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# AFFECTIVE INCOHERENCE REDUCES RELIANCE ON ACTIVATED STEREOTYPES

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The present research asked if experiences of affective coherence and incoherence regulate tendencies to respond based on activated stereotypes. Affective coherence occurs when affective feelings and activated affective concepts are in harmony, and affective incoherence occurs when such feelings and concepts are in conflict. This experiment shows that when the valence of accessible thoughts and participants' mood were affectively coherent, this promoted tendencies to respond based on activated stereotypes. When the valence of accessible thoughts and participants' mood were affectively incoherent, this inhibited tendencies to respond based on activated stereotypes. Further, results indicated that the influence of affective coherence and incoherence on stereotyping was driven by variation in feelings of positive affect. These results extend past research on affective coherence and incoherence by showing that such experiences not only influence the acquisition and organization of knowledge, but also the reliance on activated knowledge.

Cognition is a continuously interactive process that involves taking in sensory data and transforming such elementary information into tentative hypotheses or beliefs about the state of the world that are subject to confirmation or disconfirmation (Neisser, 1976). One way to view evaluative beliefs, then, is as hypotheses about the value of objects in the world. In many cases, principal sources of confirmatory evidence for such hypotheses are one's own affective feelings and bodily cues (Centerbar, Schnall, Clore, & Garvin, 2008; Strack & Neumann, 1996). When affective feelings validate evaluative beliefs, people experience what is called affective coherence; when affective feelings invalidate such beliefs, people experience what is called affective incoherence (Centerbar et al., 2008; Clore & Schnall, 2008).

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When affective experience fails to validate evaluative beliefs, a person is confronted with an epistemic problem, which may disturb efficient acquisition of new knowledge and the meaningful organization of old knowledge (Huntsinger & Clore, 2012). This idea is illustrated in Centerbar et al. (2008) who evoked momentary affective feelings in a number of ways, for example 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. They found that the experience of affective incoherence inhibited participants' ability to recall new knowledge, whereas affective coherence facilitated recall of new knowledge. A final study revealed that affective incoherence undermined the meaningful organization of old knowledge (Centerbar et al., 2008). Specifically, participants experiencing affective coherence constructed more complex and meaningful personal narratives than those experiencing affective incoherence.

The purpose of the present research was to extend this past research by examining whether experiences of affective coherence and incoherence regulate tendencies to respond based on activated knowledge, in particular stereotypes. Though no research to date demonstrates that affective coherence and incoherence regulate the use of activated knowledge, such a possibility seems theoretically plausible. That is, because affective incoherence signals epistemic difficulty, this should cast doubt on activated knowledge (including stereotypes) and inhibit tendencies to respond based on such knowledge. By contrast, because affective coherence signals epistemic ease, this should boost confidence in activated knowledge (including stereotypes) and facilitate tendencies to respond based on such knowledge (Huntsinger & Clore, 2012).

A mechanism driving the proposed effect of affective coherence and incoherence on stereotyping processes may be feelings of fluency and disfluency. Just as such feelings serve as a barometer of the ease or difficulty of perceptual and conceptual activity (Oppenheimer, 2008; Winkielman, Schwarz, Fazendeiro, & Reber, 2003) they also appear to serve as a barometer of epistemic activity. Specifically, as in the case of feelings of fluency and disfluency resulting from other sources, affective coherence is associated with increases in positive affect and affective incoherence is associated with decreases in positive affect (Centerbar et al., 2008).

More significantly, feelings of fluency have been found to enhance reliance on activated thoughts and feelings of disfluency to reduce reliance on such thoughts (Greifeneder & Bless, 2010; Häfner & Stapel, 2009; Huntsinger & Clore, 2012; Tormala, Falces, Briñol, & Petty, 2007; Tormala, Petty, & Briñol, 2002). In research examining ease of retrieval effects on persuasion and judgment, for example, fluency was found to enhance reliance on activated thoughts and disfluency to reduce reliance on such thoughts (Tormala et al., 2007; Tormala et al., 2002). A similar influence of fluency on the use of activated information has been found for primed trait concepts in impression formation tasks, such as the now classic Donald paradigm (Greifeneder & Bless, 2010). This research showed that when primed traits were associated with feelings of fluency, participants' impressions of a target person assimilated toward the primed traits. By contrast, when primed traits were associated with feelings of disfluency, participants' impressions of this person contrasted away from the primed traits.

Several explanations for this influence of fluency and disfluency on the use of activated thoughts have been offered. These include, for example, the idea that feelings of fluency and disfluency adjust the confidence with which activated thoughts are held (Tormala et al., 2007; Tormala et al., 2002). Another explanation is that such feelings act as a cue to the perceived usability of activated thoughts, with fluency enhancing and disfluency diminishing judged usability (Greifeneder & Bless, 2010; Häfner & Stapel, 2009). Yet another explanation is that the positive and negative feelings produced by experiences of fluency and disfluency may boost or diminish confidence in activated thoughts (Briñol, Petty, & Barden, 2007; Clore & Huntsinger, 2007).

These explanations are not mutually exclusive. Indeed, given that fluency, confidence and positive affect are often tightly correlated, and so too are disfluency, doubt and negative affect, demonstrating that any one of them is the mechanism does not rule out the others. For the present purposes, the important point here is that these explanations all converge on the same idea. Specifically, through its association with feelings of confidence or fluency or positive affect (or likely all three), the experience of affective coherence should facilitate tendencies to respond based on activated information, and through its association with feelings of doubt or disfluency or negative affect (or likely all three), the experience of affective incoherence should inhibit tendencies to respond based on such information.

## THE PRESENT RESEARCH

The purpose of the present research was to put to empirical consideration the idea that experiences of affective coherence and incoherence would regulate tendencies to respond based on activated mental content, specifically stereotypes. The experience of affective coherence was predicted to promote tendencies to respond based on activated stereotypes, and affective incoherence was predicted to inhibit such tendencies. These predictions were evaluated by examining participants' performance on the weapon-identification task (Payne, 2001). In this task, participants are briefly exposed to either a Black or White face and then must judge whether a presented object is a weapon or tool. Participants are more likely to mistakenly categorize a tool as a weapon if it follows exposure to a Black face and to make the converse error following exposure to a White face (Payne, 2001). Participants experiencing affective coherence were predicted to commit more stereotypical mistakes, such as that described above, than those experiencing affective incoherence.

Process-dissociation procedures (Jacoby, 1991; Payne, 2001) were applied to explore how affective coherence versus incoherence regulated stereotypical mistakes. Such procedures parse individuals' responses in the weapon-identification task into estimates of controlled and automatic processing. Existing research has established that the controlled estimate reflects controlled efforts to constrain processing to task demands or goal-relevant information and the automatic estimate represents the tendency to respond based on activated stereotypes (Payne & Stewart, 2007). Following past research (Greifeneder & Bless, 2010; Häfner & Stapel, 2009; Huntsinger, Sinclair, & Clore, 2009) and theory (Huntsinger & Clore, 2012), affective coherence and incoherence were predicted to adjust tendencies to respond based on activated stereotypes, rather than controlled processing.

This effect on stereotyping was further predicted to be driven by fluctuations in fluency, positive affect, or confidence (or likely all three) triggered by experiences of affective coherence and incoherence. Because past research demonstrated that affective coherence and incoherence elicit shifts in the experience of general positive affect, which is a marker of fluency (Winkielman et al., 2003), the current research focused on this as a potential mechanism. Specifically, following past research, at the end of the experiment participants were asked to indicate their experience of general positive affect during the experiment (Centerbar et al., 2008).

## METHOD

### PARTICIPANTS

One hundred and thirteen White students (84 women) from a mid-sized Midwestern university participated 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 10-15 minutes.

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. An identical combination of mood induction and word priming has been successfully used in past research to create affective coherence or incoherence (Centerbar et al., 2008). Next participants completed the weapon-identification task. As a measure of the potential mechanism behind these effects, participants then indicated their general positive affect during the experiment. Finally, they answered a series of manipulation checks and several demographic 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 non-word. Prior to each word or non-word 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 ms, 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 ms, respectively. Words or non-words remained on the screen until participants provided the correct answer. Incorrect answers elicited a red error message.

*Weapon-Identification Task.* The weapon-identification task used in this experiment was identical to past research (Payne, 2001). Participants were informed that the task measured speed and accuracy, and that they would see two pictures briefly presented on the computer screen. They were instructed to ignore the first picture, a face, and only respond to the second picture by indicating whether it was a gun or tool using one of two computer keys. Participants were instructed to respond as quickly and accurately as possible, and if they made a mistake to continue to the next trial. In both practice (24 trials) and test trials (128 trials), participants were first exposed to a prime (a White or Black face) and then a target (a tool or gun). The prime remained on the screen for 200 ms and was immediately replaced by the target. The target remained on the screen for 200 ms and was then replaced by a visual mask, which remained on the screen until participants responded.

*Manipulation Check.* On a scale from 1 *not at all* to 7 *extremely*, participants reported how happy and sad they felt while listening to the musical selection. These two questions were correlated, and thus combined into a single measure of positive feelings ($r = -.40$, $p < .005$).

*General Positive Affect.* Following past research on affective coherence (Centerbar et al., 2008), as a measure of positive affect, the anticipated mediator, participants were asked to indicate their general feelings during the experiment on six unipolar scales (e.g., "How cheerful [gloomy, delighted, distressed, relaxed, anxious] did you feel throughout the experiment?"; 1 = *not at all* and 7 = *extremely*). Because the measures of positive feelings ($\alpha = .91$) and negative feelings ($\alpha = .86$) were correlated ($r = -.66$), they were combined into a single index of general positive affect.

## RESULTS

### MANIPULATION CHECK

Submitting the mood manipulation check to a 2 (mood: happy, sad) × 2 (primed thoughts: happy, sad) between-participants analysis of variance (ANOVA) revealed a main effect of mood, $F(1, 109) = 4.36$, $p < .05$, $\eta^2 p = .038$. Participants reported feeling more positive while listening to the positive musical selection ($M = 4.77$, $SD = 1.54$) than the negative music selection ($M = 4.21$, $SD = 1.30$). No other effects were significant, $F$s < 1.1, $p$s > .3.

## ERROR RATES

Predictions were evaluated by submitting the error rate data to a 2 (mood: happy vs. sad) × 2 (prime: happy vs. sad) × 2 (race: Black vs. White) × 2 (target: weapon vs. tool) mixed-model ANOVA with the last two factors varying within participants. This analysis revealed the predicted four-way interaction, $F(1, 109) = 9.99$, $p < .005$, $\eta^2 p = .084$.[1] There was also a nonsignificant race by target interaction, $F(1, 109) = 2.50$, $p = .12$, $\eta^2 p = .02$. The qualitative pattern of this interaction was consistent with a stereotypical bias on the weapon-identification task. No other main or interactive effects approached significance, $F$s < 2, $p$s > .18.

The significant four-way interaction was decomposed by conducting separate two-way race by target ANOVAs for each of the four combinations of mood and prime. Consistent with predictions, participants experiencing affective coherence displayed a stereotypical pattern of error rate data (top two panels of Figure 1). Specifically, happy participants primed with happy thoughts were more likely to mistakenly categorize a tool as a weapon following exposure to a Black face, and conversely to mistakenly categorize a weapon as tool following exposure to a White face, $F(1, 28) = 10.97$, $p < .005$, $\eta^2 p = .28$. An identical, albeit weaker, pattern of stereotypical mistakes was found for sad participants primed with sad thoughts, $F(1, 27) = 3.88$, $p = .059$, $\eta^2 p = .13$. Also as predicted, participants experiencing affective incoherence failed to display such a pattern (bottom two panels of Figure 1). Specifically, happy participants primed with sad thoughts, and sad participants primed with happy thoughts displayed no difference in their ability to discriminate weapons from tools following exposure to a Black face or a White face, $F(1, 26) = .41$, $p = .53$, $\eta^2 p = .02$ and $F(1, 28) = .71$, $p = .40$, $\eta^2 p = .03$, respectively.

## PROCESS DISSOCIATION

The observed variation in error rates as a consequence of experiences of affective coherence and incoherence was predicted to result from such experiences adjusting tendencies to respond based on activated stereotypes. To evaluate this prediction, estimates of controlled and automatic processing on the weapon-identification task were created using equations described in Payne (2001). Specifically, for the Black prime conditions, the controlled estimate was created by subtracting the probability of incorrect responses when tool was primed with a Black face from the probability of correct responses when gun was primed with a Black face. The automatic estimate was derived by taking the probability of incorrect responses when tool was primed with a Black face and dividing it by (1 - C). Estimates of controlled and automatic processing for the White prime conditions were calcu-

1. To demonstrate that mood does not qualify the effects of affective coherence and incoherence on error rates, the error rate data were submitted to a 2 (coherence: yes, no) × 2 (mood: happy, sad) × 2 (race: Black vs. White) × 2 (target: weapon vs. tool) mixed-model ANOVA with the last two factors varying within participants. Replicating the results reported above, this analysis revealed a coherence by race by target interaction, $F(1, 109) = 9.99$, $p < .005$. Critically, this three-way interaction was not qualified by mood, $F(1, 109) = .02$, $p = .88$. These results demonstrate that the effects of coherence and incoherence were the same across the two types of inductions (i.e., happy-happy vs. sad-sad and happy-sad vs. sad-happy).

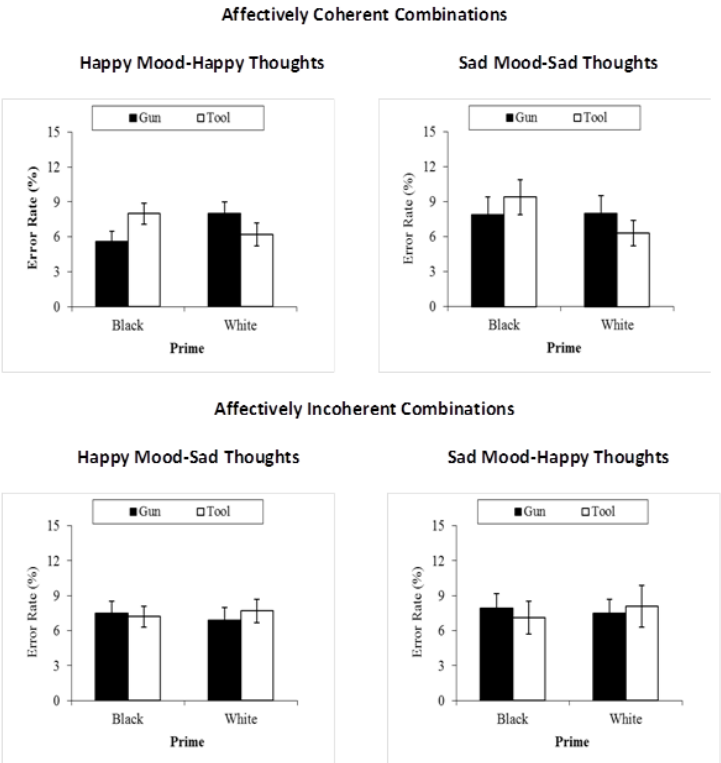


FIGURE 1. Pattern of error rates as a function of affectively coherent combinations of mood and primed thoughts (top figures) vs. affectively incoherent combinations (bottom figures), race of prime (Black vs. White), and object (weapon vs. tool). Note: error bars represent ± 1 SEM.

lated via the same method. Higher values on the two controlled estimates represented a greater tendency to exert cognitive control upon presentation of White or Black primes. Higher values on the two automatic estimates represented a greater automatic tendency to respond gun in the presence of a White or Black prime.

The controlled and automatic estimates were analyzed separately via a 2 (mood: happy vs. sad) × 2 (prime: happy vs. sad) × 2 (race: Black vs. White) mixed-model ANOVA with the last factor varying within participants.[2,3] This analysis revealed a marginally significant main effect of race, with participants exhibiting a greater tendency to respond gun after being primed with a Black face than a White face $F(1, 109) = 2.91$, $p = .09$, $\eta^2 p = .03$. However, this main effect was qualified by the predicted three-way interaction, $F(1, 109) = 11.43$, $p < .005$, $\eta^2 p = .10$ (Figure 2).

2. Analysis of the estimates together via a 2 (mood: happy vs. sad) × 2 (primed thoughts: happy vs. sad) × 2 (prime: Black vs. White) × 2 (estimate: automatic vs. controlled) mixed-model ANOVA with the last two factors varying within participants, revealed a significant four-way interaction, $F(1, 109) = 13.31$, $p < .005$.

3. To demonstrate that mood does not qualify the effects of affective coherence and incoherence on the automatic estimates, the automatic estimates were submitted to a 2 (coherence: yes, no) × 2 (mood: happy, sad) × 2 (race: Black vs. White) mixed-model ANOVA with the last factor varying within participants. Replicating the results reported above, this analysis revealed a coherence by race interaction, $F(1, 109) = 11.43$, $p < .005$. Critically, this two-way interaction was not qualified by mood, $F(1, 109) = .61$, $p = .44$.

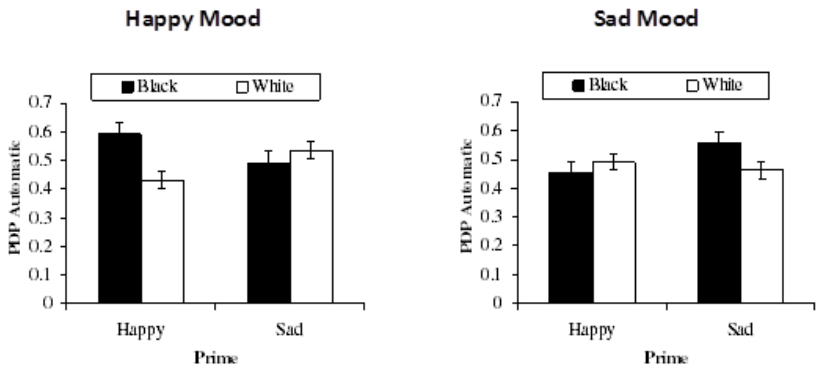


FIGURE 2. Pattern of automatic estimates as a function of mood (Happy vs. Sad), primed thoughts (Happy vs. Sad), and race of prime (Black vs. White) and Prime (Black face vs. White face). Note: error bars represent ± 1 SEM.

Neither the mood by race nor the prime by race interactions was significant, *F*s < 1, *p*s > .4.

Consistent with predictions, participants experiencing affective coherence displayed a greater automatic tendency to respond based on activated stereotypes than those experiencing affective incoherence. Specifically, happy participants primed with happy thoughts and sad participants primed with sad thoughts displayed a stereotypical tendency to respond gun after presentation of Black primes than White primes, $t(109) = 3.31$, $p < .005$, and $t(109) = 1.82$, $p = .072$, respectively. Happy participants primed with sad thoughts and sad participants primed with happy thoughts failed to display such tendencies, $t(109) = .88$, $p = .38$ and $t(109) = .80$, $p = .43$, respectively.

Finally, as predicted, no significant effects emerged for the controlled estimates, *F*s < 2, *p*s > .15.

## MEDIATION

The influence of affective coherence and incoherence on variation in participants' tendency to respond based on activated stereotypes (i.e., differences in the automatic estimates) was predicted to be driven by changes in general positive affect. This prediction was examined via Preacher and Hayes's (2008) SPSS Macro. To simplify analyses, the prime and music variables were recoded into a new variable, the predictor variable, such that affectively coherent combinations of these variables were assigned 1, and affectively incoherent combinations were assigned -1. Lastly, to create a single index of stereotyping, the outcome variable, a difference score was created by subtracting the White-prime automatic estimate from the Black-prime automatic estimate, with higher values indicating greater stereotyping.

Paralleling the results reported above, affective coherence significantly predicted the outcome, stereotyping, $B = .084$, $SE = .025$, $p < .001$. Further, affective coherence significantly predicted the mediator, general positive affect, $B = .319$, $SE = .107$, $p < .005$. When the mediator was included in the model, general positive affect significantly predicted variation in stereotyping, $B = .102$, $SE = .025$, $p < .005$, whereas the effect of affective coherence on stereotyping was reduced, $B = .052$, $SE = .023$, $p < .05$. The indirect effect was significant, $Z = 2.60$, $p < .05$ (95% CI: .012, .059). This analysis suggests that the effect of affective coherence and incoherence on stereotyping was partially mediated by feelings of general positive affect.[4]

## GENERAL DISCUSSION

The present research asked if the experience of affective coherence and incoherence would regulate the use of activated stereotypes. Affective coherence was predicted to facilitate tendencies to respond based on activated stereotypes, whereas affective incoherence was predicted to inhibit such tendencies. Consistent with these predictions, when the valence of accessible thoughts and participants' mood were affectively coherent, they committed a stereotypical pattern of errors on the weapon-identification task. When the valence of accessible thoughts and participants' mood were affectively incoherent, by contrast, they made no such errors. Process-dissociation analyses indicated that these effects were due to affective coherence facilitating tendencies to respond based on activated stereotypes and affective incoherence inhibiting such tendencies.

Mediation analyses indicated that the impact of affective coherence and incoherence on stereotyping resulted from changes in feelings of positive affect. It is important to note, however, that this result does not rule out the possibility that feelings of fluency and confidence played a role. Indeed, feelings of fluency, positive affect, and confidence are often tightly linked, and so too are feelings of disfluency, negative affect, and doubt. In support of this possibility, recent research showed that in a persuasion context, affective coherence enhanced confidence in message-relevant thoughts, and affective incoherence cast doubt on such thoughts (Huntsinger, 2013). As with most psychological phenomena, then, the effects of affective coherence and incoherence are likely multiply determined.

Do these results indicate that affective coherence will always promote and affective incoherence will always block stereotyping? Not necessarily. Although past research seemed to suggest a fixed connection between subjective experiences,

4. When analyzed separately, affective coherence significantly predicted positive feelings and negative feelings, $B = .33$, $SE = .12$, $p < .01$ and $B = -.31$, $SE = .11$, $p < .01$, respectively. This result is consistent with research on affective coherence (Centerbar et al., 2008), which finds changes for both general positive and negative emotion. This result is inconsistent with the larger fluency literature, which usually finds that fluency produces changes in positive, but not negative emotion. This apparent discrepancy can be resolved if one assumes that, as suggested by Winkielman and Cacioppo (2001), when reporting their negative feelings, people simply assess their positive feelings and reverse that assessment. When submitted to separate mediation analyses, both positive feelings and negative feelings significantly mediated the relation between affective coherence and automatic stereotyping, $Z = 2.41$, $p < .05$ (95% CI: .0087, .055), and $Z = 2.25$, $p < .05$ (95% CI: .0081, .050), respectively.

such as mood and fluency, and stereotyping (e.g., Bodenhausen, Kramer, & Susser, 1994; Huntsinger et al., 2009; Smith et al., 2006), recent research demonstrates that this connection is quite flexible (for reviews, see Clore & Huntsinger, 2009; Huntsinger & Clore, 2012). For example, consistent with the idea that positive affect confers positive value and negative affect negative value on accessible mental content, the link between affect and stereotyping has been shown to depend on the relative accessibility of stereotype-relevant thoughts (Huntsinger, Sinclair, Dunn, & Clore, 2010). Among individuals for whom counter-stereotypic thoughts were made accessible, for example via exposure to counter-stereotypic exemplars, happy moods reduced stereotyping compared to sad moods. The usual influence of happy and sad mood on stereotyping was found among individuals for whom stereotypic thoughts were accessible. Recent research showed similar flexibility for feelings of fluency and disfluency on stereotyping as a consequence of the relative accessibility of categorical or individuating information (Häfner & Stapel, 2009). Future research may explore whether affective coherence and incoherence, like other subjective experiences, have a flexible influence on stereotyping according to the relative accessibility of thoughts that promote or undermine stereotyping.

Do these results reflect the cognitive consequences of attitude ambivalence? Although affective incoherence bears some superficial similarities to attitude ambivalence, the two differ in important ways. Affective incoherence reflects a clash between embodied affective cues and evaluative concepts without reference to a particular object. Attitude ambivalence reflects a clash between positive and negative beliefs and/or feelings concerning a particular attitude object (Kaplan, 1972; Thompson, Zanna, & Griffin, 1995). Further, attitude ambivalence has been shown to enhance systematic or controlled 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 outcome of interest in this study has no obvious relevance to the source of affective incoherence, and no effects on systematic or controlled processing were observed, it is difficult to see how attitude ambivalence can explain the present results.

## CODA

Past research revealed that affective coherence and incoherence influence the acquisition of new knowledge and the organization of old knowledge. The present research reveals that experiences of affective coherence and incoherence also adjust inclinations to use activated knowledge. Specifically, affective coherence was found to facilitate and affective incoherence to inhibit tendencies to respond based on activated stereotypes. More generally, these results underline the importance of studying the joint influence of affective feelings and accessible thoughts in organizing the course of cognitive activity.

## REFERENCES

Bodenhausen, G. V., Kramer, G., & Susser, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology, 66,* 621-632.

Briñol, P., Petty, R. E., & Barden, J. (2007). Happiness versus sadness as a determinant of thought confidence in persuasion: A self-validation analysis. *Journal of Personality and Social Psychology, 93*, 711-727.

Centerbar, D. B., Schnall, S., Clore, G. L., & Garvin, E. (2008). Affective incoherence: When affective concepts and embodied reactions clash. *Journal of Personality and Social Psychology, 94*, 560-578.

Clore, G. L., & Gasper, K. (2000). Feeling is believing: Some affective influences on belief. In N. Frijda, T. Manstead, & S. Bem (Eds.), *Emotions and beliefs: How feelings influence thoughts* (pp. 10-44). New York: Cambridge University Press.

Clore, G. L., & Huntsinger, J. (2007). How emotion informs judgments and regulates thought. *Trends in Cognitive Sciences, 9,* 393-399.

Clore, G. L., & Huntsinger, J. (2009). How the object of affect guides its impact. *Emotion Review, 1,* 39-54.

Clore, G. L., & Schnall, S. (2008). Affective coherence: Affect as embodied evidence in attitude, advertising, and art. In G. Semin & E. R. Smith (Eds.), *Embodied grounding: Social, cognitive, affective, and neuroscientific approaches* (pp. 211-236). New York: Cambridge University Press.

Greifeneder, R., & Bless, H. (2010). The fate of activated information in impression formation: Fluency of concept activation moderates the emergence of assimilation versus contrast. *British Journal of Social Psychology, 49*, 405-414.

Häfner, M., & Stapel, D. A. (2009). Familiarity can increase and decrease stereotyping: Heuristic processing versus enhanced usability. *Social Cognition, 27*, 615-622.

Huntsinger, J. R. (2011). Mood and trust in intuition interactively orchestrate correspondence between implicit and explicit attitudes. *Personality and Social Psychology Bulletin, 37,* 1245-1258.

Huntsinger, J. R. (2013). Incidental experiences of affective coherence and incoherence influence persuasion. *Personality and Social Psychology Bulletin.* Published ahead of print. doi: 10.1177/0146167213482588

Huntsinger, J. R., & Clore, G. L. (2012). Emotion and social metacognition. In P. Brinol and K. DeMarree (Eds.), *Social metacognition (Frontiers of social psychology series)* (pp. 199-217). New York: Psychology Press.

Huntsinger, J. R., Sinclair, S., & Clore, G. L. (2009). Affective regulation of implicitly measured attitudes and stereotypes: Automatic and controlled processes. *Journal of Experimental Social Psychology, 45,* 560-566.

Huntsinger, J. R., Sinclair, S., Dunn, E. W., & Clore, G. L. (2010). Affective regulation of automatic stereotype activation: It's the (accessible) thought that counts. *Personality and Social Psychology Bulletin, 36,* 564-577.

Jacoby, L. L. (1991). A process dissociation framework: Separating automatic from intentional uses of memory. *Journal of Memory and Language, 30*, 513-541.

Jonas, K., Diehl, M., & Brömer, P. (1997). Effects of attitudinal ambivalence on information processing and attitude-intention consistency. *Journal of Experimental Social Psychology, 33*, 190-210.

Kaplan, K. J. (1972). On the ambivalence–indifference problem in attitude theory and measurement: A suggested modification of the semantic differential technique. *Psychological Bulletin, 77*, 361-372.

Maio, G. R., Bell, D. W., & Esses, V. M. (1996). Ambivalence and persuasion: The processing of messages about immigrant groups. *Journal of Experimental Social Psychology, 32*, 513-536.

Neisser, U. (1976). *Cognition and reality*. San Francisco, CA: W. H. Freeman.

Oppenheimer, D. M. (2008). The secret life of fluency. *Trends in Cognitive Science, 12*, 237-241.

Payne, B. K. (2001). Prejudice and perception: The role of automatic and controlled processes in misperceiving a weapon. *Journal of Personality and Social Psychology, 81*, 181-192.

Payne, B. K., & Stewart, B. D. (2007). Automatic and controlled components of social cognition: A process dissociation

approach. In J. A. Bargh (Ed.), *Social psychology and the unconscious: The automaticity of higher mental processes.* New York: Psychology Press.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879-891.

Smith, E. R., Miller, D. A., Maitner, A. T., Crump, S. A., Garcia-Marques, T., & Mackie, D. M. (2006). Familiarity can increase stereotyping. *Journal of Experimental Social Psychology, 42*, 471-478.

Strack, F., & Neumann, R. (1996). "The spirit is willing, but the flesh is weak": Beyond mind-body interaction in human decision-making. *Organizational Behavior and Human Decision Processes, 65*, 300-304.

Tamir, M., Robinson, M. D., & Clore, G. L. (2002). The epistemic benefits of trait-consistent mood states: An analysis of extraversion and mood. *Journal of Personality and Social Psychology*, *83*, 663-677.

Thompson, M. M., Zanna, M. P., & Griffin, D. W. (1995). Let's not be indifferent about (attitudinal) ambivalence. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 361-386). Hillsdale, NJ: Erlbaum.

Tormala, Z. L., Falces, C., Briñol, P., & Petty, R. E. (2007). Ease of retrieval effects in social judgment: The role of unrequested cognitions. *Journal of Personality and Social Psychology, 93*, 143-157.

Tormala, Z. L., Petty, R. E., & Briñol, P. (2002). Ease of retrieval effects in persuasion: A self-validation analysis. *Personality and Social Psychology Bulletin, 28*, 1700-1712.

van Harreveld, F., van der Pligt, J., & de Liver, Y. (2009). The agony of ambivalence and ways to resolve it: Introducing the MAID model. *Personality and Social Psychology Review, 13,* 45-61.

Winkielman, P., & Cacioppo, J. T. (2001). Mind at ease puts a smile on the face: Psychophysiological evidence that processing faciliation increases positive affect. *Journal of Personality and Social Psychology, 81,* 989-1000.

Winkielman, P., Schwarz, N., Fazendeiro, T., & Reber, R. (2003). The hedonic marking of processing fluency: Implications for evaluative judgment. In J. Musch & K. C. Klauer (Eds.), *The psychology of evaluation: Affective processes in cognition and emotion* (pp. 189-217). Mahwah, NJ: Erlbaum.