	4	5
Assessing					
Seek to understand if the employee is able to help themselves	.570				
Assess the prior circumstances leading to the employee's struggles	.843				
Assess if the employee had prior warning signs	.728				
Assess the employee's level of responsibility	.438				

Empathizing					
Connect with their pain					-0.757
Feel their suffering					-0.932
Feel their distress					-0.867
Become emotionally invested					-0.720
Taking Action					
Take practical steps					-0.741
Take action					-0.748
Address the issue					-0.820
Get involved					-0.659
Providing Feedback					
Provide guidance regarding performance expectations					-0.716
Help employees analyze their performance					-0.695
Provide constructive feedback regarding areas for improvement					-0.784
Offer useful suggestions regarding how the employee can improve their performance					-0.673
Providing Support					
Act as a sounding board for your employee to develop their ideas					.568
Facilitate creative thinking to help solve problems					.811
Encourage your employee to explore and try out new alternatives					.806
Express confidence that your employee can develop and improve					.555
Encourage your employee to continuously develop and improve					.484
Support your employee in taking on new challenges					.500
Eigenvalue	10.10	2.93	1.87	1.12	1.06
% of Total Variance	38.83	11.27	7.19	4.34	4.07
Total Variance	38.83	50.11	57.29	61.62	65.69%

Appendix C

Dissertation Proposal

Introduction

What makes a good life? This question has puzzled humans since the beginning of time. From a positive psychological perspective, a good life, also called flourishing encompasses wellbeing, resilience, mastery, self-determination, life satisfaction, and growth (VanderWeele, 2017). For flourishing to ensue, both individual-level and community-level support must be in place. For example, when individual's report self-efficacy, motivation, engagement, and achievement, they tend to flourish. In our communities, social and system support, assets, and norms can also help to cultivate flourishing (Health Equity & Policy Lab, n.d.). In the current work, I focus on individual-level resources. Namely, I suggest that mindsets are key to promoting flourishing (Burnette et al., 2023). Mindsets, as defined in Dweck's work (e.g., Dweck, 1999), are beliefs about the malleable (growth) vs. static (fixed) nature of traits, attributes, abilities, emotions, and more (Kyler & Moscicki, under review). Given that growth mindsets focus on the opportunities for development and are strongly linked to the psychological and behavioral processes driving flourishing, these belief systems can be a powerful mechanism for promoting the psychological and behavioral processes that can lead to greater wellbeing (Biddle et al., 2003; Burnette et al., 2023; Hoyt et al., 2019).

My programmatic area of research investigates mindsets as key predictors of multiple facets of flourishing across contexts. For example, I examine links between growth mindsets and flourishing outcomes in areas ranging from poverty to entrepreneurship to parenting. My primary goal is to understand how people assign meaning to their attributes and experiences and how these beliefs in turn create a pattern of affect, behavior and cognitions—that is, I investigate

mindsets and the ABCs of coping as well as the downstream implications of these processes for mental health. In addition to the importance of mindsets for the self, these beliefs also impact person perception. More recently, my work explores how mindsets shape our opinions of others, particularly around judgments and decision-making. My dissertation illustrates this progression in my work, with the first two papers focusing on the implications of mindsets for self-related outcomes and the third proposed study focusing on how mindsets impact perceptions of others, with implications for compassion. Overall, I seek to understand how we can merge conversations related to individual-level factors with ones that considers culture and environmental-level factors, such as understanding the role of leaders, practices, and policies in shaping outcomes. What binds all these areas is the theoretical underpinnings of mindsets.

As previously mentioned, mindsets, or implicit theories, are beliefs about attributes, traits, people, groups, organizations, societies, experiences, and more (Kyler & Moscicki, under review). Measured on a continuum (from growth to fixed or enhancing to debilitating), these mindsets matter most when we face challenges and are key in understanding our reactions to the inevitable setbacks we face in our lives (Dweck, 2016). Originally, mindset research focused on what we now call *ability* mindsets—in other words, when I experience a setback, what is the meaning I assign to my own abilities, traits, and/or attributes? The importance of mindsets can also be applied to assigning meaning to people, groups, organizations, and societies (Dweck, 1999; Crum et al., 2013; Hoyt et al., 2022). Additionally, there are also *experience* mindsets—that is, when I experience stress, failure, struggle—what is the meaning that I assign to that occurrence? Although these types of mindsets ask fundamentally different questions, the glue that binds them is the overall focus on the meaning assigned to the nature of the attribute or

experience (Dweck, 2016). Both ability and experience mindsets predict flourishing, such as wellbeing and resilience (Hoyt et al., 2021; Becker et al., 2023).

My research extends existing work by exploring multiple theoretically driven mechanisms (e.g., narrative identity, attributions) that contribute to flourishing as well as the boundary conditions under which growth mindsets promote positive outcomes. In the first manuscript, I explored relationships between growth mindsets of anxiety and aspects of individual flourishing as well as potential downsides of these growth mindsets. In the second manuscript, I merged two meaning-making systems, mindset theory and narrative identity theory, to better understand their relationship with the affective, behavioral, and cognitive aspects of coping. Specifically, in this second manuscript, I focused on struggle experience mindsets and their link to coping as well as social, emotional, and psychological wellbeing.

Building on my existing theoretical foundation and published work, in the third manuscript, I seek to better understand the role of leaders' mindsets of people in shaping positive outcomes for employees. I also continue to explore under what conditions mindsets may elicit more positive as well as more negative outcomes. Before detailing my third set of studies, I include a brief overview of the first two published manuscripts.

Manuscripts

Growth mindsets of anxiety: Do the benefits to individual flourishing come with societal costs?

The first manuscript, titled, "Growth mindsets of anxiety: Do the benefits to individual flourishing come with societal costs?" (Hoyt, Burnette, Nash, Becker, & Billingsley, 2021) was accepted for publication by the *Journal of Positive Psychology* on November 13, 2021, after an initial submission on May 28, 2021. The *Journal of Positive Psychology* focuses on basic

research examining outcomes such as happiness, wellbeing, and other positive psychology topics across various subdisciplines in the field of psychology. The impact factor in 2021 was 4.10.

In this work, I examined people's beliefs about the malleability or fixed nature of anxiety. Across six studies ($N=1,761$) I investigated links between growth mindsets of anxiety and various aspects of flourishing (e.g., wellbeing, resilience, and grit). I also examined causal relationships among these variables and the mediating role of threat appraisals. Threat appraisals involve evaluating the perceived level of severity and harm of the threat and whether one can cope with their stressors (Crum et al., 2017; Seo et al., 2020). When one believes they have the resources to meet the challenges they face, this can buffer against psychological distress as well as physiological effects (Crum et al., 2017; Kassam et al., 2009; Mendes et al., 2007; Seo et al., 2020). However, when one believes they do not have the resources to address the challenge, it can lead to negative physiological, cognitive, and affective outcomes (Kassam et al., 2009; Mendes et al., 2007). In prior work, growth mindsets buffer negative effects even when threat is perceived to be high, as individuals may perceive it as a learning and growth opportunity (Crum et al., 2017). However, although viewing the self as capable of handling stressors can impact motivations related to helping others in ways that may have costs, relative to the benefits for the self. That is, viewing the threat as less harmful may diminish one's motivation to take part in activism initiatives given that threat and distress often motivate individuals to act (Baldassare & Katz, 1992; Miller & Krosnick, 2004). We sought to extend and replicate this work, focusing on growth mindsets of anxiety, threat appraisal, wellbeing, and activism.

In Study 1, we found that growth mindsets of anxiety are positively related to flourishing and negatively related to activism intent. In Study 2, we primed participants with manipulated articles from the "APA Science Observer," providing evidence that anxiety is either fixed or

changeable. Although the manipulation shifted growth mindsets, it failed to directly impact flourishing outcomes. Nonetheless, self-reported growth mindsets replicated findings from Study 2. In Study 3, we focused on the link between growth mindsets of anxiety and activism and included threat appraisals as a potential link. We found that growth mindsets of anxiety predicted lower levels of activism intentions and threat appraisals significantly mediated the relationship between growth mindsets of anxiety and activism intentions, even when controlling for trait anxiety and political ideology. In Studies 4 and 5, growth mindsets of anxiety predicted greater flourishing (i.e., psychological wellbeing, resilience, and grit). We also replicated the mediation of growth mindsets of anxiety and activism intentions via threat appraisals, again controlling for political ideology, but added a measure of the Big 5 personality traits. In Study 6, stronger growth mindsets again predicted greater flourishing. Threat appraisals mediated the link between growth mindsets of anxiety and activism intentions.

Overall, these studies replicated effects from previous literature examining associations between growth mindsets and flourishing outcomes and adds to the literature by understanding how one mechanism (i.e., threat appraisals) that links to positive outcomes (e.g., mental health) can lead to costs (e.g., reduced activism intentions). An internal meta-analysis offered an overview of the strength of these findings, with links between mindsets and flourishing producing an overall effect size of $r=.42$, mindsets with threat appraisals producing an overall effect size of $r=-.27$, threat appraisals with activism intentions producing an overall effect size of $r=.52$, and mindsets with activism intentions producing an overall effect size of $r=-.25$. In terms of benchmarks, the link to flourishing is stronger than the link between social media use and wellbeing ($r=-0.07$, Huang, 2017) and taking anti-depressant medication for mild-to-moderate

depression, relative to a control group ($r=.10$, Fournier et al., 2010). Overall, this initial work replicates findings outlining that mindsets matter for flourishing.

Coping in the time of COVID-19: Mindsets and the stories we tell

The second manuscript, titled, “Coping in the time of COVID-19: Mindsets and the stories we tell,” (Becker, Burnette, & Hoyt, 2022) was accepted for publication by the *Journal of Applied Social Psychology* on October 1, 2022, after an initial submission on February 25, 2022. The *Journal of Applied Social Psychology* publishes research focused on applications to societal issues across a wide array of disciplines. The impact factor in 2022 was 2.65. This was my second-year project publication.

Although this set of studies still examined wellbeing, we shifted the focus of this study from mindsets about traits, such as anxiety, to mindsets about experiences. In particular, we focused on the meaning people assign to the experience of struggle. That is, when an individual experienced struggle, did they more strongly view it as an enhancing experience, leading to learning and growth opportunities? Or instead, did they see it as more debilitating, or something that inhibited learning and growth opportunities? These evaluations exist along a continuum rather than a dichotomy. In this set of two studies ($N=803$), we merged mindset theory with narrative identity theory, and explored how these two meaning-making systems relate to one another, as well as coping (affect, cognition, and behavior), and wellbeing. In Study 1, we surveyed parents about their mindsets of struggle and asked them to write about a specific parenting challenge they have faced recently. We coded parents’ narratives for motivational themes of agency, redemption, and contamination. Throughout the coding process, we found another theme, languishing, which represents a story that has a negative beginning and ending, signifying a sense of stagnation. We also included measures of coping (affect, cognition, and

behavior). In Study 1, we found that stronger struggle-is-enhancing mindsets were positively related to the themes of agency and redemption and negatively related to contamination and languishing themes. In terms of coping, and similar to prior mindset literature, stronger struggle-is-enhancing mindsets were related to less negative affect, more active coping behaviors, and greater future expectations of success.

In Study 2, we expanded the study to the general U.S. adult population. We again asked about their mindsets of struggle but changed the narrative prompt to ask participants to describe a particular COVID-19 challenge they had faced. We again coded for agency, redemption, contamination, and languishing and assessed coping. We also added a measure of social, emotional, and psychological wellbeing (Keyes, 2006). In Study 2, we replicated the links in Study 1, but left contamination out of the analyses given that less than 1% of the responses were coded as contamination. We also found that stronger struggle-is-enhancing mindsets were positively related to social, emotional and psychological wellbeing. Given that mindsets and narrative identity themes are both meaning-making systems, we wanted to examine predictors of wellbeing and therefore ran a multiple regression, with both mindsets and narrative identity themes (agency, redemption, & languishing). Our findings indicated that struggle-is-enhancing mindsets were the only significant predictor of social, emotional, and psychological wellbeing.

Overall, these two studies provided evidence that growth mindsets and motivational narrative identity themes are related, and both meaning-making systems matter for affective, behavioral, and cognitive aspects of coping. Finally, we found support for struggle-is-enhancing mindsets as a predictor of wellbeing. Building on these papers, as well as other published work, in my third manuscript, I seek to understand the role of mindsets in perceptions and decisions related to others.

Why are you late to work? The role of mindsets and attributions in shaping managers' compassion for employees

The third manuscript, tentatively titled “Why are you late to work? The role of mindsets and attributions in shaping managers' compassion for employees,” is in progress with plans for submission in May 2024. The submission outlet I'm proposing is *Organizational Behavior and Human Decision Processes* (IF: 5.61).

Introduction

As humans, we make around 35,000 decisions every day (Hoomans, 2015). Here, I focus on manager's decision-making in terms of showing compassion when employees are struggling. Although managers often face difficult decisions, COVID-19 created a host of additional challenges within the business sector, including record high levels of turnover, the Great Resignation, quiet quitting, and more (Serenko, 2022; Cohen, 2021; Buscaglia, 2022). The trend is likely to continue, with close to half the workforce estimated to consider leaving their current position, globally (The Work Trend Index, 2021). This leads to a greater strain on managers due to the exacerbation of knowledge gaps when employees leave and negative effects on employees who choose to stay at the company (e.g., anxiety, stress; Serenko, 2022). As a result, managers are likely to face employees who are burned out, struggling to stay on task, and disengaged. Importantly, manager's responses to these struggles may set the stage for whether employees stay or leave.

Whereas compassion can cultivate healthy, supportive work environments, punitive responses can create a more toxic environment, with implications for turnover (Sull et al., 2022). Compassion is defined and assessed in the scientific literature in two ways: feelings and actions (Goetz et al., 2010; Narratives of Compassion in Organizations, 2000; Rudolph et al., 2004).

Given that compassion has both affective and behavioral components, I choose to measure both to fully capture the construct (Narratives of Compassion in Organizations, 2000). The affective component involves feelings, although identifying the emotion of compassion can be difficult (Goetz et al., 2010; Wilson & Gilbert, 2003). Behavioral or action-based compassion focuses on the ways in which compassion is expressed through supportive actions, which may include aiding in work/life balance, providing emotional and mental health programs, and offering opportunities for growth and development.

Managerial compassion can help buffer against some of the negative effects of the COVID-19 pandemic, (Hirsch, 2021; Taylor, 2020). For example, quiet quitting (i.e., the idea that individuals will only perform duties assigned in their role description and no longer go above and beyond), is rooted in “...the failure of many managers and supervisors to honor their fundamental leadership responsibilities required to engage, empower, and inspire employees with whom they work” (Mahand & Caldwell, 2023, p. 9). Quiet quitting, like the Great Resignation, is a signal to employers about a potentially unhealthy working environment (Mahand & Caldwell, 2023). When managers do not provide employees with support alongside professional learning and growth opportunities, it can signal to the employee that there may be little room for building their skills and being promoted (Kelly, 2022). Additionally, when managers fail to acknowledge employee struggles, or show compassion, it can also lead to negative outcomes for employees (Mahand & Caldwell, 2022; Worline & Dutton, 2017). However, when managers and organizations signal that they value and prioritize employees by being supportive, even during challenging times, employees are more engaged, creative, and loyal to their company (Rath & Harter, 2019 in Mahand & Caldwell, 2022).

Considering the implications of compassion for both the organization and the employee, an important empirical question becomes: “What predicts when managers offer compassion rather than responding to employees less than optimal behaviors in punitive ways?” Existing research outlines a few potential explanations. For example, company climate predicted manager’s willingness to engage in the development of women’s skills, retention, and promotion in STEM (Braun & Turner, 2014). However, lacking the resources, or skills, can be a barrier to support (Kanov et al., 2017; Paakkanen et al., 2021) as can stress (Narratives of Compassion in Organizations, 2000). I seek to add to this literature, focusing on individuals’ meaning-making belief systems, or mindsets, as predictors of compassion and I merge this perspective with attribution theory to outline mechanisms.

Mindset Theory

First, I suggest that one’s mindset about the nature of people is critical for making sense of employee’s struggles and is an integral part of deciding whether to offer compassion (Paakkanen et al., 2021). For example, stronger fixed, relative to growth, mindsets of people predicted stronger inferences that someone’s behavior is indicative of their underlying traits, and expectations that the person would exhibit the same behavior in other similar contexts (Chiu et al., 1997). In addition to believing in the stability of traits and behavior, individuals with stronger fixed, relative to growth, mindsets are more likely to make more negative social judgments when a person errs, and they are more likely to recommend punishment (Erdley & Dweck, 1993). In contrast, individuals with a stronger growth, relative to fixed, mindset are more likely to see the misbehavior or setback as an opportunity for learning and growth, leading them to provide feedback that encourages improvement and smarter strategy-choice. These attributions and strategies tend to encourage helping behavior (Chiu et al., 1997; Heslin et al., 2008; Heyman &

Dweck, 1998, Karafantis & Levy, 2004; Zhang & Zhang, 2008). Stronger growth mindsets, relative to stronger fixed mindsets, also predict less stereotyping and stigma and thus tend to predict restorative approaches rather than punitive ones (Hoyt et al., 2019; 2022; Levy et al., 1998). Overall, mindsets, especially beliefs about the fundamental nature of people, set up the meaning assigned to the situation and guide whether a person recommends a punitive action, a compassionate approach, or avoids the issue altogether.

Related research, specifically in a work context, finds a similar pattern of results with outcomes focused on manager's mindsets and their willingness to coach (Heslin et al., 2006). For example, managers who hold stronger growth mindsets, relative to those with stronger fixed mindsets, are more likely to notice both improvements and reductions in an employee's performance, whereas individuals with a stronger fixed mindset were more likely to see their employee's performance as stable (Heslin et al., 2005). Additionally, managers who participated in a growth mindset intervention, relative to those in the control condition, were more likely to report willingness to coach an employee who was struggling and acknowledged employee's gains in performance (Heslin et al., 2006). In turn, employee coaching can play a mediating role in the relationship between growth mindsets and employee behaviors such as willingness to help coworkers (Özduran & Tanova, 2017).

In sum, leaders' decisions when their employees struggle (e.g., choosing to respond compassionately, punish, avoid) impact their supervisee's outcomes in both the short and long-term. Given that punitive approaches are linked to more negative employee outcomes, finding ways to encourage managerial compassion when employees struggle is paramount to helping them flourish. In the current study, I suggest that growth mindsets are one potential predictor of

compassion as these beliefs encourage more external, unstable attributions, providing a path forward for compassion.

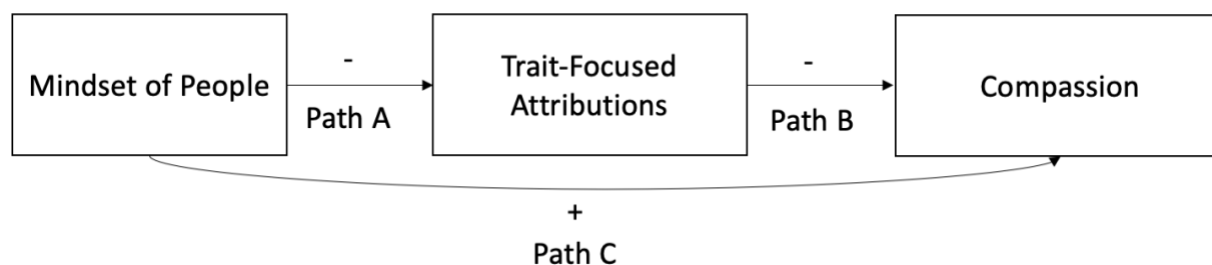
Attribution Theory

I merge mindset theory with attribution theory to try and designate a potential mechanism linking mindsets to compassion. Attribution theory is comprised of three elements: locus of causality, stability, and control (Weiner, 1985). Locus of causality refers to internal (i.e., dispositional) and external (i.e., situational) explanations (Weiner, 1985). For example, one may interpret one's poor presentation skills as an indicator of low ability (internal) or their manager's lack of task clarity (external). The second dimension, stability, refers to whether the event or someone's behavior is attributable to a stable or unstable factor (Weiner, 1985). A stable factor is consistent (e.g., the employee always presents poorly) whereas an unstable factor is temporary and may not repeat across similar situations (e.g., the employee usually gives excellent presentations, Weiner, 1985). The third dimension is controllability, which examines the extent to which the situation or behavior is deemed as within the person's control or outside of the person's control (Weiner, 1985). For example, the amount of effort one exerts to prepare for the presentation may be deemed controllable, but the amount of time an employee is given to prepare for the presentation may be seen as uncontrollable.

Mindsets, Attributions, and Compassion

Attributions for poor employee performance are often ambiguous and thus, individuals must make meaning of the situation and whether it warrants compassion (Weick, 2012; Weick et al., 2005). The individual must formulate a cause of the event, which tends to lead to questions about whether the person is deserving of assistance (Atkins & Parker, 2012). Attributions that are more externally focused, unstable and uncontrollable tend to elicit more helping behavior

(Weiner, 1980). These judgments are also called lay dispositionism in the mindset literature (Erdley & Dweck, 1993; Chiu et al., 1997). Engaging in lay dispositionism refers to the way in which people infer causes of an individual's behavior by looking at their traits and other attributes to infer something about the person, rather than the situation (Ross & Nisbett, 1991). Individuals with stronger growth mindsets of people, relative to those with stronger fixed mindsets, are less likely to believe a single situation is indicative of the person's future behavior in similar situations—that is their attributions are less focused on stability (Chiu et al., 1997). Additionally, although most individuals tend to make internal attributions (e.g., traits, character), rather than external (e.g., situational), this fundamental attribution error (Ross, 1977) is stronger for individuals with fixed, relative to growth mindsets. In other words, stronger growth, relative to fixed, mindsets predict more external attributions. In the current work, I focus on trait-based and stable, relative to situation-based and unstable, attributions, given that the former, predicted stronger punishment recommendations (Chiu et al., 1997; Erdley & Dweck; 1993; Singh & Lin, 2011). Overall, attributions focused on individual traits, culpability and stability predict less compassion, whereas situational external and unstable attributions predict more compassion (e.g., Cushman, 2008; Goetz & Halgren, 2020; Weiner, 1993, 1995). In summary, I suggest that growth mindsets predict and lead to less trait-focused attributions and thus more compassion (see Figure 1).



Growth Mindset Interventions

I also test if these mindsets can be manipulated and encouraged via longer interventions to promote greater compassion. Although there is a plethora of growth mindset interventions designed to foster stronger growth mindsets of attributes and thereby promote achievement (see Burnette et al., 2023), there is limited work examining the potential to enhance interpersonal outcomes by leveraging growth mindsets of people. These interventions are the focus of the current work and initial evidence is promising (Yeager et al., 2013a, 2013b, 2014). For example, in adolescents, these interventions lower aggressive behaviors, lessen negative responses to bullying and hamper attributions of antagonistic intentions, to name a few of the beneficial outcomes (Yeager et al., 2013a, 2013b, 2014). These interventions also promote more supportive responses, rather than punitive behavior (Keating & Heslin, 2015). Specifically, in the domain of management, interventions targeting growth mindsets of people increased managers' willingness to coach employees, the number of coaching suggestions, the quality of coaching, and the manager's attention to performance improvements (Heslin et al., 2005, 2006). I build on this work and combine it with related and emerging research suggesting that synergetic approaches to mindset interventions may be more powerful.

Synergistic Mindset and Attribution Intervention

Synergistic mindset interventions are rare and typically combine multiple types of mindsets (i.e., stress and intelligence; Yeager et al., 2022) or integrate sense of belonging or sense of purpose with mindsets (Paunesku et al., 2015; Yeager et al., 2016). In the current work, given my focus on both growth mindsets and external situational attributions in promoting compassion, I propose a synergistic intervention in which I will target both mindsets and attributions simultaneously. Mindset interventions typically aim to increase people's beliefs

regarding the changeable nature of individuals and promote positive outcomes such as less adverse reactions when experiencing a social hardship, lower stress, better academic performance, boosting prosocial behavior, and more (Yeager et al., 2013a, 2013b; Yeager et al., 2014). These interventions vary greatly, but can consist of some or all of the following: in-person facilitation, videos, articles about the malleable nature of people using science about neuroplasticity, advice and stories from other students explaining how they changed and grew over time, and the utilization of a saying-is-believing exercise (e.g., writing to another person who may be experiencing an interpersonal challenge and using what they've learned about mindsets and the brain to provide advice, Good et al., 2003; Yeager et al., 2022). Attribution interventions use a variety of approaches, from changing cognitions such as negative, internal attributions, to teaching adaptive attributions (i.e., a different strategy may be needed), to teaching reattribution (e.g., changing one's attribution from an internal cause to an external cause, Dryden et al., 2021; Hudley & Graham, 1993; Perry et al., 2014; Wilson et al., 2002). Interventions targeting the stability component of attributions are particularly effective, such as teaching college students that academic difficulties during their first year of college are temporary, or unstable, which led students to earn better grades and helped to increase college retention rates (Jesse & Gregory 1986-1987; Wilson & Linville, 1982, 1985).

I take this latter approach and propose combining a growth mindset of people intervention with an attribution intervention to foster greater management compassion in the wake of employee struggles.

Methods

Design

I am proposing a 3-study approach. I will conduct the studies via an online Qualtrics survey and recruit participants via CloudResearch, an online data platform with rigorous data quality and carelessness checks, such as their SENTRY system, which requires each participant complete a short pre-survey to determine eligibility, attention, etc. (Litman & Abberbock, 2017). Individuals who are 18 years or older, currently reside in the United States, and identify as a manager (i.e., an individual who supervises other employees in a work setting) will be eligible to participate. The first study will examine relationships between variables: mindsets of people, trait-focused attributions, and compassion. Study 2 will utilize a manipulate-the-mediator design. This will help ensure causality claims by establishing temporal precedence of the mediator (i.e., M comes before Y) and can help to account for potential confounds (Pirlott & MacKinnon, 2016). In these designs, the researcher manipulates the level of the mediator (e.g., trait-focused vs. situational), rather than allowing the individual to self-select the level of the mediator (Pirlott & MacKinnon, 2016). In Study 3, I will develop and test a synergistic intervention to foster growth mindsets and greater attention to external attributions with the goal of positively impacting managers' compassion for their employees who are struggling.

Measures

Mindsets of People

This 8-item measure (Dweck, 1999) will assess participants' beliefs about the malleability of people. The scale reflects the degree to which individuals believe people can change (e.g., Everyone, no matter who they are, can significantly change their basic characteristics, 1=strongly disagree, 7=strongly agree). There are four fixed mindset items and

four growth mindset items. The four fixed mindset items will be recoded so a higher score indicates a stronger growth mindset of people.

Attributions

To assess attributions, participants will read a scenario explaining their employee is disengaged at work. Participants will be asked the following open-ended questions: 1) What do you think is the main reason for such behavior? 2) How would you respond? Next, they will complete a self-report measure, which will be adapted from previous literature to examine trait-based attributions, relative to situational—this assessment will also include components of cross-situational generality and stability. The measure will be adapted from Heyman & Dweck (1998). After being presented with the scenario, participants will be asked questions to understand participants' trait evaluations, cross-situational generality, and stability. To assess trait evaluations, participants will be asked, "Thinking about the scenario above, does this mean the employee is lazy?" To assess cross-situational generality, participants will be asked, "Thinking about the scenario above, do you think the employee will be lazy in other situations?" Finally, to assess stability, participants will be asked, "Thinking about the scenario above, does this mean the employee will always act this way?" These will be measured dichotomously (0=no, 1=yes).

Compassion

To assess the affective and action aspects of compassion, I will use the Sussex-Oxford Compassion Scale, which would be adapted from a trait-based measure to a state-based measure (Gu et al., 2020). This measure includes 20-items and is measured on a 5-point Likert-type scale (1=not at all, 5=always true). It examines the five aspects of compassion: recognizing suffering (e.g., "In this scenario, I would recognize when my employee is feeling distressed without them having to tell me"), understanding the universality of suffering (e.g., "In this scenario, I would

understand that everyone experiences suffering at some point in their lives), feeling for the person suffering (e.g., “In this scenario, because my employee is going through a difficult time, I feel kindly towards them”), tolerating uncomfortable feelings (e.g., “In this scenario, when my employee is upset, I would try to stay open to their feelings rather than avoid them”), and acting or being motivated to act to alleviate suffering items (e.g., “In this scenario, when my employee is struggling, I would try to do things that would be helpful”). A higher score indicates more compassion toward employees.

Study 2 Manipulations

In Study 2, I will manipulate both mindsets of people (fixed and growth) and will also manipulate attributions (trait vs. situation) to demonstrate the causal link between M and Y (Pirlott & MacKinnon, 2016). Although there are multiple types of manipulate-the-mediator designs, I propose the concurrent double randomization design and enhancement approach (Pirlott & MacKinnon, 2016). The goal of this approach is to manipulate the independent variable and mediator at the same time to bolster the effect of the mediator to see how these changes also influence the effect of differing levels of X (i.e., growth, fixed) on Y (i.e., compassion), compared to a control condition that “allows the mediator to vary freely” (Pirlott & MacKinnon, 2016, p. 7). By queuing a situational explanation, I expect it will elicit more compassion from participants in both the fixed and growth mindset conditions and less compassion from participants in both the fixed and growth mindset conditions in the trait-based condition, relative to the control group. In other words, growth mindsets will only predict compassion in the situational condition, or when attention to external attributions is encouraged (Pirlott & MacKinnon, 2016). I will also measure both the IV and the mediator as a manipulation check (Pirlott & MacKinnon, 2016).

The mindset manipulation will have two conditions: growth and fixed. To induce a stronger growth or fixed mindset, I will draw on prior mindset literature that has successfully manipulated mindsets using researcher-created scientific articles that discuss the malleability of people (growth) or the innate nature of people (fixed) with scientific evidence (Yeager et al., 2019).

Participants will be given the same scenario from Study 1. In the trait-focused attribution condition, we will provide an internal/stable attribution for the behavior. Namely, participants will be offered the explanation that the employee is unmotivated and consistently misses deadlines, priming an internal, stable cause. For the situational attribution condition, we will provide an external/unstable attribution for the behavior. Namely, participants will be given the explanation that the employee had a death in the family to prime an external, unstable explanation.

Study 3 Intervention Implementation

Finally, taking the findings from Studies 1 and 2, I will develop an intervention to foster stronger growth mindsets and to also reduce trait-based attributions to determine mechanisms we can leverage to increase managers' compassion for their employees who are struggling.

This cross-sectional study will consist of a treatment condition (growth mindsets + situational attributions) and a control group (democratic leadership). Participants will be randomly assigned to one of these conditions. In the growth mindset condition, they will read an article with information on neuroplasticity and how this connects to the ability for people to change as well as content from managers illustrating how many challenges people go through can be adaptive, attributed to situational sources, and can change over time (Perry et al., 2014; Yeager et al., 2019). These scenarios will mirror the process of reattribution, giving examples of

how managers reattributed employee struggles to temporary, situational factors (Good et al., 2003). Like previous synergistic interventions, these concepts will not be introduced disparately, but will be woven together in a cohesive manner (Yeager et al., 2022). After the intervention, participants will read a scenario about an employee and then I will measure participants' mindsets of people, attributions, compassion, and relevant demographic characteristics.

To reduce demand characteristics, I will not measure anything at baseline (e.g., mindsets), to avoid cuing the participant as to the intent of the experiment prior randomly assigning them to either the growth mindset and attributions condition or the control condition (Kite & Whitley, 2018). Additionally, including a reminder in the consent form that participants can withdraw from participation at any time will be helpful in reducing effects of negative participant roles, and including the self-report responding tendencies scale may help to reduce issues pertaining to low motivation (Bruhlman et al., 2020; Kite & Whitley, 2018).

Integrative Review Preview

In the integrative review portion of my proposed dissertation, I will determine the overarching themes identified in the findings from all three manuscripts. In detecting these themes and key findings, I will focus on the importance of these meaning-making systems and potential implications for flourishing, such as how mindsets are linked to active coping strategies and wellbeing and the ways in which leaders can support employees using compassionate approaches. Additionally, I will discuss the boundary conditions of these findings and limitations pertaining to generalizability. Lastly, I will discuss future avenues for this research examining multiple levers (e.g., beliefs and attributions) and their potential for interventions that focus on using a systems-level approach to design programs that will provide an opportunity for leaders to create growth-oriented, supportive environments through their practices and policies. In

considering applications, I will take a heterogeneity-attuned approach, one that acknowledges the importance of context as it pertains to intervention outcomes and how these effects might fluctuate when replicated in different locations with different populations (Bryan et al., 2021).

Therefore, I will consider potential causes of heterogeneity (i.e., experimental procedure, research population, objective or structural affordances of the context, and psychological affordances of the context) based on my sample and measure these characteristics to account for potential heterogeneity (Bryan et al., 2021).

Proposed Timeline

