

Does Dispositional Envy Make You Flourish More (or Less) in Life?

An Examination of its Longitudinal Impact and Mediating Mechanisms Among Adolescents and Young Adults

1 Introduction

Subjective well-being refers to one's evaluation of how life is going in terms of feeling good and functioning well (Keyes et al., 2015). In the literature, studies on subjective well-being have overwhelmingly focused on the aspect of "feeling good" – the hedonic component of subjective well-being (Ryan & Deci, 2001). Hedonic well-being is defined as enjoying life, maximizing pleasure and minimizing pain (Diener et al., 1999). To measure hedonic well-being, researchers tend to use various indicators such as life satisfaction, subjective happiness, positive affect, and negative affect (Delle Fave et al., 2011).

To offer a more complete representation of subjective well-being, an increasing number of studies has examined the antecedents and consequences of the eudaimonic component of subjective well-being (e.g., Schnitket & Richardson, 2018; Sheldon et al., 2019). Eudaimonic well-being refers to a life lived in accord with one's true self (Ryan & Deci, 2001; Ryff, 1989). This component goes beyond the surface hedonic level of feeling good and focuses on the meaningful human needs of personal growth and self-realization (Ryff, 1989). To capture eudaimonic well-being, researchers tend to use psychological flourishing as an indicator. To flourish in life, one must function well in both intrapersonal aspects (e.g., achieving meaning and purpose in life, showing interest and engagement, and having a sense of competence, self-worth, optimism, and dignity) and interpersonal aspects (e.g., having positive relationships and making an active contribution to the well-being of others) (Diener et al., 2010). It is noteworthy that some researchers conceptualized flourishing in a different way (see Henderson & Knight, 2012; Schotanus-Dijkstra et al., 2016). For instance, instead of capturing only the eudaimonic component, they defined flourishing as reflecting both hedonic

and eudaimonic components of subjective well-being (e.g., Huppert 2009; Keyes 2002). To avoid confusion, in this article, we refer flourishing as an indicator of only the eudaimonic component.

To identify the contributing factors to one's subjective well-being, Diener (1984) reviewed the literature and concluded that dispositional traits were one of the strongest predictors. Among the various dispositional traits, previous studies have mostly focused on the Big Five personality traits in predicting hedonic well-being (e.g., Steel et al., 2008; Suldo et al., 2015) and eudaimonic well-being (e.g., Keyes et al., 2015; Schmutte & Ryff, 1997). Rather, less attention has been devoted to another personality trait – dispositional envy, which captures a chronic tendency to experience envy (Smith et al., 1999).

Of the studies on dispositional envy, most of them have predominantly focused on hedonic well-being (e.g., Briki, 2019; Ng et al., 2019) while very limited number of studies have attempted to examine the effect of dispositional envy on eudaimonic well-being. Most of these studies employed a cross-sectional design among young adults, restricting the robustness and generalizability of the findings. To address this research gap, we investigated the association between dispositional envy (both malicious and benign envy) and eudaimonic well-being (flourishing). To tackle the limitations inherent in the previous studies, we contributed longitudinal evidence and examined the intrapersonal and interpersonal mediating mechanisms among young adults and adolescents. We also strengthened our understanding of the associations between dispositional envy and eudaimonic well-being by 1) comparing the associations across adolescents and young adults, 2) comparing the extent that dispositional envy associated with eudaimonic well-being and hedonic well-being, and 3) comparing the intrapersonal and interpersonal mediating mechanisms.

2 Dispositional Envy and Eudaimonic Well-being

Envy typically occurs between two related people (i.e., the envier and the envied). A

person experiences envy when they lack a desired object that is possessed by another person (Cohen-Charash, 2009). Most people experience envy from time to time, but some individuals may have a chronic tendency to it. This habitual orientation has been conceptualized as a stable personality trait and coined dispositional envy (Smith et al., 1999).

The essence of envy is the making of upward social comparison with another person who possesses a desired object. Through comparing with superior others, dispositional envy is likely to influence one's eudaimonic well-being (Festinger, 1954). Eudaimonic well-being is concerned with the extent to which one's life is psychologically flourishing, such as by achieving meaning and purpose in life, having a sense of competence, self-worth, optimism, and making an active contribution to the well-being of others (Diener et al., 2010; Keyes et al., 2015). People who constantly feel envy are expected to develop a low sense of competence and self-worth because their weaknesses and disadvantages are highlighted in the upward social comparison. Thus, dispositional envy may be negatively associated with eudaimonic well-being.

Nonetheless, a reverse pattern is also possible. It has been shown that social comparisons with better others can boost self-improvement (Collins, 1996). People who compare themselves with superior others may find inspiration for personal growth and directions for self-improvement. Empirical research had revealed that individuals who were inspired by the better others and see themselves as similar to these people showed positive changes in self-concept (Burlison et al., 2005). Therefore, it is possible for dispositional envy to help individuals achieve meaning and purpose in life, thus enhancing one's eudaimonic well-being.

From these reasonings, the association between dispositional envy and eudaimonic well-being is not entirely clear and straightforward. In this research, we investigate this unexplored association.

2.1 Dispositional Malicious and Benign Envy

Lange and Crusius (2015) conceptualize dispositional envy as two separate forms, dispositional malicious envy and dispositional benign envy. Essentially, both malicious and benign envy are painful experiences, sharing the common feelings of inferiority and frustration borne of upward social comparison (Lange et al., 2018b). Both forms of dispositional envy also elicit the same goal of levelling the difference between oneself and superior others; however, the motives and the corresponding behaviors underlying the two forms of envy are different (van de Ven et al., 2009). Dispositional malicious envy follows the conventional conceptualization of envy, which emphasizes the feelings of inferiority and hostility. Dispositional benign envy, however, refers to a form of envy lacking the ill will, hostility, and resentment. It instead engenders a feeling of admiration and perceived deservingness towards superior others (Lange et al., 2018a). Similar to malicious envy, benign envy is elicited through upward social comparison, reflecting an unfavorable experience. It has been shown that dispositional benign envy was associated with painful and frustrating feelings (Lange & Crusius, 2015; Lange et al., 2016). Therefore, while dispositional malicious envy motivates individuals to pull down the envied targets, dispositional benign envy motivates people to pull themselves up.

In the literature, most of the previous studies on dispositional malicious and benign envy focused on hedonic well-being (see Briki, 2018; Ng et al., 2019; Ng et al., 2020; Rentzsch & Gross, 2015; Smith et al., 1999). As such, there remains a great paucity of evidence on the associations between dispositional malicious and benign envy and eudaimonic well-being.

2.2 Dispositional Malicious Envy and Eudaimonic Well-being

It has been shown that the experiences of malicious and benign envy were elicited depending on the appraisal patterns over situations (Van de Ven et al., 2012). If individuals perceive a low deservingness of advantaged others and a low control over situations, it is

likely for them to experience state malicious envy. Research on dispositional malicious envy revealed a similar pattern, people high in dispositional malicious envy perceived superior others as more undeserved (Lange & Crusius, 2015). As such, dispositional malicious enviers may view the envied persons with hostility and resentment (Smith et al., 1999), and tend to pull down superior others by exhibiting maladaptive social behaviors, such as less prosocial tendency (Yu et al., 2018) and more schadenfreude (Krizan & Johar, 2012). These behavioral patterns may prevent dispositional malicious enviers from establishing positive relationships with social others and making an active contribution to the well-being of other people. As they may not function well in the interpersonal aspects of eudaimonic well-being, their level of psychological flourishing may also be lowered.

Besides, given that people with high dispositional malicious envy perceive superior others in their lives as undeserved, it is likely for them to regard life as unfair. The perceived unfairness in life may further prevent them from functioning well in the intrapersonal aspects of eudaimonic well-being. For instance, perceived unfairness and injustice in life can alter one's sense of meaning in life (Park, 2010). Bègue and Bastounis (2003) found that people who believe in a just world had a more meaningful and purposeful vision of life. In contrast, dispositional malicious enviers who view life as unfair may regard striving for life as meaningless and purposeless. Also, perceived unfairness may motivate them to distance themselves from the source of unfairness (Hafer, 2000), leading to less engagement and interest to life events.

Other than a lower sense of deservingness of advantaged others, Briki (2018) found that dispositional malicious envy was associated with a lower sense of self-control, aligned with the findings in state malicious envy (Van de Ven et al., 2012). With the sense of no control over future outcomes, the perceived inadequacy and its frustration may breed a feeling of inferiority, leading to a low sense of competence and self-worth. Taken together, the poor

functioning in all these intrapersonal aspects may limit the chances for people high in dispositional malicious envy to live a flourishing life.

2.3 Dispositional Benign Envy and Eudaimonic Well-being

In contrast to state malicious envy, state benign envy is elicited when one perceives a high control over situations and a high deservingness of superior others (Van de Ven et al., 2012). Compared to dispositional malicious envy, the association between dispositional benign envy and eudaimonic well-being is less clear. On one hand, as an opposite to dispositional malicious envy, people high in dispositional benign envy are expected to have a high control over life events and perceive superior others as deserved. Thus, it is reasonable for dispositional benign envy to enhance both the intrapersonal and interpersonal aspects of eudaimonic well-being. For instance, Lange and Crusius (2015) found that dispositional benign envy was associated with a chronic achievement motive of hope for success, which reflects a high sense of competence and optimism. Also, Xiang, Chao, and Ye (2018) found that dispositional benign envy was positively associated with gratitude, highlighting the role of admiration in dispositional benign envy (Lange et al., 2016). This positive mindset is likely to help dispositional benign envious maintain positive relationships with social others and strengthen their active contribution to the well-being of other people, leading to a psychologically flourishing life.

On the other hand, the positive association between dispositional benign envy and eudaimonic well-being may not be as stable as expected. First, although dispositional benign envy is conceptually expected to associate with high perceived control over outcomes and perceived deservingness towards superior others, empirical findings failed to support these associations (see Briki, 2018; Lange & Crusius, 2015). Second, similar to malicious envy, benign envy is also inherently painful. Previous research indicated that both forms of envy elicited an equivalent degree of frustration and negative emotion from comparing with

superior others (Crusius & Lange, 2014). Thus, as with dispositional malicious envy, dispositional benign envy should also breed the feelings of inferiority and frustration at the lack of advantages. Vrabel, Zeigler-Hill, and Southard (2018) revealed that people high in dispositional benign envy had a fluctuating self-esteem, revealing that their self-worth may be somewhat fragile and vulnerable to external challenges. As a result, it is possible for dispositional benign envy to harm one's eudaimonic well-being to a certain degree.

Most of the previous investigations on dispositional malicious and benign envy have only provided cross-sectional evidence. These investigations might thus be confounded by common method variance and therefore unable to offer insights on temporal predictions. To address these limitations, the present research attempts to test the longitudinal associations between dispositional malicious and benign envy and eudaimonic well-being. Moreover, most of the research evidence for dispositional malicious and benign envy was provided from young adults. Limited studies have been conducted on other developmental stages and considered the social ecological perspective of dispositional envy (see Ng et al., 2019). In addition to young adulthood, adolescence is also a critical developmental stage which involves substantial fluctuations in self-worth, sense of competence, and social networks (Masselink et al., 2018). Therefore, to test the generalizability and robustness of the findings across different developmental stages, the present research attempts to examine dispositional malicious and benign envy among both young adults and adolescents.

2.4 Eudaimonic Well-being Versus Hedonic Well-being

Briki (2018) tested the effects of dispositional malicious and benign envy on hedonic well-being and called for further investigations on eudaimonic well-being. By combining the previous findings on hedonic well-being and the current investigation into eudaimonic well-being, we are able to explore whether dispositional envy is differentially associated with hedonic and eudaimonic well-being. It is suggested that dispositional malicious and benign

envy may have a stronger association with eudaimonic well-being than hedonic well-being. When experiencing malicious and benign envy, a feeling of inferiority can weaken one's self-worth and sense of competence. Moreover, perceiving less (or more) control over inadequacy can inhibit (or elicit) a sense of optimism while a feeling of hostility (or admiration) towards better others can harm (or promote) the positive relationships with social others. From these reasonings, it is expected that psychological flourishing is more proximal and sensitive to dispositional envy than hedonic enjoyment.

3 Intrapersonal and Interpersonal Mediating Mechanisms of Dispositional Envy

As a habitual orientation to painful experiences, dispositional envy (especially dispositional malicious envy) is expected to lower one's eudaimonic well-being. Practically, it is vital to identify factors that can reduce the negative effect of dispositional envy. To conceptualize the protective factors, it is important to look at the mediating mechanisms between dispositional envy and eudaimonic well-being – the way how dispositional envy was associated with eudaimonic well-being. Hence, prior to identifying the boundary conditions, we take a first step to examine the mediating mechanisms between dispositional envy and flourishing in the present research.

From an instrumental perspective of personality (Steel et al., 2008), dispositional envy may work through an indirect link to affect one's subjective well-being. For instance, dispositional envy may color one's experience of life events and bring intrapersonal ramifications (Vrabel et al., 2018), which in turn promote or limit one's subjective well-being (Lucas & Diener 2009). Beyond the intrapersonal ramifications, recent studies on state envy emphasized the interpersonal ramifications of experiencing envy (e.g., Behler et al., 2020; Brooks et al., 2019). Research on dispositional envy also studied the interpersonal ramifications, such as prosocial tendency (Yu et al., 2018) and interpersonal aggression (Rentzsch & Gross, 2015).

Combining both intrapersonal and interpersonal ramifications, Ng and colleagues (2020) investigated the intrapersonal and interpersonal processes underlying the association between dispositional envy and hedonic well-being. They found that self-esteem and connection with social others jointly mediated the association between dispositional envy and hedonic well-being. However, their research only focused on dispositional malicious envy and hedonic well-being, leaving unanswered the question of whether the intrapersonal and interpersonal processes can also explain the associations between dispositional malicious and benign envy and eudaimonic well-being. This aside, it is interesting to compare whether intrapersonal and interpersonal processes equally account for the associations. As a consequence, the present research followed this conceptual framework to examine the intrapersonal and interpersonal mediating mechanisms of how dispositional malicious and benign envy associates with flourishing.

3.1 Intrapersonal Mechanism: The Mediating Role of Self-Esteem

In this research, we regard self-esteem as one of the intrapersonal processes between dispositional envy and flourishing. Self-esteem refers to a global and personal evaluation of the worth of the self (Campbell, 1990; Rosenberg, 1965), reflecting a belief and confidence in one's ability and attributes (Brown, Dutton, & Cook, 2001). Built upon the core feature of perceived inferiority in both dispositional malicious and benign envy, it is possible that both forms of envy lower one's self-esteem. This may be especially the case for dispositional malicious enviers who perceive a lack of control over their inadequacy. Empirical studies indeed supported this expectation by revealing a negative association between dispositional malicious envy and self-esteem (e.g., Krizan & Johar 2012; Yu et al. 2018). However, the association between dispositional benign envy and self-esteem is less clear. Although dispositional benign envy may elicit a feeling of inferiority, a silver lining is that it also comes with a sense of optimism and perceived control over one's inadequacy. Therefore, it is

possible that the positive self-evaluation created by dispositional benign envy is strong enough to offset the feeling of inferiority, elucidating a positive effect on self-esteem. Previous studies have provided mixed results showing that while dispositional benign envy did not decrease one's overall level of self-esteem, it was associated with a fluctuating self-esteem across time (Vrabel et al., 2018).

A large body of research has supported the contention that self-esteem is an important determinant of hedonic well-being (Diener et al., 1999). Although the association between self-esteem and eudaimonic well-being is less examined in the literature, their shared conceptualizations can imply a positive association. For instance, the intrapersonal component of flourishing in terms of self-worth, competence, optimism, and dignity (Diener et al., 2010) have much in common with the definition of self-esteem in terms of worth and confidence in personal abilities and attributes (Brown et al., 2001). In view of their conceptual similarity, it is expected that self-esteem will be positively associated with flourishing.

Taken together, we attempt to examine the mediating effect of self-esteem as an intrapersonal factor on the relation between dispositional envy (both malicious and benign envy) and flourishing. Specifically, we expect that dispositional malicious envy will be negatively associated with self-esteem, whereas we make no concrete predictions between dispositional benign envy and self-esteem. In turn, self-esteem will be positively associated with one's flourishing and will mediate the association between dispositional envy (both malicious and benign envy) and flourishing.

3.2 Interpersonal Mechanism: The Mediating Role of Relationship Harmony

In this research, we regard relationship harmony as one of the interpersonal processes between dispositional envy and flourishing. Relationship harmony refers to a delicate balance between self and others, characterized by a stable and pleasant interpersonal support network

(Chen et al., 2006; Kwan et al., 1997). Over and above the intrapersonal factor of self-esteem, relationship harmony was found to mediate the effects of personality traits on hedonic well-being (e.g., life satisfaction). This phenomenon was particularly salient among members in collectivistic cultures (e.g., Hong Kong Chinese) (Kwan et al., 1997). As a consequence, to examine how dispositional envy associates with eudaimonic well-being in the current sample of Hong Kong Chinese, it is important to include the intrapersonal mediating mechanism of self-esteem as well as the interpersonal mediating mechanism of relationship harmony.

With its base characteristic of perceived hostility, dispositional malicious envy is likely to dampen one's relationship harmony with social others. Eliciting, as it does, hostility and the desire to see comparison rivals fail, malicious envy serves as a powerful driver of various socially destructive behaviors (Van de Ven et al., 2009). People high in dispositional malicious envy have been found to enact more uncooperative behaviors (Parks, Rumble, & Posey, 2002) and schadenfreude (Krizan & Johar, 2012). Clearly, these antisocial behaviors are likely to create interpersonal conflicts and disrupt relationship harmony inside one's social network. Dispositional benign envy, however, is expected to benefit relationship harmony. By regarding another's superiority as deserved, dispositional benign envier enjoys a positive feeling of admiration for better others, as well as an eagerness to get closer to them (Lange et al., 2018a). These friendly and positive responses are likely to be socially acceptable and advantageous to relationship harmony.

Maintaining harmonious relationships with social others is likely to promote one's eudaimonic well-being. Conceptually, the core value of relationship harmony of maintaining a balanced and reciprocal interpersonal network (Kwan et al., 1997) is similar to the interpersonal components of flourishing, such as supportive and rewarding relationships, and making an active contribution to the well-being of others (Diener et al., 2010). Therefore, it is expected that achieving relationship harmony with social others can contribute to one's level

of psychological flourishing.

Taken together, we examine the mediating effect of relationship harmony as an interpersonal factor on the relation between dispositional envy (both malicious and benign envy) and flourishing. It is hypothesized that dispositional malicious (benign) envy will be negatively (positively) associated with relationship harmony. In turn, it is hypothesized that relationship harmony will be positively associated with flourishing and will mediate the association between dispositional envy (both malicious and benign forms) and flourishing.

4 The Present Research

To summarize, our objectives were threefold.

First, given the extensive literature on the associations between dispositional envy and hedonic well-being indicators (e.g., life satisfaction and happiness), we decided to examine the associations of dispositional malicious and benign envy with a eudaimonic well-being indicator of flourishing. Being the first study ascertaining these associations, a cross-sectional study (Study 1a) was conducted to examine the associations between dispositional malicious and benign envy and flourishing among young adults ($N = 602$). Apart from this cross-sectional study, we conducted a 3-month longitudinal study (Study 1b) among young adults ($N = 192$), investigating the temporal associations between dispositional malicious and benign envy and flourishing. Given the well-established associations between the Big Five personality traits and flourishing (Keyes et al., 2015), the unique associations between dispositional malicious and benign envy and flourishing were also investigated with the control of these five core personality aspects.

Second, consistent with the previous investigations on dispositional envy and hedonic well-being indicators (Ng et al., 2020), we tested whether self-esteem as an intrapersonal mediator and relationship harmony as an interpersonal mediator would account for the associations between dispositional malicious and benign envy and flourishing (Figure 1A).

To enhance the generalizability and robustness of our findings, we included a sample of adolescents ($N = 658$) to test the proposed mediation model (Study 2).

Third, a series of model comparisons was conducted to enhance our understanding of dispositional malicious and benign envy. Specifically, we statistically compared the associations between dispositional envy (viz., malicious and benign envy) and flourishing among young adults (Study 1a) and adolescents (Study 2). Moreover, we statistically compared the extent that dispositional benign and malicious envy was associated with eudaimonic well-being (From Studies 1a and 2) and hedonic well-being (From Briki, 2018). Finally, we statistically compared the importance of the intrapersonal (self-esteem) and interpersonal (relationship harmony) mediating mechanisms between dispositional malicious and benign envy and flourishing (Study 2).

5 Study 1a

5.1 Method

5.1.1 Participants

A total of 602 university students (389 females) were recruited in Hong Kong ($M_{age} = 19.56$, $SD = 1.52$). Upon recruitment, participants were instructed to complete a questionnaire consisting of the following measures, and report demographic information, such as age and gender. Informed consent was obtained in advance from all participants. Assuming a small-to-moderate size of correlations ($\rho = 0.2$) among variables (Cohen, 1988), a priori power analysis via G*Power was conducted to estimate the required sample size for testing the associations between dispositional malicious and benign envy and flourishing (Faul et al., 2007). To obtain at least 90% of statistical power, a sample of 181 participants was required. Thus, in the present study, we recruited a sample larger than the required sample size.

5.1.2 Measures

Dispositional Benign and Malicious Envy. The 10-item Benign and Malicious Envy

Scale (Lange & Crusius, 2015) was used to assess the stable traits to feel malicious and benign envy. Respondents rated each item on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include “If I notice that another person is better than me, I try to improve myself” (for benign envy; $\alpha = .82$) and “Envious feelings cause me to dislike the other person” (for malicious envy; $\alpha = .88$).

Flourishing. The 8-item Flourishing Scale (Diener et al., 2010) was used to measure participants’ positive human functioning. The items were anchored on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). This measurement is aligned with the conceptualization of flourishing we adopted in this article in which flourishing captures only eudaimonic component, reflecting both intrapersonal aspects (e.g., achieving meaning and purpose in life, showing interest and engagement, and having a sense of competence, self-worth, optimism, and dignity) and interpersonal aspects (e.g., having positive relationships and making an active contribution to the well-being of others). Each item of this measurement maps into one of the eight domains in the intrapersonal and interpersonal aspects. For instance, the item “I lead a purposeful and meaningful life” measures whether one functions well in achieving meaning and purpose in life, while the item “I actively contribute to the happiness and well-being of others” quantifies whether one functions well in making an active contribution to the well-being of others ($\alpha = .91$).

5.2 Results

Descriptive statistics and bivariate correlations are summarized in Table 1 (see also Table A1 in Appendix). A structural equation model was established to examine the associations between dispositional benign and malicious envy and flourishing (Figure 2A). The model was fitted with parceling in which two to three indicators were randomly

combined into three parcels (Little et al., 2002).¹ Overall, the model revealed a satisfactory fit to the data, $\chi^2(24) = 90.37, p < .001$, CFI = .976, NNFI = .964, RMSEA = .068, 90% CI for RMSEA [.053, .083], and SRMR = .052. All factor loadings were statistically significant, ranging from .66 to .91 with an average of .82, $ps < .001$; all estimates of average variance extracted (AVE) were larger than .50, ranging from .61 to .76 with an average of .67. The latent factor of flourishing was regressed on the latent factors of dispositional malicious and benign envy (see Figure 2A). Results indicated that malicious envy was negatively associated with flourishing, $b = -.52, \beta = -.38, p < .001$, whereas benign envy was positively associated with flourishing, $b = .80, \beta = .36, p < .001$.

6 Study 1b

6.1 Method

6.1.1 Participants

A total of 192 college students (107 females; $M_{age} = 19.52, SD = 0.93$) were invited to complete a questionnaire measuring the constructs in Study 1a, namely dispositional malicious and benign envy and flourishing. To obtain at least 90% of statistical power, we recruited a sample larger than the required sample size of 181 in the present study (see Study 1a). To examine the longitudinal associations between dispositional envy and flourishing, each participant's level of flourishing was rechecked approximately three months later. Demographic information (viz., age and gender) and covariates of Big Five personality traits were also measured upon recruitment. Informed consent was obtained in advance from all participants.

6.1.2 Measures

Dispositional Benign and Malicious Envy, and Flourishing. As in Study 1a, the

¹ Unidimensionality of the measurement is an important prerequisite for the use of parceling (Bandalos, 2002). Testing of the unidimensionality assumption has been conducted for the three studies in this research. Overall, unidimensionality assumption of measurement is tenable across studies (see Table A4 in Appendix). Information of the item parceling strategies is also summarized in the *note* in Table A4.

Benign and Malicious Envy Scale (Lange & Crusius, 2015) and the Flourishing Scale (Diener et al., 2010) were used in this study. The reliabilities of benign and malicious envy at Time 1 were .82 and .93, respectively. The reliabilities of flourishing at Time 1 and Time 2 were .89 and .88, respectively.

Covariates. The 20-item Mini-International Personality Item Pool (Donnellan et al., 2006) was used to measure the five-factor personality traits as the control variables. Responses on each personality description were anchored on a 5-point Likert scale ranging from 1 (*does not describe me at all*) to 5 (*describes me very well*) ($\alpha = .71, .70, .61, .45,$ and $.71$ for extraversion, openness to experience, agreeableness, conscientiousness, and neuroticism, respectively).

6.2 Results

Descriptive statistics and bivariate correlations are summarized in Table 2. A moderate level of autoregressive correlation between flourishing at Time 1 and Time 2 was observed, $r = .64, p < .001$. This revealed that there was around 59% of unexplained variance in flourishing across time, making temporal examination of changes in flourishing feasible.

As with Study 1a, a structural equation model was established to examine the longitudinal associations between dispositional benign and malicious envy and flourishing (Figure 2B). In this model, the latent factor of flourishing at Time 2 was regressed on the latent factors of dispositional benign and malicious envy at Time 1. To infer temporal associations, the autoregressive effect of flourishing at Time 1 was controlled in the model. Also, covariates of age, gender, and Big Five personality traits were controlled to rule out possible confounding effects. Overall, the model revealed a satisfactory fit to the data, $\chi^2(104) = 196.09, p < .001$, CFI = .935, NNFI = .906, RMSEA = .068, 90% CI for RMSEA [.053, .082], and SRMR = .040. All factor loadings were statistically significant, ranging from .68 to .94 with an average of .83, $ps < .001$; all estimates of AVE were larger than .50,

ranging from .54 to .82 with an average of .70. For the structural part, flourishing at Time 1 was positively associated with flourishing at Time 2, $b = .72$, $\beta = .56$, $p < .001$, indicating a significant autoregressive effect. After controlling the autoregressive effect of flourishing at Time 1 and covariates, dispositional envy at Time 1 was still significantly associated with flourishing at Time 2. Specifically, dispositional malicious envy was negatively associated with flourishing over time, $b = -.23$, $\beta = -.19$, $p = .011$, while dispositional benign envy was positively associated with flourishing over time, $b = .28$, $\beta = .16$, $p = .042$. Information on descriptive statistics (viz., mean, standard deviation, and reliability) and bivariate correlations among all variables (viz., dispositional envy, flourishing, and Big Five personality traits) can be found in Table A2 in Appendix.

7 Study 2

7.1 Method

7.1.1 Participants

A total of 658 adolescents (325 females) were recruited from five different grades in a secondary school in Hong Kong (equivalent to Grade 7 to 11 in the American school system) with an age range of 11 to 19 ($M_{age} = 14.32$, $SD = 1.75$). A priori power analysis via the Monte Carlo simulation method was conducted on Webpower (Zhang & Yuan, 2018) to estimate the sample size required to test the proposed model (see Figure 1A). Assuming that all standardized path coefficients equal 0.2, a sample of 320 participants would be required to obtain at least 90% statistical power. Thus, in the present study, we recruited a sample larger than the required sample size. Informed consent was obtained in advance from all participants, as well as from the parents of the adolescents. Upon recruitment, participants were instructed to complete a questionnaire consisting of the following measures, and report demographic information (viz., age and gender) and Big Five personality traits as covariates.

7.1.2 Measures

Dispositional Benign and Malicious Envy. As in Studies 1a and 1b, the Benign and Malicious Envy Scale (Lange & Crusius, 2015) was used in this study ($\alpha = .81$ for benign envy; $\alpha = .83$ for malicious envy).

Flourishing. As in Studies 1a and 1b, the Flourishing Scale (Diener et al., 2010) was used in this study ($\alpha = .90$).

Self-Esteem. The 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used to measure an overall evaluation of self-worth. The items were anchored on 4-point scales ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). A sample item is “I have a number of good qualities” ($\alpha = .84$).

Relationship Harmony. The 5-item Interpersonal Relationship Harmony Inventory (Kwan et al., 1997) was used to assess the level of harmony participants perceived in their close relationships. Respondents were asked to report on their five most important dyadic relationships and to specify the target's name, gender, and the degree of harmony on a 7-point Likert scale ranging from 1 (*very low*) to 7 (*very high*). The five relationship harmony scores were regarded as a relationship harmony index ($\alpha = .64$).

Covariates. As in Study 1b, the 20-item Mini-International Personality Item Pool (Donnellan et al., 2006) was used in this study ($\alpha = .69, .72, .63, .56,$ and $.73$ for extraversion, openness to experience, agreeableness, conscientiousness, and neuroticism, respectively).

7.2 Results

Descriptive statistics and bivariate correlations are summarized in Table 3.

7.2.1 The Associations of Dispositional Malicious and Benign Envy with Flourishing among Adolescents

As in Study 1a, a structural equation model was established to examine the associations between dispositional benign and malicious envy and flourishing among adolescents (see the estimates inside parentheses in Figure 2A). Overall, the model revealed a satisfactory fit to

the data, $\chi^2(24) = 58.53, p < .001$, CFI = .986, NNFI = .979, RMSEA = .047, 90% CI for RMSEA [.032, .062], and SRMR = .032. All factor loadings were statistically significant, ranging from .68 to .86 with an average of .79, $ps < .001$; all estimates of AVE were larger than .50, ranging from .57 to .71 with an average of .63. Results indicated that dispositional malicious envy was negatively associated with flourishing, $b = -.55, \beta = -.36, p < .001$, whereas dispositional benign envy was positively associated with flourishing, $b = .66, \beta = .38, p < .001$.

7.2.2 Ancillary Comparison to Young Adults (Study 1a)

An ancillary analysis was conducted to compare the results from the young adults (Study 1a) with those of the adolescents (Study 2). To meaningfully compare the association between dispositional benign and malicious envy and flourishing between the two samples, configural and factorial invariance in the measurements were first established. A multiple-group structural equation model was fitted on the two samples of young adults and adolescents ($N = 1260$).

Results indicated that the configural model fitted the data well, $\chi^2(54) = 155.75, p < .001$, CFI = .981, NNFI = .974, RMSEA = .055, 90% CI for RMSEA [.045, .065], and SRMR = .043, revealing the equivalent factor structure in the constructs across young adults and adolescents. To test for factorial invariance, factor loadings were fixed to be equal across the two samples. The restricted model also fitted the data well, $\chi^2(60) = 174.17, p < .001$, CFI = .978, NNFI = .974, RMSEA = .055, 90% CI for RMSEA [.045, .065], and SRMR = .055. A model comparison on goodness of fit was performed to examine whether the restricted model had a non-trivial drop of model fit. Instead of using the chi-square difference statistic, which is sensitive to sample size and the violation of normality assumption (Chen, 2007), we adopted the recommendation proposed by Chen (2007) in which Δ CFI less than .010 supplemented with Δ RMSEA less than .015 or Δ SRMR less than .030 indicate model

invariance. Importantly, the comparison on goodness of fit statistics provided support for the factorial invariance of the constructs across young adults and adolescents, $\Delta\text{CFI} = -.003$, $\Delta\text{RMSEA} = .000$, $\Delta\text{SRMR} = .010$. Once we had established the configural and factorial invariance of the instruments between the two samples, we tested whether the associations of dispositional benign and malicious envy with flourishing were variant or invariant across the two samples. Path invariance was observed among the two samples, indicating that both the associations of dispositional malicious envy, $b = -.02$, $\beta = -.01$, $p = .815$, and dispositional benign envy, $b = .02$, $\beta = .01$, $p = .870$, with flourishing were equivalently strong across the two samples.

7.2.3 Ancillary Comparison to Hedonic Well-being (Briki, 2018)

An ancillary analysis was conducted to compare the associations between dispositional envy and eudaimonic well-being (flourishing) found in the current research, with the associations between dispositional envy and hedonic well-being (life satisfaction and happiness) observed in Briki (2018).

Among a heterogeneous sample ($N = 406$) on age ($M_{age} = 32.07$, $SD = 10.98$, from 18 to 71 years old), gender (57.6% female and 42.4% male), and ethnicity (18.2% African American, 7.9% Asian American, 59.4% Caucasian American, 9.1% Hispanic American and 5.4% other), Briki (2018) observed a correlation between dispositional malicious envy and hedonic well-being of $-.181$ and a correlation between dispositional benign envy and hedonic well-being of $.126$.

We pooled the samples of Studies 1a and 2 to strengthen heterogeneity ($N = 1260$). Based on the pooled sample, we observed a correlation between dispositional malicious envy and eudaimonic well-being of $-.326$ and a correlation between dispositional benign envy and eudaimonic well-being of $.336$. Using the Fisher z transformation, we compared the correlations of dispositional envy with hedonic well-being and eudaimonic well-being (Olkin

& Finn, 1995). Results indicated that both dispositional malicious and benign envy were more strongly associated with eudaimonic well-being than hedonic well-being, $z = -2.71, p = .007$ (malicious envy); $z = 3.89, p < .001$ (benign envy).

7.2.4 The Intrapersonal Versus Interpersonal Pathways between Dispositional Envy and Flourishing

The proposed mediation model was fitted with structural equation modeling (Figure 3). In the model, the latent factor of flourishing was regressed on the latent factors of self-esteem, relationship harmony, dispositional malicious envy, and dispositional benign envy, while two latent mediators were regressed on the latent factors of dispositional malicious and benign envy. Overall, the proposed mediation model had a satisfactory fit to the data, $\chi^2(80) = 183.59, p < .001$, CFI = .973, NNFI = .965, RMSEA = .044, 90% CI for RMSEA [.036, .053], and SRMR = .036 (Figure 3).

Dispositional malicious envy was negatively associated with self-esteem, $b = -.16, \beta = -.20, p < .001$, which in turn positively linked to flourishing, $b = .80, \beta = .41, p < .001$. To quantify and conduct an inferential test for the latent mediation effect, a 95% bias-corrected bootstrap confidence interval based on 10,000 bootstrap samples was computed. The latent mediation effect of dispositional malicious envy on flourishing through self-esteem was significant, $b = -.13, \beta = -.08, 95\%$ bias-corrected bootstrap CI [-.13, -.04]. The direct effect was also significant, $b = -.33, \beta = -.22, p < .001$ (Table 4). Dispositional malicious envy was negatively associated with relationship harmony, $b = -.16, \beta = -.27, p = .001$, which in turn positively linked to flourishing, $b = .52, \beta = .21, p < .001$. The latent mediation effect was also significant, $b = -.08, \beta = -.06, 95\%$ bias-corrected bootstrap CI [-.10, -.02] (Table 4).

As shown in the above analyses, dispositional malicious envy was both intrapersonally and interpersonally associated with flourishing. However, it was unclear whether the intrapersonal and interpersonal mediating mechanisms equally accounted for the association

between dispositional malicious envy and flourishing. Hence, for the third objective in this research, we compared the indirect effects through self-esteem and relationship harmony. By imposing non-linear constraints in the model comparison, we found that the indirect effects through self-esteem and relationship harmony did not significantly differ from each other among adolescents, $b = -.04$, $\beta = -.03$, $p = .302$.

Dispositional benign envy was positively associated with self-esteem, $b = .14$, $\beta = .20$, $p < .001$, which in turn positively linked to flourishing, $b = .80$, $\beta = .41$, $p < .001$. The latent mediation effect of dispositional benign envy on flourishing through self-esteem was significant, $b = .21$, $\beta = .12$, 95% bias-corrected bootstrap CI [.07, .17]. The direct effect was also significant, $b = .37$, $\beta = .21$, $p < .001$ (Table 4). Moreover, benign envy was positively associated with relationship harmony, $b = .26$, $\beta = .29$, $p < .001$, which in turn positively linked to flourishing, $b = .52$, $\beta = .21$, $p < .001$. The latent mediation effect was also significant, $b = .07$, $\beta = .04$, 95% bias-corrected bootstrap CI [.01, .07] (Table 4). As with dispositional malicious envy, the indirect effects through self-esteem and relationship harmony were compared. Interestingly, we found that the indirect effect through self-esteem was statistically stronger than the indirect effect through relationship harmony, $b = .14$, $\beta = .08$, $p = .003$. All the estimates remained significant after controlling the covariates of age, gender, and Big Five personality traits.

7.2.5 Ancillary Comparison to an Alternative Model: Does Dispositional Envy Mediate the Associations of Self-Esteem and Relationship Harmony with Flourishing?

As shown in the above analyses, the proposed model (Figure 1A) showed that self-esteem and relationship harmony mediated the associations of dispositional malicious and benign envy with flourishing (see Table 4, first model). To provide more robust evidence, we followed the previous practice of Ng and colleagues (2020) and tested an alternative model in which dispositional malicious envy and dispositional benign envy were the mediators to

explain the associations of self-esteem and relationship harmony with flourishing (Figure 1B).

Individuals who have a general inclination to evaluate themselves negatively (as reflected in their low self-esteem) may be more likely to experience envy during an upward comparison (Collins, 1996). Moreover, individuals who have poor relationship harmony with social others may be more likely to fail in regulating negative emotions during an upward comparison, leading to more experiences of envy (Marroquín, 2011). Hence, it is possible for self-esteem and relationship harmony to influence dispositional envy, which in turn dampens eudaimonic well-being. To offer a more robust conclusion, we tested whether this alternative model received empirical support in this research.

Results indicated that half of the latent mediation effects were statistically non-significant, except for the indirect effect of self-esteem through benign envy, $b = .10$, $\beta = .05$, 95% bias-corrected bootstrap CI [.02, .08], and the indirect effect of relationship harmony through malicious envy, $b = .12$, $\beta = .05$, 95% bias-corrected bootstrap CI [.01, .08] (see Table 2, second model). It is also noteworthy that the average of four indirect effects in the second model ($\beta = .035$) was weaker than the average of the indirect effects in the first model ($\beta = .075$), indicating that the mediators in the second model might account for the associations to a lesser extent than those in the first model. Taken together, compared to the significant latent mediation effects in the first model, the second model received less empirical support, thereby providing more support for the mediating roles of self-esteem and relationship harmony. Information on descriptive statistics (viz., mean, standard deviation, and reliability) and bivariate correlations among all variables (viz., dispositional envy, flourishing, self-esteem, relationship harmony and Big Five personality traits) can be found in Table A3 in Appendix.

8 Discussion

The association between dispositional envy and hedonic well-being (e.g., life satisfaction and subjective happiness) has been well-established in the literature (Briki, 2018; Ng et al., 2019). However, limited studies have been conducted to examine the association between dispositional envy and eudaimonic well-being (e.g., flourishing). In the present research, we attempted to fill this gap. First, we found that dispositional envy was significantly associated with flourishing. Dispositional malicious envy was negatively associated with flourishing, whereas dispositional benign envy was positively associated with it. Going beyond the cross-sectional evidence, we provided longitudinal support that dispositional malicious and benign envy had significant lagged associations with flourishing three months later. Second, we conducted two ancillary comparisons to strengthen our understanding of the associations between dispositional envy and flourishing. By comparing the findings of Studies 1 and 2, we revealed that the associations in young adults and adolescents were invariant. By comparing our results with previous findings (Briki, 2018), we found that dispositional envy was more strongly associated with a eudaimonic well-being indicator (viz., flourishing) than the hedonic well-being indicators (viz., life satisfaction and happiness). Finally, we studied the intrapersonal (viz., self-esteem) and interpersonal (viz., relationship harmony) mediating mechanisms between dispositional envy and flourishing. Both self-esteem and relationship harmony were able to mediate the association. Also, self-esteem was found to be a stronger mediator for dispositional benign envy than relationship harmony, while the two mediators were equally strong for dispositional malicious envy. As a whole, these findings enriched our understanding of the association between dispositional envy and flourishing through a series of model comparisons and the examination of the mediating mechanisms.

8.1 Associations of Dispositional Envy with Eudaimonic and Hedonic Well-being

Dispositional envy reflects a pervasive feeling of inferiority arising from a perception of

one's low ability (Smith et al., 1999). Conceptually, eudaimonic well-being is expected to be more sensitive to the perceived inferiority than hedonic well-being. Eudaimonic well-being emphasizes an optimal functioning in terms of competence and worthiness, whereas hedonic well-being emphasizes a life with hedonic enjoyment, which is not necessarily related to one's perceived competence and worthiness. Therefore, it may explain why both dispositional malicious envy and dispositional benign envy are more strongly associated with eudaimonic well-being than hedonic well-being in this research. Alternatively, it is possible that dispositional envy drives people to take part in more activities that promote (or inhibit) eudaimonic well-being than hedonic well-being. Activities that facilitate (or diminish) personal growth and development are expected to affect eudaimonic well-being, whereas activities that focus on staying happy, relaxed, and free of problems are expected to affect hedonic well-being (Waterman, 1993). For instance, eudaimonic activities include volunteering, expressing gratitude, listening carefully to another's point of view, and showing forgiveness, while hedonic activities include savoring, relaxing by watching television or playing videogames, and having sex purely for pleasure (Seligman et al., 2006; Steger et al., 2008). Future studies can be conducted to examine the range of eudaimonic and hedonic activities among dispositional envious.

It is noteworthy that the two samples in the current research and Briki (2018) differ in certain areas. For instance, Briki (2018) recruited the sample in the United States while our sample were recruited in Hong Kong. The ages of those recruited by Briki (2018) ($M_{age} = 32.07$, $SD = 10.98$, from 18 to 71 years old) had a wider range than our sample ($M_{age} = 16.82$, $SD = 3.09$, from 11 to 28 years old). Thus, any comparison of the results should be interpreted with caution.

8.2 Dispositional Envy and Eudaimonic Well-being among Young Adults and Adolescents

Ng and colleagues (2020) reveal that dispositional malicious envy has a stronger effect on hedonic well-being among young adults than adolescents. They speculate that social comparison orientation may play a role in the differential effect of dispositional envy across the two age groups. The stronger comparison orientation among young adults provides more room for dispositional envy to operate, thereby more strongly affecting the hedonic well-being. Following this line of logic, the association between dispositional envy and eudaimonic well-being is expected to be stronger among young adults than adolescents. Interestingly, the present research shows that the associations are equally strong across the two age groups. Thus, the explanation of varied comparison orientation may not explain the differential association of dispositional envy on eudaimonic well-being.

Dispositional envy may promote or inhibit certain activities which may in turn strengthen or weaken one's psychological health. Holding a eudaimonic or hedonic motive can shape the type of activities being promoted or inhibited (Huta & Ryan, 2010). For instance, with a strong eudaimonic (hedonic) motive, dispositional envy may elicit more eudaimonic (hedonic) activities. The present research indicates an equivalent association between dispositional envy and eudaimonic well-being among young adults and adolescents. Hence, it is possible that young adults and adolescents have a comparable level of eudaimonic motive, thereby resulting in an equivalent association. Moreover, it is possible that the hedonic motive in young adults is stronger than that in adolescents, thereby leading to a stronger association between dispositional envy and hedonic well-being in young adults. Future research should examine whether eudaimonic and hedonic motives can explain why the association between dispositional envy and eudaimonic well-being is invariant across the two age groups while its effect on hedonic well-being is variant.

8.3 Intrapersonal and Interpersonal Mediating Mechanisms of Dispositional Envy

The present findings reveal that the intrapersonal mediating mechanism of self-esteem is

more important than the interpersonal mediating mechanism of relationship harmony in explaining the association between dispositional benign envy and flourishing among adolescents. According to the theory of adolescent egocentrism (Elkind, 1967; Lin, 2016), the developmental stage of adolescence is characterized by a preoccupied intrapersonal focus on personal uniqueness and self-importance. Such self-focused interest and concern are theoretically more relevant to self-esteem that relates to one's personal ability and attributes, than to relationship harmony that highlights a supportive interpersonal network. Thus, dispositional benign envy, through which self-improvement reduces the feeling of inadequacy, is expected to affect one's eudaimonic well-being through the mediating mechanism of self-esteem to a larger extent than the mediating mechanism of relationship harmony.

In this research, we find that the mediating mechanism of self-esteem is not more important than the mediating mechanism of relationship harmony in dispositional malicious envy. Instead of focusing on self-improvement, dispositional malicious envy focuses on pulling down superior others. This focus on social others may weaken the importance of the intrapersonal mediating mechanism while enhancing the importance of the interpersonal mediating mechanism. Therefore, it is possible that the focus on social others may offset adolescent egocentrism, resulting in the comparable level of importance of the intrapersonal and interpersonal mediating mechanisms in dispositional malicious envy.

8.4 A Cautionary Note on Causality

In the present research, the relationship between dispositional envy and eudaimonic well-being should be interpreted with caution because causality cannot be clearly inferred given the current designs. For instance, Study 1b did not utilize a full cross-lagged panel design to comprehensively examine the temporal dynamics because the lagged outcome of dispositional envy was not measured three months later. Although Study 1b found that

dispositional envy was associated with the lagged outcome of eudaimonic well-being three months later, the reverse effect from eudaimonic well-being to dispositional envy can also be true. Without a full cross-lagged panel design, Study 1b failed to examine this alternative possibility. Similarly, in Study 2, it is possible to have a reverse mediation effect from eudaimonic well-being to dispositional envy through self-esteem and relationship harmony. Nonetheless, given the cross-sectional design in Study 2, the reverse mediation model was analytically undifferentiated from proposed mediation model (MacCallum et al., 1993). Future research should utilize a full cross-lagged panel design with at least three time points to examine a temporal mediation model between dispositional envy and eudaimonic well-being (Maxwell et al., 2011).

Other than the possibility of reverse effect, there is another possibility that hinders the causal interpretation between dispositional envy and eudaimonic well-being. The cross-sectional and longitudinal designs in this research cannot rule out the possibility that there is a third factor influencing both dispositional envy and eudaimonic well-being. For instance, belief in a just world may serve as a third factor behind the association between dispositional envy and eudaimonic well-being. Belief in a just world refers to a basic premise that people get what they deserve and deserve what they get (Lipkusa et al., 1996). Since perceived deservingness plays an important role in dispositional envy (Lange & Crusius, 2015), it is conceptually possible that people high in belief in a just world may have a strong endorsement of dispositional benign envy and a low endorsement of dispositional malicious envy. Moreover, Sutton, Stoeber and Kamble (2017) found that belief in a just world was associated with eudaimonic well-being. Taken together, it is methodologically possible that the association found between dispositional envy and eudaimonic well-being might be confounded by a third factor (e.g., belief in a just world). Future research should adopt a design-based approach (e.g., an experimental design) to rule out the confounding effects of

third factors behind the association between dispositional envy and eudaimonic well-being.²

8.5 Limitations and Future Directions

This research has some limitations. First, the present findings highlight the discrepancy of eudaimonic and hedonic well-being through an ancillary comparison with previous research. This comparison includes only limited eudaimonic and hedonic well-being indicators (e.g., life satisfaction, happiness, and flourishing). To provide a more robust comparison, future studies should include a more comprehensive set of indicators for both forms of well-being, such as the Basic Needs Satisfaction Scale (Ryan & Deci, 2001) or the Psychological Well-being Scale (Ryff & Keyes, 1995) for eudaimonic well-being, and the Personal Wellbeing Index (International Wellbeing Group, 2006) or the Positive and Negative Affectivity Scale (Watson et al., 1988) for hedonic well-being.

Second, although the reliability of the measurements is generally acceptable in the present research (average reliability = .76), the measurement of the personality trait of conscientiousness has a relatively low reliability (i.e., $\alpha = .45$ and $.56$ in Studies 1b and 2 respectively). Previous studies also revealed a similar pattern that this 4-item measurement of conscientiousness had a lowest reliability ($\alpha = .41$) among the five personality traits (Shou et al., 2017; see also Zhang et al., 2019). In the present research, the association of conscientiousness and eudaimonic well-being might be attenuated because of its low reliability. It is possible that this attenuated association might in turn amplify the association between dispositional envy and eudaimonic well-being because conscientiousness has been included as a covariate in analysis. Future studies should adopt a more reliable measurement of conscientiousness to rule out this possibility.

² A model-based approach was used to explore the possibility of having a third factor. Specifically, we tested an alternative model—a second-order factor analytic model with dispositional malicious envy, dispositional benign envy, and flourishing loaded on a common factor (see Figure A1 in Appendix). This alternative model did not converge across all three studies, revealing a sign of model misspecification (Boomsma & Hoogland, 2001) and providing support to the originally proposed model.

Third, the present research only sampled participants in Hong Kong China, which is generally considered as a collectivistic culture (Chen et al., 2017). Kwan and colleagues (1997) found that the social relationships in collectivists were more strongly associated with life satisfaction than the social relationships in individualists. As such, the present findings on the importance of relationship harmony and self-esteem may not fully apply to the context of individualistic cultures. For instance, although the present research found that the mediators of relationship harmony and self-esteem were equally strong for dispositional malicious envy, it is possible that in individualistic cultures, relationship harmony might be a weaker mediator than self-esteem. Besides, the differential importance found between the mediators of self-esteem and relationship harmony for dispositional benign envy might be further magnified in individualistic cultures since the importance of social relationships might be less emphasized among individualists. Future studies should be conducted among both collectivists and individualists to examine these possibilities.

Finally, although we investigated the association between dispositional envy and eudaimonic well-being and its mediating mechanisms, factors that can attenuate or exacerbate the association were not directly identified in this research. Future studies should be conducted to examine the boundary conditions of this association. In this research, both intrapersonal and interpersonal factors had been found to mediate the association between dispositional envy and eudaimonic well-being, highlighting how oneself and others are perceived may regulate this association. In this regard, cultivating a state of equanimity that brings acceptance of self and others (Hadash et al., 2016) may be able to buffer the negative association between dispositional envy and eudaimonic well-being. Equanimity is defined as *“the suspension of judging experience to be intrinsically good or bad”* (Farb et al. 2012). This non-judgemental acceptance of experience helps one to perceive all experience with even-mindedness, thereby granting ability to respond with compassion for oneself and others (see

Weber, 2017). Therefore, it is possible that cultivating a state of equanimity may attenuate the negative association between dispositional envy and eudaimonic well-being by enhancing self-compassion and compassion for others. Supporting this conjecture, research on compassion had identified the protective and reparative functions of self-compassion (Leary et al., 2007; Neff, 2009). People high in self-compassion were more likely to respond with positive reactions during emotionally difficult times (Ferguson et al., 2015). Future studies should examine the role of equanimity in dispositional envy, such as whether dispositional envious individuals may face more barriers to equanimity (Weber & Lowe, 2018) because they generally have lower acceptance of self and others, and whether there are some social situations in which fewer barriers to equanimity are perceived, assisting in attenuating the negative association between dispositional envy and eudaimonic well-being.

To conclude, this research investigated an unexplored association between dispositional envy and eudaimonic well-being, and its intrapersonal and interpersonal mediating mechanisms. Across the three studies in this article, we examined this association utilizing cross-sectional and longitudinal designs among young adults and adolescents. Through a series of model comparisons, we shed light on the differential and invariant associations of dispositional envy in different settings.

References

- Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 9, 78–102.
- Behler, A. M. C., Wall, C. S., Bos, A., & Green, J. D. (2020). To help or to harm? Assessing the impact of envy on prosocial and antisocial behaviors. *Personality and Social Psychology Bulletin*, 1–13.
- Bègue, L., & Bastounis, M. (2003). Two spheres of belief in justice: Extensive support for the bidimensional model of belief in a just world. *Journal of Personality*, 71, 435–463.
- Boomsma, A. & Hoogland, J. J. (2001). The robustness of LISREL modeling revisited. In R. Cudeck, S. Du Toit & D. Sorbom (Eds.), *Structural equation modeling: Present and future*. (pp. 139-168). Lincolnwood, IL: Scientific Software Inc.
- Briki, W. (2018). Harmed trait self-control: Why do people with a higher dispositional malicious envy experience lower subjective well-being? A cross-sectional study. *Journal of Happiness Studies*, 20, 523–540.
- Brooks, A. W., Huang, K., Abi-Esber, N., Buell, R. W., Huang, L., & Hall, B. (2019). Mitigating malicious envy: Why successful individuals should reveal their failures. *Journal of Experimental Psychology: General*, 148, 667–687.
- Brown, J. D., Dutton, K. A., & Cook, K. E. (2001). From the top down: Self-esteem and self-evaluation. *Cognition and Emotion*, 15, 615–631.
- Burleson, K., Leach, C. W., & Harrington, D. M. (2005). Upward social comparison and self-concept: Inspiration and inferiority among art students in an advanced programme. *British Journal of Social Psychology*, 44, 109–123.
- Campbell, J. D. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology*, 59, 538–549.

- Chan, W. (2007). Comparing indirect effects in SEM: A sequential model fitting method using covariance-equivalent specifications. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*, 326–346.
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*, 464–504.
- Chen, S. X., Chan, W., Bond, M. H., & Stewart, S. M. (2006). The effects of self-efficacy and relationship harmony on depression across cultures: Applying level-oriented and structure-oriented analyses. *Journal of Cross-Cultural Psychology*, *37*, 643–658.
- Chen, S. X., Ng, J. C. K., Buchtel, E. E., Guan, Y., Deng, H., & Bond, M. H. (2017). The added value of world views over self-views: Predicting modest behaviour in Eastern and Western cultures. *British Journal of Social Psychology*, *56*, 723–749.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Hillsdale, N.J: L. Erlbaum Associates.
- Cohen-Charash, Y. (2009). Episodic envy. *Journal of Applied Social Psychology*, *39*, 2128–2173.
- Collins, R. (1996). For better or worse: The impact of upward social comparison on self-evaluations. *Psychological Bulletin*, *119*, 51–69.
- Crusius, J., & Lange, J. (2014). What catches the envious eye? Attentional biases within malicious and benign envy. *Journal of Experimental Social Psychology*, *55*, 1–11.
- Delle Fave, A., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. P. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research*, *100*, 185–207.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*, 542–575.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276–302.

- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D.-W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research, 97*, 143–156.
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment, 18*, 192–203.
- Elkind, D. (1967). Egocentrism in adolescence. *Child Development, 38*, 1025–1034.
- Farb, N. A. S., Anderson, A. K., & Segal, Z. V. (2012). The mindful brain and emotion regulation in mood disorders. *The Canadian Journal of Psychiatry, 57*, 70–77.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175–191.
- Ferguson, L. J., Kowalski, K. C., Mack, D. E., & Sabiston, C. M. (2015). Self-compassion and eudaimonic well-being during emotionally difficult times in sport. *Journal of Happiness Studies, 16*, 1263–1280.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117–140.
- Hadash, Y., Segev, N., Tanay, G., Goldstein, P., & Bernstein, A. (2016). The decoupling model of equanimity: Theory, measurement, and test in a mindfulness intervention. *Mindfulness, 7*, 1214–1226.
- Hafer, C. L. (2000). Do innocent victims threaten the belief in a just world? Evidence from a modified Stroop task. *Journal of Personality and Social Psychology, 79*, 165–173.
- Henderson, L. W., & Knight, T. (2012). Integrating the hedonic and eudaimonic perspectives to more comprehensively understand wellbeing and pathways to wellbeing. *International Journal of Wellbeing, 2*, 196–221.
- Huppert, F. A. (2009). Psychological well-being: Evidence regarding its causes and

- consequences. *Applied Psychology: Health and Well-being*, *1*, 137–164.
- Huta, V., & Ryan, R. M. (2010). Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies*, *11*, 735–762.
- International Wellbeing Group. (2006). *Personal Wellbeing Index* (4th Edn.). Melbourne, Australian Centre on Quality of Life, School of Psychology, Deakin University, ISBN 1 74156 048 9. Retrieved June 9, 2011, from <http://www.deakin.edu.au/research/acqol/instruments/wellbeing-index/pwi-a-english.pdf>.
- Kenny, D. A., & McCoach, D. B. (2003). Effect of the number of variables on measures of fit in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *10*, 333–351.
- Keyes, C. L. M. (2002). The Mental Health Continuum: From languishing to flourishing in life. *Journal of Health and Social Research*, *43*, 207–222.
- Keyes, C. L., Kendler, K. S., Myers, J. M., & Martin, C. C. (2015). The genetic overlap and distinctiveness of flourishing and the Big Five personality traits. *Journal of Happiness Studies*, *16*, 655–668.
- Krizan, Z., & Johar, O. (2012). Envy divides the two faces of narcissism. *Journal of Personality*, *80*, 1415–1451.
- Kwan, V. S., Bond, M. H., & Singelis, T. M. (1997). Pancultural explanations for life satisfaction: Adding relationship harmony to self-esteem. *Journal of Personality and Social Psychology*, *73*, 1038–1051.
- Lange, J., Blatz, L., & Crusius, J. (2018a). Dispositional envy: A conceptual review. *SAGE Handbook of personality and individual differences*. Thousand Oaks, CA: SAGE.
- Lange, J., Weidman, A. C., & Crusius, J. (2018b). The painful duality of envy: Evidence for

- an integrative theory and a meta-analysis on the relation of envy and schadenfreude. *Journal of Personality and Social Psychology*, *114*, 572–598.
- Lange, J., & Crusius, J. (2015). Dispositional envy revisited: Unraveling the motivational dynamics of benign and malicious envy. *Personality and Social Psychology Bulletin*, *41*, 284–294.
- Lange, J., Crusius, J., & Hagemeyer, B. (2016). The evil queen's dilemma: Linking narcissistic admiration and rivalry to benign and malicious envy. *European Journal of Personality*, *30*, 168–188.
- Leary, M. R., Tate, E. B., Adams, C. E., Batts Allen, A., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology*, *92*, 887–904.
- Lin, P. (2016). Risky behaviors: Integrating adolescent egocentrism with the theory of planned behavior. *Review of General Psychology*, *20*, 392–398.
- Lipkusa, I. M., Dalbert, C., & Siegler, I. C. (1996). The importance of distinguishing the belief in a just world for self versus for others: Implications for psychological well-being. *Personality and Social Psychology Bulletin*, *22*, 666–677.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question and weighing the merits. *Structural Equation Modeling: A Multidisciplinary Journal*, *9*, 151–173.
- Lucas, R. E., & Diener, E. (2009). Personality and subjective well-being. In E. Diener (Ed.), *The science of well-being* (pp. 75-102). New York, NY, US: Springer.
- MacCallum, R. C., Wegener, D. T., Uchino, B. N., & Fabrigar, L. R. (1993). The problem of equivalent models in applications of covariance structure analysis. *Psychological Bulletin*, *114*, 185–199.
- Marroquín, B. (2011). Interpersonal emotion regulation as a mechanism of social support in

- depression. *Clinical Psychology Review*, *31*, 1276–1290.
- Masselink, M., Van Roekel, E., & Oldehinkel, A. J. (2018). Self-esteem in early adolescence as predictor of depressive symptoms in late adolescence and early adulthood: The mediating role of motivational and social factors. *Journal of Youth and Adolescence*, *47*, 932–946.
- Maxwell, S. E., Cole, D. A., & Mitchell, M. A. (2011). Bias in cross-sectional analyses of longitudinal mediation: Partial and complete mediation under an autoregressive model. *Multivariate Behavioral Research*, *46*, 816–841.
- Neff, K. D. (2009). Self-compassion. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 561–573). New York: Guilford Press.
- Ng, J. C. K., Cheung, V. W. T., & Lau, V. C. Y. (2019). Unpacking the differential effects of dispositional envy on happiness among adolescents and young adults: The mediated moderation role of self-esteem. *Personality and Individual Differences*, *149*, 244–249.
- Ng, J. C. K., Lau, V. C. Y., & Chen, S. X. (2020). Why are dispositional envious not satisfied with their lives? An investigation of intrapersonal and interpersonal pathways among adolescents and young adults. *Journal of Happiness Studies*, 1–21.
- Olkin, I., & Finn, J. D. (1995). Correlations redux. *Psychological Bulletin*, *118*, 155–164.
- Park, C. L. (2010). Making sense of the meaning literature: an integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*, *136*, 257–301.
- Parks, C. D., Rumble, A. C., & Posey, D. C. (2002). The effects of envy on reciprocation in a social dilemma. *Personality and Social Psychology Bulletin*, *28*, 509–520.
- Rentzsch, K., & Gross, J. J. (2015). Who turns green with envy? Conceptual and empirical perspectives on dispositional envy. *European Journal of Personality*, *29*, 530–547.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton

University Press.

- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141–166.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*, 1069–1081.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727.
- Schmutte, P. S., & Ryff, C. D. (1997). Personality and well-being: Reexamining methods and meanings. *Journal of Personality and Social Psychology, 73*, 549–559.
- Schnitker, S. A., & Richardson, K. L. (2018). Framing gratitude journaling as prayer amplifies its hedonic and eudaimonic well-being, but not health, benefits. *The Journal of Positive Psychology, 14*, 427–439.
- Schotanus-Dijkstra, M., Pieterse, M. E., Drossaert, C. H., Westerhof, G. J., De Graaf, R., Ten Have, M., ... & Bohlmeijer, E. T. (2016). What factors are associated with flourishing? Results from a large representative national sample. *Journal of Happiness Studies, 17*, 1351–1370.
- Seligman, M. E., Rashid, T., & Parks, A. C. (2006). Positive psychotherapy. *American Psychologist, 61*, 774–788.
- Sheldon, K. M., Corcoran, M., & Prentice, M. (2019). Pursuing eudaimonic functioning versus pursuing hedonic well-being: The first goal succeeds in its aim, whereas the second does not. *Journal of Happiness Studies, 20*, 919–933.
- Shou, Y., Sellbom, M., & Han, J. (2017). Evaluating the construct validity of the levenson self-report psychopathy scale in China. *Assessment, 24*, 1008–1023.
- Smith, R. H., Parrott, W. G., Diener, E., Hoyle, R. H., & Kim, S. H. (1999). Dispositional

- envy. *Personality and Social Psychology Bulletin*, 25, 1007–1020.
- Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin*, 134, 138–161.
- Steger, M. F., Kashdan, T. B., & Oishi, S. (2008). Being good by doing good: Daily eudaimonic activity and well-being. *Journal of Research in Personality*, 42, 22–42.
- Suldo, S. M., Minch, D. R., & Hearon, B. V. (2014). Adolescent life satisfaction and personality characteristics: Investigating relationships using a five-factor model. *Journal of Happiness Studies*, 16, 965–983.
- Sutton, R. M., Stoeber, J., & Kamble, S. V. (2017). Belief in a just world for oneself versus others, social goals, and subjective well-being. *Personality and Individual Differences*, 113, 115–119.
- Van de Ven, N., Zeelenberg, M., & Pieters, R. (2009). Leveling up and down: the experiences of benign and malicious envy. *Emotion*, 9, 419–429.
- Van de Ven, N., Zeelenberg, M., & Pieters, R. (2012). Appraisal patterns of envy and related emotions. *Motivation and Emotion*, 36, 195–204.
- Vrabel, J. K., Zeigler-Hill, V., & Southard, A. C. (2018). Self-esteem and envy: Is state self-esteem instability associated with the benign and malicious forms of envy? *Personality and Individual Differences*, 123, 100–104.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678–691.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063–1070.
- Weber, J. (2017). Mindfulness is not enough: Why equanimity holds the key to compassion.

Mindfulness and Compassion, 2, 149–158.

Weber, J., & Lowe, M. (2018). Development and validation of the Equanimity Barriers Scale [EBS]. *Current Psychology*, 1–15.

Xiang, Y., Chao, X., & Ye, Y. (2018). Effect of gratitude on benign and malicious envy: The mediating role of social support. *Frontiers in Psychiatry*, 9, 139.

Yu, Z., Hao, J., & Shi, B. (2018). Dispositional envy inhibits prosocial behavior in adolescents with high self-esteem. *Personality and Individual Differences*, 122, 127–133.

Zhang, X., Wang, M. C., He, L., Jie, L., & Deng, J. (2019). The development and psychometric evaluation of the Chinese Big Five Personality Inventory-15. *PloS one*, 14, e0221621.

Zhang, Z., & Yuan, K.-H. (2018). *Practical Statistical Power Analysis Using Webpower and R* (Eds). Granger, IN: ISDSA Press.

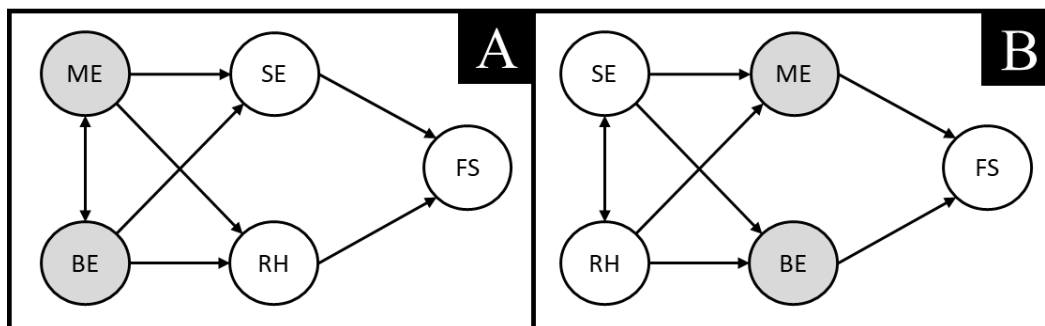


Figure 1. The conceptual diagram of the first (A) and second (B) models. ME = dispositional malicious envy; BE = dispositional benign envy; SE = self-esteem; RH = relationship harmony; FS = flourishing.

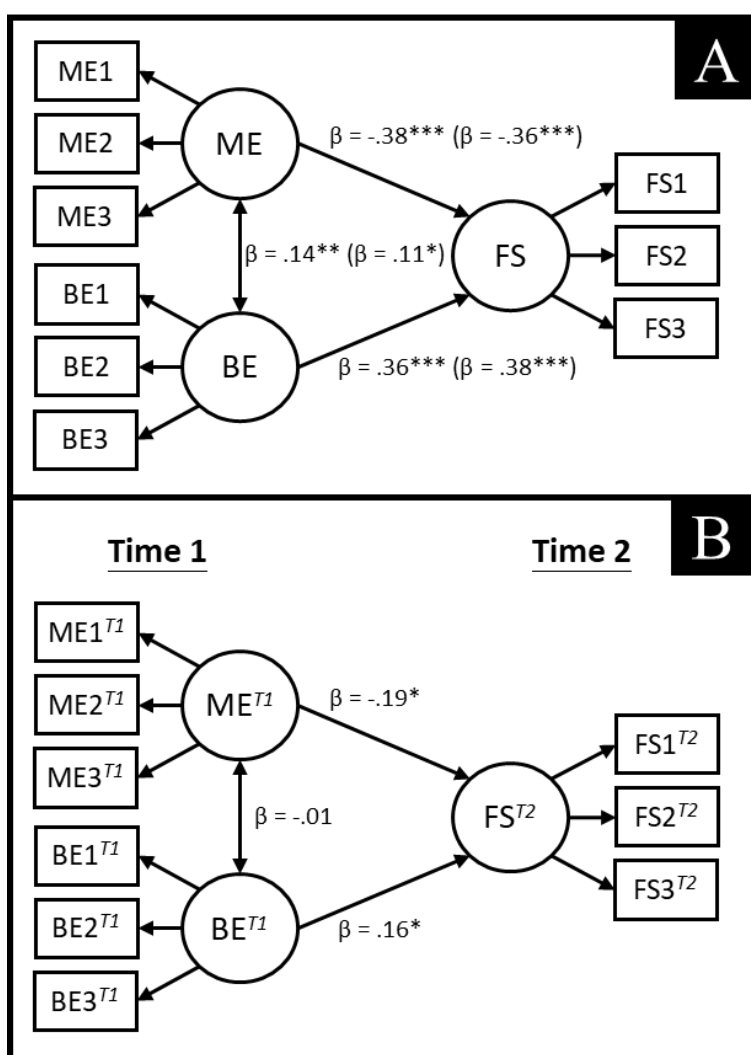


Figure 2. The structural equation model examining the associations between dispositional malicious and benign envy and flourishing. ME = dispositional malicious envy; BE = dispositional benign envy; FS = flourishing. All the coefficients are standardized. In Figure A, the estimates outside parentheses are from young adults (Study 1a) while the estimates inside parentheses are from adolescents (Study 2). In Figure B (Study 1b), the model was estimated with the control of the autoregressive effect from flourishing at Time 1, while Big Five personality traits were not controlled in this model. * $p < .05$, ** $p < .01$, *** $p < .001$.

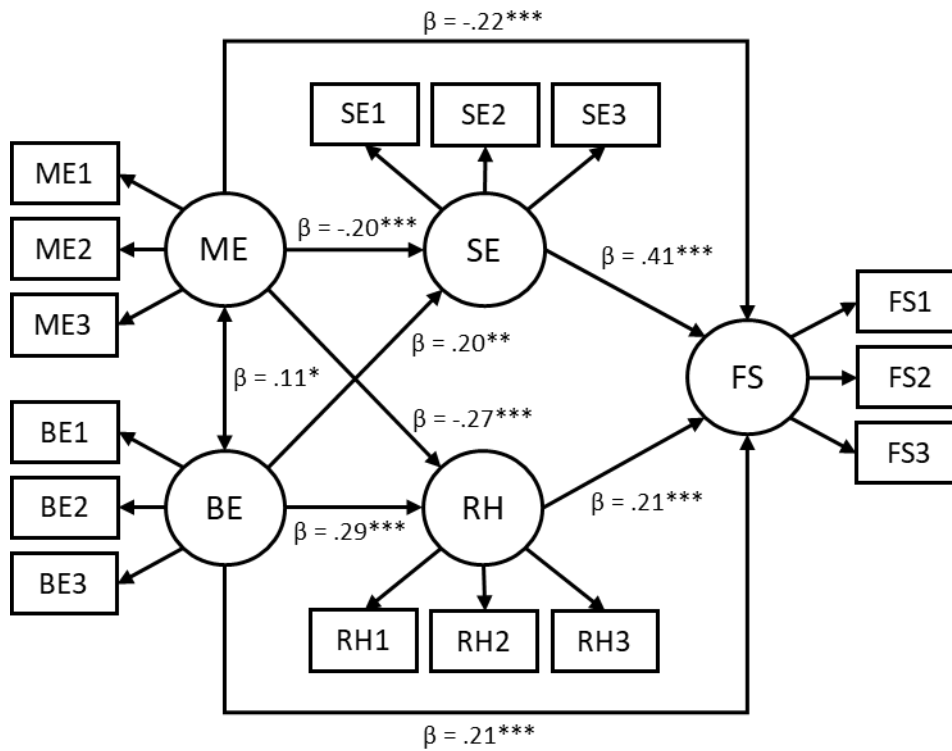


Figure 3. The latent mediation model examining the intrapersonal (self-esteem) and interpersonal (relationship harmony) pathways underlying the associations between dispositional malicious and benign envy and flourishing. ME = dispositional malicious envy; BE = dispositional benign envy; SE = self-esteem; RH = relationship harmony; FS = flourishing. All the coefficients are standardized. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 1.

Descriptive Statistics and Bivariate Correlations in Study 1a

	Mean (SD)	1	2	3
1. Dispositional Malicious Envy	2.49 (0.80)	-	.09*	-.30***
2. Dispositional Benign Envy	3.66 (0.62)	-	-	.30***
3. Flourishing	5.02 (0.99)	-	-	-

* $p < .05$, *** $p < .001$.

Table 2.

Descriptive Statistics and Bivariate Correlations in Study 1b

	Mean (SD)	1	2	3	4
1. T1 Dispositional Malicious Envy	2.20 (0.82)	-	-.01	-.30***	-.34***
2. T1 Dispositional Benign Envy	3.59 (0.59)	-	-	.20**	.20**
3. T1 Flourishing	5.08 (0.78)	-	-	-	.64***
4. T2 Flourishing	5.13 (0.94)	-	-	-	-

** $p < .01$, *** $p < .001$.

Table 3.

Descriptive Statistics and Bivariate Correlations in Study 2

	Mean (SD)	1	2	3	4	5
1. Dispositional Malicious Envy	2.45 (0.80)	-	.10*	-.15***	-.17***	-.27***
2. Dispositional Benign Envy	3.50 (0.67)	-	-	.22***	.11**	.29***
3. Self-Esteem	2.61 (0.45)	-	-	-	.23***	.49***
4. Relationship Harmony	4.17 (0.52)	-	-	-	-	.30***
5. Flourishing	4.79 (1.00)	-	-	-	-	-

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

Table 4.

Indirect effects in the first and second models

Model	Path	β	95% BCCI
First	ME→SE→FS	-.08***	[-.13, -.04]
	ME→RH→FS	-.06**	[-.10, -.02]
	BE→SE→FS	.12***	[.07, .17]
	BE→RH→FS	.04**	[.01, .07]
Second	SE→ME→FS	.02	[-.04, .05]
	RH→ME→FS	.05**	[.01, .08]
	SE→BE→FS	.05***	[.02, .08]
	RH→BE→FS	.02	[-.01, .05]

ME = dispositional malicious envy; BE = dispositional benign envy; SE = self-esteem; RH = relationship harmony; FS = flourishing. BCCI = Bias-corrected bootstrap confidence interval. All the coefficients are standardized. * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendix

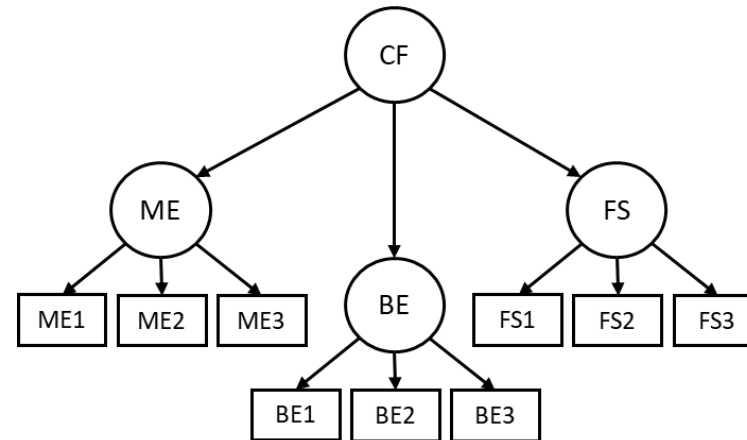


Figure A1. The second-order factor analytic model as an alternative model. CF = the second-order latent factor as the common factor; ME = dispositional malicious envy; BE = dispositional benign envy; FS = flourishing. It is noteworthy that the specification of this model is analytically equivalent to the originally proposed model of regressing flourishing on dispositional malicious envy and dispositional benign envy. Hence, the test of this alternative model reflects a model reparameterization process (Chan, 2007). Since the two models are analytically undifferentiated, omnibus measures of model fit (e.g., CFI, RMSEA, and SRMR) will not be able to differentiate which model has a better fit to the data. Nonetheless, the second-order factor loadings may still provide us some insights on whether dispositional malicious envy, dispositional benign envy, and flourishing can be explained by a common latent factor.

Table A1.

Descriptive Statistics and Bivariate Correlations in Study 1a

	Mean (SD)	α	1	2	3
1. Dispositional Malicious Envy	2.49 (0.80)	.88	-	.09*	-.30***
2. Dispositional Benign Envy	3.66 (0.62)	.82	-	-	.30***
3. Flourishing	5.02 (0.99)	.91	-	-	-

* $p < .05$, *** $p < .001$.

Table A2.

Descriptive Statistics and Bivariate Correlations in Study 1b

	<i>Mean (SD)</i>	α	1	2	3	4	5	6	7	8	9
1. T1 Dispositional Malicious Envy	2.20 (0.82)	.93	-	-.01	-.30***	-.34***	-.01	-.17*	-.23**	-.17*	.23**
2. T1 Dispositional Benign Envy	3.59 (0.59)	.82	-	-	.20**	.20**	.04	.06	.20**	.20**	.22**
3. T1 Flourishing	5.08 (0.78)	.89	-	-	-	.64***	.37***	.18*	.43***	.09	-.19**
4. T2 Flourishing	5.13 (0.94)	.88	-	-	-	-	.29***	.11	.30***	.10	-.15*
5. Extraversion	2.96 (0.61)	.71	-	-	-	-	-	.19**	.40***	-.05	.03
6. Openness to experience	3.23 (0.61)	.70	-	-	-	-	-	-	.34***	.09	-.12
7. Agreeableness	3.66 (0.46)	.61	-	-	-	-	-	-	-	.03	-.05
8. Conscientiousness	3.43 (0.51)	.45	-	-	-	-	-	-	-	-	-.12
9. Neuroticism	3.29 (0.66)	.71	-	-	-	-	-	-	-	-	-

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

Table A3.

Descriptive Statistics and Bivariate Correlations in Study 2

	<i>Mean (SD)</i>	α	1	2	3	4	5	6	7	8	9	10
1. Dispositional Malicious Envy	2.45 (0.80)	.83	-	.10*	-.15***	-.17***	-.27***	-.07	-.10*	-.29***	-.13**	.12**
2. Dispositional Benign Envy	3.50 (0.67)	.81	-	-	.22***	.11**	.29***	.16***	.03	.10*	.20***	-.02
3. Self-Esteem	2.61 (0.45)	.84	-	-	-	.23***	.49***	.29***	.16***	.14***	.37***	-.46***
4. Relationship Harmony	4.17 (0.52)	.64	-	-	-	-	.30***	.14***	.07	.18***	.18***	-.15***
5. Flourishing	4.79 (1.00)	.90	-	-	-	-	-	.29***	.14***	.35***	.33***	-.26***
6. Extraversion	3.00 (0.72)	.69	-	-	-	-	-	-	.20***	.28***	.00	-.16***
7. Openness to experience	3.26 (0.74)	.72	-	-	-	-	-	-	-	.18***	-.02	-.02
8. Agreeableness	3.68 (0.59)	.63	-	-	-	-	-	-	-	-	.21***	.05
9. Conscientiousness	3.26 (0.65)	.56	-	-	-	-	-	-	-	-	-	-.22***
10. Neuroticism	3.18 (0.77)	.73	-	-	-	-	-	-	-	-	-	-

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

Table A4.

Results of Confirmatory Factor Analysis for the Unidimensionality Assumption

	χ^2 (df)	p-value	CFI	RMSEA	SRMR
Study 1a: <i>Factor analytic model of three unidimensional factors (Dispositional Malicious Envy, Dispositional Benign Envy, Flourishing)</i>	491.00 (132)	< .001	.92	.07	.06
Study 1b: <i>Factor analytic model of three unidimensional factors (T1 Dispositional Malicious Envy, T1 Dispositional Benign Envy, T1 Flourishing)</i>	242.75 (132)	< .001	.92	.07	.07
Study 2: <i>Factor analytic model of five unidimensional factors (Dispositional Malicious Envy, Dispositional Benign Envy, Flourishing, Self-esteem, Relationship Harmony)</i>	1290.85 (485)	< .001	.88	.05	.06

Note 1: The CFI of the model in Study 2 was slightly below the conventional cutoff (CFI = 0.88) whereas the RMSEA and SRMR indicated a good fit to the data. Methodological research revealed that compared to RMSEA, the performance of CFI tends to worsen when the number of variables in the model is large (Kenny & McCoach, 2003). In Study 2, the number of items is relatively large ($p = 33$), providing an unfavorable data-analytic condition for CFI. Thus, it may explain why the CFI in Study 2 was slightly below the conventional cutoff while both RMSEA and SRMR indicated a good fit to the data.

Note 2: For dispositional malicious envy, three parcels were formed by 5 items (items 5 and 6 for P1; 2 and 8 for P2; 10 for P3; item numbers are aligned with Lange and Crusius (2015)). For dispositional benign envy, three parcels were formed by 5 items (items 7 and 9 for P1; 1 and 3 for P2; 4 for P3; item numbers are aligned with Lange and Crusius (2015)). For flourishing, three parcels were formed by 8 items (items 1, 7 and 8 for P1; 2, 5 and 6 for P2; 3 and 4 for P3; item numbers are aligned with Diener et al. (2010)). For self-esteem, three parcels were formed by 10 items (items 2, 6, 7 and 10 for P1; 4, 5 and 9 for P2; 1, 3 and 8 for P3; item numbers are aligned with Rosenberg (1965)). For relationship harmony, three parcels were formed by 5 items (items 3 and 4 for P1; 1 and 2 for P2; 5 for P3; item numbers are aligned with Kwan et al. (1997)).

Compliance with Ethical Standards

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest (both financial and non-financial) with respect to the research, authorship, and/or publication of this article.

Research involving Human Participants and/or Animals

The present research involved human participants. Informed consent was obtained in advance from all participants in this research in written form. In Study 2, informed consent was also obtained from the parents of adolescents in written form. The study procedure has been approved by the Human Subjects Ethics Sub-Committee of the Hong Kong Polytechnic University. The present research did not involve animals.