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Correcting For Unconscious Experiential Processing

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We manipulated the subjective experience of certainty associated with a recommendation using subliminal priming and found that consumers corrected their judgments in opposite directions, depending on whether they were primed with certainty or uncertainty. These results demonstrate that consumers can correct for unconscious experiential processing, unlike suggested by previous research.

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Correcting for Unconscious Experiential Processing

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ABSTRACT

Previous research is inconclusive about whether consumers can correct their judgments for the influence of unconscious subjective experiences. We manipulated the subjective experience of certainty associated with a persuasive message using subliminal priming and found that participants corrected their judgments in opposite directions depending on whether they were subliminally primed with certainty or uncertainty. These results demonstrate that consumers can correct for unconscious experiential processing.

Previous research has shown that subjective experiences that remain outside the consumer's awareness (e.g., visual stimuli presented faster than eye perception levels or audio stimuli played below audible volumes) may influence judgments. For example, an individual's judgment of a condo in a magazine ad may be negatively influenced by pictures of a terrorist attack placed in the parafoveal vision area. If this person is prompted to correct her judgments about the product in ad, would she be able to account for a potential influence of the unconscious experiential processing?

The correction literature has focused on situations in which people are or can become aware of potential influences (Wegener and Petty 1995). If people are aware of an influence, they must have processed the information either systematically, when considerable resources and motivation are present, or heuristically, when at least moderate resources and motivation are available (Petty and Cacioppo 1986). Research has shown that correction may happen under both of these types of processing if enough cognitive resources are available for correction (Petty, Wegener, and White 1998). In such situations, the direction of the correction effect depends on the perceived initial influence. Thus, judgments that were perceived to be positively influenced by the stimulus should become more negative after correction, and judgments that were perceived to be negatively influenced by the stimulus should become more positive (Wegener and Petty 1995).

In a third type of processing, experiential processing, judgments are formed based on immediate sensations and feelings prompted by the situation and that are often outside of people's awareness (Meyers-Levy and Malaviya 1999). Experiential processing happens automatically, unconsciously, and independently from conscious resources. It occurs when exposure to stimuli is subliminal or extremely brief. For instance, people tend to like unknown stimuli (e.g., Chinese ideographs) more when these follow positive subliminal primes (e.g., smiling faces) than when they follow negative primes (e.g., frowning faces; Murphy and Zajonc 1993).

The literature suggests that judgments based on experiential processing are the result of two sequential processes (e.g., Jacoby, Kelley, and Dywan 1989; Strack 1992). First, general cues about the target are evaluated automatically and unconsciously to produce a global feeling. These cues include cognitive, affective, and/or bodily reactions to the stimulus, such as, for example, feelings of fluency (Schwarz 2004), positive affect (Zajonc and Markus 1982) or perceptions of smell (Lee and Schwarz 2012). Second, this subjective experience is used as the default basis for judgment and may remain outside of consumers' awareness (Strack 1992). Thus, in the previous example, people with familiar, more fluent faces are judged as famous, objects associated with positive affect are more liked, or an argument associated with a smell of fish is judged as suspicious. When subliminal priming produces an influence, this influence is represented by a change in judgments or behavior (Aarts, Custers, and Marien 2008; Clore and Parrott 1994; Winkielman and Berridge

2004). For example, Clore and Parrot (1994) manipulated the feeling of certainty unconsciously (through hypnosis) and found that certain people understood a poem better than uncertain people.

Although experiential processing and its influence on judgments has been extensively shown in the literature (Schwarz and Clore 1996; Winkielman and Berridge 2004; Zajonc 1994), current evidence suggests that people may not be able to correct for an unconscious influence. In a series of experiments involving subliminal priming, Winkielman, Zajonc, and Schwarz (1997) found no evidence for judgment correction as predicted. Although the authors listed several potential methodological limitations, they generally concluded that correction may not happen when the stimulus does not produce consciously experienced feelings even though it has produced measurable influences on judgments. We integrate literatures on correction and experiential processing to build our hypothesis.

We propose that people can correct for unconscious experiential processing. According to correction theories, when people are prompted to correct their judgments, they will think back of that situation and appraise their initial reactions (Wegener and Petty 1995). We posit that when people appraise their reactions, they may also take into consideration their global and subjective reactions towards the target, even if these are not completely accessible to consciousness. Consumers will evaluate their judgments for accuracy and adjust them if they believe their judgments were biased for some reason. Consistent with the correction literature, we predict that the direction of correction should be the opposite of that of the initial influence. Nevertheless, our perspective deviates from the traditional view in a key way. Whereas the traditional view implies that people must consciously perceive an influence, we argue that people may correct for the influence of an unconscious subjective experience.

Experiential processing may be mediated by low-level systems that do not produce any accompanying conscious feeling (Winkielman et al. 1997; Zajonc 1994) but increase the accessibility of prime-related mental content (Loersch and Payne 2011). When affect is primed subliminally, it generates a diffuse and nonspecific sensation whose origin is not accessible (Murphy and Zajonc 1993). Based on such previous research, we expect that when an affective stimulus is presented subliminally, the unconsciously elicited feelings will be automatically associated with and interpreted as nonspecific affective reactions to the target (Bargh et al. 1992; Fazio et al. 1986). Thus, although the subliminal stimulus cannot produce identifiable feelings, we expect that people should be able to intuitively access their global feelings or an overall subjective experience that is attributed to their reactions to the target, and correct for this experiential processing.

METHOD

Design and Participants

The study employed a 2 subliminal prime (certain vs. uncertain) x 2 correction (no-correction vs. correction) between-subjects design. We subliminally primed participants with certainty or uncertainty-related words during a lexical decision task. One hundred sixty-seven university students participated in the experiment as part of a one-hour session in exchange for extra credit.

PROCEDURE

Prime manipulation. To prime the feeling of (un)certainly, we subliminally exposed participants to certainty or uncertainty-related

words. Participants were told that they were participating in two unrelated studies. Participants completed a lexical decision task in which they had to identify as quickly and accurately as possible whether a stimulus presented on a desktop computer was a word (using the “z” and the “/” keys). Before the actual task, participants completed six practice trials with no prime. At the beginning of each trial, a fixation point (“****”) appeared at the center of a white screen for 2 seconds to focus their attention. The fixation point was replaced by a 16-point-black-font prime word. Primes consisted of certainty or uncertainty-related words and were presented in randomized order. Certainty-related primes were: confident, sure, convinced, certain, positive, definite, correct, and decisive. Uncertainty-related primes were: insecure, unsure, doubtful, uncertain, hesitant, vague, wrong, ambivalent. The primes were presented for 50 ms and then were replaced by a masking letter string (xvxxvxxv) that did not convey any additional meaning and was at least equal in length to the prime to ensure that the prime would not reach the threshold of conscious perception. The mask was then replaced by the target word, which appeared in the same location after a very brief delay (SOA-Stimulus Onset Asynchrony) varying randomly in duration (from 250 to 750 ms) to avoid participants anticipating the target’s appearance. Targets were neutral words (e.g., house, planet, carpet, river, building, hat, window, ranch) or non-words (e.g., blater, campure, dight, lench, measing, nesion, poit, reesy) and appeared until participants registered their response. A combination of two blocks, eight primes, four words and four non-words yielded 32 trials (each prime was presented twice, once with a word and once with a non-word).

After exposure to the certainty primes, participants proceeded to the next task and read a scenario in which they were looking for an apartment to rent. They were told that they had narrowed their options down to two apartments and that a realtor had recommended the nicer but more expensive apartment (Appendix).

A pretest was conducted to test the efficacy of the priming ($N = 32$). Consistent with previous research, given that certainty was induced subliminally we found no significant effect of the primes on a measure of reported certainty ($p > .48$; “how certain are you about your attitude towards the recommended apartment?”). Therefore, to test whether the certainty primes were effective, we looked at participants’ reaction times in the lexical decision task. Previous research indicates that certainty is related to faster responses (Gross, Holtz, and Miller 1995). We found that participants primed with certainty (vs. uncertainty) related words responded faster in the lexical decision task ($M_{\text{certainty}} = 821.95$ ms, $SD = 317.34$ vs. $M_{\text{uncertainty}} = 1150.30$ ms, $SD = 536.47$; $F(1, 28) = 4.00$, $p = .05$, $\eta^2 = .12$), after accounting for outliers with an excessive number of error rates and cases with latencies faster than 300 ms or slower than 2000 ms (Bargh and Chartrand 2000). As an awareness check, we presented five of the subliminal stimuli again at the end of the pretest, told participants that words were being presented, and asked them to guess what those words were (Bargh and Chartrand 2000). None of the participants could identify any of the primed words, indicating that the subliminal priming was indeed subliminal.

Correction manipulation. In the no correction condition, participants answered the questions immediately after reading the scenario. In the correction condition, participants first read an instruction adapted from Wegener and Petty (1995): “In the next section, please be sure that the realtor’s opinion will not influence your own opinion. It is very important that your answers be based on your own opinion of the apartments.”

Measures. To capture judgments, we asked participants to rate their relative preference to the apartments (“1 = I prefer apartment one/ 7 = I prefer apartment two”). We did not measure certainty in

the study for two reasons. First, consistent with our pretest and with previous research (Winkielman and Berridge 2004), we did not expect an effect on a reported measure of certainty but on participants’ judgments. Second, measuring certainty might affect the nature of the judgment process and create a demand for participants to respond according to their certainty judgments (Petrucci and Baranski 2003). If participants must be aware of their feelings for its effects on judgments to emerge, the generalizability of the findings would be limited and we could be observing a demand effect. By manipulating certainty subliminally and not including a reported measure of certainty, the study provides a compelling test of the effect with a clean manipulation. Finally, to help rule out participants’ mood as an alternative explanation, we included thirteen mood measures adapted from the PANAS (Watson, Clark, and Tellegen 1988) ranging from 1 (“does not describe my current feeling at all”) to 7 (“describes my current feelings very well”).

RESULTS

After removing participants who had an exceptionally high error rate on the lexical decision task and the remaining cases with latencies faster than 300 ms or slower than 2000 ms (Bargh and Chartrand 2000), our final sample was one hundred twenty-three participants. Neither the error rate ($\chi^2 = .19$, $p > .4$) nor the latencies beyond acceptable speed ($\chi^2 = 5.00$, $p > .2$) were related to participants’ assigned conditions, meaning that the removed cases were well distributed across conditions. Differences in degrees of freedom are due to missing values.

Manipulation check. Consistent with the pretest and confirming the efficacy of the certainty manipulation, a one-way (certainty vs. uncertainty) ANOVA ($F(1, 121) = 3.60$, $p < .06$, $\eta^2 = .03$) shows that participants primed with certainty-related words responded marginally faster to the lexical decision task than participants primed with uncertainty-related words ($M_{\text{certainty}} = 816.71$ ms, $SD = 221.73$; $M_{\text{uncertainty}} = 902.07$ ms, $SD = 276.20$).

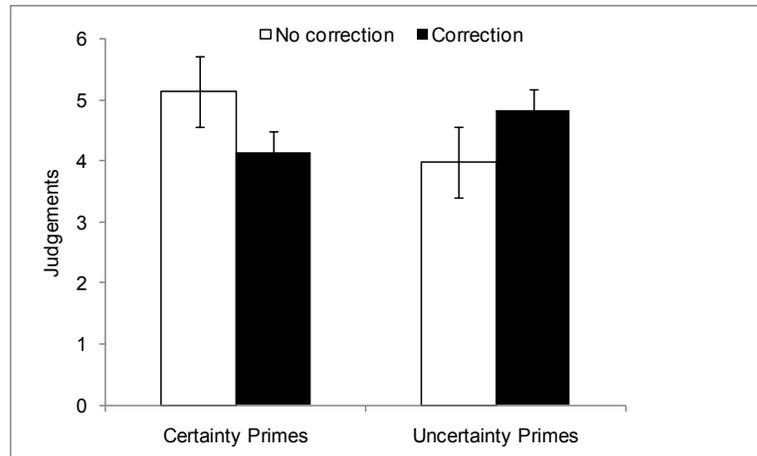
Judgments. A 2 (subliminal prime) x 2 (correction) ANOVA shows a significant interaction between subliminal prime and correction ($F(1, 119) = 11.83$, $p < .001$, $\eta^2 = .09$). In the no-correction condition ($F(1, 119) = 9.64$, $p < .01$, $\eta^2 = .12$), participants primed with certainty words ($M_{\text{certainty}} = 5.13$, $SD = 1.50$) had more favorable judgments towards the recommended apartment than participants primed with uncertainty words ($M_{\text{uncertainty}} = 3.97$, $SD = 1.71$). Providing support for the predicted effect of correction on judgments (figure 1), planned contrasts show that correction decreased preferences for the recommended apartment when certainty was primed ($F(1, 119) = 6.53$, $p < .01$, $\eta^2 = .11$) but increased preferences for the recommended apartment when uncertainty was primed ($F(1, 119) = 5.31$, $p < .02$, $\eta^2 = .08$).

Mood. Based on a factor analysis we created indices of positive mood ($\alpha = .86$; happy, enthusiastic, excited, and proud), negative mood ($\alpha = .84$; afraid, sad, depressed, upset, and irritable), and anxiety ($\alpha = .83$; anxious, tense, distressed, and nervous). None of these indices showed significant effects (all $ps > .47$) when entered as dependent variables in a 2 (subliminal prime) x 2 (correction) ANOVA.

DISCUSSION

The results suggest that people can correct for the influence of stimuli that was presented subliminally and was not found to produce conscious feelings that participants could deliberately report even though we observe a subliminal priming effect on judgments. Our results suggest that changes in mood cannot explain the reported findings, and the fact that the effect of certainty on judgments was marginally reversed in the correction condition rules out regression

Figure 1. Judgements corrected for subliminal priming.



Note: Standard errors are represented in the figure by the error bars attached to each column.

to the mean as a potential explanation. This overcorrection suggests that individuals are adjusting their judgments based on their miscalibrated perceptions (Wilson and Brekke 1994) instead of simply reporting more moderate views.

GENERAL DISCUSSION

We present evidence for correction for unconscious experiential processing. Although most theories of correction assume that people will correct when they become aware that a given factor is influencing their judgments, we show that people can correct for the influence of a stimulus that was presented outside of their conscious awareness. In our study, there is no evidence that participants became aware of the influence. If anything, participants thought that the recommender was possibly influencing their opinion but they were neither aware of what about the recommender was influencing them nor were they told about the direction of the influence. Although the stimuli was primed subliminally and there was no evidence that participants were aware of them or of the feelings they convey, participants were able to intuitively access their global evaluation and correct in the direction opposite of their initial reactions, as correction models would predict.

Though the present study was not designed to test a specific explanation for the effect, it is useful to consider a few alternatives of processes underlying the effect. There are at least two explanatory accounts that could be explored in future research. Our results seem to be consistent with the feelings-as-information model for influence of consciously experienced affect on judgments (Schwarz 1990). This model predicts that judgments positively affected by, for example, positive mood, should become less favorable when people become aware that mood was influencing their judgments. Although unconscious, it is possible that the subliminally primed feelings were thought to be global reactions to the recommender, leading to discounting of these feelings from judgment.

It is also possible that the results here reported are not limited to affective priming but could be explained by semantic priming. One may wonder whether the effect would hold if the subliminal priming involves nonaffective stimuli. According to semantic priming findings people would discount the perceived influence according to the perceived meaning of the priming, which would lead to similar results. However, there is also evidence that affective and semantic priming involve different processes (Murphy and Zajonc 1993). If nonaffective semantic subliminal priming is less intuitively

accessible than affective priming, correction for subliminal semantic priming might be hindered.

A relevant agenda for future research includes not only to reveal what is driving the correction for experiential processing but also to determine when this effect is more or less prominent. Contrary to our results, Winkielman and colleagues (1997) did not find evidence for correction for subliminal affective priming as predicted by the correction literature, which raises the question of when we should observe persistence of subliminal priming and under what circumstances people should be able to correct for an influence they cannot consciously report. Perhaps key to obtain correction of unconscious experiential processing is the presence of an identifiable object to which the subjective experience can be attributed. Correction requires identification of a source of bias, which can be the recommender associated with the unconscious feelings.

Another possibility is that the way that correction is instigated matters. Winkielman and colleagues (1997) induced correction by making a potential source for the feelings salient and telling participants about the direction of influence. This manipulation has been proved successful in several studies using the feelings-as-information paradigm (Schwarz 1990). Our manipulation, on the other hand, was modeled closely after a traditional correction manipulation used in the correction literature (e.g., Wegener and Petty 1995). We have not explicitly told participants that there was an influence, but asked participants to not let the recommender influence their opinions. One key difference is that instead of calling attention to the source of feelings of which participants were unaware, our correction manipulation called attention to a potential (more general) influence by the recommender. The absence of correction in the predicted direction in Winkielman et al.'s (1997) study may have occurred because participants did not perceive the source of the feelings as a potential source of bias given that they were unaware of the feelings. Our manipulation, on the other hand, allows them to access their global reactions to the recommender and correct for that. Moreover, it is possible that telling participants about the source of the feeling (vs. prompting them to correct) did not motivate participants enough to correct.

A potential limitation of our study is that the primed feelings were accessible to consciousness somehow. This is still possible although we carefully developed the subliminal priming after methods used in previous research and the pretest has indicated that participants could not report conscious feelings consistent with the primes nor guess any of the words that were primed. To shed light on this

issue, future research could examine how feelings that are primed subliminally manifest consciously or behaviorally.

In conclusion, the present results suggest that awareness of a biasing factor and naïve theories about how this factor influences one's judgments may not be necessarily consciously present for correction to occur, unlike assumed by traditional correction models (Martin 1986; Schwarz and Bless 1992; Wegener et al. 2004; Wilson and Brekke 1994). Given the pervasiveness of the influence of factors of which consumers are unaware, these results call for further testing and for updating of correction theories to include correction for subjective experiences in addition to conscious assessments. From a consumer welfare perspective, it is interesting that correction may serve as a tool to defend consumers from the influence of marketing stimuli, given that consumers are often unaware of the stimulus and of its influence.

APPENDIX

Stimuli

Imagine that you are looking for an apartment to rent. You have looked at a few apartments, but haven't found what you really want. Although you have seen several different apartments, nothing has seemed just right. You head into an apartment rental agency.

Picture yourself walking into the agency and looking at pictures and ads of apartments. There are pictures of different styles of apartments in various sizes and locations. A realtor walks up to you and says, "Hi, my name is Chris. Let me know if I can answer any questions for you."

Imagine that after looking through the pictures of several apartments, you narrow it down to two choices. The first is a nice, fairly standard apartment. The second apartment looks a little nicer, but it costs quite a bit more than the first. You look over the pictures one more time, looking carefully at the floor plans of each apartment. As you look at the picture of the second apartment, the realtor walks up to you and says, "That's a great apartment. I think it's a better option than the other one. Besides, it is very attractive." You look at the pictures and the floor plans one more time, wondering whether you should get the second apartment.

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