Running head: IMPLICIT THEORIES OF EMOTION

Implicit Theories of Emotion Shape Regulation of Negative Affect

Andreas Kappes

New York University

Andra Schikowski

University of Hamburg

Word count: 3679 (4000)

Abstract

Implicit theories of emotion—assumptions about whether emotions are fixed (entity theory) or malleable (incremental theory)—have previously been shown to influence affective outcomes over time. We examined whether implicit theories of emotion also relate to the immediate regulation of negative affect. Consistent with our hypotheses, we found that the more students endorsed an entity theory of emotion, the more discomfort they reported while watching an aversive movie clip, the more they avoided affective stimuli in this movie clip, the more negative affect they reported after the clip, and the less likely they were to watch the same clip again to learn about its ending. These findings suggest that implicit theories of emotion might produce poor affective outcomes immediately as well as over time. They also offer insight into why some people avoid negative affect while others confront it.

Words: 139

Implicit Theories of Emotion Shape Regulation of Negative Affect

All people inevitably experience upsetting or stressful events throughout life, but they differ in how they manage the resulting negative affect. There is a growing body of research on how people handle their affective responses (Koole, 2009, for an overview), but rather little is known about why some people attempt to regulate negative affect in one way, and some people in another. One might wonder, for instance, why some individuals avoid negative affect, while others do the opposite.

We suggest that lay theories about the nature of emotions (Tamir, Srivastava, & Gross, 2007) impact the strategies people use. Entity theorists see emotions as fixed, running their course no matter how hard one might try to alter them. Such an understanding of emotions might lead entity theorists to favor an avoidance-centered approach to regulating their affect. Specifically, people who believe that emotions cannot be changed might evaluate everyday levels of unpleasant affect as negative, perhaps even threatening, since such unpleasant affect might indicate the onset of emotions beyond control. Negative evaluations of unpleasant affect in turn are central to the unwillingness to experience such affect (i.e., experiential avoidance; Hayes et al., 1996; 2006). Entity theorists might therefore be prone to use experiential avoidance, potentially seeing it as a self-protective strategy that can prevent dreadful consequences (cf. Kashdan, Barrios, Forsyth, & Steger, 2006).

In light off this reasoning, we suggests that entity theorists might try to influence negative affect by avoiding the experiential contact, by, for instance, trying to distract themselves from the unpleasant feelings or by trying to suppress the feelings. Subsequently, entity theorists might also avoid circumstances similar to those that elicited such affect, trying thereby to control the frequency of these emotional reactions. If, for instance, an entity theorist has a fear of flying, he might try to avoid thinking about flying, distract himself when flying-related thoughts are elicited, and avoid situations that involve talking about flying (e.g., a fear-of-flying workshop), as well as avoiding flying itself.

Incremental theorists, on the other hand, view emotions as malleable, and susceptible to control and change. Such a view of emotions might lead to an acceptance-centered approach to affect regulation. In contrast to entity theorists, incremental theorists might not evaluate unpleasant affect as negative. Instead, incremental theorists might be interested in their affective reactions, since they could potentially gain insight into understanding and controlling their emotional states (cf. Whiteside et al., 2007). Hence, events that might bear negative feelings should not be avoided per se, but rather should be approached when something could be learned. If, for example, an incremental theorist experiences fear of flying, instead of distracting herself, she might start wondering about how this fear is elicited, and where it is coming from. Furthermore, she should seek out opportunities to learn more about her fear, such as a fear-of-flying workshop, and ultimately, she should approach flying to test her ideas about the emotion.

There is some evidence that implicit theories of emotion shape the way people manage their affect. Tamir and colleagues (2007) examined the relation between implicit theories and affective outcomes over time. Before the beginning of college, students reported their implicit theories of emotion (incremental versus entity) as well as their emotion regulation self-efficacy, and throughout the first year in college, their emotional experiences. At the end of the first college year, they also indicated their depressive symptoms and well-being. The more that students endorsed an entity theory of emotion at the beginning of college, the lower was their emotion regulation self-efficacy, the more negative were their emotional experiences throughout the first year, the higher were their depressive symptoms, and the lower was their well-being at the end of the year. These findings suggest that entity theorists and incremental theorists deploy different regulation strategies, which lead to poor outcomes for the former compared to the latter.

Our predictions are in line with these findings. Avoiding negative affect, as we suspect entity theorists to do, leads to poor affective outcomes over time (Plump, Orsillo & Luterek,

2004; Shaar & Herr, 2011; Shallcross, Troy, Boland, & Mauss, 2010). For instance, the tendency to avoid negative affect—measured before a negative life event—predicts greater psychological distress after the negative life event as well as the subsequent development of depressive symptoms (Shallcross, Troy, Boland, & Mauss, 2010, Study 2; Shahar & Herr, 2011). Interestingly, Tamir et al. (2007) found that students with an entity theory of emotion had lower emotion regulation self-efficacy compared to students with an incremental theory. Such confidence beliefs in turn have been linked not only to experiential avoidance, but also to negative evaluations of unpleasant affect (Barlow, Allen, & Choate, 2004; Catanzaro & Mearns, 1990; Lazarus, 1991). We theorized that such negative evaluations of affect might trigger experiential avoidance in entity theorists. Hence, we suspect that students with entity theories might have unfavorable emotional outcomes due to their tendency to avoid negative affect in the short-term, and that this tendency is initiated by the negative evaluation of unpleasant affect.

Entity theorists' experiential avoidance might not only lead to poor affective outcomes over time, but also to increases in negative affect after an aversive event. Even though some evidence suggests potential short-term benefits (Wegner & Gold, 1995), the majority of studies examining the effects of experiential avoidance on subsequent negative affect found that avoidance backfires by increasing negative affect, especially in non-clinical samples. For example, students high in avoidance of negative affect reported higher negative affect when watching an aversive film clip compared to students low in avoidance (Shallcross et al., 2010, Study 1, see also Eifert & Heffner, 2003; Feldner et al., 2003, Levitt et al, 2004). Based on these results, we expected that the more students endorsed an entity view of emotion the more negative affect they would experience after an aversive event, potentially by using experiential avoidance throughout the aversive event.

To test our predictions, we invited female students to a study about movie perception, measured their implicit theories of emotion, and then showed them a distressing movie clip,

which stopped right before its resolution. Thereafter, we measured multiple facets of experiential avoidance. Specifically, we measured participants' feelings of discomfort during the movie clip, their negative affect thereafter, and their self-reported use of avoidance-based regulation strategies. Finally, to measure participants' avoidance of the event itself, we offered them the choice between watching the movie clip again, this time with its resolution revealed, or watching an entertaining movie clip instead. Hence, students could choose to confront the same aversive clip again, or could avoid the clip, but also miss the chance to learn more about it.

We predicted that the more students endorsed an entity view of emotion, the more discomfort they would report while watching the aversive movie clip, the more they would avoid affective stimuli in the clip, the more negative affect they would report after the clip, and the less likely they would be to watch the same clip again, even though this would mean forgoing the chance to learn something.

Method

Participants

Eighty-four female university students ($M = 24.2$ years, $SD = 5.5$, range 19 to 42) participated in return for partial course credit. We recruited only women to reduce the variance within the sample, since men and women tend to differ in their emotional reactivity (Timmers, Fischer, & Manstead, 1998). All participants were briefed about the potentially upsetting nature of the movie clip before the experiment.

Procedure

In the beginning, we measured participants' implicit theories and baseline negative affect. Following Campbell-Sills et al. (2006), participants then saw a scene from the movie "The Deer Hunter." The scene was about five minutes long and depicted soldiers being forced to play Russian roulette. The soldiers cried and begged for their lives while they were forced to put a gun to their head and pull the trigger over and over again. The movie clip ended

before it became clear that the two soldiers would survive. Directly thereafter, we measured

participants' feelings of discomfort as well as the avoidance of affective stimuli during the

movie clip and their negative affect. Finally, to observe the subsequent avoidance of the

upsetting event, students had the chance to either watch a longer version of the previously

presented movie in order to find out whether the soldiers were able to escape, or to watch an

uplifting, animated movie clip of the same length called "No Time for Nuts."

Materials

Implicit theories of emotion. The Implicit Theories of Emotion Scale (Tamir et al.,

2007) is based on the Implicit Theories of Intelligence Scale (Dweck, 1999) and assesses

beliefs about the nature of emotions. It consists of two items referring to the malleable nature

of emotions, (i.e., "everyone can learn to control their emotions," "if they want to, people can

change the emotions that they have") and two items referring to the fixed nature of emotions

(i.e., "no matter how hard they try, people can't really change the emotions that they have,"

"the truth is, people have very little control over their emotions") Participants indicated their

agreement with each statement on a 6-point scale, ranging from 1 (*strongly disagree*) to 6

(*strongly agree*). Following Tamir et al. (2007), we averaged the items to form one score (α

=.79), with higher scores indicating a stronger endorsement of an entity view of emotion.

Negative affect. We measured participants' negative affect with the Negative Affect

Scale of the Positive and Negative Affect Schedule (PANAS-N, Watson, Clark & Tellegen,

1988). The PANAS-N consists of ten adjectives pertaining to negative affect (e.g., distressed,

upset, afraid) which participants rated on a 5-point scale to indicate how they felt at this

moment. Answers were averaged to form one negative affect score (before the movie clip: $\alpha =$

.72, after the movie clip: $\alpha = .82$).

Experiential avoidance. We measured different facets of experiential avoidance:

feelings of discomfort during the movie, avoidance of affective stimuli, and subsequent

avoidance behavior. To measure feelings of discomfort, participants indicated how often they

were bothered by feeling uncomfortable while watching the movie clip on a scale ranging from 0 (*not at all*) to 8 (*all the time*). To measure avoidance of affective stimuli, participants indicated whether they focused on the less emotional details of the film (e.g., the scenery), whether they distracted themselves during the movie (e.g., by thinking about other things), whether they were interested in getting drawn into the film to really experience it or shifted their gaze when seeing something upsetting (reverse coded). Again, participants used a scale ranging from 0 (*not at all*) to 8 (*all the time*) to rate how often they had applied each strategy during the movie clip. We averaged the three items to form one avoidance scale ($\alpha = .81$).

Finally, to measure the subsequent avoidance of the upsetting event, we recorded students' choices between watching a longer version of the previously presented movie in order to find out whether the soldiers were able to escape (coded 1), or to watch an uplifting, animated movie clip of the same length called "No Time for Nuts" at the end of the study (coded 2). We selected an up-lifting movie clip as alternative choice, rather than a neutral movie clip. We theorized that choosing an uplifting movie clip conveys experiential avoidance since it indicates the unwillingness to further experience unpleasant affect. A neutral movie clip, in contrast, might be perceived as offering a further opportunity to confront current affect since a neutral movie clip does not offer distraction.

Results

We excluded three participants because they knew the movie clip and its ending.

Manipulation Check

First, we tested whether the movie clip induced negative affect. We computed a repeated measures analysis of variance with negative affect as dependent variable and time (before the movie clip versus after the movie clip) as within-subject factor. We found the predicted main effect of time, $F(1,81) = 98.28$, $p < .0001$, with negative affect after the movie clip ($M = 2.30$, $SD = .69$) higher than negative affect before the movie clip ($M = 1.55$, $SD = .42$).

Implicit Theories of Emotion

Implicit theories of emotion were measured using a scale ranging from one to six, with higher scores indicating a stronger entity theory of emotion. In our sample, students tended to endorse the entity view slightly less than the incremental view of emotion, $M = 3.16$, $SD = .95$; scores ranged from 1.25 to 5.25. These results are similar to the ones found in previous research (Tamir et al., 2007). Implicit theories of emotion did not correlate with negative affect before the movie, $r(82) = -.003$, $p = .98$.

Implicit Theories of Emotion and Affect Regulation

Using correlational analysis, we examined whether participants' implicit theories of emotion were related to three outcomes: their negative affect after the movie clip, avoidance of affective stimuli, and feelings of discomfort during the movie clip. We controlled for negative affect before the movie to ensure that our results were not due to differences in negative affect in general (see Table 1 for all the zero order correlations and Table 2 for all the partial correlations).

In line with our predictions, we found that the stronger the belief in an entity theory of emotion, the more negative affect participants reported after the movie clip, $r(82) = .31$, $p = .005$, controlling for negative affect before the movie. Furthermore, the stronger the belief in an entity theory of emotion, the more students avoided the affective stimuli during the movie, $r(82) = .28$, $p = .01$, and the more feelings of discomfort they reported having during the movie, $r(82) = .35$, $p = .001$. Importantly, the relationship between implicit theories and feelings of discomfort remained even when additionally controlling for negative affect after the movie, $r(82) = -.26$, $p = .02$, indicating that implicit theories of emotion were related to how much students felt bothered by their negative affect, over and above its intensity.

Finally, we examined whether participants' implicit theories of emotion influenced their choice of movie clip (i.e., same movie clip again or funny movie clip) at the end of the study. We found a marginally significant relationship between implicit theories of emotion

and film choice, $r(82) = .21$, $p = .057$, indicating that the stronger the belief in the entity theory of emotion was, the less often participants chose to watch the same movie clip again to learn about its ending.

Discussion

We examined whether students' ideas about the nature of emotions (i.e., implicit theories of emotion) predicted the regulation of negative affect during an unpleasant event, and affective outcomes as well as avoidance behavior thereafter. As expected, endorsing an entity belief about emotions was related to experiential avoidance. The more that students believed emotions cannot be changed, the more they were bothered by their negative affect during an aversive movie clip, the more they avoided affective stimuli during the clip, the more negative affect they reported after the movie clip, and the less likely they were to watch the same clip again to learn about its ending. Taken together, these results suggest that implicit theories of emotion might lead to poor affective outcomes in the short-term, not only in the long run as has been previously found (Tamir et al., 2007). Furthermore, lay theories about emotion might play an important role in *how* people manage aversive events, and how people subsequently adapt their behavior.

Implications

The present findings imply that implicit theories of emotion might play a role in explaining individual differences in affect regulation. Whereas most research on emotion regulation focuses on identifying strategies that people in general use to regulate their affect, we looked at why people might choose one strategy over another. Our results imply that the ideas people hold about the nature of emotion—susceptible to change, or not—influence their responses to emotional situations. By providing a framework for evaluating negative affect, implicit theories of emotion may guide reactions to aversive events, leading entity theorists to avoid the affect, and incremental theorists to accept it.

The presented results in conjunction with previous research also contribute toward a better understanding of how implicit theories of emotion shape affect regulation and affective outcomes. In the short-term, these theories influence whether people approach or avoid negative affect, thereby fashioning their affective outcomes over time. Furthermore, our results also suggest that the appraisal of experienced affect is critical for the influence of implicit theories of emotion on affect regulation. We found that participants with entity theories of emotion judged their negative affect during the movie clip more discomforting than incremental theorist. The relationship between implicit theories of emotion and feelings of discomfort was still present when controlling for the reported negative affect after the movie clip. This finding suggests that it was not merely the comparatively higher intensity of negative affect for entity theorists that caused these feelings of discomfort, but rather entity theorists' appraisal of the affect. In support of this idea, previous research found that entity theories of emotion are related to low confidence in the ability to control one's emotions (i.e., emotion regulation self-efficacy; Tamir et al., 2007) and such low confidence is related to appraising negative affect as threatening (Barlow, Allen, & Choate, 2004; Lazarus, 1991).

Potential Limitations

In our study we measured, rather than manipulated, implicit theories of emotion. Our results in conjunction with the findings of Tamir et al. (2007) speak to the ecological validity of implicit theories of emotion; people do systematically differ in their assumptions about the nature of emotion. However, the presented results do not speak to the causal relation between implicit theories of emotion and the management of negative affect. One could argue, for instance, that participants who tend to avoid negative affect, might, as a consequence form the idea that emotions cannot be changed. Hence, entity theories of emotion might be the outcome of avoidance, rather than the cause. Speaking against this possibility, extensive research on lay theories of personal attributes such as intelligence (Dweck, 1999; Molden & Dweck, 2006, for overviews) shows that implicit theories influence appraisals and behavior

independent of whether they are manipulated or measured (e.g., Hong et al., 1999). Similarly, implicit theories of emotion might establish a framework to understand one's affective reactions, which then guides subsequent behavior. However, it is important for future research to manipulate the theories people hold in order to gain more insight into the causal relationship between implicit theories of emotion and responses to aversive events.

The design of our study had some further limitations. For instance, implicit beliefs were measured right before the emotional manipulation and students might have felt that they had to report and behave in a way consistent with their previous answers. This is a point of particular concern as we did not measure social desirability. However, the items on the implicit theories of emotion scale ask participants about their general ideas about the nature of emotion (e.g., "the truth is, people have very little control over their emotions"), making it harder for participants to guess how they might be connected to other items. Nevertheless, measuring implicit theories of emotion at the end and controlling for social desirability in future studies would rule out these concerns.

A strength of our study is that we measured different indicators of poor affect management—not only negative affect itself, but also how students felt about the negative affect and the strategies they used to regulate the affect. Importantly, we found a consistent pattern among these different indicators. However, we measured avoidance and feeling of discomfort during the movie retrospectively via self-report and at the same time as negative affect. Hence, one might argue that those students who had increased negative feelings after the movie would report more feelings of discomfort and more avoidance during the movie just to respond consistently. However, we found only small to moderate correlations between our dependent variables (see Table 1), suggesting that students were capable of differentiating between the various aspects of their affect regulation. Furthermore, we also observed spontaneous behavior (i.e., which movie clip students watched the second time). Hence,

implicit theories of emotion do not only relate to self-reported indicators of affect management, but also to behavioral indicators.

In the interest of generalizability, future studies should try to incorporate additional measures and alternative samples. Such studies might measure, for instance, physiological indicators of experienced affect (e.g., heart rate, skin conductance, eye movement) to examine how far reaching the effects of implicit theories of emotion are. Such studies could also ensure that these effects are present in samples more varied than ours, which consisted only of female university students.

Future Directions

Better understanding how implicit theories of emotion influence emotion regulation has some intriguing implications for interventions and therapy. Obviously, if entity theories of emotion lead to experiential avoidance and unfavorable affective outcomes over time, then trying to change these ideas about the nature of emotions would be crucial to emotion regulation interventions. Research on implicit theories of intelligence not only shows that such theories can be changed, but also that doing so helps people to master challenges (Blackwell, Trzesniewski, & Dweck, 2007). In therapeutic settings, implicit theories of emotion might impact the degree to which clients believe that therapy can help them to change certain aversive affective states. These theories might even influence whether a person seeks out professional help in the first place.

<div align="center">

Conclusion

</div>

We tested whether lay theories about the nature of emotions shape people's affect management during and after an aversive event. In our study, students who endorsed the view that emotions cannot be changed reported stronger negative affect after an aversive movie clip, and not only avoided affective stimuli during the movie clip, but also passed up the chance to see how the story in the movie clip ended. In spite of some methodological limitations, this study offers exciting implications for diverse areas of research on emotion

regulation. Understanding the ideas that people have about their emotions might offer the

chance to help people manage their affect effectively, turning incremental theories about

emotions into reality.

References (19 out of 25)

Blackwell, L., Trzesniewski, K., & Dweck, C.S. (2007). Implicit theories of intelligence

predict achievement across an adolescent transition: A longitudinal study and an

intervention. *Child Development, 78*, 246-263.

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development.*

Philadelphia, PA: Psychology Press.

Eifert, G. H., & Heffner, M. (2003). The effects of acceptance versus control contexts on

avoidance of panic-related symptoms. *Journal of Behavior Therapy and Experimental*

Psychiatry, *34*, 293–312.

Feldner, M. T., Zvolensky, M. J., Eifert, G. H., & Spira, A. P. (2003). Emotional avoidance:

An experimental test of individual differences and response suppression using

biological challenge. *Behaviour Research and Therapy*, *41*, 403–411.

Hayes , S. C. Wilson , K. G. Gifford , E. V. Follette , V. M. Strosahl , K. (1996). Experiential

avoidance and behavioral disorders: A functional dimensional approach to diagnosis

and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152-1168.

Hayes, S.C., Luoma, J.B., Bond, F.W., Masuda, A., & Lillis, J. (2006). Acceptance and

commitment therapy: model, processes and outcomes. *Behaviour Research and*

Therapy, 44, 1-25.

Hong, Y.-y., Chiu, C.-y., Dweck, C. S., Lin, D. M.-S., & Wan, W. (1999). Implicit theories,

attributions, and coping: A meaning system approach. *Journal of Personality and*

Social Psychology, 77, 588-599.

Koole, S. L. (2009). The psychology of emotion regulation: An integrative review. *Cognition*

& Emotion, *23*, 4–41.

Kashdan, T.B., Barrios, V., Forsyth, J.P., & Steger, M.F. (2006). Experiential avoidance as a

generalized psychological vulnerability: Comparisons with coping and emotion regulation

strategies. *Behaviour Research and Therapy, 9*, 1301-1320.

Lazarus , R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion. *American Psychologist, 46*, 819-834.

Levitt, J. T., Brown, T. A., Orsillo, S. M., & Barlow, D. H. (2004). The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. *Behavior Therapy*, *35*, 747–766.

Molden, D.C., & Dweck, C.S. (2006). Finding "meaning" in psychology: A lay theories approach to self-regulation, social perception, and social development. *American Psychologist, 61*, 192-203.

Plumb, J., Orsillo, S., & Luterek, J. (2004). A preliminary test of the role of experiential avoidance in post-event functioning. *Journal of Behavior Therapy and Experimental Psychiatry, 35*, 245-257.

Shahar, B., & Herr, N. R. (2011). Depressive symptoms predict inflexibly high levels of experiential avoidance in response to daily negative affect: A daily diary study. *Behaviour Research and Therapy, 49*, 676-681.

Shallcross, A. J., Troy, A. S., Boland, M., & Mauss, I. B. (2010). Let it be: Accepting negative emotional experiences predicts decreased negative affect and depressive symptoms. *Behaviour Research and Therapy, 48*, 921–929.

Tamir, M., John, O. P., Srivastava, S., & Gross, J. J. (2007). Implicit theories of emotion: Affective and social outcomes across a major life transition. *Journal of Personality and Social Psychology, 92*, 731–744.

Timmers, M., Fischer, A. H., & Manstead, A. S. R. (1998). Gender differences in motives for regulating emotions. *Personality and Social Psychology Bulletin, 24*, 974-985.

Wegner, D. M., & Gold, D. B. (1995). Fanning old flames: Emotional and cognitive effects of suppressing thoughts of a past relationship. *Journal of Personality and Social Psychology, 68*, 782-792.

Whiteside, U., Chen, E., Neighbors, C., Hunter, D., Lo, T., & Larimer, M. (2007). Difficulties regulating emotions: Do binge eaters have fewer strategies to modulate and tolerate negative affect? *Eating Behaviors, 8*, 162–169.

Table 1. Zero-order correlations between the measured variables in the study

	1.	2.	3.	4.	5.	6.
1. Implicit Theories of Emotion	1	-.003	.29**	.35**	.26*	.21^t
2. Negative Affect before the Movie Clip		1	.32**	.05	.37**	.13
3. Negative Affect after the Movie Clip			1	.40**	.34**	.17
4. Appraisal of Negative Affect				1	.27*	.20
5. Avoidance of Affective Stimuli					1	.40**
6. Movie Choice						1

** $p < 01$, * $p < .05$, ^{t} p <.10, Note that movie choice is coded 1 = wanted to watch movie again, 2 = did not want to watch movie again

Table 2. Partial correlations between the measured variables in the study, controlling for baseline negative affect

	1.	2.	3.	4.	5.
1. Implicit Theories of Emotion	1	.31**	.35**	.28**	.21^t
2. Negative Affect after the Movie Clip		1	.41**	.25*	.13
3. Appraisal of Negative Affect			1	.27*	.19^t
4. Avoidance of Affective Stimuli				1	.38**
5. Movie Choice					1

** $p < 01$, * $p < .05$, ^{t} p <.10, Note that movie choice is coded 1 = wanted to watch movie again, 2 = did not want to watch movie again