

Testing the Link Between Empathy and Lay Theories of Happiness

Alexa M. Tullett¹ and Jason E. Plaks²

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Abstract

Happiness is a topic that ignites both considerable interest and considerable disagreement. Thus far, however, there has been little attempt to characterize people's lay theories about happiness or explore their consequences. We examined whether individual differences in lay theories of happiness would predict empathy. In Studies 1a and 1b, we validated the Lay Theories of Happiness Scale (LTHS), which includes three dimensions: flexibility, controllability, and locus. In Study 2, higher dispositional empathy was predicted by the belief that happiness is flexible, controllable, and internal. In Studies 3 and 4, higher empathy toward a specific target was predicted by the belief that happiness is flexible, *uncontrollable*, and *external*. In conjunction, Studies 2, 3, and 4 provide evidence that trait and state empathy are separable and can have opposing relationships with people's lay theories. Overall, these findings highlight generalized beliefs that may guide empathic reactions to the unhappiness of others.

Keywords

lay theories, happiness, empathy, motivation

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Both the scientific community and the lay public are divided when it comes to their theories about the nature of happiness. Some view happiness as a product of internal beliefs and psychological processes (e.g., Anik, Aknin, Norton, & Dunn, 2011). Others emphasize the importance of external circumstances (e.g., Oishi & Schimmack, 2010). Some believe that, despite temporary ups and downs, each individual generally maintains a “set point” level of happiness or unhappiness (e.g., Brickman, Coates, & Janoff-Bulman, 1978). Others hold that an individual's level of happiness can change significantly over time (e.g., Fujita & Diener, 2005). Some believe that happiness is something that is largely under one's control (e.g., Quoidbach & Dunn, 2013). Others believe that being happy is heavily influenced by uncontrollable factors (e.g., Lykken & Tellegen, 1996).

We suggest that (a) each of these beliefs is represented in the public consciousness and (b) different beliefs about happiness can produce meaningful differences in interpersonal behavior. In the present studies, we focus specifically on empathy and prosocial behavior. Whereas the literature on empathy has tended to focus on cognitive and affective processes that occur in an observer's mind once a suffering person has been encountered, we suggest that observers may enter the situation with different *a priori* naïve theories about the nature of happiness. These different theories of happiness may, in turn, serve as starting points that ultimately lead to divergent responses toward those who are unhappy. Before describing

our specific hypotheses, we briefly review work highlighting the role of cognitive processes in the production of empathy and prosocial behavior.

Cognition, Empathy, and Prosociality

Relating to the emotions and mental states of others is a heterogeneous process. Consequently, the term *empathy* has been used to apply to a broad range of phenomena. Here, our primary focus is on how theories about happiness might influence empathic concern and perspective taking. According to de Waal's (2008) Russian Doll model of empathy, there are three categories of empathic response that build on each other both in complexity and in evolutionary recency. First, emotional contagion involves the vicarious experience of another person's affective state (Shamay-Tsoory, Aharon-Peretz, & Perry, 2009). Because this process is thought to be relatively automatic, and perhaps least likely to be influenced by elaborative cognitive processes, we chose not to focus on it here (Hatfield, Cacioppo, & Rapson, 1994; Iacoboni &

¹University of Alabama, Tuscaloosa, USA

²University of Toronto, Ontario, Canada

Corresponding Author:

Alexa M. Tullett, Department of Psychology, University of Alabama, Box 870348, Tuscaloosa, AL 35487-0348, USA.
Email: atullett@bama.ua.edu

Dapretto, 2006; Rizzolatti & Craighero, 2004). Second, empathic concern refers to a feeling of compassion and warmth toward a person that is contingent upon differentiating between self and other (Batson, Fultz, & Schoenrade, 1987; Davis, 1980; de Waal, 2008). Third, perspective taking involves the deliberate attempt to imagine another person's thoughts and feelings (Davis, 1980; de Waal, 2008).

Given that the third tier of de Waal's model—perspective taking—is conceptualized as a cognitive process, it seems likely that it would be directly informed by preexisting beliefs about human emotions (e.g., Schumann, Zaki, & Dweck, 2014). Although the second tier—empathic concern—has been increasingly viewed as a reflection of automatic neural mimicry (e.g., Gallese, Keysers, & Rizzolatti, 2004; Jackson, Meltzoff, & Decety, 2005), there is evidence that the nature and strength of this reaction are also powerfully influenced by top-down, cognitive processes, such as evaluations of perceived responsibility, ability to help, and expectations for improvement (Barnett, Thompson, & Pfeifer, 1985; Betancourt, 1990; Weiner, 1980a, 1980b). Recent work shows that people display less empathy when they anticipate that the emotional experience will be overwhelming; presumably, lower engagement serves as a protective mechanism (Cameron & Payne, 2011). Taken together, these findings provide support for the idea that empathic concern can be regulated in a top-down fashion.

Several theorists have proposed that such cognitive processes influence helping behavior via their effects on empathic reactions. For example, Weiner's (1980a) seminal "cognition (attribution)–emotion–action" model proposed that causal attributions influence feelings of sympathy, which in turn influence the propensity to help. Similarly, in his attribution–empathy model of helping, Betancourt (1990) suggested that perspective taking and attributions of controllability both play a role in influencing emotional reactions, which subsequently influence prosocial behavior. Within the related field of moral judgment, neuroscientific findings support the idea that determining the "right" way to treat others is influenced by the interaction of both cognitive and emotional processes (Greene, Nystrom, Engell, Darley, & Cohen, 2004). Indeed, helping behavior can be influenced by people's expectations about how it will affect their mood (Manucia, Baumann, & Cialdini, 1984, cf. Hirt, Devers, & McCrea, 2008), their considerations of moral obligation (Schwartz, 1977), and even their interpretation of subtle syntactical cues (e.g., "You will help me, won't you?" vs. "Won't you help me?"; Enzle & Harvey, 1982). Thus, there is reason to expect that established cognitions—such as lay beliefs—could have a downstream influence on empathic concern and prosocial behavior.

More recent work has provided further evidence of the influence of attributional processes on empathic reactions. For example, Gill, Andreychik, and Getty (2013) examined how the kinds of explanations people generate for social events

impact the empathic concern felt toward those involved. Specifically, they found that external explanations (e.g., discrimination and prejudice) were associated with greater empathic concern toward outgroups' plights (e.g., economic and social problems experienced by African Americans) than were internal explanations. Moreover, they showed that this happens because external explanations imply lower control and greater suffering on the part of the victims. This work thus provides further evidence for the role of attributions—and specifically for the role of perceptions of controllability and locus—in determining empathic reactions.

The Role of Lay Theories

There is a wealth of evidence that attributions influence reactions to the suffering of others. A question that has received less attention, however, is whether one's dispositional tendency to make certain kinds of attributions might be tied to empathic responding. Indeed, it seems unlikely that people evaluate every unhappy person independently. Instead, observers' chronic attributional tendencies may help to predict what types of attributions they make, independently of the victim's specific circumstances.

Although still relatively sparse, there has been some work examining the influence of attributional style on empathic reactions. In particular, there is evidence that people who generally tend to attribute social events to external (vs. internal) causes are generally more empathic (Gill & Andreychik, 2009). Perhaps, then, beliefs that are tied to attributional style might have consequences for empathic responding.

Building on this work, we draw from the literature on lay theories (e.g., Chiu, Hong, & Dweck, 1997; Dweck & Leggett, 1988; Plaks & Stecher, 2007) to suggest that observers enter each potential help-giving situation with longstanding lay theories¹ about the degree to which happiness is generally internal (external), flexible (stable), and controllable (uncontrollable) across the population at large. Such a priori theories about happiness may play an important role in shaping observers' attributions and, in turn, emotions and behavior toward individuals in need. Put differently, whereas much of the previous research on empathy has focused on, for example, the roles of cognitive versus affective processes (e.g., Shamay-Tsoory et al., 2009), trait-level correlates (e.g., Eisenberg et al., 1994; Tullett, Harmon-Jones, & Inzlicht, 2012), or neurophysiological responses (e.g., Carr, Iacoboni, Dubeau, Mazziotta, & Lenzi, 2003; Gutsell & Inzlicht, 2010; Lamm, Batson, & Decety, 2007), the present research extends this literature by focusing on how prior, generalized beliefs about happiness might play a role in shaping more downstream attributions and other empathy-related processes.

Our strategy was twofold. First, we developed and validated the Lay Theories of Happiness Scale (LTHS) as a tool for reliably assessing individual differences in lay theories relevant to empathy (Studies 1a and 1b). In creating the

LTHS, we took inspiration from Weiner's (1980a) attributional model, which identified three dimensions of causality relevant to empathy and helping: *flexibility* (flexible/stable), *controllability* (uncontrollable/controllable), and *locus* (internal/external). In Studies 2 to 4, we used this tool to examine whether differences in beliefs along one or more of these dimensions would be associated with trait- and state-level measures of empathy. We turn next to a description of how beliefs along each dimension might relate to empathy.

Flexibility

Over 25 years of research has examined people's lay theories, or "implicit" theories about the stability/changeability of human qualities (for reviews, see Dweck, 2006; Plaks, Levy, & Dweck, 2009). In this research, the belief that a given trait is stable is termed an *entity theory*, whereas the belief that a given trait is flexible is termed an *incremental theory*. This literature has consistently found that entity theorists tend to understand human behavior in terms of stable underlying traits, whereas incremental theorists are more likely to invoke dynamic, context-sensitive, psychological processes (Burton & Plaks, 2013; Xu & Plaks, 2015).

Intuitively, one might think that viewing happiness as stable would be associated with higher empathy. After all, if the victim is powerless to change his or her unhappiness, there should be little basis for condemnation. However, data from related studies provide indirect evidence that stability beliefs may be associated with *lower* empathy. For example, in research on moral judgment, Miller, Burgoon, and Hall (2007) found that, compared with incremental theorists, entity theorists feel less sorry for—and are more punitive toward—wrongdoers. This is in part due to entity theorists' greater tendency to generate stable trait attributions from individual behaviors (e.g., Molden, Plaks, & Dweck, 2006). That is, just as a person who commits an immoral act is perceived to be an irredeemably immoral person, a person who is unhappy may be perceived to be an irredeemably unhappy person. In the present studies, we examined more directly whether belief in the stability/flexibility of happiness would influence empathic responding, independent of beliefs regarding the locus and controllability of happiness.

Controllability

There is also reason to predict that lay theories about the controllability of happiness might be relevant to empathy. Weiner (1985) noted that controllability may vary independently of flexibility; for example, a negative change in one's life outcomes could be due to controllable factors (e.g., lack of effort) or uncontrollable factors (e.g., a sudden illness). Given that people tend to empathize more with victims of uncontrollable (vs. controllable) negative circumstances, higher belief in the controllability of happiness might predict weaker empathic reactions (Betancourt, 1990; Ickes & Kidd,

1976; Meyer & Mulherin, 1980; Weiner, 1980a, 1980b). We investigate this possibility in Studies 3 and 4.

In contrast, precedent for the opposite prediction can be found in the entity/incremental literature described above. Although the entity/incremental scales are traditionally conceptualized as measures of theories about stability, the wording of specific questions on the entity/incremental questionnaire often combines ideas of stability and controllability. For instance, the use of the active voice in the item "People can substantially change their intelligence" implies not only high flexibility but also high controllability (Levy, Stroessner, & Dweck, 1998). Thus, it is unclear whether the suggested link between an incremental theory and empathy arises because empathy is associated with flexibility or controllability (or both).²

To summarize, two hypotheses regarding the relationship between controllability beliefs and empathy seemed equally plausible to us. The relationship could be negative if people who consider happiness controllable assign personal responsibility to people who are unhappy. The relationship could be positive if people who consider happiness controllable tend to optimistically think that unhappy people can (and perhaps will) change. To foreshadow the results, in Study 2, we found evidence of a positive relationship (higher controllability beliefs predicted higher empathy) when we measured empathy at the dispositional level. However, in Studies 3 and 4, we found evidence of a negative relationship (higher controllability beliefs predicted lower empathy) when we measured state empathy toward specific targets.

Internal/External Locus

The popular idea that happiness "comes from within" suggests that anyone can be happy if they adopt the right perspective or frame of mind. How might such a belief in the internality of happiness influence empathy and compassion toward someone who is unhappy? Evidence suggests that attributing a target person's unhappiness to an internal source reduces observers' willingness to help, especially if this internal source is also seen as controllable (Weiner, 1980a). This suggests that internal (vs. external) theories might be associated with perceptions of responsibility and increased blame for the suffering person's negative outcomes. On the contrary, this relationship might not emerge if locus is effectively disentangled from flexibility and controllability (Weiner, 1980a). Thus, we sought to examine whether individual differences in beliefs regarding the locus of happiness would predict empathic responding independently of beliefs along the other two dimensions.

Overview

In the following four studies, we explore the link between lay theories of happiness and empathy. First, in Studies 1a and 1b, we developed a scale for measuring these theories along

three dimensions: flexibility, controllability, and locus. Then, in Study 2, we examined whether these beliefs were associated with dispositional, self-reported empathy. In Study 3, we shifted the emphasis from dispositional empathy to state empathy and prosocial behavior toward someone in need. Finally, in Study 4, we ran a replication of Study 3 to determine the robustness of the relationships between the LTHS subscales and state empathy, particularly those that differed from the trait empathy patterns observed in Study 2.

Study 1a—LTHS Reliability

Method

We report how we determined our sample size, all data exclusions, and all manipulations (none). We present all measures within the text or in the Supplementary Materials.

Participants. A total of 573 participants completed an initial 33-item version of the scale. Participants were recruited from six locations: three lecture halls at the University of Toronto St. George campus ($n_1 = 172$, $n_2 = 162$, and $n_3 = 20$), two lecture halls at the University of Toronto Scarborough campus ($n_4 = 84$ and $n_5 = 104$), and the Toronto version of an online classifieds website, craigslist.com ($n_6 = 31$). We determined sample size a priori by deciding to include all interested students from five lecture sections that were available to us, plus all participants who responded to a 2-week posting on craigslist.com. University students were compensated with course credit, whereas online participants were entered in a draw for a monetary prize. The total sample was divided into two subsamples by creating random split halves within each of the six locations. The first of these subsamples was used for initial exploratory factor analysis ($n_{S1} = 287$), and the second was used to test for replication of the factor structure using confirmatory factor analysis ($n_{S2} = 286$).³

Materials. We generated an initial pool of 33 items based on the Lay Theories of Intelligence Scale (Dweck, 1999). Items included “A person’s happiness comes from within, not from their circumstances” (Locus), “Happiness can change a lot throughout a person’s life” (Flexibility), and “In all honesty, if someone is unhappy they can usually do something to change that” (Controllability). The Flexibility items were specifically created to be agnostic regarding Locus and Controllability. For example, the phrase “happiness can change” does not specify whether that change comes from internal, external, controllable, or uncontrollable sources. Similarly, the Locus items were created to be agnostic regarding Flexibility and Controllability. For example, the phrase “happiness comes from within” does not specify whether the internal sources of happiness are controllable (e.g., willpower) versus uncontrollable (e.g., genetics). All items were rated on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Procedure. Participants completed the scale at the beginning of lecture (for Locations 1-5) or online (Location 6).

Results

The factor structure of the LTHS was examined with exploratory and confirmatory analyses using Mplus (see Tables S1 and S2, Supplementary Materials for factor loadings). Missing data (79 unanswered items out of 18,909, or 0.004%) were replaced with the series mean. To account for participants’ dispositional tendencies to agree with items, we created an acquiescence index by subtracting each participant’s mean rating from their rating on each item. This allowed us to avoid the problem of artificially attenuated reliability estimates that can occur when participants have a tendency to agree with items regardless of wording direction (Winkler, Kanouse, & Ware, 1982). These scores were used in all subsequent analyses. A maximum likelihood estimator was used.

In the first half of the sample ($n_{S1} = 287$), we adopted an iterative exploratory approach. Specifically, we analyzed all 33 items using exploratory factor analyses with three factors extracted. Because our theoretical framework specified a three-factor structure, these analyses were not intended to examine the existing factor structure but rather to select the best items to assess the Locus, Stability/Flexibility, and Controllability dimensions.⁴ The results of the initial exploratory factor analysis (EFA) were examined, and only items with primary loadings of $>.40$ and secondary loadings of $<.20$ were retained. This resulted in the exclusion of 14 items. The procedure was repeated, leading to elimination of an additional two items. The remaining 17 items all showed primary loadings $>.40$ and secondary loadings of $<.20$. These items were closely examined, and a rational procedure was used to select a final four items for each of the three subscales. The goals in this stage were to eliminate redundant items, to maximize fit, and to balance positively and negatively worded items. This left us with 12 items, four assessing the flexibility of happiness over time (Flexibility, $\alpha = .610$), four assessing the controllability of happiness (Controllability, $\alpha = .686$), and four assessing the locus of happiness (Locus, $\alpha = .631$), comparative fit index (CFI) = 0.93, root mean square error of approximation (RMSEA) = 0.05.

The second stage involved a confirmatory factor analysis with an independent sample to ensure that a three-factor structure was an adequate fit for the final 12-item scale. These analyses were conducted with the participants in the second half ($n_{S2} = 286$), all of whom completed the original 33-item version of the scale. The three-factor model showed an adequate fit to the data, CFI = 0.93, RMSEA = 0.06. All items had substantial loadings on their designated scale, and internal reliability estimates were adequate (Flexibility, $\alpha = .744$; Controllability, $\alpha = .698$; Locus, $\alpha = .659$). Items and factor loadings for the final scale are listed in the Supplementary Materials. Intercorrelations for the three subscales were $r =$

.14, 95% confidence interval (CI) = $[-.05, .28]$ for flexibility and controllability, $r = .04$, 95% CI = $[-.11, .18]$ for flexibility and (internal) locus, and $r = .35$, 95% CI = $[.21, .49]$ for controllability and (internal) locus. In summary, Study 1a produced an initial version of the LTHS with acceptable reliability.

Study 1b—LTHS Validity

Next, our goal was to examine whether the LTHS is related in meaningful ways to scales with which it shares conceptual overlap. In general, the LTHS should be related to, but not redundant with, existing measures of lay theories of emotion. Furthermore, it should be related to emotion regulation practices and levels of well-being and optimism. Finally, if the LTHS effectively measures theories about the locus, flexibility, and controllability of happiness, it should be predictably related to more general beliefs about the controllability of events as well as related beliefs about justice.

To test whether the LTHS has the potential to provide unique, incremental utility in predicting attitudes and behavior, we assessed optimism, satisfaction with life, and entity/incremental theories of emotion. It is possible that theories about happiness simply reflect people's general level of happiness or their overall outlook on life. For instance, perhaps believing that happiness is highly flexible, controllable, and internal can be reduced to being optimistic. Furthermore, existing measures of theories about the flexibility of emotions (not restricted to happiness) might already capture the theories about happiness that we highlight here. Thus, we included these measures to determine whether the LTHS would provide additional information that existing scales could not.

Flexibility

As noted above, we predicted that people who scored low on the Flexibility subscale (i.e., who believe that happiness is relatively stable) would be more likely to believe in a just world. The belief that people generally get what they deserve may, in fact, require the assumption that people generally "are the way are" and are not likely to change (Burton & Plaks, 2013).

Controllability

For the Controllability subscale, we suspected that higher controllability would be related to stronger belief in a just world. Indeed, the presupposition that the actor has control over his or her behavior is the basis for most justice-related judgments (e.g., Plaks, McNichols, & Fortune, 2009; Shariff et al., 2014). Such a link between controllability belief and belief in a just world would suggest a link between belief in the controllability of happiness and a tendency to blame the victim (e.g., Lerner, 1980; Lerner & Simmons, 1966).

We further anticipated that the belief that happiness is controllable would be associated with a more generalized internal locus of control and higher levels of emotional reappraisal, as both of these constructs depend on assumptions about personal control over outcomes. Observing such relationships would provide further evidence for the validity of the controllability dimension of the LTHS.

Locus

We expected internal theories to be associated with higher levels of emotional reappraisal. We reasoned that people who believe that happiness is internal would be more likely to engage in emotional reappraisal as a way to regulate emotion. If happiness were viewed as having an external source, there should be little basis for trying to regulate internal states as a way to increase happiness levels.

Method

We report how we determined our sample size, all data exclusions, and all manipulations (none). We present all measures within the text or in the Supplementary Materials.

Participants. A total of 104 undergraduate students (71 females, $M_{age} = 20.17$, $SD_{age} = 1.94$) at the University of Toronto completed the materials for course credit at the beginning of a lecture. These participants were a subset of those included in the factor analysis in Study 1a. We determined sample size a priori by deciding to collect data from all interested students attending the lecture. Thirteen participants were excluded because they failed to complete the experiment, leaving 91 participants.

Materials

LTHS. Participants completed the original 33 items used as a starting point for development of the LTHS. Only items from the final, 12-item version were analyzed here (Flexibility, $\alpha = .523$; Controllability, $\alpha = .735$; Locus, $\alpha = .503$).⁵

Life Orientation Test (LOT). The LOT is a 12-item scale that measures optimism in terms of generalized outcome expectancies ($\alpha = .659$; Scheier & Carver, 1985). Items include statements like "I always look on the bright side of things."

Satisfaction With Life Scale (SWLS). The SWLS is a five-item scale that measures global life satisfaction ($\alpha = .815$; Diener, Emmons, Larsen, & Griffin, 1985). Items include statements like "In most ways my life is close to ideal."

Implicit Theories of Emotion (IToE). The IToE is a four-item scale that measures theories about the fixed versus malleable nature of emotion (not restricted to happiness; $\alpha = .684$; Tamir, John, Srivastava, & Gross, 2007). Items include

statements like “If they want to, people can change the emotions that they have.”

Global Belief in a Just World Scale (GBJWS). The GBJWS is a seven-item scale that measures the degree to which people think that the world is a fair place ($\alpha = .782$; Lipkus, 1991). Items include statements like “I feel that people get what they deserve.”

Locus of Control (LOC). The LOC is a 29-item scale that measures the degree to which people think that they can control events that affect them ($\alpha = .536$; Rotter, 1966). Each item consists of two statements, such as “What happens to me is my own doing” and “Sometimes I feel that I don’t have enough control over the direction my life is taking.” Participants were asked to choose the statement that they agree with most. Higher scores correspond to a more internal locus of control.

Emotional Reappraisal. Emotional reappraisal was assessed using the reappraisal factor of the two-factor Emotion Regulation Questionnaire ($\alpha = .883$; Gross & John, 2003). This subscale is comprised of six items that measure the degree to which people regulate their emotions by changing the way they think about situations. Items include statements like “I control my emotions by changing the way I think about the situation I’m in.”

Procedure. Participants completed the scales at the beginning of lecture.

Results and Discussion

Raw correlations between each of the three subscales of the LTHS and the scales of interest are reported in Table 1. (See Table S3, Supplementary Materials for regression coefficients from models predicting each outcome variable from all three LTHS subscales simultaneously.) The LOT and the SWLS both showed significant overlap with the Controllability and Locus subscales but not to a degree that would suggest that the scales are measuring the same construct. Specifically, viewing happiness as controllable was associated with greater life satisfaction, $r = .33$, 95% CI = [.13, .50], and optimism, $r = .40$, 95% CI = [.21, .56]. Believing in an internal locus of happiness was similarly associated with greater life satisfaction, $r = .37$, 95% CI = [.18, .54], and optimism, $r = .47$, 95% CI = [.29, .61]. Neither the LOT nor the SWLS was significantly correlated with the Flexibility subscale, suggesting that people’s views about the flexibility of happiness are largely unrelated to their own levels of well-being and optimism.

An examination of the relationship between the LTHS and the IToE (entity vs. incremental theories of emotions in general) revealed that participants with an incremental theory of emotion were more likely to view happiness as controllable, $r = .42$, 95% CI = [.23, .58], and internal, $r = .34$, 95% CI = [.14, .51], but were not more likely to view happiness as flexible,

$r = .03$, 95% CI = [−.17, .24]. To the extent that participants view happiness and general emotion in similar ways, this suggests that the IToE may actually capture theories about the controllability and internal locus of emotions, rather than theories about how changeable emotions are over time.

Flexibility. As predicted, there was a negative relationship between the Flexibility subscale and the GBJWS, $r = -.25$, 95% CI = [−.44, −.05], demonstrating that people who think that happiness is stable are more likely to believe in a just world. This suggests that people who believe in the flexibility of happiness are more likely to perceive unfairness in the world and, in turn, are more likely to empathize with those who experience negative outcomes (Sutton & Douglas, 2005).

Controllability. For the Controllability subscale, we found the predicted positive relationships with both the GBJWS and the LOC-Internal. Participants who scored high on the Controllability subscale were more likely to view the world as just, $r = .27$, 95% CI = [.06, .45], consistent with the idea that the controllability belief implies a stronger assumption of personal responsibility for one’s own outcomes. The Controllability subscale was also positively related to the LOC-Internal, but the modest size of the correlation, $r = .36$, 95% CI = [.17, .53], suggests that people’s theories about the controllability of happiness are not completely captured by their more general views about control. We also observed a small, positive relationship between the Controllability subscale and Emotional Reappraisal, $r = .23$, 95% CI = [.02, .42], likely because people who believe that happiness is controllable also attempt to control their emotions via reappraisal strategies.

Locus. For the Locus subscale, we anticipated a positive relationship between internality and both the LOC-Internal and Emotional Reappraisal. The first of these predictions was confirmed, $r = .25$, 95% CI = [.05, .43], and the second was partially supported by a marginal effect in the predicted direction, $r = .18$, 95% CI = [−.03, .37]. These results suggest that people who believe that happiness comes from an internal locus are more likely to have an internal locus of control and are marginally more likely to engage in emotional reappraisal.

Study 2

Having obtained evidence of the reliability and validity of the LTHS, in Study 2 we turned to the primary aim of this research: to examine whether theories of happiness predict measures of empathy. First, we focused on empathy measured at the trait level.

Method

We report how we determined our sample size, all data exclusions, and all manipulations (none). We present all measures within the text or in the Supplementary Materials.

Table 1. Correlations Between LTHS Subscales and Related Constructs.

	LTHS subscale					
	Flexibility		Controllability		Internal	
	<i>r</i>	95% CI	<i>r</i>	95% CI	<i>r</i>	95% CI
Locus of Control (Internal)	-.08	[-.28, .13]	.36**	[.17, .53]	.25*	[.05, .43]
Emotional Reappraisal	.01	[-.20, .21]	.23*	[.02, .42]	.18†	[-.03, .37]
Global Belief in a Just World	-.25*	[-.44, -.05]	.27*	[.06, .45]	.09	[-.12, .29]
Incremental Theories of Emotion	.03	[-.17, .24]	.42**	[.23, .58]	.34**	[.14, .51]
Life Orientation Test	.00	[-.21, .20]	.40**	[.21, .56]	.47**	[.29, .61]
Satisfaction With Life Scale	-.01	[-.22, .20]	.33**	[.13, .50]	.37**	[.18, .54]

Note. LTHS = Lay Theories of Happiness Scale; CI = confidence interval.

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

Participants. A total of 160 participants (82 females, $M_{\text{age}} = 31.08$, $SD_{\text{age}} = 10.64$) completed the scales online using Mechanical Turk (MTurk) for monetary compensation of US\$0.50. We determined sample size a priori by deciding to post 200 slots on MTurk (discrepancies between number of slots and number of participants can occur if MTurk users do not access the study's web address, exit before providing consent, or decline to participate). In addition, 407 participants across Study 3 ($n = 295$) and two separate studies ($n = 49$; $n = 63$) completed both the LTHS and the Interpersonal Reactivity Index (IRI; Davis, 1980) but not the IToE, LOT, or Inventory of Callous–Unemotional Traits (ICU). Thus, for analyses involving only the IRI and the LTHS, we used data from 567 participants, whereas for all other analyses, we used data from 160 participants.

Materials

LTHS. Participants completed the validated, 12-item version of the LTHS (Flexible, $\alpha = .626$; Controllable, $\alpha = .796$; Internal, $\alpha = .643$).

IRI. The IRI is a 28-item scale that measures four dimensions of dispositional empathy (Davis, 1980). The Perspective-Taking subscale ($\alpha = .792$) assesses the tendency to spontaneously adopt others' points of view; the Fantasy subscale ($\alpha = .802$) assesses the tendency to transpose oneself into the feelings of characters in books, movies, and plays; the Empathic Concern subscale ($\alpha = .807$) assesses "other-oriented" feelings of concern for others; and the Personal Distress subscale ($\alpha = .783$) assesses "self-oriented" feelings of anxiety in stressful interpersonal settings.

ICU. The ICU is a 24-item scale that measures callous–unemotional traits (i.e., lack of empathy, lack of guilt, poverty in emotional expression; Frick, 2004). Previous work has demonstrated that two items on the original scale show relatively weak factor loadings and decrease the overall model fit for the scale. Thus, we used the modified 22-item version (Fanti, Frick, & Georgiou, 2009). This scale assesses

callous–unemotional traits on three dimensions: uncaring ($\alpha = .609$), callousness⁶ ($\alpha = .876$), and unemotional ($\alpha = .698$). Items include statements like "The feelings of others are unimportant to me."

IToE. Participants completed the IToE (see Study 1b, $\alpha = .808$)

LOT. Participants completed the LOT (see Study 1b, $\alpha = .843$)

Procedure. Participants completed the scales online.

Results and Discussion

To examine the relationship between lay theories of happiness and dispositional empathy, we first conducted a series of correlations (Table 2).

Flexibility. Flexibility beliefs were positively correlated with perspective taking, $r(557) = .09$, 95% CI = [.01, .09], fantasy, $r(556) = .20$, 95% CI = [.12, .28], and empathic concern, $r(557) = .21$, 95% CI = [.13, .29], and negatively correlated with personal distress, $r(556) = -.11$, 95% CI = [-.19, -.03]. Flexibility beliefs were also associated with lower levels of callousness, $r(152) = -.24$, 95% CI = [-.38, -.09]. Generally, then, believing that happiness can change is associated with higher dispositional empathy.

Controllability. Controllability beliefs showed similar associations with perspective taking, $r(557) = .15$, 95% CI = [.07, .23], empathic concern, $r(558) = .14$, 95% CI = [.06, .22], and personal distress, $r(557) = -.30$, 95% CI = [-.37, -.22], but was not significantly correlated with the Fantasy subscale of the IRI. Belief in the controllability of happiness was also linked to lower scores on the Uncaring, $r(155) = -.26$, 95% CI = [-.40, -.11], Unemotional, $r(154) = -.20$, 95% CI = [-.35, -.04], and Callous, $r(153) = -.34$, 95% CI = [-.47, -.19], subscales of the ICU. Thus, these data suggest that the

Table 2. Correlations Between LTHS Dispositional Empathy.

	LTHS subscale					
	Flexibility		Controllability		Internal	
	<i>r</i>	95% CI	<i>r</i>	95% CI	<i>r</i>	95% CI
IRI						
Perspective taking	.09*	[.01, .17]	.15**	[.07, .23]	.11*	[.03, .19]
Fantasy	.20**	[.12, .28]	.07	[-.01, .15]	-.04	[-.12, .04]
Empathic concern	.21**	[.13, .29]	.14**	[.06, .22]	.02	[-.06, .10]
Personal distress	-.11*	[-.19, -.03]	-.30**	[-.37, -.22]	-.23*	[-.31, -.15]
ICU						
Uncaring	-.04	[-.20, .12]	-.26**	[-.40, -.11]	-.19*	[-.34, -.03]
Unemotional	.04	[-.12, .20]	-.20*	[-.35, -.04]	-.06	[-.22, .10]
Callous	-.24**	[-.38, -.09]	-.34**	[-.47, -.19]	-.19*	[-.38, .02]

Note. *ns* vary from 555 to 558 due to missing data. LTHS = Lay Theories of Happiness Scale; CI = confidence interval; IRI = Interpersonal Reactivity Index; ICU = Inventory of Callous–Unemotional Traits.

†*p* < .10. **p* < .05. ***p* < .01.

higher the belief that happiness is controllable, the higher the dispositional empathy.

Locus. Internal beliefs were positively associated with perspective taking, $r(557) = .11$, 95% CI = [.03, .19], and negatively associated with personal distress, $r(557) = -.23$, 95% CI = [-.31, -.15]. They were also negatively associated with the Uncaring, $r(153) = -.19$, 95% CI = [-.34, -.03], and Callous, $r(152) = -.19$, 95% CI = [-.38, .02], subscales of the ICU. This pattern provides evidence that viewing happiness as internal predicts higher dispositional empathy. So far, these results suggest that people with higher levels of dispositional empathy (and lower levels of self-directed emotion, as well as lower levels of callous and unemotional traits) tend to think of happiness as relatively controllable, flexible, and internal.

Controlling for optimism. Next, we considered it important to test whether these relationships between the three dimensions of the LTHS and dispositional empathy might be partially accounted for by optimism. Perhaps this constellation of happiness beliefs is associated with a generally optimistic outlook (as suggested by the results of Study 1b), and thus with positive regard for others and/or positive self-views. To do so, we conducted the same correlations as above but controlling for scores on the LOT (Table 3). For the Flexibility subscale, controlling for optimism did not have a substantial influence on the results. Higher flexibility beliefs continued to significantly predict fantasy, empathic concern, and reduced callousness. For the Controllability subscale, the negative relationships with personal distress, $r = -.27$, 95% CI = [-.41, -.12] and callousness, $r = -.24$, 95% CI = [-.38, -.09], remained significant, but the relationships with empathic concern, perspective taking, unemotional traits, and uncaring traits were nonsignificant, all r s < .15. For the Internal subscale, the relationships with perspective taking,

personal distress, uncaring traits, and unemotional traits were nonsignificant, whereas a negative relationship between internal beliefs and the Fantasy subscale emerged. Thus, the relationships between empathy and both controllability and locus were smaller when controlling for optimism, suggesting that people who believe that happiness is internal and controllable tend to be generally optimistic, and this optimism might partially account for more positive dispositions toward others and/or more flattering self-perceptions.

Controlling for lay theories of emotion. We then conducted a parallel set of analyses testing whether the relationships between the three dimensions of the LTHS and dispositional empathy might be partially accounted for by more general implicit theories of emotion. To do so, we conducted the same correlations as above, but controlling for scores on the IToE (Table 3). For the Flexibility subscale, controlling for the IToE did not substantially change the results. Flexibility beliefs continued to be positively associated with fantasy and empathic concern, and negatively associated with callousness. For the Controllability subscale, the negative relationships with personal distress, $r = -.25$, 95% CI = [-.41, -.08], uncaring, $r = -.19$, 95% CI = [-.35, -.02], and callousness, $r = -.23$, 95% CI = [-.39, -.06], were still significant, whereas the relationships with empathic concern, perspective taking, and unemotional traits were not, all r s < .15. For the Internal subscale, none of the associations remained significant except for a marginal association with callousness, $r = -.15$, 95% CI = [-.31, -.02]. Mirroring the analyses controlling for the LOT, the relationships between empathy and both controllability and locus were smaller when controlling for the IToE. This suggests that people who believe that happiness is internal and controllable tend to feel this way about emotions generally, and these broader lay theories partially account for more empathic dispositions.

Table 3. Partial Correlations Between LTHS Dispositional Empathy Controlling for the LOT and the IToE.

	LTHS subscale																	
	Flexibility				Controllability				Internal									
	Cont. for LOT	95% CI	r	Cont. for IToE	95% CI	r	Cont. for LOT	95% CI	r	Cont. for IToE	95% CI	r	Cont. for LOT	95% CI	r	Cont. for IToE	95% CI	
IRI																		
Perspective taking	.01	[-.15, .17]	-.02	[-.19, .15]	-.01	[-.17, .15]	.12	[-.05, .13]	.06	[-.10, .22]	.12	[-.05, .13]	.06	[-.10, .22]	.12	[-.05, .13]	.06	[-.10, .22]
Fantasy	.25**	[.10, .39]	.22*	[.05, .38]	-.04	[-.20, .12]	.07	[-.10, .24]	-.16*	[-.31, -.01]	-.05	[-.22, .12]	-.16*	[-.31, -.01]	-.05	[-.22, .12]	-.16*	[-.31, -.01]
Empathic concern	.27**	[.11, .41]	.23**	[.06, .39]	.08	[-.08, .24]	.07	[-.10, .24]	-.07	[-.23, .09]	-.06	[-.23, .11]	-.07	[-.23, .09]	-.06	[-.23, .11]	-.07	[-.23, .09]
Personal distress	-.07	[-.23, .09]	-.07	[-.24, .10]	-.27**	[-.41, -.12]	-.25**	[-.41, -.08]	-.12	[-.27, .04]	-.12	[-.29, .05]	-.12	[-.27, .04]	-.12	[-.29, .05]	-.12	[-.27, .04]
ICU																		
Uncaring	-.06	[-.22, .10]	-.02	[-.19, .15]	-.14 [†]	[-.29, .02]	-.19*	[-.35, -.02]	-.08	[-.24, .08]	-.12	[-.29, .05]	-.08	[-.24, .08]	-.12	[-.29, .05]	-.08	[-.24, .08]
Unemotional	.02	[-.14, .18]	.04	[-.13, .21]	-.12	[-.27, .04]	-.12	[-.29, .05]	-.05	[-.21, .11]	.00	[-.17, .17]	-.05	[-.21, .11]	.00	[-.17, .17]	-.05	[-.21, .11]
Callous	-.22**	[-.37, -.01]	-.20*	[-.36, -.03]	-.24**	[-.38, -.09]	-.23**	[-.39, -.06]	-.10	[-.25, .06]	-.15 [†]	[-.31, -.02]	-.10	[-.25, .06]	-.15 [†]	[-.31, -.02]	-.10	[-.25, .06]

Note. LTHS = Lay Theories of Happiness Scale; Cont. for LOT = controlling for the Life Orientation Test (ns for partial correlations controlling for the Life Orientation Scale vary from 152 to 155 due to missing data); Cont. for IToE = controlling for the Implicit Theories of Emotion Scale (ns for partial correlations controlling for the Implicit Theories of Emotion Scale are 129 due to missing data); CI = confidence interval; IRI = Interpersonal Reactivity Index; ICU = Inventory of Callous-Unemotional Traits.

[†]p < .10. *p < .05. **p < .01.

To summarize, these results provide the first direct evidence of a relationship between lay theories of happiness and dispositional empathy. We observed that greater levels of dispositional empathy were associated with viewing happiness as flexible, controllable, and having an internal source. These patterns tended to hold both for measures of empathy and (in the opposite direction) for measures of callous and unemotional traits. Not surprisingly, the Personal Distress subscale of the IRI often showed the opposite pattern demonstrated by the other IRI subscales. This reflects the fact that this subscale tends to tap into egoistic negative emotions as opposed to other-oriented thoughts and feelings (Cialdini et al., 1987).

We also observed that associations between the LTHS and dispositional measures of empathy were partially accounted for by optimism and lay theories about emotion, generally. Specifically, the Controllability and Internal subscales of the LTHS tended to show weaker relations with the LTHS when optimism or lay theories of emotions were taken into account. For the Flexibility subscale, however, controlling for optimism and lay theories of emotion did not substantially change the results, suggesting that believing in the flexibility of happiness is predictive of dispositional empathy independent of these other constructs.

In Study 2, we measured empathy by asking participants to provide generalized self-ratings on empathy-related traits. Would the same pattern hold when participants were faced with an actual, suffering target person? In other words, do people have an accurate sense of how empathic they are? Given the literature on self-serving biases in the moral domain (e.g., Batson, Thompson, Seufferling, Whitney, & Strongman, 1999; Epley & Dunning, 2000) and in general (e.g., Kunda, 1990; Shepperd, Malone, & Sweeny, 2008), it seemed plausible that the pattern might diverge. Studies 3 and 4 examined whether and how such a divergence might occur.

Study 3: LTHS, State Empathy, and Donation

In Study 3, we tested whether lay theories of the locus, flexibility, and controllability of happiness would predict not only dispositional empathy but also empathic behavior toward a specific individual in need. Participants read a vignette about a depressed individual and completed measures of compassion and empathy toward this individual. In addition, we included a behavioral measure (monetary donation) to examine the degree to which feelings of empathy would translate into quantifiable helping behavior.

Method

We report how we determined our sample size, all data exclusions, and all manipulations. We present all measures within the text or in the Supplementary Materials.

Participants. A total of 295 participants (184 females, $M_{\text{age}} = 34.74$, $SD_{\text{age}} = 13.01$) completed the scales online using MTurk for monetary compensation of US\$0.50. We determined sample size a priori by deciding to post 300 slots on MTurk.

Materials

LTHS. Participants completed the validated, 12-item version of the LTHS (Flexible, $\alpha = .849$; Controllable, $\alpha = .803$; Internal, $\alpha = .686$).

Procedure. To assess participants' state empathy toward a specific target, we asked them to read an information sheet about depression and a vignette describing one person's experience with depression. We chose depression as the target negative outcome because there is not clear popular consensus about whether depression stems from internal versus external, stable versus flexible, and controllable versus uncontrollable sources. (Consider, for instance, the following titles of articles in popular media: "The Depression Cure" [Ilardi, 2010] vs. "Why There Will Be No Cure for Depression" [Rottenberg, 2014]). In response to the vignette, participants used a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) to rate their empathic concern (six items; for example, *warm*), perspective taking (three items; for example, *I am able to put myself in this person's situation*), and blame (one item: *This person is to blame for their negative feelings*). Participants then completed the LTHS. Finally, participants were given the opportunity to donate any portion of the money they made doing the study (from US\$0.00 to US\$0.50 in US\$0.05 increments) to an organization devoted to research on depression. Participants were told that pressing the "Continue" button would cause the selected amount to be automatically donated. (No money was actually donated.) At the end of the study, participants were fully debriefed and received the full US\$0.50 compensation. They were also informed of websites where monetary donations could be made to organizations involved in helping people with depression.

Results

First, we examined the relationships between the LTHS and our state variables of interest: empathic concern, perspective taking, blame, and donation (Table 4).

Flexibility. Consistent with Study 2, belief in the flexibility of happiness was positively correlated with perspective taking, $r(294) = .19$, 95% CI = [.08, .30], and marginally negatively correlated with blame, $r(295) = -.11$, 95% CI = [-.22, .00]. This subscale was not significantly associated with either empathic concern or donation.

Controllability. In contrast to Study 2, belief in the controllability of happiness was *negatively* correlated with perspective taking, $r(294) = -.16$, 95% CI = [-.27, -.05], and positively correlated with blame, $r(295) = .16$, 95% CI = [.05, .27].

Table 4. Correlations Between LTHS Subscales, Empathy, Blame, and Donation in Study 3.

	LTHS subscale					
	Flexibility		Controllability		Internal	
	<i>r</i>	95% CI	<i>r</i>	95% CI	<i>r</i>	95% CI
Empathic concern	.04	[-.07, .15]	-.05	[-.16, .06]	-.03	[-.14, .08]
Perspective taking	.19**	[.08, .30]	-.16**	[-.27, -.05]	-.18**	[-.29, -.07]
Blame	-.11 [†]	[-.22, .00]	.16**	[.05, .27]	.06	[-.05, .17]
Donation	-.06	[-.17, .05]	-.15*	[-.29, .00]	.02	[-.09, .13]

Note. *ns* vary from 294 to 295 due to missing data. LTHS = Lay Theories of Happiness Scale; CI = confidence interval.

[†]*p* < .10. **p* < .05. ***p* < .01.

Believing that happiness is controllable was also associated with smaller donations, $r = -.15$, 95% CI = [-.29, .00].

Locus. Internal beliefs were negatively associated with perspective taking, $r(294) = -.18$, 95% CI = [-.29, -.07]. This subscale was not significantly linked with empathic concern, blame, or donation.

In sum, the Study 3 data provide evidence that individual differences in beliefs regarding the locus, flexibility, and controllability of happiness predict not only dispositional empathy but also state empathy and prosocial behavior toward a specific target. For flexibility beliefs, the relationship was in the same direction across trait and state measures of empathy. For controllability and locus beliefs, however, a divergence emerged between trait and state measures of empathy—a positive relationship to trait empathy (Study 2) but a negative relationship to state empathy and prosocial behavior (Study 3). Given these seemingly conflicting data, we thought it important to examine whether the pattern observed in Study 3 (i.e., the negative association between controllability/internal beliefs and empathy) would replicate in a new sample.

Study 4: A Replication

In Study 4, we conducted a direct replication of Study 3, with particular interest in testing whether we would again observe a negative association between state empathy and both controllability and (internal) locus beliefs.

Method

We report how we determined our sample size, all data exclusions, and all manipulations. We present all measures within the text or in the Supplementary Materials.

Participants. A total of 230 participants (117 females, $M_{\text{age}} = 36.89$, $SD_{\text{age}} = 13.10$) completed the scales online using MTurk for monetary compensation of US\$0.30. We determined sample size a priori by deciding to post 300 slots on MTurk.

Procedure. The procedure was identical to that in Study 3 with four exceptions. First, we measured lay theories *before* participants responded to the depression vignette. Given that our theoretical framework posits that preexisting lay theories may influence downstream empathic reactions, we thought it important to assess these constructs in the corresponding temporal order. Second, we excluded the manipulation of flexibility beliefs and the measures of dispositional empathy and beliefs about the causes of depression (see the Supplementary Materials). Third, the scale of our donation measure changed (from US\$0.00 to US\$0.30 in US\$0.05 increments) to reflect the fact that participants were paid less. Reliabilities for the LTHS were (Flexible, $\alpha = .767$; Controllable, $\alpha = .767$; Internal, $\alpha = .715$). Finally, we included an instructional manipulation check (Oppenheimer, Meyvis, & Davidenko, 2009) to determine at the outset whether or not participants were paying attention. Participants who failed the instructional manipulation check twice were prevented from participating in the experiment.

Results

As in Study 3, we examined the relationships between the LTHS and our state variables of interest: empathic concern, perspective taking, blame, and donation (Table 5).

Flexibility. Replicating results from Study 3, flexibility beliefs were positively correlated with perspective taking, $r(218) = .23$, 95% CI = [.10, .35], and negatively correlated with blame, $r(218) = -.30$, 95% CI = [-.42, -.18]. This subscale was not significantly associated with either empathic concern or donation.

Controllability. The direction of the correlation between controllability beliefs and perspective taking was negative—consistent with Study 3—although this relationship did not reach statistical significance in this sample, $r(218) = -.10$, 95% CI = [-.23, .03]. Controllability was not significantly correlated with empathic concern, blame, or donation.

Table 5. Correlations Between LTHS Subscales, Empathy, Blame, and Donation in Study 4 ($n = 218$).

	LTHS subscale					
	Flexibility		Controllability		Internal	
	<i>r</i>	95% CI	<i>r</i>	95% CI	<i>r</i>	95% CI
Empathic concern	.07	[-.06, .20]	.01	[-.12, .14]	-.09	[-.22, .04]
Perspective taking	.23**	[.10, .35]	-.10	[-.23, .03]	-.17*	[-.30, -.04]
Blame	-.30**	[-.42, -.18]	-.06	[-.19, .07]	.07	[-.06, .20]
Donation	-.02	[-.15, .11]	-.02	[-.15, .11]	-.07	[-.20, .06]

Note. LTHS = Lay Theories of Happiness Scale; CI = confidence interval.

* $p < .05$. ** $p < .01$.

Table 6. Correlations Between LTHS Subscales, Empathy, and Blame in Studies 3 and 4 Combined.

	LTHS subscale					
	Flexibility		Controllability		Internal	
	<i>r</i>	95% CI	<i>r</i>	95% CI	<i>r</i>	95% CI
Empathic concern	.06	[-.03, .15]	-.02	[-.11, .07]	-.05	[-.14, .04]
Perspective taking	.21**	[.13, .29]	-.14**	[-.22, -.05]	-.17**	[-.25, -.09]
Blame	-.18**	[-.26, -.10]	-.05	[-.14, .04]	.07	[-.02, .16]

Note. *ns* vary from 512 to 513 due to missing data. LTHS = Lay Theories of Happiness Scale; CI = confidence interval.

** $p < .01$.

Locus. As in Study 3, internal beliefs were negatively associated with perspective taking, $r(218) = -.17$, 95% CI = [-.30, -.04]. This subscale was not significantly linked with empathic concern, blame, or donation.

The overall pattern of results of Study 4 was largely consistent with that observed in Study 3. Flexibility beliefs were again associated with both increased perspective taking and decreased blame, demonstrating that when people think happiness is highly changeable, they tend to be more understanding toward depressed individuals. Results for the Locus subscale confirmed our previous finding that internal beliefs were associated with less perspective taking toward a depressed individual. Results for the Controllability subscale were partially consistent with Study 3; the correlation between controllability beliefs and perspective taking was in the same (negative) direction but was not significant in the present sample (but see below, for results aggregated across both studies).

One exception to this consistency was that in Study 3, donations were predicted by controllability beliefs, whereas in Study 4, donations were not correlated with any of the subscales of the LTHS. This discrepancy may be accounted for by one of two possible explanations. First, it may be the case that the relationship between controllability and donation is weak or nonexistent and that the correlation observed in Study 3 was a false positive. Alternatively, it may be the case that the restricted range of the donation variable in Study 4 limited the sensitivity of that measure. In Study 3, participants could choose to donate up to US\$0.50 ($M =$

US\$0.07, $SD = US\$0.14$), whereas in Study 4, participants could only choose an amount up to US\$0.30 ($M = US\0.05, $SD = US\$0.09$). At this point, it is difficult to draw conclusions about the relationship between the LTHS and donation behavior, or prosocial behavior more generally, without further evidence.

Combining Studies 3 and 4

Because Studies 3 and 4 used identical measures of happiness beliefs (the LTHS), empathic concern, perspective taking, and blame, we had an opportunity to assess the relationships between these variables with a high level of statistical power (Table 6). Of note, we observed robust relationships between perspective taking and all three dimensions of the LTHS; greater state perspective taking was associated with believing that happiness is flexible, uncontrollable, and external ($ps < .005$). This provides an interesting contrast with Study 2, in which trait perspective taking was associated with believing that happiness is flexible, controllable, and internal.

Controllability and Internal Beliefs: A Reversal

In Study 2, when self-reported empathy was measured at the trait level, believing in the controllability and internal locus of happiness predicted higher perspective taking. In Studies 3 and 4, however, when self-reported empathy was measured at

the state level, these beliefs predicted *lower* perspective taking toward a specific target. Why might this reversal have occurred? One possibility is that controllability theorists are susceptible to a form of “moral forecasting error” (e.g., Teper, Inzlicht, & Page-Gould, 2011; Teper, Zhong, & Inzlicht, 2015). That is, believing that happiness is controllable and internal—beliefs that are linked with general optimism (Study 2)—is associated with an optimistic bias when considering their own dispositional empathy. However, the salience of a concrete exemplar alters the situation from one of abstract principles to a real-life scenario involving the participant’s just-earned money. Put differently, the question participants are answering changes from “Am I a generally empathic person?” to “Am I motivated to take this specific person’s perspective?” The answer to the second question may be less influenced by a general optimism than the first. For flexibility theorists, the assumption that people can change implies that investing empathy or money in a specific victim would be resources well spent. In contrast, for controllability and internal theorists, the assumption that people have control over their outcomes or that happiness comes from within implies that the specific victim had the power to prevent his or her unhappiness but failed to do so. This, in turn, may lead to less empathy for the victim.

General Discussion

Much of the research on empathy has focused on identifying affective, cognitive, and neurophysiological processes that occur once an observer has encountered someone who is suffering. Other research has identified specific attributional pathways to higher versus lower empathy (e.g., Betancourt, 1990; Gill et al., 2013; Weiner, 1980a, 1980b). Considerably less research has emphasized the a priori assumptions that observers bring with them to a potential help-giving situation. Yet in other person perception domains (e.g., stereotyping, moral judgment), such assumptions have been found to play an important role in predicting perceivers’ judgments (e.g., Chiu, Hong, & Dweck, 1997; Levy et al., 1998; for a review, see Plaks, Levy, & Dweck, 2009), including judgments of outgroups and stigmatized groups (e.g., Cohen-Chen, Halperin, Saguy, & van Zomeren, 2013; Schumann et al., 2014). Thus, the present studies seek to extend the empathy literature by importing concepts from the literature on lay theories.

In Study 1a, we developed the 12-item LTHS to assess individual differences in lay theories about happiness along the three dimensions of Flexibility, Controllability, and Locus. In Study 1b, we found that the LTHS was meaningfully related to—but not redundant with—conceptually similar constructs. We further found that the three dimensions were not redundant or collapsible: Each displayed a reasonable amount of independent predictive power.

In Study 2, we assessed the relationships between the three dimensions of the LTHS and measures of dispositional

empathy. We found that believing that happiness was flexible, controllable, and internal correlated with measures of empathic concern and inversely correlated with callous–unemotional traits. These relationships remained (though weaker) even when optimism and incremental theories of emotion were included as covariates. In Studies 3 and 4, we focused on state measures of empathic concern and perspective taking. Here, flexibility beliefs positively predicted perspective taking toward specific targets, but controllability and internal beliefs *negatively* predicted perspective taking. This highlighted the intriguing possibility that controllability and internal beliefs predict higher dispositional (self-reported) empathy but lower empathic responding toward specific individuals.

All of the studies reported here are correlational, and thus, the causal direction of the reported effects remains unclear. We did conduct four additional experimental studies in an attempt to learn more about the relationships between lay theories of happiness and empathy (see Supplementary Materials). In Studies S1 to S3, we attempted to manipulate specific LTHS dimensions and to test the effects on empathy. These studies failed to provide evidence of a consistent causal relationship from lay theories to empathic responding. This lack of significant results could be interpreted in at least three ways. First, it is possible that lay theories do not have a downstream effect on empathic reactions and that the observed correlations reflect the reverse causal pathway (i.e., empathy → lay theories). However, the results from Study 4 appear to cast doubt on this explanation as it seems unlikely that state empathy could influence lay theories of happiness reported *before* state empathy was elicited. Second, it is possible that a third variable may underlie both lay theories of happiness and empathic responding. Optimism provides one possible candidate, although it seems implausible that optimism could account for the positive association between Controllability/Locus subscales and trait empathy (Study 2), as well as the negative association between controllability/locus and state empathy (Studies 3 and 4). Nevertheless, the possibility of a third variable (or multiple third variables) is not something that can be ruled out with the present results. Third, it is possible that our attempts to manipulate lay theories of happiness in an online sample were not effective. We encourage future researchers to use the present findings as a basis for developing effective manipulations of lay theories of happiness, analogous to manipulations used in research on the entity/incremental theories (e.g., Plaks & Chasteen, 2013; Plaks & Halvorson, 2013).

In Study S4, we examined the possibility of the reverse causal path by manipulating empathy and then assessing the effects on participants’ scores on the LTHS. This study provided preliminary, although inconclusive evidence that increasing empathy can cause decreased perceptions of personal control, perhaps because adjusting one’s theory provides a means of justifying the empathic response. Future research could be informative in further investigating this causal pathway.

The Role of Lay Theories in Empathy

Attributions do not occur in a vacuum. Instead, they are often derived from more general lay theories about human nature (e.g., Burton & Plaks, 2013; Plaks, Levy, & Dweck, 2009). Although previous research has examined individual differences in empathic tendencies (e.g., Baron-Cohen & Wheelwright, 2004; Davis, 1980), there has been little examination of how empathic tendencies are predicted by the more general theories that structure people's interpretations of behavior. Because reactions to the suffering of others are heavily influenced by the attributions people make for that suffering (Betancourt, 1990; Weiner 1980a, 1980b), an understanding of the sources of those attributions may shed light on why two observers can have dramatically different reactions to the same victim's distress.

These results build on earlier work on entity versus incremental theories by demonstrating that the flexibility dimension can be usefully applied to theories of happiness. Furthermore, these results suggest new dimensions—controllability and locus—that could expand the purview of lay theories research and help to clarify existing findings. Two of the present results, in particular, provide evidence of the utility of disentangling these three dimensions in lay theories research. First, in Study 1b, we observed that the IToE was positively correlated with the Controllability and Locus subscales but showed no significant relationship with the Flexibility subscale. This suggests that conceptualizing traditional lay theories scales as measures of stability per se, rather than some combination of stability, controllability, and locus, may be inaccurate. Second, we observed a dissociation between the subscales in predicting state and trait empathy; flexibility was correlated with both trait and state measures in the same direction, but controllability and locus showed reversals from trait to state. Thus, scales that confound flexibility and controllability may disguise the independent relationships that these dimensions have with important outcomes.

One question prompted by our findings is whether the relationship between empathy and lay theories might extend beyond happiness to theories of human characteristics in general. This question deserves further investigation, although some of our results suggest that theories of happiness are not wholly generalizable. In Study 2, we provided evidence that viewing happiness as flexible was associated with higher levels of empathic concern even when controlling for incremental theories of emotion (i.e., beyond happiness per se). This suggests that there might be something unique about theories of happiness that cannot be reduced to theories of emotion broadly construed. Nevertheless, future studies should examine whether theories of personality (rather than emotion) might be related to enhanced empathic concern.

Indeed, adopting a lay theories approach may open a range of avenues of research on empathy. It is likely that

people hold numerous other assumptions about human traits and behavior that imply different responses to a suffering person. For example, people appear to hold different beliefs about the malleability of their own empathy. Schumann et al. (2014) reported that participants who believed that their own capacity for empathy was malleable and improvable displayed higher empathy toward a range of outgroups than did participants who believed that their level of empathy was fixed. Another relevant, related lay theory may be the belief that one's capacity for empathy is limited versus unlimited. The unlimited theory may yield greater empathy than a theory holding that expressing empathy causes "burnout" (analogous to the demonstrated effect of theories about self-regulation; Job, Dweck, & Walton, 2010). As future research isolates more of these assumptions, researchers may account for more of the variability in empathy-related cognition, affect, and behavior.

Limitations and Future Directions

A limitation of Studies 2 to 4 is that they were conducted online, and thus, people's responses may not be representative of the ways in which they would respond in face-to-face social interactions. Although this puts boundaries on the generalizability of our results, people are increasingly exposed to the suffering of others in online contexts (e.g., news websites, online charity campaigns, social media, etc.) making these environments directly relevant, rather than simply imperfect proxies of the "real world." Online studies also pose the challenge of determining whether or not participants were paying full attention to the study. As this can be particularly important in studies that require people to pay close attention to written instructions, we included an instructional manipulation check in Study 4 (Oppenheimer et al., 2009). Nevertheless, conducting related studies in laboratory or field settings would certainly deepen our understanding of these phenomena.

One potential avenue for future research would be to work to develop a longer version of the LTHS with the aim of creating subscales with higher internal reliability. In the studies reported here, we observed reliabilities ranging from .5 to .9, which is not unexpected given the short length of the subscales and the inclusion of reverse-coded items (Cortina, 1993; Weems & Onwuegbuzie, 2001). Nevertheless, the development of a longer version would allow for more precise measurement in contexts in which brevity is not a priority.

Conclusion

The true nature of happiness—whether it is flexible or stable, controllable or uncontrollable, internal or external—continues to be a source of debate within the field of psychology as well as the general public. Here, we found evidence that the view to which an individual subscribes

predicts his or her response to the suffering of others. Moreover, these views may serve to justify instances when people feel a strong emotional reaction to others' suffering, and also instances when people respond with callousness or disinterest. We anticipate that future research will clarify and expand on these findings by systematically investigating how lay theories of human behavior work together with other allied beliefs (e.g., just world beliefs, free will beliefs, political beliefs) to produce empathic responding and prosocial behavior.

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Supplemental Material

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Notes

- Following Dweck and colleagues (e.g., Levy, Chiu, & Hong, 2006; Plaks, Levy, & Dweck, 2009), we define lay theories (also referred to as "implicit" or "naïve" theories) as ontological assumptions about what is true in the world. Like scientific theories, lay theories generate predictions from a small set of core assumptions. Unlike scientific theories, lay theories tend not to be articulated explicitly (for more on the nature and function of lay theories, see Plaks, Levy, & Dweck, 2009).
- For this reason, we do not use the terms "entity" and "incremental" when discussing the Lay Theories of Happiness Scale (LTHS). Instead, our operationalization of lay theories distinguishes between stability/flexibility and controllability/uncontrollability.
- Ninety-eight of these participants completed the questionnaire on two occasions, 42 days apart, allowing us to perform test-retest reliability analyses. The test-retest coefficients for the individual subscales were as follows: Flexibility ($r = .446, p = .001$), Controllability ($r = .426, p < .001$), and Locus ($r = .715, p < .001$). Only their first set of responses was used in the factor analysis.
- We also conducted a number-of-factors assessment for all 573 participants (Fabrigar, Wegener, MacCallum, & Strahan, 1999). We used a maximum likelihood estimator and promax rotation. Examining the scree plot clearly revealed three major factors taking up 17.02%, 11.29%, and 9.14% of the variance, respectively. Qualitative examination of the item loadings revealed that the first factor primarily captured controllability (eight controllability items with loadings more than .40, three locus items with loadings more than .40, one flexibility item with a loading more than .40), the second captured flexibility (six flexibility items with loadings more than .40, no other items with loadings more than .40), and the third captured locus (four locus items with loadings more than .40, no other items with loadings more than .40). Thus, the existing factor structure largely corresponds to that specified by our theoretical model, with the exception that controllability and locus show a small degree of overlap when we do not constrain our model to three factors.
- For ease of interpretation, these and all subsequent reliability indices are conducted using raw scores rather than acquiescence index scores. These estimates have the disadvantage of underestimating reliability due to the tendency to agree with items regardless of wording direction (Winkler, Kanouse, & Ware, 1982).
- Due to experimenter error, the Callousness subscale of the Inventory of Callous-Unemotional Traits is missing one item: "I am concerned about the feelings of others."

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