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Source / Izvornik: **Personality and Individual Differences, 2023, 215**

Journal article, Published version

Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

<https://doi.org/10.1016/j.paid.2023.112361>

Permanent link / Trajna poveznica: <https://um.nsk.hr/um:nbn:hr:186:075494>

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Download date / Datum preuzimanja: **2025-02-08**



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The venom and antidotes of dispositional envy:

Life History Strategy, emotion regulation, and envy links

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Declaration of interest: none

The study was approved by the Institutional Review Board at Faculty of Humanities and Social Sciences, University of Rijeka.

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Abstract

The objective of present research was to examine associations between Life History Strategy (LHS), emotion regulation and dispositional envy, as well as a mediating effect of emotion regulation on the hypothesized link between LHS and dispositional envy. These were examined in a sample of 312 adult participants by using general, malicious, and benign envy scales. Overall, slow LHS was positively related with cognitive reappraisal, and negatively with all measures that contained malicious aspects of envy. Reappraisal was positively related with benign envy and mediated a positive effect of slow LHS on benign as well as its negative effect on malicious envy. However, LHS did not demonstrate significant effect on expressive suppression and the measure of benign envy disposition. The hypothesized mediation effect of suppression on malicious disposition measures has not been confirmed. Findings were discussed within the LHS theoretical framework.

Key words: dispositional envy, emotion regulation, life history strategies

1. Introduction

1.1. The devious design of dispositional envy

Increased scientific interest in the last couple of decades revealed the peculiar design of one unpleasant emotion that persistently leaves its traces through the history of human interactions - envy. The first envy researchers defined envy as an intense craving for something that another person already has that is accompanied by wishing that others lose their advantage (Smith & Kim, 2007). Hence, the initial conceptualization considered envy

as a unitary construct inherently containing hostility towards the envied. Subsequently, researchers started exploring a possible dual nature of envy. Following their findings, malicious envy creates a goal to damage the envied, while affective and behavioural experiences of benign envy may also exist and create a motivation to move up the social ladder by self-improvement (Van de Ven et al., 2009). The sneaky design of envy seems to produce both venom and its antidotes (Yu & Duffy, 2016) for individuals more sensitive to social comparison. Whether seen as a unitary or a dual construct, and regardless of its destructive potential, envy is recognized as an emotion that signals a purposeful evolutionary goal: create or preserve a safe, socially attractive status, especially in comparison with one's relevant environment (Smith & Kim, 2007). Envy arises from low self-esteem and a chronic feeling of inadequacy (Krizan & Johar, 2012), but it remains puzzling why for some it may be enough to acquire success inspired by the superiority of an envied person, and some strive for an envied person's loss of status and advantage. Existing studies hinted at several important personality-based factors, that may be related to whether a person's envy becomes a stronger or weaker "coordinator" of their behavioural choices. Current findings point towards a relationship of dispositional envy with a constellation of traits that facilitate higher reactivity to upward social comparison and a tendency towards social exploitation. In addition to its links with neuroticism (Smith et al., 1999) researchers found that the Dark Triad (DT) traits may significantly predict dispositional envy (Krizan & Johar, 2012). A recent study, that included measures of envy conceptualized both as a unitary and as a dual construct, examined whether the Big Five (BF) and the DT traits may be related to an envious disposition (author, blinded for review). The results suggested that the BF traits of neuroticism, lower conscientiousness, and openness, positively predict dispositional envy. However, the DT traits of narcissism and Machiavellianism significantly increased the amount of variance in all used envy measures beyond and above the BF.

1.2. The integrative framework of LHS

Research shows that personality traits found to be related with dispositional envy may also form a faster LHS (Jonason et al., 2017). This led us towards placing the exploration of dispositional envy within the framework of a higher-level psychological construct that contains corresponding personality variables, that of different LHS derived from the Life History Theory (LHT) (Figueredo et al., 2006). Also, development of personalities scoring higher on DT traits, that seem to be quite prominent in the orbit of dispositional envy, may be affected by environmental factors that also inform an individual's LHS, such as quality of relationships (Jonason et al., 2012). Early life experiences and variables related to the (in)stability of an environment may have a large effect on future resource allocation preferences. Safe and relatively stable environments call for slower LHS and preference for somatic efforts characterized by more stable relationships and cautious risk taking (Olderbak & Figueredo, 2010). By contrast, environments of deprivation paired with strained relationships, encourage faster life history strategizing, higher impulsivity and diminished sense of self-control (Jonason & Tost, 2010).

1.3 Emotion regulation

Considering what is known so far about the nature of envy, it is safe to conclude that this is an emotion that creates emotional distress and calls for regulation. Consequently, in search for empirical imprints of psychological mechanisms underlying a personal tendency to envy, we turned to mechanisms of emotion regulation. After all, all emotions are subject to regulation and researchers continuously pay attention to examining emotion regulation process models. Unlike emotion dysregulation, that signifies disproportional domination of one emotion or rigidity in emotional expression (Cole et al., 1994), emotion regulation signifies shaping which emotions one has, when one has them and how one experiences and expresses these emotions (Gross & John, 2003). Individual differences in the habitual use of

a particular regulation strategy are related to early childhood rearing, and attachment styles developed (Cassidy, 1994). Numerous studies focused on examining consequences of two emotion regulation strategies - expressive suppression (changing a response once an emotion has already arisen), and reappraisal (changing the meaning or importance of a situation) (Gross & John, 2003). Empirical findings indicate that reappraisal is a more functional regulation strategy. Downregulating an emotion through reappraisal decreases the intensity of emotional experience and proneness to experience unpleasant emotions, and is associated with higher self-esteem (Gross & John, 2003). By contrast, suppression does not inhibit emotion arousal, but merely hinders its expressive behavioural response. It is associated with lower self-esteem and increased emotional negativity (Gross & John, 2003). Suppression is associated with fewer daily positive events, particularly in individuals with elevated social anxiety (Kashdan et al., 2006). In general, people with a tendency to reappraise reported more satisfaction with their social status and a positive affect (e.g., Augustine & Hemenover, 2009). The opposite associations were found with the habitual use of suppression. It needs to be emphasized that effectiveness of these strategies depends on the emotion intensity, the strength of a regulatory goal versus other goals that activated an emotion, and atonement with a range of personal and contextual factors (Gross & John, 2003). Suppression, that has acquired a bad reputation, may not be always maladaptive. At least temporarily, it may save one from the devastating effect of recollecting an abusive episode that no appraisal process can turn into a less demanding emotional experience. However, in the long run, it may leave one vulnerable for developing psychopathological symptoms (Aldao et al., 2010). Thus, the adaptiveness of emotion regulation strategies needs to be judged by assessing the price and values they pose for our personal well-being and the well-being of the people we interact with in specific contexts.

2. Current research

Since it is universally condemned as an unacceptable, harming emotion, and is subjecting the envier to suffering based on a realization that someone else is better off in a domain of one's keen interest – it makes sense to consider the emotion of envy as a good candidate for prompting the one experiencing it to maintain a regulatory goal. Yet, envy is “guilty as charged” for causing dysfunctional behaviours. The following questions arise: to what extent does a regulatory goal compete with other motivations inflicted by envy, what regulation strategy is feasible in an interaction with envy, and how could available regulatory strategies further shape an envious response? In search for evidence on associations between emotion regulation and dispositional envy, one needs to note that, regardless of different operationalisations of the construct and lack of studies that focus on the link between envy and emotion regulation, noteworthy mechanisms that may play a role in enviers' regulatory preferences have been identified. Based on results of their study, Lange and Crusius (2015) posited that benign envy is characterized by the optimistic hope for success which leads towards a goal directed approach strategy, while fear of failure of the maliciously envious leads towards avoidant behaviour and maintenance of a hostile attitude towards the envied. Furthermore, emotional distress created by envy seems to enable the envier to better focus on information about their social targets, and to better retrieve that information from memory. However, this consumes cognitive resources to the point of not willing or being able to re-direct and focus on solving unrelated problems from other domains Hill's et al. (2011). Therefore, while envy calls for regulation, this regulatory goal may be hard to maintain considering that dispositional envy is determined by its unreserved and chronic focus on the emotion provoking sources.

Furthermore, emotion regulation development may be strongly impacted by environmental factors related to the LHS, e.g., influences of parents starting from infancy.

When infants more susceptible to emotional distress receive less sensitive parental responses, they are more likely to develop regulation problems while maturation supported by a comforting caregiver increases the infant's ability to manage distress (e.g., Crowell et al., 2015). Taken together, these studies vouch for integration of previous knowledge regarding emotion regulation and dispositional envy under the "umbrella" of LHT and variability in LHS. Therefore, the objective was to examine associations between LHS, emotion regulation and dispositional envy, as well as a possible mediating effect of emotion regulation on the hypothesized link between LHS and dispositional envy. Our hypotheses were supported by research that demonstrated compatible patterns of connectedness which both dispositional envy and LHS generated in relation to DT and other reported variables. Also, since all emotions may contain a regulatory goal, it was safe to assume that an emotion that brings higher levels of distress, will demonstrate a strong link with emotion regulation mechanisms. In addition to two measures that operationalize envy as a general/unitary construct with items that mostly measure malicious aspects of envy, a measure with sub-scales that differentiate benign and malicious envy was included. Two distinct emotion regulation strategies were considered: cognitive reappraisal and expressive suppression (Gross & John, 2003).

The following hypotheses were tested: slower LHS would positively predict both cognitive reappraisal and benign motivations of dispositional envy, and negatively predict expressive suppression and malicious envy motivations. Suppressive emotion regulation strategizing would predict malicious, while reappraisal would positively predict benign envy. Emotion regulation mechanisms would mediate the link between slower LHS and dispositional envy, in a way that reappraisal would be linked with increased experience of benign properties in envy, while suppression would be linked with the experience of its malicious properties.

3. Method

3.1. Participants and procedure

Participants were 312 Croatian respondents (208 identify as women, 104 as men) that completed a survey distributed online with the request to further distribute the Google Form survey link to their contacts. Participation was voluntary, respondents provided informed consent and were able to withdraw their participation at any time. Age range of respondents was from 18 to 75 ($M=45.20$, $SD=13.28$). The majority completed either secondary (52%) or university (34%) education, 71% of participants were in a relationship, and 51% considered their income as average.

3.2. Measures

Dispositional envy was measured by the following scales:

Dispositional Envy Scale (DES) (Smith et al., 1999) - an 8-item scale that measures a general tendency towards envy and consists of items measuring a sense of inferiority, frustration and ill will (e.g., *"It is so frustrating to see some people succeed so easily."*), on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Domain-Specific Envy Scale (DSES) (Rentsch & Gross, 2015) - a 15-item scale that measures variations across three domains; attraction (*"It eats me up inside when people come across to others better than I do."*), competence (*"It disturbs me when others have a greater fund of knowledge than I have."*) and wealth (*"It bothers me when others own things that I cannot have."*). Participants answered on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The factorial structure of the scale indicates a superordinate factor of general dispositional envy that was considered for the purpose of this study.

Benign and Malicious Envy Scale (BeMaS), (Lange & Crusius, 2015) - a 10-item scale that measures a dispositional form of benign (BeMaS_b) (“*If I notice that another person is better than me, I try to improve myself.*”) and malicious envy (BeMaS_m) (“*I wish that superior people lose their advantage.*”) on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*) with five items for each sub-scale.

Emotion regulation strategies were measured by the Emotion Regulation Questionnaire (ERQ) (Gross & John, 2003) - a 10-item instrument that measures typical use of cognitive reappraisal (ERQ_r) (“*I control my emotions by changing the way I think about the situation I’m in.*”) or expressive suppression (ERQ_s) (“*I control my emotions by not expressing them.*”). Respondents answered on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

LHS was measured by Mini-K (Figueredo et al., 2006) - a 20-item measure of LHS on the continuum of the fast/short-term (r scores) or slow/long-term (K scores). Respondents indicated how much they agree with statements on the scale from 1 (*not at all*) to 5 (*very much*) and the test is scored in a way that larger values (higher K scores) indicate a slower LHS. Items refer to: (a) *family social contact and support*; (b) *friends social contact and support*; (c) *altruism*; (d) *mother/ father relationship quality*; (e) *insight, planning, and control*; (f) *intentions toward infidelity*; and (g) *religiosity*.

4. Results

Descriptive statistics and correlations between all variables were computed first and are presented in Table 1.

Table 1. Descriptive statistics and correlations between all variables

Variables	1	2	3	4	5	6	7
1. LHS	-	.36**	-.13*	-.30**	-.27**	.03	-.26**
2. ERQ_r		-	.13*	-.18**	-.16**	.16**	-.22**
3. ERQ_s			-	.16**	.19**	.07	.12*
4. DES				-	.63**	.21**	.48**
5. DSES					-	.37**	.48**
6. BeMaS_b						-	.24**
7. BeMaS_m							-
Cronbach α	.78	.85	.72	.86	.92	.78	.63
Mean	103.78	29.44	14.27	11.92	29.92	14.81	8.49
Sd. deviation	14.75	7.78	5.19	5.19	15.03	5.74	3.31

* $p < 0.05$, ** $p < 0.01$

The correlational matrix demonstrated that all dispositional envy measures were significantly and positively correlated. Envious experiences measured by DES, DSES and BeMaS_m, scales that contain items pertaining to the malicious aspects of envy, were more related with each other than with envy measured by BeMaS_b. Slow LHS was significantly negatively correlated with DES, DSES and BeMaS_m. It showed no correlation with BeMaS_b, but significantly positively correlated with reappraisal and negatively with suppression. Reappraisal was significantly positively correlated with BeMaS_b and negatively with all other dispositional envy scales. Suppression was significantly positively correlated with all envy scales that measure it as inherently containing maliciousness.

Mediation analyses were then performed to investigate the effects of LHS on emotion regulation strategies, as well as the effects of LHS, reappraisal and suppression on four envy measures. It was examined whether the relationship between LHS and envy will be mediated by emotion regulation strategies. Four separate analyses were carried out for four measures of dispositional envy included in this study. The mediation model is presented graphically in Figure 1. PROCESS macro for R was used for analyses (Hayes, 2022). The results of these analyses are presented in Table 2.

Figure 1. A general model of the relationships between LHS, emotion regulation and envy

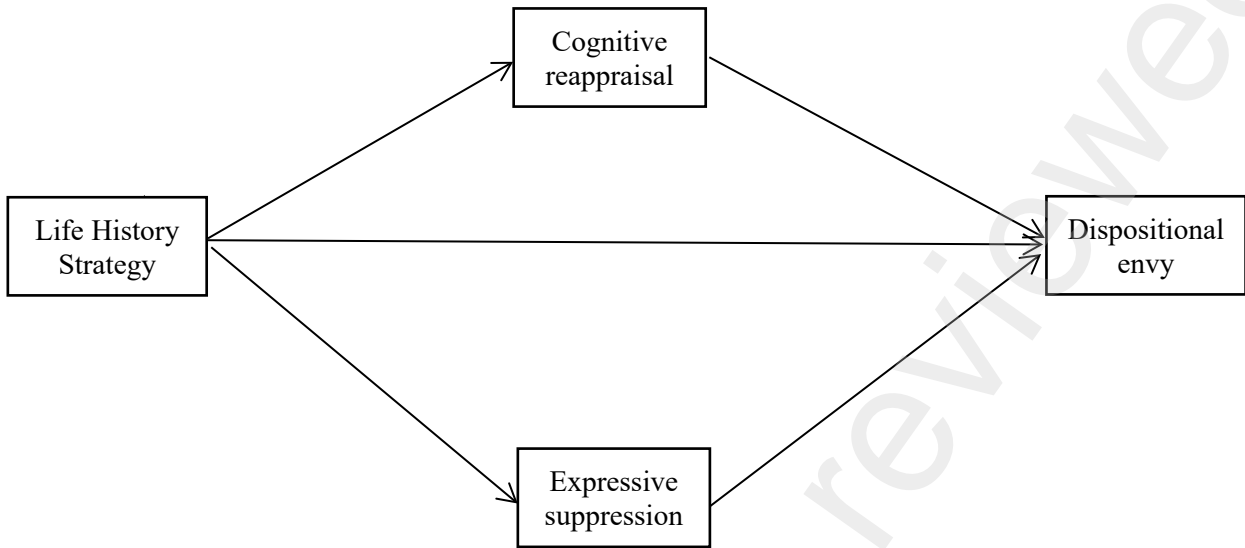


Table 2. Results of the mediation analyses

Effects	Dispositional envy measures			
	DES_sum	DSES_global	BeMaS_b	BeMaS_m
LHS → reappraisal		.19 [.13, .24]		
LHS → suppression		-.05 [-.09, -.00]		
LHS → envy	-.09 [-.13, -.05]	-.22 [-.34, -.09]	-.01 [-.06, .03]	-.04 [-.07, -.01]
reappraisal → envy	-.07 [-.15, .00]	-.21 [-.43, .02]	.12 [.02, .22]	-.07 [-.13, -.02]
suppression → envy	.14 [.05, .25]	.50 [.19, .82]	.05 [-.08, .18]	.07 [.01, .14]
LHS → reappraisal → envy	-.04 [-.09, .00]	-.04 [-.09, .00]	.06 [.01, .11]	-.06 [-.11, -.01]
LHS → suppression → envy	-.02 [-.04, -.00]	-.02 [-.05, -.00]	-.01 [-.03, .01]	-.01 [-.04, -.00]
R	.30***	.27***	.03	.26***

*** $p < 0.001$

Note: Unstandardised regression coefficients and their 95% confidence intervals are reported. Bootstrap confidence intervals were obtained on 10000 samples. Significant effects are bolded.

As hypothesized, slow LHS was positively linked with cognitive reappraisal and negatively with all measures of envy that contain malicious envy. Contrary to the prediction, LHS did not demonstrate significant relationship with expressive suppression and the measure of benign envy disposition. The hypothesis that cognitive reappraisal would be significantly positively linked with benign envy and negatively with malicious disposition was partly confirmed by our findings. Considering hypothesized mediation effects of emotion regulation strategies, the findings supported prediction that cognitive reappraisal would significantly mediate the positive link between slow LHS and benign envy measured by BeMaS_b and a negative link with malicious envy measured by BeMaS_m. However, the hypothesized mediation effect of suppression on malicious disposition measures has not been confirmed.

5. Discussion

This study focused on links between LHS, emotion regulation and dispositional envy and mediating effects of emotion regulation on the hypothesised relationship between LHS

and dispositional envy. It was hypothesised that slower LHS would positively predict both cognitive reappraisal and benign motivations of dispositional envy, and negatively predict expressive suppression and malicious envy motivations. Suppressing emotion regulation strategizing would positively predict malicious envy, while reappraisal would positively predict the benign feature of envy. Emotion regulation mechanisms would mediate the link between slower LHS and dispositional envy, in a way that reappraisal would be related to the increased experience of the benign properties in envy, while suppression would be related to the experience of its malicious properties. Considering that different dispositional envy measures were simultaneously used, the hypotheses were tested several times. The results provided partial support to the hypotheses, except for the expected direct effects of LHS on suppression and mediation effect of suppression on the link between LHS and dispositional envy.

Rephrasing the results, it may be affirmed that slow LH strategists tend to use reappraisal and are less likely to experience malicious envy. Cognitive reappraisal seems to be positively related with benign and negatively with malicious envy measured by BeMaS_m. Reappraisal significantly mediated positive effects of slow LHS on benign envy, and negative effects on malicious envy. LHS showed no direct effect on suppression, and suppression did not significantly mediate a relationship between LHS and envy. However, suppression was directly linked with the increased maliciousness of envy.

The tendency towards responding to social threats with envy seems to guide individuals to identify and not lose sight of the target of their envy to have an accurate model on how to deal with such threats. To encapsulate what the results suggested, it appears that “staying on target” may be possible in two distinct ways. In a realm of faster LHS, one would be more susceptible to instant solutions such as crushing the target and taking its place. That is in easy reach through unreserved hostility, lack of remorse, and not “wasting time” on

regulating the emotional experience. Strategizing slower and being open to longer-term goals is compatible with reappraisal that “buys time” to guide behavior towards a constructive search of options, such as how to get one’s desired social status without necessarily eliminating the target.

The results did not demonstrate direct effects of LHS on suppression and suppression did not mediate a relationship between LHS and envy. The reason may be in fast LHS trait clusters letting down the emotion regulation strategizing entirely. Also, although it likes to hide under other related emotions such as hostility or admiration (Smith & Kim, 2007), envy seems to vigorously resist being silenced, because it is sending an important message with social implications. Therefore, dysregulation may be a strategy by itself (Heilman et al., 2010). In other words, not regulating an emotion at all, may be a strategy to maintain the strength of emotional arousal and be able to discharge the impulsive potential of a personality trait cluster related to fast LHS.

However, according to the findings, the use of suppression may be positively and directly related to the experience of maliciousness in envy. This effect is easy to explain given the body of available emotion regulation research. Suppressing unpleasant emotions comes with a great risk of backfiring with amplified strength of unwanted emotions (Wegner, 1994). Therefore, envious thoughts are bound to return, the emotion regulatory goal is compromised, and the increased negative emotional experience may be expected.

Scrutinizing all the hypotheses in light of these findings, brought the focus towards weighting up to whether benign and malicious envy can be set apart in the framework of the hypothesised model. Researchers argue that a clear-cut picture of fast-slow strategizing cannot be painted. Sherman et al. (2013) cautioned that while slow LH strategists tend to appear considerate, hard-working, and reliable, they can also be socially awkward and overcontrolling, while fast LH strategists although hostile, manipulative and impulsive may

appear socially skilled. This is consistent with the evolutionary interpretation of LHS that adapts to systematically different environments. A similar explanation is plausible regarding benign and malicious experiences of envy. The combination of traits and mediating variables found to be predictive of what is considered as benign or malicious envy indicate somewhat different motivational dynamics, but at the same time there are indications of remarkable intersections. For example, although slow LH strategizing predominantly clusters so called “getting along” personality traits (Hogan & Blicke, 2018), and is directly positively linked with cognitive reappraisal, this does not preclude slow LH strategists to draw on possible narcissistic and Machiavellian tendencies that are linked to both slow and fast LHS (e.g., Davis et al, 2019). Moreover, emotion regulation researchers found that cognitive reappraisal, by reducing negative affect, may at times endorse motivation for riskier behaviors (Heilman et al., 2010). It is conceivable that this may lead to responding to the provoked envy with a blend of benign and malicious responses.

In summary, placing this study in the framework of LHS may have provided useful directions for further research on dispositional envy. Both LHS and dispositional envy relate to the important motives of human behaviour, safe positioning and expectancy of social advancement. In ancestral times, fast LHS ensured securing favourable statuses while competing for scarce resources. To respond to the harshness of such environments, archetypal malicious envy may have risen to maintain strong motivation to seize means that meant prolonged survival and secured reproduction. With the development of slower LH strategy as a response to the more stable human settlements, where cooperation and less impulsive choices ensured social support and prosperity, the decoding system to decipher signals of envy needed to be augmented to keep it functional. It seems that, depending on several important personal and situational variables, the decoding of envy may filter it into its

benign expression or leave it indigestible and impossible to handle without releasing its ancestral raw potential without delay.

However, considering what the empirical results demonstrated so far, dispositional envy assembles personality features that enable the emotion to oscillate between benign and malicious experiences. Thus, it cannot be concluded beyond doubt that benign envy may stand by itself as a distinct and relatively stable disposition, fully equipped with antidotes to stay purified from the venom of maliciousness.

There are limitations to this study that call for a follow-up research. The inherent weakness of self-reported questionnaire design and the tendency to underreport unpleasant emotions needs to be acknowledged. Replicating this study while using different methodology to assess envy and using another measure of LHS, would advance generalizability of findings. Cultural variabilities in habitual use of emotion regulation strategies and how this may link up to the relationship between LHS, emotion regulation and dispositional envy have not been examined at this time. Thus, it would be worthwhile exploring the model hypothesized in this research in the wider contexts of different social hierarchies and cultures. Finally, this study focused on path-specific effects of mediation analyses. Therefore, the reported direct and indirect effects cannot be interpreted as causal inferences.

In conclusion, whether experienced as a poison of inferiority or as its cure and whether reacted to with hostility against the target or lacking it, within this framework the adaptive logic of dispositional envy may gain clarity. By exploring other critical personality variables and mediators still not accounted for, our understanding of dispositional envy may lead to learning what changes are feasible in adaptive responding to this painful emotional experience.

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