Empirical Research Paper

Implicit Theories of Happiness: When Happiness Is Viewed as Changeable, Happy People Are Perceived Much More Positively Than Unhappy People

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Abstract

Happy people are often perceived positively, perhaps more than they actually are, whereas unhappy people are often perceived negatively, perhaps more than they actually are. What would make this bias stronger or weaker? The present research addresses this question by exploring the roles of implicit theories of happiness in the trait perceptions toward happy and unhappy people. Specifically, four studies ($N = 998$) tested hypotheses that an incremental theory of happiness would enhance and an entity theory of happiness would attenuate the trait perceptions favoring happy over unhappy people. Results found converging evidence that believing happiness as changeable (incremental theory) enhances the positive perceptions toward happy people, while providing less consistent evidence that believing happiness as fixed (entity theory) mitigates the negative perceptions toward unhappy people. The current research contributes to the literature on essentialism and advances the understanding of the roles of implicit theories of happiness in person perception.

Keywords

happiness, implicit theory, essentialism, person perception

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While the physical world is understood through a collection of scientific theories (e.g., water falls down), lay people often make sense of the social reality with lay theories about the nature of entities. Such lay theories vary across individuals to the extent that they espouse the changeability of human attributes (e.g., intelligence) or social categories (e.g., gender). Specifically, *entity theorists* believe human attributes or social categories as biologically determined, stable, and immutable, whereas *incrementalists* view them as malleable, socially constructed, and thus alterable by one's efforts and volitional choices (Levy et al., 2001). Research suggests that implicit theories are prevalent in various social categories, including race (Williams & Eberhardt, 2008), gender (Mahalingam, 2003), social class (Kraus & Keltner, 2013), and sexuality (Haslam & Levy, 2006), and in various human attributes such as intelligence (Rattan et al., 2012), personality (Chiu, Hong, & Dweck, 1997), morality (Chiu, Dweck, et al., 1997), and identity (Christy et al., 2019).

Of a primary relevance to the present research, people also differ in the extent to which they believe whether happiness is fixed or changeable. According to a recent study (Choi et al., 2021), individuals with an entity theory of happiness, compared with those with an incremental theory of happiness, are less motivated to engage in happiness-boosting activities. This finding is generally consistent with the previous research demonstrating the downstream consequences of implicit theories (Dweck & Leggett, 1988), such that entity theorists of happiness find it pointless to attempt to improve their own happiness because happiness is not alterable. The present research aims to extend this previous work to person perception.

Specifically, we explored how entity and incremental views of happiness affect one's trait perceptions toward happy and unhappy people. Because happy people are usually perceived more positively than unhappy people, our research agenda tackles the question as to whether espousing entity or incremental theories of happiness amplify or

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attenuate such biases favoring happy over unhappy people. Guided by the theoretical and empirical work on implicit theories and psychological essentialism, we proposed hypotheses that an incremental theory of happiness would contribute to the positive perceptions toward happy people, while an entity theory of happiness would mitigate the negative perceptions toward unhappy people.

Implicit Theories of Happiness

Happiness is generally defined as hedonic well-being—a psychological state that contains affectively positive ("feeling good") and cognitively satisfying ("doing great") experiences (Keyes & Annas, 2009). The age-old debate of whether happiness is genetically inherited or nurtured by environments has been of a considerable interest to many scholars of well-being. As in the other nature-versus-nurture debates (e.g., intelligence), views on the origin and changeability of happiness are bifurcated into two opposing stances: entity (i.e., happiness is genetically based, immutable, and stable) and incremental views (i.e., happiness is environmentally shaped, malleable, and alterable). While each view has received its own empirical supports (e.g., Lykken & Tellegen, 1996; Lyubomirsky, Sheldon, & Schkade, 2005), the debate among scholars is still ongoing. Regardless, lay people also seem quite sharply divided into each side. Choi and colleagues (2021), guided by the psychological essentialism literature (e.g., Bastian & Haslam, 2006), conceptualized the essentialist beliefs about happiness (EBH) as consisting of three components: *biological basis*, referring to the belief that happiness is genetically predetermined; *immutability*, referring to the belief that happiness is temporally stable and unchangeable; and *effort constructivism*, as a reverse construct, referring to the belief that happiness can be cultivated through efforts. They developed and provided initial validity evidence for a scale that captures these components to assess the extent to which an individual views happiness as immutable versus malleable and found evidence for substantial individual differences in the endorsement of EBH. As intrapersonal consequences of EBH, they further showed that individuals with greater EBH attributed happiness to genetic dispositions over deliberate efforts and exhibited less interest in engaging in various happiness-boosting activities (e.g., expressing gratitude).

Although the concept of EBH was originally formulated as a special kind of essentialism about human attributes, it is theoretically crucial to critically evaluate exactly what kind of essentialism the EBH refers to. By definition, psychological essentialism is the belief that various entities have a fundamental reality or true nature (i.e., essence) that makes them what they are and explains why they appear or act in certain manners (Gelman, 2003). In this sense, essentialized entities are often described as natural (biologically based), immutable, distinct, and inductively informative, all of which are the common features of essentialism (Haslam et al., 2000). The EBH clearly ascribes two of these essentialism features to happiness (i.e., biological basis and immutability). Within the EBH framework, however, happiness is not essentialized as a concept that has some objective, underlying reality; rather, happiness is treated as a trait-like essence and innate, stable disposition that fundamentally distinguishes between different kinds of people, namely, happy and unhappy people. Another important clarification about the EBH is concerned with the effort constructivism. This component deals with volitional changeability/controllability, which, in fact, is rarely included as a defining feature of essentialism (e.g., Haslam et al., 2000). Although the effort constructivism EBH supposedly is in contrast with the biological basis and immutability EBH, it should be best understood as the operationalization of an incremental theory of happiness. Similarly, we believe the biological basis and immutability EBH components are better suited for the operationalization of entity theories of happiness, rather than broadly as happiness essentialism.

In this article, the biological basis and immutability EBH serve as two distinct but related entity theories of happiness, and the effort constructivism EBH serves as an entity theory of happiness. Indeed, similar to other cases of implicit theories, the EBH has important motivational and behavioral consequences for one's happiness, independently of other well-being correlates (e.g., self-esteem). However, an important follow-up question remains unexamined as to whether implicit theories of happiness would affect one's perceptions toward happy and unhappy people. Building upon the previous work and theories, we propose several predictions about the relationship between entity/incremental theories of happiness and trait perceptions toward happy and unhappy people.

Trait Perceptions Toward Happy and Unhappy People

Generally, happy people are perceived more positively than unhappy people. For example, happy people are seen as more attractive (Diener et al., 1995), competent (Diener & Fujita, 1995), warm-hearted (Schimmack et al., 2004), and moral (King & Napa, 1998) than unhappy people. Consequently, happy people are evaluated more favorably, particularly in work-related settings, such that happy workers tend to receive more positive evaluations in job interviews (Burger & Caldwell, 2000), achieve greater performance ratings (Cropanzano & Wright, 1999), and earn higher salaries (Diener et al., 2010). While these evaluative asymmetries between happy and unhappy people may reflect the actual differences in their abilities and psychological qualities (Fredrickson, 2001; Lyubomirsky, King, & Diener, 2005), happy people seem to ascribe many positive attributes, perhaps more than they deserve.

We aim to link these positively biased perceptions toward happy people with implicit theories of happiness. Specifically,

how would believing that happiness is biologically based and immutable (vs. happiness is alterable with effort) influence the way that happy and unhappy people are perceived? One possible direction of the relationship is that an entity theory of happiness facilitates the positive perceptions favoring happy over unhappy people. This prediction is informed by the previous research demonstrating that essentialism intensifies stereotyping and prejudice (Yzerbyt et al., 2001). For example, believing social class as immutable was positively correlated with the preference for the existing social system and the endorsement of a just-world belief (Kraus & Keltner, 2013). In a similar process, an entity theory of happiness may foster a naturalistic-fallacy bias about happy people such that what they currently are is good as it is, thereby reinforcing the positive perceptions toward happy people. By the same token, viewing (un)happiness as fixed might lead to similar stereotypic justifications about the negative perceptions toward unhappy people (e.g., "They are bad, and that's what they are.").

In contrast, a recent perspective provides an integrative framework for understanding psychological essentialism that highlights the more nuanced consequences of implicit theories (Ryazanov & Christenfeld, 2018a). To illustrate, the previous view on the consequences of essentialism for social and moral judgments fails to explain the findings that entity theorists exhibit less prejudice toward stigmatized social groups (e.g., schizophrenics, Furnham & Chan, 2004; homosexuals, Jayaratne et al., 2006) and more acceptance of personal failures (e.g., Plaks et al., 2005) and wrongdoings (e.g., Kammrath & Dweck, 2006) than incrementalists being less accepting and forgiving (e.g., Ryazanov & Christenfeld, 2018b). To reconcile the incongruity between the view that essentialism is maladaptive at both group and individual levels and the evidence that essentialism is not necessarily maladaptive but sometimes even beneficial, Ryazanov and Christenfeld (2018a) suggest to consider three things: Acceptance, Valence, and Identity. *Acceptance* concerns whether social groups or personal faults can be accepted when groups or traits are essentialized, which has much to do with the judgment of accountability. Personal wrongdoings, for instance, are more likely to be accepted by trait essentialists because there is limited potential for improvement (e.g., "He can't help being aggressive, and that's not his fault"; Kammrath & Dweck, 2006). *Valence* refers to the positivity or negativity of what is essentialized. Depending on the valence of the views on the underlying essence of social groups or a person (e.g., optimistic vs. pessimistic view on human nature), essentialists are more likely to make positive or negative social judgments, respectively (e.g., Newman et al., 2015). Finally, *Identity* refers to the role of essentialism in identity formation. Essentialists about their own in-group have a sense of certainty (Hogg, 2007) and are more open to out-group members (Fischer, 2011); people tend to essentialize positive traits more than negative traits and use them as defining core identity, which results in more positive social perceptions (e.g., "Being compassionate is an essence of his identity, and he is a truly compassionate person"; Newman et al., 2014). Ryazanov and Christenfeld assume that social cognitive consequences of entity/incremental theories depend on the dynamics by which these three aspects manifest in social contexts.

This theoretical framework, particularly *Acceptance*, guides several predictions regarding the association between implicit theories of happiness and trait perceptions toward happy and unhappy people. First, entity theorists of happiness would perceive unhappy people less negatively as they are not accountable for their unhappiness but something else, such as genes, and should not be blamed for their unhappy characters. Similarly, entity theorists of happiness would perceive happy people less positively assuming that happiness is merely granted to happy people, and thus they should not be credited for their happy characters. Second, happiness incrementalists would perceive happy people more positively as they should be credited for their effort and continual success to remain happy. By the same logic, happiness incrementalists would perceive unhappy people even more negatively as their unhappiness indicates continual failures despite that they can improve with effort.

The Present Studies

Informed by the aforementioned predictions, the present research examined two overarching hypotheses: an entity theory of happiness would have attenuating effects on the negative trait perceptions toward unhappy people, which we refer to as an *attenuation hypothesis*; an incremental theory of happiness would have enhancing effects on the positive trait perceptions toward happy people, which we refer to as an *enhancement hypothesis*. Note that these hypotheses are solely derived from Ryazanov and Christenfeld's *Acceptance* notion, rather than *Valence* or *Identity*, because, on one hand, *Acceptance* generates the most straightforward predictions regarding the social cognitive processes by which entity/incremental theorists of happiness perceive happy and unhappy people. On the other hand, *Valence* and *Identity* produce less straightforward hypotheses and perhaps better serve as guidance for making predictions about boundary conditions or individual differences, such as beliefs about good true self (Newman et al., 2014). We discuss about the latter as future research avenues in General Discussion.

To test our hypotheses, we operationalize an entity theory of happiness with the biological basis and immutability EBH components, and an incremental theory of happiness with the effort constructivism EBH (Choi et al., 2021), as described earlier. Trait perceptions toward happy and unhappy people were made in diverse domains, including competence and warmth (e.g., intelligent and warm, Studies 1–4), two fundamental dimensions in person perception (Fiske et al., 2002), as well as psychological immaturity (e.g., childish, Studies 1–4), attractiveness (e.g., charming, Studies 2 and 4), and

morality (e.g., honest, Studies 2 and 4), those that are critical in person perception (e.g., Erikson, 1963) and differently perceived for happy and unhappy people (Diener et al., 1995; King & Napa, 1998). Four studies were conducted, with two correlational (Studies 1 and 2) and two experimental studies (Studies 3 and 4). We evaluated the hypotheses by examining how each EBH component was associated with the trait perceptions toward happy and unhappy people, and by further probing whether these associations would differ between experimentally induced entity and incremental theorists of happiness.

Study 1

In Study 1, we examined the association between implicit theories of happiness and the trait perceptions toward happy and unhappy people in competence, warmth, and psychological immaturity. We hypothesized that while happy people would be rated as more competent, warm, and psychologically less immature than unhappy people, the perceptions favoring happy over unhappy people would be attenuated by an entity theory of happiness and enhanced by an incremental theory of happiness.

Method

All study materials and data for the present studies can be found in the Open Science Framework (OSF) at https://osf.io/z2km9. We report the relevant measures (except for self-continuity measures in Study 1, irrelevant to the current research, see OSF for details; and job-applicant evaluations in Study 3, see Note 2 and the online Supplemental Material for details), manipulations, and exclusions in these studies.

Participants. Two hundred eighty participants (159 female, 115 male, 4 other, 2 prefer not to answer; aged 18–80 years, M_{age} = 34.40, SD = 13.03) were recruited via Prolific, the U.K.-based online research platform (Peer et al., 2017). They received £0.70 (approximately 1.00 USD) for completion of the survey. To ensure data quality, we included a self-report attention check question (i.e., "Did you pay attention to this survey while completing?") and excluded 24 respondents who indicated no (final n = 256). This sample size was not guided by an a priori power analysis; however, we followed the recommendation of sampling minimum 250 for detecting a stable correlation estimate (Schönbrodt & Perugini, 2013). A sensitivity test via G*Power (Faul et al., 2007) revealed that our final sample size can detect a minimum effect of interest of f^2 = .04 at p = .05 with power of .80.

Materials and Procedure

EBH. To assess implicit theories of happiness, we used the 12-item EBH scale (Choi et al., 2021). This measure consists of three four-item subscales: biological basis (e.g., "Happiness is genetically determined"), effort constructivism (e.g., "Anyone can become happy with practice and effort"), and immutability (e.g., "In general, person's happiness level does not change much throughout one's lifetime"). Participants indicated their agreement with items on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). As in the previous research (Choi et al., 2021), each subscale showed a good reliability and thus was averaged for their composite scores (biological basis: α = .71; effort constructivism: α = .80; immutability: α = .75).

Trait Perceptions. Participants first were given brief descriptions about happy and unhappy people: Happy people were described as "generally very happy. They enjoy life regardless of what is going on, getting the most out of everything," and unhappy people as "generally very unhappy. Although they are not depressed, they never seem as happy as they might be" (adapted from Lyubomirsky & Lepper, 1999, p. 151). They then rated happy and unhappy people by using a 7-point scale (1 = *not at all*, 7 = *extremely*) for three trait domains: *competence* (competent, independent, competitive, intelligent), *warmth* (sincere, warm, tolerant, trustworthy), and *psychological immaturity* (complaining, selfish, childish; hereinafter shortened as *immaturity*). Participants' ratings of happy and unhappy people were averaged for each trait domain (competence: α = .78; warmth: α = .86; immaturity: α = .72, toward happy people; competence: α = .77; warmth: α = .83; immaturity: α = .80, toward unhappy people). Finally, to ensure that happy people were perceived as happier than unhappy people, we asked participants to rate how "happy" and "depressed" happy and unhappy people are on a 7-point scale (1 = *not at all*, 7 = *extremely*).

Results

As predicted, participants rated happy people as happier and less depressed than unhappy people (see Table 1). Participants also rated happy people as more competent, warmer, and less immature than unhappy people. Descriptive statistics and bivariate correlations among study variables are presented in Table 2.

To test our hypotheses, we performed a multivariate regression analysis by using Mplus (version 8.0; Muthén & Muthén, 1998–2017). Specifically, we tested a regression model in which each EBH component predicts each of the trait ratings for happy and unhappy people simultaneously. As shown in Table 3, we found that the biological basis EBH positively predicted the competence and, albeit marginally significant, warmth ratings for unhappy people. Conversely, the effort constructivism of EBH positively predicted the competence and warmth and, albeit marginally significant, negatively immaturity ratings for happy people; it also positively predicted the immaturity ratings for unhappy people. However, we found mixed patterns regarding the immutability EBH: It predicted neither competence nor

Table 1. Differences in Trait Perceptions Toward Happy and Unhappy People in Study 1.

	Happy people	Unhappy people				
Trait	*M* (*SD*)	*M* (*SD*)	*t*	*df*	*p*	*d*
Happiness	6.43 (0.92)	2.00 (1.29)	39.89	254	<.001	3.03
Depression	1.81 (1.08)	5.37 (1.26)	−32.47	254	<.001	−2.08
Competence	4.84 (0.92)	4.46 (0.98)	5.25	254	<.001	0.33
Warmth	5.47 (0.93)	3.73 (1.05)	19.40	254	<.001	1.29
Immaturity	2.69 (1.04)	4.22 (1.29)	−15.91	254	<.001	−1.13

Table 2. Descriptive Statistics and Bivariate Correlations Among Study Variables in Study 1.

Variable	1	2	3	4	5	6	7	8	9
1. BBH	–								
2. ECH	−.20**	–							
3. IMH	.52***	−.11†	–						
4. CP HP	.02	.33***	.01	–					
5. WM HP	−.004	.36***	−.07	.59***	–				
6. PI HP	.19**	−.15*	.27***	−.24***	−.36***	–			
7. CP UP	.16**	−.06	−.001	.24***	.23***	.10†	–		
8. WM UP	.11†	−.07	−.001	.10†	−.05	.12†	.53***	–	
9. PI UP	.03	.26***	.14*	.21*	.29***	.15*	−.08	−.39***	–
M	3.53	4.98	2.90	3.42	4.03	3.50	3.94	4.63	5.21
SD	1.11	1.03	1.13	1.28	1.01	0.95	0.90	0.87	0.89

Note. BBH = biological basis of happiness; ECH = effort constructivism of happiness; IMH = immutability of happiness; CP = competence; WM = warmth; PI = psychological immaturity; HP = happy people; UP = unhappy people.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 3. Multivariate Regression Analysis Predicting Trait Perceptions Toward Happy and Unhappy People in Study 1.

	Happy people			Unhappy people		
Predictor	Competence	Warmth	Immaturity	Competence	Warmth	Immaturity
BBH	.07 (.06)	.10 (.06)	.04 (.07)	**.19**** (.07)	.13† (.08)	−.02 (.09)
ECH	**.29***** (.05)	**.31***** (.05)	−.11† (.06)	−.04 (.06)	−.06 (.06)	**.31***** (.07)
IMH	.01 (.06)	−.08 (.06)	**.22**** (.07)	−.10 (.07)	−.07 (.07)	**.22**** (.09)
R^2	.12**	.14**	.09*	.03	.02	.09**

Note. Estimates are unstandardized beta coefficients, and the values in the parentheses indicate standard errors. Significant beta coefficients are bolded.
BBH = biological basis of happiness; ECH = effort constructivism of happiness; IMH = immutability of happiness.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

warmth for happy and unhappy people, while it positively predicted immaturity *both* for happy and unhappy people.

Discussion

Overall, Study 1 findings provide some evidence for our hypotheses. The enhancement hypothesis was supported by the findings that the effort constructivism EBH positively predicted the perceptions of how competent and warm happy people are; the attenuation hypothesis was partly supported by the findings that the biological basis EBH positively predicted the perceptions of how competent and warm unhappy people are.

However, we also found some patterns that are hardly explained. It is puzzling to understand why the immutability EBH positively predicted the perceived immaturity of both happy and unhappy people. It is also unclear why the biological basis EBH was significantly associated with competence of unhappy people but not with warmth and immaturity. Thus, it is necessary to examine whether these findings would be replicated, preferably with a larger sample. Study 2 addressed this issue.

Study 2

Study 2 was a preregistered study (https://aspredicted.org/ig3bz.pdf) with three goals. First, we aimed to replicate the previous findings, as described in our preregistered hypothesis that "EBH is positively associated with positive trait perceptions (e.g., competent, warm, and less immature) toward unhappy people, compared with happy people." Second, we extended trait domains by including attractiveness and morality to examine whether the implicit theories about happiness would differently predict how attractive and moral happy and unhappy people are (Diener et al., 1995; King & Napa, 1998). Third, we explored the possibility that the implicit theories of happiness would uniquely explain the trait perceptions toward happy and unhappy people by accounting for essentialist beliefs about human attributes in general (e.g., immutability, Bastian & Haslam, 2006; Levy et al., 1998). For instance, it will be particularly important to test how biological basis and immutability EBH predict the perceived traits of happy and unhappy people while controlling for biological basis and immutability of human attributes, respectively. If any of the EBH components still predicts the perceived traits of happy and unhappy people while controlling for essentialist beliefs about human attributes, it would suggest their unique explanatory values for understanding how happy and unhappy people are perceived.

Method

Participants. Three hundred forty-eight participants (138 female, 201 male, 2 other, 3 prefer not to answer; aged 18–93 years, $M_{age} = 43.22$, $SD = 14.59$) were recruited via Prolific. They received £1.00 (approximately 1.40 USD) for completion of the survey. As preregistered, we included one attention check item (i.e., "For quality control purposes, please select 'Agree'") and one self-report seriousness check question (i.e., "whether you have taken part seriously or whether you were just clicking through," Aust et al., 2013). We excluded four respondents accordingly (final $n = 344$). This sample size exceeds a recommended sample size of 297 guided by an a priori power analysis, based on the smallest effect size found in Study 1 ($f^2 = 0.08$) with power of .95 at an adjusted $p = .008$ for a multivariate regression analysis.

Materials and Procedure

EBH. As in Study 1, we used the same EBH scale to measure the implicit theories of happiness. We averaged the responses for the composite scores of each EBH component (biological basis: $\alpha = .77$; effort constructivism: $\alpha = .81$; immutability: $\alpha = .82$).

Essentialist Beliefs. Guided by the previous research (Bastian & Haslam, 2006), we measured essentialist beliefs about human attributes with four scales: the eight-item immutability (e.g., "The kind of person someone is, is something very basic about them and it can't be changed very much"; Levy et al., 1998), the eight-item biological basis (e.g., "The kind of person someone is can be largely attributed to their genetic inheritance"; Bastian & Haslam, 2006), the eight-item discreteness (e.g., "The kind of person someone is, is clearly defined; they either are a certain kind of person or they are not"; Bastian & Haslam, 2006), and the seven-item informativeness scales (e.g., "When getting to know a person it is possible to get a picture of the kind of person they are very quickly"; Bastian & Haslam, 2006). They assess essentialist beliefs that there are immutable and biologically grounded human attributes that distinguish people into discrete categories and help make informative inferences about them. Participants indicated their agreement with items on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*); their responses were averaged for the composite scores of each essentialist belief (immutability: $\alpha = .95$; biological basis: $\alpha = .87$; discreteness: $\alpha = .82$; informativeness: $\alpha = .79$).

Trait Perceptions. As in Study 1, participants rated how they perceive happy and unhappy people in competence, warmth, and immaturity domains. We also included traits for attractiveness (attractive, likable, charming) and morality (fair, responsible, honest). We found good reliabilities for all trait domains and created the averaged composite scores of ratings (competence: $\alpha = .73$; warmth: $\alpha = .77$; immaturity: $\alpha = .70$; attractiveness: $\alpha = .79$; morality: $\alpha = .85$, toward happy people; competence: $\alpha = .74$; warmth: $\alpha = .84$; immaturity: $\alpha = .72$; attractiveness: $\alpha = .86$; morality: $\alpha = .84$, toward unhappy people). Participants also rated how happy and depressed happy and unhappy people are.

Results

As expected, happy people were perceived as happier, less depressed, more competent, warmer, less immature, more attractive, and more moral than unhappy people (see Table 4). Correlations among the study variables are presented in Table 5.

To test the hypotheses, we performed two multivariate regression analyses by using Mplus (version 8.0; Muthén & Muthén, 1998–2017). In the first multivariate regression model, the ratings of happy and unhappy people across five trait domains were simultaneously regressed onto the three EBH components (see Model 1 in Table 6). Primarily, we found that the effort constructivism EBH positively predicted the competence, warmth, attractiveness, and morality ratings for happy people. In contrast, the effort constructivism EBH negatively predicted the warmth, attractiveness, morality, and positively immaturity for unhappy people. These results are consistent with our preregistered hypothesis concerning the enhancing effect of an incremental theory of happiness.

The biological basis EBH neither predicted any of the trait perceptions for happy nor unhappy people, which did

Table 4. Differences in Trait Perceptions Toward Happy and Unhappy People in Study 2.

	Happy people	Unhappy people				
Trait	*M* (*SD*)	*M* (*SD*)	*t*	*df*	*p*	*d*
Happiness	6.36 (0.84)	1.86 (1.22)	49.70	343	<.001	3.32
Depression	1.80 (1.01)	4.74 (1.65)	−27.21	343	<.001	−1.98
Competence	4.63 (0.87)	4.20 (0.98)	6.77	343	<.001	0.40
Warmth	5.21 (0.89)	3.53 (1.09)	22.15	343	<.001	1.34
Immaturity	2.58 (1.02)	4.06 (1.22)	−17.31	343	<.001	−1.03
Attractiveness	5.31 (0.95)	3.05 (1.15)	27.70	343	<.001	1.66
Morality	4.94 (0.94)	4.10 (1.06)	12.10	343	<.001	0.69

Table 5. Descriptive Statistics and Bivariate Correlations Among Study Variables in Study 2.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	*M*	*SD*
1. BBH	–							.12*	.15**	−.08	−.11*	.13*		
2. ECH	−.19***	–						−.07	−.15**	.18**	−.13*	−.16**		
3. IMH	.63***	−.25***	–					.16**	.16**	−.05	.16†	.11*		
4. IMM	.40***	−.37***	.56***	–				.11*	−.09†	−.10†	.09†	.11†		
5. BIO	.64***	−.22***	.44***	.44***	–			.10†	.13**	−.08	.07	.12*		
6. DIS	.20***	−.04	.30***	.38***	.27***	–		−.05	−.003	−.18**	.06	−.01		
7. INF	.21***	.01	.27***	.25***	.30***	.49***	–	.01	−.07	.01	−.04	−.04		
8. CP	−.10†	.20***	−.05	−.23***	−.14*	−.01	−.001	–	.58***	−.14*	.54***	.73***	4.20	0.98
9. WM	−.13*	.27***	−.10	−.22***	−.10†	−.08	−.001	.60***	–	−.43***	.82***	.80***	3.53	1.09
10. PI	.19**	−.10	.21***	.17**	.14*	.03	.12*	−.22***	−.44***	–	−.41***	−.33***	4.06	1.22
11. ATR	−.08	.28***	−.05	−.17**	−.07	−.01	.02	.59***	.69***	.57***	–	.67***	3.04	1.15
12. MOR	−.11*	.24***	−.08	−.20***	−.14**	−.06	−.02	.70***	.77***	.17**	.21***	–	4.10	1.06
M	3.53	4.98	2.90	3.42	4.03	3.50	3.94	4.63	5.21	2.58	5.31	4.93		
SD	1.11	1.03	1.13	1.28	1.01	0.95	0.90	0.87	0.89	1.03	0.95	0.94		

Note. Values below the diagonal indicate correlations and descriptive statistics for ratings on happy people; values above the diagonal indicate those for ratings on unhappy people. Correlations between trait ratings for happy and unhappy people can be found in the online Supplemental Material. BBH = biological basis of happiness; ECH = effort constructivism of happiness; IMH = immutability of happiness; IMM = immutability of human attributes; BIO = biological basis of human attributes; DIS = discreteness of human attributes; INF = informativeness of human attributes; CP = competence; WM = warmth; PI = psychological immaturity; ATR = attractiveness; MOR = morality.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

not replicate the previous findings. Finally, the immutability EBH positively predicted the immaturity ratings for happy people and positively the competence and attractiveness ratings for unhappy people. Importantly, the immutability EBH did not predict the immaturity ratings for unhappy people, which did not replicate Study 1 findings. These results provide little support for our preregistered hypothesis concerning the attenuating effect of an entity theory of happiness.

In the second multivariate regression model, we included the four essentialist beliefs about human attributes as additional predictors to test the unique effects of implicit theories of happiness. As presented in Table 6 (see Model 2), most of the effects remained significant, particularly the effort constructivism EBH. These findings demonstrate the unique effects of an incremental theory of happiness on the perceptions of happy and unhappy people, which cannot be simply explained by essentialist beliefs about human attributes in general.

Discussion

Overall, Study 2 provides supporting evidence for our hypotheses. Consistent with the enhancement hypothesis, the effort constructivism EBH was associated with the perceptions that happy people are more competent, warm, attractiveness, moral, and less immature, whereas it was associated with the perceptions that unhappy people are less warm, attractive, moral, and more immature. The attenuation hypothesis, however, was little supported. For example, the biological basis EBH was not associated with the perceptions toward happy and unhappy people, which differed from Study 1. The only evidence consistent with the attenuation hypothesis was the findings that the immutability EBH significantly predicted the perceptions that unhappy people are more competent and attractive, which was not observed in Study 1.[1]

Table 6. Multivariate Regression Analysis Predicting Trait Perceptions Toward Happy and Unhappy People in Study 2.

	Happy people									
	Competence		Warmth		Immaturity		Attractiveness		Morality	
Predictor	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
BBH	−.08 (.05)	−.04 (.06)	−.08 (.05)	−.10 (.06)	.08 (.06)	.07 (.07)	−.06 (.06)	−.07 (.07)	−.07 (.06)	−.03 (.07)
ECH	**.17***** (.05)	**.11*** (.05)	**.22***** (.05)	**.19***** (.05)	−.04 (.05)	−.03 (.06)	**.26***** (.05)	**.23***** (.05)	**.22***** (.05)	**.18**** (.05)
IMH	.05 (.05)	**.12*** (.06)	.03 (.05)	.09 (.06)	**.13*** (.06)	.11 (.07)	.05 (.06)	.09 (.06)	.02 (.06)	.07 (.06)
IMM		**−.17***** (.05)		**−.11*** (.05)		.06 (.06)		−.10† (.05)		−.10† (.05)
BIO		−.05 (.06)		.04 (.06)		−.01 (.07)		.04 (.07)		−.05 (.07)
DIS		.05 (.06)		−.06 (.06)		−.10 (.07)		.01 (.06)		−.01 (.06)
INF		.03 (.06)		.05 (.06)		.12† (.06)		.03 (.06)		.02 (.06)
R^2	.05*	.09**	.08**	.10**	.05*	.06*	.08**	.09**	.06*	.08**
	Unhappy people									
	Competence		Warmth		Immaturity		Attractiveness		Morality	
Predictor	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
BBH	.02 (.06)	−.003 (.07)	.08 (.07)	.06 (.08)	−.07 (.08)	−.09 (.09)	.01 (.07)	.02 (.08)	.09 (.07)	.05 (.08)
ECH	−.03 (.05)	−.004 (.06)	**−.12*** (.06)	−.11† (.06)	**.21**** (.07)	**.22**** (.07)	−.10† (.06)	−.11† (.06)	**−.14*** (.06)	**−.12*** (.06)
IMH	**.13*** (.06)	**.13*** (.07)	.07 (.07)	.10 (.07)	.04 (.08)	.09 (.08)	**.14*** (.07)	**.15*** (.08)	.02 (.07)	.02 (.07)
IMM		.04 (.06)		−.02 (.06)		.02 (.07)		−.03 (.06)		.02 (.06)
BIO		.04 (.07)		.07 (.08)		.001 (.09)		−.001 (.08)		.07 (.08)
DIS		−.13† (.07)		.003 (.07)		**−.32***** (.08)		.08 (.08)		−.03 (.07)
INF		.01 (.07)		**−.15*** (.08)		**.16*** (.08)		−.13 (.08)		−.07 (.07)
R^2	.03	.04†	.04†	.06*	.04†	.08**	.04†	.04*	.03†	.04†

Note. Estimates are unstandardized beta coefficients and the values in the parentheses indicate standard errors. Significant beta coefficients are bolded. BBH = biological basis of happiness; ECH = effort constructivism of happiness; IMH = immutability of happiness; IMM = immutability of human attributes; BIO = biological basis of human attributes; DIS = discreteness of human attributes; INF = informativeness of human attributes.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Although Studies 1 and 2 provide the initial proof of concept about the effect of implicit theories of happiness on the trait perceptions toward happy and unhappy people, both studies were correlational. Thus, we are limited to speak about the causality. We addressed this issue in the following experimental studies.

Study 3

In Study 3, we aimed to establish a causal relationship between the implicit theories of happiness and the trait perceptions toward happy and unhappy people. To this end, we experimentally manipulated an endorsement of the malleability of happiness (entity vs. incremental) and then assessed the trait perceptions of happy and unhappy people. We examined whether participants induced to endorse an entity theory of happiness would rate traits of unhappy people less negatively and traits of happy people less positively (attenuation hypothesis) than those induced to endorse an incremental theory of happiness (enhancement hypothesis). Specifically, based on the previous correlational findings suggesting that the enhancement effect was more clearly observed for happy than unhappy people, we preregistered a hypothesis that happy people would be perceived less positively by participants in the entity theory of happiness condition than those in the incremental theory of happiness condition, whereas unhappy people would be perceived similarly across the conditions. Preregistration can be found at https://aspredicted.org/w2wr8.pdf.[2]

Method

Participants. One hundred eighty-three participants (70 female, 109 male, 4 other; aged 18–78 years, $M_{age} = 35.39$, $SD = 12.55$) were recruited through Prolific. They received £1.00 for their participation. As preregistered, we included the same attention check question used in Study 1 and excluded 15 participants failing the attention check from analyses (final $n = 168$). We determined the sample size based on an a priori power analysis (within a mixed analysis of variance [ANOVA] test) that yields 168 as a minimally required sample size for a medium effect size ($f = .14$) to achieve power of .95 at $p = .05$.

Materials and Procedure

Manipulation. We manipulated implicit theories of happiness by adapting a procedure used in the previous research (Choi et al., 2021). Participants were randomly assigned to

Table 7. Endorsement of Implicit Theories of Happiness and Trait Perceptions Toward Happy and Unhappy People Between the Conditions in Study 3.

	Across conditions	Conditions					
		Entity	Incremental				
Variable	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*t*	*df*	*p*	*d*
Implicit theory							
BBH	3.83 (1.59)	4.64 (1.53)	3.02 (1.19)	7.69	166	<.001	1.18
ECH	5.28 (1.32)	4.72 (1.40)	5.83 (0.94)	−6.03	166	<.001	1.12
IMH	3.08 (1.65)	4.01 (1.56)	2.15 (1.14)	8.77	166	<.001	1.36
Competence							
Happy people	5.04 (0.92)	5.08 (0.94)	5.00 (0.90)	0.56	166	.572	0.09
Unhappy people	4.59 (0.98)	4.87 (0.98)	4.32 (0.90)	3.84	166	<.001	0.59
Warmth							
Happy people	5.60 (0.85)	5.60 (0.89)	5.61 (0.81)	−0.04	166	.964	0.01
Unhappy people	3.78 (1.11)	4.06 (1.13)	3.51 (1.03)	3.31	166	.001	0.51
Immaturity							
Happy people	2.72 (1.06)	2.78 (1.17)	2.66 (0.95)	0.73	166	.47	0.11
Unhappy people	4.16 (1.28)	3.99 (1.30)	4.33 (1.24)	−1.73	166	.085	0.27

Note. BBH = biological basis of happiness; ECH = effort constructivism of happiness; IMH = immutability of happiness.

read one of the two mock scientific articles, with one fostering endorsement of an entity theory of happiness ($n = 84$) and the other fostering endorsement of an incremental theory of happiness ($n = 84$). The *entity-theory* article included the arguments with bogus scientific facts suggesting that happiness is genetically determined and thus immutable. For examples, the article says "happy people are just born to be happy. Happiness is not what we can really control" and further elaborates that "genetic disposition is the most important factor determining the level of happiness." In contrast, the *incremental-theory* article delivers the opposite arguments suggesting that happiness depends on intentions and thus changeable. For example, the article says "happy people are not born to be happy. We can control our happiness" and further elaborates that "the extent to which genetic and environmental factors influence one's happiness is not as meaningful as regular engagement in happiness-boosting activities."

As a manipulation check, we used a shortened EBH scale (Choi et al., 2021). Two items for each of the EBH components were selected based on the item-total correlations from Study 1. We computed average scores for each component (biological basis: $r = .89$; effort constructivism: $r = .70$; immutability: $r = .77$).

Trait Perceptions. Participants rated traits of happy and unhappy people in three domains as in Study 1, with one exception: We added one more item "careless" to the immaturity domain, thereby using four items for each trait domain (competence: $\alpha = .78$; warmth: $\alpha = .83$; immaturity: $\alpha = .82$, toward happy people; competence: $\alpha = .77$; warmth: $\alpha = .87$; immaturity: $\alpha = .83$, toward unhappy people). As previously, participants rated happy people as happier ($M = 6.46$, $SD = 0.92$) and less depressed ($M = 1.95$, $SD = 1.26$) than unhappy people ($M = 2.05$, $SD = 1.28$; $M = 5.17$, $SD = 1.43$), $t(167) = 20.23$, $p < .001$, $d = 1.67$; $t(167) = 32.53$, $p < .001$, $d = 3.02$, respectively.

Results

As intended, participants in the entity-theory condition endorsed the biological basis and immutability EBH but rejected the effort constructivism EBH more than those in the incremental-theory condition (see Table 7). Thus, our manipulation was successful.

To examine whether the manipulation affected the trait perceptions of happy and unhappy people, we conducted a 2 (condition: entity vs. incremental) × 2 (target: happy vs. unhappy people) × 3 (trait: competence vs. warmth vs. immaturity) mixed-design ANOVA with condition as a between-subjects factor and target and trait as within-subjects factors. This yielded a significant three-way interaction effect, $F(2, 332) = 5.85$, $p = .003$, $\eta_p^2 = .04$. To understand the interaction pattern, we further conducted a series of two-way ANOVA across the trait domains.

First, an ANOVA on the competence ratings revealed a main effect of target, $F(1, 166) = 24.61$, $p < .001$, $\eta_p^2 = .13$, such that happy people were perceived as more competent than unhappy people (see Table 7). More importantly, a significant interaction effect was observed, $F(1, 166) = 6.83$, $p = .01$, $\eta_p^2 = .04$. As presented in Table 7, unhappy people were perceived as more competent among participants in the entity-theory condition than those in the incremental-theory condition, whereas happy people were perceived as equally competent in both conditions.

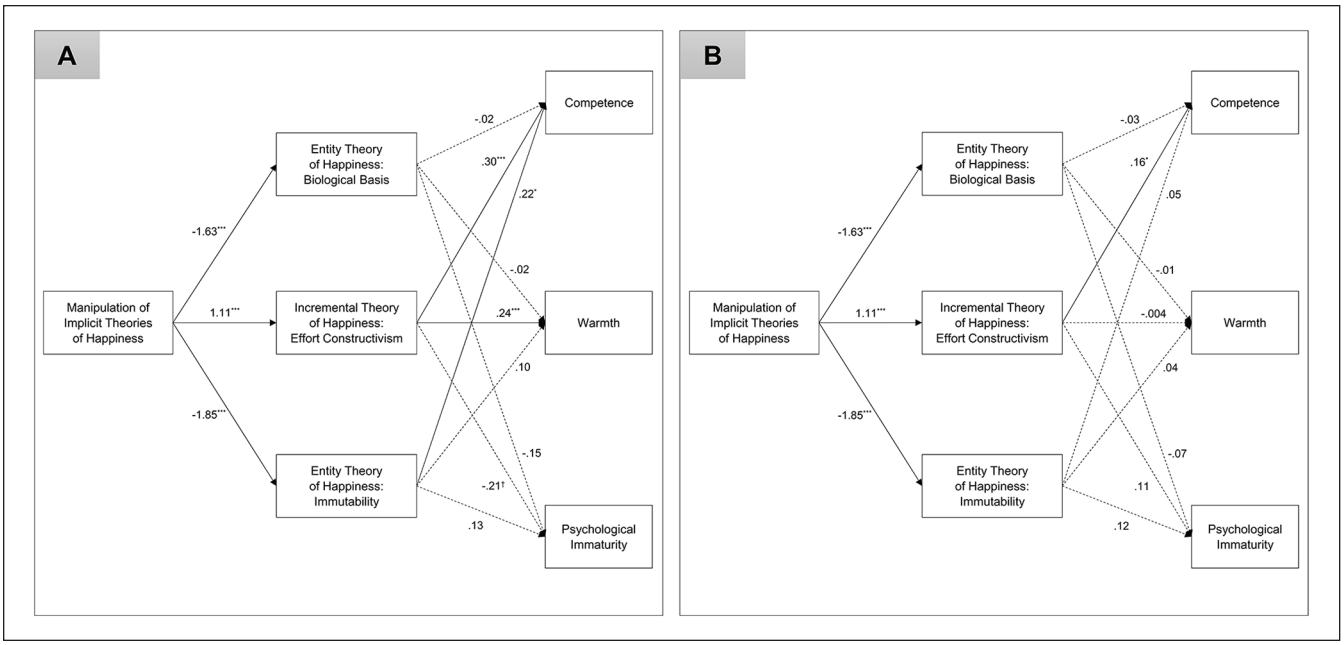

Figure 1. Mediation Analysis: The Effect of Implicit Theories of Happiness Manipulation on the Trait Perceptions Toward Happy and Unhappy People Through the Endorsement of Entity and Incremental Theories of Happiness in Study 3.

Note. Panel A represents the results for the trait perceptions toward happy people; Panel B represents the results for the trait perceptions toward unhappy people. Solid lines indicate significant effects; dotted lines indicate non-significant effects. Estimates are unstandardized beta coefficients. Entity-theory condition was coded as 0; incremental-theory condition was coded as 1.

$^{\dagger}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Second, an ANOVA on the warmth ratings revealed happy people were rated as much warmer than unhappy people, $F(1, 166) = 295.84$, $p < .001$, $\eta_p^2 = .64$. This effect was significantly moderated by the condition, $F(1, 166) = 6.92$, $p = .009$, $\eta_p^2 = .04$, such that the warmth ratings for unhappy people were higher in the entity-theory than incremental-theory conditions, whereas the warmth ratings for happy people did not differ between the conditions (see Table 7).

Finally, an ANOVA submitted to the immaturity ratings revealed that happy people were perceived as much less immature than unhappy people, $F(1, 166) = 144.04$, $p < .001$, $\eta_p^2 = .47$. As for the competence and warmth ratings, there was a consistent interaction effect, albeit marginally significant, $F(1, 166) = 3.62$, $p = .059$, $\eta_p^2 = .02$. Participants in the entity-theory condition rated unhappy people as less immature than those in the incremental-theory condition, whereas happy people were perceived as similarly immature between the conditions (see Table 7).

Taken together, these findings showed that the manipulation did not influence the trait perceptions toward happy people but changed those toward unhappy people. While the overall patterns are consistent with the attenuation hypothesis (i.e., perceiving unhappy people less negatively when endorsing an entity theory), the specific findings differed from our preregistered predictions that the effect of the manipulation would be evident for happy people but not for unhappy people. We conducted the follow-up mediation analysis to address this unexpected issue.

Mediation Analysis. Was the mitigation of the negative perceptions toward unhappy people indeed due to the endorsement of entity theories of happiness? Could it be possible that the unaffected positive perceptions toward happy people might have been indirectly linked with the endorsement of incremental theories of happiness? To answer these questions, although not preregistered, we further explored a mediation pathway in which the manipulation is linked with the trait perceptions toward happy and unhappy people through the endorsements of implicit theories of happiness.

To this end, we performed a path analysis with 10,000 bootstrap sampling by using Mplus (version 8.0; Muthén & Muthén, 1998–2017). As illustrated in Figure 1, the effort constructivism EBH significantly and consistently predicted the trait perceptions toward happy people, which is consistent with Studies 1 and 2 findings. Indeed, there was significant indirect effects of the manipulation on the competence and warmth ratings on happy people via the effort constructivism EBH (see Table 8).[3] This suggests that although our manipulation did not directly influence the perceptions toward happy people, it did so indirectly by changing the endorsement of an incremental theory of happiness.

However, the biological basis and immutability EBH did not significantly predict the trait perceptions toward unhappy

Table 8. Tests of Total, Direct, and Indirect Effects in Mediation Analysis in Study 3.

Path	*B*	*SE*	β	95 % bootstrap CI	
				LL	UL
Manipulation → Competence					
Total effect	−0.08 / −0.56	0.14 / 0.14	−0.04 / −0.28	−0.36 / −0.83	0.20 / 0.26
IE via biological basis	0.03 / 0.04	0.14 / 0.15	0.01 / 0.02	−0.23 / −0.23	0.32 / 0.33
IE via effort constructivism	0.34 / 0.18	0.09 / 0.09	0.18 / 0.09	**0.17** / −0.21	**0.53** / 0.39
IE via immutability	−0.40 / −0.10	0.18 / 0.16	−0.22 / −0.05	**−0.78** / −0.42	**−0.07** / 0.21
Direct effect	−0.04 / −0.67	0.17 / 0.18	−0.02 / −0.35	−0.37 / **−01.02**	0.20 / **–0.33**
Manipulation → Warmth					
Total effect	0.01 / −0.55	0.13 / 0.16	0.004 / −0.25	−0.25 / **−0.87**	0.26 / **−0.22**
IE via biological basis	0.03 / 0.02	0.13 / 0.18	0.02 / 0.01	−0.21 / −0.31	0.29 / 0.40
IE via effort constructivism	0.27 / −0.004	0.08 / 0.11	0.16 / −0.002	**0.13** / −0.20	**0.43** / 0.24
IE via immutability	−0.18 / −0.08	0.15 / 0.22	−0.11 / −0.04	−0.49 / −0.53	0.09 / 0.35
Direct effect	−0.11 / −0.49	0.16 / 0.19	−0.07 / −0.22	−0.41 / **−0.88**	0.20 / **–0.12**
Manipulation → Immaturity					
Total effect	−0.12 / 0.34	0.17 / 0.19	−0.06 / 0.13	−0.44 / −0.03	0.21 / 0.72
IE via biological basis	0.24 / 0.11	0.15 / 0.21	0.11 / 0.04	−0.07 / −0.31	0.53 / 0.53
IE via effort constructivism	−0.23 / 0.12	0.12 / 0.12	−0.11 / 0.05	−0.47 / −0.15	0.004 / 0.35
IE via immutability	−0.25 / −0.23	0.20 / 0.27	−0.12 / −0.09	−0.62 / −0.75	0.14 / 0.31
Direct effect	0.11 / 0.33	0.20 / 0.22	0.05 / 0.13	−0.28 / −0.10	0.50 / 0.78

Note. Entity-theory condition was coded as 0; incremental-theory condition was coded as 1. Coefficients before slash represent estimates for the trait perceptions toward happy people; those after slash represent estimates for the trait perceptions toward unhappy people. Confidence intervals for the significant indirect effects are bolded. IE = indirect effect; CI = confidence interval; LL = lower limit; UL = upper limit.

people (see Figure 1). Accordingly, there was no significant indirect effect of the manipulation on the attenuated negative perceptions toward unhappy people via incremental theories of happiness (see Table 8). Rather, direct effects of the manipulation on the competence and warmth ratings on unhappy people were still significant.

Discussion

Study 3 offers additional evidence for the relationship between implicit theories of happiness and the perceptions toward happy and unhappy people. Experimentally induced happiness entity theorists rated unhappy people less negatively than experimentally induced happiness incrementalists. Although we did not find a difference in the perceived traits for happy people between the conditions, an exploratory mediation analysis revealed indirect pathways in which the manipulation of an incremental theory of happiness was linked with the positive perceptions toward happy people through the greater endorsement of the effort constructivism EBH. Notably, the effects of the manipulation on the perceptions toward unhappy people were not explained by implicit theories of happiness; given the significant direct effects of the manipulation on the competence and warmth ratings on unhappy people, it seems that something else about the manipulation other than implicit theories of happiness may have mitigated the negative perceptions toward unhappy people. For example, demand characteristics might have affected the participants. We conducted Study 4 to address these unexplained issues.

Study 4

The main goal of Study 4 was to replicate Study 3 findings. As preregistered (https://aspredicted.org/vm9y7.pdf), we hypothesized that "believing that happiness is fixed leads to more positive trait perceptions (e.g., competent, warm, and less immature) toward unhappy people, compared to believing that happiness is changeable." We also examined whether Study 3 findings of "no difference in trait evaluations toward happy people between entity-theory and incremental-theory happiness conditions" would be replicated.

Importantly, Study 4 included a few additional changes. First, we used the full 12-item EBH scale rather than a shortened version as an assessment of implicit theories of happiness following the manipulation. Second, as in Study 2, we added attractiveness and morality to the trait perceptions. Third, we preregistered a mediation analysis performed in Study 3 as a confirmatory analysis. Specifically, we hypothesized that "there would be mediation links in which the manipulation indirectly influences more positive trait perceptions toward happy people through the endorsement of an incremental theory of happiness (*enhancement hypothesis*), while the manipulation indirectly influences less negative trait perceptions toward unhappy people through the endorsement of an entity theory of happiness (*attenuation*

hypothesis)." Fourth, we slightly tweaked the articles used in the manipulation. Specifically, we changed the wordings "control" to "change" (e.g., Happiness is not *what we can really control* to Happiness is not *something we can easily change*) to rule out a possibility that what had been manipulated was controllability not changeability of happiness. Fifth, we counterbalanced order in which participants rate traits on happy and unhappy people to ensure that order did not matter. Finally, we introduced participants that the study ostensibly has two parts (i.e., the first part about reading articles; the second part about social perceptions; visit OSF for verbatim instructions), so that they would less likely intentionally link the reading task with the trait rating task, thereby minimizing demand characteristics. We further asked participants whether they think they knew the hypotheses and used it as a covariate in analysis.

Method

Participants. Two hundred thirty-four participants (116 female, 116 male, 2 other; aged 19–73 years, $M_{age} = 41.32$, $SD = 13.40$) were recruited through Prolific. They received £1.00 for their participation. As preregistered, we excluded two participants who indicated that they did not participate seriously and two who failed to follow the instruction (i.e., copying and pasting the article instruction instead of writing a summary) from analyses (final $n = 230$). This sample size exceeded a recommended sample size of 202 based on an a priori power analysis (within a mixed ANOVA test) with a medium effect size ($f = .14$) to achieve power of .95 at $p = .05$.

Materials and Procedure

Manipulation. As aforementioned, we used the same manipulation from Study 3 with the slight changes of wordings (visit OSF for details). Participants were randomly assigned to reading the *entity-theory* ($n = 115$) or *incremental-theory* articles ($n = 115$) and then provided a summary of what they read as a comprehension check. Afterward, they completed the full 12-item EBH scale (Choi et al., 2021) as a manipulation check. We computed average scores for each EBH component (biological basis: $\alpha = .76$; effort constructivism: $\alpha = .89$; immutability: $\alpha = .88$).

Trait Perceptions. Participants rated traits of happy and unhappy people as in Study 2. We averaged the composite rating scores of each trait domain (competence: $\alpha = .77$; warmth: $\alpha = .85$; immaturity: $\alpha = .77$; attractiveness: $\alpha = .82$; morality: $\alpha = .87$, toward happy people; competence: $\alpha = .75$; warmth: $\alpha = .82$; immaturity: $\alpha = .79$; attractiveness: $\alpha = .88$; morality: $\alpha = .79$, toward unhappy people). As in previous studies, participants rated happy people as happier ($M = 6.30$, $SD = 0.99$) and less depressed ($M = 1.90$, $SD = 1.19$) than unhappy people ($M = 1.96$, $SD = 1.36$; $M = 4.97$, $SD = 1.53$), $t(229) = 34.76$, $p < .001$, $d = 2.74$; $t(229) = 23.71$, $p < .001$, $d = 1.80$, respectively.

Demand Characteristics. We asked participants to answer four items about whether they knew our hypotheses and respond to questions accordingly (e.g., "I knew what the researchers were investigating in this research," Rubin, 2016) on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Their responses were averaged and used as an indicator of demand characteristics ($\alpha = .96$).

Results

The manipulation was successful, such that participants in the entity-theory condition endorsed the biological basis and immutability EBH but rejected the effort constructivism EBH more than those in the incremental-theory condition (see Table 9). Participants reported that they knew the hypotheses of this study to a moderate degree ($M = 4.59$, $SD = 1.80$), which did not differ between the conditions ($M_{entity} = 4.43$, $SD = 1.77$ vs. $M_{incremental} = 4.75$, $SD = 1.83$), $t(228) = 1.33$, $p = .185$, $d = 0.18$. The results remained intact when this sense of knowing the hypotheses was included in analyses as a moderator or covariate; hence, it will not be discussed further.

As preregistered, we conducted a series of 2 (condition: entity vs. incremental) × 2 (target: happy vs. unhappy people) mixed-design ANOVA with condition as a between-subjects factor and target as a within-subjects factor across the trait domains.[4] First, an ANOVA submitted to the competence ratings revealed a main effect of target, $F(1, 228) = 22.84$, $p < .001$, $\eta_p^2 = .13$, such that happy people were perceived as more competent than unhappy people (see Table 9). Inconsistent with Study 3, however, we did not find a significant interaction effect, $F(1, 228) = 0.10$, $p = .752$, $\eta_p^2 < .001$. As presented in Table 9, the same pattern was observed across the other trait domains: happy people were perceived as warmer, less immature, more attractive, and more moral than unhappy people, Fs > 104.53, ps $< .001$, $\eta_p^2 > .31$, and this difference was not moderated by the condition, Fs < 1.63, ps $> .20$, $\eta_p^2 < .007$. Thus, our first preregistered hypothesis was not supported.

Mediation Analysis. Although there was no difference in the trait perceptions between the conditions, the manipulation might have been indirectly linked with the perceptions toward happy and unhappy people through the endorsement of implicit theories of happiness (the second preregistered hypothesis). As illustrated in Figure 2, a path analysis with 10,000 bootstrap sampling revealed that the effort constructivism EBH significantly and consistently predicted the trait perceptions toward happy people (except for immaturity), which replicates and extends Study 3 findings. Consequently, indirect effects via the effort constructivism EBH were significant (see Table 10). These findings support the enhancement hypothesis.

We also found some supporting evidence for the attenuation hypothesis: The immutability EBH significantly mediated

Table 9. Endorsement of Implicit Theories of Happiness and Trait Perceptions Toward Happy and Unhappy People Between the Conditions in Study 4.

	Across conditions	Conditions					
		Entity	Incremental				
Variable	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*t*	*df*	*p*	*d*
Implicit theory							
BBH	4.14 (1.22)	4.48 (1.28)	3.80 (1.06)	4.41	228	< .001	0.58
ECH	4.99 (1.28)	4.56 (1.39)	5.42 (1.00)	−5.37	228	< .001	0.71
IMH	3.27 (1.45)	3.91 (1.52)	2.63 (1.04)	7.46	228	< .001	0.98
Competence							
Happy people	4.64 (0.93)	4.63 (0.91)	4.66 (0.96)	−0.28	228	.778	0.03
Unhappy people	4.20 (0.96)	4.20 (0.96)	4.19 (0.96)	0.10	228	.918	0.01
Warmth							
Happy people	5.23 (0.96)	5.15 (0.92)	5.30 (1.00)	−1.17	228	.245	0.16
Unhappy people	3.55 (1.05)	3.54 (1.13)	3.56 (0.98)	0.17	228	.864	0.02
Immaturity							
Happy people	2.57 (1.06)	2.75 (1.11)	2.38 (0.97)	2.64	228	.009	0.36
Unhappy people	3.90 (1.21)	3.98 (1.16)	3.81 (1.26)	1.06	228	.289	0.14
Attractiveness							
Happy people	5.29 (0.95)	5.23 (0.96)	5.34 (0.94)	−0.90	228	.368	0.12
Unhappy people	3.13 (1.16)	3.20 (1.10)	3.06 (1.21)	0.93	228	.354	0.12
Morality							
Happy people	4.98 (1.05)	4.96 (1.01)	4.99 (1.09)	−0.25	228	.802	0.03
Unhappy people	4.06 (1.01)	3.99 (0.96)	4.13 (1.06)	−1.06	228	.289	0.14

Note. BBH = biological basis of happiness; ECH = effort constructivism of happiness; IMH = immutability of happiness.

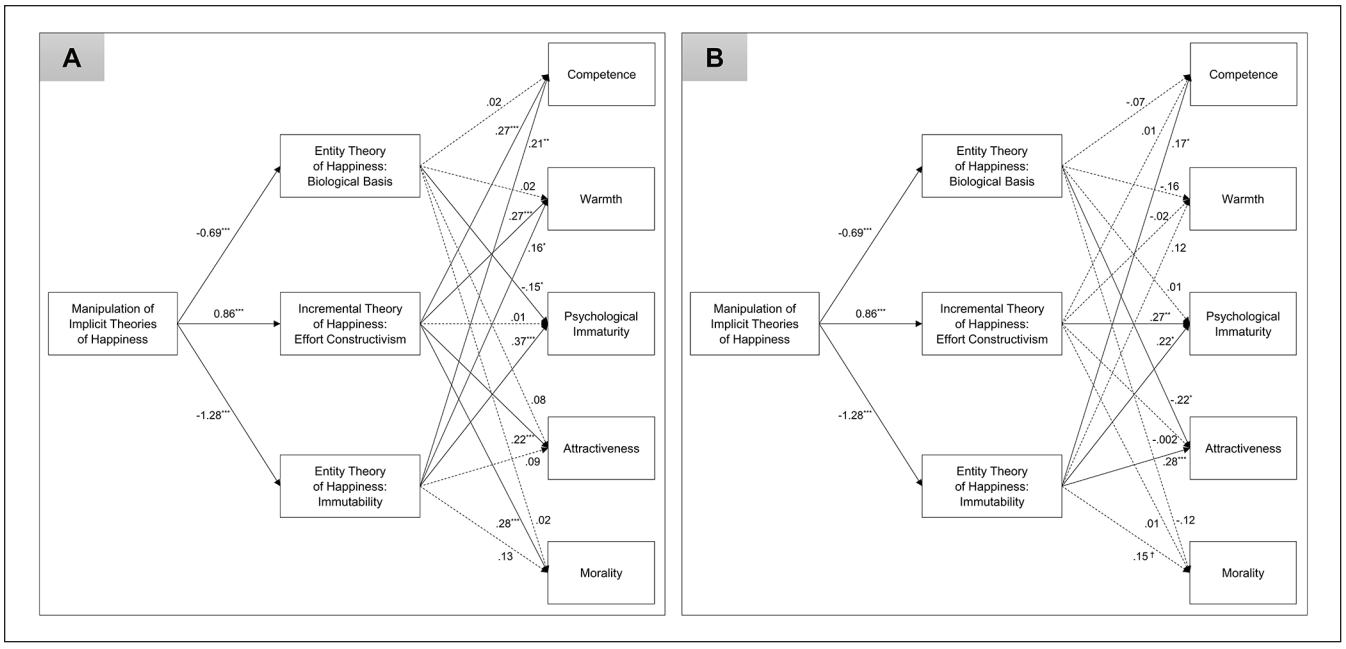

Figure 2. Mediation Analysis: The Effect of Implicit Theories of Happiness Manipulation on the Trait Perceptions Toward Happy and Unhappy People Through the Endorsement of Entity and Incremental Theories of Happiness in Study 4.

Note. Panel A represents the results for the trait perceptions toward happy people; Panel B represents the results for the trait perceptions toward unhappy people. Solid lines indicate significant effect(s); dotted lines indicate non-significant effects. Estimates are unstandardized beta coefficients. Entity-theory condition was coded as 0; incremental-theory condition was coded as 1.

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 10. Tests of Total, Direct, and Indirect Effects in Mediation Analysis in Study 4.

				95 % bootstrap CI	
Path	*B*	*SE*	β	LL	UL
Manipulation → Competence					
Total effect	0.04 / −0.01	0.12 / 0.13	0.02 / −0.01	−0.21 / −0.26	0.27 / 0.23
IE via biological basis	−0.01 / 0.05	0.06 / 0.06	−0.01 / 0.03	−0.12 / −0.06	0.10 / 0.19
IE via effort constructivism	0.23 / 0.01	0.07 / 0.07	0.12 / 0.01	**0.09** / −0.13	**0.38** / 0.13
IE via immutability	−0.26 / −0.21	0.11 / 0.10	−0.14 / −0.11	**−0.49** / **−0.43**	**−0.06** / **−0.02**
Direct effect	0.08 / 0.14	0.13 / 0.13	0.04 / 0.07	−0.18 / −0.11	0.33 / 0.38
Manipulation → Warmth					
Total effect	0.15 / 0.02	0.13 / 0.14	0.08 / 0.01	−0.10 / −0.25	0.40 / 0.30
IE via biological basis	−0.01 / 0.11	0.06 / 0.08	−0.01 / 0.05	−0.14 / −0.02	0.11 / 0.30
IE via effort constructivism	0.23 / −0.01	0.06 / 0.07	0.12 / −0.01	**0.11** / −0.16	**0.35** / 0.12
IE via immutability	−0.20 / −0.16	0.10 / 0.14	−0.11 / −0.08	**−0.39** / −0.45	**−0.01** / 0.09
Direct effect	0.14 / 0.09	0.13 / 0.15	0.07 / 0.04	−0.11 / −0.21	0.39 / 0.38
Manipulation → Immaturity					
Total effect	−0.36 / −0.17	0.14 / 0.16	−0.17 / −0.07	**−0.63** / −0.49	**−0.09** / 0.15
IE via biological basis	0.10 / −0.01	0.06 / 0.07	0.05 / −0.003	**0.001** / −0.17	**0.23** / 0.13
IE via effort constructivism	0.01 / 0.23	0.06 / 0.08	0.002 / 0.01	−0.12 / **0.09**	0.13 / **0.40**
IE via immutability	−0.47 / −0.28	0.13 / 0.13	−0.22 / −0.11	**−0.73** / **−0.53**	**−0.23** / **−0.04**
Direct effect	−0.002 / −0.12	0.15 / 0.18	−0.001 / −0.05	−0.29 / −0.47	0.28 / 0.23
Manipulation → Attractiveness					
Total effect	0.11 / −0.14	0.13 / 0.15	0.06 / −0.06	−0.13 / −0.44	0.36 / 0.16
IE via biological basis	−0.06 / 0.15	0.06 / 0.09	−0.03 / 0.07	−0.19 / **0.01**	0.06 / **0.36**
IE via effort constructivism	0.19 / −0.001	0.06 / 0.07	0.10 / −0.001	**0.08** / −0.15	**0.30** / 0.14
IE via immutability	−0.11 / −0.36	0.09 / 0.14	−0.06 / −0.16	−0.29 / **−0.76**	0.07 / **−0.10**
Direct effect	0.10 / 0.07	0.13 / 0.16	0.05 / 0.03	−0.16 / −0.25	0.35 / 0.38
Manipulation →Morality					
Total effect	0.04 / 0.14	0.14 / 0.13	0.02 / 0.07	−0.24 / −0.12	0.30 / 0.40
IE via biological basis	−0.01 / 0.08	0.06 / 0.07	−0.01 / 0.04	−0.14 / −0.03	0.11 / 0.24
IE via effort constructivism	0.24 / 0.01	0.07 / 0.07	0.11 / 0.01	**0.10** / −0.14	**0.38** / 0.15
IE via immutability	−0.17 / −0.19	0.11 / 0.12	−0.08 / −0.09	−0.37 / −0.42	0.05 / 0.03
Direct effect	−0.02 / 0.24	0.14 / 0.15	−0.01 / 0.12	−0.30 / −0.05	0.26 / 0.52

Note. Entity-theory condition was coded as 0; incremental-theory condition was coded as 1. Coefficients before slash represent estimates for the trait perceptions toward happy people; those after slash represent estimates for the trait perceptions toward unhappy people. Confidence intervals for the significant indirect effects are bolded. IE = indirect effect; CI = confidence interval; LL = lower limit; UL = upper limit.

the effect of the manipulation on the decreased competence and warmth perceptions toward happy people and on the decreased immaturity perceptions toward unhappy people; the biological basis EBH significantly mediated the effect of the manipulation on the increased immaturity perceptions toward happy people and attractiveness perceptions toward unhappy people. However, we also found mixed patterns, such that the immutability EBH significantly mediated the effect of the manipulation on the *decreased* immaturity perceptions toward happy people and the *decreased* competence and attractiveness perceptions toward unhappy people. Thus, here we found limited support for the attenuation hypothesis.

Discussion

Study 4 provides yet another evidence for how implicit theories of happiness affect the perceptions toward happy and unhappy people. Along with Study 3 findings, there was much more consistent evidence for the enhancement hypothesis such that the greater endorsement of an incremental theory of happiness, induced by the manipulation, was linked with the increased positive perceptions toward happy people. However, there were much less consistent but more mixed patterns for the attenuation hypothesis.

General Discussion

The current research explored the roles of implicit theories of happiness in the positive perceptions favoring happy over unhappy people. Our two correlational and two experimental studies support the enhancement hypothesis such that an incremental theory of happiness contributes to the perceptions that happy people have many desirable traits, including competence, warmth, attractiveness, and morality (Studies

1–4), and the perceptions that unhappy people lack desirable traits (warmth and morality, Study 2) and have undesirable traits (immaturity, Studies 1, 2, and 4). The enhancement effect was particularly robust because the observed patterns remained unchanged when controlling for general essentialism beliefs about human attributes (Study 2). We also found some evidence for the attenuation hypothesis such that an entity theory of happiness was associated with the perceptions of happy people as more immature (Studies 1, 2, and 4) and less competent (Studies 3 and 4), and the perceptions of unhappy people as more competent (Studies 1 and 2) and more attractive (Studies 3 and 4), although the findings were mixed and inconsistent across studies and measures (see below). Overall, our findings speak more to the enhancement hypothesis but less to the attenuation hypothesis.

It is noteworthy to highlight a few findings. First, despite some evidence, the attenuation hypothesis received limited support. For instance, entity theorists of happiness with the immutability EBH viewed unhappy people as less competent and attractive (Study 4) and more immature (Study 1) and rated happy people as less immature (Study 4). An entity theory of happiness with the biological basis EBH did have the proposed attenuating effects (e.g., enhanced attractiveness perceptions toward unhappy people in Study 4); however, it was not a significant predictor most of the cases (Study 2). These mixed patterns suggest that the attenuating effect of entity theories of happiness, whether biological basis or immutability, seems dubious and probably hinges on contextual nuances and individual differences. Second, in Study 3, the manipulation influenced the perceptions toward unhappy people; however, it was not explained by any of the implicit theories of happiness, but by the direct effect of the manipulation. In Study 4, we did not replicate these observations. Several changes made in Study 4 may explain this disparity. Participants in Study 4 believed there were purportedly two parts of the study, which may help them intentionally unlink the manipulation from the trait perception tasks, thereby reducing possible demand characteristics. We also changed the wordings representing controllability to those representing changeability in the manipulation, which might have removed the unexplained direct effects of the manipulation (e.g., uncontrollability of happiness may have stronger effects than changeability of happiness).

Theoretical Implications

The present research provides theoretical implications largely for the two lines of literature. First, building on the previous findings about the intrapersonal effect of the EBH (Choi et al., 2021), the current studies extend the understanding about the EBH to person perceptions. While the previous research implies that an incremental theory of happiness benefits individuals by motivating them to engage in the happiness-boosting activities (Lyubomirsky & Layous, 2013), our findings suggest that when it comes to person perceptions, an incremental view on happiness may maintain or even intensify the positive bias favoring happy over unhappy people. Second, the current work is well aligned with the recent findings and theoretical framework on downstream consequences of psychological essentialism about personal attributes and social groups (Ryazanov & Christenfeld, 2018a). While essentialist beliefs promote stereotyping (Bastian & Haslam, 2006), prejudicial attitudes (Haslam et al., 2002), and discriminating behaviors (Rhodes et al., 2018), biological essentialism reduces blames for maladaptive behaviors (Ryazanov & Christenfeld, 2018b) and moral wrongdoings (Bailey et al., 2021), engendered by target traits or performed by target social groups. Although not perfectly fitted, our research contributes to this literature by providing some evidence suggesting that de-essentializing happiness may intensify the negative perceptions toward unhappy people, which are often biased and sometimes unfair.

Limitations and Future Research

We should acknowledge that there are several limitations in the present research. First, all our samples were recruited from the online survey platform, Prolific. Although data quality of studies using Prolific participants has been ensured in the previous examinations (Peer et al., 2017), and we excluded potentially problematic responses through attention check in our own studies, it is necessary to replicate our findings in a more controlled setting to minimize influences of extraneous factors. Second, we only used English-speaking participants, which limits the generalizability of the findings. Although the previous research validated the EBH scale and replicated its relation to personal hedonic regulation using both American and Korean samples (Choi et al., 2021), it is possible that the attenuating effect of the EBH would be more salient in Western cultures where pursuit of happiness is idealized and normative, while less evident in Eastern cultures where personal happiness is less valued and prioritized than collectivistic goals (Joshanloo & Weijers, 2014). Future research should examine whether our findings would be moderated by culture or personal value of happiness.

Third, although Studies 3 and 4 provide supporting evidence for our hypotheses by using the experimental manipulation of implicit theories of happiness, many of the perception measures did not statistically differ between the conditions. Hence, the causal effect of implicit theories of happiness on the perceptions toward happy and unhappy people should be interpreted with caution. Future research should develop a manipulation method that changes the endorsement of implicit theories of happiness and subsequently affects the perceptions toward happy and unhappy people. That way, we will be better informed about the psychological process by which implicit theories of happiness are associated with the perceptions toward happy and unhappy people.

Finally, the guiding framework for the current hypotheses was derived from Ryazanov and Christenfeld's (2018a) notion of *Acceptance*; however, they also suggest *Valence* and *Identity* when considering downstream consequences of psychological essentialism. It is theoretically important to explore how *Valence* and *Identity* might play into the relationship between implicit theories of happiness and the person perceptions. For example, the attenuating effect of an entity theory of happiness on the negative perceptions toward unhappy people would be more pronounced if entity theorists believe unhappy people are essentially good (Newman et al., 2014), while the negative perceptions would be less attenuated if entity theorists essentialize unhappiness as unhappy people's true selves (e.g., they are truly unhappy and thus inferior). Similarly, the enhancement of positive perceptions toward happy people among happiness incrementalists would be even stronger when they believe that happy people are fundamentally good and truly happy. Future research awaits these intriguing possibilities.

Data Availability

Study materials and datasets are available on the Open Science Framework at https://osf.io/z2km9/.

Declaration of Conflicting Interests

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Supplemental Material

Supplemental material is available online with this article.

Notes

1. The immutability EBH appeared to become a stronger predictor for the trait perceptions of happy people when controlling for the immutability essentialist beliefs about human attributes, which negatively predicted the trait perceptions of happy people. This seems a case of suppression and suggests that the positive perceptions toward happy people may be attenuated by a general essentialist belief about person attributes, rather than happiness per se.
2. We also explored the effect of implicit theories of happiness in a hiring context. Specifically, participants rated traits for two job applicants described as happy or unhappy and indicated their hiring preference. Overall, we found some support for our hypotheses, such that participants in the entity theory of happiness condition evaluated an unhappy applicant more competent, warm, less immature, and more hirable than those in the incremental theory of happiness condition. This was not included in the preregistration; thus, we decided not to report them in main text. Details can be found in the online Supplemental Material.
3. Although there was no significant total effects of the manipulation on the trait perceptions toward happy people, presence of total effect is not necessary for testing indirect effect (e.g., Rucker et al., 2011). Thus, indirect effect can exist even without total effect.
4. Order of the ratings on happy and unhappy people did not affect the results either as a moderator or covariate, so we won't discuss about it hereinafter.

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