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Knowing Good From Bad: The Paradox of Neuroticism, Negative Affect, and Evaluative Processing

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There are pragmatic benefits to trait-consistent mood states, especially when people are evaluating new objects within the environment (M. Tamir, M. D. Robinson, & G. L. Clore, 2002). The present studies, involving both naturally occurring (Studies 1 and 2) and manipulated (Study 3) mood states, demonstrated such trait-consistent interactions within the context of neuroticism and negative mood states. Individuals high in neuroticism were faster to make evaluations when in a negative mood state like sadness. By contrast, individuals low in neuroticism were faster to make evaluations when in a neutral mood state. The present studies demonstrate that although negative mood states are hedonically unpleasant, they can be beneficial in some ways for individuals high in neuroticism.

According to the affective certainty model, trait-consistent mood states have epistemic as well as pragmatic benefits (Tamir, Robinson, & Clore, 2002). When affective traits (e.g., neuroticism) and states (e.g., sadness) match, the model predicts that people should experience less affective confusion and in turn be faster to make evaluative distinctions. To test this prediction, the current studies examined the interaction between neuroticism and negative mood states on affective processing. By examining the epistemic benefits of negative mood states, the current studies also demonstrated the importance of going beyond the hedonic principle in the study of mood and performance (Clore & Robinson, 2000; Tamir, 2004). We review several important precursors of the current affective certainty model before presenting the hypotheses of the present studies.

State and Trait Affect as Information

The affective certainty model constitutes an integration of two prior models related to affect and processing. One model, the affect-as-information model (Schwarz & Clore, 1996), holds that affect plays an important role in appraising new objects. Sad mood states generally suggest that one is in a negative environment, composed of negative objects and outcomes, whereas happy mood states suggest that one is in a positive environment. According to the affect-as-information model, mood effects on judgments occur because people operate under the assumption that mood states are informative concerning the situation at hand. Mood effects, however, are not attributed to a spread of activation within a semantic network.

According to the affect-as-information model, mood states should bias judgments but should not generally speed the categorization of mood-congruent stimuli. Available evidence is somewhat limited but suggests that mood states do not speed lexical access to valence-specific stimuli, aside from one exception. According to Niedenthal, Halberstadt, and Setterlund (1997), mood states speed lexical access for synonyms for one's current mood state (e.g., *joy* in the case of a happy mood state). However, mood states do not speed lexical access for emotion words that are indirectly related to one's current mood state (e.g., *love* in the case of a happy mood state) or to valence-congruent words in general (e.g., *wise* in the case of a happy mood state). Because the words used in the present study were broadly positive and negative rather than synonyms for a mood state, we did not expect mood-congruent effects on speed to categorize the words (Bower, 1987). However, we did expect mood states to exert interactive effects on categorization, as explained below.

In addition to borrowing from the affect-as-information model, the affective certainty model also borrows from recent theory related to the separability of trait- and state-related sources of emotion knowledge. Robinson and Clore (2002a) observed that reports of momentary emotional experience often do not seem congruent with reports of emotional experience that are retrospective or trait-related. On the basis of such dissociations in emotional self-report, Robinson and Clore (2002a) suggested that people possess two distinct types of emotion knowledge. Episodic emotion knowledge is experiential, context-dependent, and quite variable over time. Semantic emotion knowledge is propositional, context-independent, and quite stable over time (see also Robinson, Vargas, & Crawford, 2003).

Robinson and Clore (2002a) proposed and confirmed (Robinson & Clore, 2002b) that reports of emotion based on momentary experiences tend to favor episodic sources of emotion knowledge. By contrast, reports of emotion that are trait-related tend to favor

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semantic sources of emotion knowledge. Robinson and Clore (2002b) therefore suggested that the two sources of emotion knowledge—episodic and semantic—are dissociable and distinct with reference to both retrieval process and judgments. Subsequent results have generally supported the distinction between episodic and semantic emotion knowledge in a variety of ways (e.g., Robinson, Solberg, Vargas, & Tamir, 2003; Robinson, Vargas, Tamir, & Solberg, 2004).

Robinson and Clore (2002a) proposed that when people make affective judgments, they can retrieve either episodic or semantic emotion knowledge. The framework has generally been used to understand dissociations between trait- and state-related emotional self-reports (e.g., Robinson & Clore, 2002b). With respect to the current investigation, if one assumes that trait- and state-related sources of emotion knowledge are separable, then these sources may either be congruent with each other or incongruent with each other. A trait–state conflict could manifest itself in slow and inefficient evaluations. This is the specific prediction made by the affective certainty model.

Affective Certainty Model

From the affect-as-information model (Schwarz & Clore, 1996), the affective certainty model borrows the assumption that affect is a source of information used in making affective judgments. From the two-process retrieval model (Robinson & Clore, 2002b), the affective certainty model borrows the assumption that trait- and state-related sources of emotion knowledge are distinct and separable. Combining these two assumptions, the affective certainty model specifically proposes that when people make affective judgments, they consult both trait- and state-related sources of emotion knowledge. Furthermore, the affective certainty model makes the prediction that when the two sources of emotion knowledge—related to trait and state—diverge, the person will encounter difficulties in making affective judgments.

It should be noted that the affective certainty model has important precursors in other literatures. In terms of affective processing, the affective certainty model is consistent with Rusting's (1998) contention that trait and state may interact in influencing the speed of affective processing. In terms of affective congruence, our model is consistent with Festinger's (1957) dissonance theory, which posits that dissonance results from discrepancies between experienced affect and semantic knowledge (see also Harmon-Jones, Peterson, & Vaughn, 2003). Dissonance, in turn, has similarly been shown to influence subsequent judgments (Aronson & Carlsmith, 1962).

More specifically, the affective certainty model is consistent with research showing that people seem to exhibit a preference for trait-consistent social feedback (e.g., Swann, 1987). Somewhat paradoxically, such research (e.g., Aronson & Carlsmith, 1962; Swann, Griffin, Predmore, & Gaines, 1987; Swann & Read, 1981; Swann, Stein-Seroussi, & Giesler, 1992) has shown that people with low self-esteem exhibit a tendency to seek negative rather than positive feedback or outcomes.

Why would people low in self-esteem seek negative social feedback? At some level, Swann (1992) proposed, epistemic and pragmatic motives are more important than hedonic ones. People seek to understand and predict events within the social world, specifically because such an understanding promotes effective behavioral self-regulation. When people with negative self-concepts experience negative social feedback, they gain confirmation of their self-theories (Epstein, 1973), which in turn reinforces habitual ways of evaluating the environment. When people with negative self-concepts experience positive feedback, they become confused and uncertain concerning habitual ways of evaluating the environment (Swann, 1992). Because epistemic motives may be more important than hedonic ones (see also Erber & Erber, 2000), people with negative self-concepts prefer negative social feedback despite the fact that such feedback will make them unhappy.

The affective certainty model shares Swann's (1992) emphasis on epistemic motives. However, the two models differ in important ways. First, the specific focus of the affective certainty model is on emotion-related knowledge rather than the self-concept or social feedback. Because extraverts believe that they tend to experience positive emotional states (Robinson & Clore, 2002a), positive mood states should be epistemically beneficial to them (Tamir et al., 2002). By contrast, because people high in neuroticism believe that they experience more negative emotional states (Robinson & Clore, 2002a), negative mood states should be epistemically beneficial to them (the focus of the present investigation).

Second, the affective certainty model does not focus on preferences for social feedback but rather on speed to encode new events as positive or negative. In this sense, the affective certainty model is a relatively cognitive one, being concerned with retrieval and encoding processes rather than more complex social phenomena. A premise of the affective certainty model is that cognitive dependent measures (i.e., related to reaction time [RT]) are quite direct in examining the epistemic consequences of trait–state conflict. Also, however, we expect that the present cognitive results offer a basis for understanding why it is that people high in neuroticism may sometimes seek and prefer to experience negative mood states (Tamir, 2004). A prior investigation provided support for the affective certainty model (Tamir et al., 2002), but we regard the present investigation as a more crucial test of the model.

Neuroticism and Affective Certainty

A prior investigation (Tamir et al., 2002) provided support for the affective certainty model with respect to extraversion and positive mood states. Specifically, extraverts (vs. introverts) were faster to judge the motivational significance of both positive (e.g., the word *love*) and negative (e.g., the word *criticism*) words when in a happy (vs. a neutral) mood state. Although these results provided initial support for the affective certainty model, they are silent with respect to both the trait of neuroticism and the functional significance of negative mood states.

Examining the affective certainty model with respect to neuroticism and negative affect is of particular importance. First, extraversion and neuroticism, as well as the mood states that are associated with them (i.e., positive and negative mood states, respectively), are presumed to be independent of one another (Costa & McCrae, 1980; Meyer & Shack, 1989; Watson & Tellegen, 1985). For this reason, there is no a priori reason for assuming that results involving extraversion and positive mood states will necessarily apply to an analysis of neuroticism and negative mood states. To the extent that we can validate the model in the context of neuroticism and negative mood states, such results would be statistically (but not theoretically) independent of the prior results involving extraversion and positive mood states (Tamir et al., 2002).

Of more importance, results involving negative mood states make a stronger case for the epistemic assumptions of the model. The experience of positive mood states, for extraverts, should be both epistemically and hedonically beneficial. The latter is the case because positive mood states are, by definition, pleasant experiences. Negative mood states, on the other hand, are unpleasant experiences. If the affective certainty model can predict interactions between neuroticism and negative mood states, the results would make a much stronger case for the idea that people benefit from trait-consistent mood states regardless of whether those mood states are pleasant or unpleasant.

A focus on neuroticism is particularly important given prior conceptions of this trait. Neuroticism has been tied to a plethora of maladaptive outcomes, including psychological distress (Suls, Green, & Hillis, 1998), increased susceptibility to anxiety and depression (L. Clark, Watson, & Mineka, 1994), and deficient mood-regulation skills (Ciarocchi, Chan, & Caputi, 2000; Elliott, Herrick, MacNair, & Harkins, 1994; Kokkonen & Pulkkinen, 2001). Some authors have suggested that the maladaptive correlates of neuroticism pertain specifically to a tendency to experience negative mood states (Bolger & Zuckerman, 1995; Suls et al., 1998).

From prior research, then, we have reason to suspect that negative mood states are both epistemically and hedonically problematic for individuals higher in neuroticism. It is within this context that our predictions are somewhat surprising. Specifically, we suggest that negative mood states may actually be beneficial for individuals high in neuroticism precisely because such mood states are consistent with semantic knowledge concerning the self (Robinson & Clore, 2002a). In other words, we are proposing that people high in neuroticism benefit, at some level, from negative affect (see also Borkovec, 1994; Wells & Matthews, 1996).

Finally, the current predictions raise interesting implications for research on emotion regulation. Whereas negative mood states have been considered dysfunctional and undesirable, the present investigation proposes that such states can be adaptive with reference to the encoding operations related to self-regulation, at least for those high in neuroticism. Support for such predictions would begin to pave the way for more differentiated models of self-regulation, ones that interactively examine traits and mood states as well as their behavioral effects (Larsen, 2000; Rusting & Larsen, 1997; Tamir, 2004).

Overview of Studies

Three studies examined interactions between neuroticism and negative affect. To examine negative mood states, Studies 1 and 2 measured, but did not manipulate, negative mood states. Results involving such a measure of mood are generally seen as representative concerning the effects of mood on processing within daily life (Rusting, 2001). However, measured, but not manipulated, mood states are generally seen as less revealing concerning the causal impact of mood states (Rusting, 2001). To examine the causal impact of negative mood states, we manipulated them in Study 3.

In all studies, we asked participants to categorize words as positive versus neutral on the one hand or as negative versus neutral on the other. The procedures allow separable estimates of speed to categorize positive or negative objects, which should be useful in examining the generality of the affective certainty model. In this respect, we were interested in whether people high in neuroticism experiencing negative mood states would be faster to categorize positive as well as negative objects. To the extent that this was true, the results would argue against mood-congruent explanations of the results. The specific categorization tasks have proven useful in prior investigations related to affect and cognition (Robinson et al., 2004; Robinson, Solberg, et al., 2003; for a review, see Robinson, 2004), and therefore we expected them to be informative in the present context as well.

Study 1

In Study 1, participants performed an evaluation task on the computer and then reported on their current mood states as well as their level of neuroticism.

Method

Participants

Participants were 74 undergraduates at the University of Illinois who were fluent English speakers. Participants were awarded $7 for their participation.

Materials

Categorization task. The task included two target blocks and a neutral control block. In one target block, participants were instructed to press the "9" key when the word on the screen was positive (e.g., *kiss*) but to press the "1" key when the word on the screen was neutral (e.g., *chair*). In a second target block, participants were instructed to press the "9" key when the word on the screen was negative (e.g., *needle*) but to press the "1" key when the word was neutral (e.g., *string*). In the control block, participants were asked to press the "9" key when the word on the screen represented an animal (e.g., *cat*) but to press the "1" key when the word did not represent an animal (e.g., *stick*). A short practice block with similar instructions preceded each target block. Practice blocks included 16 trials, and target blocks included 30 trials.

Neutral, positive, and negative words were chosen from the norms of Toglia and Battig (1978). There were 12 positive, 12 negative, and 24 neutral words. There were twice as many neutral words because we presented unique neutral words within the neutral–positive and neutral–negative categorization tasks. An analysis established that the positive, negative, and neutral words were equal in familiarity (M = 6.16), concreteness (M = 5.79), and number of letters (M = 4.98; $Fs < 1.3$). On the 7-point pleasantness (1 = *unpleasant*, 7 = *pleasant*) scale used by Toglia and Battig, the positive words (M = 5.42) were judged more pleasant than the neutral words (M = 4.48), $t(45) = 6.5$, $p = .00$. Similarly, the negative words (M = 3.24) were judged less pleasant than the neutral words, $t(45) = -8.5$, $p = .00$. The Appendix lists the positive, negative, and neutral words used in the target blocks. To examine the consistency of performance affecting categorizations related to negative, neutral, and positive evaluations, we computed Cronbach's alpha coefficients across trials involving a particular word valence (e.g., negative target trials only). Reliability estimates for the neutral, positive, and negative words were .87, .72, and .78, respectively.

Words presented in positive and negative blocks were chosen because of their evaluative status (i.e., positive, neutral, negative). In addition, however, there was a third animal classification block that consisted of exclusively neutral words. The inclusion of this third block was designed to reveal whether our anticipated Neuroticism × Mood State interaction pertained to evaluative classifications specifically or to categorization speed more generally. We expected to obtain a Neuroticism × Mood State interaction even after controlling for speed on the animal block. This would indicate that the present interaction is specific to affective categorization rather than more generally applicable to categorization performance per se (in this connection, see Robinson et al., 2004; Robinson, Solberg, et al., 2003).

In all blocks, category labels ("positive" vs. "neutral," "negative" vs. "neutral," or "not animal" vs. "animal") were presented on the screen throughout the trials. Participants were encouraged to be as fast and as accurate as possible. Following a 150-ms blank period, each trial began with the presentation of the trial word in the center of the screen. The trial was terminated by the participant's response. If the response was correct, the next trial began. If the response was incorrect, the participant was punished by a computer-generated beep and a 2-s delay. For each trial, both the speed and the accuracy of the response were stored.

Mood scale. The mood scale included adjectives chosen based on Larsen and Diener's (1992) analysis of the circumplex model of emotion. It included items related to positive feelings (*happy, enthusiastic, elated, up, good mood*) and negative feelings (*sad, anxious, down, depressed, bad mood*). Participants were asked to rate their current mood state (1 = *very slightly to not at all*, 5 = *extremely*). We created separate negative affect (NA) and positive affect (PA) scores by averaging across ratings of negative ($\alpha = .76$) and positive ($\alpha = .78$) mood items, respectively.

Neuroticism scale. Neuroticism was measured by Goldberg's (1999) Big Five International Personality Item Pool Scale (short form). The scale involves agreeing or disagreeing with statements indicative of high or low neuroticism (e.g., "worry a lot"). For evidence on the reliability and validity of the scales, see Goldberg. In the present study, alpha for the scale was .89.

Procedure

The study was conducted in groups of 4–8 participants in each session. Instructions for the categorization task were presented on a computer monitor, and latencies were also collected by the computer. Following the completion of the affective categorization tasks, participants completed the mood and neuroticism self-report measures.

Results

Categorization Scores

Average accuracy rates were 92% for the neutral–positive block, 93% for the neutral–negative block, and 97% for the not-animal–animal block. On average, speed and accuracy in the task were unrelated ($r = -.05$), indicating there was no speed–accuracy tradeoff (i.e., people who were faster were not less accurate in their responses).

To compute RT scores, we excluded error trials and replaced RTs that were more than 2.5 standard deviations from the overall grand latency mean (3% of times) with these cutoff values. Such a replacement procedure was designed to minimize the influence of outliers (Ratcliff, 1993). Millisecond latencies were then log transformed to normalize the distribution. For each participant separately, we computed mean RTs for each of the three target blocks: neutral–positive, neutral–negative, and not-animal–animal.

Because the affective certainty model predicts effects on speed of evaluative processing rather than speed of processing per se, it was useful to demonstrate that Trait × State interactions did not influence speed within the animal categorization block. To test this prediction, we first centered neuroticism as well as the positive and negative mood scores (Aiken & West, 1991). We then entered neuroticism, negative mood, and their interaction term into a regression analysis, with speed on the animal block as the dependent variable. There were no significant effects ($Fs < 1$). The same was true in a second regression analysis that examined interactions between neuroticism and positive mood states ($Fs < 1$). Thus, it was not generally the case that neuroticism and mood states interacted in predicting categorization speed.

To examine the effects of neuroticism and mood states on evaluative processing, we first sought to control for baseline speed of categorization, which is useful when individual differences in RT are involved (Fazio, 1990). We therefore entered the speed on the not-animal–animal block as a predictor of performance on each of the two valenced blocks (negative–neutral and positive–neutral). We used the regression equations to calculate two residual scores. One score pertained to positive evaluation speed, whereas the other pertained to negative evaluation speed. Scores below zero indicate that performance on the particular valenced block was faster than we would expect on the basis of animal block performance; scores above zero indicate that performance on the particular evaluation task was slower than we would expect on the basis of animal block performance.

Neuroticism, Mood, and Performance

Neuroticism was not significantly correlated with NA ($r = .12$, $p = .29$), although there was a marginal negative correlation between neuroticism and PA ($r = -.20$, $p = .07$). In addition, in a series of bivariate correlations, there were no significant correlations between neuroticism and mood state scores on the one hand and residualized evaluation performance on the other (*r*s range from −.14 to .08).

We expected participants higher in neuroticism to be faster when in a negative mood state; by contrast, we expected participants lower in neuroticism to be faster when not in a negative mood state. In other words, we expected neuroticism and negative mood states to interact in predicting categorization performance. To test these predictions, we used the general linear model (GLM) procedures of SAS (Version 8.1) to test a 2 (neuroticism) × 2 (negative mood) × 2 (block speed: neutral–positive vs. neutral–negative) design. In this design, the first two variables were continuous between-subjects variables (which were centered prior to analysis), whereas the third was a two-level, within-subject variable. All two-way and three-way interactions were simultaneously tested.

As suggested by the correlations reported above, there were no main effects for neuroticism or negative mood. However, there was a significant two-way interaction involving these variables, $F(1, 71) = 8.21$, $p < .01$. Collapsing across the positive and negative evaluation blocks, we used a regression equation to predict categorization speed scores for those low (−1 standard deviation) and high (+1 standard deviation) in neuroticism who were experiencing a greater (+1 standard deviation) versus lesser (−1 standard deviation) degree of negative mood. These estimated means are reported in Figure 1. As expected, participants higher in neuroticism were faster in making evaluations when in a negative mood state; by contrast, participants lower in neuroticism were faster in making evaluations when in a nonnegative mood state. Tests of simple slopes indicated that the effect of negative mood

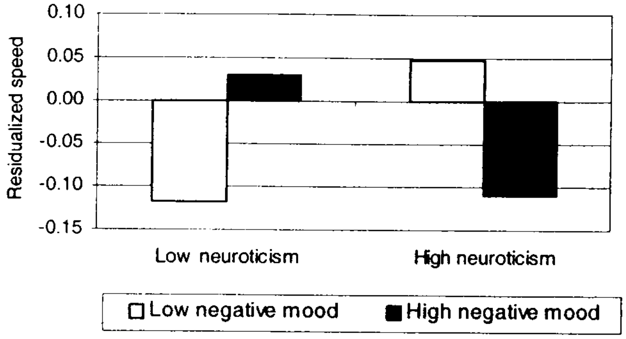

Figure 1. Residual speed on the evaluation tasks as a function of neuroticism and negative mood states (Study 1).

was significant within high levels of neuroticism, $t(71) = 2.36$, $p = .02$, and marginally significant within low levels of neuroticism, $t(71) = -1.80$, $p = .07$. All other effects, including the three-way Neuroticism × Negative Mood × Block Speed interaction, were not significant ($Fs < 1.5$).

Because the three-way interaction mentioned immediately above was not significant, the Neuroticism × Negative Mood interaction was equally true of performance on positive and negative evaluation blocks. This point was further confirmed in separate analyses of positive and negative residual speed scores. In a multiple regression predicting positive evaluations, there was a significant Neuroticism × Negative Mood interaction of the type shown in Figure 1, $F(1, 71) = 7.49$, $p < .05$. Likewise, in a multiple regression predicting negative evaluations, there was a significant Neuroticism × Negative Mood interaction, $F(1, 71) = 4.22$, $p < .05$.

To determine whether our results were unique to negative mood states, we examined a parallel Neuroticism × Positive Mood × Block Speed GLM model. There were no effects in this analysis ($Fs < 1$). Thus, the present results involve negative mood states but not positive mood states, precisely as expected on the basis of the idea that neuroticism pertains to self-knowledge concerning negative rather than positive mood states (Robinson & Clore, 2002a).

Discussion

According to the affective certainty model, people draw on both episodic and semantic emotion knowledge when assigning valence to new events. A mismatch between trait and state aspects of emotion engenders affective uncertainty, which in turn makes it difficult for the person to determine the valence of new events. The results of Study 1, in the form of a Neuroticism × Negative Mood State interaction, support predictions of the affective certainty model. Individuals higher in neuroticism are more effective evaluators when in a negative mood state, whereas individuals lower in neuroticism are more effective evaluators when in a nonnegative mood state. In further results, we were able to confirm that the interaction with neuroticism was specific to negative rather than positive mood states, which makes sense given that neuroticism concerns tendencies toward negative affect, with few implications for levels of positive affect (Costa & McCrae, 1980; Emmons & Diener, 1986; Meyer & Shack, 1989; Watson & Clark, 1984).

The current results, in addition to providing support for the affective certainty model, are also incompatible with other models of neuroticism, mood, and performance. First, on the basis of the assumption that neuroticism reflects higher reactivity to emotional cues (Eysenck, 1967), one might expect neurotic individuals to be faster to categorize both positive and negative information, regardless of their mood state (Wallace & Newman, 1990). In this respect, at least one study found a positive relationship between neuroticism and the P300 event-related potential, which is related to the central cortical time needed to categorize and evaluate stimuli (Stelmack & Houlihan, 1995). Because there was no main effect for neuroticism in Study 1, such a model is not consistent with the present findings.

The apparent discrepancy can be reconciled by pointing out that the P300 latency tends to be uncorrelated with response categorization speed (Kutas, McCarthy, & Donchin, 1977; Stelmack, Houlihan, & McGarry-Roberts, 1993). Therefore, effects on P300 latencies should generally be independent of effects on response categorization speed. Indeed, we view it as likely that our affective certainty effects pertain to stages of processing subsequent to those measured by the P300. More specifically, we view it as likely that the present findings are specific to the response-selection stage of information processing, which generally accounts for most of the variance in choice RT tasks (Pashler & Baylis, 1991) and is specifically sensitive to conflicts between alternate potential responses (Carter et al., 1998).

Our findings also appear inconsistent with models linking neuroticism to punishment sensitivity (e.g., Carver, Sutton, & Scheier, 2000). The latter type of model might predict a Neuroticism × Block Speed interaction in the present context such that people high in neuroticism are faster in making negative but not positive evaluations. As has been pointed out elsewhere (e.g., Robinson, 2004; Robinson et al., 2004), however, metaphors like "punishment sensitivity" are relatively molar in nature and have uncertain relevance to performance within cognitive performance tasks (Robinson, Vargas, & Crawford, 2003). Therefore, we really do not know whether a "punishment sensitivity" mechanism should speed negative evaluations or not (Matthews & Gilliland, 1999). It should be noted that a prior article examining negative categorizations (Robinson et al., 2004) also found no correlations between neuroticism and performance on this task, and so the lack of a correlation reported here should not be surprising.

Finally, it is worth discussing the present results in light of Rusting's (1998) trait–state interaction model. Rusting suggested that cognitive performance involving negative evaluations should be specifically facilitated for people high in neuroticism who are in a negative mood state. We actually found this to be true in Study 1. However, we also found a parallel interaction affecting the speed of positive evaluations. The latter interaction does not follow from Rusting's model. Rusting's model builds on Bower's (1981) mood–cognition model, which has only limited support within affective processing tasks (Bower, 1987; MacLeod, 1993; Niedenthal et al., 1997), as noted by Rusting herself. Therefore, we were not particularly surprised that the results supported the affective certainty model rather than Rusting's trait–state interaction model. Overall, it appears that the results are specifically consistent with the affective certainty model and broadly inconsistent with some other models, as discussed above.

Study 2

Study 1 established that the Neuroticism × Sad Mood interaction examined here is specific to tasks involving an evaluation component. Specifically, it appeared when participants were evaluating words as neutral or positive on the one hand, or neutral or negative on the other. The inclusion of a neutral response pole in both evaluation tasks was intentional in that it allowed us to examine positive (Robinson, Solberg, et al., 2003) and negative (Robinson et al., 2004) evaluations separately.

On the other hand, evaluation is often conceptualized as a bipolar dimension involving negative versus positive connotation. This is especially true in the attitude accessibility literature, which also uses RTs to make inferences about the strength or accessibility of a person's attitudes (see Fazio, 1995). Therefore, it seemed desirable in Study 2 to show that the present interaction is also obtained within a bipolar evaluation task involving negative versus positive connotation. We expected to observe a parallel Neuroticism × Mood State interaction on this task also. If so, the results would have broad significance for models of evaluative processing.

When examining individual differences in choice RT, it is often desirable to include a nontarget categorization task in order to remove baseline speed in responding (Fazio, 1990; Robinson & Neighbors, in press). In Study 1, the task involved categorizing words as representative of animals (e.g., *fox*) or not (e.g., *stick*). Because the baseline task was part of the calculation of residual scores, it too played some role in the findings. In Study 2, it seemed desirable to include a second baseline categorization task in order to show that the findings obtained in Study 1 were not due to the particular baseline scores used. In Study 2, participants made animal versus not-animal categorizations, as in Study 1, but also made heavy (e.g., *barbell*) versus not-heavy (e.g., *feather*) categorizations. The inclusion of an additional baseline task allowed for a slightly more stable estimate of baseline performance, one that was not dependent on the particular baseline task used. As in Study 1, we predicted that neuroticism and mood states would interact in evaluative processing performance, even after baseline performance (on the animal and heavy categorization tasks) was statistically controlled.

Method

Participants

Participants were 85 undergraduates at the University of Illinois who were fluent English speakers. Participants were awarded $7 for their participation.

Materials

Categorization task. The task used in Study 2 was identical to the one used in Study 1, apart from three changes, two of which are mentioned above. First, an additional target block was added to examine categorization of words as positive versus negative. In this block, participants were asked to press the "9" key for negative words and the "1" key for positive words. Second, an additional control block was added, in which participants were asked to press the "9" key for heavy objects (e.g., *barbell*) and the "1" key for objects that were not heavy (e.g., *feather*). Finally, to increase the reliability of the task, we increased the number of trials in each target block to 40. Reliability estimates for neutral, positive, and negative words were computed as in Study 1, with alphas equal to .91, .84, and .87 for speed to neutral, positive, and negative words, respectively.

Mood and neuroticism scales. The scales measuring mood and neuroticism were identical to those used in Study 1. Reliability estimates in the current study were adequate, with $\alpha = .87$ for neuroticism, and $\alpha\text{s} = .90$ and .85 for the PA and NA scales, respectively.

Procedure

The procedure was identical to the one described in Study 1.

Results

Categorization Scores

Average accuracy rates for the valenced target blocks were 93% for the neutral–positive block, 90% for the neutral–negative block, and 97% for the negative–positive block. The average accuracy rates for both the not-animal–animal and the not-heavy–heavy control blocks were 98%. The average correlation between RT and accuracy was −.05, indicating there was no speed–accuracy tradeoff influencing categorization performance.

Scores were computed as in Study 1. Error trials were discarded, and observations that were over 2.5 standard deviations above or below the mean were replaced with those cutoff values, resulting in the replacement of 2.65% of the total observations. Scores were then log transformed to normalize the distribution. For each participant, we calculated the mean RT for each target block: neutral–positive, neutral–negative, negative–positive, not-animal–animal, and not-heavy–heavy. To quantify baseline response speed, we then averaged speed across the not-animal–animal and not-heavy–heavy blocks.

As in Study 1, before controlling for baseline speed, we first examined whether our variables, neuroticism and negative affect, influenced baseline categorization performance. To examine this question, we centered neuroticism, NA, and PA and entered them as predictors in a regression analysis, with baseline speed of response as the dependent variable. In the regression with negative mood states, none of the predictors were significant ($Fs < 1$). Similarly, in the regression with positive mood states, none of the predictors were significant ($Fs < 1$). These null effects suggest that baseline speed was not influenced by neuroticism, mood states, or interactions between neuroticism and mood states.

As in Study 1, we used baseline performance to statistically remove performance on the nonevaluative categorization tasks. Specifically, we entered the average baseline speed as a predictor of performance on each of the three valenced blocks and used regression equations to calculate three distinct residual scores. One residual score reflected speed of categorizing words as neutral versus negative, a second residual score reflected speed of categorizing words as neutral versus positive, and a third residual score reflected speed of categorizing words as negative versus positive. Again, negative scores indicate that the person was relatively quick to make the particular evaluative distinction.

Neuroticism, Mood, and Performance

As has sometimes been reported, neuroticism was positively correlated with negative mood states ($r = .38$, $p = .00$), and negatively correlated with positive mood states ($r = -.23$, $p = .03$). Although neuroticism and mood scores correlated significantly, the correlations were nevertheless somewhat moderate, and neither neuroticism nor mood states correlated with residual evaluation performance (*r*s range from −.12 to .07).

We expected individuals high in neuroticism to be faster at making all evaluative distinctions when in a negative mood state; by contrast, we expected individuals low in neuroticism to be faster at making all evaluative distinctions when in a less negative mood state. As in Study 1, we also expected to find this Neuroticism × Mood interaction when examining negative, but not positive, mood states. To test these predictions, we centered neuroticism, PA, and NA and then used the GLM to test a full 2 (neuroticism) × 2 (negative mood) × 3 (block speed: neutral–positive, neutral–negative, negative–positive) design. In this design, the first two variables were continuous between-subjects variables, whereas the third was a three-level, within-subject variable. As predicted, the only significant effect was a Neuroticism × Negative Mood interaction, $F(1, 82) = 8.55, p < .01$. As indicated in Figure 2, individuals high on neuroticism (1 standard deviation above the neuroticism mean) were faster to make valenced distinctions when in a relatively negative mood state (1 standard deviation above the negative mood mean). On the other hand, individuals low on neuroticism (1 standard deviation below the neuroticism mean) were faster to make valenced distinctions when in a less negative mood state (1 standard deviation below the negative mood mean). The effects of negative mood on response speed within high or low levels of neuroticism, as indicated by tests of simple slopes, did not reach significance ($|t|s < 1.2$). No other effects were significant ($Fs < 1.5$).

Because there was no Neuroticism × Mood State × Block interaction, we can conclude that the Neuroticism × Mood State interaction was of the same form in affecting performance within each of the evaluation blocks considered separately. To further examine this, we performed three different multiple regressions, one for each block considered alone. There was a significant Neuroticism × Mood State interaction affecting performance on the neutral–positive block, $F(1, 82) = 7.52, p < .01$, and the negative–positive block, $F(1, 82) = 4.47, p < .05$. The interaction was not significant with reference to the neutral–negative block, $F(1, 82) = 2.52, p = .10$, but the means were in the same direction as shown in Figure 2. Clearly, these results suggest that the Neuroticism × Mood State interaction was not particular to making negative evaluations.

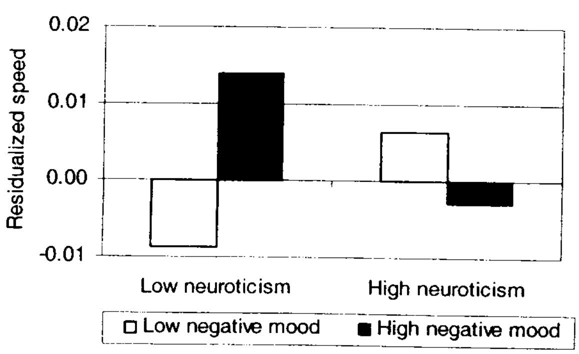

Figure 2. Residual speed on the evaluation tasks as a function of neuroticism and negative mood states (Study 2).

As in Study 1, we predicted that neuroticism would interact with negative but not positive mood states. To determine whether there was an interaction with positive mood states, we performed a parallel GLM model replacing negative mood states with positive mood states. None of the effects were significant ($Fs < 1.1$).

Discussion

Study 2 found that individuals high in neuroticism were faster to categorize words as positive versus neutral and negative versus neutral as well as positive versus negative when in a negative mood state. On the other hand, participants low in neuroticism were faster to make such evaluative distinctions when they were not in a negative mood state. As in Study 1, the interaction between neuroticism and mood state was found with negative but not positive mood state reports, supporting the trait-consistent nature of such interactions. In addition, as in Study 1, no main effects on evaluation speed were found for neuroticism, nor were the results qualified by a three-way interaction, as other models might predict (e.g., Rogers & Revelle, 1998; Rusting, 1998).

A strength of Studies 1 and 2 is that data were based on self-reports of mood. As Rusting (2001) suggested, measuring rather than manipulating mood states may offer a more realistic portrayal of the typical relations between personality, mood, and cognition. In addition, self-reported mood states provide an opportunity to examine the effects of multiple concurrent mood states (i.e., positive and negative) on affective processing. Nevertheless, because neuroticism and mood states were significantly correlated in Study 2, the contribution of mood states is not completely clear. In Study 3, therefore, we used a mood manipulation to examine the causal role of negative mood states in influencing the speed of evaluative processing.

Study 3

Study 3 was designed to replicate the previous studies using a mood induction rather than self-reports of mood. Specifically, we asked participants to recall an event from their personal life prior to completing the categorization task (Gasper & Clore, 1998; Tamir et al., 2002). To focus the design on negative mood states (especially given that positive mood states were irrelevant in Studies 1 and 2), we randomly assigned individuals to negative versus neutral mood inductions. As in Studies 1 and 2, we expected individuals high in neuroticism to be faster at making valenced categorizations when in a sad (vs. neutral) mood state. On the other hand, we expected individuals low in neuroticism to be faster at making valenced categorizations when in a neutral (vs. sad) mood state.

Method

Participants

Participants were 55 undergraduate students at the University of Illinois who participated in return for partial credit toward a course requirement. All participants were fluent English speakers.

Materials

Mood induction. In the sad mood condition, participants were asked to report on a sad event from their lives (see Schwarz & Clore, 1983; Tamir et al., 2002). Specifically, they were told the following:

> Please think about your own life. Try to think about an event that made you feel really sad in the past few years. Please take time to imagine what this event was like that made you feel truly sad and try to relive it again in your mind's eye. Then describe what made you feel sad as vividly and in as much detail as you can.

In the neutral mood condition, participants were asked to describe the content of their room. Specifically, they were told the following: "Now please think about your room. Try to imagine your room and its content in your mind's eye. Then describe the room and whatever is in it in as much detail as you can."
All participants were given 10 min to write their answers.

Categorization task. The task was identical to the one used in Study 1, except for two changes. First, the number of trials was increased to 60 per target block. The reliability estimates for the neutral, positive, and negative targets were .95, .78, and .81, respectively. Second, as in Study 2, both animal–not-animal and heavy–not-heavy categorization tasks were used to estimate baseline speed.

Mood and neuroticism scales. The same scales were used as in Studies 1 and 2. In this sample, Cronbach's α = .88 for the neuroticism scale, and αs = .72 and .78 for the NA and PA scales, respectively.

Procedure

Participants were run in groups of 4–6. After entering the lab, they were seated in private cubicles in front of personal computers and filled out a consent form. Participants were then randomly assigned to either the sad or the neutral mood condition. To disguise the mood induction, all the participants were told that the study concerned memory and cognitive performance. After the mood induction, participants completed the categorization task. After categorization performance, participants completed the mood and neuroticism scales.

Results

Mood Manipulation Check

To test whether the manipulation influenced mood, we ran two one-way analyses of variance, one for positive mood states and one for negative mood states. There was a marginal effect of mood condition on NA, $F(1, 54) = 3.22$, $p = .07$. Specifically, participants in the sad mood condition reported more negative feelings ($M = 2.13$) than participants in the neutral mood condition ($M = 1.83$). On the other hand, participants did not differ in their reports of positive feelings ($F < 1$). Considering that the participants rated their mood long after the mood induction took place and that the manipulation used in this study has been repeatedly found to influence mood in previous research (e.g., Schwarz & Clore, 1983), it would appear that the mood induction influenced mood in the appropriate direction. Because the manipulation appeared to increase negative mood states but not decrease positive mood states, we can be relatively confident that the results pertain to negative rather than positive affect.

Performance on the Categorization Task

Average accuracy rates were 91% for the neutral–positive block, 90% for the neutral–negative block, and 98% for both the non-animal–animal and the not-heavy–heavy blocks. The average correlation between RT and accuracy was −.03, indicating there was no speed–accuracy tradeoff. Scores were computed as in Study 2. Error trials were discarded, and observations that were over 2.5 standard deviations above or below the mean were replaced with those cutoff values, resulting in the replacement of 3.28% of the total observations. Scores were then log transformed to normalize the distribution.

To examine whether neuroticism and mood condition had any effect on baseline speed, we first centered neuroticism scores. We then entered neuroticism, mood condition, and their interaction as predictors in a regression analysis, with baseline categorization speed as the dependent measure. There was a marginal interaction, $F(1, 51) = 2.9$, $p = .09$, but neither of the main effects was significant or marginal. To examine the nature of the marginal interaction, we calculated estimated means on the basis of the regression equation. The means indicated a slight tendency for people high in neuroticism in the sad versus neutral mood condition to be faster within the baseline categorization blocks. Given that the effect was not significant and was not obtained in either Study 1 or Study 2, we regarded this interaction as suggestive at best. As in Studies 1 and 2, we then controlled for baseline speed in predicting evaluation performance. The reader will note that to the extent that there was an interaction on baseline performance (as described, but marginal), the interaction works against our ability to find a significant Neuroticism × Mood Condition interaction in predicting evaluation performance. Nevertheless, we predicted such an interaction on the basis of the idea that mismatching mood states have particular relevance to evaluative categorization.

To test predictions derived from the affective certainty model, we used the same GLM procedures described in Studies 1 and 2. In this case, neuroticism was a continuous between-subjects variable; mood condition (−1 = sad, 0 = neutral) was a two-level, between-subjects variable; and block was a two-level, within-subject variable. As in Studies 1 and 2, no significant main effects were found for either mood condition or neuroticism (Fs < 1). However, as predicted, there was a significant Mood Condition × Neuroticism interaction, $F(1, 51) = 3.91$, $p = .05$. To determine the nature of the interaction, we used the same procedure described earlier (with 0 and −1 representing the mood conditions and −1 and +1 representing participants low and high in neuroticism). Figure 3 plots the resulting interaction. The two-way interaction was not significant when separately considering speed on the neutral–negative block, $F(3, 54) = 2.00$, $p = .15$, and marginally significant when considering speed on the neutral–positive block, $F(3, 54) = 3.66$, $p = .06$. In both cases, the means were in the direction shown in Figure 3. Tests of simple slopes indicated that

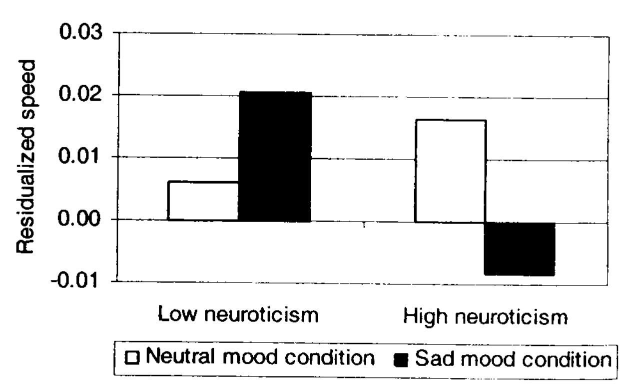

Figure 3. Residual speed on the evaluation tasks as a function of neuroticism and mood condition (Study 3).

the effects of mood condition were marginally significant within high levels of neuroticism, $t(54) = -1.13$, $p = .09$, and not significant within low levels of neuroticism, $t(54) = 1.72$, $p = .30$. None of the other effects within the GLM model were significant ($Fs < 1.1$).

Discussion

Replicating Studies 1 and 2, Study 3 found that individuals high in neuroticism were faster to make evaluative distinctions when in a sad mood state, whereas individuals low in neuroticism were faster to make such distinctions when they were in a neutral mood state. In addition, Study 3 confirmed that mood states play a causal role in affective certainty. Because participants were randomly assigned to either a sad or a neutral mood condition, the interaction cannot be ascribed solely to the fact that people high in neuroticism are often in a more negative mood state compared with emotionally stable individuals. Rather, the results must be due to the differential effects of negative mood states on evaluative processing for those low versus high in neuroticism.

General Discussion

Assigning value to stimuli in the environment is one of the most important tasks facing people daily. The present findings join a growing body of research (e.g., Rusting, 1998) that demonstrates the need to consider both trait and state affect to predict individual differences in evaluative processing. Specifically, the current studies show that individuals high in neuroticism are more efficient in evaluating stimuli when in a more negative mood state, whereas those low in neuroticism are more efficient when in a less negative mood state.

By exploring the epistemic benefits of negative mood states, the current studies yield several important conclusions. First, they provide further evidence for the affective certainty model (Tamir et al., 2002) as well as rule out alternative explanations. Second, they are consistent with a configural, context-dependent view of the cognitive implications of affect (Martin, Ward, Achee, & Wyer, 1993; Tamir, Robinson, Clore, Martin, & Whitaker, 2004). Third, the present investigation suggests that negative mood states can be beneficial to certain people within certain contexts. Each of these implications is discussed in further detail below.

Neuroticism, Mood States, and Affective Certainty

Both momentary mood states (Clore, Schwarz, & Conway, 1994; Schwarz & Clore, 1983) and dispositional affect (Damasio, 1994; Robinson & Clore, 2002a) provide information about the self and the world. These sources of information can either match (e.g., a sad neurotic) or mismatch (e.g., a happy neurotic). When a person experiences a momentary mood state that mismatches his or her stable affective disposition, epistemic uncertainty results. This uncertainty is associated with a sense of evaluative confusion, resulting in hesitancy in evaluating new objects. By contrast, when a person experiences a momentary mood state that matches his or her stable affective disposition, epistemic certainty results. This certainty is associated with a sense of familiarity (and perhaps even confidence), resulting in efficiency in evaluating new objects.

Tamir et al. (2002) provided initial evidence for the affective certainty model by showing that extraverts are faster to identify the motivational significance of environmental stimuli when they are happy, whereas introverts are faster to do so when they are in a neutral mood state. The current studies provide an important extension of these findings by conceptually replicating a theoretically consistent Trait × State pattern in the case of neuroticism and negative mood states. Despite being unpleasant, negative mood states contributed to a sense of epistemic certainty for individuals high (vs. low) in neuroticism, as suggested by their evaluation performance. This pattern was replicated whether mood states were measured (Studies 1 and 2) or manipulated (Study 3).

The present findings not only support the predictions of the affective certainty model but also rule out alternative explanations. In none of our analyses did we find main effects for mood state or Mood State × Block Speed interactions, as might be predicted by associative models of mood–cognition relations (e.g., Bower, 1981). In this context, it should be noted that network models of mood–cognition relations have been successful in accounting for social judgments but have fared far more poorly when cognitive performance is examined (MacLeod, 1993). Additionally, in none of our analyses did we find main effects for neuroticism or Neuroticism × Block Speed interactions, as might be predicted by certain trait-congruent accounts. It should be noted, however, that main effects for neuroticism on cognitive performance are often weak and difficult to replicate (Rusting, 1998). The present studies join prior studies from our lab in suggesting that there are no straightforward correlations between neuroticism on the one hand and speed to evaluate negative objects on the other (Robinson, 2004; Robinson et al., 2004). Finally, in no study did we find Neuroticism × Mood State × Block Speed interactions, as would be predicted by a priming interpretation of Trait × State interactions (Rusting, 1998). However, as pointed out above, affect-priming effects reported in the literature typically involve social judgments or autobiographical memories, and network models appear to have only circumscribed relevance for predicting cognitive performance (Niedenthal et al., 1997; Rusting, 1998).

Although the present results may seem inconsistent with prior research on valence-consistent processing, this may not necessarily be the case. Specifically, the distinct patterns of findings may depend on the nature of the task at hand. According to Forgas (1995, 2001), valence-congruent effects of mood are likely when the judgment at hand involves elaborative or constructive processing. On the other hand, valence-congruent effects are less likely when the judgment involves reproduction of preexisting associations (for a similar model, see Rusting, 2001). Because affective certainty involves reproduction of accessible attitudes rather than elaborative processes (Tamir et al., 2002), there may be no reason to predict straightforward mood-congruent effects in the present studies (Bower & Forgas, 2000).

Implications for Mood–Cognition Relationships

What are the effects of mood states on cognitive performance? Most theories of affect and cognition are based on valence-specific views of mood–cognition relations. For example, negative mood states induce a disposition for negative evaluations (Forgas, 1995; Mayer, Gaschke, Braverman, & Evans, 1992), analytic thinking (Bless & Fiedler, 1995; Ketelaar & Clore, 1997; Schwarz & Bless, 1991), and mood repair (M. A. Clark & Isen, 1982; Thayer, 2000). The present results are quite different in nature and therefore suggest possible exceptions to the idea that mood states necessarily have valence-specific effects on cognitive performance.

Alternatively, the affect as input model (Martin et al., 1993; Martin & Whitaker, 2000) suggests that there are no fixed relations between affective states on the one hand and cognitive and behavioral performance on the other. Instead, the same affective experiences can produce distinct, even opposite, effects in different contexts (see also Tamir et al., 2004). Rather than evaluating on the basis of one specific source of information (e.g., mood states), individuals appear to make evaluations on the basis of configurations of information, here including dispositional beliefs about one's emotional experiences over time (as well as mood states). The results encourage further research related to the flexible impact of mood states on cognitive performance. The results also indicate that the trait of neuroticism is one of the configural elements that determine how mood states will be interpreted and deployed. Interactive frameworks for neuroticism and mood states are quite scarce (Rusting, 1998) and deserve further treatment, especially given the results reported here.

Epistemic Versus Hedonistic Concerns

There is strong adaptive value to having highly accessible attitudes. In particular, accessible attitudes guide attention toward important objects in the environment (Fazio, Roskos-Ewoldsen, & Powell, 1994). Accessible attitudes free people from stress under conditions of high information load (Fazio, Blascovich, & Driscoll, 1992). In addition, having accessible attitudes can protect people to some extent from distress (Fazio & Powell, 1997). Finally, highly accessible attitudes promote consistent behavior across situations and over time (Fazio, 1995), which in turn is more conductive to positive well-being (Campbell et al., 1996).

Given that affective certainty increases the accessibility of affective attitudes and that having accessible attitudes is highly adaptive, the present findings demonstrate that negative mood states can be beneficial for certain people (i.e., those high in neuroticism). Therefore, there is reason to assume that in certain circumstances some people might be motivated (albeit implicitly) to experience negative mood states. In a relevant examination of this idea, Tamir (2004) found that people high in neuroticism chose a negative mood induction over a positive one, particularly when they expected to engage in a difficult cognitive task. This result, combined with the present results, suggests that people high in neuroticism choose to feel bad at some level of functioning and furthermore that this choice could actually benefit cognitive performance.

Negative mood states feel bad, whereas positive mood states feel good. It is therefore tempting to propose that feeling good can be recommended for all people under all circumstances. Indeed, most theories of mood regulation emphasize hedonic concerns (Larsen, 2000; Thayer, 2000). These theories assume that people regulate mood in order to maximize pleasure and avoid pain. However, people also regulate their mood to obtain performance goals in everyday life, even at the risk of decreasing momentary pleasure (Clore & Robinson, 2000; Erber & Erber, 2000; Hirt & McCrea, 2000; Martin, 2000). Some data, for example, suggest that people may prefer to experience less positive (as well as more negative) feelings when anticipating a challenging cognitive task or a social interaction with an unfamiliar stranger (Erber, Wegner, & Therriault, 1996).

Overall, both positive and negative mood states can serve useful purposes for the individual (Gasper & Clore, 2002; Schwarz, 1990; Watson, 2000). In assessing the costs and benefits of a given mood state, it is important to keep in mind that behavior, rather than hedonic considerations, is the ultimate arbiter of successful adaptation (Watson, 2000). Therefore, negative mood states, despite the fact that they feel bad, may nevertheless be beneficial for some people under some circumstances.

Although recent theories of mood regulation suggest that given certain motivational concerns, people may in fact be motivated to increase negative mood states (e.g., Martin & Davies, 1998; Parrott, 2002), so far very little empirical evidence has been provided in support of such a claim. The current research offers a theoretical framework along with relevant data that can explain some cases of antihedonic mood regulation. Specifically, on the basis of the present findings one might predict that neurotic individuals would be motivated to experience negative feelings in situations that call for immediate affective choices (e.g., "Should I approach this person or not?"; "Should I touch or avoid this animal?"; "Should I consume this food item?"). In exploring such possibilities, future research might benefit from conceptualizing self-regulation as the result of Trait × State interactions and from considering both epistemic and hedonic motives for mood regulation.

A Paradox and Its Solution

The three studies here have established that negative mood states facilitate evaluative processing for individuals high in neuroticism but impair evaluative processing for individuals low in neuroticism. The results offer support for the idea that trait-consistent mood states (whether pleasant or unpleasant) are beneficial to individuals as they seek to evaluate new events in the environment (Tamir et al., 2002).

Considering the implications of the current findings to everyday life, it is interesting to note that traits tend to be associated with trait-consistent emotional states. That is, extraverts often report more positive affect than introverts, and those high in neuroticism often report more negative affect than those low in neuroticism. Such correlations suggest that trait–state congruence is the norm rather than the exception. Trait–state incongruence is a comparatively infrequent outcome that is likely to signal significant changes in the person–environment relationship. Such changes produce uncertainty concerning habitual modes of evaluation and therefore problems in linking events to personal preferences (see also Swann & Schroeder, 1995).

The current studies suggest that people high in neuroticism might prefer, at least epistemically, to experience more negative mood states rather than less negative ones (see also Wells & Matthews, 1996). This of course places the individual in a peculiar position in that feeling bad promotes effective functioning. This seeming paradox is resolved by recognizing that people often seek to be effective rather than happy in their interactions with the environment (Erber & Erber, 2000; Harmon-Jones, 1999; Higgins, 1997). People high in neuroticism, therefore, may perpetuate their negative affect (Swann, 1992) in order to ensure that the world, as subjectively experienced, continues to be predictable and the self continues to function smoothly when evaluating its surroundings.

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Appendix

Words Used in the Evaluative Categorization Tasks

Positive	Neutral	Negative
candy, child, flower, kiss, mother, palace, sunset, smile, clown, temple, lips, silk	apple, couch, café, dime, icebox, jelly, engine, street, coffee, lime, string, tool, straw, coke, glass, carpet, circle, fan, basket, pocket, carrot, lamp, chair, bell	sweat, dust, dirt, snake, bill, toilet, needle, chain, skull, whip, vinegar, insect

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