

## Positive Mood Can Increase or Decrease Message Scrutiny: The Hedonic Contingency View of Mood and Message Processing

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Currently dominant explanations of mood effects on persuasive message processing (i.e., *cognitive capacity* and *feelings as information*) predict that happy moods lead to less message scrutiny than neutral or sad moods. The *hedonic contingency* view (D. T. Wegener & R. E. Petty, 1994) predicts that happy moods can sometimes be associated with greater message processing activity because people in a happy mood are more attentive than neutral or sad people to the hedonic consequences of their actions. Consistent with this view, Experiment 1 finds that a happy mood can lead to greater message scrutiny than a neutral mood when the message is not mood threatening. Experiment 2 finds that a happy mood leads to greater message scrutiny than a sad mood when an uplifting message is encountered, but to less message scrutiny when a depressing message is encountered.

If you could construct a setting aimed at maximizing persuasion, what would it be? When Mackie and Worth (1991) asked college students a similar question, 90% said that they would want message recipients to be happy. One student stated that "If you can get [people] feeling relaxed, maybe make them laugh, that's when they'll listen to you" (p. 201). Recent research and theory suggests a more complex view of how happy people deal with persuasive messages, however (see Petty, Gleicher, & Baker, 1991; Petty & Wegener, 1991). For example, happiness can be associated with more or less persuasion than sadness or neutrality because happiness can reduce thinking about the persuasive message (see Schwarz, Bless, & Bohner, 1991). If thinking is reduced, then persuasion is enhanced if the message contains

weak arguments but is reduced if message arguments are strong (Petty, Wells, & Brock, 1976).

Why might happy people think less than people in neutral or sad moods about the substantive content of persuasive messages? Two theoretical positions have achieved prominence. The *cognitive capacity* view contends that positive affective states render people less able to process incoming information (Mackie & Worth, 1989) because happy moods activate many positive thoughts in memory, and these thoughts occupy attentional capacity. Alternatively, Schwarz's (1990) *feelings-as-information* framework views happy moods as informing people that the environment is safe, thereby reducing their motivation to scrutinize information in that environment. Recently, Wegener and Petty (1994) introduced a third position—the *hedonic contingency* view—that is based on differential mood management tendencies across affective states. This framework appears capable of accounting for past findings and also generates new predictions. After reviewing these perspectives, we present two experiments that address the differential predictions of the frameworks.

In one of the first studies designed to examine the effects of mood on message processing, Worth and Mackie (1987) found that people in a neutral mood processed a counterattitudinal message on government control of acid rain more than people in a happy mood.<sup>1</sup> Mackie and Worth (1989) expanded on their

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<sup>1</sup> In their research (and most of the other studies on mood and message processing), the extent of message processing is gauged by the extent to which strong arguments lead to greater persuasion than weak ones (see Petty & Cacioppo, 1986). Neither happy nor neutral people who received a proattitudinal message were persuaded more by strong than weak arguments, and little overall persuasion was observed for

1987 efforts. In a limited time condition (conceptually replicating Worth & Mackie, 1987), participants were told that the message would only appear long enough to be read once, but in an unlimited time condition, participants were explicitly told that they could take as long as they wished to read (and reread) the message. In the limited time condition, neutral people processed the message more thoroughly than happy people. In the unlimited time conditions, however, happy and neutral people processed the message equally, though happy people took longer to read the counterattitudinal message. These studies were interpreted as supporting a cognitive capacity view of mood effects on processing. That is, Mackie and Worth (1989) believed that in limited time situations, happy people were less able to effortfully process the message. Yet, when given unlimited time, people in a happy mood were just as motivated to process the message and did so to the same extent as people in a neutral mood—it simply took happy people longer to process the message in order to overcome their ability deficit (see Mackie & Worth, 1989, p. 28; but see also Mackie, Asuncion, & Rosselli, 1992, for a discussion of increased motivation overcoming positive-mood capacity deficits).

As noted above, the feelings-as-information framework views positive mood as leading to motivational rather than capacity deficits. That is, negative states are hypothesized to inform people that their current situation is problematic and something must be done. Positive states, on the other hand, tell people that they are safe and no scrutiny of the environment is necessary (Schwarz et al., 1991). Thus, according to this view, positive states lead to less processing than negative states, unless some external goal motivates processing. In support of this notion, Bless, Bohner, Schwarz, and Strack (1990) found that sad students processed a message justifying a student fee increase more than happy students when the study was introduced as an investigation of language use (i.e., when processing should be relatively spontaneous), but happy and sad students processed the message to the same extent when the study was introduced as an investigation of peoples' ability to evaluate arguments (i.e., when an external goal motivated message scrutiny; see also Smith & Shaffer, 1991).

### A Mood Management Alternative: The Hedonic Contingency Hypothesis

Rather than positive mood informing people that the environment is safe or taking up processing capacity, positive mood may lead to especially high levels of mood management. Because the messages used in studies finding positive-mood processing deficits have been counterattitudinal or on depressing topics (e.g., acid rain, fee increases, etc.), happy people might have avoided message processing to maintain their current pleasant state (see Clark & Isen, 1982; Sinclair & Mark, 1992; Smith & Shaffer, 1991; Wegener & Petty, 1994). If this is so, however, what mood management basis might one have for pre-

dicting the observed processing differences between people in happy versus neutral or sad moods?<sup>2</sup>

One possible basis for predicting relative differences in mood management across affective states comes from the hedonic contingency hypothesis (Wegener & Petty, 1994). This hypothesis states that scrutiny of the hedonic consequences of actions will be more likely in happy than sad states (and thus activities will be chosen on the basis of the hedonic consequences of those actions more in happy than in sad states). The rationale is as follows. When people engage in a behavior and feel better because of it, they are hedonically rewarded for engaging in that activity. When people engage in a behavior and feel worse because of it, however, they are hedonically punished. Consider a person in a happy mood. Most behaviors in which that person could engage would make the person feel worse. Thus, this person must choose very carefully if he or she is going to stay as happy or feel better (i.e., hedonic rewards are highly dependent on the person scrutinizing the hedonic consequences of actions). For a sad person, however, the hedonic contingencies are very different. Most behaviors in which the person might engage would make the person feel better. Thus, this person need not consider the hedonic consequences to reap hedonic rewards (i.e., hedonic rewards are relatively independent of whether or not the person scrutinizes the hedonic consequences of actions). Because hedonic rewards are more contingent on scrutiny of the hedonic consequences of actions in happy than sad moods, people should be directed toward consideration of those consequences (and corresponding choices of actions) more in happy than sad states.<sup>3</sup>

Neutral moods might relate to mood management in one of a couple of ways. Neutral moods might foster mood management at levels in between happy and sad states because hedonic contingencies in neutral moods fall between those of happy and sad moods. It could also be, however, that the value of mood as a salient signal for different reward contingencies depends on the mood being different from a normal (i.e., neutral) state. Thus, because hedonic rewards are relatively noncontingent in sad moods, and current feelings (as well as motives to manage

<sup>2</sup> The notion that mood management might affect the activity choices of happy or sad people is certainly not new. For example, Isen and her colleagues discussed attempts by happy people to maintain their positive moods and attempts by sad people to relieve their negative moods (e.g., Clark & Isen, 1982; Isen, 1987). These discussions helped to develop the notion of mood management (which is crucial to the hedonic contingency view) but did not provide a framework for predicting the relative likelihood of mood management across positive and negative states. Cialdini and his colleagues attempted to provide such a framework (e.g., Cialdini, Darby, & Vincent, 1973; Schaller & Cialdini, 1990). Although these researchers posited that sadness but not happiness leads to high levels of mood management, recent theoretical and empirical developments suggest that happy moods can create greater use of mood management strategies than sad or neutral moods (see Wegener & Petty, 1994).

<sup>3</sup> That is, careful consideration of hedonic consequences is the only way for happy people to reap hedonic rewards, but careful consideration of hedonic consequences is not the only way for sad people—they can reap hedonic rewards even if they act on the basis of strategies that are unrelated to scrutiny of hedonic consequences (e.g., scrutinize everything because there might be problems in the environment; cf. Schwarz, 1990).

these groups. This might have been due to a ceiling effect (i.e., people already supported the position so extremely that little room was left for persuasion). Thus, the proattitudinal condition in Worth and Mackie (1987) might not constitute a strong test of the hypothesized effects.

the feelings) might not be salient in neutral moods, there might be little difference in the level of mood management found in neutral versus sad moods. In fact, in empirical research driven by the hedonic contingency framework, results have shown similar levels of mood management for neutral and sad people, with higher levels of mood management found for happy than for sad or neutral research participants. Specifically, Wegener and Petty (1994) found that, across three experiments using different mood manipulations, happy people based their choices of future activities on differences in the affective qualities of the activities to a greater extent than neutral or sad people. Neutral and sad people did not differ in their use of the information about affective qualities of activities.<sup>4</sup>

Perhaps the most important difference between our mood management alternative and the currently dominant models is that our view does not limit positive mood to decreased message processing. The cognitive capacity and feelings-as-information views both hold that happy mood will either decrease processing or have no effect compared with neutral or sad moods. In contrast, our hedonic contingency view predicts that positive moods should lead to processing deficits primarily when avoiding thoughts about the message allows one to feel better than thinking about the message. Positive moods could, in fact, lead to increased processing if a message recipient believes that processing the message will allow him or her to maintain a pleasant state or feel better. Within this view, the processing differences associated with the hedonic qualities of the task should be greater in happy than neutral or sad states.

If strong arguments were found to be more persuasive than weak arguments to a greater extent when a happy rather than a neutral mood was induced, this would represent clear evidence of manipulated positive mood leading to increased message scrutiny. Such a finding would contrast with the prevailing view that happy moods decrease message scrutiny (Bless et al., 1990; Kuykendall & Keating, 1990; Mackie & Worth, 1989). Of course, in previous research, the messages have been counterattitudinal or mood threatening. In our first experiment, however, a primary goal was to examine the possibility that positive mood could enhance message processing if the message topic was not mood threatening. If only the processes postulated by the cognitive capacity or feelings-as-information views operate, then happy moods should lead to less processing than neutral moods.

### Experiment 1

We created happy or neutral moods and told participants that they were about to hear an audiotaped editorial about improving foster care. Participants heard a message advocating changes in the foster care program of their home state to make it more like a (fictitious) foster care program in a distant state. The message focused on the proposed benefits of the changes, rather than on any reasons why the changes might be necessary. Either strong or weak arguments supported the changes.<sup>5</sup> Following the message, participants were asked to complete attitude measures and to provide any thoughts that had come to mind during the message.

## Method

### Participants

One hundred fifteen introductory psychology students participated in the 2 (mood: happy vs. neutral)  $\times$  2 (argument quality: strong vs. weak) between-subjects design.

### Procedure

Students participated in groups of 4 to 8 and were told that they would be completing a variety of tasks as pretests for studies later in the quarter. The tasks to be pretested included a neutralizing task (which served to neutralize everyone's mood), the mood manipulations, and an audiotaped excerpt supposedly from a college radio editorial. The editorial served as the persuasive message. All written materials were provided in an experimental packet.

### Independent Variables

**Mood.** The packet began with two performance tasks for which "baseline performance levels were being collected." The two tasks, solving math problems and alphabetizing words, each took 2 min. These tasks were designed to remove any mood differences due to factors outside the laboratory (e.g., weather; see Petty, Schumann, Richman, & Strathman, 1993; Schwarz & Clore, 1983). Next, participants encountered the mood manipulations. Two imagination tasks (totaling 7 min) were introduced "in order to create banks of data on what people imagine for different scenarios." For half of the participants, the two imagination tasks had been pretested to induce a happy mood. For example, people were asked to imagine and write about being able to skip finals and take an expenses-paid trip to Hawaii. The other half of the participants encountered neutral scenarios. One neutral task was to imagine going to the library and checking out a book. These tasks were adapted from past research that used similar procedures to manipulate mood successfully (e.g., Baumann, Cialdini, & Kenrick, 1981; Bless et al., 1990; Manucia, Baumann, & Cialdini, 1984).

**Argument quality.** Participants encountered the editorial "in order to judge the sound quality of the recording and the quality of the speaker's voice." The message advocated that the foster care program in the participants' state be improved by making three primary changes that would make the program more like a (fictitious) program from a distant state. The changes were described as about to be discussed in sessions of

<sup>4</sup> Data from a variety of literatures are consistent with the hedonic contingency view. For example, in recent meta-analyses of the mood and helping literature, Carlson, Charlin, and Miller (1988) found that as the pleasantness of the helping task increased, the facilitative effects of positive mood on helping also increased when compared with neutral mood. Also, Carlson and Miller (1987) and Miller and Carlson (1990) found no significant relationship between pleasantness of the helping task and level of sadness-induced helping when compared with neutral mood. Thus, happy people appear to be acting according to the hedonic consequences of the helping task to a greater extent than neutral or sad people (for further discussions see Wegener & Petty, 1994; in press).

<sup>5</sup> As an introduction to the editorial, participants also heard a description of a person who had supposedly grown up in a foster care program. The person was either quite successful and happy or not at all successful and quite unhappy. This description was meant to create expectations that the message on foster care would be either uplifting or depressing. Unfortunately, the manipulation was ineffective. In all conditions, the findings suggest that participants viewed the message as relatively proattitudinal and not at all mood threatening (see Wegener & Petty, in press, for a discussion). This manipulation is not discussed further.

the local state legislature and were supported by either strong or weak arguments (bolstered versions of the arguments used by Petty et al., 1993, Experiment 1). For example, one of the advocated changes was that foster parents should have multiple children in their families. A strong reason for this noted that the presence of siblings aids the social development of foster children and also noted that siblings are a source of love and support for foster children. A weak argument noted that it would be good for foster children to have brothers and sisters with whom to fight.

### Dependent Measures

After the editorial, participants reported their attitudes toward implementation of the new program. Attitudes toward the program were reported on unnumbered scales bounded by verbal scale anchors. Participants responded to three 9-point attitude measures with endpoint labels of how *bad-good*, *negative-positive*, and *foolish-wise* adoption of the proposed policies would be. Participants wrote down all the thoughts that they recalled going through their minds as they listened to the editorial (see Petty & Cacioppo, 1986).

### Results

Dependent measures were submitted to a 2 (mood)  $\times$  2 (argument quality) analysis of variance (ANOVA).

#### Attitudes

The attitude questions were scored such that higher values corresponded to more favorable attitudes and were averaged to create a composite measure of attitude ( $\alpha = .95$ ). The 2  $\times$  2 ANOVA revealed a main effect of argument quality such that participants who received strong arguments in support of the new program held more favorable attitudes toward the program ( $M = 7.43$ ) than participants who received weak arguments ( $M = 6.76$ ),  $F(1, 111) = 4.37, p < .04$ . In addition, there was a Mood  $\times$  Argument Quality interaction,  $F(1, 111) = 4.99, p < .03$  (see Figure 1). Happy participants were more persuaded by strong ( $M = 7.57$ ) than weak arguments ( $M = 6.18$ ),  $F(1, 111) = 8.44, p < .003$ , but neutral participants were not differentially persuaded by strong ( $M = 7.29$ ) and weak ( $M = 7.33$ ) arguments ( $F < 1$ ). That is, the arguments in the message had a greater impact on the attitudes of happy than neutral people.

#### Cognitive Responses

Cognitive responses were coded by two judges unaware of participants' experimental conditions. Thoughts were classified as favorable, unfavorable, or neutral, and as message related or unrelated. Judges agreed on classifications of over 85% of the

thoughts, and disagreements were resolved by discussion. An index of favorability of message-related thoughts was formed by subtracting the number of unfavorable message-related thoughts from the number of favorable message-related thoughts and dividing by the total number of message-related thoughts. On this index, there was a main effect of argument quality,  $F(1, 110) = 11.18, p < .001$ .<sup>6</sup> Participants' thoughts were more favorable toward the advocacy after receiving strong arguments ( $M = .32$ ) rather than weak arguments ( $M = .04$ ). This effect was qualified by a Mood  $\times$  Argument Quality interaction,  $F(1, 110) = 3.51, p < .06$ . Whereas happy participants were more favorable following strong ( $M = .33$ ) than weak arguments ( $M = -.11$ ),  $F(1, 110) = 13.83, p < .0004$ , neutral participants were not differentially favorable following strong ( $M = .32$ ) and weak arguments ( $M = .19$ ),  $F(1, 110) = 1.19, p > .28$ . Thus, it appears that the content of the message tended to direct the thoughts of happy more than neutral people.

If the attitudes of happy people were more influenced than those of neutral people by substantive processing of the message, then the thought index noted above should be more highly correlated with their attitudes (Petty & Cacioppo, 1979). In fact, for happy people, the correlation between thoughts and attitudes was substantial ( $r = .80, p < .0001$ ). For neutral people, however, the correlation between thoughts and attitudes was much smaller ( $r = .39, p < .002$ ). Using Fisher's  $r$ -to- $z$  transformation, the difference between these correlations was significant ( $Z = 3.57, p < .0002$ ).

### Discussion

The results of Experiment 1 provide initial evidence that happy mood can increase message processing over neutral mood. In fact, in a second data collection that used the same design and messages as the present experiment (but used a very different manipulation of mood—neutral vs. happy excerpts of classical instrumental music), we replicated this finding of increased message processing in a happy mood (Wegener, Petty, & Richman, 1991, discussed in Wegener & Petty, in press).<sup>7</sup> This effect is not predicted by either the cognitive capacity or feelings-as-information views. Because of this, it would appear that some other theoretical framework should be brought to bear on the data. We suggest that one important difference between our experiments (i.e., Experiment 1 and Wegener et al., 1991, which found that happy mood enhanced message scrutiny) and past work (e.g., Bless et al., 1990; Mackie & Worth, 1989, which found that happy mood inhibited message scrutiny) is the extent to which the message topics were likely to have threatened the positive states of happy participants. Whereas published evidence of positive-mood processing defi-

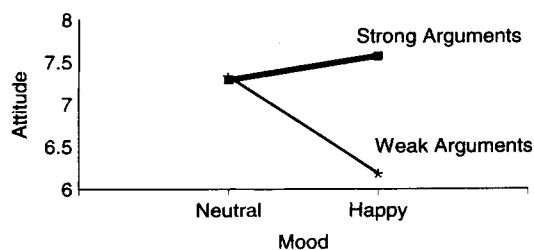


Figure 1. Attitude as a function of mood and argument quality.

<sup>6</sup> One participant wrote no thoughts and was dropped from the analysis.

<sup>7</sup> Specifically, there was a Mood  $\times$  Argument Quality interaction on both a thought favorability index,  $F(1, 186) = 5.46, p < .02$  and on the attitude measure,  $F(1, 186) = 3.67, p < .06$ , such that the thoughts and attitudes of happy participants were more influenced by argument quality than were the thoughts and attitudes of neutral participants. Happy participants also recalled more arguments from the message than did neutral participants,  $F(1, 186) = 4.94, p < .03$ .

cits used clearly counterattitudinal and depressing topics, our message (improve foster care) was rather agreeable and not mood threatening.<sup>8</sup> Thus, if the improve foster care message was generally too positive for participants to feel that processing the message would threaten mood, then enhancement of processing in a happy mood would be consistent with the hedonic contingency analysis.

If this explanation is correct, then using a message that participants truly believe is mood threatening should be more likely to produce processing deficits in happy moods (as in past research guided by the cognitive capacity and feelings-as-information views), but use of a nonthreatening message should not (as in our Experiment 1). Thus, to form a stronger test of the hedonic contingency position, our second experiment used a message for which the same arguments supported either a clearly proattitudinal (uplifting) position or a clearly counterattitudinal (depressing) position. In addition, the following experiment used sad rather than neutral mood to investigate whether happy mood could enhance processing over sad mood (when a proattitudinal and uplifting communication is encountered).

## Experiment 2

To create strong manipulations of hedonic expectations and content, it was necessary to create a situation in which credible information was provided to participants about the affective content of the message. Therefore, the following persuasion study was conducted within a larger session that provided reasons to give statements about the likely hedonic content of articles. The session began with the selective exposure paradigm used by Wegener and Petty (1994). Specifically, participants were told that they would be choosing activities in which to engage later in the session and that they would engage in those activities on the basis of their individual rankings of a number of options. Following the ranking task, participants were told that tabulating their rankings of the available activities would take some time and that the experimenter wished to verify the qualities of two separate articles during that tabulation. The two articles to be verified constituted the focal persuasion experiment.

The experimenter was said to already know the basic qualities of the two articles but wanted to verify those qualities. Therefore, participants received two articles to read and rate. The first was a mood induction article (either happy or sad), and the second was the persuasive message (framed in either an uplifting or depressing way and containing either strong or weak arguments). To provide expectations about the affective content of the articles, a brief statement of the content preceded each article. Because the mood induction article matched the hedonic qualities predicted by the statement, the statement creating the expectation of hedonic content of the persuasive message should have been credible.

Also, to ensure that participants' initial perceptions of whether message processing would be uplifting or depressing were confirmed in the first part of the message, the arguments provided in the message were presented on behalf of either a proattitudinal position (in the uplifting condition) or a counterattitudinal position (in the depressing condition). This differential framing of the issue allowed the same arguments

to support the advocacy regardless of the proattitudinal (uplifting) or counterattitudinal (depressing) qualities (see Baker & Petty, 1994; Petty & Brock, 1976). Because the arguments are the same, any observed processing differences are not attributable to different processing ability across the hedonic manipulation.

## Hypotheses

If our hedonic contingency mood management perspective is correct, then message processing by happy people should be affected by the hedonic consequences of that processing to a greater extent than the message processing by sad people. That is, happy people should be more persuaded by strong than weak arguments to a greater extent when the hedonic content of the message is viewed as positive rather than negative. For people in a sad mood, a couple of possibilities exist. Sad people might show the same mood management tendencies (i.e., to process uplifting messages more than depressing messages) but to a lesser degree than happy people. It is also possible, however, that mood management tendencies for sad people would be overridden by the usual tendency for counterattitudinal information to receive more scrutiny than proattitudinal information (e.g., see Apaniesk & Ditto, 1994; Cacioppo & Petty, 1979; Worth & Mackie, 1987, for people in neutral moods processing counterattitudinal more than proattitudinal information). Either result would be consistent with the hedonic contingency proposition that happy people manage mood to a greater extent than sad people.

Within this general pattern, our hedonic contingency analysis implies that enhancement of message processing in happy as compared with sad states should be most likely when the message content is proattitudinal (uplifting). This would provide a conceptual replication of the results of Experiment 1. In addition, happy people should be most likely to show positive-mood disruption of processing when the message content is counterattitudinal (depressing). This would provide a conceptual replication of past work on mood and message processing (e.g., Bless et al., 1990; Kuykendall & Keating, 1990).

## Method

### Participants

One hundred twenty-one introductory psychology students participated in partial fulfillment of a course requirement and were randomly assigned to the 2 (mood: happy vs. sad)  $\times$  2 (hedonic expectancy/content: uplifting vs. depressing)  $\times$  2 (argument quality: strong vs. weak) between-subjects design.

### Procedure

Students participated in groups of 2 to 10. They were told that the study was about preferences that people have for material presented

<sup>8</sup> One indication of this is in the attitude data from Experiment 1. Even the cell with the least favorable mean attitude (i.e., happy people/weak message) was significantly above the midpoint of the scale ( $M = 6.18$ ;  $t = 2.53$ ,  $p < .02$ ). In addition, it is likely that most participants would anticipate that they would agree with a message on improving foster care for children.

through various media and that they might be asked to watch videotapes or read articles and then rate those materials on a number of dimensions. In addition, participants were told that they would be asked at times to choose which activities they would prefer for later in the session. During a session, participants watched a videotape, made rankings of which activities they preferred for later in the session, and read and rated the qualities of two articles to verify the hedonic content of the articles (so the experimenter could use the articles in future research). The two articles to be verified constituted the persuasion experiment of interest. The first article manipulated mood and the second served as the persuasive message.

### *Independent Variables*

**Mood manipulation.** All participants received two mood inductions of the same valence. The first induction was a videotape at the beginning of the session; the second was an article of the same valence that constituted the beginning of the focal persuasion experiment.

Following the introduction to the session, the experimenter left the room and activated a 10-min videotape. Participants watched either the happy or sad videotape used by Wegener and Petty (1994, Experiment 1). The happy tape was an excerpt from "Late Night With David Letterman," whereas the sad tape was an excerpt from an HBO presentation ("You Don't Have to Die") about a child with cancer. After the videotape, participants rated various qualities of the tape, including how watching the tape made them feel. Then, participants received information about activities that would be available later in the session and were asked to rank the eight activities in order of which they preferred most (see Wegener & Petty, 1994, for a discussion of this task). Participants returned the completed ranking sheets to the experimenter and received the materials for the present persuasion experiment.

Participants were told that the experimenter had two short articles that he planned to use in future research, and they were asked to verify the qualities of those articles while rankings from the previous task were being tabulated. The experimenter was said to already have a good idea of the qualities of the articles (from past ratings), but he wanted to verify those qualities before using them in future research. The first of the articles was actually a mood induction of the same valence as the videotape watched at the beginning of the session. That is, participants read either a happy or a sad article used with success in previous research (see Kuykendall & Keating, 1990; Wegener & Petty, 1994, Experiment 2). The happy article, "Meeting Them More Than Halfway," presented a reunion of old friends at a country inn, whereas the sad article, "Cameroon's Valley of Death," described a natural disaster that took many lives. Each article was approximately 1.25 single-spaced pages of text. Immediately preceding the article, participants encountered a statement about the supposed qualities of the article. That is, participants were told that "the primary quality of the article you are about to read is that it makes people feel *HAPPY* (*SAD*)."<sup>1</sup> Receipt of this statement was to lend credence to the statement that formed part of the hedonic expectancy manipulation that preceded presentation of the persuasive appeal. Following the mood article, participants rated a number of qualities of the article, including how reading it made them feel (on three 9-point scales with 1 = *happy, pleasant, and good*, respectively, and 9 = *sad, unpleasant, and bad*, respectively). Participants were then instructed to open the folder that contained the next article.

**Hedonic expectancy and content of the persuasive appeal.** Participants first encountered a statement about the hedonic content of the persuasive article. That is, participants were told either that the primary quality of the article was that it "makes people feel *HAPPY* if they think carefully about the information in the article" or that it "makes people feel *SAD* if they think carefully about the information in the article." In addition, if participants were told that the article would make them feel happy, the article (on the next page) described a proattitudinal position that the arguments in the article were meant to support. That is, in uplifting conditions, the title of the article was "Students Pleased With

Tuition Plan That Gives Them a Break," and the article began with the following passage:

A bill under debate in the state legislature would give all students the opportunity to attend college with drastically reduced tuition in exchange for working as part-time university staff members. The plan would have no impact on students choosing not to participate. In the new plan, the period of work would depend on the length of time left in the student's course of study, with a maximum requirement of two years of "University Service," even if the student takes longer than the two years to finish his or her coursework. A number of student groups and administrators have issued statements favoring such a development. Some of the arguments supporting such a proposal include the following. . . .

In contrast, if participants were told that the article would make them feel sad, the article on the next page described a counterattitudinal position that the arguments in the article were meant to support. That is, in depressing conditions, the title of the article was "Students Upset With Tuition Plan That Places New Burdens on Them," and the article began with a similar but more disturbing passage for students:

A bill under debate in the state legislature would require all students to work as part-time secretarial and maintenance staff. The plan requires students who choose not to participate in the program to pay Out-of-State tuition. In the new plan, the period of work would depend on the length of time left in the student's course of study, with a maximum requirement of four years of "University Service," even if the student takes longer than the four years to finish his or her coursework. Of course, a number of student groups vehemently oppose such a bill. Yet, a number of state university administrators have issued statements favoring such a development. Some of the arguments supporting such a proposal include the following. . . .

**Argument quality manipulation.** For both the proattitudinal (uplifting) and counterattitudinal (depressing) positions, participants received either strong or weak arguments in support of the university service proposal. The same strong versus weak arguments were used regardless of position framing and were adapted from Baker and Petty (1994). For example, strong arguments stated that university services would ensure that an education would remain affordable for the vast majority of students desiring to earn a college degree and that university service by students would allow additional funds and personnel to be available to maintain and increase the quality of services provided by the library system. Weak arguments stated that university enrollment would surely decrease because some students would not want to work extra hours and that university service would allow libraries and computer labs to reduce their hours because students would have less time to spend in these facilities. All versions of the message were one single-spaced page in length.

### *Dependent Measures*

**Attitudes.** Following the persuasive message, participants were told that "because we have found that opinions on the issues in this kind of article can influence other perceptions, please answer the following questions about the issue in the article." Participants then responded to the stem—"The proposal concerning student performance of university service is" on five 9-point scales. The scales were anchored at 1 (*bad, foolish, negative, unfavorable, and harmful*, respectively) and 9 (*good, wise, positive, favorable, and beneficial*, respectively).

**Hedonic content of the article.** Participants were also asked the hedonic content of the article by completing the stem "The content of the article was actually." Responses were made on three 9-point scales anchored at 1 (*disagreeable, not at all enjoyable, and de-*



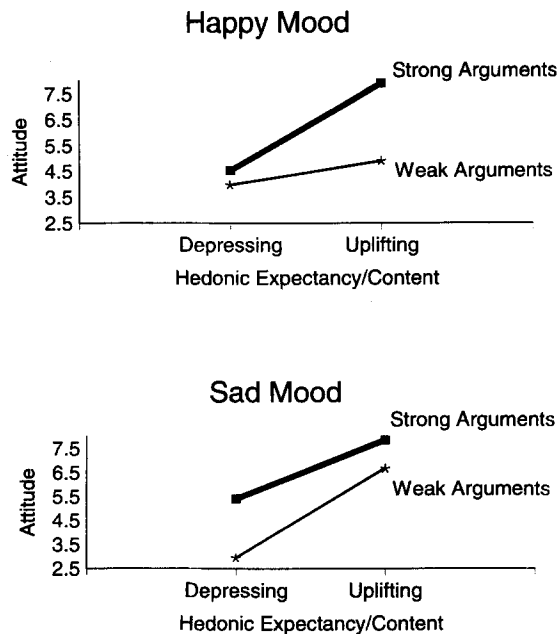


Figure 2. Attitude as a function of mood, hedonic expectancy and content, and argument quality.

pressing, respectively) and 9 (agreeable, very enjoyable, and uplifting, respectively).

**Cognitive responses.** Finally, participants were asked to write down all of the thoughts that went through their minds as they were reading the article. Participants were asked to do this without looking back at the article and were provided with 10 double-spaced lines on which to write. No time limit was given for the listing of thoughts.

### Results

All dependent measures were submitted to a 2 (mood: happy vs. sad)  $\times$  2 (hedonic expectancy and content: uplifting vs. depressing)  $\times$  2 (argument quality: strong vs. weak) ANOVA.

#### Manipulation Checks

**Mood.** The three measures were averaged to create a composite measure of mood (video  $\alpha = .98$  and article  $\alpha = .99$ ). Participants who encountered the happy video and happy article reported feeling better after each activity ( $M_s = 1.88$  and  $2.46$ ) than participants who encountered the sad video and article ( $M_s = 7.54$  and  $7.80$ ),  $F_s(1, 113) = 713$  and  $616$ ,  $p_s < .0001$ .

**Hedonic content.** The three measures were averaged to create a composite measure of perceptions of hedonic content of the message ( $\alpha = .85$ ). The  $2 \times 2 \times 2$  ANOVA revealed the expected main effect of hedonic expectancy and content such that the messages in the uplifting condition were rated as more positive ( $M = 5.68$ ) than messages in the depressing condition ( $M = 3.84$ ),  $F(1, 113) = 53.85$ ,  $p < .0001$ . Importantly, each of these values differed significantly from the midpoint of the scale such that uplifting messages were seen as significantly more uplifting than the midpoint ( $p < .003$ ), and depressing

messages were seen as significantly more depressing than the midpoint ( $p < .0001$ ).<sup>9</sup>

#### Primary Dependent Measures

**Attitudes.** The five attitude measures were averaged to create a composite measure of attitude ( $\alpha = .91$ ). The  $2 \times 2 \times 2$  ANOVA revealed a main effect of argument quality such that strong arguments in support of the new program led to more favorable attitudes toward implementation of the program ( $M = 6.43$ ) than weak arguments ( $M = 4.63$ ),  $F(1, 113) = 41.8$ ,  $p < .0001$ . In addition, there was a main effect of hedonic expectancy and content such that uplifting versions of the message elicited more favorable attitudes ( $M = 6.83$ ) than depressing versions of the same message ( $M = 4.22$ ),  $F(1, 113) = 89.12$ ,  $p < .0001$ . More important, the predicted three-way interaction among mood, hedonic expectancy and content, and argument quality was also significant,  $F(1, 113) = 11.33$ ,  $p < .001$  (see Figure 2). As predicted by the hedonic contingency analysis, the information-processing activity of happy people was greater when the message content was uplifting than when it was depressing. That is, happy people were more persuaded by strong than weak arguments to a greater extent when the message was uplifting ( $M_s = 7.89$  and  $4.90$ , respectively) than when the message was depressing ( $M_s = 4.53$  and  $3.99$ , respectively). For happy people, this two-way Hedonic Expectancy and Content  $\times$  Argument Quality interaction was highly significant,  $F(1, 113) = 10.12$ ,  $p < .003$ . Sad people did not show the same mood management pattern. Instead, sad people were more persuaded by strong than weak arguments both when the message was depressing ( $M_s = 5.41$  and  $2.96$ , respectively),  $F(1, 31) = 17.4$ ,  $p < .0002$ , and when the message was uplifting ( $M_s = 7.86$  and  $6.69$ , respectively),  $F(1, 31) = 5.2$ ,  $p < .03$ . The Hedonic Expectancy/Content  $\times$  Argument Quality interaction was not significant for sad participants,  $F(1, 113) = 2.69$ ,  $p > .10$ . That is, for sad people, the hedonic qualities of the message had little impact on message processing, and the trend in processing was actually toward processing counterattitudinal information more than proattitudinal information (see Cacioppo & Petty, 1979; Worth & Mackie, 1987, for the same effect with people in neutral moods). Thus, these data are consistent with the hedonic contingency mood management view of mood and message processing.

Moreover, when one organizes the current results in terms of enhancement versus reduction of message processing in a happy mood, one finds that the hedonic contingency view appears capable of organizing the past literature on mood and

<sup>9</sup> There were also effects of Argument Quality and a Mood  $\times$  Hedonic Expectancy and Content  $\times$  Argument Quality interaction ( $p_s < .0001$ ). As one might expect, the Argument Quality effect showed that hedonic content was viewed more positively when the message contained strong rather than weak arguments. The three-way interaction showed that the argument quality effect on perceptions of hedonic content only took place when happy people encountered a proattitudinal uplifting message or sad people encountered a counterattitudinal depressing message. When the argument quality effect on perceptions of hedonic content was not present, the counterattitudinal depressing and proattitudinal uplifting messages were rated as universally negative and positive, respectively.

message processing. That is, reduction of processing in happy as opposed to sad moods occurs when the hedonic qualities of the message are negative. That is, a Mood  $\times$  Argument Quality interaction is obtained for the depressing message (see Figure 2),  $F(1, 57) = 5.29, p < .03$ , that conceptually replicates past positive-mood processing deficits (e.g., Bless et al., 1990; Kuykendall & Keating, 1990; Mackie & Worth, 1989). Also consistent with the hedonic contingency analysis, enhancement of processing in happy as opposed to sad moods occurs when the hedonic qualities of the message are positive. That is, a Mood  $\times$  Argument Quality interaction is obtained for the uplifting message (see Figure 2),  $F(1, 56) = 6.17, p < .02$ , that replicates the positive-mood processing enhancement found in Experiment 1 when a proattitudinal message was used.

*Cognitive responses.* Cognitive responses were coded by two judges in the same manner as in Experiment 1. The judges agreed on classifications on over 82% of the thoughts, and disagreements were resolved by discussion. The same index of favorability of message-related thoughts was formed. On this index, there was a main effect of argument quality,  $F(1, 113) = 28.97, p < .0001$ . That is, participants' thoughts were more favorable toward the advocacy after receiving strong arguments ( $M = 0.12$ ) than after receiving weak arguments ( $M = -0.27$ ). In addition, there was a main effect of hedonic expectancy and content such that uplifting versions of the same message elicited more favorable thoughts ( $M = 0.09$ ) than depressing versions ( $M = -0.24$ ),  $F(1, 113) = 20.85, p < .0001$ . The hypothesized three-way interaction among mood, hedonic expectancy and content, and argument quality was also significant,  $F(1, 113) = 6.25, p < .01$ . Happy people generated more favorable thoughts in response to strong than weak arguments to a greater extent when the message was uplifting ( $M_s = 0.50$  and  $-0.25$ , respectively) than when the message was depressing ( $M_s = -0.04$  and  $-0.30$ , respectively). This two-way Hedonic Expectancy and Content  $\times$  Argument Quality interaction was significant for happy participants,  $F(1, 113) = 4.63, p < .04$ . In contrast, sad people generated more favorable thoughts in response to strong than weak arguments to the same extent regardless of whether the message was depressing ( $M_s = -0.12$  and  $-0.51$ , respectively) or uplifting ( $M_s = 0.12$  and  $-0.03$ , respectively),  $F(1, 113) = 1.35, p > .20$ , for the Hedonic Expectancy and Content  $\times$  Argument Quality interaction. That is, consistent with the hedonic contingency view, the hedonic qualities of processing the message had little impact on the relationship between argument quality and thoughts for sad people but had a marked impact for happy people (with happy people producing thoughts more consistent with argument quality to the extent that processing was uplifting).

When one organizes the cognitive response results in terms of happy-mood enhancement versus reduction of message processing, one finds a replication of the thought effects found in Experiment 1 (when a proattitudinal message was used). That is, a Mood  $\times$  Argument Quality interaction,  $F(1, 113) = 8.53, p < .005$ , revealed that when the message was uplifting, the thoughts of people in a positive mood were more responsive to argument quality than were the thoughts of people in a sad mood. Reduction of message processing for positive mood participants exposed to the depressing message was not significant in the thought data ( $F < 1$ ). However, correlational evidence provided some support for positive mood disruption of message

processing when the message was mood threatening. As predicted by the hedonic contingency analysis, the correlation between favorability of cognitive responses and favorability of attitudes was significantly higher for happy people who received the uplifting ( $r = .82$ ) rather than the depressing message ( $r = .32$ ; using Fisher's  $r$ -to- $z$  transformation,  $Z = 3.14, p < .002$ ). Also as anticipated by the hedonic contingency view, there was little difference in thought-attitude correlations for sad people who received the uplifting ( $r = .43$ ) versus depressing ( $r = .66$ ) messages ( $Z = 1.22, p > .20$ ). Also as expected, when organized around positive-mood enhancement versus disruption, happy people showed a higher thought-attitude correlation than sad people ( $Z = 2.53, p < .01$ ) for uplifting messages but tended to show a lower thought-attitude correlation than sad people ( $Z = 1.68, p < .09$ ) for depressing messages.<sup>10</sup>

### Discussion

Experiment 2 provided support for the hedonic contingency mood management view of mood effects on message processing. That is, the amount of scrutiny the persuasive message received was more affected by the hedonic consequences of that scrutiny for people in happy than in sad moods. In addition, significant enhancement of message processing in happy as compared with sad states (when the hedonic qualities of the message were positive) and significant reduction of processing in happy as compared with sad states (when the hedonic qualities of the message were negative) were demonstrated within the same experiment. These processing differences were found even though the same strong versus weak arguments were used to support the uplifting versus depressing advocacy. Thus, the current studies provide consistent support for differential mood management in happy as opposed to neutral and sad moods. In addition, because past studies obtaining positive-mood processing deficits have used counterattitudinal, potentially depressing messages, the hedonic contingency view appears capable of organizing the existing mood and processing literature. These data provide a challenge to cognitive capacity and feelings-as-information views as general explanations of the mood and processing literature because both views predict that mood-based differences in processing will be such that happy people process less than people in neutral or negative states.<sup>11</sup>

<sup>10</sup> Ancillary analyses of the attitude and cognitive response measures provided evidence that mood was the operative factor in the observed effects. That is, a simultaneous regression that added terms representing mood check for the article mood manipulation, the interaction between the mood check and argument quality, and the three-way interaction of mood check, argument quality, and hedonic expectancy and content to the original ANOVA showed that including the mood check factors drastically reduced the significance of the key three-way interactions of mood manipulation, argument quality, and hedonic expectancy and content for both the cognitive response measure ( $p > .39$ , whereas  $p < .01$  in the original ANOVA) and the attitude measure ( $p > .08$ , whereas  $p < .001$  in the original ANOVA).

<sup>11</sup> As noted by a reviewer, in Experiment 1, neutral people showed little evidence of processing the proattitudinal message; yet, sad participants in Experiment 2 were more persuaded by strong than weak arguments when they encountered a proattitudinal message. Of course, the two message topics and formats differed greatly. For example, the message in Experiment 1 might have been more difficult to process because it was audiotaped (i.e., externally paced), whereas the message in Experiment 2 was written (i.e., self-paced; consistent with research by



Of course, we do not view the hedonic contingency effects as likely to occur in all instances. Other goals could certainly take precedence over hedonic considerations for some people or situations. For example, within the elaboration likelihood model (Petty & Cacioppo, 1986) that guides our persuasion research, effects of variables on the amount of message scrutiny should only occur to the extent that background levels of elaboration are not already (a) so high that everyone scrutinizes message content at maximal levels (e.g., when message recipients are high in need for cognition, Wegener, Petty, & Klein, 1994, or when people encounter a message on an especially important or consequential topic, Petty et al., 1993) or (b) so low that no one scrutinizes message content (e.g., when message recipients are distracted, Petty et al., 1976). Thus, hedonic contingency effects on message scrutiny should also be most likely when the background level of elaboration is relatively moderate rather than extremely high or low (for an extended discussion see Wegener & Petty, in press).

### *Current Status of the Alternatives*

*Cognitive capacity and feelings as information.* Given the present results, it appears that the hedonic contingency view is more capable of organizing the effects of mood on message processing than the cognitive capacity and feelings-as-information approaches. Even in the literature existing before the current experiments, the two prominent frameworks each had some set of results that were problematic. For example, findings of processing differences between happy and neutral (or sad) moods even when messages were self-paced (e.g., Kuykendall & Keating, 1990) are difficult to reconcile with a cognitive capacity view that predicts equal processing when time to process the message is unlimited (Mackie & Worth, 1989). Also, finding no differences in processing between sad and neutral states (e.g., Kuykendall & Keating, 1990) is difficult to reconcile with the feelings-as-information view, which holds that increases in message processing are due to negative states signaling problems

that must be addressed to a greater extent than neutral or positive states (Schwarz, 1990). To the extent that these findings are compatible with the hedonic contingency view, it appears to have additional advantages over the currently dominant positions.

This is not to say that processes hypothesized by the cognitive capacity or feelings-as-information views never occur. It is possible that, under at least some circumstances, positive mood might decrease cognitive and attentional capacity or inform individuals that the environment is safe. One might even suggest that informational qualities of mood allow happy people to pursue mood management (because of a safe environment) more than sad people (because of presumed problems that need attention). Thus, effects on message processing due to differential mood management across affective states are not necessarily incompatible with the feelings-as-information framework, although they are not predicted by it. One might even suggest that combining the mood-as-information view with the hedonic contingency framework would allow prediction of the enhancement of processing in happy moods with uplifting messages as well as a possible enhancement of processing in a sad mood when a message is depressing (although support for such an increase in processing is not strong in the current data—see discussion below—and it has not been demonstrated that sad people would show this effect to a greater extent than neutral people). It might also be that mood management motives simply overwhelm cognitive capacity or mood-as-information processes under certain conditions. These are issues to be resolved in future research. Given the current results and conceptualization, however, one need not invoke cognitive capacity or mood-as-information processes to organize the existing mood and processing literature.

It should also be noted, however, that perspectives not previously brought to bear on the mood and persuasion literature might prove relevant to the present findings. In the following sections, two such perspectives are discussed.

*Mood as input.* In a recent investigation, Martin, Ward, Achee, and Wyer (1993) used the feelings-as-information view as a starting point but theorized that either positive or negative moods could lead to either increased or decreased motivation to engage in effortful cognitive processes, depending on the question or stop rule that mood served to address. Martin et al. (1993) found that instructing people to work on a task until they thought it was a “good time to stop” led to greater effort from sad than happy people, but instructing people to work on the task as long as they “feel like continuing” led to greater effort from happy than sad people. Because it is not clear what question people ask themselves (if any) in persuasion settings, the applicability of this framework to the current research is not clear. As one reviewer noted, the current results might be considered consistent with this view if one were to assume that participants in Experiment 2 asked a “do I still enjoy the task?” question in the uplifting condition but a “have I done enough?” question in the depressing condition.

There are two important points to consider regarding the mood-as-input position. First, although the above questions are plausible, equally plausible stop rules make the opposite predictions within the mood-as-input view. For example, perhaps the most likely question to which participants might have applied mood as an answer is whether or not the article actually had

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Chaiken & Eagly, 1976). If topic and presentation differences were responsible for the observed processing differences (rather than differences between neutral and sad mood), then presenting the proattitudinal messages from Experiment 2 to people in a neutral mood should result in processing equal to that of the sad people in Experiment 2. Therefore, we ran a set of conditions in which the neutral mood inductions used by Wegener and Petty (1994; Experiments 1 and 2) were used within the procedure for the proattitudinal uplifting conditions of the current Experiment 2. People in a neutral mood were more persuaded by strong ( $M = 7.54$ ) than weak ( $M = 5.98$ ) arguments,  $F(1, 29) = 6.97, p < .013$ . When these data were included with happy and sad participants from the uplifting conditions of Experiment 2, the Mood  $\times$  Argument Quality interaction was significant,  $F(2, 85) = 3.13, p < .049$ . More important, when neutral participants were compared with sad participants, the effect of argument quality was the same for both groups (Mood  $\times$  Argument Quality,  $F < 1$ ). When neutral participants were compared with happy participants, however, the effect of argument quality was marginally greater in a happy mood—Mood  $\times$  Argument Quality,  $F(1, 85) = 3.54, p < .068$ . Thus, these data provided no evidence of differences in processing between neutral and sad moods but provided a pattern consistent with greater processing in happy than neutral moods when the message was uplifting (both of which are consistent with the hedonic contingency view).

the hedonic quality that the experimenter said it did (after all, verifying this quality of the article was the only task at hand in this portion of the session). Using mood as input to that assessment, happy (sad) people should have been able to verify the qualities of the uplifting (depressing) article earlier, thus leaving less reason to scrutinize all of the arguments in the body of the article. Of course, these were not the obtained results. Unfortunately, the mood-as-input perspective does not entail prediction of which questions people might ask in different situations. Therefore, at this point, a priori specification of which stop rules are used is difficult. Undoubtedly, future research will attempt to clarify such aspects of the model and will ultimately determine the extent to which this perspective constitutes a plausible account of the present data. Second, even if the above assumptions were made, the data are not strong in support of the predicted pattern. That is, if the uplifting condition institutes an "enjoy" rule and the depressing condition institutes an "enough" rule, the mood-as-input view would predict greater processing by happy people when the message is hedonically positive rather than negative and greater processing by sad people when the message is hedonically negative rather than positive. Although the processing difference was consistently found for happy people (i.e., for attitudes, cognitive responses, and thought-attitude correlations), the mood-as-input processing difference for sad people was only marginally significant for the attitude measure ( $p > .10$ ) and was not significant for either the cognitive response measure or thought-attitude correlations ( $ps > .20$ ). Thus, the mood-as-input predictions would meet with only partial success, even if one were to grant the assumptions above.

It is also possible, however, that the hedonic contingency analysis could inform the mood-as-input view regarding the questions most likely to be asked. Consistent with the hedonic contingency view, happy people might be more likely to ask themselves if they are enjoying the task than people in sad or neutral moods. Thus, if the task is perceived as pleasant, happy people would continue processing, but if the task is not perceived as pleasant, they would stop (and would show this tendency more than neutral or sad people).

*Mood congruency in processing.* One might also consider the current results as consistent with a tendency for people to process information more thoroughly that is consistent with their affective state (though support for such a tendency is rather weak in the sad mood case—see discussion above). Although most discussions of mood congruency discuss mood as making congruent material easier to process, Forgas and Bower (1987) posited that mood would also create a tendency to spend more time with mood-congruent material. Of course, the ability portion of mood congruency cannot easily account for both enhancement of processing in happy moods (when the arguments were framed as supporting an uplifting advocacy) and enhancement of processing in sad moods (when the arguments were framed as supporting a depressing advocacy) when the same arguments were used in both cases. Yet, one might predict such differences on the basis of the Forgas and Bower (1987) motivational version of mood congruency. However, such tendencies would not be inconsistent with the hedonic contingency view. That is, if sad people spend more time with sad material than happy material, but happy people do the opposite, then people in happy moods would engage in mood-elevating activities

more than people in sad moods. We do not believe that mood congruency can be considered as encompassing the hedonic contingency framework, however. In addition to the weak support of mood congruency in the present experiment, past research has failed to support a motivational view of mood congruency. For instance, if people seek out mood-congruent material, then sad people in the Wegener and Petty (1994) studies should have chosen sad activities (and more so than people in a neutral mood). Yet, in three studies, activity choices by neutral and sad participants did not differ and were on the side of preferring positive activities for both groups (and happy people chose positive activities to a greater extent than either sad or neutral participants). Thus, we prefer the hedonic contingency view of our results.

### Future Directions

Our mood management perspective and the current data suggest a variety of directions for future research. For example, there might be times when mood management strategies direct happy people to effortfully process information that is at least temporarily mood threatening. Consider a situation in which a person finds out that a negative consequence might take place but that he or she can do something to avert that occurrence. In such a case, a happy person might effortfully process information about that event to find out what can be done to make sure that the negative consequence does not take place. In effect, happy states might not only produce greater short-term mood management than neutral or sad states but might also produce greater attention to long-term mood management concerns (see Salovey, Mayer, & Rosenhan, 1991; Wegener & Petty, 1994). A number of possibilities exist depending on factors such as the negativity of thinking about the event, the perceived controllability of the event, and the negativity of the eventual outcome of the event.

It is our hope that the hedonic contingency perspective helps to motivate future research on the ways in which mood states can influence processing of persuasive communications. By introducing a perspective within which positive mood enhancement of message processing can be predicted and understood, perhaps the doors are opened for future perspectives dealing with moderators of mood effects on message processing in which the effects of positive and negative moods are conceptualized in more flexible ways.

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