

ABSTRACT

CHONG, REBECCA. *Envy Across the Adult Lifespan*. (Under the direction of Daniel Grühn, Ph.D.)

Envy typically arises when individuals find themselves making social comparisons and desiring the object or state not in their possessions (Parrott & Smith, 1993; Smith & Kim, 2007; van de Ven, Zeelenberg, & Pieters, 2009). Lack of ownership of the envied object or state often leads to feelings of inferiority (Smith, 2004). In order to further understand this emotion and associated age differences a proposed conceptual framework of envy led to hypotheses that (a) certain dispositional characteristics associate with increased frequency and intensity of envy occurrences, (b) the frequency and intensity in which one experiences envy decrease with age, and (c) by age group, level of intimacy between the envied and the envier influences how one experiences envy. Data were obtained from 186 participants through an online survey about experiences of envy occurring over the last month.

Dispositional envy and the frequency of envy events were associated with (a) lack of self-esteem, (b) neuroticism, and (c) depressive symptoms (Parrott & Smith, 1993; Smith, Parrott, Diener, Hoyle, & Kim, 1999; Smith, Parrott, Ozer, & Moniz, 1994). The intensity of envy experienced in specified events was related to low self-esteem and neuroticism but not high depressive symptoms. Additional analyses revealed that, in the reported envy events, more valued relationships instigated a more intense experience of envy, indicating that participants experienced stronger feelings of envy towards important rather than non-important persons. Regarding age differences in envy experiences, older adults, compared to young adults, reported less dispositional envy and less frequent experiences of envy within the last month. Participants' intensity of envy did not vary by age. Compared to young adults, older adults

did not report experiences of envy more often towards intimate than non-intimate persons.

Limitations and suggestions for future directions are discussed.

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Envy Across the Adult Lifespan

by
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THEORETICAL BACKGROUND

Defining envy

During one's life, almost everyone has experienced a form of envy (i.e., *the envier*) or has been the recipient of another's envy (i.e., *the envied*). One might be envious of another's possessions (e.g., clothes or cars) or another's life (e.g., successful careers or romances). These examples illustrate how envy typically arises in circumstances in which individuals observe or perceive good fortune occurring to others rather than themselves (Parrott & Smith, 1993; Smith & Kim, 2007). Envy typically surfaces when individuals experience feelings of similarity to the envied and convey interest towards the envy-eliciting scenario (Smith, 2004; van de Ven, Zeelenberg, & Pieters, 2009). The envier is not in possession of the envied object or state, and comparing oneself with the envied eventually leads to feelings of inferiority. Researchers of social comparison processes (Festinger, 1954; Stapel & Blanton, 2007) explain envy by suggesting that humans intuitively compare themselves to others as a form of self-evaluation, aiding in the development of self-identity (e.g., coveted items personally deemed important) and learning socially acceptable behaviors (e.g., understanding how to express envy in an appropriate manner).

Researchers typically define two types of envy: benign and malicious envy. *Benign envy* occurs when individuals notice something (e.g. an object, a life situation) being enjoyed, acknowledge its value, and find themselves desiring it (Foster, 1972; Rawls, 1971; Silver & Sabini, 1978; van de Ven et al., 2009; van de Ven, Zeelenberg, & Pieters, 2012). Benign envy usually drives individuals to improve their own state and motivates them to reach the desired outcome. When experiencing benign envy, individuals aim to pull

themselves closer to the envied, resulting in experiences of moving-up motivation.

Malicious envy, in contrast, is associated with frustration and the desire for the good fortune to be stripped from the envied (Smith & Kim, 2007; van de Ven et al., 2009; 2012). This aggravation forms due to feelings of injustice, resulting in hostility towards the envied and eventually leading to a manifestation of anger and ill will. Unlike benign envy, individuals experiencing malicious envy attempt to pull down the envied because the desired object or state is perceived as unobtainable, resulting in experiences of pulling-down motivation.

Deservedness and perceived control influence whether benign or malicious envy is elicited (Smith, 2004). Individuals are more prone to experience malicious envy over benign envy when they perceive the situation to be unfair and feel low control over the situation (van de Ven et al., 2009; 2012). Deservedness and perceived control of the envied object or state determine whether enviers feel moving-up or pulling-down motivation because the individual could observe the situation in either an optimistic or a pessimistic manner. If the envied did not deserve the envied object or state and obtained it unjustly, malicious envy would be more likely to arise than benign envy. Both forms of envy are prevalent in young adults, as participants reported experiences of benign envy as frequently as experiences of malicious envy (van de Ven et al., 2009). Perception of deservedness and control influenced the type of envy experienced, but the literature lacks evidence regarding individuals' behaviors in perceiving situations as either low or high in deservedness and control, highlighting the importance of assessing individual differences in experiences of envy.

Individual differences in envy

Dispositional characteristics. Some individuals are predisposed to experiencing envy by being emotionally vulnerable and doubting their own competence (Smith, Parrott, Diener, Hoyle, & Kim, 1999). The feelings of inferiority associated with envy are also a defining quality in neuroticism, self-esteem, and depressive symptoms. Individuals with low neuroticism report less dispositional envy (i.e., the tendency to envy others) than individuals with high neuroticism (Smith et al., 1999). Feelings of inferiority may also lead to depressive symptoms because the internal causal attribution of inferiority produces perceptions of low control and directs focus on the self rather than on the other (e.g., self-reflection). Reports of feeling inferior regarding the envied predicted depressive feelings (Smith, Parrott, Ozer, & Moniz, 1994). This is further supported in studies positively correlating dispositional envy and depressive symptoms (Smith et al., 1999). Dispositional envy is also negatively correlated with another dispositional characteristic – self-esteem (Smith et al., 1999). That is, those who are dispositionally envious tend to have low self-esteem. Because low self-esteem, like envy, has been highly correlated with feelings of inferiority (Parrott & Smith, 1993), individuals with low self-esteem may report more frequent experiences of envy compared to individuals with high self-esteem. The findings regarding these three dispositional characteristics (e.g., neuroticism, depressive symptoms, and low self-esteem) suggest that some individuals, compared to others, are more likely to experience envy.

In addition, these three aspects also serve as determinants of subjective emotional intensity in envy. On the one hand, neuroticism (Schimmack & Diener, 1997) and threats to

the self (Sonnemans & Frijda, 1995) can increase experiences of negative emotional intensity. High levels of neuroticism and low self-esteem theoretically exacerbate the intensity of envy events due to factors such as excessive fixation and insecurity. On the other hand, depressive symptoms typically decrease emotional intensity (Rottenberg, Joormann, Brozovich, & Gotlib, 2005) due to components such as indifference. Depressive symptoms typically result in a reduction in emotional intensity and emotional sensitivity (Price & Goodwin, 2009).

Control beliefs. Because perceived control has been associated with envy experiences (van de Ven et al., 2009), it is possible that individuals' locus of control might contribute to experiences of envy. Heckhausen and Schulz's (1995) lifespan *theory of control* describes control on three dimensions: *primary vs. secondary, functional vs. dysfunctional, and veridical vs. illusory*. For purposes of this paper, the focus will be solely placed on primary and secondary control. *Primary control* involves environmental manipulation in order to suit individuals' needs, whereas *secondary control* involves internal manipulation of cognitive or affective states in order to reduce the negative impact of events. Thus, when individuals control their external environments to best fit their needs and development, they engage in primary control. When individuals control internal features, they engage in secondary control. Primary control promotes ideal developmental potential better than secondary control (Heckhausen & Schulz, 1995). That is, primary control is considered to be more adaptive than secondary control because primary control aims at goal attainment (i.e., investing resources towards goals) rather than focusing on controlling the psychological impact. From these descriptors of primary and secondary control, it is possible

that poor primary control may be associated with many envy experiences, and high secondary control may be associated with few envy experiences. Compared to individuals who mainly rely on primary control strategies, persons with low utilization of primary control may be similar to envious with low perceived control (van de Ven et al., 2009) because of low perceived capability to manipulate external factors. Poor primary control relates with the mindset of “I am unable to obtain the envied object or state”, promoting incapability of acquiring the appropriate resources to obtain the envied object or state. In addition, because secondary control is associated with modifying the self, an individual utilizing secondary control strategies might have low expectations towards envied objects and states, thereby experiencing envy less frequently.

Age. Certain dispositional characteristics and control beliefs influence envy experiences; it is possible that these patterns may follow into late adulthood, leading to questions regarding age differences in the frequency and intensity of envy experiences. If age-related differences exist, what factors could possibly explain them? The current study investigated experiences of envy, as well as potential age differences therein.

As discussed earlier, personality correlates such as neuroticism, depressive symptoms, and self-esteem are associated with negative envy experiences. With age, though, the pattern of these dispositional characteristics change. For example, neuroticism decreases from young adulthood to midlife and remains relatively low in old age (Lucas & Donnellan, 2009; Roberts, Walton, & Viechtbauer, 2006; Terracciano, McCrae, Brant, & Costa, 2005), suggesting that older adults’ low ratings of neuroticism imply potentially low experiences of envy. Depressive symptoms slowly decline over the lifespan, with a slight increase in old

age (Fiske, Wetherell, & Gatz, 2009; Kessler, Foster, Webster, & House, 1992; Lewinsohn, Rohde, Seeley, & Fischer, 1991; Lucas & Donnellan, 2009), suggesting that older adults' decreased reports of depressive symptoms indicate a low likelihood of experiencing envy events. Self-esteem has a quadratic trajectory, with increases during young and middle adulthood, a peak around the 60s, and declines in old age (Orth, Trzesniewski, & Robins, 2010; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002), suggesting that envy is not as apparent from young adulthood to the mid 60s. Due to these complex patterns of dispositional characteristics in late adulthood, it is difficult to ascertain a developmental trajectory of envy from observing these personality correlates alone.

When applied to physical and cognitive decline in late adulthood, the lifespan theory of selection, optimization, and compensation (*SOC*; Baltes, 1997) states that, in order to adapt to society, older adults must first recognize their own limitations and select reasonable goals within their capabilities. This can be accomplished by restricting the amount and variety of activities in order to pursue preferred goals. Older adults then optimize the efficacy in those pre-existing functions. That is, they acquire (if possible), refine, and manage pre-existing skills in order to achieve their desired goals. Older adults must select and/or optimize their skills in order to compensate for age-associated losses. However, for skills that cannot be restored, older adults can use resources such as psychological cues, social or environmental adaptations, and technology to compensate for the losses. The gain-loss dynamic posits that losses outnumber gains in late adulthood (Baltes, 1987). That is, the balance of individuals' resources (e.g., cognitive, emotional, etc.) becomes disproportionate with age, pushing older adults to focus and reallocate their limited resources toward

preventing further loss rather than, for example, acquiring new skills. This shift in balance could potentially explain decreased frequency of emotions like envy because older adults may find themselves disengaging to unattainable, selecting not to engage with this emotion by instead focusing on areas that better utilize their limited resources.

Another relevant theory to emotional functioning in adulthood is socioemotional selectivity theory (*SST*; Carstensen, Isaacowitz, & Charles, 2003; Carstensen, Fung, & Charles, 1999), which proposes that older adults prefer *antecedent-focused* strategies (i.e., situation-selection, situation-modification, attentional deployment, and cognitive change) over *response-focused* strategies (i.e., response modulation). *SST* posits that this preference may occur due to awareness of mortality, thereby causing motivational shifts towards desired social goals (Carstensen et al., 2003; Carstensen et al., 1999; Charles & Carstensen, 2000). That is, when time is perceived as indefinite, individuals prioritize knowledge-based information. Typically, as individuals age and their perception of time is viewed as limited, emotion-related goals becomes prioritized. The connection between perceived death and chronological age leads to age-related differences in social goals, with increasing time constraints in later life heightening the desire for rewarding social relationships. Older adults may engage in a selective pruning process where they maintain emotionally meaningful relationships and discard trivial and meaningless ones in order to optimize positive affective experiences (Carstensen et al., 2003; Carstensen et al., 1999). It is possible that, because older adults prioritize their social relationships, they may attempt to avoid negative encounters; in particular, older adults may be more active than young adults in reducing negative envy due to the negative emotions associated with it (Carstensen, Pasupathi, Mayr,

& Nesselroade, 2000). Given these typical age differences, the research suggests that older adults should experience less dispositional and less frequent envy than their younger counterparts because of higher desire to decrease forms of negative social interactions. Furthermore, older adults are more adept at regulating their emotions in social situations (Birditt, Fingerman, & Almeida, 2005), report more efficient emotion regulation of negative affect (Phillips, Henry, Hosie, & Milne, 2008), and report better emotion regulation (Carstensen et al., 2000; Gross, Carstensen, Pasupathi, Tsai, Göttestam Skorpen, & Hsu, 1997) than their younger counterparts. This suggests that, due to factors such as expertise or increased control over emotions with age, older adults are typically more efficient than young adults in emotional situations, as past experiences can serve as guidance in future negative encounters (Bartholomew & Horowitz, 1991). Given that emotional functioning improves with age and that envy is not as prioritized later in life, there should be few intense experiences of envy with age.

The lifespan theory of control proposes lifespan trajectories of primary control striving, primary control capacity, and secondary control striving (Heckhausen, 1999; Heckhausen, Wrosch, & Schulz, 2010). Primary (i.e., external) control increases in young adulthood, remains stable in middle adulthood, and declines in old age. Individuals strive to maintain primary control, but their capacities for primary control decrease in late adulthood. Older adults need to invest additional effort in striving for primary control goals by activating secondary (i.e., internal) control strategies. As certain primary control goals become unattainable, individuals need to learn to disengage in order to pursue more achievable goals. As time passes, older adults rely more on secondary control as a coping strategy because of

biological declines and sociocultural constraints (Heckhausen & Schulz, 1995). Older adults adjust their expectations so that declines in primary control are not associated with failure and report secondary control more frequently than primary control (Bailis, Chipperfield, & Perry, 2005). Secondary control mainly functions as compensation for low primary control of external forces because it helps older adults to minimize of losses and to maintain primary control. This compensatory role may help individuals cope with the frustration of unattainable goals, as well as to protect self-esteem and preserve motivational resources for attainable goals. Secondary control strategies typically helps one attain desired goals, determine personal value of a goal, and provide causal attribution to the outcome of a situation.

With age, while perceived control decreases, goal attainment becomes less of a priority (Heckhausen & Schulz, 1995). Because of this lifespan trajectory, the lifespan theory of control argues that older adults may lack certain control beliefs and the motivation to experience envy due to change in goals (i.e., compared to younger adults, older adults might simply express decreased personal desire to obtain an envied object or state because of low ability to obtain the envied object).

As discussed earlier, envy is a type of social comparison that correlates with characteristics such as high neuroticism (Smith et al., 1999), high depressive symptoms (Smith et al., 1999; Smith et al., 1994), and low self-esteem (Parrott & Smith, 1993; Smith et al., 1999). While it is difficult to determine a lifespan trajectory from observing the dispositional characteristics alone, the SOC model (Baltes, 1987; 1997), the lifespan control theory (Heckhausen & Schulz, 1995; Heckhausen 1999; Heckhausen et al., 2010), and SST

(Carstensen et al., 2003; Carstensen et al., 1999) promote a lifespan trajectory of decreased frequency and decreased intensity of envy experiences, as well as decreased motivation to obtain the envied object or state (van de Ven, Zeelenberg, & Pieters, 2011). In addition, due to prioritization of emotionally-meaningful relationships and the eventual pruning in social network size, older adults, compared to younger adults, might be less inclined to experience envy due to the type of relationship they share with the envied.

Present study

This thesis aimed to investigate (a) correlates of and (b) adult age differences in experiences of envy. In order to assess these aims, participants were asked (a) to report their general experiences with envy – from the perspective of the envier – and (b) to describe one recent specific envy event. The general questions about envy experiences, such as how is dispositional envy (i.e., individual differences in tendencies to envy) related to how frequently persons experience envy, were intended to provide additional insight on envy and on the individual differences in responses to social comparisons. Linking dispositional envy with certain reactions to social comparisons may clarify previous inconsistencies regarding individuals' reactions to such comparisons (Collins, 1996). Participants completed an online survey containing envy-related questions. Responses from the survey asked for a description of a recent envy event and included questions about the intensity, the specific feelings, the persons involved, etc., that may provide further insight into envy processes that might not be easily observable from responses to more general questions about envy.

Aim 1. Personality correlates were of interest in this study as they may directly influence experiences of envy. That is, individual differences in personality may affect

persons' envy experiences since feelings of inferiority brought on by an unfavorable social comparison typically elicit envy experiences. Analyses were run in order to observe any relationships between the dispositional characteristics of interest (e.g., neuroticism, depressive symptoms, or self-esteem) and (a) dispositional envy, (b) the frequency of envy experiences, or (c) the intensity of the reported envy events. Table 1 lists the corresponding hypotheses.

Aim 2. Another purpose of this study was to examine age differences in envy experiences across the adult lifespan. Given the literature review, age differences were expected in (a) dispositional characteristics, (b) the frequency in which envy was experienced, (c) level of intensity regarding the specific envy event, and (d) the significance of the relationship between the envier and the envied. Table 1 provides the detailed hypotheses.

Table 1

Summary of Hypotheses.

Hypotheses 1 & 2 – Correlates of envy

Hypothesis 1: In general, envy is associated with personality characteristics, such as neuroticism, self-esteem, and depressive symptoms.

H1a Persons with high depressive symptoms will report more frequent and more dispositional envy than persons with low depressive symptoms.

H1b Persons with high neuroticism will report more frequent and more dispositional envy than persons with low neuroticism.

H1c Persons with low self-esteem will report more frequent and more dispositional envy than persons with high self-esteem.

Hypothesis 2: Aspects of reported envy events are associated with personality characteristics, such as neuroticism, self-esteem, and depressive symptoms.

H2a Persons with high depressive symptoms will report a less intense envy event than persons with low depressive symptoms.

H2b Persons with high neuroticism will report a more intense envy event than persons with low neuroticism.

H2c Persons with low self-esteem will report a more intense envy event than persons with high self-esteem.

Hypotheses 3 & 4 – Potential Effects of age on envy

Hypothesis 3: In general, increasing age will be associated with a reduction in envy experiences.

Table 1 Continued

H3a Older adults will report fewer incidences envy than will young adults.

H3b Dispositional envy will be negatively related to age.

Hypothesis 4: There will be age differences in aspects of reported envy events.

H4a When reporting an envy event, older adults will report a less intensity than will young adults.

H4b When reporting an envy event, older adults, in contrast to young adults, will be more likely to report envy toward non-intimate rather than intimate persons.

METHOD

Participants

Participants were recruited through three means: (a) Amazon's Mechanical Turk (For additional information, please visit <https://www.mturk.com/mturk/welcome>), a website that allows persons access to tasks requiring human input, known as *human intelligence tasks* (*HIT*; Sharek, 2010), (b) North Carolina State University's Experimentrix, an online experiment scheduling system used by its undergraduates (<https://experimentrix2.com/NCSU/>), and (c) North Carolina State University's Encore Program for Lifelong Enrichment, a program promoting lifelong enrichment by providing noncredit courses, study trips, and special events for individuals over the age of 50. As

compensation, the MTurk participants received 25¢ to \$1, the North Carolina State University undergraduates received 1 credit for their “Intro to Psychology” (i.e., PSY 200) course, and the Encore participants volunteered their services, free of charge.

The initial sample consisted of 249 participants, but due to missing data, 24 individuals were removed. For purposes of this study, the middle-aged adults were removed, leaving a final sample of 186. The sample consisted of 89 young adults between the ages of 17 and 27 ($M = 19.47$, $SD = 1.87$, 56 % female) and 97 older adults between the ages of 60 and 85 ($M = 69.18$, $SD = 6.40$, 73% female). The sample was predominantly white and well-educated. Table 2 provides a summary of the basic socio-demographic information of the total sample and subsamples of young and older adults. Additional socio-demographic questions were asked, as noted in Appendix C. Compared to the younger sample, the older adult sample had a greater proportion of women ($\chi^2_{(1)} = 5.91$, $p = .015$) and was better educated ($\chi^2_{(5)} = 121.17$, $p < .001$).

Table 2

Socio-Demographic Characteristics of the Total Sample (N=186) and for Subsamples of Young (n=89) and Older Adults (n=97).

	Total		Young Adults		Older Adults	
Ethnicity						
Non-Hispanic	167	97%	75	93%	92	100%
Hispanic	6	3%	6	7%	0	0%
Racial Group						
European American	153	88%	64	75%	89	97%
Asian	10	5%	9	11%	1	1%
African American	8	4%	6	7%	2	2%
American Indian or Alaska Native	2	1%	2	2%	0	0%
Other	4	2%	4	5%	0	0%
Marital Status						
Single	81	48%	78	95%	3	3%
Married/partnership	55	32%	3	4%	52	59%
Divorced	21	12%	1	1%	20	22%
Widowed	14	8%	0	0%	14	16%
Highest Level of Education						
Grade School	3	2%	3	4%	0	0%
Junior/high school	70	41%	66	80%	4	4%
Trade/technical/business school	6	3%	1	1%	5	6%
College	45	26%	12	15%	33	37%
Graduate School	48	28%	0	0%	48	53%

Note. Some participants did not report all of their socio-demographic information.

Measures

Measures of Dispositional Characteristics. In order to test Hypotheses 1 and 2, participants responded to measures assessing their self-esteem, depressive symptoms, and dispositional envy.

Personality. The Big Five Inventory (BFI; Benet-Martinez & John, 1998; John, Donahue, & Kentle, 1991; John, Naumann, & Soto, 2008) is a widely used 44-item self-report scale measuring five dimensions of personality: extraversion, neuroticism, openness, agreeableness, and conscientiousness. This multi-dimension scale consists of short phrases and has demonstrated satisfactory validity and reliability. Participants rate items on a 7-point scale ranging from *strongly agree* (1) to *strongly disagree* (7). The internal consistencies in the current sample were relatively high (extraversion: $\alpha = .82$; neuroticism: $\alpha = .81$; agreeableness: $\alpha = .80$; openness: $\alpha = .82$; conscientiousness: $\alpha = .80$). Appendix D presents the items.

Depressive symptoms. The Center for Epidemiologic Studies – Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report scale measuring depressive symptoms. Participants indicate the frequency of feelings or behaviors from the past week on a 4-point scale ranging from *rarely or never (less than a day)* (1) to *most or all of the time (5–7 days)* (4). Coefficient alpha for this measure in the current sample was ($\alpha = .89$). Appendix E presents the items.

Self-esteem. The Self-Liking and Competency Scale (SLC; Tatarodi & Swann, 1995) contains two 10-item subscales designed to measure personal assessment of one's self-liking (i.e., social worth) and self-competence (i.e., sense of personal efficacy). Participants

rate each items on a 7-point scale ranging from *strongly agree* (1) to *strongly disagree* (7). Internal consistencies were high for self-liking subscale ($\alpha = .94$) and the self-competence subscale ($\alpha = .90$). Both subscales were significant correlated, $r(156) = .77, p < .001$. Appendix G presents the items.

General envy. To assess dispositional envy (Hypotheses 1 and 3), persons completed the Dispositional Envy Scale (DES; Smith et al., 1999) in order to determine participants' tendency to experience envy. The DES is a psychometrically-valid and reliable self-report measure used to evaluate an individual's propensity to experience envy. Participants rate each item on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7). Internal consistency for this measure was high in the current sample ($\alpha = .91$). Appendix F presents the items. In addition, persons were asked how frequently they experienced envy ("In the past month, how often did you experience envy?") on a scale from *0 times* (1) to *11 or more times* (12).

Measures of envy event. To obtain a deeper insight into developmental aspects and processes of envy, persons reported a recent negative envy event ("Please describe a recent experience when you had negative feelings of envy towards another person"). For this event, participants indicated the time when the envy event occurred ("How long ago did the event happen? Days? Months? Years?") to control for the possible reduction of emotional intensity over time (Verduyna, Mechelena, Tuerlinckx, Meersa, & Van Coillie, 2009). Then, on a scale from *not at all* (1) to *very much* (7), participants rated self-relevancy of the event ("Regarding the envy event, how relevant was the event to you?") and the intensity of the event ("Regarding the envy event, how intense was it?"). In order to test Hypotheses 2 and

4a, participants also reported the intensity of their envy (“Regarding the envy event, how strong were your feelings of envy?”) on a scale from *not at all* (1) to *very much* (7).

Next, participants rated their feelings during the envy experience (“How did you feel at the time of the event?”) using a semantic differential with 9 emotion points (e.g., “Happy Sad). They also reported what they coveted (“Regarding the event, what were you MOST envious of.”), including [but not limited to] a person’s belongings, a person’s appearance, a person’s success, a person’s abilities/skills, a person’s social life, a person’s health, or something else.

To assess Hypothesis 4b, participants reported their associations with the envied (“What is your relationship to the person you were envious of?”) as either “family member” or “non-family member (e.g., friend)”. Participants then rated the significance of their relationship with the envied (“How much does your relationship with this person matter to you?”) on a scale from *not at all* (1) to *very much* (7) and their closeness with the envied. Lastly, participants answered questions regarding the experiential content of the envy event. Appendix H presents the items.

Procedure

The envy survey was designed on Unipark, an online questionnaire-designing survey software program (For additional information, please visit <http://www.unipark.com>). Upon completion, the envy survey was distributed to three different sources: Amazon’s Mechanical Turk, North Carolina State University’s Experimentrix, and North Carolina State University’s Encore Program for Lifelong Enrichment.

Amazon's Mechanical Turk is an open online marketplace where individuals can register as "workers". Workers scan through the available tasks and choose ones they find most appealing. When the survey was uploaded on Amazon's Mechanical Turk, workers read a brief description, which is provided in Appendix B. Eligible workers then chose whether or not to partake in the study. In addition, during the final stages of distributing the survey, compensation increased to \$1.

North Carolina State University's Experimetrix is an online forum where students typically participate in IRB-approved experiments for class credit. When the envy survey was uploaded on Experimetrix, students read a brief description, which is provided in Appendix B. Students then chose whether or not to partake in the study.

North Carolina State University's Encore Program for Lifelong Enrichment is a membership-supported program that provides non-credit courses and activities for adults 50 years or better. After requesting permission from the director in charge, e-mails were sent to the Encore members, asking for their participation. All except for the request of the 4 digit code, Encore members were provided the same instructions as the Experimetrix students (further details provided in Appendix B).

After accepting the terms and conditions, they completed the first section of the survey, which includes basic socio-demographic questions, assessing age, sex, education, etc., in order to obtain general information about the individuals. Participants then self-reflected on their overall life satisfaction, physical health, and state-like reports of their current emotions. Participants next completed questionnaires assessing their personality, depressive symptoms (or lack thereof), trait-like affect, and recent stressors.

The following portion of the survey contained the envy-specific questions. First, to trigger initial reflection about envy and envy events, participants were asked to provide a brief definition of envy. The intention of this procedure was to make it easier for participants to come up with envy events. Participants then indicated how frequently they experienced envy within the last month and to compare these frequencies to other persons. In order to increase focus on the negative aspect of envy, participants were asked to describe a recent experience of negative envy. After describing the situation, participants answered questions regarding their negative envy experience and the persons involved. After the envy report, participants completed the Dispositional Envy Scale and the Self-Liking and Competency Scale. At the end of the survey, Mechanical Turk participants and North Carolina State students received a 4-digit code that served as confirmation that they completed the study.

RESULTS

Data were cleaned in order to check and correct for potential errors, such as quality of data (e.g., missing data) and the quality of measurements (e.g., reliability analyses). Ineligible participants (i.e., those with either incomplete or missing data) were excluded from the statistical tests. Focus was placed on two main subjects: correlates of envy and the potential effects of age on envy.

Correlates of Envy. Correlational analyses were run on the variables of interest (i.e., self-liking, self-competency, neuroticism, depressive symptoms, dispositional envy, frequency of envy experiences within the last month, and intensity of the reported envy events) to ensure that they were highly related. As predicted, all constructs were significantly correlated. As illustrated in Table 3, the dispositional characteristics were

significantly correlated with one another. Individuals with low self-esteem (i.e., low self-liking and low self-competence) were typically neurotic and reported high levels of depressive symptoms. These results suggest co-existing relationships among low self-esteem, high neuroticism, and high depressive symptoms.

In addition, the relationships among dispositional envy, how frequently one experiences envy, and how intensely one experiences envy were significantly correlated with one another. High dispositional envy was associated with high frequency of envy experiences within the past month and highly intense envy events. Frequent experiences of envy were associated with intense envy events. These results indicate how dispositional envy can influence how frequently and intensely one experiences envy.

Three dispositional characteristics (i.e., low self-esteem, high neuroticism, and high depressive symptoms) have previously been shown to play a role in how one experiences envy. As illustrated in Table 3 and consistent with Hypotheses 1, low self-esteem, high neuroticism, and high depressive symptoms were associated with high dispositional envy and high frequency of envy experiences within the last month. Hypotheses 2 were mostly supported, as high neuroticism and low self-esteem were associated with reports of highly intense envy events. Inconsistent with Hypothesis 2a, high depressive symptoms were related to envy events with high intensity rather than low intensity. Overall, these findings indicate how certain traits can influence envy experiences.

Table 3
Correlations Among Variables

	1	2	3	4	5	6
1 Self-liking	-	-	-	-	-	-
2 Self-competency	.77**	-	-	-	-	-
3 Neuroticism	-.52**	-.59**	-	-	-	-
4 Depressive Symptoms	-.58**	-.57**	.52**	-	-	-
5 Dispositional Envy	-.69**	-.64**	.58**	.53**	-	-
6 Frequency of Envy	-.30**	-.31**	.43**	.32**	.51**	-
7 Intensity of Envy	-.28**	-.16*	.21*	.24**	.45**	.40**

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

Given the extreme group design of the sample, additional analyses were run in order to determine whether these correlations were influenced by the sample. As illustrated in Table 4, for young adults, all of the dispositional characteristics remained significant to one another, and frequent experiences of envy maintained a significant relationship between neuroticism, dispositional envy, and reports of intense envy events. In addition, intensity of reported envy events still correlated with dispositional envy. For older adults, all of the previous correlations remained significant except for the relationship between neuroticism and dispositional envy. Significant differences were observed in some of the correlations. In particular, there were age differences between self-liking and (a) neuroticism, (b) depressive symptoms, (c) dispositional envy, and (d) frequent experiences of envy. There were also age differences for (a) self-competent individuals and the frequency in which they experienced

envy, (b) neurotics with depressive symptoms, and (c) those with depressive symptoms and how intensely they experienced a specific envy event.

Table 4
Correlations Among Variables Split by Age

	1	2	3	4	5	6	7
1 Self-liking	-	.80**	-.66**	-.67**	-.81**	-.45**	-.37*
2 Self-competency	.71**	-	-.67**	-.61**	-.68**	-.49**	-.29*
3 Neuroticism	-.32*	-.44**	-	.59**	.58**	.46**	.24
4 Depressive Symptoms	-.44**	-.47**	.35**	-	.59**	.32**	.39*
5 Dispositional Envy	-.56**	-.55**	.51**	.37**	-	.38**	.47*
6 Frequency of Envy	-.13	-.07	.34**	.16	.51**	-	.34*
7 Intensity of Envy	-.15	.01	.10	.02	.39**	.42**	-

Note. ** $p < .01$, * $p < .05$. The young adult sample is located below the diagonal. The older adult sample is located above the diagonal. Significant differences (i.e., $p < .05$) between the correlations are marked in bold.

Potential Effects of Age on Envy. As indicated in Table 5, significant main effects of age were observed for the subscales of self-esteem – self-liking, $F(1,154) = 5.25$, $p = .023$, $\eta^2 = .03$; self-competence, $F(1,54) = 8.09$, $p = .005$, $\eta^2 = .05$ –; neuroticism, $F(1,171) = 9.80$, $p = .002$, $\eta^2 = .05$; depressive symptoms, $F(1,168) = 26.93$, $p < .001$, $\eta^2 = .14$; dispositional envy, $F(1,152) = 21.21$, $p < .001$, $\eta^2 = .12$; and frequency of envy experiences, $F(1,171) =$

20.52, $p < .001$, $\eta^2 = .11$. Compared to young adults, older adults had higher self-esteem, were less neurotic, and had less depressive symptoms. Given these three constructs' relation to envy, the results indicate less potential experiences of envy for older adults. In support of Hypotheses 3, older adults, compared to young adults, reported less dispositional envy and less frequent experiences of envy within the last month. Contrary to Hypotheses 4, no significant age differences were found regarding the intensity of the reported envy events, $F(1,152) = 3.79$, $p = .053$, $\eta^2 = .02$; and whether the envier considered the relationship between the envied to be important, $F(1,116) = .35$, $p = .554$, $\eta^2 < .01$.

Table 5
Sample Characteristics for Young and Older Adults

	Young Adults		Older adults		ANOVA		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	η^2
Dispositional Characteristics							
Self-liking	4.90	1.33	5.43	1.79	5.25	.02	.03
Self-competency	5.23	1.04	5.74	1.22	8.09	<.01	.05
Neuroticism	3.67	0.95	3.18	1.09	9.80	<.01	.05
Depressive Symptoms	1.73	0.42	1.42	0.38	26.93	<.01	.14
Dispositional Envy	2.98	1.44	1.93	1.38	21.21	<.01	.12
Envy Occurrence							
Frequency of Envy	5.17	3.21	3.17	2.55	20.52	<.01	.11
Intensity of Envy	4.38	1.86	3.75	2.11	3.79	.05	.02
Association with Envied							
Important relationship	3.93	2.27	4.19	2.40	0.35	.55	<.01

A hierarchical regression analysis was conducted to further examine the extent to which a set of predictors (i.e., self-esteem, neuroticism, and depressive symptoms) accounted for individual differences in older adults' reports of dispositional envy, frequent experiences of envy, and intense envy experiences. A separate predictor (i.e., relational value with the envied) was included to account for individual differences in older adults' reports of intense envy experiences. The first block of predictors included age and sex, the second block saw the addition of self-esteem, neuroticism, and depressive symptoms, and the third block included intimacy of the relationship between the envier and the envied. As can be seen in Table 6, the first block of predictors accounted for 17% of the variance in dispositional envy. Results from the first block indicated that age was significantly negatively related to dispositional envy ($\beta = -.42, t = -5.45, p < .001$), suggesting that, compared to younger adults, older adults had less dispositional envy. Sex was not uniquely predictive of dispositional envy ($\beta = .05, t = 0.63, p = .530$).

The dispositional characteristics of interest (i.e., self-esteem, neuroticism, and depressive symptoms) were added in the second block, increasing the variance accounted for in dispositional envy to 56%. Results from the second block indicated that self-liking ($\beta = -.37, t = -4.10, p < .001$) and neuroticism ($\beta = .24, t = 3.24, p = .002$) were negatively related to dispositional envy, suggesting that neurotics who disliked themselves had high dispositional envy. Self-competence ($\beta = -.09, t = -0.96, p = .341$) and depressive symptoms ($\beta = .07, t = 0.86, p = .393$) was unrelated to dispositional envy. With the addition of the second block, age remained significantly associated with dispositional envy ($\beta = -.22, t = -$

3.58, $p < .001$), and sex remained unrelated to dispositional envy ($\beta = -.02$, $t = -0.39$, $p = .700$).

Table 6

Hierarchical Regression Results Predicting Dispositional Envy

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	-1.19	0.22	-.42**	-0.63	0.18	-.22**
Sex	0.14	0.23	.05	-0.07	0.17	-.02
Self-liking				-0.38	0.09	-.37**
Self-competence				-0.12	0.12	-.09
Neuroticism				0.32	0.10	.24**
Depressive symptoms				0.22	0.26	.07
R ²		0.17			.56	
ΔR^2					.39**	

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

As can be seen in Table 7, the first block of predictors accounted for 11% of the variance in frequent envy occurrences. Results from the first block indicated that age was significantly negatively related to frequent experiences of envy ($\beta = -.33$, $t = -4.10$, $p < .001$), suggesting that, compared to younger adults, older adults reported experiences of envy less

frequently. Sex was not uniquely predictive of frequent experiences of envy ($\beta = .06, t = 0.80, p = .423$).

The dispositional characteristics of interest (i.e., self-esteem, neuroticism, and depressive symptoms) were added in the second block, increasing the variance accounted for in frequent envy occurrences to 24%. Self-esteem – self-liking ($\beta = -.13, t = -1.16, p = .250$); self-competence ($\beta = .11, t = 0.89, p = .377$) – and depressive symptoms ($\beta = -.01, t = -0.07, p = .947$) were not uniquely predictive of the frequency in which one experiences envy. Neuroticism was positively related to frequent envy experiences ($\beta = .38, t = 3.86, p < .001$), indicating that, compared to persons with low neuroticism, persons with high neuroticism experienced envy more frequently. With the addition of the second block, age remained significantly associated with frequent experiences of envy ($\beta = -.23, t = -2.48, p = .005$), and sex remained unrelated to frequent experiences of envy ($\beta = -.02, t = -0.24, p = .812$).

Table 7

Hierarchical Regression Results Predicting Frequency of Envy

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	-2.04	0.50	-.33**	-1.42	0.50	-.23**
Sex	0.41	0.51	.06	-0.12	0.50	-.02
Self-liking				-0.30	0.26	-.13
Self-competence				0.31	0.35	.11
Neuroticism				1.08	0.28	.38**
Depressive symptoms				-0.05	0.73	-.01
R ²		.11			.24	
ΔR^2					.13**	

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

As can be seen in Table 8, the first block of predictors accounted for 3% of the variance in intensity of reported envy events age ($\beta = -.15$, $t = -1.58$, $p = .116$) and sex ($\beta = .08$, $t = 0.83$, $p = .410$) was unrelated to the intensity of reported envy events.

The dispositional characteristics of interest (i.e., self-esteem, neuroticism, and depressive symptoms) were added in the second block, increasing the variance accounted for in intensity of reported envy events to 8%. Self-esteem – self-liking ($\beta = -.21$, $t = -1.47$, $p = .146$); self-competence ($\beta = .12$, $t = 0.76$, $p = .452$) –, depressive symptoms ($\beta = .05$, $t = 0.38$,

$p = .708$), and neuroticism ($\beta = .10, t = 0.76, p = .451$) were not uniquely predictive of how intensely one experiences envy. With the addition of the second block, age ($\beta = -.12, t = -1.19, p = .236$) and sex ($\beta = .05, t = 0.45, p = .655$) remained unrelated to reports of intense envy events.

Intimate relationship with the envied was added in the third block, increasing the variance accounted for in intensity of reported envy events to 14%. Perceived closeness to the envied was positively related to the intensity of the envy experienced ($\beta = .24, t = 2.45, p = .016$), implying that a more valued relationship instigated a more intense experience of envy. With the addition of the third block, age ($\beta = -.14, t = -1.45, p = .150$), sex ($\beta = -.02, t = -0.18, p = .856$), self-esteem – self-liking ($\beta = -.23, t = -1.60, p = .113$); self-competence ($\beta = .17, t = 1.07, p = .286$) –, neuroticism ($\beta = .16, t = 1.23, p = .221$) and depressive symptoms ($\beta = .04, t = 0.28, p = .779$) remained unrelated to intense experiences of envy.

Table 8

Hierarchical Regression Results Predicting Intensity of Reported Envy Events

Predictors	Block 1			Block 2			Block 3		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	-0.57	0.36	-.16	-0.44	0.37	-.12	-0.53	0.36	-.14
Sex	0.30	0.37	.08	0.17	0.38	.05	-0.07	0.39	-.02
Self-liking				-0.28	0.19	-.21	-0.29	0.18	-.23
Self-competence				0.20	0.26	.12	0.28	0.26	.17
Neuroticism				0.17	0.22	.10	0.27	0.22	.16
Depressive symptoms				0.21	0.55	.05	0.15	0.54	.04
Important relationship							0.19	0.08	.24*
R ²		.03			.08			.14	
ΔR^2					.05			.06*	

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

Additional analyses. In order to assess whether emotional intensity of the envy event reduced over time, participants reported when the recalled envy event occurred. 72% of the reported envy events occurred less than a month ago. 20% of the reported envy events occurred from a month to a year ago. 8% of the reported envy events occurred more than a year ago. Results from a one-way ANOVA indicated that time did not influence the strength of participants' feelings of intensity regarding the envy event, $F(2, 142) = 0.36, p = .70$.

DISCUSSION

Summary of findings

Consistent with Hypotheses 1, the findings provided additional support for a relationship between envy and (a) self-esteem, (b) neuroticism, and (c) depressive symptoms (Parrott & Smith, 1993; Smith et al., 1999; Smith et al., 1994). In particular, individuals with high dispositional envy tended to be neurotic, have depressive symptoms, and have low self-esteem, suggesting that persons possessing certain traits may experience envy more frequently than others (or vice versa). Depending on the individual, the tendency to experience envy differed, highlighting the significance of assessing and controlling for these traits when researching envy.

Mixed results were obtained for Hypotheses 2. Envy events reported as high in intensity related to high levels of neuroticism and low self-esteem, supporting previous research that certain dispositional characteristics intensify emotional experiences (Schimmack & Diener, 1997; Sonnemans & Frijda, 1995). The relationship between depressive symptoms and intense envy events, however, went in the opposite direction of the proposed hypothesis. The findings indicated that high depressive symptoms were related to intense experiences of envy. Depression is categorized in two dimensions: anaclitic and introjective (Blatt & Zuroff, 1992). Anaclitic depression is associated with high dependence on others and feelings of loneliness and helplessness, whereas introjective depression is associated with self-criticism and a sense of inferiority. Given that the scale used to measure depressive symptoms in the survey did not specifically indicate the type of depressive symptoms, it is possible that this lack of information was interfering with the findings. Past

research regarding depression and envy, by definition, focused on introjective depression (Smith et al., 1999; Smith et al., 1994) rather than anaclitic depression because of its association with sense of inferiority. Because of this discrepancy, a clear relationship between envy and depressive symptoms could not be observed in this study.

One other explanation of the lack of support in Hypothesis 2a may be individual propensity. Individuals differ in their tendencies to experience general positive and negative emotions (Watson & Clark, 1984), making it difficult to predict their reactions. In addition, since the study did not assess depressive symptoms during the time of the reported envy event, the participants' responses may not be reflective of their past states.

Consistent with Hypotheses 3, age differences were found in envy experiences. With age, there were decreases in dispositional envy and less frequent experiences of envy within the last month. Compared to the young age group, the older age group reported less inclination to experience envy and reported less overall envy occurrences. When accounting for the three dispositional characteristics associated with envy (i.e., neuroticism, self-esteem, and depressive symptoms), dispositional envy and frequent experiences of envy within the last month remained significant with age, indicating that personality did not influence the predicted direction. These findings provide additional insight to age differences in envy, supporting that, compared to their younger counterparts, older adults experience envy less frequently. An explanation for this phenomenon may be that older adults opt to better utilize their limited resources to domains they consider more important, like maintaining positive social relationships (Carstensen et al., 2003; Carstensen et al., 1999; Charles & Carstensen, 2007).

The results provided no support for Hypotheses 4. Contrary to Hypothesis 4a, no age differences were found regarding the intensity in which individuals experienced envy. One possible explanation for the mixed findings may be due to memory retention and retrieval. The study did not specify a time restraint in which the envy event occurred, so answers varied from a day ago to more than a year ago. Memory for emotion is subject to bias (Levine, 1997), so it is possible that participants provided inaccurate reports of their past feelings of envy.

Hypothesis 4b was not supported, as there were no age differences regarding perceived closeness between the envied and the envier. One explanation may be that previous research in social comparison suggests that individuals are more likely to be envious of those who are similar to them (Tesser, 1991) and more often than not, befriend those in similarity (Smith, 2004). Compared to envying intimate persons, envying non-intimate persons may be more unlikely due to decreased exposure. Given that older adults' social network typically comprises of friends similar in age, sex, and social class (Brown, 1981; Usui, 1984) and that older adults' social network becomes selective over time (Carstensen et al., 2003; Carstensen et al., 1999), older adults' daily exposure of people consist more of intimate rather than non-intimate others. Given increased tendency to surround themselves with loved ones, this phenomenon reduces the possibility for older adults to experience envy towards non-intimate individuals.

Limitations and future directions

This study is not without its limitations. First, while online surveys offer advantages such as cost-efficiency, the online surveys were distributed via specific computer mediums

(i.e., Amazon's Mechanical Turk, North Carolina State University's Experimentrix, and North Carolina State University's Encore Program for Lifelong Enrichment), limiting access to particular group members. This then leads to the issue of self-selection bias, as some individuals are more likely than others to complete an online survey.

Second, cross-sectional studies assess different age groups at the same time, focusing on interindividual differences. Future research should opt for a design that provides a more accurate assessment of intraindividual change of envy. Ideally, a longitudinal sequence (Baltes, Reese, & Nesselroade, 1988; Schaie & Caskie, 2004) would involve two or more longitudinal studies using two or more cohorts, observing both intraindividual change and interindividual differences in changes.

Third, the usage of retrospective self-report data could influence the data, as self-report answers might be exaggerated, or participants might be ashamed of experiencing envy and do not want to divulge it. It is also possible that participants might also forget some envy experiences, or their current mood might be influencing their answers to the questions. If possible, future research should utilize a daily diary study design, as this can (a) obtain reliable information regarding the individual, (b) obtain estimations of within-person change over time and individual differences in change, (c) obtain between-person differences and between-person differences in variability, (d) reduce the occurrence of retrospection, and (e) increase reliability and validity (Bolger, Davis, & Rafaeli, 2003; Nesselroade, 1991; Neupert, Stawski, & Almeida, 2008; Sliwinski, Almeida, Smyth, & Stawski, 2009).

Lastly, participants reported their most recent experiences of envy. Future research should focus on expressions of envy, as it is possible that, compared to young adults, older

adults may be less likely to express feelings of envy towards intimate persons. Considering the pruning process that older adults apply to their social network (Carstensen et al., 2003; Carstensen et al., 1999), they may be more likely to suppress or reappraise their envy towards important individuals due to the potential repercussions that may negatively impact their relationships.

Conclusion

Overall, the results of the present study support an association between certain dispositional characteristics (i.e., high neuroticism, high depressive symptoms, and low self-esteem) and the likelihood of envy occurrences. Simply put, some individuals are more likely than others to envy, and some more likely to experience envy more frequently. Although the intensity in which one experiences envy will vary depending on the context, envy experiences will change over time. Regardless of age, targets of envy tend to be persons of high relational value. Furthermore, age differences are observed in envy experiences, as suggested by the decline in dispositional envy and frequent envy experiences. With age comes a shift in priorities, promoting a reduction in negative aspects like envy.

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APPENDICES

Appendix

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Appendix A

List of All Measures

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1. Instructions
 2. Background Questionnaires
 3. Big Five Inventory (BFI, John, Donahue, & Kentle, 1991; John, Naumann, & Soto, 2008)
 4. Center for Epidemiological Studies – Depression scale (CES-D; Radloff, 1977)
 5. Dispositional Envy Scale (DES; Smith, Parrott, Diener, Hoyle, & Kim, 1999)
 6. Self-Liking and Competency Scale (SLC; Tafarodi & Swann, 1995)
 7. Envy-directed Questions
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Appendix B

Instructions

Amazon's Mechanical Turk

Your Personal Experiences – Envy. We are interested in your experiences with social interactions, such as envy. Thus, we are interested in how people show envy, when people show envy, and what are people envious about. To qualify for this survey, it is required to participate in the basic background survey (Your Personal Experiences - Demographics) of the Adult Cognition and Emotion Lab in MTurk. If you completed the background survey and got a corresponding qualification (typically within 24 hours), you are invited to participate in this survey. We will ask some general questions (e.g. your age or gender) and more specific questions, such as questions about your personality. There are no right or wrong answers. We are interested in your personal opinion. Please follow the link below for the survey.

The survey is anonymous. We are not collecting information that could potentially identify you. The survey will take about 15 to 25 minutes. For your participation, \$0.25 will be awarded to your Worker account. We'll try to do this within 24 hours. At the end of the survey, you will get a code. In order to get credit, please enter it below!"

North Carolina State University's Experimentrix

1 CREDIT. In this survey, we are interested in your experiences with envy. We would like to ask you to report how often you experienced envy. And we will ask you to describe specific envy experiences that you had recently. By doing so, we hope to get insights into the types of situations and contexts, in which envy occurs. We will show you statements and ask you about your agreement. There are no right or wrong answers. We are interested in your personal opinion. Note that this survey will take about 25-30 minutes. At the end of the survey, you will get a 4 digit code. In order to get credit, please e-mail this code to [lab's e-mail address]. You will also find a contact form for comments, and suggestions.

North Carolina State University's Encore Program for Lifelong Enrichment

Welcome! In this survey, we are interested in your experiences with envy. We would like to ask you to report how often you experienced envy. And we will ask you to describe specific envy experiences that you had recently. By doing so, we hope to get insights into the types of situations and contexts, in which envy occurs. We will show you statements and ask you about your agreement. There are no right or wrong answers. We are interested in your personal opinion. Note that this survey will take about 30 minutes. If you choose to participate in this study, please check the box below! Thank you very much! I agree to participate.

Appendix C

Measures of Socio-demographic information

Below you find general background questions that we need for our research. Please indicate at least your gender and age.

Sex

Male

Female

Please select your age group (in years).

10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]

Please enter your current age

years

In what year were you born?

In what month were you born?

Are you of Hispanic, Spanish, or Latino origin? (e.g., Mexican, Puerto Rican)

Yes

No

Which do you feel best describes your racial background? (Multiple answers are possible!)

White and/or European American

Black and/or African American

Native American or Alaska Native

Asian

Native Hawaiian or Pacific Islander

Other (Please Specify):

Nationality (American, Canadian, British, ...)

What is the highest level of education you have completed?

Grade School	1st	2nd	3rd	4th	5th	6th		
Junior/High School	7th	8th	9th	10th	11th	12th		
Trade/Business/Technical School	1 yr	2 yrs	3 yrs	4 yrs	4 yrs	4+ yrs		
College	1 yr	2 yrs	3 yrs	4 yrs	4+ yrs			
Graduate School	1 yr	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs	6+ yrs	

What is the highest degree you have received?

- High school diploma or equivalency (GED)
- Associate Degree
- Bachelor's Degree
- Master's Degree
- Doctorate (e.g., PhD, MD, JD, EdD, PsyD)
- Other (Please Specify):

What is your current employment situation? (Check all that apply!)

- Working full-time
- Working part-time
- In training / education (e.g. student)
- Retired or retired on disability
- Unemployed or laid off
- Keeping house or raising children full-time
- Other (Please Specify):

What kind of work do (did) you do? (Job Title)

What is your current total household income for the past 12 months? (Check one!)

- Between \$0 and \$9,999
- Between \$10,000 and \$19,999
- Between \$20,000 and \$29,999
- Between \$30,000 and \$39,999
- Between \$40,000 and \$49,999
- Between \$50,000 and \$59,999
- Between \$60,000 and \$69,999
- Between \$70,000 and \$79,999
- Between \$80,000 and \$89,999
- Between \$90,000 and \$99,999
- \$100,000 or more

Appendix D

Measure of Personality

Big Five Inventory (BFI; Benet-Martínez, V. & John, O. P., 1998; John, Donahue, & Kentle, 1991; John, Naumann, & Soto, 2008)

Please to indicate the extent to which you agree or disagree with that statement.

1=strongly disagree, 7=strongly agree

I am someone who...

1. _____ Is talkative
2. _____ Tends to find fault with others
3. _____ Does a thorough job
4. _____ Is depressed, blue
5. _____ Is original, comes up with new ideas
6. _____ Is reserved
7. _____ Is helpful and unselfish with others
8. _____ Can be somewhat careless
9. _____ Is relaxed, handles stress well.
10. _____ Is curious about many different things
11. _____ Is full of energy
12. _____ Starts quarrels with others
13. _____ Is a reliable worker
14. _____ Can be tense
15. _____ Is ingenious, a deep thinker
16. _____ Generates a lot of enthusiasm
17. _____ Has a forgiving nature
18. _____ Tends to be disorganized
19. _____ Worries a lot
20. _____ Has an active imagination
21. _____ Tends to be quiet
22. _____ Is generally trusting
23. _____ Tends to be lazy
24. _____ Is emotionally stable, not easily upset
25. _____ Is inventive
26. _____ Has an assertive personality
27. _____ Can be cold and aloof
28. _____ Perseveres until the task is finished
29. _____ Can be moody
30. _____ Values artistic, aesthetic experiences
31. _____ Is sometimes shy, inhibited

- 32. _____ Is considerate and kind to almost everyone
- 33. _____ Does things efficiently
- 34. _____ Remains calm in tense situations
- 35. _____ Prefers work that is routine
- 36. _____ Is outgoing, sociable
- 37. _____ Is sometimes rude to others
- 38. _____ Makes plans and follows through with them
- 39. _____ Gets nervous easily
- 40. _____ Likes to reflect, play with ideas
- 41. _____ Has few artistic interests
- 42. _____ Likes to cooperate with others
- 43. _____ Is easily distracted
- 44. _____ Is sophisticated in art, music, or literature
- 45. _____ Is politically liberal

Appendix E

Measure of Depressive Symptoms**Center for Epidemiological Studies – Depression scale (CES-D; Radloff, 1977)**

During the past week, how often have you felt or behaved this way?

1 = rarely or never (less than a day), 2 = sometimes (1-2 days), 3 = often (3-4 days), 4 = most or all of the time (5-7 days)

1. _____ I was bothered by things that usually don't bother me.
2. _____ I did not feel like eating; my appetite was poor.
3. _____ I felt that I could not shake off the blues even with help from my family or friends.
4. _____ I felt I was just as good as other people.
5. _____ I had trouble keeping my mind on what I was doing.
6. _____ I felt depressed.
7. _____ I felt that everything I did was an effort.
8. _____ I felt hopeful about the future.
9. _____ I thought my life had been a failure.
10. _____ I felt fearful.
11. _____ My sleep was restless.
12. _____ I was happy.
13. _____ I talked less than usual.
14. _____ I felt lonely.
15. _____ People were unfriendly.
16. _____ I enjoyed life.
17. _____ I had crying spells.
18. _____ I felt sad.
19. _____ I felt that people dislike me.
20. _____ I could not get "going."

Appendix F

Measure of Dispositional Envy

Dispositional envy scale (DES; Smith, Parrott, Diener, Hoyle, & Kim, 1999)

Please use the following scale to indicate how much you agree with the following statements.

1=strongly disagree, 7=strongly agree

1. _____ It is so frustrating to see some people succeed so easily.
2. _____ Feelings of envy constantly torment me.
3. _____ Frankly, the success of my neighbors makes me resent them.
4. _____ It somehow doesn't seem fair that some people seem to have all the talent.
5. _____ I am troubled by feelings of inadequacy.
6. _____ The bitter truth is that I generally feel inferior to others.
7. _____ I feel envy every day.
8. _____ No matter what I do, envy always plagues me.

Appendix G

Measure of Self-esteem**Self-Liking and Competency Scale (SLC; Tafarodi & Swann, 1995)**

Please use the following scale to indicate how much you agree with the following statement.

1 = strongly disagree, 7 = strongly agree

1. _____ I feel comfortable about myself.
2. _____ I am a capable person.
3. _____ I have done well in life so far.
4. _____ I focus on my strength.
5. _____ It is often unpleasant for me to think about myself.
6. _____ Owing to my capabilities, I have much potential.
7. _____ I perform very well at a number of things.
8. _____ I tend to devalue myself.
9. _____ I feel worthless at times.
10. _____ I don't succeed at much.
11. _____ I do not have enough respect for myself.
12. _____ I perform inadequately in many important situations.
13. _____ I feel good about who I am.
14. _____ I am talented.
15. _____ I do not have much to be proud of.
16. _____ I deal poorly with challenges.
17. _____ I am not very competent.
18. _____ I'm secure in my sense of self-worth.
19. _____ I have a negative attitude toward myself.
20. _____ I like myself.

