

What You Like Is What You Try to Get: Attitudes Toward Emotions and Situation Selection

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Why do people expose themselves to certain emotional stimuli and avoid others? We propose that what people want to feel is linked to attitudes toward emotions. In 3 studies, we show that individuals with more (vs. less) negative attitudes toward an emotion were more (vs. less) likely to avoid stimuli that induce that emotion. People who evaluated disgust (or joy) less favorably than others were less likely to expose themselves to disgusting (or joyful) pictures (Study 1). These links were emotion-specific and could not be explained by differences in state or trait emotion (Study 2) or in emotional reactivity (Study 3). We were further able to show that the choice of emotion-inducing stimuli affected emotional experience in a congruent manner. People with more (vs. less) negative attitudes toward disgust (or sadness) were more likely to avoid disgusting (or sad) stimuli, resulting in more intense experiences of disgust (or sadness; Study 2). Finally, people with more negative attitudes toward disgust chose to avoid more disgusting stimuli, whether attitudes were assessed explicitly or implicitly (Study 3). These findings suggest that people avoid stimuli that induce emotions that they evaluate less favorably, even when such evaluations are not consciously accessible.

Keywords: attitudes, situation selection, emotion regulation, motivation, disgust

Our environment offers endless opportunities to shape our emotional experiences. Televisions, radios, Internet, mobile phones, and newspapers are constantly ready to amuse, anger, scare, sadden, or disgust us. More often than not, people are aware of the likely emotional impact of various stimuli. They know that watching a comedy would amuse them, reading about the threat of terror in the newspaper would scare them, and watching *Jackass* in the movie theater would disgust them. What leads people to avoid some emotional stimuli and approach others? People often shape their emotional experiences to achieve emotion goals (i.e., desired emotional states; Mauss & Tamir, 2014; Tamir, 2016). We propose that one of the factors that is associated with emotion goals is people's attitudes toward emotions. At least in some contexts, the more favorably (or less unfavorably) people evaluate an emotion, the more they want to experience (and the less they want to avoid) it. This, in turn, should make them more likely to select stimuli that induce that emotion (or less likely to avoid such stimuli). We tested this idea in the current investigation.

Emotion Goals and Situation Selection

Emotion regulation is the process by which individuals attempt to achieve their emotion goals by trying to influence which emo-

tions they experience, when they feel them, and how they experience them (e.g., Gross, 1998). To attain an emotion goal, individuals can use different strategies. According to the process model of emotion regulation (Gross, 1998, 2015), strategies that are employed relatively early in the emotion generation process may be particularly effective. One of these strategies is situation selection, which involves the selection of situations that are expected to induce desired emotions. As situation selection enables individuals to choose stimuli that induce desired emotions or avoid stimuli that induce undesired emotions, it is often used as an index of emotion goals (e.g., Harmon-Jones, Harmon-Jones, Amodio, & Gable, 2011; Millgram, Joormann, Huppert, & Tamir, 2015; Tamir & Ford, 2012). This is because the very nature of situation selection is dictated by the emotion goal that is pursued.

People differ in the emotion goals they pursue, and consequently, in the emotion-inducing situations they select. First, there is considerable evidence that emotion goals vary as a function of situational demands (for a review, see Tamir, 2016). For example, people want to feel angrier when they need to confront and more fear when they need to avoid (Tamir & Ford, 2009, 2012; Tamir, Mitchell, & Gross, 2008). Second, emotion goals vary as a function of individual differences. Emotion goals differ as a function of personality traits (e.g., Tamir, 2005, 2009), psychopathology (Millgram et al., 2015), and culture (e.g., Tsai, Knutson, & Fung, 2006). But little is known about the common mechanism that might underlie such individual differences.

In this article, we suggest that individual differences in emotion goals are related, in part, to differences in attitudes toward emotions. The more favorably people evaluate an emotion, the more motivated they are to experience it, and the more likely they would be to select stimuli that induce that emotion. Similarly, the less favorably people evaluate an emotion, the more motivated they are to avoid experiencing the emotion, and the less likely they would

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be to select stimuli that induce it. Therefore, to assess potential links between attitudes toward emotions and emotion goals, we examined whether and how attitudes toward emotions are associated with different patterns of situation selection.

Situation Selection and Attitudes Toward Emotions

An attitude is a tendency to evaluate a target with some degree of favor or disfavor (Eagly & Chaiken, 1993). Attitudes often motivate people to behave in ways that are attitude-consistent (see Kraus, 1995). Generally, individuals with more positive attitudes toward a target are more likely to approach that target, whereas individuals with more negative attitudes toward a target are more likely to avoid it (e.g., Eagly & Chaiken, 1993; Kraus, 1995; Kruglanski et al., 2015; Zanna, Olson, & Fazio, 1980). For instance, people who like chocolate more, are likely to consume more chocolate than people who like chocolate less. The link between attitudes and behavior is mediated by attitude-related goals. According to Kruglanski and colleagues (2015), attitudes toward an object (i.e., its desirability), contributes to the formation of attitude-related goals, which in turn affect goal-directed behavior. For example, people who like chocolate may be more likely to try to get chocolate, by going to chocolate shops or by selecting situations in which chocolate might be readily available. As attitudes often give rise to goals, it is possible that attitudes toward emotions are linked to emotion goals, which shape emotion regulatory behavior (e.g., Tamir, Bigman, Rhodes, Salerno, & Schreier, 2015).

Attitudes toward emotions involve subjective evaluations of discrete emotions (Harmon-Jones et al., 2011). Individuals differ in their attitudes toward distinct emotions, such as disgust and sadness. Furthermore, Harmon-Jones and colleagues (2011) found that, depending on whether the emotion is approach-oriented or avoidance-oriented, attitudes toward emotions are related to the disposition to experience that emotion. With respect to approach-oriented emotions (e.g., anger, joy), people who tend to experience the emotion more frequently tend to have more positive attitudes toward that emotion. In contrast, with respect to avoidance-oriented emotions (e.g., fear, disgust), people who tend to experience the emotion more frequently tend to have more negative attitudes toward that emotion.

Harmon-Jones and colleagues (2011) provided preliminary evidence for the possible links between attitudes toward emotions and situation selection. They showed that people with more negative attitudes toward an emotion were less likely to choose images that induce this emotion. They also found that individuals with more negative attitudes toward fear were more motivated to avoid fear-arousing images after watching a fear-inducing film. Similarly, we found that attitudes toward disgust were associated with greater engagement with disgusting stimuli (Markovitch, Netzer, & Tamir, 2016). These findings demonstrate the importance of studying attitudes toward emotions and situation selection. They also give rise to additional questions.

First, there are questions regarding the specificity of attitudes toward emotions. For example, Harmon-Jones et al. (2011) found that both attitudes toward sadness and attitudes toward disgust were related to interest in viewing sad pictures. It remains to be tested whether attitudes toward an emotion are linked to selecting stimuli that induce that particular emotion, but not other emotions.

There are also questions about generalizability. For instance, associations with situation selection were tested only in relation to attitudes toward fear, but not other emotions. Second, attitudes toward emotions were found to be associated with selecting emotion-inducing stimuli, but participants were not actually exposed to these stimuli and their emotional reactions to them were not assessed. It is possible, for instance, that such differences were driven by differences in emotional reactivity to the stimuli.

Finally, the attitude literature differentiates between explicit and implicit attitudes (see Greenwald & Banaji, 1995; McConnell & Rydell, 2014). Explicit attitudes refer to conscious and controlled evaluations. Implicit attitudes are derived from associations that are stored in memory, and are automatic and uncontrolled evaluations (McConnell & Rydell, 2014; Nosek, 2007). Whereas explicit measures of attitudes relate to deliberate processes of evaluations, implicit measures of attitudes focus on the strength of associations between the attitude target and its evaluation that people are not necessarily aware of. Explicit and implicit measures of attitudes measure distinct, but related, constructs (see Nosek, 2007).

Harmon-Jones and colleagues (2011) developed explicit measures of attitudes toward emotions using self-reports (e.g., "I like doing things that I find disgusting"). However, emotions may be associated with positive and negative evaluations in ways that are less accessible to conscious awareness. An important question, therefore, is whether people differ in both explicit and implicit attitudes toward emotions, and if so, whether implicit attitudes are similarly linked to situation selection. Using implicit measures of attitudes toward emotions would allow us to begin to address these questions. The current investigation tested whether attitudes toward specific emotions are differentially linked to emotion goals, as reflected in patterns of situation selection, and whether such patterns emerge independently with both explicit and implicit measures of attitudes toward emotions.

The Current Investigation

The present studies were designed to examine possible links between attitudes toward emotions and emotion goals, as indicated by patterns of situation selection. Specifically, we assessed the types of emotion-inducing stimuli people select, using a behavioral situation selection task. Using nonhypothetical situation selection task enabled us to assess the actual (rather than hypothetical) direction in which people shape their emotional experiences in real time. To this end, we designed tasks that required people to select between different emotion-inducing stimuli and subsequently experience the outcome of their choice. In Studies 1 and 3, participants could either continue watching emotional stimuli or avoid them. In Study 2, participants selected one of two different emotion-inducing stimuli.

First, in order to test for specificity and generalizability, Study 1 assessed attitudes toward disgust and toward joy, and Studies 2–3 assessed attitudes toward disgust and toward sadness. These designs allowed us to examine attitudes to unpleasant and pleasant emotions, as well as attitudes toward distinct negative emotions. We predicted that attitudes toward an emotion would be uniquely associated with the selection of stimuli that induce that emotion, so that people with more positive attitudes toward an emotion,

whether pleasant or unpleasant, would be more willing to expose themselves to stimuli that induce that emotion.

Second, we tested whether attitudes toward emotions are linked to situation selection even when assessed with implicit measures. We predicted that attitudes toward emotions, whether measured explicitly or implicitly, would be linked to situation selection. To our knowledge, we are the first to measure both explicit and implicit attitudes toward emotions, and examine how they relate to situation selection.

This work offers several potential extensions of the available literature on attitudes toward emotions. First, we study the relationship between attitudes toward emotions and situation selection, even when controlling for critical alternative explanatory variables. Second, we examine the specificity of these associations. Third and importantly, we introduce an implicit measure of attitudes toward emotions and test its potential links to situation selection.

Study 1

Our goal in Study 1 was to test whether attitudes toward emotions are associated with emotion goal pursuit, as manifested by the direction of situation selection. For that purpose, participants completed a task in which they chose between watching disgusting and joyful images or avoiding them (i.e., watching a blank screen instead). These choices were not hypothetical, as participants were exposed to their chosen stimulus upon choosing it. We expected to find an interaction between attitudes toward emotion and the selection of different emotions the stimuli is likely to induce. We predicted that people who hold more negative attitudes toward disgust would be more likely than others to avoid disgusting images, but would not differ in their tendency to choose joyful images. Similarly, we predicted that people who hold more positive attitudes toward joy would be more likely than others to select joyful images, but would not differ in their tendency to select disgusting images.

Method

Participants. Participants were 68 students¹ (72% females, $M_{\text{age}} = 24.69$, $SD_{\text{age}} = 2.43$, range = 19–32 years), who participated in return for course credit or \$15.

Materials.

Attitudes toward emotions. Attitudes toward disgust and attitudes toward joy were measured using the Attitudes Toward Emotions scales (ATE; Harmon-Jones et al., 2011). Each scale included 5–6 statements, reflecting attitudes toward the target emotion (e.g., “I like doing things that I find disgusting”; “I like experiencing joy”). Participants rated the frequency with which they experience each statement (1 = Rarely/Never, 5 = Almost always/Always). We averaged across statements regarding disgust ($\alpha = .58^2$) and joy ($\alpha = .83$), so that higher scores mean more positive attitudes toward the target emotion.

Emotional stimuli. Participants viewed 45 images taken from the International Affective Image System (Lang, Bradley, & Cuthbert, 1997) and various online sources. All images were pretested on an Israeli sample in order to validate their emotional impact on the target population. Images were selected based on a pilot study ($N = 20$), in which we assessed emotional reactions to each image

on a 9-point scale. Based on the pilot, we selected 15 disgusting images (e.g., internal organs), $M_{\text{disgust}} = 6.72$, $SD_{\text{disgust}} = 0.96$, $M_{\text{arousal}} = 4.64$, $SD_{\text{arousal}} = 0.58$; 15 joyful images (e.g., a baby seal), $M_{\text{joy}} = 5.96$, $SD_{\text{joy}} = 0.93$, $M_{\text{arousal}} = 5.46$, $SD_{\text{arousal}} = 0.70$; and 15 neutral images (e.g., a whistle), $M_{\text{arousal}} = 2.37$, $SD_{\text{arousal}} = 0.55$, $M_{\text{valence}} = 5.28$, $SD_{\text{valence}} = 0.25$. The complete list of images is provided in the Appendix. We selected images that induced one target emotion (disgust or joy) in moderate intensity and did not induce the other target emotion (joy or disgust, respectively).

Situation selection task. The task was designed to examine the direction in which people choose to regulate disgust and joy. The task included 15 disgusting, 15 joyful, and 15 neutral images that were presented in a random order. Each image was presented on the full screen for 1 s. Then, participants were presented with two options—namely, to continue watching the image for 2 s or to watch a blank screen for 2 s instead. Each option was presented in a small square at the bottom of the screen (i.e., a small icon of the image or a black square of equal size, respectively). The specific location (i.e., right vs. left) of each option was selected at random. On each trial, participants hit the 1-key to select the option that was presented on the left and the 9-key to select the option that was presented on the right. The selected option was then presented on the full screen for 2 s. We then computed the sum of trials in which participants chose to view the image instead of the blank screen, per each emotional category (i.e., disgust, joy, neutral). Scores for each emotional category were continuous and ranged from 0 to 15.

Procedure. Participants first completed the situation selection task and then completed the attitude measures. Participants provided demographic information and were thanked and debriefed.

Results

To test whether attitudes toward emotions were differentially related to the selection of disgusting and joyful images, we ran two repeated-measures ANOVA analyses, with image (disgusting, joyful, and neutral) as a within-subject factor, and either attitude toward disgust or attitude toward joy as a covariate. As expected, when examining attitudes toward disgust, the Image \times Attitude Toward Disgust interaction was significant, $F(2, 130) = 24.83$, $p < .01$, $\eta_p^2 = .28$. As shown in Table 1, attitudes toward disgust were significantly correlated with the number of disgusting images people chose to watch, but they were not significantly correlated with the number of joyful images people selected. People with more (vs. less) negative attitudes toward disgust chose to watch less disgusting images, even though they could watch a blank screen instead. This interaction qualified a significant main effect for image, $F(2, 130) = 73.92$, $p < .01$, $\eta_p^2 = .53$, such that, on average, participants chose joyful images ($M = 14.01$) more than neutral images ($M = 12.45$), and neutral images more than disgusting images ($M = 5.76$).

Similarly, as expected, when examining attitudes toward joy, the Image \times Attitudes Toward Joy interaction was significant,

¹ Participants in all of the studies were from Israel.

² Reliability increased to .78 when we omitted the reversed item from the scale. For the sake of consistency, we report analyses with the original scale. The analyses remained unchanged when we excluded the reversed item from the analyses.

$F(2, 130) = 3.92, p = .02, \eta_p^2 = .06$. Attitudes toward joy were significantly correlated with the number of joyful, but not disgusting, images people selected. People with more (vs. less) positive attitudes toward joy chose to watch more joyful images. No other effects were significant, $F_s < 1$.

Because attitudes toward disgust were negatively correlated with attitudes toward joy, we conducted two follow-up multiple linear regression analyses, predicting the selection of emotion-inducing stimuli, using both indices of attitudes toward emotions as predictors (see Table 2). As expected, attitudes toward disgust were the only significant predictor of the selection of disgusting images, $\beta = .56, t(64) = 5.11, p < .01$, explaining 32% of the variance. In contrast, attitudes toward joy were the only significant predictor of the selection of joyful images, $\beta = .28, t(64) = 2.22, p < .05$, explaining 10% of the variance.³

Discussion

The results of Study 1 demonstrate that attitudes toward emotions are linked to emotion goal pursuit, as manifested in the selection of emotion-inducing situations, such that people with more positive attitudes toward an emotion (either pleasant or unpleasant) are more likely to select stimuli that induce that emotion. People who had more (vs. less) negative attitudes toward disgust were less likely to select disgusting images to watch, and selected to watch a blank screen instead. Similarly, people who had more (vs. less) positive attitudes toward joy selected to watch more joyful images. Attitudes toward an emotion (disgust or joy) were related to the selection of stimuli that induced that particular emotion.

Although the findings of Study 1 supported our predictions, the study has several limitations. First, disgust and joy differ in valence, and so the links between attitudes toward emotions and situation selection may not be emotion-specific, but merely valence-specific. Second, attitudes toward emotions are linked to emotional dispositions (Harmon-Jones et al., 2011). Therefore, links between attitudes toward emotions and situation selection may be driven by a third variable—namely, differences in emotional dispositions. The direction of these relations, however, may depend on whether the emotion is avoidance-oriented (e.g., disgust) or approach-oriented (e.g., joy or sadness, as found in Harmon-Jones et al., 2011). So, at least in the case of some

Table 2
Summary of Multiple Regression Analyses for Predicting Emotion-Inducing Stimuli in Study 1

Predictors	Predicting selection of disgusting images				Predicting selection of joyful images			
	<i>B</i>	<i>SE B</i>	β	<i>t</i> (64)	<i>B</i>	<i>SE B</i>	β	<i>t</i> (64)
Attitudes toward disgust	5.25	1.03	.56*	5.11	-.23	.45	-.06	-.50
Attitudes toward joy	.09	1.21	.01	.08	1.18	.53	.28*	2.22

* $p < .05$.

emotions, the link between attitudes toward emotions and situation selection may be driven by typical emotional experiences. For instance, people who like sadness tend to feel sadness, and people who tend to feel sadness select sadness-inducing stimuli out of habit or inertia. Finally, although the situation selection task assessed differences in the selection of emotion-inducing stimuli, we did not test whether choosing emotion-inducing stimuli actually leads to more intense experiences of such stimuli, and whether it does so regardless of attitudes toward emotions. We attempted to address all these limitations in Study 2.

Study 2

First, to test whether the links between attitudes toward emotions and situation selection are emotion-specific rather than valence-specific, in Study 2 we assessed attitudes toward two distinct unpleasant emotions—namely, disgust and sadness. Second, to test whether people select stimuli that induce emotions that they evaluate more positively, rather than stimuli that induce emotions that they are more familiar with, in Study 2 we controlled for differences in emotional dispositions. To this end, we assessed trait disgust and sadness. Also, to test whether people select stimuli that induce emotions that they evaluate more positively, rather than stimuli that induce emotions they already feel, in Study 2 we controlled for differences in state emotion. To this end, we assessed state disgust and sadness.

Finally, in Study 1 we demonstrated that attitudes toward emotions are associated with the selection of emotion-inducing stimuli, but we did not show that choosing certain stimuli induce congruent emotional experiences, regardless of whether people have more or less favorable attitudes toward the target emotion. In Study 2, therefore, we sought to show that people who expose themselves to stimuli that induce a particular emotion, experience that emotion more intensely, as a consequence, regardless of their a priori attitudes toward the emotion. To provide a stronger test of our hypotheses, we designed a situation selection task that imitated a more realistic environment, where people need to select between various emotion-inducing stimuli. Participants were asked to select between pairs of disgusting and neutral, sad and neutral, and disgusting and sad images to watch. Furthermore, participants rated their emotional experience after each trial, so that we could assess emotional experience as a function of stimulus selection.

³ Results here and throughout did not change when gender was included as a predictor in the analysis.

Table 1
Descriptive Statistics and Correlations in Study 1

Key variables	1	2	3	4	Mean (<i>SD</i>)
1. Number of trials disgust images were selected over a black screen					5.76 (4.93)
2. Number of trials joy images were selected over a black screen	.03				14.01 (1.89)
3. Number of trials neutral images were selected over a black screen	.27*	.66*			12.45 (3.71)
4. Attitudes toward disgust	.56*	-.16	-.02		1.68 (.53)
5. Attitudes toward joy	-.19	.30*	.04	-.38*	4.74 (.46)

* $p < .05$.

This allowed us to test whether people with more negative attitudes toward an emotion were less likely to select images that induce that emotion simply because they expected to be more strongly influenced by these images.

We predicted that participants with more negative attitudes toward an emotion (disgust or sadness) would be less likely to select images that induce that emotion (disgusting or sad, respectively), regardless of their trait or state emotion. We further predicted that following these choices, participants' emotional experiences would change in accordance with their choice, so that when people choose to watch less disgusting images they would then feel less disgusted, whereas when they choose to watch less sad images they would feel less sad.

Method

Participants. Participants were 66 students (67% females, $M_{\text{age}} = 24.26$, $SD_{\text{age}} = 3.37$, $\text{range} = 19\text{--}44$ years) who participated in return for course credit or \$10.

Materials.

Attitudes toward emotions. Attitudes toward emotions were measured using the disgust ($\alpha = .57$) and sadness ($\alpha = .75$) scales of the ATE questionnaire (Harmon-Jones et al., 2011).

Emotional images. Based on a pilot study, we selected 20 sad images (e.g., a crying girl; $M_{\text{sadness}} = 6.80$, $SD_{\text{sadness}} = 0.63$, $M_{\text{arousal}} = 5.36$, $SD_{\text{arousal}} = 0.33$), 20 disgusting images ($M_{\text{disgust}} = 6.94$, $SD_{\text{disgust}} = 0.99$, $M_{\text{arousal}} = 4.67$, $SD_{\text{arousal}} = 0.53$), and 20 neutral images ($M_{\text{arousal}} = 2.47$, $SD_{\text{arousal}} = 0.62$, $M_{\text{valence}} = 5.22$, $SD_{\text{valence}} = 0.27$). The list of images that were added to those that were included in Study 1 is provided in the Appendix. We selected images that induced one target emotion (i.e., disgust or sadness) in moderate intensity, but did not induce the other target emotion (i.e., sadness or disgust, respectively).

Situation selection task. Twenty disgusting, 20 sad, and 20 neutral images were divided into 10 pairs from each type of category pairing (sadness-disgust, disgust-neutral, disgust-sadness). On each trial, one of those predetermined pairs was presented at the bottom of the screen in a random order. Within each type of pairing, the location of each image (left vs. right) was counterbalanced between the emotion categories. Participants hit the 1-key to select the image on the left and the 9-key to select the image on the right. The selected image was then presented on the full screen for 2 s. We computed the sum of trials in which participants selected images of a particular emotional category, across all trials that included that category. Selections of stimuli that induce each emotional category were therefore continuous and ranged from 0 to 20.

Emotional consequences of situation selection. Participants rated the extent to which they experienced *disgust* and *sadness* (1 = *Not at all*, 9 = *Very much*) after viewing the image they selected in the situation selection task. To assess the emotional impact of selecting disgusting images, we averaged ratings of disgust on trials in which participants chose to watch disgusting images. To assess the emotional impact of selecting sad images, we averaged ratings of sadness on trials in which participants chose to watch sad images.

Trait emotions. Trait disgust was measured using the Disgust Scale—Revised (DS-R; Haidt, McCauley, & Rozin, 1994; modified by Olatunji et al., 2007). The DS-R includes 24 items that

assess individual differences in the propensity to experience core disgust, animal-remainder disgust, and contamination disgust ($\alpha = .75$). The scale also includes two statements that were designed to identify unreliable participants but are not included in the calculation of the disgust score.⁴

Trait sadness was measured using the BDI-II (Beck, Steer, & Brown, 1996). The BDI-II includes 20 items assessing different depressive symptoms, on a scale from 0 (e.g., “*I don't feel disappointed in myself*”) to 3 (e.g., “*I hate myself*”). The original scale includes an item on suicidal thoughts that we did not include, following the instructions of the ethical committee. The BDI-II score was calculated by summing across all items ($\alpha = .89$).

State emotions. Participants rated the degree to which they felt various emotions on a 7-point scale (1 = *Not at all*, 7 = *Very much*). State disgust was computed by averaging ratings of *disgust* and *nausea* ($\alpha = .77$), and state sadness was computed by averaging ratings of *sadness* and *melancholia* ($\alpha = .82$).

Procedure. Participants provided demographic information and rated their state emotions at baseline. They then completed the situation selection task combined with the emotional consequences of situation selection assessment. Participants later completed measures of attitudes toward emotions and finally completed measures of trait emotions.

Results

The emotional consequences of situation selection. First, we tested whether people who chose to expose themselves to less stimuli that induce a particular emotion (disgust or sadness) subsequently experienced that emotion (disgust and sadness, respectively) less intensely. To this end, we tested the impact of situation selection, by examining emotional experiences following exposure to selected images. We ran several repeated measures ANOVAs. We first assessed the experience of disgust, with disgust experienced in response to disgusting, sad, or neutral images as a within-subject factor, and with attitudes toward disgust and state disgust as covariates. As expected, we found a significant effect of selected image category on the experience of disgust, $F(2, 112) = 15.33$, $p < .01$, $\eta_p^2 = .22$, such that participants experienced significantly more disgust after watching selected disgusting images ($M = 5.50$), than sad ($M = 1.74$) or neutral images ($M = 1.21$). This difference was not qualified by an interaction with attitudes toward disgust, or state disgust, $F_s < 1$, indicating that all participants who chose to expose themselves to disgusting images felt more disgusted as a consequence, regardless of their attitudes toward disgust or their baseline level of disgust.

Second, we assessed the experience of sadness, with sadness experienced in response to sad, disgusting, or neutral images, with image category as a within-subject factor, and with attitudes toward sadness and state sadness as covariates. As expected, we found a significant effect of the selected image category on the experience of sadness, $F(2, 112) = 18.40$, $p < .01$, $\eta_p^2 = .30$, such that participants experienced significantly more sadness after

⁴ Disqualifying statements were “*I would rather eat a piece of fruit than a piece of paper*” and “*You see a person eating an apple with a knife and fork*”. Seven participants were disqualified from analyses including DS-R due to this recommendation. Results remained largely unchanged when these participants were included in the analyses.

watching selected sad images ($M = 5.91$), than disgusting ($M = 1.91$) or neutral images ($M = 1.41$). This difference was not qualified by an interaction with attitudes toward sadness or state sadness, $F_s < 1$, indicating that all participants who chose to expose themselves to sad images felt more sadness as a consequence, regardless of their attitudes toward sadness or their baseline experience of sadness.

Attitudes toward emotion and situation selection. Because participants in Study 2 selected between two emotion-inducing stimuli, selections of each type of emotion-inducing stimuli were interdependent. Therefore, we did not run a repeated-measures analysis. Table 3 presents the correlations between our key variables. As we predicted, attitudes toward emotions were related to the selection of emotion-inducing stimuli. People with more negative attitudes toward disgust chose to watch less disgusting images, but did not differ in the selection of sad images. People with more negative attitudes toward sadness chose to watch less sad images, but did not differ in the selection of disgusting images.

To assess the potential contribution of attitudes, states, and traits to the selection of emotion-inducing stimuli, we ran multiple linear regressions in which we predicted either the selection of disgusting images or the selection of sad images. In these analyses, we included attitudes toward emotions, state emotions, and trait emotions as simultaneous predictors. First, we used both indices of attitudes toward emotions (disgust and sadness) and both indices of state emotions and trait emotions, to predict the selection of disgusting images (see Table 4). Attitudes toward disgust, but not attitudes toward sadness, were a significant predictor of the selection of disgusting images, $\beta = .39$, $t(48) = 3.03$, $p < .01$. The only other significant predictor was trait sadness, $\beta = -.34$, $t(48) = -2.11$, $p < .05$. The entire model explained 28% of the variance. Similarly, we used the same predictors to predict the selection of sad images. Attitudes toward sadness were the only significant predictor of the selection of sad images, $\beta = .29$, $t(48) = 2.04$, $p < .05$. The model explained 14% of the variance.⁵

Discussion

The findings of Study 2 demonstrate that attitudes toward an emotion are linked to the selection of images that induce that emotion, even when people choose between different emotion-inducing images. This link was emotion-specific, as attitudes toward disgust predicted the selection of disgusting, but not sad, images. In contrast, attitudes toward sadness predicted the selection of sad, but not disgusting, images. The link between attitudes toward emotions and situation selection was not driven by differences in the familiarity of the emotion, as it remained when controlling for trait emotions. This link also was not driven by inertia, as it remained when controlling for state emotions. Finally, the findings of Study 2 also confirmed that situation selection influences emotional experiences in a congruent manner. People who avoided disgusting (or sad) images felt less disgusted (or sad) than people who selected them, regardless of their attitudes toward disgust (or sadness).

Study 3

Attitudes can be assessed using explicit and implicit measures (e.g., Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; McConnell & Rydell, 2014; Nosek, 2007). Consistent with

Harmon-Jones and colleagues (2011), in Studies 1 and 2 we measured explicit attitudes toward emotions. Might the pattern of findings extend to implicit attitudes toward emotions? One possibility is that what people want to feel and the emotion-inducing situations they select are linked to their explicit evaluations of emotions. For example, people who believe that they dislike disgust are more likely to intentionally avoid disgusting situations or stimuli, leading them to experience less disgust. Another possibility, however, is that what people want to feel and the emotion-inducing situations they select depend on their evaluations of emotions, whether explicit or implicit. We tested these possibilities in Study 3, in the context of disgust.

A common measure of implicit attitudes is the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). The IAT is based on assessing associations between two concepts (e.g., self and others) and two attributes (e.g., good and bad), as participants are asked to categorize exemplars into the different categories. The strength of the implicit attitude is reflected by the difference in average reaction time between categorizations in which one concept shares a response key with one attribute (e.g., *me* with *good*), compared to categorizations in which the same concept shares the alternative response key (e.g., *me* with *bad*). In Study 3, we assessed attitudes toward emotions using a variant of the IAT—namely, the Single Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2006). The SC-IAT measures the strength of associations with one attitude object (e.g., self). Because emotions are discrete categorical states, we used the SC-IAT to measure implicit attitudes toward emotions. To do so, we assessed attitudes toward disgust, using a novel measure of implicit attitudes toward emotions (see Netzer, Igra, Anan, & Tamir, 2015). To ensure that our effects are not influenced by the order in which measures were administered, participants completed the key measures in a counterbalanced order.

Building on Study 2, where we ruled out the possibility that familiarity and inertia account for our predicted associations, in Study 3 we sought to rule out a third alternative account—namely, differences in emotional reactivity. Harmon-Jones and colleagues (2011) have differentiated between approach-oriented emotions (e.g., anger) and avoidance-oriented emotions (e.g., disgust) in the direction of their relations with attitudes toward emotions. Therefore, we considered the possibility that individuals who are more reactive with respect to avoidance-oriented emotions, may be more likely to avoid stimuli that induce such emotions and might also evaluate them more negatively. In contrast, individuals who are more reactive with respect to approach-oriented emotions, may be more likely to approach stimuli that induce such emotions and might also evaluate them less negatively. In particular, people who tend to be more disgusted by disgusting stimuli may be less willing to expose themselves to such stimuli and may have relatively more negative attitudes toward disgust. To test this alternative account, we assessed disgust reactivity to

⁵ When running regressions on three different scores, depending on the pairing type (i.e., choice of disgust from disgust-neutral pairings, choice of sadness from sadness-neutral pairings, and choice of disgust from disgust-sad pairings), results remained largely the same. When predicting choice of disgust from disgust-neutral pairings, attitudes toward disgust was the only significant predictor. When predicting choice of disgust from disgust-sad pairings, both attitudes toward disgust and attitudes toward sadness were significant predictors, of opposite outcomes. When predicting choice of sad pictures from sad-neutral pairings there were no significant predictors.

Table 3
Descriptive Statistics and Correlations in Study 2

Key variables	1	2	3	4	5	6	7	8	9	10	Mean (SD)
1. Selection of disgust images											4.21 (2.81)
2. Selection of sad images	-.37*										9.77 (4.03)
3. Selection of neutral images	-.33*	-.75*									16.02 (3.96)
4. Attitudes toward disgust	.31*	-.01	-.21 [†]								1.62 (.53)
5. Attitudes toward sadness	-.12	.25 [†]	-.17	.26*							2.86 (.73)
6. State disgust	-.02	.18	-.16	.05	.07						1.33 (.84)
7. State sadness	-.24 [†]	.07	.07	.07	.13	.50*					2.15 (1.25)
8. Trait disgust	-.11	.18	-.11	-.14	-.13	.17	.11				3.55 (.53)
9. Trait sadness	-.37*	.15	.11	-.06	.07	.31*	.54*	.14			9.19 (7.80)
10. Disgust in response to selected disgust images	-.22	.22 [†]	-.07	-.04	-.20	.13	-.09	.50*	.10		5.50 (2.31)
11. Sadness in response to selected sad images	-.14	.04	.06	.06	-.02	.19	.06	.37*	.07	.66*	5.91 (1.80)

Note. Selection of disgust images refers to the number of disgusting images participants selected to watch over sad or neutral images combined. Selections of sad images refers to the number of sad images participants chose to watch over disgusting or neutral images combined. Selection of neutral images refers to the number of neutral images participants chose to watch over sad or disgusting images combined.

* $p < .05$. [†] $p < .10$.

each disgusting stimulus, in a separate task that did not involve selection.

We predicted that as in Studies 1–2, explicit attitudes toward disgust would be positively related to the selection of disgusting images. More importantly, however, we predicted that implicit attitudes toward disgust would also be positively linked to the selection of disgusting images, so that individuals with more (vs. less) negative implicit attitudes toward disgust would choose to watch less disgusting images. Because in Study 3 we focused on disgust, in particular, we used a situation selection task that allowed us to assess the selection of disgust-inducing images, independently of images that induce other emotions. We predicted an interaction between attitudes toward disgust and the type of emotion-inducing stimuli selected. In particular, we expected attitudes toward disgust, both explicit and implicit, to be independent predictors of the selection of disgusting (but not other) images, above and beyond disgust reactivity.

Method

Participants. Participants were 45 students⁶ (58% females, $M_{age} = 24.00$, $SD_{age} = 1.60$, $range = 20$ –28 years) who participated in return for course credit or \$10.

Materials.

Explicit attitudes toward disgust. Explicit attitudes toward disgust were measured as in Studies 1–2 ($\alpha = .72$).

Table 4

Summary of Multiple Regression Analyses for Predicting Emotional-Inducing Stimuli in Study 2

Predictors	Predicting selection of disgusting images				Predicting selection of sad images			
	B	SE B	β	$t(48)$	B	SE B	β	$t(48)$
Attitudes toward disgust	2.00	.66	.39*	3.03	-.56	1.07	-.07	-.53
Attitudes toward sadness	-.71	.47	-.19	-1.50	1.56	.77	.29*	2.04
Trait disgust	-.21	.67	-.04	-.31	1.33	1.09	.17	1.22
Trait sadness	-.14	.07	-.34*	-2.11	.05	.11	.08	.42
State disgust	.49	.45	.16	1.10	.82	.73	.18	1.12
State sadness	-.16	.37	-.07	-.43	-.34	.60	-.11	-.58

* $p < .05$.

Implicit attitudes toward disgust. The Disgust Implicit Associations Test (D-IAT) involved an adaptation of the Single Category Implicit Associations Test (SC-IAT; Karpinski & Steinman, 2006). Participants first completed two practice blocks of 24 trials each. In the first block, disgust words (e.g., disgust, repulsion) and positive words (e.g., health, success) were associated with the same key, while responses to negative words (e.g., disaster, failure) were associated with a different key. In the second block, the pattern reversed, so responses to the disgust words were now associated with the same key as negative words, and responses to positive words were now performed with a different key. Participants then completed two test blocks of 48 trials each, the first with positive-disgust associations, and the second with negative-disgust associations. Scores of the D-IAT were computed based on the scoring method recommended by Greenwald, Nosek, and Banaji (2003), so that higher scores of the D-IAT reflect a more positive implicit attitude toward disgust.

Images. The task included 15 disgusting, 15 neutral, and 15 sad images. The disgusting and neutral images were the same as in Study 1. The sad images were 15 of those used in Study 2 ($M_{sadness} = 6.79$, $SD_{sadness} = 0.64$; $M_{arousal} = 5.35$, $SD_{arousal} = 0.36$).

Situation selection task. The task was similar to the one used in Study 1, with disgusting, sad, and neutral images. We computed the sum of trials in which the target image was selected over a blank screen, per each emotional category (i.e., disgust, sadness, neutral). Scores for each emotional category were continuous and ranged from 0 to 15.

Disgust reactivity. Participants viewed each image that was included in the situation selection task in a random order, and rated the extent to which they experienced disgust in response to it (1 = *Not at all*; 9 = *A lot*). Disgust reactivity was computed by averaging ratings of disgust across disgusting images ($\alpha = .92$).

Procedure. Participants first answered some demographic questions. Half of the participants completed the situation selection task first and then the D-IAT, and the other half completed the

⁶ One participant was omitted from the analysis because she failed to follow instructions.

tasks in the reverse order. Participants then rated disgust reactivity, trait disgust, and explicit attitudes toward disgust.⁷

Results

As shown in Table 5, explicit and implicit attitudes toward disgust were positively correlated, supporting the validity of the D-IAT as a measure of implicit attitudes toward disgust. Consistent with our predictions, individuals with more (vs. less) negative explicit or implicit attitudes toward disgust chose to watch less disgusting images. In addition, as might be expected, people who found the disgusting images less disgusting chose to watch more disgusting images. Furthermore, both explicit and implicit attitudes toward disgust were negatively correlated with disgust reactivity, so that individuals who experienced more intense disgust to the images tended to evaluate disgust more negatively, both explicitly and implicitly.

To test whether individuals' attitudes toward disgust were uniquely related to their tendency to select disgusting images, we ran two repeated measures ANOVAs, both with image (disgusting, sad, and neutral) as a within-subject factor, and with attitudes toward disgust (explicit or implicit) as a covariate. As expected, the Image \times Explicit Attitudes Toward Disgust interaction was significant, $F(2, 82) = 6.70, p < .01, \eta_p^2 = .14$. As shown in Table 5, explicit attitudes toward disgust were significantly correlated with the number of disgusting images people chose to watch, but they were not significantly correlated with the number of sad images people selected. People with more (vs. less) negative explicit attitudes toward disgust chose to watch less disgusting images, even though they could watch a blank screen instead. This analysis qualified a main effect for image, $F(2, 82) = 28.23, p < .01, \eta_p^2 = .41$, such that, on average, participants chose to watch neutral images ($M = 13.17$) more than sad images ($M = 7.60$), and sad images more than disgusting images ($M = 5.03$). Importantly, when considering implicit attitudes toward disgust as a covariate, the Image \times Implicit Attitude Toward Disgust interaction was also significant, $F(2, 86) = 4.00, p < .05, \eta_p^2 = .09$. As shown in Table 5, implicit attitudes toward disgust were significantly correlated with the number of disgusting images people selected, but they were not significantly correlated with the number of sad images people selected. People with more (vs. less) negative implicit attitudes toward disgust selected to watch less disgusting images, even though they could watch a blank screen instead. This analysis also qualified a significant main effect for image, $F(2, 86) = 6.66, p < .01, \eta_p^2 = .13$.

To test the predictive value of both indices of attitudes toward emotions, we ran a multiple linear regression analysis, predicting the selection of disgusting images, with explicit attitudes toward disgust, implicit attitudes toward disgust, and disgust reactivity as predictors (see Table 6). As expected, both explicit attitudes, $\beta = .32, t(38) = 3.20, p < .01$, and implicit attitudes, $\beta = .20, t(38) = 2.36, p < .05$, were significant and independent predictors of the selection of disgusting images. Disgust reactivity was also a significant predictor, $\beta = -.58, t(38) = -5.86, p < .01$. The entire model predicted 75% of the variance.

Discussion

The findings of Study 3 demonstrate that people hold both explicit and implicit attitudes toward disgust, and that these are

distinct. Furthermore, both explicit and implicit attitudes toward disgust were independently related to the selection of disgusting (but not sad) images, so that individuals with more (vs. less) negative attitudes toward disgust, whether these were consciously accessible or not, were more likely to select stimuli that increase disgust. This pattern could not be explained by differences in disgust reactivity.

General Discussion

Our findings show that people who hold more negative attitudes toward an emotion are more likely to intentionally avoid exposure to stimuli that induce that emotion, whether it is pleasant or unpleasant. As a consequence, such individuals are likely to ultimately experience that emotion less intensely. This is true for both attitudes that are consciously accessible and those that may be less accessible to consciousness. Such links are not driven by differences in state emotion, trait emotion, or emotional reactivity. It appears that the more negatively people evaluate an emotion, the more they avoid it.

Theoretical Implications

Our findings offer several theoretical insights. First, situation selection tends to reflect emotion goals—namely, what people want to feel (e.g., Tamir et al., 2008). Although emotion goals can shape the outcome of emotion regulation (see Tamir et al., 2015), we know little about what shapes emotion goals. Here, we proposed and demonstrated that one factor that might underlie what people want to feel is their attitudes toward emotions. People vary in how positively or negatively they evaluate specific emotions, and such variation is linked to the emotional choices they make. Indeed, attitudes toward emotions may mediate the links previously found between personality traits (e.g., Augustine, Hemenover, Larsen, & Shulman, 2010) or culture (e.g., Tsai et al., 2006) and emotion goals. For example, individuals from collectivistic cultures may evaluate low arousal pleasant emotions more positively, leading them to actively try to increase these emotions.

Second, Harmon-Jones et al. (2011) demonstrated the existence of attitudes toward emotions and their links to emotional phenomena. Building on this important work, we demonstrated how attitudes toward emotions are linked to the process of emotion goal pursuit through situation selection, which in turn affects emotional experiences, controlling for other potential explanations, such as trait emotion, state emotion, and emotion reactivity.

Third, we showed that implicit attitudes toward emotions are distinct from explicit attitudes toward emotions, and their links to situation selection are independent of the links between explicit attitudes toward emotions and situation selection. This means that people may have explicit and implicit attitudes toward an emotion that are not the same, and each may be associated with potentially distinct patterns of situation selection. These are interesting directions for future research to examine.

⁷ Six of the participants in the experiment completed the two attitudes measurements in a separate session (first D-IAT and then ATE) several days prior to completing the situation selection task. Both explicit and implicit attitudes toward disgust were significantly associated with the selection of disgusting images, even when these participants were omitted from the analyses.

Table 5
Descriptive Statistics and Correlations in Study 3

Key variables	1	2	3	4	5	Mean (SD)
1. Number of trials disgust images were selected over a black screen						5.03 (4.60)
2. Number of trials sad images were selected over a black screen	.56*					7.60 (5.25)
3. Number of trials neutral images were selected over a black screen	-.03	.25 [†]				13.37 (2.49)
4. Explicit attitudes toward disgust	.67*	.29 [†]	.14			1.68 (.65)
5. Implicit attitudes toward disgust	.44*	.15	-.02	.20		-.43 (.26)
6. Disgust reactivity to disgusting images	-.80*	-.42*	.06	-.55*	-.27 [†]	6.11 (1.93)

* $p < .05$. [†] $p < .10$.

Pragmatic Implications

Maladaptive emotion regulation may be associated with psychopathology (see Kring & Werner, 2004). In the context of disgust, in particular, heightened levels of disgust have been related to animal phobias, blood-injury-injection phobia, contamination fear, eating disorders, and sexual dysfunctions (see Olatunji & McKay, 2009). These abnormal levels of disgust have been linked to individual differences in disgust reactivity. The current findings point to the possibility that abnormal levels of disgust may also be associated with attitudes toward emotions. Indeed, we recently found that attitudes toward disgust were related to behavioral engagement with disgusting stimuli (Markovitch et al., 2016).

Our findings suggest that attitudes toward emotions are linked to the emotion-inducing situations people select, which results in congruent emotional experiences. It is possible, therefore, that both adaptive and maladaptive emotion regulation may be linked to differences in attitudes toward emotions, both explicit and implicit. Some have proposed that whereas explicit attitudes reflect more recent accessible events, implicit attitudes reflect early experiences and learning (Rudman, 2004). If so, understanding what shapes explicit and implicit attitudes toward emotions could ultimately help promote adaptive or treat maladaptive emotional experiences.

Limitations and Future Directions

Many studies that examine attitudes use correlational designs, including ours (e.g., Doll & Ajzen, 1992; Fazio & Zanna, 1978; Zanna et al., 1980). We assessed differences in explicit and implicit attitudes, and examined the links between such attitudes and situation selection. By doing so, we were able to provide support for our key hypotheses, using established attitude measures. In the future, however, it would also be important to test whether attitudes toward emotions could causally shape situation selection, by manipulating them experimentally. Such research would have

pragmatic implications, to the extent that manipulating attitudes toward emotions could ultimately shape subsequent emotional experiences through motivated regulation.

It is also possible that order effect played some role in our results, as explicit attitudes were always assessed after the situation selection task. However, we believe that this interpretation is unlikely. This is because in Study 3, implicit attitudes toward emotions were measured either before or after the situation selection task in a counterbalanced manner, and the results did not vary by order. Nonetheless, in future research the order of all tasks should be counterbalanced, to further rule out the possibility of order effects.

In addition, our findings regarding implicit attitudes toward emotions are currently limited to attitudes toward disgust and require further replication. Because we did not want participants to complete multiple IATs within the same session for fear of carry-over effects, we did not assess implicit attitudes toward other emotions. Future studies should test the specificity of implicit attitudes toward emotions and whether they are differentially linked to situation selection and to the regulation of attitude-consistent emotions.

Finally, future studies could move outside the laboratory and test whether attitudes toward emotions are linked to different patterns of situation selection in daily life. For instance, do people who hold more negative attitudes toward disgust actively expose themselves to less disgust-inducing stimuli in daily life? Similarly, do people who hold more negative attitudes toward sadness select less sadness-inducing stimuli? If so, how does this form of situation selection relate to changes in emotional experiences over time? It would also be important, in future research, to test whether associations between attitudes toward emotions and situation selection varies by culture. Addressing these and other related questions might ultimately help explain why some people choose comedies over tearjerkers, or yoga classes over rollercoasters.

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Table 6
Summary of Multiple Regression Analyses for Predicting Choice of Disgusting Stimuli in Study 3

Predictors	B	SE B	β	$t(38)$
Explicit attitudes toward disgust	2.22	.69	.32*	3.20
Implicit attitudes toward disgust	3.80	1.61	.20*	2.36
Disgust reactivity to disgusting images	-1.42	.24	-.58*	-5.86

* $p < .05$.

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(Appendix follows)

Appendix

List of Images Included in Studies 1–3

Study	Emotion	Image
1	Joy	Laughing ladies with parrots (IAPS #1340)
1	Joy	A white baby fur seal (#1440)
1	Joy	A baby polar bear sleeping on an adult polar bear (#1441)
1	Joy	A kitten on a tree (#1460)
1	Joy	A group of playful ginger kittens (#1463)
1	Joy	Mickey and Minnie Mouse (#1999)
1	Joy	A cute baby (#2070)
1	Joy	Happy children (#2224)
1	Joy	Two elderly individuals staring to each other's eyes and smiling (#2550)
1	Joy	A child feeding a dog on the beach (#2655)
1	Joy	A child and an adult on the beach surrounded by birds (#5831)
1	Joy	Brownies (#7200)
1	Joy	Ice cream with chocolate syrup and strawberries (#7330)
1	Joy	A ship sailing through a beautiful lake (#7492)
1	Joy	Happy young adults (#8461)
1, 2, 3	Disgust	An unknown disgusting animal (#1617)
1, 2, 3	Disgust	A close-up on a turtle eating a worm (#1945)
1, 2, 3	Disgust	A bruised corpse (#3061)
1, 2, 3	Disgust	Internal organs (#3250)
1, 2, 3	Disgust	A cockroach next to a piece of pie (#7359)
1, 2, 3	Disgust	A cockroach on a pizza (#7380)
1, 2, 3	Disgust	A man vomiting (#9326)
1, 2, 3	Disgust	Red food smeared on the road (#9373)
1, 2, 3	Disgust	A soldier eating a scorpion (internet)
1, 2, 3	Disgust	Fungus infected toenails (internet)
1, 2, 3	Disgust	An open egg where organs can be seen (internet)
1, 2, 3	Disgust	A lot of cockroaches (internet)
1, 2, 3	Disgust	Plates with worms and different bugs (internet)
1, 2, 3	Disgust	A close-up on a praying mantis eating (internet)
1, 2, 3	Disgust	A close-up on worms (internet)
2	Disgust	Rotten and missing teeth (#9043)
2	Disgust	Toilet flooded with feces (#9300)
2	Disgust	A person vomiting on another person (#9321)
2	Disgust	Disgusting foot with fungus infected toenails (internet)
2	Disgust	Infected internal organs (internet)
2, 3	Sadness	A premature baby connected to tubes (#2053)
2, 3	Sadness	A woman crying next to a dying man (#2141)
2, 3	Sadness	An old sad man holding the hand of an old woman in a hospital bed (#2205)
2, 3	Sadness	A child crying (#2900)
2, 3	Sadness	A man crying in a hospital bed (#3220)
2, 3	Sadness	A skinny man connected to ventilation tubes (#3230)
2, 3	Sadness	People carrying a wounded women (#9250)
2, 3	Sadness	Dirty children (#9520)
2, 3	Sadness	Women crying hysterically next to a child's body (internet)
2, 3	Sadness	A close-up on a girl crying (internet)
2, 3	Sadness	A woman crying in the middle of a wrecked house (internet)
2, 3	Sadness	A skinny child eating of the floor (internet)
2, 3	Sadness	Soldiers crying on each other's shoulder (internet)
2, 3	Sadness	A close-up on a woman crying (internet)
2, 3	Sadness	Skinny children wet from the rain (internet)
2	Sadness	A child in a hospital bed (internet)
2	Sadness	Sad children with empty cups (internet)
2	Sadness	A woman on her knees crying hysterically (internet)
2	Sadness	A woman on the street holding a baby and crying (internet)
2	Sadness	A close-up on a child crying (internet)
1, 2, 3	Neutral	A man sitting on a bench (#2102)
1, 2, 3	Neutral	Men sleeping on the train (#2397)

(Appendix continues)

Appendix (continued)

Study	Emotion	Image
1, 2, 3	Neutral	A girl using a computer (#2411)
1, 2, 3	Neutral	A man with a hat (#2495)
1, 2, 3	Neutral	Another man with a hat (#2570)
1, 2, 3	Neutral	A woman looking to the sky (#2850)
1, 2, 3	Neutral	Rubber bands (#7012)
1, 2, 3	Neutral	Scissors cutting through paper (#7014)
1, 2, 3	Neutral	A whistle (#7021)
1, 2, 3	Neutral	Wood buckets (#7041)
1, 2, 3	Neutral	A cup of coffee (#7057)
1, 2, 3	Neutral	A light bulb (#7236)
1, 3	Neutral	A paint brush painting (#7509)
1, 2, 3	Neutral	A hand playing chess (#7512)
1, 2, 3	Neutral	A man looking on a computer screen (#7550)
2	Neutral	Man close-up (#2190)
2	Neutral	Man close-up (#2200)
2	Neutral	Man close-up (#2499)
2	Neutral	Buttons (#7001)
2	Neutral	A cup (#7009)
2	Neutral	A book (#7090)

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