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Incidental Experiences of Affective Coherence and Incoherence Influence Persuasion

Jeffrey R. Huntsinger[1]

Abstract

When affective experiences are inconsistent with activated evaluative concepts, people experience what is called *affective incoherence*; when affective experiences are consistent with activated evaluative concepts, people experience affective coherence. The present research asked whether incidental feelings of affective coherence and incoherence would regulate persuasion. Experiences of affective coherence and incoherence were predicted and found to influence the processing of persuasive messages when evoked prior to receipt of such messages (Experiments 1 and 3), and to influence the confidence with which thoughts generated by persuasive messages were held when evoked after presentation of such messages (Experiments 2 and 3). These results extend research on affective coherence and incoherence by showing that they exert a broader impact on cognitive activity than originally assumed.

Keywords

affective incoherence, persuasion, self-validation processes, mood, emotion

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Emotions are the co-occurrence of thoughts, feelings, and bodily sensations. Usually the constituent elements of emotional experience are in harmony, as when happy feelings are accompanied by happy thoughts. In such situations, people experience what may be termed *affective coherence*. At other times, however, these emotional elements are in conflict, as when happy feelings are accompanied by sad thoughts. In such situations, people experience what may be termed *affective incoherence* (Centerbar, Schnall, Clore, & Garvin, 2008). Incidental experiences of affective coherence have been found to facilitate and affective incoherence found to impair memory for presented text and the production of meaningful personal narratives (for a review, see Huntsinger & Clore, 2012). The current project expands on past research by investigating the consequences of incidental experiences of affective coherence and incoherence for persuasion.

Confidence and Persuasion

Confidence can be defined as a subjective sense that one's opinions and beliefs are correct or valid, whereas doubt is a subjective sense that such opinions and belief are incorrect or invalid (Gross, Holtz, & Miller, 1995; Petty, Briñol, Tormala, & Wegener, 2007). An assortment of psychological states has been shown to prompt feelings of confidence or doubt. These include happy mood, fluency, and feeling powerful, which boost confidence; and sad mood, disfluency, and feeling powerless, which undermine confidence (e.g., Briñol, Petty, & Barden, 2007; Briñol, Petty, Valle, Rucker, & Becerra, 2007; Tiedens & Linton, 2001; for a review, see Briñol & Petty, 2009). According to contemporary multiprocess models of persuasion (Briñol & Petty, 2009; Petty et al., 2007), confidence may have different effects on persuasion processes at different levels of elaboration or processing motivation, and whether confidence is evoked before or after receipt of a persuasive appeal.

When induced prior to reading a persuasive appeal, confidence can serve several different roles (Briñol & Petty, 2009; Petty et al., 2007). When people are unwilling or unable to process a persuasive message, for example, people may rely on their feelings of confidence as the basis for their attitudes toward the position advocated in the persuasive message. In this case, because the experience of confidence is likely positive and the experience of doubt is likely negative (Briñol, Petty, & Wheeler, 2006; Petty et al., 2007), confidence should elicit positive attitudes and doubt should elicit negative attitudes. When people are highly motivated to carefully scrutinize a persuasive message, people's feelings of confidence

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and doubt may bias the interpretation of the information presented in the message (Briñol & Petty, 2009; Petty et al., 2007). In this case, confidence should lead to more positive interpretations of presented information, and doubt should lead to more negative interpretations.

Of most relevance, when elaboration is not constrained to be high or low, confidence and doubt may influence the amount of thinking. People often consult their general level of confidence when deciding how much effort to devote to thinking about a message (Briñol, Petty, Valle, et al., 2007; Petty et al., 2007; Tiedens & Linton, 2001). When confidence is high, people trust their preexisting opinions about a message topic and therefore they see little need to apply cognitive effort and resources to process the persuasive appeal. By contrast, when doubt is high, people are wary of their preexisting opinions and therefore they engage in greater information processing as a way to reduce this uncertainty. Thus, a common finding in studies that induce feelings of confidence and doubt prior to delivery of persuasive appeals is that such feelings influence the amount of information processing (Briñol, Petty, & Barden, 2007; Briñol, Petty, Valle, et al., 2007; Tiedens & Linton, 2001).

This idea is illustrated in research examining the role of subjective experiences in persuasion. Happy people are more likely to engage in superficial processing of persuasive messages, whereas sad people are more likely to engage in systematic processing. As a result, happy people are generally equally persuaded by strong and weak arguments, and sad people are persuaded only by strong arguments (Bless, Bohner, Schwarz, & Strack, 1990; Bless, Mackie, & Schwarz, 1992; Mackie & Worth, 1989; Sinclair, Mark, & Clore, 1994; Worth & Mackie, 1987). One way to understand these effects is that happy mood is associated with confidence and sad mood is associated with doubt, and that this difference in confidence produces differences in the amount of information processing (Briñol, Petty, & Barden, 2007; Smith & Ellsworth, 1985; Tiedens & Linton, 2001).

A similar influence can be seen in research examining the impact of feelings of fluency and disfluency on persuasion. Like affective feelings of happiness and sadness, cognitive feelings of fluency and disfluency have been found to regulate processing of persuasive appeals, with fluency leading to superficial processing and disfluency leading to more systematic processing (Alter, Oppenheimer, Epley, & Eyre, 2007). One way to understand this result is that feelings of fluency are associated with confidence and certainty, and feelings of disfluency are associated with doubt and uncertainty (Alter et al., 2007; Tormala, Falces, Briñol, & Petty, 2007; Tormala, Petty, & Briñol, 2002; see Koriat & Levy-Sadot, 1999, for a review).

A second kind of influence can be seen in other research in which, rather than feelings of confidence and doubt being induced before presentation of persuasive appeals, they are induced afterward. Under these conditions, confidence and doubt may influence whether people rely on the specific thoughts that come to mind while reading the persuasive messages when reporting their attitudes (Briñol & Petty, 2009; Petty et al., 2007). Confidence should validate and doubt should invalidate accessible message-relevant thoughts. This idea is illustrated in research (Briñol, Petty, & Barden, 2007) on happy and sad moods in which participants first read persuasive messages consisting of either strong arguments or weak arguments. Participants then wrote down their thoughts about the messages, which tended to be positive for strong arguments and negative for weak arguments. Positive or negative moods were then induced and participants rated their agreement with the persuasive appeal. Positive mood enhanced confidence in thoughts about the messages so that participants were more persuaded by strong than by weak arguments. In contrast, negative mood reduced confidence in such thoughts, reversing these effects.

A similar influence can be seen in research on fluency and disfluency in which such feelings were found to influence the confidence with which participants held the thoughts they generated in favor of a persuasive appeal (Tormala et al., 2002). In this study, participants were asked to generate many or few thoughts in favor of instituting comprehensive exams for college seniors. Participants who generated few examples, and thus experienced a sense of meta-cognitive ease (i.e., fluency), reported more favorable attitudes toward the proposal than those who generated many examples, and thus experienced a sense of meta-cognitive difficulty (i.e., disfluency). More significantly, participants who listed few thoughts were more confident in their thoughts than those who listed many thoughts, and this effect of ease and difficulty on attitudes was mediated by differences in thought confidence (see also Tormala et al., 2007).

Affective Coherence and Incoherence

One way to view evaluative concepts is as hypotheses about the value of objects in the world. Principal sources of confirmatory evidence for such hypotheses are one's own affective feelings and bodily cues (Centerbar et al., 2008). Such internally generated affective cues are particularly compelling sources of evidence because they are experienced directly and, consequently, further verification of one's hypotheses are unnecessary (Strack & Neumann, 1996). When such affective experiences are inconsistent with activated evaluative concepts, people experience what is called affective incoherence; when affective experiences are consistent with activated evaluative concepts, people experience affective coherence (Centerbar et al., 2008; Clore & Schnall, 2008).

In past research, incidental experiences of affective coherence have been found to facilitate and affective incoherence found to impair memory for presented text and the production of meaningful personal narratives (for a review, see Huntsinger & Clore, 2012). The present research asked whether incidental experiences of affective coherence and incoherence created outside of the persuasion context carry

over to influence persuasion processes. The basic idea explored here is that affective coherence and incoherence will influence persuasion processes because they are linked to feelings of confidence or doubt.

There are several reasons to suspect that experiences of affective coherence and incoherence should be associated with feelings of confidence and doubt. Affective coherence and incoherence, for example, may directly generate feelings of confidence or doubt. Under this idea, because affective coherence signals a benign epistemic environment, it may directly generate feelings of confidence in existing or newly acquired knowledge and accessible mental content. By contrast, because affective incoherence signals a problematic epistemic environment, it may directly produce feelings of doubt in such knowledge and mental content (Centerbar et al., 2008; Huntsinger & Clore, 2012).

Affective coherence and incoherence may also indirectly influence confidence because they are associated with shifts in feelings of fluency. According to this possibility affective incoherence produces a sense of epistemic difficulty or disfluency and affective coherence generates a sense of epistemic ease or fluency (Huntsinger, in press; Huntsinger & Clore, 2012). Consistent with this possibility, as in the case of feelings of fluency and disfluency resulting from other sources (Oppenheimer, 2008; Winkielman, Schwarz, Fazendeiro, & Reber, 2003), affective coherence is associated with increases in positive affect and affective incoherence is associated with decreases in positive affect (Centerbar et al., 2008; Huntsinger, in press). Thus, just as feelings of fluency serve as a marker of the ease or difficulty of perceptual and conceptual activity (Oppenheimer, 2008; Winkielman et al., 2003), they may also serve as a marker of the ease or difficulty of ongoing epistemic activity.

Alternatively, or perhaps additionally, experiences of affective coherence are likely pleasant and experiences of affective incoherence are likely unpleasant. These pleasant and unpleasant feelings may also influence information processing and thought confidence (e.g., Briñol, Petty, & Barden, 2007; Huntsinger, in press; Huntsinger & Clore, 2012). Likewise, it is also conceivable that affective incoherence produces feelings of confusion or surprise. Such feelings would also be expected to lead to increased information processing and, if experienced as aversive, this negativity could be misattributed to people's thoughts in the form of decreased thought confidence. Affective coherence could elicit feelings of clarity or calm. Such feelings may also lead to decreased information processing and, if experienced as pleasant, such feelings could be misattributed to people's thoughts in the form of increased confidence.

These explanations are not mutually exclusive, and demonstrating that any one of them is the reason why affective coherence and incoherence produce shifts in confidence does not necessarily rule out the others. Indeed, given that most psychological phenomena are multiply determined, each explanation likely captures part of the psychological picture. For the present purposes, the important point here is that these explanations all converge on the same idea. Specifically, affective coherence should be associated with confidence and affective incoherence should be associated with doubt.

Affective Coherence/Incoherence and Persuasion

Like other subjective experiences linked to confidence and doubt, affective coherence and incoherence should impact persuasion in different ways depending on whether elaboration is high, low, or somewhere in between, and when they are evoked during a persuasive episode (Briñol & Petty, 2009; Petty et al., 2007). When induced prior to presentation of a persuasive appeal and elaboration is not constrained to be high or low, for example, affective coherence and incoherence should regulate how people process persuasive messages. In this case, because affective coherence is associated with confidence, this should lead to superficial processing, and because affective incoherence is associated with doubt, this should lead to systematic processing. As a result, people experiencing affective coherence should be relatively immune to the effects of argument quality, whereas those experiencing affective incoherence should be attuned to argument quality.

When induced after receipt of a persuasive appeal, however, affective coherence and incoherence should now shape the confidence with which thoughts spontaneously generated by persuasive messages are held. In this case, affective coherence should validate and affective incoherence should invalidate any message-relevant thoughts. As a result, the attitudes of people experiencing affective coherence should be more influenced by strong than weak persuasive appeals, whereas the attitudes of those experiencing affective incoherence should be relatively immune to differences in argument quality. These hypotheses were put to empirical scrutiny in three experiments.

Overview of Experiments

In a first experiment, affective coherence or incoherence was induced prior to participants reading persuasive messages advocating implementation of comprehensive exams for graduating seniors. The messages contained either strong or weak arguments in favor of comprehensive exams. Affective coherence and incoherence in this situation should lead to differences in how participants process the persuasive appeals. Specifically, affective coherence should lead to superficial processing, whereas affective incoherence should lead to more careful processing. Thus, participants experiencing affective coherence were predicted to be equally persuaded by strong and weak appeals, and participants experiencing affective incoherence were predicted to be more persuaded by strong than weak appeals.

In a second experiment, affective coherence was induced after participants read persuasive appeals containing either strong or weak arguments, but before they reported their attitudes toward comprehensive exams. Thus, rather than directing the amount of information processing, in this situation, affective coherence and incoherence should validate or invalidate the particular thoughts that came to mind while reading the persuasive messages. Specifically, affective coherence should lead participants to be more persuaded by strong versus weak persuasive appeals, whereas affective incoherence should lead to the opposite pattern of persuasion. In this experiment to provide evidence for the role of affective coherence and incoherence in regulating thought confidence, participants in this experiment were also asked about their confidence in the thoughts that came to mind reading the persuasive messages. Affective coherence was expected to lead to greater confidence in such thoughts, and further, this difference in thought confidence was predicted to mediate the relation between affective coherence and persuasion.

A third experiment was conducted to establish the causal role of timing in producing these effects. In this experiment, timing of the affective coherence induction was experimentally manipulated such that it either occurred prior to or after receipt of a persuasive appeal containing either strong or weak arguments. When induced prior to participants reading the persuasive appeals, affective coherence should lead to differences in processing of the persuasive appeals (as in Experiment 1), and when induced after participants read the persuasive appeals, affective coherence and incoherence should validate or invalidate thoughts generated while reading the appeals (as in Experiment 2).

Experiment 1

Method

Participants. A total of 109 participants (81 women, 28 men) completed this experiment in partial fulfillment of a course requirement.

Procedure and Materials. Participants were greeted by an experimenter and seated in front of a computer in an individual cubicle. After gaining participants' consent, the experimenter informed each participant that he or she would complete several unrelated tasks on the computer. At this point, the experimenter began the computer program that would guide participants through the remainder of the experiment, and left the experiment room. The first task, participants were informed, involved pretesting one of several classical music selections for use in an experiment to be conducted later in the semester, and that they would be asked several questions about the music toward the end of the experiment. Instructions on the computer informed participants first to put on headphones and then how to begin the music. Participants then listened to either a happy or sad musical selection for approximately 10 to 15 min. After listening to the music, participants completed what they believed was a vigilance task. Specifically, participants completed a lexical decision task on the computer in which they were unknowingly primed with either happy or sad words. A comparable combination of mood induction and word priming has been successfully used in past research to create affective coherence or incoherence (Centerbar et al., 2008). Following the manipulation of affective coherence versus incoherence, participants were assigned to read a persuasive appeal arguing for instituting comprehensive exams at their university that contained either 10 strong or 10 weak arguments. Next, participants reported their attitudes toward comprehensive exams. Finally, participants completed a series of manipulation checks and demographics items.

Mood manipulation. Via headphones, participants listened to one of two musical selections shown in previous research to induce positive moods (Mozart's *Eine Kleine Nacht Musik*) and negative moods (Mahler's *Adagietto*; Centerbar et al., 2008; Huntsinger, 2011).

Priming procedure. A lexical decision task was used to subliminally prime participants with either happy or sad words (Centerbar et al., 2008). During this task (10 practice, 60 test trials), participants were instructed to respond with one key if the stimulus was a word and a different key if the stimulus was a nonword. Prior to each word or nonword appearing on the screen, either a happy word (e.g., smile, happy) or a sad word (e.g., sad, glum) appeared on the screen for 40 milliseconds, with 12 words included in each category. The target words that participants consciously viewed were always unrelated to happiness or sadness. A mask (XXXXX) preceded and followed presentation of each prime word. The forward and backward masks remained on the screen for 150 and 15 milliseconds, respectively. Words or nonwords remained on the screen until participants provided the correct answer. Incorrect answers elicited a red error message.

Argument quality. Participants were randomly assigned to read 10 strong or 10 weak arguments, each argument presented one at a time. The nature of the persuasive message centered on the issue of mandatory comprehensive exams for graduating college seniors, taken from previous research (Petty & Cacioppo, 1986). The arguments were tailored somewhat for this sample of participants to ensure believability and relevance.

Attitudes. Following past research (Briñol, Petty, & Barden, 2007), participants' attitudes toward comprehensive exams were measured via four 7-point semantic differentials (*good–bad, against–favor, wise–foolish, beneficial–harmful*). These four questions were averaged to form an overall

attitude index with higher values indicating a more favorable attitude toward comprehensive exams (α = .52).

Manipulation checks. To establish the efficacy of the mood manipulation, participants were asked six questions designed to assess their mood while listening to the musical selections (e.g., "How happy [sad, positive, negative, good, bad] did you feel while listening to the musical selection?" 1 = *not at all happy*, 7 = *very happy*). After appropriate rescoring, the six questions were averaged to form a composite measure of positive mood (α = .85).

Results and Discussion

Manipulation Checks. The measure of positive mood was submitted to a 2 (mood: happy vs. sad) × 2 (prime: happy vs. sad) × 2 (arguments: strong vs. weak) ANOVA. This analysis revealed a significant main effect of mood, $F(1, 101) = 4.98$, $p < .05$. Participants reported more positive mood while listening to the happy musical selection ($M = 5.59$, $SD = .80$) than while listening to the sad musical selection ($M = 5.20$, $SD = 1.00$). No other effects were significant, Fs < .5, ps > .6.

Main Analysis. The effect of argument strength on attitudes toward comprehensive exams was predicted to depend on whether participants were experiencing affective coherence or affective incoherence. To test this prediction, the attitude index was submitted to a 2 (mood: happy vs. sad) × 2 (prime: happy vs. sad) × 2 (arguments: strong vs. weak) ANOVA. This analysis revealed a significant main effect of argument, $F(1, 101) = 24.63$, $p < .005$, $\eta_P^2 = .20$. Participants' attitudes toward comprehensive exams were more favorable after reading strong arguments ($M = 4.81$, $SD = 1.36$) than after reading weak arguments ($M = 3.47$, $SD = 1.31$). However, more critically, this main effect was qualified by a significant three-way interaction between mood, prime, and argument, $F(1, 101) = 6.24$, $p < .05$, $\eta_P^2 = .06$. As shown in Figure 1, participants experiencing affective coherence were equally persuaded by the strong and the weak message, whereas those experiencing affective incoherence were more persuaded by the strong message than the weak message. More specifically, happy participants primed with happy thoughts and sad participants primed with sad thoughts were equally persuaded by the strong and the weak message, $t(101) = .68$, $p = .50$ and $t(101) = 1.68$, $p = .096$, respectively. Happy participants primed with sad thoughts and sad participants primed with happy thoughts, on the other hand, were more persuaded by the strong message than the weak message, $t(101) = 4.05$, $p < .005$ and $t(101) = 3.75$, $p < .005$, respectively. No other effects were significant, Fs < 2.5, ps > .10.

Consistent with predictions, the experience of affective coherence and incoherence regulated the processing of the persuasive appeals. The experience of affective coherence produced superficial processing of the appeals, whereas the experience of affective incoherence produced detailed processing of the appeals.

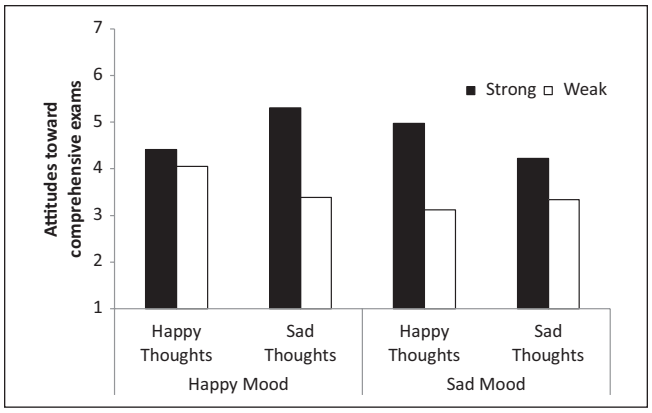

Figure 1. Experiment 1: Attitudes toward comprehensive exams as a consequence of mood, primed concepts, and argument quality. Note: Higher values indicate more positive attitudes.

Experiment 2

In this experiment, the manipulation of affective coherence and incoherence took place after participants read a strong or weak message and listed their thoughts about it, but before they reported their attitudes. Now, rather than regulating the amount of information processing, affective coherence and incoherence were predicted to adjust participants' confidence in the favorable or unfavorable thoughts that they generated in response to the persuasive message. As previous research amply demonstrates (Petty & Cacioppo, 1986), the strong arguments used in this experiment produce mostly positive thoughts, whereas the weak arguments produce mostly negative thoughts. The experience of affective coherence was predicted to validate such thoughts so that participants would be more persuaded by strong than by weak arguments. In contrast, the experience of affective incoherence was predicted to invalidate such thoughts so that participants would be equally persuaded by strong and weak arguments.

In addition to investigating the moderating role of affective coherence and incoherence in persuasion processes, this experiment also examined the potential mediating role of thought confidence in producing these effects. That is, following past research (Briñol, Petty, & Barden, 2007), after the manipulation of affective coherence or incoherence and before measuring participants' attitudes toward comprehensive exams, participants were asked to rate their overall confidence in the thoughts they generated earlier in the experiment. Participants experiencing affective coherence were predicted to be more confident in their thoughts than those experiencing affective incoherence. This difference in confidence was predicted to mediate the effect of affective coherence and incoherence on attitudes.

Method

Participants. A total of 206 participants (139 women, 67 men) completed this experiment in partial fulfillment of a course requirement.

Procedure and Materials. The procedure for this experiment was identical to that of Experiment 1, with only minor changes. First, after reading the strong or weak messages, participants were asked to list up to 10 thoughts that popped into their heads as they read the message. Second, the manipulation of affective coherence versus incoherence took place after participants read the persuasive appeals and listed their thoughts about it, but before they reported their attitudes. Third, participants were asked to indicate their confidence in the thoughts they generated in response to the message after experiencing the manipulation of affective coherence or incoherence. Finally, participants reported their attitudes toward implementation of comprehensive exams. The manipulation of affective coherence and incoherence, the manipulation of argument quality, the measure of attitudes ($\alpha = .84$), and the mood manipulation check ($\alpha = .90$) were identical to those used in Experiment 1.

Thought confidence. Following past research (Briñol, Petty, & Barden, 2007), to measure participants' confidence in their thoughts, they were asked to think back to the thoughts they listed and to indicate their general confidence in those thoughts. This measure, a 9-point semantic differential, was anchored at 1 = *not at all confident* and 9 = *extremely confident*.

Results and Discussion

Manipulation Checks. The measure of positive mood was submitted to a 2 (mood: happy vs. sad) × 2 (prime: happy vs. sad) × 2 (arguments: strong vs. weak) ANOVA. This analysis revealed only a significant main effect of mood, $F(1, 198) = 34.11$, $p < .005$. Participants reported more positive mood while listening to the happy musical selection ($M = 5.83$, $SD = .96$) than while listening to the sad musical selection ($M = 4.98$, $SD = 1.13$). No other effects were significant, Fs < 3.1, ps $> .09$.

Main Analysis. Predictions were evaluated by submitting the attitude index to a 2 (mood: happy vs. sad) × 2 (prime: happy vs. sad) × 2 (arguments: strong vs. weak) ANOVA. This analysis revealed a significant main effect of argument quality, $F(1, 198) = 22.14$, $p < .005$, $\eta_p^2 = .10$. Participants' attitudes toward comprehensive exams were more favorable after reading strong arguments ($M = 5.08$, $SD = 1.17$) than after reading weak arguments ($M = 4.21$, $SD = 1.34$). However, more critically, this main effect was qualified by a significant three-way interaction between mood, prime, and argument, $F(1, 198) = 16.30$, $p < .005$, $\eta_p^2 = .076$. As shown in Figure 2, participants experiencing affective coherence were more persuaded by the strong message than the weak message, whereas those experiencing affective incoherence were equally persuaded by the strong and the weak message. More specifically, happy participants primed with happy thoughts and sad participants primed with sad thoughts were more persuaded by the strong message than the weak message, $t(198) = 5.19$, $p < .005$ and $t(198) = 3.95$, $p < .005$, respectively. Happy participants primed with sad thoughts and sad participants primed with happy thoughts, on the other hand, were equally persuaded by the strong message and the weak message, $t(198) = .87$, $p = .38$ and $t(198) = .24$, $p = .81$, respectively. No other effects were significant, Fs < 1.5, ps $> .20$.

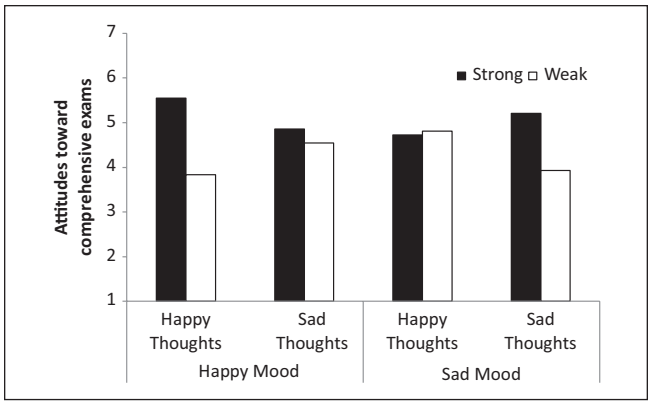

Figure 2. Experiment 2: Attitudes toward comprehensive exams as a consequence of mood, primed concepts, and argument quality. Note: Higher values indicate more positive attitudes.

Thought Confidence. The item measuring thought confidence was submitted to the same ANOVA as directly above. This analysis revealed only the predicted interaction between mood and prime, $F(1, 198) = 9.02$, $p < .01$, $\eta_p^2 = .04$. Happy participants primed with happy thoughts reported more confidence in their thoughts ($M = 6.48$, $SD = 1.74$) than happy participants primed with sad thoughts ($M = 5.63$, $SD = 1.90$), $t(198) = 2.27$, $p < .05$. Conversely, sad participants primed with sad thoughts reported more confidence in their thoughts ($M = 6.28$, $SD = 1.80$) than sad participants primed with happy thoughts ($M = 5.55$, $SD = 2.07$), $t(198) = 1.97$, $p = .05$. No other effects, including the main effect of mood, were significant, Fs $< .5$, ps $> .5$.

Mediation Analysis. Thought confidence was predicted to mediate the effects of affective coherence and incoherence on attitudes. This prediction was evaluated via procedures outlined by Baron and Kenny (1986). To simplify analyses, the mood and prime variables were recoded into a new variable, such that affectively coherent combinations of these variables were assigned 1, and affectively incoherent combinations were assigned −1. In addition, the attitude measure for participants in the weak argument group was

recoded so that it would have the same direction of effect as the strong argument group. Affective coherence significantly predicted attitudes, the outcome (B = .28 [SE = .10], p < .005), and thought confidence, the mediator (B = .39 [SE = .13], p < .005). When affective coherence and thought confidence were included in the same regression equation as predictors of attitudes, thought confidence predicted attitudes (B = .10 [SE = .05], p = .051), and the effect of affective coherence on attitudes was reduced (B = .24 [SE = .098], p = .014). This reduction in the direct effect of affective coherence on attitudes, however, was marginally significant, z = 1.66, p = .096.

Consistent with predictions, the experience of affective coherence and affective incoherence served to validate or invalidate the thoughts participants generated while reading the persuasive appeals. As a result, the attitudes of participants experiencing affective coherence were more influenced by strong than weak persuasive messages, and the attitudes of those experiencing affective incoherence were unaffected by argument quality. Furthermore, results revealed that this effect was partially mediated by changes in thought confidence.

Experiment 3

In this experiment, the timing of the affective coherence induction was manipulated within the same experimental setting to demonstrate its causal role in producing the effects uncovered in Experiments 1 and 2. Because there were few systematic differences in the effectiveness of the two instantiations of affective coherence in the previous two studies, the manipulation of affective coherence was simplified. Specifically, participants in this experiment always listened to a happy musical selection and then were either primed with happy or sad words. This induction occurred either before or after participants read the same strong or weak persuasive arguments used in the previous two experiments. Affective coherence and incoherence were expected to influence processing of the persuasive appeals when induced prior to participants reading the persuasive appeals, but to validate or invalidate thoughts generated while reading the persuasive appeals when induced after reading the appeals.

Method

Participants. A total of 213 participants (146 women, 64 men, and 3 unspecified) completed this experiment in partial fulfillment of a course requirement.

Procedure and Materials. The procedure for this experiment was identical to that of Experiments 1 and 2, with only minor changes. First, to manipulate affective coherence and incoherence all participants listened to happy music and were then primed with either happy or sad words. Second, participants were randomly assigned to experience the manipulation of affective coherence either before they read strong or weak messages, or after participants read the persuasive appeals and listed their thoughts about it, but before they reported their attitudes. The manipulation of argument quality, the measure of attitudes (α = .86), and the mood manipulation check (α = .87) were identical to those used in Experiments 1 and 2.

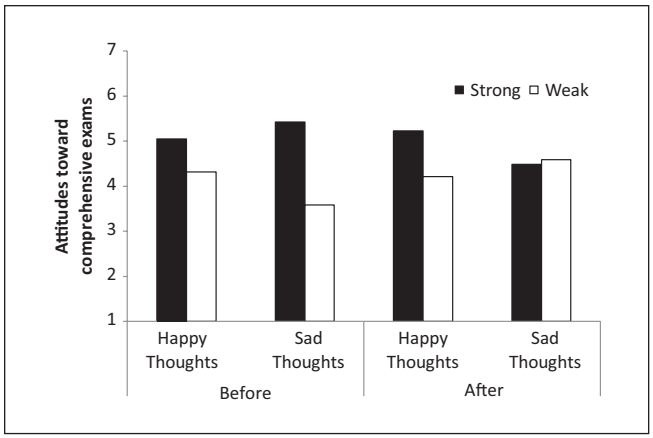

Figure 3. Experiment 3: Attitudes toward comprehensive exams as a consequence of timing, primed concepts, and argument quality. Note: Higher values indicate more positive attitudes.

Results and Discussion

Manipulation Checks. The measure of positive mood was submitted to a 2 (timing: before vs. after) × 2 (prime: happy vs. sad) × 2 (arguments: strong vs. weak) ANOVA. This analysis revealed no significant results, all Fs < 2.8, ps > .10. Participants reported a similarly positive mood across all conditions (M = 5.90, SD = .93).

Main Analysis. Predictions were evaluated by submitting the attitude index to a 2 (timing: before vs. after) × 2 (prime: happy vs. sad) × 2 (arguments: strong vs. weak) ANOVA. This analysis revealed a significant main effect of argument quality, $F(1, 205) = 23.94$, $p < .005$, $\eta_P^2 = .11$. Participants' attitudes toward comprehensive exams were more favorable after reading strong arguments (M = 5.04, SD = 1.23) than after reading weak arguments (M = 4.16, SD = 1.41). However, more critically, this main effect was qualified by a significant three-way interaction between timing, prime, and argument, $F(1, 205) = 9.78$, $p < .005$, $\eta_P^2 = .046$ (see Figure 3).

When induced prior to reading the persuasive appeals, the effect of argument quality was more pronounced among participants experiencing affective incoherence than those experiencing affective coherence. More specifically, participants primed with sad thoughts were more persuaded by the strong and the weak message, $t(205) = 2.90$, $p < .005$, whereas this effect was reduced for participants primed with happy thoughts, $t(205) = 1.98$, $p = .05$. When induced after reading the persuasive appeal, however, the effect of argument quality was more pronounced among participants experiencing affective coherence than those experiencing affective

incoherence. More specifically, participants primed with happy thoughts were more persuaded by the strong message than the weak message, $t(205) = 5.27$, $p < .005$, whereas the attitudes of those primed with sad thoughts were immune to argument quality, $t(205) = .29$, $p = .77$, respectively. Further confirming these results, when examined separately, the underlying two-way interaction between priming and argument was significant when affective coherence was induced before reading the persuasive appeals, $F(1, 100) = 4.56$, $p < .05$, $\eta_p^2 = .04$, and after reading such appeals, $F(1, 105) = 5.24$, $p < .05$, $\eta_p^2 = .048$. This analysis also produced a theoretically meaningless Timing × Argument interaction, $F(1, 205) = 6.90$, $p < .01$, $\eta_p^2 = .03$. No other effects were significant, Fs < 1.5, ps > .20.

This experiment confirms the causal role of timing in determining how affective coherence and incoherence influence persuasion. When induced before participants read persuasive appeals, affective coherence and incoherence led to differences in information processing, whereas when induced after participants read the appeals, affective coherence and incoherence led to differences in confidence in thoughts generated while reading the appeals.

General Discussion

Three experiments revealed that, depending on when they were induced, the experience of affective coherence and incoherence adjusted the processing of persuasive messages, or the confidence with which thoughts generated by the persuasive messages were held. In Experiment 1, when affective coherence and incoherence were induced prior to receipt of strong or weak persuasive messages, they regulated the processing of such messages. Specifically, the experience of affective coherence led to superficial processing of the appeals, whereas the experience of affective incoherence led to detailed processing of the appeals. As a result, people experiencing affective coherence were relatively immune to the effects of argument quality, whereas those experiencing affective incoherence were attuned to argument quality.

In Experiment 2, when affective coherence and incoherence were induced after receipt of strong or weak persuasive messages, but before participants reported their attitudes, they regulated participants' confidence in the thoughts generated while reading the persuasive messages. Specifically, the experience of affective coherence validated the thoughts participants generated while reading the persuasive appeals, and the experience of affective coherence invalidated such thoughts. As a result, the attitudes of participants experiencing affective coherence were attuned to argument quality, whereas those experiencing affective incoherence were relatively resistant to the effects of argument quality. Results of Experiment 2 also provided evidence for the role of thought confidence in producing these effects. Finally, Experiment 3 established the causal role of timing in producing these effects.

Matching Effects in Persuasion

There is a long tradition in the persuasion literature of exploring the role of matching or tailoring effects in persuasion (for a review, see Petty, Wheeler, & Bizer, 2000). Traditionally, such matching effects involved creating a message that matched (or mismatched) some aspect of the recipient. For example, an affective appeal might be presented to a person whose attitudes are primarily based on emotion (e.g., Fabrigar & Petty, 1999), an appeal framed in terms of gains may be presented to a person who is primarily promotion focused (Lee & Aaker, 2004), or an image appeal may be presented to a person high in self-monitoring (Snyder & DeBono, 1985). In this research, when message characteristics matched recipient characteristics this generally led to more positive attitudes to the topic of the persuasive appeal than when there was a mismatch between message and recipient characteristics.

A similar influence of matching can be seen in research examining the impact on persuasion processes of matches between internal aspects of an individual. For example, discrepancies between implicit and explicit self-concepts have been found to influence processing of persuasive messages, with a match between implicit and explicit self-concepts producing relatively superficial processing of persuasive appeals and a mismatch producing relatively systematic processing of the appeal (Briñol et al., 2006). The influence of matching can also be seen in research on incidental experiences of regulatory fit and nonfit (Koenig, Cesario, Molden, Kosloff, & Higgins, 2009). In this research, a match between dispositional and momentary tendencies to pursue a particular goal via an eager (i.e., promotion focused) or vigilant (i.e., prevention focused) strategy produced differences in information processing. Specifically, feelings of regulatory fit led to relatively superficial processing of persuasive appeals, whereas feelings of regulatory nonfit led to relatively systematic processing. In other research (Cesario, Grant, & Higgins, 2004), feelings of regulatory fit and nonfit were found to influence the extent to which positive and negative thoughts generated while reading a persuasive appeal influenced attitudes. Specifically, the experience of regulatory fit encouraged reliance on accessible thoughts when reporting attitudes toward the topic of the persuasive message, and the experience of regulatory fit discouraged reliance on thoughts when reporting attitudes toward the message topic.

One way to understand the influence of matching on persuasion is that the various forms of matching and mismatching produce feelings of confidence or feelings of doubt (Briñol & Petty, 2009; Briñol, Tormala, & Petty, 2013). Like other variables linked to differences in confidence, then, the influence of matching on attitude change should depend on the particular level of elaboration present within a persuasive episode and whether the match is induced before or after receipt of a persuasive appeal. This is precisely what past research reveals (for reviews, see Briñol & Petty, 2009; Briñol et al., 2013).

The current work nicely complements and extends earlier research on matching effects and persuasion. The experiments reported here revealed that a previously unexamined and quite different form of matching, in this case, matches or mismatches between a person's emotional feelings and emotional thoughts, also influences persuasion processes. Furthermore, like other forms of matching, when feelings and thoughts are affectively coherent this elicits confidence, and when such feelings and thoughts are affectively incoherent this elicits doubt. Finally, the confidence engendered by matches between affective feelings and activated concepts may regulate the amount of information processing when induced before processing, and such confidence may serve to validate thoughts generated by the persuasive appeal when induced after processing.

Limitations and Alternative Explanations

A limitation of this research is the lack of a control condition in which neither affective coherence nor incoherence was induced. Such a condition, in principle, would allow one to determine whether affective coherence, affective incoherence, or both drove these results. Past research that included such a condition (e.g., Centerbar et al., 2008) revealed that affective coherence and incoherence produced results significantly different from control conditions. Although it seems reasonable to think that the same pattern would have emerged if a control condition had been included in the present studies, future research that includes such a condition is necessary to sort out this issue.

A second limitation of the present research is that the same manipulation of affective coherence was used in both studies. This leaves open the possibility that these results apply only to this method of evoking affective coherence and incoherence. This seems unlikely, however. Past research (Centerbar et al., 2008) evoked momentary affective feelings in a number of ways, including by having participants listen to happy or sad music, flex either their obicularis oculi (smile) or corrugator (frown) muscles, or engage in arm muscle flexion (approach) or extension (avoidance). Happy or sad concepts were primed via a sentence unscrambling technique or via subliminal exposure to happy or sad words. These methods of inducing affective feelings and priming valenced concepts were combined in various ways to create feelings of affective coherence and incoherence, and each had an identical influence on recall of presented text and production of personal narratives. That said, future research is required to establish that these results generalize to other instantiations of affective coherence and incoherence.

Do these results reflect the cognitive consequences of attitude ambivalence? Although affective incoherence bears certain superficial similarities to attitude ambivalence, the two differ in important ways. Affective incoherence reflects a conflict between embodied affective feelings and evaluative concepts without reference to a particular object. Attitude ambivalence reflects a conflict between positive and negative beliefs and/or feelings concerning a particular attitude object (Kaplan, 1972; Thompson, Zanna, & Griffin, 1995). Furthermore, attitude ambivalence has been shown to regulate processing only of information relevant to the source of ambivalence (Jonas, Diehl, & Brömer, 1997; Maio, Bell, & Esses, 1996; van Harreveld, van der Pligt, & de Liver, 2009).

As the content of the persuasive messages used in this research had no obvious relevance to the source of affective incoherence, ambivalence seems an unlikely explanation for these effects. Nevertheless, and despite their conceptual differences, it is still possible that affective coherence may reflect a form of ambivalence or subjective conflict. The psychological discomfort produced by such a state may have increased processing to reduce the discomfort or undermined confidence if the feelings of discomfort had been misattributed to the thoughts generated while reading the persuasive message. Future research is necessary to properly resolve this issue.

Future Research

Future research may examine whether experiences of affective coherence and incoherence regulate persuasion in ways other than those demonstrated here. According to contemporary multiprocess models of persuasion (Briñol & Petty, 2009; Clore & Schnall, 2005; Eagly & Chaiken, 1993; Petty & Wegener, 1998), incidental subjective experiences associated with feelings of confidence will have different effects on persuasion processes at different levels of elaboration or processing motivation. It seems reasonable to assume that incidental feelings of affective coherence and incoherence, like other subjective experiences linked to confidence, will have different effects on persuasion processes at different levels of elaboration.

When processing motivation or ability is not constrained to be either high or low, as was the case in these experiments, feelings of confidence or doubt may nudge processing higher or lower. By contrast, when people are unwilling to process a persuasive message, people often rely on their current feelings of confidence or doubt as the basis for their attitudes toward the position advocated in the persuasive message (Briñol & Petty, 2009). In this case, affective coherence may generally produce positive attitudes, and affective incoherence may produce negative attitudes (Briñol & Petty, 2009; Clore & Schnall, 2005; Petty, Fabrigar, & Wegener, 2003). In addition, when people are highly motivated to carefully scrutinize a persuasive message, people's current feelings may bias the interpretation of the information presented in the message. In this case, affective coherence may lead to more positive interpretations of presented information, and affective incoherence may lead to more negative interpretations (e.g., Petty, Schumann, Richman, & Strathman, 1993). Finally, if affective coherence is experienced as pleasant, it is possible that when hedonic concerns are engaged, affective

coherence may lead to systematic processing if such a high level of processing is assumed to maintain this pleasant state (e.g., the topic of the message is uplifting; Wegener & Petty, 1994; Wegener, Petty, & Smith, 1995).

Coda

Experiences of affective coherence and incoherence were found to influence the processing of persuasive messages when evoked prior to presentation of such messages, and to influence the confidence with which thoughts evoked by persuasive messages were held when induced after receipt of such messages. Past research demonstrated that affective coherence and incoherence influenced recall of presented text and meaningful organization of autobiographical knowledge. These results indicate that affective coherence and incoherence may exert a broader influence on cognitive activity than this earlier research appeared to indicate.

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