Facing Setbacks at Work, an Analysis of Professional Skills and Abilities Mindset and

Maladaptive Perfectionism

Linnea Schmidt

S3990974

Department of Psychology, University of Groningen

PSB3E-BT15: Bachelor Thesis

Group number 09

Supervisor: Teodora Heihal

Second Evaluator:

In collaboration with: Hanka Gajdošová, Frans Mooibrok, Ben Mulder, Yvonne Smit

07 June 2023

Abstract

This paper examines how individuals' reactions to setbacks differ by investigating the SOMA framework outlined by Burnette et al. (2012), which states that people's reactions to setbacks will result in success expectations and negative affect. Burnette et al. (2012) posit that mindset, either believing that skills are malleable and developable, defined as a growth mindset, or cannot be changed, defined as a fixed mindset, underlie people's reaction to setbacks. In this paper, an experiment prompting people to subscribe to either Professional Skills and Abilities (PSaA; Schmitt & Scheibe, 2022) growth or fixed mindset was designed to check how people react to setbacks in a workplace setting. We found that a growth PSaA mindset indeed increased individuals' success expectations compared to a fixed PSaA mindset at the p<.05 level [$F_{(1,96)} = 6.94$, $p = .01$]. Furthermore, individual differences are essential to how people deal with setbacks. Thus we investigate how PSaA mindset affects reported success expectations might also differ depending on one's traits like maladaptive perfectionism. Maladaptive perfectionism is thought to buffer the effects of a primed growth PSaA mindset and amplify the effects of a primed fixed PSaA mindset. The interaction of maladaptive perfectionism and PSaA was insignificant at p<.05, with [$F_{(1,94)} = 3.25$, $p = .07$], thus not supporting the hypothesis.

Keywords: mindset, setback, implicit beliefs, professional skills and abilities

Facing Setbacks at Work, an analysis of Professional Skills and Abilities Mindset and Maladaptive Perfectionism

Setbacks, while unique to every individual, are commonly shared and expected experiences in the trajectory of one's life. One study found that over 30 days, 9.2% of males and 8.6% of females reported facing failure at work, which was significantly associated with higher reported psychological distress (Hilton & Whiteford, 2010). Nevertheless, while facing setbacks is a shared experience, individuals differ in how they perceive failure and their actions following a setback (Lo & Abbott, 2019). Why do some individuals persevere in the face of a setback, and others stop and give up? This paper aims to uncover why people react so differently by examining whether different beliefs about the malleability of skills can account for differences in reactions to setbacks. According to implicit theories, when individuals hold incremental beliefs, they believe their traits are malleable and can be developed. In contrast, those who hold entity beliefs believe their characteristics and skills are fixed and cannot be changed (Burnette et al., 2012). The process of overcoming setbacks is principal to goal pursuit, as it relates to whether a person will reach their goal. If an individual believes more strongly in their ability to act in order to achieve their goal, to change specific attributes even after being confronted by a discrepancy between desired and current level, they are more likely to have confidence in their ability to succeed and continue to strive for goal achievement (Dweck & Leggett, 1988). Hence the way implicit beliefs influence the achievement of goals is paramount to understanding discrepancies between individuals' actions in the wake of a setback, especially in the workplace where these are common occurrences. Furthermore, an essential consideration of implicit beliefs on goal achievement are personality and individual differences. Thus, we further investigate how the relationship between implicit beliefs and success expectations may also differ depending one's traits like maladaptive perfectionism.

History of Implicit Theories

Ellen Legget (1985) first introduced implicit theories of intelligence in children when she described concepts of incremental and entity beliefs and how they could influence children's achievements and failures. Building upon this, Dweck and Leggett (1988) published their paper that would provide grounds for implicit theories research for many decades. Their research demonstrates that when children hold incremental beliefs, they perform better than their peers with entity beliefs, who believe that their traits, in this case, intelligence, are fixed (Dweck & Leggett, 1988). Furthermore, Dweck and Leggett (1988) demonstrate that implicit theories shape how individuals orient themselves toward particular goals and how these goals have differing patterns, described as mastery-orientated and avoidance-orientated goals. Hence demonstrating that implicit beliefs of intelligence in children influence not only their achievements but also determine their strategies for goal setting and achievement, thus influencing their self-regulation (Dweck & Leggett, 1988).

Implicit theories and Self-regulation

Burnette et al. (2012) further investigate implicit theories and their association with self-regulation, building upon Carver and Scheier's (1998) model of self-control. Goal-directed behavior is tiresome; hence motivation is required to go through the stages of goal pursuit (Carver & Scheier, 1998). Brunette et al. (2012) expanded on the model of self-control (Carver & Scheier, 1998) by introducing the four-stage self-regulation model of goal setting, goal operating, goal monitoring, and goal achievement (SOMA) to identify how and when precisely implicit beliefs influence self-regulation at each stage. The influence of implicit theories on the nature of goal setting, defined as the process of establishing specific reference points or desired results, has established the distinction between learning and performance goals. Incremental theorists, compared to entity theorists, are more likely to set learning goals, demonstrating implicit beliefs' influence on goal setting (Burnette et al.,

2012). Goal operating, performing activities to achieve the objective, has been a long-standing issue dividing implicit theorists, as it is debated whether incremental and entity theorists differ in goal operating or whether these differences only arise after the difference between goal and current standpoint are made transparent in the goal monitoring stage (Burnette et al., 2012).

Setbacks in the context of Self-regulation

Considering the present paper's focus on dealing with setbacks, the stage of utmost importance is goal monitoring, which describes evaluating one's progress regarding actions taken toward goal achievement and considering potential limitations in achieving the target (Carver & Scheier, 1982). In the goal-monitoring stage, individuals get confronted with the discrepancy between desired and current goal progress, resulting in emotional experiences that like negative affect and success expectations (Burnette et al., 2012). Success expectations, one's belief about the likelihood they will progress to achieve their goal, was introduced by Burnette et al. (2012) to embody the concept of self-efficacy in empirical research. While Burnette et al. (2012) refer to success expectations, it is more frequently referred to and found in research as self-efficacy and hence will be referred to as self-efficacy in this paper. Carver and Scheier (1998) propose that these positive expectations, self-efficacy, in the face of a setback, typically associated with incremental theorists, are related to greater achievement.

Burnette et al. (2012) posit that the discrepancy between incremental (growth mindset) and entity (fixed mindset) self-regulatory processes is the most evident when the individual needs to adjust their process for goal achievement, this can also be referred to as ego threat. In the context of implicit theory, Ego-threat describes "any event or communication having unfavorable implications about the self" (Baumeister, Heatherton, & Tice, 1993, p. 143). Such that the experience of negative feedback acts as an ego threat in the

phase of goal-monitoring, signaling to the individual that they must adapt their approach as the current one will not lead to goal achievement (Schmitt & Scheibe, 2010). Dweck (2012) postulates that implicit theories have the most significant effect when individuals face a hurdle on their journey to goal achievement. Therefore, two emotional reactions were identified in the goal monitoring phase: success expectations, which is confidence in achieving the objective, and negative affect, which is unpleasant motions over the progress made thus far. According to Burnette et al. (2012), people holding a growth mindset are more likely to experience success expectations than negative affect, while people holding a fixed mindset experience quite the opposite. These emotional processes later impact goal achievement and from a self-regulated learning perspective, individuals with higher self-efficacy performed better in their exams than their counterparts with lower self-efficacy (Locke & Latham, 2002).

Domain Specificity of Implicit Beliefs

While previous research focused on more generalizable incremental beliefs such as intelligence, domain-specific incremental beliefs are less studied. Stump et al. (2014) found that while incremental beliefs of intelligence were not predictive of engineering students' course grades, more specific incremental beliefs of self-efficacy, perceived use of collaborative learning skills and adaptive personal beliefs about intelligence were predictive of knowledge-building behaviors (i.e. self-efficacy) and ultimately course grades. Thus, demonstrating that incremental beliefs alone do not necessarily impact individuals' scores self-efficacy, incremental beliefs need to be domain-specific and applicable to the individual to influence perceived self-efficacy. This was supported by Scott and Ghinea (2014) by comparing individuals primed with programming-specific incremental beliefs to those primed with broadly applicable incremental beliefs. Therefore, demonstrating mindset as multi-faceted, which requires it to be domain-specific and applicable to the context of the situation.

Setbacks in the Workplace

Although employment is an important and fundamental aspect throughout most adults' lives, how implicit beliefs shape individuals' experiences and reactions to setbacks in domains other than academia is unclear (Stoeber, Davis, & Townley, 2013) and exploring mindset in work domains may prove fruitful. Professional skills and abilities (PSaA) mindset is defined as an individual's belief that their professional skills and abilities are either developable (incremental or growth mindset) or are uncontrollable and near impossible to change (entity or fixed mindset; Schmitt & Scheibe, 2022). Implicit beliefs about abilities in the workplace, outlined as PSaA mindset, are demonstrated to predict an employee's adaptive readiness, defined as an employee's level of preparedness to deal with current and future career changes and to adapt to new conditions (Schmitt & Scheibe, 2022). Meaning that holding a growth PSaA mindset at work will yield better organizational outcomes, such as better employee performance, leadership and workplace engagement (Caniëls et al., 2018).

Setbacks represent the deviation between an individual's current state and their desired goal, while negative feedback highlights the discrepancy and makes it transparent (Burnette et al., 2012). While setbacks in the workplace are common and negative feedback is a frequently used tool to communicate crucial information, negative feedback may trigger affective processes for employees (Kluger & DeNisi, 1996). Burnette et al. (2012) state that under goal monitoring, being confronted with one's progress or lack thereof will result in feelings of self-efficacy and negative affect. Driven by individuals' belief systems, the reaction to goal monitoring results in emotional processes that facilitate or hamper goal achievement. Regarding work-related setbacks, it appears that holding a growth PSaA might facilitate goal achievement as individuals deploy increased willingness to take part in career development tasks and take responsibility for their careers by setting specific goals and action plans to achieve these (Schmitt & Scheibe, 2022). Schmitt and Scheibe (2022) explain the

increased willingness of individuals to improve their skills to arise from the belief that their abilities are malleable, as opposed to individuals who hold a PSaA fixed mindset, who would deem the engagement to improve skills as futile. On the other hand, an individual with a fixed PSaA might demonstrate lower feelings of confidence and control over their skills and abilities and, as a result, engage less in activities designed to prepare and better their career skills, additionally expressing less curiosity about exploring future career options (Schmitt & Scheibe, 2022). It is expected that individuals primed with growth-oriented professional skills and abilities messages will report higher self-efficacy following setbacks as their beliefs that aptitudes are malleable are activated as opposed to individuals primed with fixed-oriented professional skills and abilities mindset.

Hypothesis 1: In the face of setbacks, employees primed with a professional skills and abilities growth mindset will have higher self-efficacy than those primed with professional skills and abilities fixed mindset.

Maladaptive perfectionism

Furthermore, an essential consideration regarding implicit theories are personality and individual differences. Perfectionists are denoted as individuals who relentlessly set and strive for high standards of performance (Ocampo et al., 2020). The association between goals, outcomes, and perfectionism has shown that perfectionism can be split into two types; maladaptive and adaptive perfectionists. Maladaptive perfectionists, also called neurotic perfectionists, are individuals who engage in harsh self-criticism and experience shame and guilt when not achieving their high-performance goals (Hamachek, 1978). Adaptive perfectionists, also called normal or positive perfectionists, enjoy striving for excellence and experience less self-criticism than maladaptive perfectionists when not achieving their goals (Mofield & Peters, 2018). While research into perfectionism and implicit beliefs in academia is extensive, the impact of perfectionism from an organizational behavior perspective is

becoming increasingly important as there is higher legitimation and demands of perfectionism in workplaces (Stoeber, Davis, & Townley, 2013). Maladaptive perfectionists typically hold entity beliefs; this difference has been demonstrated in the nature of their goal setting, through setting high performance-avoidance goals and reporting a greater fear of failure than adaptive perfectionists and non-perfectionists (Stoeber, Harris & Moon, 2007). While the influence of perfectionism in goal setting is evident, how implicit theories influence goal monitoring and self-efficacy are paramount in understanding the influence of setbacks in the increasingly demanding perfectionism in today's workplaces.

Prior to experiencing a setback, perfectionists set higher future goals compared to non-perfectionist individuals (Stoeber, Harris & Moon, 2007). Maladaptive perfectionism can diminish the positive relationship between a growth mindset and self-efficacy and exacerbate the negative relationship between fixed mindset and self-efficacy. Following a setback, maladaptive perfectionists experience more guilt and lower levels of self-efficacy than non-maladaptive perfectionists, demonstrating how it can to moderate the relationship between self-efficacy and implicit beliefs (Diamond & Greenbaum, 2012).

Hypothesis 2: High levels of Maladaptive perfectionism will buffer the effect of professional skills and abilities growth mindset on self-efficacy and will enhance the effect of a mindset professional skills and abilities fixed mindset resulting in lower reported self-efficacy.

Method

Participants

In this one-level experimental design with two groups, participants were primed with a fixed or growth mindset within a professional setting. 369 persons opened the link to the questionnaire. After removing the people who did not meet the inclusion conditions, 97 persons remained. The inclusion criteria were giving informed consent before and after the

experiment (245 excluded cases), and being over the age of 18 and working part-time, full-time, or on a zero-hour contract (14 excluded cases). Finally, 13 more participants who guessed the aim of the study or were aware of the deception were excluded from further analyses. Of the participants that disclosed their gender ($N = 95$), 62.2% were female, and 35.7% were male. The mean age of the sample was $M = 37.2$ years, with a standard deviation of $SD = 14.4$. Participants in the sample were primarily Dutch (57.1%), followed by German (17.3%), Finnish (11.2%), and Other (15.1%). The highest level of education was primarily a (technical) university degree (49.0 %) and secondary school with a diploma (34.7%). The primed mindset was approximately equally divided, the growth mindset group contained 53 participants, and the fixed mindset group contained 45 participants. This research collected data using an online Qualtrics questionnaire, which involves manipulation vignettes and experimental tasks and measures. The questionnaire has been distributed through social media, family, and work connections.

Materials

Short Almost Perfect Scale

The Short Almost Perfect Scale (SAPS; Rice et al. 2014) measures two dimensions of perfectionism. The scale consists of eight items, equally divided into 'Standards' representing adaptive perfectionism (e.g., 'I expect the best from myself') and 'Discrepancy' for maladaptive perfectionism (e.g., 'Doing my best never seems enough'). Each item is rated on a 5-point Likert-type scale, with anchors ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha in Rice et al. (2014) for Discrepancy was α= .87, and α = .85 for Standards. In our experiment, both Cronbach's alpha values were good, with α = .88 for Discrepancy and α =.88 for Standards.

Self-efficacy scale

Self-efficacy was measured by four items targeting general self-efficacy ("I can increase my career skills beyond their current levels. The items were inspired by Maurer et al. (2002) and scored on a 7-point Likert scale ranging from "Disagree very strongly" to "Agree very strongly". Maurer et al. (2002) report a high reliability for the scale ($\alpha = .88$), which aligns with the reliability of the scale in our research ($\alpha = .91$).

Procedure

This research was conducted in the form of an experimental one-level study with two conditions. It took approximately 25 minutes to complete the questionnaire. Firstly, participants were asked to sign the informed consent, in which they were introduced to the research and granted permission to start. Participants were then presented with a manipulation by reading a vignette to prime one of the conditions, either a growth mindset or a fixed mindset. The vignettes were fabricated news articles appearing to be from 'Psychology Today' (see Appendix 1a). To strengthen the manipulation, participants were asked to rate statements about the respective PSAM on a 4-point Likert scale ranging from Neutral to Strongly Agree, therefore disabling the option to disagree with the statements aligned with their condition. A manipulation check consisted of writing down the central message of their vignette. Following this, participants carried out two HR-inspired occupational propensity tasks that should appeal to a variety of individuals (Shafir et al., 2017). These included a video-based emotion-recognition task ("To what extent is the person feeling…?", see Appendix 1b) and a pattern-recognition task by selecting the missing tiles from six incomplete pictures (see Appendix 1c). After fulfilling each task, they were falsely informed about their below-average performance to elicit feelings of failure. Participants then filled out measures about their current affect and self-efficacy. Afterward, participants answered items regarding maladaptive perfectionism. After answering demographic

questions, participants were shown a movie clip in order to restore their mood. Finally, participants were debriefed, and the deception was made transparent.

Statistical procedure

ANOVA. The obtained data has been analyzed by the program SPSS Statistics (version 26). The group means of the variables self-compassion, adaptive and maladaptive perfectionism, negative affect and success expectations were calculated through ANOVA variance analyses. We set the significance level to $p = .05$. ANOVA is used to test the following hypotheses by comparing the means of the self-efficacy belonging to the groups fixed and growth mindset.

ANCOVA. For the testing of hypotheses regarding the moderator variables, the ANCOVA procedure has been used. ANCOVA was run to discover the interaction effect between maladaptive perfectionism and mindset. Applying this method slightly unconventionally, we sought to uncover the interaction effect shared between both mindset and maladaptive perfectionism instead of controlling for it. Assumptions for both the ANOVA and ANCOVA were checked. A test of normality achieved this, a Q-Q plot, and Levene's test to check homogeneity of variance.

Results

Descriptive Statistics and Correlations

The data collected was analyzed by using SPSS statistical program version 27. Table 1 depicts the means (*M*), standard deviation (*SD*) and correlations between dependent variables, self-efficacy trial 1 (SE1), self-efficacy trial 2 (SE2), and average self-efficacy (SEC), along with moderator maladaptive perfectionism (MAL_PF).

Table 1.

Means, standard deviation and correlations.

Variable	Fixed		Growth		Correlations			
	M	*SD*	*M*	*SD*	*SE1*	*SE2*	*SEC*	*MAL_PF*
SE1	18.7	4.6	22.0	5.1	1			
SE2	18.2	4.9	21.1	5.8	.92**	1		
SEC	36.9	9.3	43.2	10.6	.97**	.98**	1	
MAL_PF	15.9	6.6	15.9	6.1	.16	.15	.16	1

Note: Variable abbreviations are defined as follows; SEC (combined self-efficacy), SE1(self-efficacy trial 1), SE2 (self-efficacy trial 2), MAL_PF(maladaptive perfectionism)

**p<.01

Assumptions

To compute an ANOVA and ANCOVA to test the hypotheses, it is necessary to check for assumptions of normality and homogeneity of variance. Due to the small sample size (n=43), the assumption of normality is checked by Shapiro-wilk's test of normality, along with a visual check with a Q-Q plot, while the assumption of homogeneity of variance is calculated by Levene's Test statistic.

Shapiro-wilk's test of normality at significance level α=0.05, demonstrates no evidence of non-normality for self-efficacy for fixed mindset (W(53)= 0.95, p = 0.08). The Shapiro-wilk test for self-efficacy in growth mindset condition indicates deviation from normality p< .05 (W(45) =.95, *p* = .03), additionally Q-Q plots were used as a visual check for normality (see figure 1). The scores for maladaptive perfectionism were normally distributed in both Growth mindset (W(45) = .97, *p* = .27) and fixed mindset (W(53) = .96, *p* = .27).
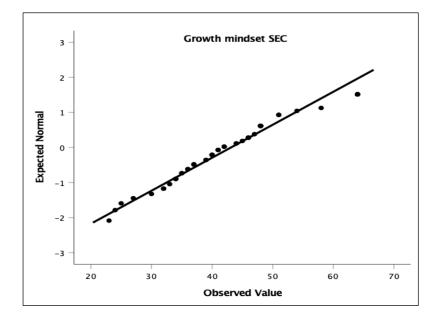
Table 2.

Shapiro- Wilk's Test of Normality

Mindset	Shapiro-Wilk		
	Statistic	*df*	*Sig.*
Self-efficacy			
Fixed	.95	45	.08
Growth	.95	53	.03
Maladaptive Perfectionism			
Fixed	.96	45	.12
Growth	.97	53	.27

Figure 1.

Q-Q plot for normality assumptions for growth mindset self-efficacy

Levenes's test statistic was used to test homogeneity of variance at significance level $p > .05$. The assumption of homogeneity of variance of self-efficacy was not rejected $p = .21$. The assumption of homogeneity of variance of maladaptive perfectionism was also not violated with P value $= .21$. The visual check for homogeneity of variance was carried out

through a residual plot of standardized residual vs standardized predicted scored and found

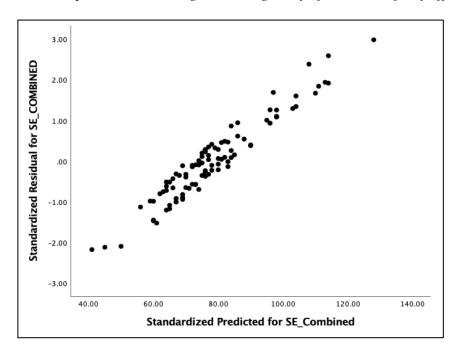no evidence of heteroscedasticity, see figure 2.

Table 3.

Levenes statistic based on mean for Self-efficacy and Maladaptive Perfectionism

	Levene Statistic	df1	df2	P value
Self-efficacy	1.59	1	96	.21
Maladaptive Perfectionism	1.61	1	96	.21

Figure 2.

Residual plot demonstrating the homogeneity of variance of self-efficacy (homoscedasticity)

Note: SE_Combined is defined as average self-efficacy

ANOVA

To test the first hypothesis of whether a larger proportion of participants in the growth

mindset condition will score higher in self-efficacy a One-way Analysis of Variance

(ANOVA) was carried out. A difference between the two conditions was observed, meaning

that there was a significant effect of PSA mindset condition on the reported self-efficacy at

the p<.05 level [F (1,96) = 6.94, p = 0.01], which renders support in favor of H1. The percentage of variance explained, calculated as eta-squared (η^2) is .09, therefore demonstrating a moderately large effect size.

Table 4.

One way analysis of Variance of Self-efficacy

	SS	df	F	P	η^2	95%CI [LL,UL]
SEC	922.77	1	9.14	.003**	.09	[.01, .21]

Note: SEC is defined as combined self-efficacy

p<.01**

ANCOVA

To test the second hypothesis of whether in the face of setback maladaptive perfectionism will buffer the effects of growth PSaA on rates of success expectations and maladaptive perfectionism will enhance the effects of fixed PSaA on success expectations, an analysis of covariance (ANCOVA) will be run. Maladaptive perfection and the interaction of mindset and perfectionism were both insignificant with $p = .11$ and $p = .07$, respectively. Furthermore, the percentage of explained variable was very small, with an effect size of eta-squared (η^2) of .003 and .03, thus demonstrating the covariate of maladaptive perfectionism to poorly account for the variance.

Table 5.

Analysis of Covariance for Mindset with Maladaptive Perfectionism as a Covariate

	Type III sum of squares	df	F	Sig	η^2
(intercept)	17166.09	1	177.10	<.001	.65
mindset	27.85	1	0.29	.59	.003
Mal_PF	257.87	1	2.66	.11	.03
Mindset*Mal_PF	315.31	1	3.25	.07	.03

Note: MAL_PF is defined as maladaptive perfectionism

Explanatory Analysis: Age effects

Furthermore, it was important to investigate whether age was a significant predictor in the model. Since the interaction between age and mindset is not significant, an ANCOVA can be run to control for the effect of age on self-efficacy. By doing so the results can be controlled for maladaptive perfectionism and age as well. Results demonstrated a significant correlation between age and self-efficacy with a *P* value of *p* =.06. An independent samples t-test was run to analyze if there were significant differences between group age means in the 2 conditions. With a P value = 0.03, at significance level of α=0.05, (Fixed Mindset : *M* = 36.8, *SD* = 15.7; Growth Mindset: *M* = 37.5, *SD* = 13.3). The significant P value indicates a systematic difference in ages between the two groups. Variance inflation factor (VIF) indicated no evidence of multicollinearity with a value of 1.00.

Table 6.

Analysis of Covariance for Mindset with Age

	Type III sum of squares	*df*	*F*	*Sig*	η^2
(intercept)	98232.31	1	456.14	.000	.831
mindset	850.03	1	3.947	.05	.041
age	1715.57	1	7.966	.006	. 079
mindset*age	242.28	1	1.12	.292	.012

Discussion

A two-group experiment based on vignette PSaA mindset manipulation was carried out to investigate the effect of a growth and fixed PSaA mindset on the participants' scores on self-efficacy and the interaction with maladaptive perfectionism. The first hypothesis investigated whether employees primed with a PSaA growth mindset will have higher reported self-efficacy than those primed with PSaA fixed mindset when faced with a setback.

Results showed a significant difference in the reported self-efficacy scores between the fixed and growth PSaA mindset condition, thus supporting H1. The second hypothesis tested whether maladaptive perfectionistic tendencies will buffer the effect of growth PSaA mindset on self-efficacy and will enhance the effect of a fixed PSaA resulting in lower reported self-efficacy. Analysis of moderators demonstrated both maladaptive perfectionism and the interaction of PSaA mindset and maladaptive perfectionism to be insignificant, hence H2 was rejected.

While only the first hypothesis has grounds to be supported, it is essential to investigate the protentional reasons for both significant and insignificant findings. Tabernero and Wood (1999) found through their novel group-management task that the motivational benefits of incremental beliefs, which are similar to growth mindset beliefs, allowed participants to be less prone to feelings of dissatisfaction when receiving negative feedback as well as have higher expectations of success following negative feedback. Similar results were demonstrated by Biddle and Wang (2003), when they investigated incremental beliefs about sports in adolescent girls and found that individuals who adopted a general growth mindset had more motivation and spent more time playing sports in comparison to those who held a fixed mindset.

Although our findings cannot support H2, it is important to consider the potential reasons for insignificant findings. While we expected maladaptive perfectionism to buffer the effect of growth PSaA mindset on self-efficacy in the context of negative feedback and exacerbate the effect in the fixed PSaA mindset on self-efficacy, no significant interaction was found. Firstly a possible explanation for this is that maladaptive perfectionists are desensitized to negative feedback, as they are known to experience more negative affect and project negative attitudes on themselves more frequently (Hummel et al., 2023; Zhang et al., 2021). In an effort to deal with the effects of negative evaluations resulting from their own

perfectionistic tendencies, the individual may compensate and practice more self-efficacy. Furthermore, the frequent receival of negative feedback could impact how seriously the individual takes the negative feedback from the study. This could mean that the situation does not accurately reflect the context of a setback for the individual.

Strengths

While previous research focused on more generalizable incremental beliefs such as intelligence, domain-specific incremental beliefs like the PSaA mindset still need to be studied. Stump et al. (2014) and Scott and Ghinea (2014) demonstrate the importance of domain-specific mindset in the respective fields of engineering and programming, as opposed to viewing mindset as a single construct, demonstrating mindset as to be multi-faceted, which requires it to be domain-specific and applicable to the context of the situation. While this study did not compare Schmitt and Scheibe's (2022) PSaA mindset and a more general implicit belief system, it deepens the understanding and research that domain-specific mindsets like the PSaA mindset are also applicable in an organizational setting. Our research has practical applications for the workplace, as it broadens the knowledge gaps of mindsets in a professional setting.

Furthermore, the strength of our study lies in its complex analysis of moderators. This allowed for investigating interaction effects between PSaA mindset and maladaptive perfectionism, which allows for more conclusions to be drawn regarding whether individual differences should drive interventions. Thus it enabled the explanatory variable of age to be analyzed. The complex analysis of moderators improves the accuracy of our statistical model, allows for better predictions, and thus leads to a more nuanced understanding of how maladaptive perfectionism and PSaA mindset interact. It also benefits from being a novel manipulation and a field consistent manipulation of Schmitt and Scheibe's (2022) Professional Skills and Abilities mindset. Therefore it has increased external validity and

greater control of extraneous variables. Furthermore, field-consistent manipulations allow participants to engage more meaningfully with the manipulation even if in the future a more fine-tuned manipulation that addresses job-specific skills is advisable.

Limitations

Nevertheless, while being a field-consistent manipulation to the PSaA mindset, the study must address the generalizability between professions. Each profession is vastly different in the skills and abilities required to be proficient in that field; hence, the PSaA mindset cannot be classed as a domain-specific to all professions. As seen in Scott and Ghinea (2014), it was only when individuals held a growth programming-specific mindset, as opposed to a general growth mindset, that the manipulation of mindset was linked with increased perseverance, particularly after experiencing early setbacks. Additionally, the study was conducted in an online setting, making it difficult to generalize to in-person workplace skills and abilities as the study has limited ecological validity. Furthermore, Burnette et al. (2012) posit that an individual requires motivation to go through stages of the self-regulation stages of the SOMA model. In this case, the study examines self-regulation in a vacuum somewhat unrelated or not explicitly related to their current work, as the participants need more motivation or to care more about their performance in the study in order to be impacted by the negative feedback. A further limitation of the study was the limited sample size of 97 participants; ideally, to achieve good power, a sample of at least 200 participants is required.

Moreover, vignette manipulations can be seen as problematic for various reasons, and a manipulation carried out through a vignette may be on the weaker side. A vignette manipulation fails to capture elements of reality fully and hence poses difficulties in application to real life (Hughes & Huby, 2012). Vignettes, in theory, only identify knowledge that does not mean that it necessarily elicits a certain behavior or adoption of a certain mindset, especially if the gap between participants' experience and vignette characteristics is

significant (Weisman & Brosgole, 1994). Therefore better manipulations of mindset conditions in the workplace, such as the implementation of growth-oriented feedback, would bridge the gap of uncertainty that vignette manipulations fail to address. A growth mindset can be stimulated through the coaching skills of employees in the workplace by demonstrating the malleability of skills and reassuring the acceptance of mistakes (Blackwell, Trzesniewski, & Dweck, 2007). Furthermore, it is known that people are more likely to endorse self-enhancing information than self-depleting, this was seen by participants more likely to disagree with the fixed PSaA mindset condition than the growth PSaA mindset.

Future Research

Nevertheless, while our study poses limitations, it provides grounds to gain better insight into the field of mindsets in an organizational setting. One way to better understand the influence of mindsets when faced with a setback is through conducting a journal study, as it would allow for the investigation of mindsets in real-life moments of self-regulation, hence theoretically the individual would be entirely motivated to go through the stages of SOMA. Additionally, it would allow for observation over time in a specific workplace and environment. A journal study can be conducted by setting work-related goals and continuously monitoring expectations and mindset, including setbacks and their effect on self-efficacy. This would also increase domain specificity in their respective professions. Furthermore, a way to overcome the limitations imposed by vignette manipulations is by controlling for mindset in an experimental setting and having participants engage in mindset interventions in the workplace, since most growth mindset interventions have been implemented in academia where results proved to be weak (Sisk et al., 2018). Additionally, it would be interesting to research how perfectionistic tendencies affect individuals' reactions to setbacks in the workplace, and if mindset interventions compared to vignette manipulations alleviate some feelings of negative affect and increase self-efficacy in

participants. This can be accomplished through a similar journal study and an occupation-specific mindset interventions.

Practical and Theoretical Implications

Furthermore, it would be paramount to research whether the framing of feedback significantly impacts individuals self-efficacy to a greater extent than a mindset manipulation or intervention. Rather than focusing on negative feedback in the context of a setback, where the individual is not clear on how to improve, constructive feedback is highlighted. The importance of this type of feedback was demonstrated by Kluger & DeNisi (1996), showing that employees who received constructive feedback from their supervisors were more likely to have higher levels of job satisfaction, organizational commitment, and performance compared to employees who received destructive feedback were more likely to experience negative emotions and have lower levels of job satisfaction and organizational commitment. In this case, whether an individual holds a growth or fixed mindset may not be most apropos, as the nature of the feedback could be a more significant predictor of self-efficacy.

Conclusion

The results of our study suggest that growth PSaA mindset increases self-efficacy in a negative feedback setting and reinforces the model of Burnette et al. (2012) in an artificial setting. Furthermore, in line with studies demonstrating the importance of domain-specific mindsets (Stump et al.,2014; Scott & Ghinea, 2014), this paper broadens the knowledge of mindsets in an organizational setting by utilizing Schmitt and Scheibe's (2022) Professional skills and abilities mindset. Therefore, this demonstrates the potential of workplace mindset interventions to increase employees' self-efficacy when faced with adversity. Furthermore, in an increasingly perfectionistic striving job market, the potential effects of maladaptive perfectionism on mindset and self-efficacy were explored. The interaction between maladaptive perfectionism and mindset was found to be insignificant. Nevertheless, it is

essential to investigate further the potential effects of individual differences on reactions to setbacks, as it would allow for a better understating of the potential of mindsets interventions. Implementing a growth PSaA mindset increases employees reported self-efficacy and has the potential to improve employees' resilience and performance, leadership, and workplace engagement (Caniëls et al., 2018; Schmitt & Scheibe, 2022).

References

Biddle, S. J. H., & Wang, C. K. J. (2003). Motivation and self-perception profiles and links with physical activity in adolescent girls. Journal of Adolescence, 26(6), 687–701.

Caniëls, M. C. J., Semeijn, J. H., & Renders, I. H. M. (2018). Mind the mindset! the interaction of proactive personality, transformational leadership and growth mindset for engagement at work. Career Development International, 23(1), 48–66. https://doi.org/10.1108/CDI-11-2016-0194

Carver, C., & Scheier, M. (1998). On the Self-Regulation of Behavior. Cambridge: Cambridge University Press. doi:10.1017/CBO9781139174794

Diamond, G. M., Greenbaum, M., Shelef, K., & Shahar, G. (2012). Perfectionism and goal setting behaviors: optimizing opportunities for success and avoiding the potential for failure. *International Journal of Cognitive Therapy*, *5*(4), 430–443.

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

Hamachek, D. E. (1987). *Encounters with the self* (3rd ed.).

Hilton, M. F., & Whiteford, H. A. (2010). Associations between psychological distress, workplace accidents, workplace failures, and workplace successes. International Archives of Occupational and Environmental Health, 83(8), 923–933. https://doi.org/10.1007/s00420-010-0555-x

Hughes, R., & Huby, M. (2012). The construction and interpretation of vignettes in social research. Social Work and Social Sciences Review, 11(1), 36-51. https://doi.org/10.1921/swssr.v11i1.428

Hummel, J., Cludius, B., Woud, M. L., Holdenrieder, J., Mende, N., Huber, V., Limburg, K., & Takano, K. (2023). The causal relationship between perfectionism and negative

affect: two experimental studies. Personality and Individual Differences, 200. https://doi.org/10.1016/j.paid.2022.111895

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: a historical review, a meta-analysis, and a preliminary feedback intervention theory. Psychological bulletin, 119(2), 254.

Leggett, E. L. (1985). *Children's entity and incremental theories of intelligence: Relationships to achievement behavior*. Paper presented at the annual meeting of the Eastern Psychological Association, Boston.

Lo A, Abbott MJ. Affective and cognitive responses to repeated performance feedback across adaptive and maladaptive dimensions of perfectionism. Journal of Experimental Psychopathology. 2019;10(4). doi:10.1177/2043808719880702

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. American Psychologist, 57(9), 705–717. https://doi.org/10.1037/0003-066X.57.9.705

Mofield, E. L., & Parker Peters, M. (2018). Mindset Misconception? Comparing Mindsets, Perfectionism, and Attitudes of Achievement in Gifted, Advanced, and Typical Students. Gifted Child Quarterly, 62(4), 327–349. https://doi-org.proxy-ub.rug.nl/10.1177/0016986218758440

Ocampo, A. C. G., Wang, L., Kiazad, K., Restubog, S. L. D., & Ashkanasy, N. M. (2020). The relentless pursuit of perfectionism: a review of perfectionism in the workplace and an agenda for future research. Journal of Organizational Behavior, 41(2), 144–168. https://doi.org/10.1002/job.2400

Schmitt, A., & Scheibe, S. (2022). Beliefs about the malleability of professional skills and abilities: Development and validation of a scale. Journal of Career Assessment. https://doi.org/10.1177/10690727221120367
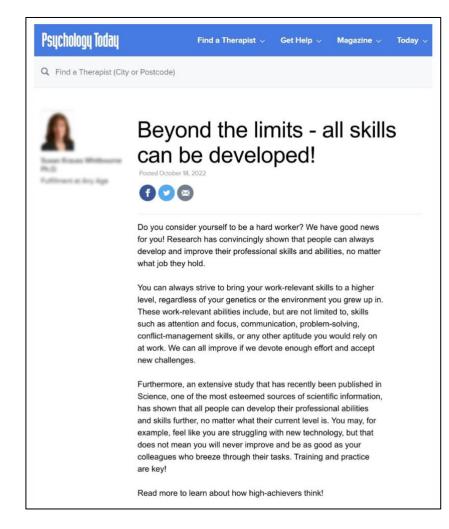
Scott, M. J., & Ghinea, G. (2014). On the domain-specificity of mindsets: the relationship between aptitude beliefs and programming practice. Ieee Transactions on Education, 57(3). https://doi.org/10.1109/TE.2013.2288700

Sisk, V. & Burgoyne, A. & Sun, J. & Butler, J. & Macnamara, B.. (2018). To What Extent and Under Which Circumstances Are Growth Mind-Sets Important to Academic Achievement? Two Meta-Analyses. Psychological Science, 29(4) 549-571.

Stoeber, J., Harris, R. A., & Moon, P. S. (2007). Perfectionism and the experience of pride, shame, and guilt: comparing healthy perfectionists, unhealthy perfectionists, and non-perfectionists. *Personality and Individual Differences*, *43*(1), 131–141. https://doi.org/10.1016/j.paid.2006.11.012

Stoeber, J., Davis, C. R., & Townley, J. (2013). Perfectionism and workaholism in employees: the role of work motivation. *Perfectionism and Workaholism in Employees: The Role of Work Motivation*. Retrieved January 20, 2023, from http://kar.kent.ac.uk/34044/1/Stoeber Davis Townley (2013) PAID.pdf.

Stump, G. S., Husman, J., & Corby, M. (2014). Engineering students' intelligence beliefs and learning. Journal of Engineering Education, 103(3), 369–387. https://doi.org/10.1002/jee.20051

Tabernero, C., & Wood, R. E. (1999). Implicit theories versus the social construal of ability in self-regulation and performance on a complex task. Organizational Behavior and Human Decision Processes, 78(2), 104–127.

Weisman, J., & Brosgole, L. (1994). Facial affect recognition in singly diagnosed mentally retarded people and normal young children: a methodological comparison. The International Journal of Neuroscience, 75(1-2), 45–55.

Zhang, L., Shen, L., Cai, Y., Liu, X., Zhang, Y., Ying, R., Bi, D., & Tao, Y. (2021). Focus on the beauty of body: the mediation role of body appreciation between perfectionism

and body-related shame and body-related guilt, 12.

https://doi.org/10.3389/fpsyg.2021.638641

Appendix A

A1 Manipulated Vignette to appear from Psychology Today

A2 video-based emotion-recognition task

A screenshot of the video participants are shown (left) after which they are asked to answer questions about the persons mood in the video (right).

A3 pattern-recognition task

Which of the following alternatives best matches the image displayed?