

Counterfactual Thoughts, Self-Efficacy, and Envy

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Abstract

Recent research has distinguished two separate forms of envy. These constructs are called benign and malicious envy. To date, little is known about the mechanisms underlying the predictors. Therefore, the goal of the current study was how the effect of counterfactual thoughts on malicious and benign envy relates to self-efficacy. In an online study (N = 37) participants re-experienced a situation in which they felt envy and formed counterfactual thoughts about this situation. Counterfactual thoughts were found to not affect either form of envy. Self-efficacy positively affected malicious envy and did not affect benign envy. All of these findings are contrary to previous literature. Therefore, the current study challenges the existing theories. Furthermore, more research must be conducted to properly understand the underlying mechanisms of the effect of counterfactual thoughts on malicious and benign envy. Also, the motivational benefits to improve oneself related to self-efficacy have to be re-evaluated.

Keywords: Self-Efficacy, Counterfactual Thoughts, Benign Envy, Malicious Envy

Counterfactual Thoughts, Self-Efficacy, and Envy

Envy is a universally known experience, translated into almost all languages and written about throughout history (Schoeck, 1987). Nevertheless, understanding the mechanisms behind envy poses a problem to date. Rooted in an unfavourable upward comparison, envy is defined by the experience of pain combined with a desire to eliminate the experienced inferiority (Crusius et al., 2019). More recent research suggests that envy can be distinguished into two separate constructs, called benign and malicious envy (Van de Ven et al., 2009). Specifically, benign envy is defined by the desire to eliminate inferiority through improving one's status, and malicious envy describes the desire to eradicate inferiority through degrading the other person. While similar, the two constructs can vary in their predictors, experience, and outcomes (Van de Ven, 2016). The current study will investigate how two possible predictors, self-efficacy and counterfactual thoughts, might affect malicious and benign envy.

Envy and its two forms

Envy in its purest form describes a negative feeling emerging when a person “lacks another's superior quality, achievement, or possession and either desires it or wishes that the other lacked it.” (Parrott & Smith, 1993). So, envy has its core in an unfavourable upward comparison, which leads to an experience of inferiority and a desire to diminish this

inferiority. In most definitions, the negative feelings include hostility and resentment (Smith & Kim, 2007). However, other emotions such as ill-will and aggression toward the envied person are also commonly related to envy (Hill et al., 2011). Envy has a general antipathetic connotation and is considered one of the seven deadly sins (Silver & Sabini, 1978; Tucker, 2015). Nonetheless, envy does not only have negative aspects to it but can also be motivational (Van de Ven, 2015). The desire to possess or achieve the same as the envied person can fuel the motivation to improve oneself. Therefore, envy has two sides to it.

Modern research has focused on this differentiation between two types of envy. On the one hand, there is malicious envy, sometimes known as “envy proper”; on the other, there is benign envy (Crusius et al., 2019; Smith & Kim, 2007). Both types of envy describe thoughts, feelings, and behaviours that diminish the felt inferiority situation after an unbeneficial comparison (Crusius et al., 2019). The difference between the terms lies in how the inferiority is tackled. Malicious envy describes the commonly recognised reaction of envy, consisting of negative emotions like hostility and resentment. The envier here tries to relieve the felt inferiority by derogating the success of the envied person.

On the other hand, there is benign envy, which describes the experience of envy without hostile emotions. Specifically, the envier tries to overcome the feelings of inferiority by improving their situation and emulating the envied person. Although the two concepts may seem like opposite sides of a spectrum, research suggests that you can experience both simultaneously or not at all (Belk, 2011; Lange & Crusius, 2014). So, they can be seen as two separate dimensions. To conclude, this section identifies two distinct forms of envy, which differ in their approach to surmounting feelings of inferiority.

Having demonstrated that two distinct forms of envy exist, it is now necessary to understand what antecedents lead to either form of envy. This is important because malicious and benign envy differ vastly in the consequences for the envier. Benign envy can have various beneficial consequences, including increased motivation (D’Arms, 2016), feelings of inspiration (Meier & Schäfer, 2018), as well as increased effort, persistence, and performance (Khan et al., 2017; Lange et al., 2016; Van de Ven et al., 2011). Meanwhile, malicious envy is related to several antisocial and harmful consequences. These include counterproductive work behaviour (Khan et al., 2013), hostile behaviour (Lange & Crusius, 2015), and negative emotions toward the envied person (Navarro-Carrillo et al., 2018). Based on the consequences mentioned above, benign envy is often seen as a more adaptive and socially desirable form of envy than malicious envy (Cohen-Charash & Larson, 2016). Therefore, it is essential to understand what antecedents predict each form of envy.

However, while numerous factors predicting benign and malicious envy have been investigated, there is a lack of understanding of the mechanisms underlying this relationship (Jafri, 2020; Van de Ven, 2016). The research on malicious and benign envy has only surged in recent years. As a result, research has mainly focused on the direct effects of predictors on the two forms of envy. So, there is only limited research on moderators and mediators. The current study will investigate the underlying effects of two potential predictors of malicious and benign envy to partake in solving this problem. Specifically, the present study will investigate the influence of self-efficacy and counterfactual thoughts on malicious envy and benign envy. Moreover, how does self-efficacy influence the effect of counterfactual thoughts on envy?

Further understanding of these mechanisms may provide valuable knowledge for scientific as well as practical purposes. It can help put current and past findings into context and form the basis for further research. Moreover, it can provide valuable knowledge on coping mechanisms for envy and situations of social comparison. One example would be that top-level athletes are constantly being compared (Celse, 2011). This is a significant cause of envy among athletes. Therefore, knowing how to handle unfavourable comparisons and envy is vital to them. Especially understanding what factors can transform envy into motivational benefits and which factors protect from counterproductive consequences may be highly valuable. For these reasons, further research on the underlying mechanisms of malicious and benign envy can be essential.

Counterfactual Thoughts and Envy

One factor that can determine whether a person experiences benign or malicious envy is counterfactual thoughts. Historically, counterfactual thoughts have been described as a mental simulation of alternative outcomes for past situations (Roese & Olson, 1993). Past events are being re-evaluated with thoughts such as “what if...” or “if only...”. Counterfactual thoughts can help to explain the past (Byrne, 2016). They can, for example, identify the causes of a given situation: “If I had studied more, I would have passed my exams”. These counterfactual thoughts can also affect whether you experience benign or malicious envy.

In a recent study, Crusius and Lange (2021) showed that how counterfactual thoughts affect envy depends on the type of counterfactual thoughts. Among other factors, they discovered that the *focus* of counterfactual thoughts could affect malicious and benign envy in different ways. In this case, the *focus* describes whether the counterfactual thoughts are about what the envier could have done differently or what the envied person could have done

differently. Specifically, they discovered that counterfactual thoughts focused on the self were more likely to induce benign envy than malicious envy. However, counterfactual thoughts about the other person lead to an increase in malicious envy compared to benign envy. The underlying theory is that when one engages in counterfactual thoughts about themselves, they can identify the causes of their behaviour for the unfavourable comparison. This can motivate them to find new ways to improve themselves and activate behavioural intentions.

Consequently, the envier experiences increased capability to diminish the felt inferiority by working on themselves, which leads to benign envy. This is also further supported by research that shows that counterfactual thoughts can increase effort (Roese & Epstude, 2017), motivation (Dyczewski & Markman, 2012), and induce behavioural change (Morris & Moore, 2000). Therefore, the first hypothesis of this study was:

Hypothesis 1: Self-focused counterfactual thoughts lead to higher levels of benign envy than other-focused counterfactual thoughts.

Regarding malicious envy, the contrary is true. Here, other-focused counterfactual thoughts lead to higher levels of malicious envy compared to self-focused (Crusius & Lange, 2021). This is because the envier focuses on what the envied person could have done differently, which can lead to blaming the envier for the experienced inferiority. This can cause the feeling that the envied person is undeserving of their superior position, which is an essential predictor of malicious envy (Van de Ven et al., 2011). Furthermore, this explanation is supported by findings that increased attention toward the envied person is related to an increase in malicious envy (Crusius & Lange, 2014). Also, counterfactual thoughts can change the perception of who is at fault (Goldinger et al., 2003) and increase negative affect (Broomhall et al., 2017). So, counterfactual thoughts about what the other person could have done differently increase blame and hostility, which leads to an increase in malicious envy. This is the foundation for the second hypothesis of the current study:

Hypothesis 2: Other-focused counterfactual thoughts lead to higher levels of malicious envy than self-focused counterfactual thoughts.

Self-Efficacy and Envy

Self-efficacy is an essential concept of modern psychology and can be traced back to Bandura's (1977) social cognitive theory. It describes a person's belief in their ability to influence and achieve desired outcomes. A critical aspect that self-efficacy may affect is benign and malicious envy. Self-efficacy can, for example, increase a person's perceived ability to achieve the same as the people they envy (Li, 2019). Feeling capable of reducing inferiority on your own could make you more motivated to improve yourself. In turn, this

could increase benign envy. This theory is also supported by similar studies showing that benign envy is positively related to perceived control (Van de Ven et al., 2011). Perceived control is closely related to self-efficacy (Ajzen, 1987; Bandura, 2006). It describes a person's subjective ability to change the situation.

Furthermore, according to the theory of planned behaviour, to form an intention, perceived behavioural control is necessary (Ajzen, 1991). Thus, increased self-efficacy may also play an essential role in intention formation. After experiencing envy, people with higher self-efficacy may be more likely to form an intention to improve themselves. Therefore, self-efficacy might significantly predict whether a person experiences benign envy. Consequently, the third hypothesis of the current study:

Hypothesis 3: Higher levels of self-efficacy lead to higher levels of benign envy.

Contrastingly, self-efficacy may be a preventative factor when it comes to malicious envy. Studies have shown that low self-efficacy can change the perception of certain situations (Rabaglietti et al., 2021). People with low self-efficacy tend to perceive situations in which they feel envy as more threatening. Furthermore, low self-efficacy can lead to a belief that one cannot achieve their ideal life (Li, 2019). In an unfavourable social comparison, people with low self-efficacy may believe they will never reach what the envied person has achieved. Accordingly, they might experience increased malicious envy because they think they have to decrease inferiority by derogating the envied person. This is also supported by findings that show that lower perceived control is related to malicious envy (Van de Ven et al., 2011). So, low self-efficacy may mean that the envier also has low perceived control and does not believe they can achieve the same as the envied person. Therefore, they experience malicious envy, which leads to the fourth hypothesis:

Hypothesis 4: Lower levels of self-efficacy lead to higher levels of malicious envy.

Self-Efficacy, Counterfactual Thoughts, and Envy

Returning to the influence of counterfactual thoughts on envy. A vital factor to consider is that this relationship may be moderated by self-efficacy. According to the theory of planned behaviour (Ajzen, 1991), intentions to perform a behaviour are largely predicted by perceived control. So, the transformation of thoughts into actual choices is dependent on whether the thoughts are assessed to be accomplishable. This means that to convert the counterfactual thoughts about the self into benign envy, the envier has to be confident in their ability to realise these thoughts. This theory can be supported by findings showing that increased goal pursuit is related to high-self efficacy (Ntoumanis et al., 2014). When people perceive their goals to be attainable, they are more likely to pursue them and refrain from

switching their goals. Consequently, higher self-efficacy may give people more confidence in reaching their goals. So, they could be more willing to decrease inferiority by improving themselves, which means they would experience increased benign envy.

Further research supports this theory, showing that counterfactual thoughts may only have motivational benefits when perceived as realisable (Roese & Epstude, 2017; Smallman & Summerville, 2018). This means the alternative actions determined with the counterfactual thoughts must be accomplishable. So, to facilitate motivation, intention, and behavioural change, all related to benign envy, the individual must believe they can act upon the counterfactual thoughts. Self-efficacy may be essential here because it determines how capable one feels of engaging in actions determined through counterfactual thoughts. Overall, this section has explained how existing theories and studies indicate that self-efficacy may be an essential moderator in the effect of counterfactual thoughts on benign envy. Based on this, the fifth hypothesis is:

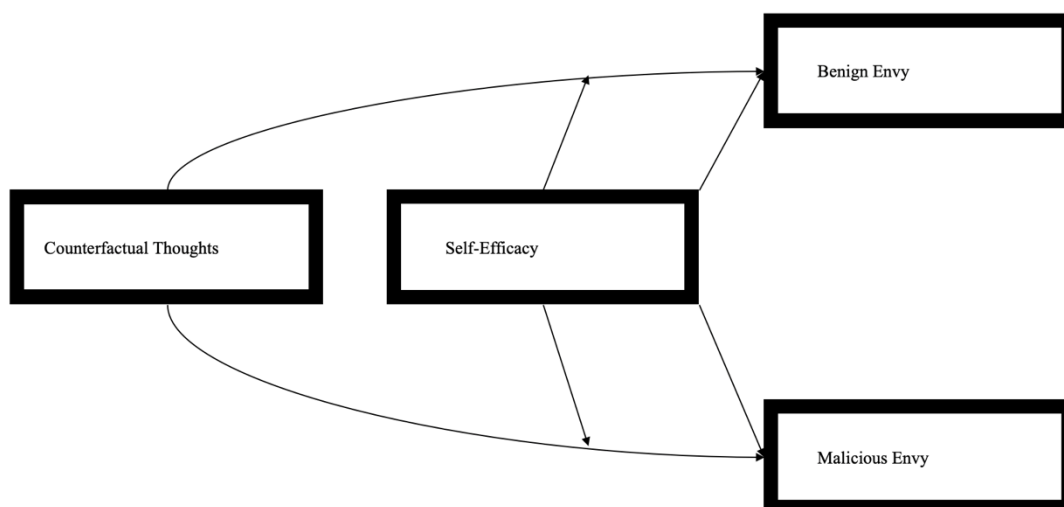
Hypothesis 5: When self-efficacy is high, there is a larger difference in benign envy due to other- and self-focused counterfactual thoughts compared to low self-efficacy.

Similarly, self-efficacy may also be a moderator for the influence of counterfactual thoughts on malicious envy. Research shows that self-efficacy is related to the causal attribution of own behaviours for given outcomes (Kitsantas & Zimmerman, 2008). This means that when a person has high self-efficacy, they are more likely to see themselves as the reason why they are where they are. This could suggest that even with other-focused counterfactual thoughts, an envier with high self-efficacy would still take over responsibility for their experienced inferiority. Therefore, they might be less likely to blame the other person and thus develop hostile emotions toward them. In turn, this would lead to decreased malicious envy. This is also supported by the findings showing that self-efficacy is a protective factor against negative affect caused by counterfactual thoughts (Sanna, 1997). Higher self-efficacy also increases optimism (Sanna, 1997), decreasing hostile thoughts and thus reducing malicious envy (Boman & Yates, 2001). In order, self-efficacy may reduce malicious envy caused by other-focused counterfactuals.

Hypothesis 6: When self-efficacy is high, there is a bigger difference in malicious envy due to other- and self-focused counterfactual thoughts than when self-efficacy is low.

Figure 1:

Conceptual Model



Methods

Participants

In this study, 327 individuals participated. Most of them, 261, had to be excluded because they did not complete the survey, and 26 more because of a mistake in the study. They were not presented with any of the conditions. Furthermore, three more were excluded because they failed the attention check. So, in total, the data of 37 participants were analysed. The participants were mainly from Germany (64.9%) or the Netherlands (29.7%). The rest (5.4%) originated from other countries. The participants were between 21 and 66 years, with a mean age of 33. The sample mainly was of higher education, with 81.1% having at least a bachelor's degree. They were attracted via social media, including Facebook, WhatsApp, and Instagram, and on the websites surveyswap.io and surveycircle.com.

Materials and Procedure

Demographics

The participants were first asked to provide their demographic data, including their age, gender, the country they were residing in, and their education level.

Relived emotions task

To induce envy, participants were instructed to remember a situation in which they felt envy towards another person. They were further instructed to re-experience this situation as closely as possible and then write it down. This task, a form of the relived emotions task, is a suitable way of inducing a similar emotional state as in the original situation the participant is trying to re-experience (Ekman et al., 1983). After the task, participants were asked to

indicate whether they felt they could re-experience the situation well on a 5-point Likert scale, ranging from (1) extremely accurately to (5) not accurately at all. Based on the self-report, on average, participants could re-experience the situation moderately to very accurately ($M = 2.67$).

Counterfactual Thoughts

Afterwards, participants were randomly divided into the self-focused or the other-focused counterfactual group. To induce the counterfactual thoughts, participants of the self-focused group were instructed to list things they could have done differently that would have changed the situation. Participants of the other-focused group were asked to do the same, but listing things the person they envied could have done differently. In the analysis, the results of the two groups were compared.

Self-Efficacy

Next, participants were instructed to fill out the New General Self-Efficacy Scale (NGSE; Chen et al., 2001). The NGSE is an 8-item, 5-point Likert scale questionnaire to measure general self-efficacy in a healthy sample (Chen et al., 2001). The scale included statements such as, “I will be able to achieve most of the goals that I have set for myself.”. The answers ranged from 1 - strongly disagree (low self-efficacy) to 5 - strongly agree (high self-efficacy). Moreover, The NGSE has been shown to have high content validity and reliability (Chen et al., 2001).

Malicious Envy

Malicious envy was measured with an 8-item, 5-point Likert scale questionnaire (Crusius & Lange, 2014, 2021). One item was, for example, “I felt coldness toward the person.”. These items were validated by Crusius and Lange (2014) and show a high internal consistency ($\alpha = .87$). The mean score ranged from 1 – strongly disagree (low malicious envy) to 5 – strongly agree (high malicious envy).

Benign Envy

Lastly, benign envy was measured with an 8-item, 5-point Likert scale questionnaire (Crusius & Lange, 2014, 2021). An example item would be “I admired the person.”. These items were validated by Crusius and Lange (2014) and showed moderate internal consistency ($\alpha = .60$). The mean score was taken, ranging from 1 – strongly disagree (low benign envy) to 5 – strongly agree (high benign envy).

Analysis

Four regression analyses were conducted to measure the effect of self-efficacy and counterfactual thoughts on malicious and benign envy. The analyses used counterfactual

thoughts as a between-subject factor, with the groups self-focused and other-focused. Self-efficacy was used as a covariate. The participants' mean score on benign envy was used for the first analysis as the dependent variable. The second analysis used the same independent variables, with malicious envy as the dependent variable, instead of benign envy. Lastly, the interaction was measured by conducting two multiple regression analyses with the same independent variables and benign envy/ malicious envy as dependent variables using PROCESS (Hayes, 2017). The analyses met all the assumptions of linearity, normality, and homoscedasticity.

Results

Table 1

Correlations and Descriptives

		Self-Efficacy	Benign Envy	Malicious Envy
Self-Efficacy	Pearson Correlation	$\alpha = .87$		
	Sig. (2-Tailed)			
	Mean	3.84		
	Std. Deviation	0.49		
Benign Envy	Pearson Correlation	0.19	$\alpha = .90$	
	Sig. (2-Tailed)	0.27		
	Mean	3.55		
	Std. Deviation	0.83		
Malicious Envy	Pearson Correlation	.42**	0.03	$\alpha = .90$
	Sig. (2-Tailed)	0.00	0.88	
	Mean	2.4		
	Std. Deviation	0.99		

** . Correlation is significant at the 0.01 level (2-tailed). N = 37.

Table 2

Regression Analysis with Benign Envy as Dependent Variable

Predictor Variables	B	95% CI	β	t	p
(Constant)	2.39	[.12, 4.54]		2.15	0.04
Self-Efficacy	0.48	[-1.33, 1.09]	0.28	1.59	0.12
Counterfactual Thoughts	-0.42	[-1.01, 0.17]	-0.26	-1.46	0.15

Note. $R^2_{adj}=.038$ ($N = 37$, $p = .19$). CI = confidence interval for B .

Counterfactual Thoughts: 1=Self 2=Other

Hypothesis 1 & 3: Table 2 shows the results of the multiple regression analysis with self-efficacy as the covariate, counterfactual thoughts (self/ other) as the between-subject factor and benign envy as the dependent variable. It was hypothesised that self-focused counterfactual thoughts increase benign envy (*Hypothesis 1*). The results show that counterfactual thoughts do not affect benign envy ($B = -.42$, $t = -1.46$, $p = .15$). So, the first hypothesis is rejected. Furthermore, self-efficacy was hypothesised to increase benign envy (*Hypothesis 3*). The results show that self-efficacy does not significantly affect benign envy ($B = .48$, $t = 1.59$, $p = .12$). Consequently, the third hypothesis is not supported.

Table 3

Regression Analysis with Malicious Envy as Dependent Variable

Variable	B	95% CI	β	t	p
(Constant)	2.54	[-3.40, 1.56]		2.92	0.01
Self-Efficacy	0.78	[.092,146]	0.38	2.31	0.03
Counterfactual Thoughts	0.24	[-0.43, 0.90]	0.12	0.73	0.47

Note. $R^2_{adj}=.14$ ($N = 37$, $p = .027$). CI = confidence interval for B .

Counterfactual Thoughts: 1=Self 2=Other

Hypothesis 2 & 4: Table 3 shows the results of the multiple regression analysis with self-efficacy as the covariate, counterfactual thoughts (self/ other) as the between-subject factor and malicious envy as the dependent variable. Other-focused counterfactual thoughts were hypothesised to increase malicious envy (*Hypothesis 2*). The results show that counterfactual thoughts are not significantly predicting malicious envy ($B = .24$, $t = 0.73$, $p = .472$). This means the second hypothesis is not supported. Furthermore, self-efficacy was hypothesised to be negatively related to malicious envy (*Hypothesis 4*). The results show that self-efficacy is a significant predictor of malicious envy ($B = .78$, $t = 2.306$, $p = .027$). However, the direction is opposite of what was hypothesised, and self-efficacy is positively related to malicious envy. So, the fourth hypothesis is not supported.

Table 4

Moderated Regression Analysis with Malicious Envy as Dependent Variable

Variable	B	95% CI	t	p
(Constant)	2.39	[2.05, 2.72]	14.52	0.00
Interaction	0.18	[-1.27,1.62]	0.25	0.80

Note. $R^2_{adj}=.144$ ($N = 37$, $p = .027$). CI = confidence interval for B . Interaction = interaction effect (self-efficacy x counterfactual thoughts)

Table 5

Moderated Regression Analysis with Benign Envy as Dependent Variable

Variable	B	95% CI	t	p
(Constant)	3.53	[3.23, 3.82]	24.16	0.00
Interaction	0.27	[-1.02, 1.55]	0.42	0.68

Note. $R^2_{adj}=.14$ ($N = 37$, $p = .027$). CI = confidence interval for B . Interaction = interaction effect (self-efficacy x counterfactual thoughts)

Hypothesis 5 & 6: Tables 4 and 5 show the results of the two multiple regression analyses with counterfactual thoughts as the between-subject factor and self-efficacy as the covariate. These analyses were conducted with PROCESS (Hayes, 2017) to investigate the interaction between self-efficacy and counterfactual thoughts. It was hypothesised that self-efficacy moderates the effect of counterfactual thoughts on benign envy (*Hypothesis 5*). The results indicate no interaction effect between the two independent variables on benign envy ($B = .27$, $t = .42$, $p = .68$). So, the fifth hypothesis is rejected.

Furthermore, it was hypothesised that self-efficacy moderates the effect of counterfactual thoughts on malicious envy (*Hypothesis 6*). The results show no interaction effect between the independent variables on malicious envy ($B = .20$, $t = .28$, $p = .78$), rejecting the sixth hypothesis.

Discussion

The current study tried to investigate the influence of counterfactual thoughts on malicious and benign envy. Furthermore, it was investigated how self-efficacy moderates this relationship. The research question was investigated in an online study consisting of questionnaires on self-efficacy, malicious envy, and benign envy. Furthermore, participants participated in a relived emotions task to re-experience a situation in which they felt envy. Regarding this situation, they also had to come up with counterfactual thoughts in which they thought of how the situation could have turned out differently. Overall, none of the six hypotheses was supported. The results indicate that there is no effect of counterfactual thoughts on either malicious or benign envy. Furthermore, self-efficacy seemed to affect malicious envy in the opposite direction compared to what was hypothesised. No effect of self-efficacy on benign envy was found. Also, neither an interaction effect between the two independent variables was found on benign envy nor malicious envy. In the following, the especially interesting findings will be discussed.

One surprising finding was that hypothesis four was not only rejected, but the effect went in the opposite direction. People with higher self-efficacy were more likely to experience malicious envy. This was inconsistent with the theory above. Low self-efficacy was expected to lead to an increased need to derogate the other person and thus to an increase in malicious envy. One explanation for this could be that increased self-efficacy leads to perceived unfairness. Believing that one possesses the same capabilities but still not achieving the same results can lead to thoughts such as “This could have been me!” or “I deserve the same!” (Van de Ven, 2015). So, in the current study, participants with high self-efficacy may have believed they deserve the same as the person they envy because they are equally able to achieve the same. However, they nevertheless experienced inferiority, implying they might have been mistreated. Perceiving a situation to be unfair is an essential predictor of malicious envy (Van de Ven et al., 2009, 2011; Van de Ven, 2015; Zong & Hawk, 2021). This is because the envier is more likely to perceive the envied to be undeserving of their situation. Therefore, the envier is more likely to derogate the envied person with the desire to re-establish their perception of fairness. To conclude, one explanation might be that an increase in self-efficacy leads to a rise in perceived unfairness, leading to increased malicious envy.

Contrary to expectations, this study did not find a significant effect of self-efficacy on benign envy either. One explanation could be that self-efficacy does not increase your perceived control, as expected, but potentially even decreases it. As mentioned above, high self-efficacy might have increased perceived unfairness. This perceived unfairness may have then led to reduced perceived control. This is because the envier felt inferior even though they thought they deserved the same. Research supports this argument, as perceived unfairness can negatively affect perceived control (Gakovic & Tetrick, 2003; Pugh et al., 2003; Robbins et al., 2012). As mentioned in the introduction, perceived control is an essential predictor of benign envy (Van de Ven et al., 2011). Specifically, when people have decreased perceptions of control over a situation, they are less likely to experience benign envy. Thus, high self-efficacy may have led to perceived unfairness, which decreased perceived control and therefore decreased benign envy. This may have counteracted the positive direct effect of self-efficacy on benign envy. So, in the end, self-efficacy had no significant effect on benign envy.

Another unanticipated finding was that there were no significant differences between the counterfactual groups across both dependent variables. This is not in line with the existing literature (Crusius & Lange, 2021). One factor could be that the manipulation did not work. Participants already filled out a text box about their envy experience before filling out counterfactual thoughts. Therefore, they may have had decreased motivation to thoroughly

think about potential factors that they or the other person could have done differently. A lack of motivation can be detrimental to performing tasks adequately (Vollmeyer & Rheinberg, 2000). This lack of motivation may also be underlined by the fact that most of the participants that quit did so after the first text box. Thus, two text box assignments might have been demotivating for participants. Therefore, one of the reasons for the lack of effect might be that participants did not correctly engage in the counterfactual thoughts task.

The missing effect of counterfactual thoughts on benign envy could also be explained by an increase in motivation, unrelated to whether they were focused on the self or the other person. It was hypothesised that self-focused counterfactual thoughts increase motivation because they reflect on the envier's behaviour. This can lead to a learning effect, leading to motivational benefits and an increase in benign envy. However, this learning effect may also have occurred in the other-focused counterfactual thoughts (Rohbanfard & Proteau, 2011). This explanation can be supported by Bandura's (1977) social learning theory. There, it is described that an essential part of learning can also be observational. So, learning from the example of others. In this case, the envier also reflects on behavioural causes when they think about what the other person did to achieve their position. To conclude, there may have been no difference between the two groups of counterfactual thoughts on benign envy because both groups triggered similar motivation levels to improve.

The results and conclusions of this study fall under certain limitations. An important factor that has to be considered for these conclusions is the small sample size. Due to many participants quitting early and time constraints, data of fewer participants than planned was gathered. One problem is that the p-value depends on sample size (Sullivan & Feinn, 2012; Whitley & Ball, 2002). Large sample sizes can already lead to a significant p-value with an almost negligible effect. On the other hand, when the sample size is small, the effect size may be relevant, but the p-value can remain non-significant. Benign envy and self-efficacy, for example, were positively correlated. This was in line with the expectations. However, the p-value was insignificant. So, it is essential to consider this study's effect sizes. Overall, because of the small sample size, it is necessary to be careful in interpreting too much into results.

Another limitation of the findings is that self-efficacy was measured non-experimental. Therefore, the findings that include self-efficacy are only correlational. Correlational research designs have several weaknesses (Radhakrishnan, 2013). One disadvantage is the generalizability of the results because the conclusions are based on pre-existing groups. Furthermore, it is impossible to determine causation. Self-efficacy is, for

example, related to many other traits, such as self-esteem (Gardner & Pierce, 1998), goal orientation (Caraway et al., 2003) and well-being (Luszczynska et al., 2005). Therefore, the results may not be solely the consequence of self-efficacy but of one of the related factors. For these reasons, the non-experimental design requires caution in interpreting the results.

Furthermore, one limitation is social desirability. Participants may have felt uncomfortable admitting that they felt malicious envy towards another person (Foster, 1972). Since envy is looked very badly upon in our current society, people tend to hide their envious feelings towards others and often even suppress them. This may have affected the current studies' results as well. Participants in the present study scored on average higher on benign envy than malicious envy, which may also indicate social desirability. So, social desirability may also be a limiting factor in this study.

Overall, the study challenges the existing literature on self-efficacy, counterfactual thoughts, and envy. It shows that the current literature's reasoning must be taken with care and needs further research as support. Crusius & Lange (2020) showed that self-focused counterfactual thoughts are related to benign envy, while other-focused counterfactual thoughts are related to malicious envy. However, the current study's findings do not support these findings. Consequently, more research is needed to investigate why the present study's results deviate from the theory. Furthermore, self-efficacy seems to be a predictor of malicious envy, which is also not in line with the above-established theory. Thus, the current study's findings call for re-evaluating these theories. Further understanding of when self-efficacy leads to an increased motivation to improve oneself may be essential. So, the present study highlights knowledge gaps in the current state of research and opens up new pathways for future research.

There are many different directions future research could look into. Other types of counterfactual thoughts, for example, could offer more understanding of the underlying effects of counterfactual thoughts. This study focused on self- and other-focused counterfactual thoughts. Nevertheless, there are more types, such as additive/ subtractive or upwards/ downwards focused counterfactuals. These other types of counterfactual thoughts have also been shown to affect malicious and benign envy (Crusius & Lange, 2021). Though the underlying process is not well-understood, mediation or moderation effects could exist.

All in all, no definite conclusions can be made on the effect of counterfactual thoughts on malicious and benign envy or the relation to self-efficacy. Mainly because a larger sample is needed. Therefore, the goal of providing a practical way of coping with envy has not been met. Nevertheless, it must be considered that unfavourable social comparison and envy can

have vastly different consequences. These consequences may depend on psychological traits, situational factors and coping behaviours. Further understanding of these factors and when they are critical can help not just top-level athletes but also in everyday life. It can help to understand envy further and, more importantly turn its aversive consequences into beneficial ones. The current study may offer valuable findings to provide further context for the existing literature and fuel further research on the universally known phenomenon that has not been fully explained to date.

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