

Affects of the Unexpected: When Inconsistency Feels Good (or Bad)

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Abstract

Affective responses to disconfirmation of expectancies have paradoxical features: Incongruity is uncomfortable and elicits negative affect, but how do people feel when the incongruent outcome is positive? This article shows that affective responses to disconfirmed expectancies depend on whether people value consistency and thus focus on the expectancy-congruency of the outcome or on its valence. People with high need for structure, a prevention focus, or for whom mortality is salient, assign more value to consistency and are more congruency focused: They feel more positive after congruent outcomes than after incongruent outcomes (independent of valence). People with low need for structure, a promotion focus, or for whom mortality is not salient, value consistency less and are more outcome focused: They feel more positive after positive outcomes than after negative outcomes (independent of congruency). This article furthermore shows how responses to the unexpected unfold and that a congruency focus requires less cognitive resources than an outcome focus.

Keywords

expectancies, disconfirmation, consistency, affect, judgment

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One of the primary goals of people is to attain meaning and give structure to the ever-changing environment. As a host of classic and modern consistency theories in social psychology have argued and shown, people have a strong need to understand, structure, and predict the (social) world (see Abelson et al., 1968; Cooper, 2007; Festinger, 1957; Harmon-Jones & Mills, 1999). Expectancies are an important tool to achieve this goal. Expectancies can be defined as beliefs about a future state of affairs that enable people to anticipate what is coming and prepare them for effective living (Biernat, 2005; Olson, Roese, & Zanna, 1996; Roese & Sherman, 2007). Without expectancies, the world would be experienced as chaotic. Expectancies help structure the world (“Leon is a friendly person”) and make life predictable (“Leon is unlikely to hit me”).

It feels pleasant and positive when expectancies are accurate. When the world is expectancy-congruent, people experience positive affect and feelings of comprehension and control. Conversely, when expectancies are disconfirmed and the world turns out to be incongruent to predictions, negative affect is often experienced (Elliot & Devine, 1994; Mendes, Blascovich, Hunter, Lickel, & Jost, 2007). Of course, there are individual differences (some people like structure more than others) and situational exceptions (think of sports and arts—excitement, creativity), but for most people and in most situations, incongruity, inconsistency,

disconfirmation, and dissonance are uncomfortable mental states that elicit negative affect. At least, that is what consistency theories have been positing for the past 50 years (Aronson, 1968; Cooper, 2007; Festinger, 1957; Harmon-Jones, 1999; Heider, 1958).

A Paradox

The idea that people experience positive affect when there is consistency and negative affect when there is inconsistency makes intuitive sense. Nevertheless, a striking paradox arises when one thinks through the implications of this consistency-is-good, inconsistency-is-bad reasoning: How would one feel when the world turns out to be *inconsistent* with predictions but *positive*? The incongruity may feel uncomfortable, but the outcome may feel good. The question is thus: What will happen when a negative expectancy (“Elliot is unfriendly”) is disconfirmed in a positive way (“Elliot engages in several friendly acts”)? When will the (in)congruency drive the

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affective response (positive affect after congruency, negative affect after incongruency) and when will the valence of the outcome drive the affective response (positive affect after a positive outcome, negative affect after a negative outcome)?

We argue that there is a simple solution for this paradox: The affective response to disconfirmation of expectancies depends on whether people are primarily focused on the *expectancy-congruency* of the outcome or on the *valence* of the outcome. The affective responses of people who are congruency focused will be positive when outcomes are expectancy congruent and negative when they are expectancy incongruent—*independent of the valence of the outcome*. The affective responses of people who are outcome focused will be positive when outcomes are positive and negative when they are negative—*independent of the expectancy-congruency of the outcome*.

To illustrate, imagine you feel like eating a snack. You come home and on the table there is a plate with pieces of cheese. You like cheese very much and with the expectancy of the salty taste of cheese you take a piece and put it in your mouth. After a few chews you notice that it is not cheese you are chewing on, but something else. You do not immediately recognize what it is and the unexpected and unfamiliar substance in your mouth is probably an unpleasant experience (congruency focus). However, after a few moments you start realizing that instead of the salty taste of cheese, you are chewing on something that is sweet. You realize that the taste is nice and that instead of cheese you are eating marzipan that is shaped and colored to look like cheese. Although it is not what you thought it would be, the moment you realize what it is, you probably like the experience of eating it (outcome focus).

Thus, how one reacts to positive or negative outcomes of reality that are congruent or incongruent with what one expected depends on whether one is mainly outcome or congruency focused. But what then determines one's focus? Following earlier consistency theorists (see Abelson et al., 1968; Festinger, 1957; but see also, Cooper, 2007; Harmon-Jones & Mills, 1999; Swann, 1990; Tavis & Aronson, 2007), we argue that the need for consistency is fundamental, and thus, the expectancy-congruency focus is likely to be a relatively basic and initial response. People like the world to be predictable and controllable because this makes it easier to maneuver through it. It is comforting to know that trees do not spontaneously change into porcupines and tables do not sometimes turn into casseroles. In fact, the need for consistency is the basis for all kinds of psychological phenomena. It is for the sake of consistency that people search for evidence that confirms rather than disconfirms their hypotheses, expectancies, stereotypes, or prejudices (e.g., Klein & Kunda, 1992; Snyder & Swann, 1978), that people especially like things they have seen twice instead of once (e.g., Zajonc, 1968), and that people are inclined to preserve and

hold onto their self-views, even when these views are not especially flattering (Aronson & Carlsmith, 1962; Swann, 1983). People do not strive for consistency as an end in itself but as a means of bolstering their perception that the world is predictable and controllable (see Cooper, 2007).

Thus, as the consistency literature suggests, people value congruency because it helps them deal with the complexities of our (social) world. One could thus argue that because the need for consistency is relatively basic, people's initial and automatic reactions are likely to be congruency focused (see also Macrae, Bodenhausen, Schloerscheidt, & Milne, 1999). People use expectancies to anticipate, predict, and prepare for the future, and when reality appears to be different than expected, people will experience the incongruency between expectancy and reality before they look at reality as it is. In other words, to become outcome focused, people have to abandon their expectancy and shift their focus to the valence of the outcome ("Although this is not what I expected, I like it"). An outcome focus thus involves a shift away from a congruency focus, and becoming outcome focused is thus likely to take relatively more time and mental space.

It is important to note that in previous research on affective consequences of disconfirmation of expectancies, the more automatic versus controlled responses to incongruencies have not been disentangled. For example, Shepperd and McNulty (2002) tested whether affective responses to expected and unexpected outcomes are in line with consistency theory. In contrast to our theorizing, they did not find support for consistency theories. That is, they found that positive outcomes feel better than negative outcomes, even when positive outcomes are unexpected. Translating their results into the current theorizing, however, it is important to note that Shepperd and McNulty did not measure the initial response of their participants, so their results are consistent with the notion that participants had the ability to focus on the valence of the outcome. It is also important to note that although consistency is important for people and the congruency focus is likely to be initial and basic, being outcome focused is often very functional. In the end, that is the *reality* people have to deal with, respond to, and live in—not their *expectancies* (see also Macrae & Bodenhausen, 2000). When you do not recognize a tiger for what it is because you expected to see a cat, you have a problem.¹

Overview and Background of Experiments

In the preceding, we have argued that whether people are mentally able and willing to abandon expectancies and accept reality as *it is* rather than as they expected *it would be* depends on the extent to which people value consistency. Although the relevant literature suggests that the need for consistency and structure is initial and universal (see Abelson et al., 1968; Harmon-Jones & Mills, 1999), for some people and in

some situations consistency is of course more important than for other people and in other situations. When consistency is important for people, it is likely that expectancy–congruency will be their main focus and the (in)congruency of an outcome will drive affective responses (e.g., expected unkindness feels good; unexpected kindness does not). Conversely, when consistency is valued less, people are likely to be less congruency focused and more willing and able to become outcome focused, such that the valence of the outcome (and not its relation to expectancies) will drive affective responses (e.g., kindness feels good; unkindness does not).

In the present article, we test this main hypothesis concerning the need for consistency and the affective responses to disconfirmation of expectancies in five experiments. We manipulate the value people assign to consistency in different ways. We do this not only to demonstrate the robustness of our theorizing but also to attest to the theory overarching qualities of the consistency concept; that is, theorizing is used from divergent branches of social psychology. Specifically, we use measures and manipulations of the need for structure (Experiment 2), regulatory focus (Experiment 3), mortality salience (Experiment 4), and cognitive busyness (Experiments 5a and 5b) to test the general hypothesis that whether one likes or dislikes positive or negative outcomes that are congruent or incongruent to one's expectancies is a matter of whether one is outcome focused or congruency focused, with the latter focus being the initial and more spontaneous one. We first pretest whether these different constructs indeed affect the value people assign to consistency. We start, however, with an illustration of the manner in which incongruency-to-outcome responses unfold using filmed facial expressions to unexpected food (Experiment 1).

Together, these experiments constitute a systematic empirical assessment of the question of when dissonance or incongruency elicits negative affect and when it does not. Many dissonance theorists have assumed (either implicitly or explicitly) that dissonance (or incongruency) is an unpleasant, uncomfortable state that elicits negative affect (see Abelson et al., 1968; Harmon-Jones & Mills, 1999). It is still unclear, however, whether dissonance *always* elicits negative affect, even when the dissonant outcome is positive. With the present studies, we aim to further our understanding of this issue and provide support for the hypothesis that a congruency focus is an initial response, and an outcome focus is a secondary response.

Experiment 1: Cheese or Marzipan

We first want to illustrate the manner in which incongruency-to-outcome responses unfold by simply observing how people react to unexpected (but nice) food. Similar to the example we described previously, participants were asked to eat a piece of Gouda cheese. In reality, it was either cheese or

marzipan that looked like cheese. We filmed participants' facial responses to test our hypothesis that people who generally like marzipan but eat a piece expecting it is cheese initially respond with a negative facial expression (confusion, disgust), which in time turns into a positive facial expression. Thus, in this experiment we filmed participants ($N = 58$) who ate either a block of cheese or a block of marzipan that looked like cheese (for pictures of the marzipan and an example of a videotaped observation, see www.stapel.socialpsychology.nl/cheese.html).

Method

Procedure. Participants entered the lab, where they were seated behind a computer in an individual cubicle. Participants read on the screen that they were about to participate in three ostensibly unrelated studies.

The first "study" functioned as a cover story for using the webcam. We told participants that recent studies had indicated that reading text on a computer screen is not as effective as reading text on paper. Next, we told participants that we wanted to test whether eye movement and blink behavior is perhaps driving this effect and that to test this, we would film their faces while they were reading a text. Participants read a neutral text and then answered some filler questions. After this, the second "study" started. This study was introduced as a worldwide survey on health and behavior but was in fact designed to check participants' general preferences for cheese and marzipan (because for our analyses we can only use the responses of people who like cheese and marzipan) and to check for possible food allergies. Embedded in several filler questions (to avoid suspicion), we asked participants to indicate their preference for cheese and marzipan (1 = *not at all nice* to 7 = *extremely nice*) and whether they were allergic to any foods, including dairy products and nuts. When participants indicated that they were not allergic to any of these, the program continued to the final and last task, the "tasting" study.

Participants were told that they had to taste a piece of cheese, after which they would be asked to give their opinion about this cheese. We told participants they should take as much time as they needed to get a good sense of the taste of the cheese. For half of the participants, these instructions matched the outcome: They ate Gouda cheese. For the other half of the participants, these instructions mismatched the outcome: They ate marzipan that looked like Gouda cheese. We filmed participants' facial responses while eating (with the webcam that was still running from the first part of the study). After participants tasted the cheese or marzipan, they were thanked and debriefed and we asked them for permission to use the films for analysis.

Coding of the facial expression. We edited the films in such a way that they all started from the moment that participants put the block in their mouth and stopped 20 s later. Two



Figure 1. Examples of facial expressions to unexpected marzipan (Left: negative response at second 4. Right: positive response at second 11)

independent coders coded for each of the 20 s the content of the response (“What do you see?” response choices: *no response*, *disgust*, *confusion*, *joyfulness*) and the intensity of the response (“How intense is it?” 1 = *hardly visible* to 5 = *extremely visible*). The coders knew the general theme of the research but were blind to condition. The interrater agreement on content was 79% and disagreement was solved through discussion. The intensity scores of the coders were averaged. For an illustration of the film, see Figure 1.

Results and Discussion

In our analysis, we included only the 22 participants who indicated they liked cheese and marzipan. Then, we transformed the coding data, such that each participant had on each second an intensity score for *negative response* (mean of the intensity of disgust and confusion) and *positive response* (intensity of joyfulness): For each second we created three variables that described the presence or absence of disgust, confusion, and joyfulness (1 = present, 0 = absent). Subsequently, we multiplied these variables with the intensity score per second (which thus resulted in 0 when the facial expression was absent and in the intensity score of the facial expression when the facial expression was present), and we averaged the disgust and confusion scores to create one negative category.

Then, we performed a 2 (facial expression: positive, negative) \times 2 (food: cheese, marzipan) \times 20 (seconds) mixed

ANOVA, which revealed a marginal significant three-way interaction (see Figure 2), $F(19, 380) = 1.55$, $p = .07$ (sphericity assumed, Mauchly’s test *ns*). When we compare the intensity scores of the marzipan responses to that of the cheese responses, we find that participants who eat marzipan respond significantly more negative during the first 3 s than people who eat cheese, $t(20) = -3.09$, $p < .01$, whereas participants who eat marzipan respond marginally more positive on the 13th to 15th s than people who eat cheese, $t(20) = -1.96$, $p = .09$. Thus, participants in the cheese condition hardly show any positive or negative facial expressions, whereas participants in the marzipan condition initially respond with a negative facial expression (congruency focus), which is then followed by a positive facial expression (outcome focus). Thus, these results nicely illustrate the logic of our general model: People do not like unexpected outcomes, even when they are pleasant. It takes time to appreciate the pleasantness of the unexpected.

Pretest: It Is the Need for Consistency!

To test our main hypothesis concerning the need for consistency and the affective responses to disconfirmation of expectancies, we use measures and manipulations that are diverse (need for structure, regulatory focus, terror management, and cognitive load). However, we argue that they have a common denominator, which is that they all affect the need for consistency. This notion is based on the relevant literature

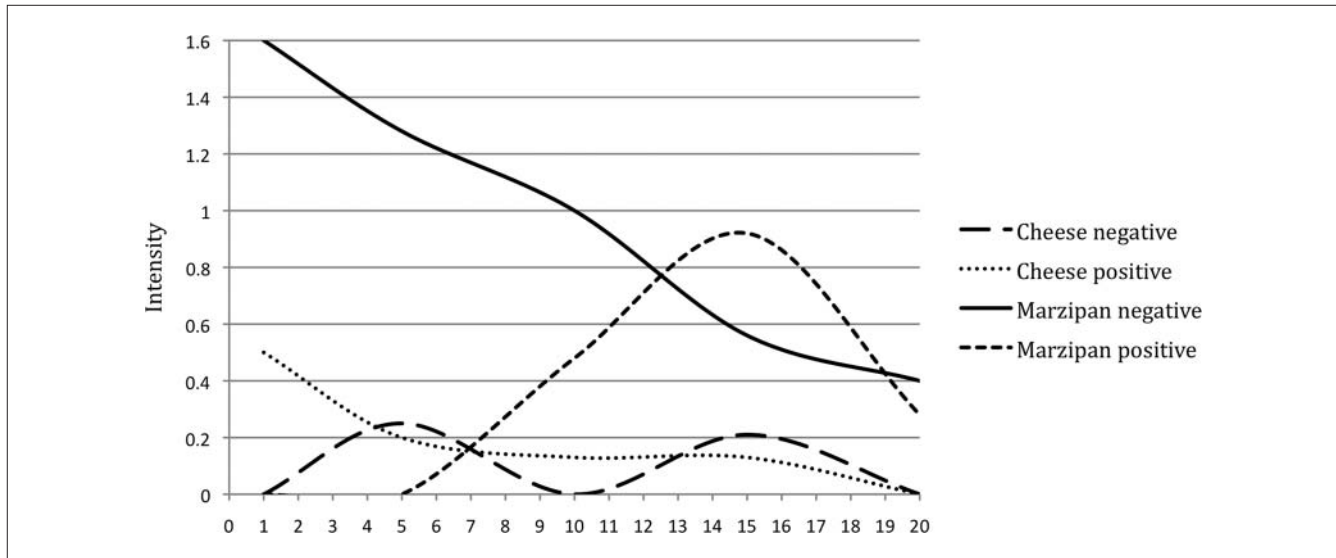


Figure 2. Mean intensity of positive and negative facial expressions as a function of food: expected cheese or unexpected marzipan (Experiment 1)

that strongly suggests such a relationship (see the following); however, to strengthen this assumption, in the present pretest, we set out to empirically show that the measures and manipulations that are used in Experiments 2 to 5 indeed all affect the need for consistency in a similar manner.

Method

To directly test the hypothesis that people with high need for structure, prevention focus, mortality salience, and cognitive load value consistency more than people with low need for structure, promotion focus, no mortality salience, and low cognitive load, participants were asked to fill out one of the measures and manipulations used in Experiments 2 to 5 followed by a need for consistency measure.

Participants ($N = 130$, $M_{\text{age}} = 19$ years) were randomly assigned to one of seven conditions (need for structure, prevention focus, promotion focus, mortality salience, no mortality salience, cognitive load, control). After an introduction, participants received either the Personal Need for Structure questionnaire (see Experiment 2), one of the two versions of a regulatory focus manipulation (see Experiment 3), a mortality salience manipulation or a dental pain (control) manipulation (see Experiment 4), a cognitive load manipulation (see Experiments 5a and 5b), or a neutral filler task (naming capitals and solving anagrams; control condition). After participants completed the measure or manipulation, we measured the need for consistency. Participants had to score seven items, each concerning the value they assigned to predictability, routine, expectedness, and structure (e.g., "I prefer situations in which I do not know exactly what is going to

happen" [reverse scored] or "When something happens that I did not expect, I do not know for a minute what to do"). Participants answered the items on a 7-point scale (1 = *disagree completely* to 7 = *agree completely*; $\alpha = .85$).

Results and Discussion

First, we performed a regression analysis with the standardized mean of need for structure on the mean need for consistency, which revealed the predicted relation between need for structure and need for consistency, $B = .677$, $t(37) = 7.01$, $p < .001$. That is, people with high need for structure had a higher need for consistency ($M = 4.33$) than people with low need for structure ($M = 2.97$; estimated regression lines at 1 *SD* above the mean and at 1 *SD* below the mean). Subsequently, we compared the need for consistency of the regulatory focus, terror management, and cognitive load conditions to the control condition. As expected, participants with a prevention focus had a higher need for consistency ($M = 4.36$) than participants in the control condition ($M = 3.34$), $t(30) = 4.91$, $p < .001$. The same was true for people for whom mortality was salient ($M = 4.55$), $t(28) = 6.33$, $p < .001$, and people under cognitive load ($M = 4.55$), $t(29) = 6.24$, $p < .001$. In contrast, people with a promotion focus had a lower need for consistency ($M = 2.81$) compared to the control condition, $t(29) = -2.22$, $p < .05$, and as expected, the dental pain condition ($M = 3.72$) did not differ from the control condition, $t(29) = 1.58$, *ns*.

These findings confirm the hypothesis that the diverse manipulations and measures we used in Experiments 2 to 5 indeed are all related to the need for consistency. Thus, even

though these various independent variables are divergent, they have at least an important overarching commonality: the need for consistency. This again attests to the power of the consistency concept to explain a heterogeneous set of social psychological phenomena. In the experiments that follow, we test these hypotheses that people who have a high need for structure, who are prevention focused, who are cognitively busy, or for whom mortality is especially salient value consistency and are therefore likely to be congruency focused, whereas people who have a low need for structure, who are promotion focused, who are not cognitively busy, or for whom mortality is not salient value consistency less and are thus likely to be more outcome focused.

Experiment 2: Personal Need for Structure

In this experiment, we test our main hypothesis using a chronic measure of one's willingness and ability to abandon expectancies and focus on the outcome. People differ in the extent to which they find predictability and structure important and have a chronic desire for consistent knowledge (e.g., Neuberg & Newsom, 1993; Webster & Kruglanski, 1994). In the present experiment, we tap these individual differences in the Personal Need for Structure scale (PNS scale; Thompson, Naccarato, & Parker, 1989) and hypothesize that people who have a high personal need for structure are more likely to be congruency focused, such that expectancy-congruent outcomes elicit positive affect and expectancy-incongruent outcomes elicit negative affect. People who have a low personal need for structure should be more focused on *actual* rather than *expected* reality, such that positive outcomes elicit positive affect and negative outcomes elicit negative affect, regardless of congruency.

Method

Participants were undergraduate students ($N = 80$, $M_{\text{age}} = 19$ years) who were randomly assigned to one of the four conditions of a 2 (expectancy: positive, negative) \times 2 (target: positive, negative) between-subjects design, with personal need for structure as a continuous moderator variable.

Participants received a set of two seemingly unrelated studies. After an instruction, participants filled out the PNS scale (Thompson et al., 1989; $\alpha = .80$). After this, the second study followed, which was framed as a person perception study. In the instructions, we induced the expectancy: We told participants in the positive expectancy condition that they were going to read about a *kind* man, named Paul. In the negative expectancy condition, we told participants that Paul was *unkind*. Subsequently, participants read a scenario that was congruent or incongruent to their expectancy, about *kind* or *unkind* Paul.² After reading the scenario, participants were asked to rate their current feelings on a 9-point scale ("Right now, how do you

Table 1. Mean Affective Response as a Function of Expectancy, Target, and Personal Need for Structure (Experiment 2)

	Outcome	High need for structure		Low need for structure	
		Positive	Negative	Positive	Negative
Expectancy	Positive	7.42 _a	6.35 _b	8.09 _a	6.37 _b
	Negative	5.72 _b	8.37 _c	8.65 _a	6.21 _b

Higher values indicate a more positive affective response. Means with different subscripts differ at $p < .01$.

feel?" 1 = *not at all* to 9 = *extremely*) using a mood questionnaire developed by Förster and colleagues (Förster, Higgins, & Werth, 2004; *happy, content, discouraged, disappointed, calm, relaxed, tense, worried*; $\alpha = .94$). Finally, participants were asked to judge Paul on a 9-point scale ("What is your impression of Paul?" 1 = *not at all kind* to 9 = *extremely kind*).

Results

We computed the mean of the items measuring personal need for structure and standardized this measure so that $M = 0$ and $SD = 1$. We performed a regression analysis with personal need for structure, expectancy, target, and the interactions between these variables on affect. The analysis revealed the predicted three-way interaction between expectancy, target, and personal need for structure on affect, $B = 2.31$, $t(72) = 5.48$, $p < .001$. Following Aiken and West (1991), we selected data points for estimating regression lines at 1 SD above the mean (labeled *high need for structure*) and at 1 SD below the mean (labeled *low need for structure*). Table 1 depicts means of affect as a function of expectancy, target, and label for high need for structure (+1 SD) and low need for structure (−1 SD).

Further analyses indicated that, as expected, people with a high need for structure responded more positively to congruency than to incongruency, regardless of the outcome. People with a low need for structure responded more positively to positive outcomes than to negative outcomes, regardless of congruency (all relevant $ps < .01$).

In sum, the affective responses of people with a high need for structure were more positive after congruent than after incongruent outcomes, whereas the affective responses of people with a low need for structure were more positive after positive than after negative outcomes.

In the Discussion section of Experiment 5, we discuss the judgment results of this and the following experiments.

Experiment 3: Regulatory Focus

In this experiment, we test our main hypothesis by manipulating rather than measuring people's tendency to be

congruency or outcome focused. We do this by manipulating regulatory focus. Regulatory focus theory suggests that the extent to which people value consistency and congruency is likely to depend on the regulatory focus with which they process information. Regulatory focus theory distinguishes between a prevention focus state of vigilance that serves safety concerns and a promotion focus state of eagerness that serves accomplishment concerns. As several studies have shown, a prevention focus is associated with a preference for consistency and congruency, whereas a promotion focus is associated with openness to change (e.g., Liberman, Idson, Camacho, & Higgins, 1999). For example, Förster and colleagues (Förster et al., 2004; Förster, Higgins, & Strack, 2000) showed that stereotype-incongruent information is experienced as negative for people with a prevention focus but not for people with a promotion focus. This suggests that regulatory focus is a good candidate to test our logic. In Experiment 3, we thus manipulate regulatory focus and hypothesize that people with a prevention focus are more likely to be congruency focused, such that expectancy-congruent outcomes elicit positive affect and expectancy-incongruent outcomes elicit negative affect. People with a promotion focus, however, should be more likely to have an outcome focus, such that positive outcomes elicit positive affect and negative outcomes elicit negative affect, regardless of congruency.

Method

Participants were undergraduate students ($N = 91$, $M_{\text{age}} = 19$ years) who were randomly assigned to one of the eight conditions of a 2 (expectancy: positive, negative) \times 2 (target: positive, negative) \times 2 (regulatory focus: promotion, prevention) between-subjects design.

The procedure was similar to the one used in Experiment 2. Participants again received a set of two seemingly unrelated studies. After an instruction, participants received one of the two versions of a regulatory focus manipulation. We used the manipulation from Friedman and Förster (2001), in which participants had to complete a maze. A cartoon mouse was trapped inside the maze and participants were instructed to "find the way for the mouse." In the promotion condition, a piece of cheese was depicted as lying outside the maze, in front of a brick wall containing an entryway for the mouse (activation of "seeking nurturance"). In the prevention condition, instead of cheese, an owl was depicted as hovering above the maze (activation of "seeking security"; for a more detailed description, see Friedman & Förster, 2001). After participants completed the maze, the person perception study followed. In the instructions, we again induced the expectancy by telling people that they were going to read about a *kind* (positive expectancy) or *unkind* (negative expectancy) man named Paul. Subsequently, participants read the scenario, which was congruent or incongruent to their

Table 2. Mean Affective Response as a Function of Expectancy, Target, and Regulatory Focus (Experiment 3)

	Outcome	Prevention focus		Promotion focus	
		Positive	Negative	Positive	Negative
Expectancy	Positive	7.43 _a	6.00 _b	7.03 _a	6.33 _b
	Negative	6.30 _b	7.14 _a	7.25 _a	6.04 _b

Higher values indicate a more positive affective response. Means with different subscripts differ at $p < .09$.

expectancy, about *kind* or *unkind* Paul. After reading the scenario, participants were asked to rate their current feelings ($\alpha = .87$) and judge the kindness of Paul (using the same items as in Experiment 2). At the end of the experiment participants were asked to answer a question from a regulatory focus questionnaire developed by Lockwood, Jordan, and Kunda (2002; "I am more concerned with reaching success than preventing failure") using a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*), which served as a manipulation check.

Results

An ANOVA with regulatory focus on the manipulation check item showed that the regulatory focus manipulation was successful ($M_{\text{prevention}} = 5.04$, $M_{\text{promotion}} = 5.78$), $F(1, 83) = 13.47$, $p < .001$.

We conducted a 2 (expectancy) \times 2 (target) \times 2 (regulatory focus) ANOVA on the affect scores, which showed the expected three-way interaction between expectancy, target, and regulatory focus, $F(1, 83) = 12.08$, $p < .01$, $\eta^2 = .11$. We also found a main effect of target, $F(1, 83) = 9.74$, $p < .01$, $\eta^2 = .09$; a two-way interaction between expectancy and target, $F(1, 83) = 4.85$, $p < .05$, $\eta^2 = .04$; and a marginally significant two-way interaction between target and regulatory focus, $F(1, 83) = 2.74$, $p = .10$, $\eta^2 = .02$ (other effects, $F_s < 1$). To interpret the three-way interaction between expectancy, target, and regulatory focus on affect, we first looked at the prevention focus conditions and then at the promotion focus conditions (see Table 2).

In the prevention focus conditions, we found the predicted interaction effect between expectancy and target, $F(1, 83) = 14.64$, $p < .001$, $\eta^2 = .14$. When expectancy and target were congruent, the affective response was more positive than when expectancy and target were incongruent, regardless of the outcome. In the promotion focus conditions, however, the interaction between expectancy and target was not significant ($F < 1$). Instead of an interaction, we found the predicted main effect of target, $F(1, 83) = 9.96$, $p < .01$, $\eta^2 = .10$. The affective response was more positive when the target was positive, regardless of congruency (all relevant p s $< .09$).

Thus, these results show that, as expected, the affective responses of people with a prevention focus were more positive after congruent than after incongruent outcomes, whereas the affective responses of people with a promotion focus were more positive after positive than after negative outcomes.

Experiment 4: Terror Management

In Experiment 4, we test our hypothesis using yet another manipulation of people's tendency to be congruency or outcome focused. This time we take our manipulation from terror management theory (see Greenberg, Solomon, & Pyszczynski, 1997). After all, as several terror management theory studies suggest, when people are reminded of their own mortality, the need for consistency, structure, and (social) order increases (Landau et al., 2004; see also Friedman & Arndt, 2005). When people are made aware of the inevitability of death, they try to protect themselves against the feelings of general anxiety this evokes by turning to worldviews that give meaning, order, predictability, and permanence (such as religions) and by using stable cognitive frameworks and concepts that explain and organize the world and one's place within it (such as stereotypes and expectancies; see Greenberg et al., 1997). Following our logic, this implies that when mortality is salient, people should be congruency focused, such that expectancy-congruent outcomes elicit positive affect and expectancy-incongruent outcomes elicit negative affect. When mortality is not salient, however, people should be outcome focused, such that positive outcomes elicit positive affect and negative outcomes elicit negative affect, regardless of congruency.

Method

To increase the generalizability of our findings, we used a different method from the one used in Experiments 2 and 3. First, we constructed a different affect measure, which was an adaptation of the dissonance as psychological discomfort measure of Elliot and Devine (1994; *happy, energetic, uncomfortable, uneasy, calm, optimistic, annoyed, dejected*; $\alpha = .91$). Second, we used a different scenario, which described a woman named Maria as either an intelligent woman (positive target) or as an unintelligent woman (negative target). Participants were undergraduate students ($N = 101$, $M_{\text{age}} = 19$ years) who were randomly assigned to the conditions of a 2 (expectancy: positive, negative) \times 2 (target: positive, negative) \times 2 (mortality salience: yes, no) between-subjects design.

Participants received a set of two seemingly unrelated studies. In the first part, participants received a typical mortality salience manipulation (see Greenberg et al., 1997; Landau et al., 2004). Participants had to respond to two open-ended items: "Please briefly describe the thoughts and emotions that the thought of your own death arouses in you"

Table 3. Mean Affective Response as a Function of Expectancy, Target, and Mortality Salience (Experiment 4)

		Mortality salience		Control	
		Positive	Negative	Positive	Negative
Expectancy	Positive	6.64 _a	5.36 _b	7.20 _a	6.29 _b
	Negative	5.52 _b	6.74 _a	7.27 _a	6.29 _b

Higher values indicate a more positive affective response. Means with different subscripts differ at $p < .05$.

and "Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead." Participants in the control condition were given similar questions about their feelings concerning dental pain. After this, the second study followed, which was framed as a person perception study. In the positive expectancy condition, we told participants they were going to read about an *intelligent* woman, named Maria. In the negative expectancy condition, we told participants that Maria was *unintelligent*. Subsequently, participants read a scenario that was either congruent or incongruent to their expectancy, about *intelligent* or *unintelligent* Maria.³ After reading the scenario, participants were asked to rate their current feelings on a 9-point scale ("Right now, how do you feel?" 1 = *not at all* to 9 = *extremely*) and to judge the intelligence of Maria on a 9-point scale ("What is your impression of Maria?" 1 = *not at all intelligent* to 9 = *extremely intelligent*).

Results

We conducted a 2 (expectancy) \times 2 (target) \times 2 (mortality salience) ANOVA on the affect scores, which showed the expected three-way interaction between expectancy, target, and mortality salience, $F(1, 93) = 11.32$, $p < .01$, $\eta^2 = .08$. There was also a main effect of target, $F(1, 93) = 6.56$, $p < .05$, $\eta^2 = .05$; a main effect of mortality salience, $F(1, 93) = 13.16$, $p < .001$, $\eta^2 = .09$; a two-way interaction between expectancy and target, $F(1, 93) = 10.03$, $p < .01$, $\eta^2 = .07$; and a two-way interaction between target and mortality salience, $F(1, 93) = 5.66$, $p < .05$, $\eta^2 = .04$ (other effects, $F_s < 1$). To interpret the three-way interaction between expectancy, target, and mortality salience on affect, we first looked at the mortality salience conditions and then at the control conditions (see Table 3).

In the mortality salience conditions, there was an interaction effect between expectancy and target, $F(1, 93) = 18.18$, $p < .001$, $\eta^2 = .16$. When expectancy and target were congruent, the affective response was more positive than when expectancy and target were incongruent, regardless of the outcome. In the dental pain conditions, however, the interaction between expectancy and target was not significant ($F < 1$). Instead of an interaction, we found the predicted main effect

of target, $F(1, 93) = 8.50, p < .01, \eta^2 = .08$. The affective response was more positive when the target was positive, regardless of congruency (all relevant $ps < .05$).

As predicted, these results show that the affective responses of people for whom mortality was salient were more positive after congruent than after incongruent outcomes, whereas the affective responses of people in the dental pain condition were more positive after positive than after negative outcomes.

Experiment 5: Cognitive Load

In this experiment, we test our proposition that the expectancy-congruency focus is a more direct and initial response that requires less cognitive resources than a focus on the valence of the outcome. We use a cognitive load manipulation (see e.g., Gilbert, 1989) and we predict that people who are under high cognitive load (i.e., who are cognitively busy) are more likely to be congruency focused, such that expectancy-congruent outcomes elicit positive affect and expectancy-incongruent outcomes elicit negative affect. People who are under low cognitive load, however, should be more likely to shift toward an outcome focus, such that positive outcomes elicit positive affect and negative outcomes elicit negative affect.

Experiment 5a: Person Perception

Method. Participants were 88 undergraduate students ($M_{\text{age}} = 19$ years) who were randomly assigned to one of the eight conditions of a 2 (expectancy: positive, negative) \times 2 (target: positive, negative) \times 2 (cognitive load: yes, no) between-subjects design.

The procedure was identical to the one used in Experiments 2 and 3. Participants received a set of two seemingly unrelated studies. In the first part, participants were asked to fill out a questionnaire with neutral items about student life. This questionnaire had an equal number of questions as the PNS questionnaire and served as a filler task to ensure that the different experiments are comparable. After the filler task, the person perception study followed. In the instructions, we again induced the expectancy by telling people that they were going to read about a *kind* (positive expectancy) or *unkind* (negative expectancy) man named Paul.

After the expectancy induction, participants in the cognitively busy conditions were asked to keep a nine-digit number in mind throughout the experiment and to be prepared to report the number when the experiment was finished (Gilbert, 1989). Participants in the nonbusy conditions were not given a number to rehearse. Subsequently, participants were asked to read a scenario, which was congruent or incongruent to their expectancy, about *kind* or *unkind* Paul. After reading the scenario, participants were asked to rate their current feelings (same scale as Experiments 2 and 3; $\alpha = .86$).

Table 4. Mean Affective Response as a Function of Expectancy, Target, and Cognitive Load (Experiment 5a)

	Outcome	Load		No load	
		Positive	Negative	Positive	Negative
Expectancy	Positive	7.16 _a	6.08 _b	7.15 _a	6.34 _b
	Negative	6.27 _b	7.15 _a	7.24 _a	6.41 _b

Higher values indicate a more positive affective response. Means with different subscripts differ at $p < .05$.

Finally, participants in the cognitive load conditions were asked to choose among five options provided the number they were asked to keep in mind. All participants were able to recall the nine-digit number successfully.

Results. We conducted a 2 (expectancy) \times 2 (target) \times 2 (cognitive load) ANOVA on the affect scores, which showed the expected three-way interaction between expectancy, target, and load, $F(1, 80) = 6.50, p < .05, \eta^2 = .06$. We also found a main effect of target, $F(1, 80) = 5.64, p < .05, \eta^2 = .06$; a two-way interaction between expectancy and target, $F(1, 80) = 6.21, p < .05, \eta^2 = .06$; and a marginally significant interaction between target and cognitive load, $F(1, 80) = 3.41, p = .07, \eta^2 = .03$ (other effects, $F_s < 1$). To interpret the three-way interaction between expectancy, target, and cognitive load on affect, we first looked at the cognitive load conditions and then at the no cognitive load conditions (see Table 4).

In the cognitive load conditions, there was an interaction effect between expectancy and target, $F(1, 80) = 10.51, p < .01, \eta^2 = .12$. When expectancy and target were congruent, the affective response was more positive than when expectancy and target were incongruent, regardless of the outcome. In the no cognitive load conditions, however, the interaction between expectancy and target was not significant ($F < 1$). Instead of an interaction, we found the predicted main effect of target, $F(1, 80) = 8.02, p < .01, \eta^2 = .09$. The affective response was more positive when the target was positive, regardless of congruency (all relevant $ps < .05$).

The results show, as predicted, that the affective responses of people under load were more positive after congruent than after incongruent outcomes, whereas the affective responses of people who were not under cognitive load were more positive after positive than after negative outcomes.

Experiment 5b: Simple Visual Stimuli

A possible critique to Experiment 5a could be that participants had trouble understanding the person description they had to read because they read the text while they were under cognitive load and that, because of this, they would understand congruent information better than incongruent information. Although we believe that it is unlikely that people understood the person descriptions differently as a

result of cognitive load because these descriptions were designed to be clear and extreme (see pretests in Experiments 2 to 5a), we wanted to completely rule out this possibility. Therefore, in Experiment 5b, we use simple visual stimuli that were extremely easy to encode and understand (happy vs. sad emoticons) to see whether we can conceptually replicate Experiment 5a.

Method. Participants were 108 undergraduate students ($M_{\text{age}} = 18$ years) who were randomly assigned to one of the eight conditions of a 2 (expectancy: positive, negative) \times 2 (target: positive, negative) \times 2 (cognitive load: yes, no) between-subjects design.

Participants looked at a happy emoticon (☺: positive target) or a sad emoticon (☹: negative target) in font size 400 after a positive or negative expectancy induction ("We would like to ask you to look at a *happy/sad* emoticon and subsequently answer some questions about it," which was part of a [bogus] study on language and emoticons). They did this task either under load or not (similar to Experiment 5a). Dependent variables were again affect (same as Experiment 4; $\alpha = .91$) and judgment of the emoticon ("What is your impression of the emoticon?" 1 = *not at all happy* to 9 = *extremely happy*). At the end of the experiment, participants in the cognitive load condition were asked to choose one of the five options provided to recall the number they were asked to keep in mind. All participants were able to recall the number successfully.

Results and discussion. We conducted an ANOVA on the affect scores, which showed the expected three-way interaction between expectancy, target, and cognitive load, $F(1, 107) = 21.96, p < .001, \eta^2 = .09$. We also found a main effect of target, $F(1, 107) = 15.80, p < .001, \eta^2 = .12$; a two-way interaction between expectancy and target, $F(1, 107) = 21.08, p < .001, \eta^2 = .12$; and a two-way interaction between target and load, $F(1, 107) = 15.42, p < .001, \eta^2 = .09$ (other effects, $p > .21$). To interpret the three-way interaction between expectancy, target, and cognitive load on affect, we first looked at the cognitive load conditions and then at the no cognitive load conditions (see Table 5).

In the cognitive load conditions, there was an interaction effect between expectancy and target, $F(1, 107) = 34.70, p < .001, \eta^2 = .25$. When expectancy and target were congruent, the affective responses were more positive than when expectancy and target were incongruent, regardless of the outcome. In the no cognitive load conditions, however, the interaction between expectancy and target, was not significant ($F < 1$). Instead of an interaction, we found the predicted main effect of target, $F(1, 107) = 22.06, p < .001, \eta^2 = .17$. The affective response was more positive when the target was positive, regardless of congruency (all relevant $ps < .001$). Thus, also with simple visual stimuli we find support for our notion that the expectancy-congruency focus is a more direct and initial response that requires less cognitive resources than a focus on the valence of the outcome.

Table 5. Mean Affective Response and Judgment as a Function of Expectancy, Target, and Cognitive Load (Experiment 5b)

		Load		No load	
		Positive	Negative	Positive	Negative
Expectancy	Positive	7.04 _a	5.39 _b	7.00 _a	5.62 _b
	Negative	5.67 _b	7.30 _a	7.19 _a	5.77 _b

Higher values indicate a more positive affective response. Means with different subscripts differ at $p < .001$.

Finally, because affective states are likely to influence evaluative judgments ("feelings as information"; see, e.g., Schwarz, 1990), it is likely that judgments of the outcome are influenced by whether the (in)congruency or the valence of the outcome drives the affective response. That is, when people are congruency focused, it is likely that congruent outcomes are judged more positively than incongruent outcomes (e.g., expected unkindness is judged as more kind than unexpected unkindness). Conversely, when people are outcome focused, judgments follow the valence of the outcome, regardless of congruency (e.g., kindness is judged as kind, unkindness as unkind). To test this logic, in Experiments 2 to 5 we also asked participants to judge the target. The results were as predicted. For people who have a high need for structure, a prevention focus, for whom mortality is salient, or who are cognitively busy, a positive target was judged more positively when expectancy and target were congruent than when expectancy and target were incongruent. Similarly, for these participants the judgment of a negative target was more positive when expectancy and target were congruent than when expectancy and target were incongruent. On the contrary, for people who had a low need for structure, a promotion focus, for whom mortality was not salient, or who were under low cognitive load, a positive target was judged more positively than a negative target, regardless of congruency.⁴

General Discussion

In many, if not all, consistency theories, the idea that expectancy-inconsistent outcomes should elicit negative affect is one of the core features. It is therefore curious that there have been no systematic empirical investigations of the conditions under which disconfirmed expectancies indeed elicit negative affect. Although researchers have measured all kinds of consequences of disconfirmed expectancies (e.g., Aronson & Carlsmith, 1962; Festinger, 1957; Förster et al., 2000; Swann, 1990), the occurrence of actual negative affective consequences is often not more than a theoretical assumption (see also Carlsmith & Aronson, 1963; Olson et al., 1996; Roese & Sherman, 2007). The present experiments provide the first systematic and empirical evidence for the notion that disconfirmed expectancies often (but not always!) elicit negative affect.

The present experiments show that whether disconfirmed expectancies elicit negative or positive affect depends on whether people are focused on the expectancy–congruency of the outcome or on the valence of the outcome. In a series of empirical studies, we showed that whether people are congruency focused or outcome focused depends on their ability and willingness to abandon their expectancies and focus on the outcome per se. We demonstrated that responses unfold over time from negative reactions to the unexpected to positive responses based on the positive valence of the outcome. We subsequently showed that people with a high need for structure, a prevention focus, or for whom mortality is salient assign more value to consistency and are more congruency focused, such that expectancy–congruent outcomes elicit more positive affect than expectancy–incongruent outcomes. Conversely, people with a low need for structure, a promotion focus, or for whom mortality is not especially salient value consistency less and are more outcome focused, such that positive outcomes elicit more positive affect than negative outcomes. Furthermore, we found support for the notion that an expectancy–congruency focus requires less effort and is thus a more automatic and initial response than an outcome–valence focus. We showed that when cognitive resources are depleted, people value consistency more and are more congruency focused, such that expectancy–congruent outcomes elicit more positive affect than expectancy–incongruent outcomes. When there are plenty of cognitive resources available, however, people value consistency less and become outcome focused, such that positive outcomes elicit more positive affect than negative outcomes. In other words, people need time and effort to abandon their expectancies and focus on reality.

To ensure the robustness and generalizability of our manipulations, we used a variety of manipulations to induce a congruency or outcome focus. Interestingly, in the relevant literature, each of the manipulations we used in our studies (need for structure, mortality salience, regulatory focus) has been related to the need for consistency (see, e.g., Förster et al., 2000; Förster et al., 2004; Greenberg et al., 1997; Landau et al., 2004; Liberman et al., 1999; Neuberg & Newsom, 1993; Thompson et al., 1989; Webster & Kruglanski, 1994). It is one of the contributions of the present studies that we now have strong empirical evidence for this relationship. Interestingly, these studies also suggest that consistency striving is a strong and basic motivation that is probably a fundamental explanatory factor for a number of different psychological phenomena.

Implications, Generalizations, and Future Directions

It is interesting to note that although in the present studies we used valenced expectancies and outcomes, there is of course no reason to assume that our results should be restricted to expectancies and outcomes with a specific valence. Something can simply be *different* than expected rather than more

positive or more negative than expected (e.g., seeing a purple sunflower or tasting sweet vinegar). We would like to argue that the experience of “difference” may be enough to elicit negative affect.

One might furthermore wonder whether our findings would generalize to more important and self-relevant outcomes. There are several reasons why we think that similar results will be obtained. First, although the person perception and visual stimuli used in our studies (Experiments 2–5) are not necessarily important to participants, the food in Experiment 1 is highly self-relevant. The finding that it takes time to appreciate unexpected nice food (marzipan that looks like cheese) suggests that also in the context of more important outcomes, the congruency of an outcome determined people’s initial responses. Second, the work by Swann and colleagues (for an overview, see Swann, 1990) indicates that consistency is often preferred over enhancement. Swann has shown in a number of experiments that people often prefer self-verifying feedback over self-enhancing feedback (see Swann, 1990). Related to this, we are currently running experiments that test our logic in a self-consistency paradigm and find results that are very similar to the current findings. That is, unexpected success initially feels worse than expected failure. Only when people have sufficient resources does (unexpected) success feel better than (expected) failure (see Noordewier & Stapel, 2009). In sum, it seems reasonable to assume the findings are generalizable to outcomes that are important to people.

Another interesting question is whether responses to the unexpected always unfold from a congruency focus to an outcome focus, or is it possible that an outcome focus is sometimes not preceded by a congruency focus? Thus, is the congruency-to-outcome sequence more or less the same for everybody? We think that the cognitive load studies suggest the answer to these questions is yes. The fact that people who are cognitively busy assign more value to consistency and respond to the consistency of an outcome indicates that the initial response is to value consistency over positivity. We think that the key difference between people who respond to the consistency of an outcome and those who respond mainly to its valence is the ease with which they can let go of this initial response. This ease with which people can let go is determined by personality and situational characteristics: Some *people* find it more difficult to go beyond their initial response (congruency focus), whereas other *people* make the switch to reality as it is (outcome focus) more easily. And similarly, in some *situations*, people find it more difficult to go beyond their initial response (congruency focus), whereas in other *situations* people can more easily make the switch to reality as it is (outcome focus).

Yet, it is important to note that of course we do not argue that there are no limits to the effects we have reported here. When an outcome is extremely consequential, attention to the valence of the outcomes will be extra strong and the

valence of the outcome is likely to drive all affective responses—even for people who assign a lot of value to consistency and probably for people who are under heavy cognitive load. Similarly, when expectancies are very strong and outcome information is vague, the expectancy is more likely to guide affective responses. Nonetheless, our data suggest that in relatively “normal” situations, a congruency focus is likely to precede an outcome focus, not vice versa.

Finally, an interesting avenue for future research is to relate the present findings to other dependent measures. For instance, it seems logical to predict that disconfirmation of expectancies will make people relatively attentive and curious (e.g., Berlyne, 1954; Loewenstein, 1994). Furthermore, it might be interesting to look at “the expected unexpected.” That is, paintings, music, novels, and movies would be boring if they all were always and exactly as expected. A possible explanation for the fact that this type of unexpectedness is often experienced as pleasant is that it is anticipated and that people are prepared for it.

Conclusion

With the present experiments, we solved the paradoxical feature of affective responses to disconfirmation of expectancies; people like positive outcomes and they dislike inconsistencies, but how do they evaluate positive inconsistencies? Do they like them because they are positive or dislike them because they are inconsistent? Our results show that disconfirmation of an expectancy does not *always* elicit negative affect—as consistency theories would predict. Rather, the affective consequences of an unexpected outcome depend on processing resources and motivation. When such a dissonant outcome is positive and people are able and willing to abandon their expectancy, that is when inconsistency feels good.

Coda

Next time you think the article you read is tragically flawed, the movie you saw is awfully acted, or the new meal your partner made is disgustingly bitter, think again and discover that your dislike may not have much to do with the quality of that article, the production value of that movie, or the culinary skills of your partner. It might be all about you. You simply do not like things that are somewhat unexpected. Thus, accept that strange article, tell others to go see that arty movie, and give your partner a loving kiss!

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Notes

1. It is important to note that we are not suggesting that the congruency focus is the typical or normal response. What we argue is that the congruency focus takes less resources and is more automatic than the outcome focus. Whether people typically focus on the congruency or the outcome cannot be known because we do not know the frequency or prevalence of real-life situations where people have motivation and ability to abandon their expectancies or not.
2. We pretested the two scenarios (“What is your impression of Paul?” 1 = *not at all kind* to 9 = *extremely kind*), which showed that the kind scenario of Paul was judged extremely kind ($M = 8.2$) and the unkind scenario of Paul was judged as extremely unkind ($M = 2.5$). For more details about the target descriptions, contact one of the authors.
3. We pretested the two scenarios (“What is your impression of Maria?” 1 = *not at all intelligent* to 9 = *extremely intelligent*), which showed that the intelligent scenario of Maria was judged extremely intelligent ($M = 8.3$) and the unintelligent scenario of Maria was judged as extremely unintelligent ($M = 2.8$). For more details about the target descriptions, contact one of the authors.
4. For more details and separate analyses, contact one of the authors.

References

- Abelson, R. P., Aronson, E., McGuire, W., Newcomb, T., Rosenberg, M., & Tannenbaum, P. (1968). *Theories of cognitive consistency: A sourcebook*. Chicago: Rand McNally.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Aronson, E. (1968). Dissonance theory: Progress and problems. In E. A. R. P. Abelson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, & P. H. Tannenbaum (Eds.), *Theories of cognitive consistency: A sourcebook* (pp. 5-27). Chicago: Rand McNally.
- Aronson, E., & Carlsmith, J. M. (1962). Performance expectancy as a determinant of actual performance. *Journal of Abnormal and Social Psychology*, 65, 178-182.
- Berlyne, D. E. (1954). A theory of human curiosity. *British Journal of Psychology*, 45, 180-191.
- Biernat, M. (2005). *Standards and expectancies: Contrast and assimilation in judgments of self and others*. New York: Psychology Press.
- Carlsmith, J. M., & Aronson, E. (1963). Some hedonic consequences of the confirmation and disconfirmation of expectancies. *Journal of Abnormal and Social Psychology*, 66, 151.

- Cooper, J. (2007). *Cognitive dissonance: 50 years of a classic theory*. Thousand Oaks, CA: Sage.
- Elliot, A. J., & Devine, P. G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. *Journal of Personality and Social Psychology*, 67, 382-394.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Oxford, UK: Row, Peterson.
- Förster, J., Higgins, E. T., & Strack, F. (2000). When stereotype disconfirmation is a personal threat: How prejudice and prevention focus moderate incongruity effects. *Social Cognition*, 18, 178-197.
- Förster, J., Higgins, E. T., & Werth, L. (2004). How threat from stereotype disconfirmation triggers self-defense. *Social Cognition*, 22, 54-74.
- Friedman, R. S., & Arndt, J. (2005). Reexploring the connection between terror management theory and dissonance theory. *Personality and Social Psychology Bulletin*, 31, 1217-1225.
- Friedman, R. S., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology*, 81, 1001-1013.
- Gilbert, D. T. (1989). *Thinking lightly about others: Automatic components of the social inference process*. New York: Guilford.
- Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). *Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements*. San Diego, CA: Academic Press.
- Harmon-Jones, E. (1999). Toward an understanding of the motivation underlying dissonance effects: Is the production of aversive consequences necessary? In E. Harmon-Jones & J. Mills (Eds.), *Cognitive dissonance: Progress on a pivotal theory in social psychology* (pp. 71-99). Washington, DC: American Psychological Association.
- Harmon-Jones, E., & Mills, J. (1999). *Cognitive dissonance: Progress on a pivotal theory in social psychology*. Washington, DC: American Psychological Association.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: John Wiley.
- Klein, W. M., & Kunda, Z. (1992). Motivated person perception: Constructing justifications for desired beliefs. *Journal of Experimental Social Psychology*, 28, 145-168.
- Landau, M. J., Johns, M., Greenberg, J., Pyszczynski, T., Martens, A., Goldenberg, J. L., et al. (2004). A function of form: Terror management and structuring the social world. *Journal of Personality and Social Psychology*, 87, 190-210.
- Lieberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology*, 77, 1135-1145.
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, 83, 854-864.
- Loewenstein, G. (1994). The psychology of curiosity: A review and reinterpretation. *Psychological Bulletin*, 116, 75-98.
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, 51, 93-120.
- Macrae, C. N., Bodenhausen, G. V., Schloerscheidt, A. M., & Milne, A. B. (1999). Tales of the unexpected: Executive function and person perception. *Journal of Personality and Social Psychology*, 76, 200-213.
- Mendes, W. B., Blascovich, J., Hunter, S. B., Lickel, B., & Jost, J. T. (2007). Threatened by the unexpected: Physiological responses during social interactions with expectancy-violation partners. *Journal of Personality and Social Psychology*, 4, 698-716.
- Neuberg, S. L., & Newsom, J. T. (1993). Personal need for structure: Individual differences in the desire for simpler structure. *Journal of Personality and Social Psychology*, 65, 113-131.
- Noordewier, M. K., & Stapel, D. A. (2009). *When failure feels better than success: Self-salience, self-consistency, and affect*. Manuscript submitted for publication.
- Olson, J. M., Roese, N. J., & Zanna, M. P. (1996). Expectancies. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 211-238). New York: Guilford.
- Roese, N. J., & Sherman, J. W. (2007). Expectancy. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (Vol. 2, pp. 91-115). New York: Guilford.
- Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527-561). New York: Guilford.
- Shepperd, J. A., & McNulty, J. K. (2002). The affective consequences of expected and unexpected outcomes. *Psychological Science*, 13, 85-88.
- Snyder, M., & Swann, W. B. (1978). Hypothesis-testing processes in social interaction. *Journal of Personality and Social Psychology*, 36, 1202-1212.
- Swann, W. B. (1983). Self-verification: Bringing social reality into harmony with the self. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2, pp. 33-66). Hillsdale, NJ: Lawrence Erlbaum.
- Swann, W. B. (1990). To be adored or to be known? The interplay of self-enhancement and self-verification. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 408-450). New York: Guilford.
- Tavris, C., & Aronson, E. (2007). *Mistakes were made (but not by me): Why we justify foolish beliefs, bad decisions, and hurtful acts*. Orlando, FL: Harcourt.
- Thompson, M. M., Naccarato, M. E., & Parker, K. E. (1989, June). *Assessing cognitive need: The development of the Personal Need for Structure and Personal Fear of Invalidity scales*. Paper presented at the annual meeting of the Canadian Psychological Association, Halifax, Nova Scotia.
- Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, 67, 1049-1062.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, 9, 1-27.