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A Second Chance for First Impressions? Exploring the Context-(In)Dependent Updating of Implicit Evaluations

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Abstract

Research on implicit evaluation has yielded mixed results, with some studies suggesting that implicit evaluations are relatively resistant to change and others showing that implicit evaluations can change rapidly in response to new information. To reconcile these findings, it has been suggested that changes in implicit evaluations can be limited to the context in which counterattitudinal information was acquired. The current research expands on evidence for such context-dependent changes by investigating whether two cases of rapid change—updating caused by a reinterpretation of earlier information and by exposure to diagnostic information—generalize across contexts or, instead, are limited to the context in which the qualifying information was acquired. Two experiments found that both reinterpretation of earlier information and diagnostic counterattitudinal information led to changes in implicit evaluations that generalized across contexts. Implications for the malleability of implicit evaluations and context-dependent changes in implicit evaluations are discussed.

Keywords

attitude change, implicit evaluation, context effects, impression formation

Our implicit evaluation[1] of people can influence the type of information we seek about them (e.g., Galdi, Gawronski, Arcuri, & Friese, 2012), our interpretation of their behaviors (e.g., Hugenberg & Bodenhausen, 2003), and our own behaviors toward them (e.g., Dovidio, Kawakami, & Gaertner, 2002). Thus, a considerable body of research has been devoted to understanding whether and how implicit evaluations can be altered, especially when these evaluations are deemed problematic or undesirable (e.g., Hu et al., 2015; Lai et al., 2014).

Overall, this research has yielded mixed results regarding the ease with which implicit evaluations can be changed. Whereas some studies have found that implicit evaluations are highly resistant to change, other studies have shown rapid changes in response to counterattitudinal information (for a review, see Gawronski & Bodenhausen, 2006). To reconcile these mixed findings, it has been suggested that at least some of the observed changes may be limited to the context in which the counterattitudinal information was acquired (Gawronski & Cesario, 2013). Expanding on evidence supporting this hypothesis, the current research examined whether two recently discovered cases of rapid change—updating caused by a reinterpretation of earlier information[2] (Mann & Ferguson, 2015) and by exposure to diagnostic information (Cone & Ferguson, 2015)—generalize across contexts or, instead, are limited to the context in which the qualifying information was acquired.

Stability Versus Malleability of Implicit Evaluations

Early theories assumed that implicit evaluations reflect overlearned information that was solidified through repeated experiences (e.g., Devine, 1989; Rudman, 2004). In line with this view, some theorists proposed that counterattitudinal information often leads to the formation of a new attitude that does not erase the old attitude from memory (e.g., Petty, Tormala, Briñol, & Jarvis, 2006; Wilson, Lindsey, & Schooler, 2000). According to these theories, old attitudes are activated automatically, whereas newly acquired attitudes require controlled processing to influence evaluations. As a result, old attitudes may influence evaluations even after new information has been acquired.

Consistent with these assumptions, Rydell, McConnell, Strain, Claypool, and Hugenberg (2007) found that explicit evaluations changed rapidly in response to small amounts of counterattitudinal information. In contrast, implicit evaluations changed only after exposure to large amounts of coun-

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terattitudinal information. Similarly, Gregg, Seibt, and Banaji (2006) found that implicit evaluations changed in response to numerous concrete observations but not in response to abstract statements regarding the object being evaluated. Yet, explicit evaluations changed in response to either type of information.

In contrast, other findings point to the relative ease with which implicit evaluations can change. Notably, two recent findings suggest that implicit evaluations can change in response to a single piece of information. First, Mann and Ferguson (2015) demonstrated that new information resulting in a reinterpretation of prior information changed implicit evaluations. In these studies, participants formed a negative impression of a target individual by reading a story that depicted the individual performing various negative actions (e.g., breaking into a house and taking precious things from the bedroom). After forming an impression, participants received additional information that suggested a positive meaning of the target's actions (e.g., the individual broke into the house to save the family's kids from a fire). Counter to the hypothesis that changes in implicit evaluations require large amounts of counterattitudinal information, participants showed a revision of their implicit evaluations in response to the new information.

Another set of experiments by Cone and Ferguson (2015) demonstrated the effectiveness of diagnostic information in rapidly changing implicit evaluations. In their experiments, participants formed an impression of a target individual via large amounts of positive information and then received either one piece of highly diagnostic negative information or neutral information. Again, counter to the hypothesis that changes in implicit evaluations require large amounts of counterattitudinal information, participants who received a single piece of diagnostic negative information showed a revision of their implicit evaluations.

Context-Dependent Change in Implicit Evaluations

To reconcile inconsistencies in the literature on implicit evaluation, Gawronski, Rydell, Vervliet, and De Houwer (2010) hypothesized that changes in implicit evaluations can be limited to the context in which counterattitudinal information was acquired. As a result, implicit evaluations can appear either resistant or responsive to new information depending on the context in which they are measured. Specifically, implicit evaluations may reflect newly learned, counterattitudinal information when measured in the context in which counterattitudinal information was acquired. Yet, implicit evaluations may reflect initial attitudinal information when measured in the context in which initial attitudinal information was acquired or in a novel context in which no prior learning occurred (for a review, see Gawronski & Cesario, 2013).

Rydell and Gawronski (2009) provided the first demonstration of context-dependent changes in implicit evaluations. In their study, participants formed an impression of an individual via behavioral statements that were presented against a colored background (e.g., blue). Subsequently, participants were given new information about the individual that was opposite in valence to the initial information, and this new information was presented against a different background color (e.g., yellow). Participants' implicit evaluations of the individual were then measured against the background of the initial attitudinal information (e.g., blue), the background of the counterattitudinal information (e.g., yellow), and a novel background that had not been previously presented (e.g., green). Demonstrating context-dependent change, implicit evaluations reflected the counterattitudinal information only when the target was presented against the background color of the counterattitudinal information. In contrast, implicit evaluations reflected the initial attitudinal information when the target was presented against the background color of the initial attitudinal information or a novel background color.

To account for these findings, Gawronski et al. (2010) proposed that attention to the context is typically low during the encoding of initial information about other people (see Gilbert & Malone, 1995) but enhanced during the encoding of expectancy-violating information (see Hamilton, 1998). To the extent that enhanced attention to the context during the encoding of evaluative information leads to an integration of the context into the representation of that information, initial attitudinal information should be stored in context-free representations, whereas expectancy-violating information should be stored in contextualized representations. As a result, implicit evaluations should reflect the valence of expectancy-violating information only in the context in which this information was acquired.

The Current Research

The current research expands on the findings of Mann and Ferguson (2015) and Cone and Ferguson (2015) by investigating whether the two cases of rapid updating reflect context-dependent or context-independent changes in implicit evaluations. Drawing on Gawronski et al.'s (2010) hypothesis that context-dependent change results from enhanced attention to the context during the encoding of expectancy-violating information, we predicted that reinterpretation of earlier information should lead to *context-independent* changes in implicit evaluations. In contrast, diagnostic counterattitudinal information was predicted to produce *context-dependent* changes in implicit evaluations.

The first prediction was derived from the proposition that information that sheds new light on old information simply provides additional cues regarding the meaning of the old information, which does not involve any kind of expectancy violation. Because expectancy violation is assumed to be a central determinant of attention to the context during encoding (Gawronski, Rydell, Vervliet, & De Houwer, 2010), the new information should simply lead to a reinterpretation of the old information instead of being stored in a contextualized representation. As a result, it should lead to changes in implicit evaluations that generalize across contexts.

The second prediction was derived from the proposition that diagnostic information that is inconsistent with initially acquired attitudinal information should violate perceivers' expectancies and thereby enhance attention to the context during the encoding of the counterattitudinal information. As a result, diagnostic counterattitudinal information should be stored in a contextualized representation, leading to context-dependent changes in implicit evaluations.

To test these predictions, we conducted two experiments that directly adapted the paradigms by Mann and Ferguson (2015) and Cone and Ferguson (2015) and combined them with the contextualized change paradigm by Rydell and Gawronski (2009). In doing so, our studies provide (a) direct replications of the two cases of rapid changes in implicit evaluations and (b) tests of the two hypotheses regarding the context dependence versus context independence of the obtained changes in implicit evaluations.[3]

Experiment 1

Experiment 1 tested the hypothesis that the reinterpretation of earlier information in light of new information leads to context-independent changes in implicit evaluations. Participants first received negative information about a target individual against a colored background and then completed a measure of implicit evaluations of the target. Afterward, participants received one additional piece of information against a different colored background. For half of the participants, the new information suggested a positive interpretation of the initial information. For the remaining half, the new information supported the initial negative interpretation. Finally, all participants completed the measure of implicit evaluations a second time. To investigate the context-dependent versus context-independent changes resulting from reinterpretation, implicit evaluations at both measurement points were assessed against three different backgrounds: the background color of the initial information (first learning context), the background color of the additional information (second learning context), and a third background color that was not presented during the impression formation task (novel context).

Method

Participants and Design

Participants were recruited for a study on impression formation via Amazon's MTurk. Participants received US$1.00 in exchange for their participation. Data were collected using Inquisit by Millisecond Software. The program included several individual scripts, such that participants could cease participation or skip portions of the study at any time. Of the 536 participants who initially began the study, 300 participants submitted requests for payments. Two of these participants skipped critical parts of the study, leaving us with a final sample of 298 (137 female, 147 male; $M_{age} = 35.24$, $SD_{age} = 10.78$; demographic data missing for 14 participants).[4] The study included a 2 (New Information: supportive vs. reinterpretation) × 2 (Measurement Time: Time 1 vs. Time 2) × 3 (Measurement Context: first learning context vs. second learning context vs. novel context) mixed design, with the first variable as a between-subject factor and the others as within-subject factors.

Impression Formation Task

Participants were instructed to form an impression of a pictured target individual on the basis of a short story. The story included 26 statements, each of which was presented on a separate screen until the participant pressed the space bar to move on to the next statement. The story was designed to elicit a negative impression by depicting the target forcefully entering homes, destroying valuables, and removing items from the homes. Each piece of the story was presented below the target's picture and against the same background color. Half of the participants viewed the information against a blue background, while the remaining participants viewed the information against a yellow background.

After reading the story, participants were presented with one additional piece of information about the target. Critically, for participants who viewed the initial story against a blue background, the new information was presented against a yellow background, and vice versa. Half of the participants received a new piece of information that suggested a positive interpretation of the target's actions in the story (i.e., the individual had broken into the homes in order to save two children from fires that had broken out within the homes). Participants in a control condition received new information that supported the initial negative interpretation (i.e., after exiting the homes, the individual sat outside throwing rocks at the houses until the owners returned).

Implicit Evaluations

Implicit evaluations were measured with the affect misattribution procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005) at two measurement points: once after the presentation of the story and once after participants received the additional information. On each trial, a face prime was presented against one of three background colors for 75 ms, followed by a fixation cross for 125 ms, a Chinese ideograph for 100 ms, and finally a pattern mask until participants gave a response. Participants were told to ignore the face and to indicate whether they considered the Chinese ideograph as visually more pleasant or less pleasant than average. To measure implicit evaluations, the Chinese ideograph was preceded by one of six face primes: the individual from the impression formation task or one of five unknown faces. Each face prime was presented against one of the three different background colors: the background color of the initial story (first learning context), the background color of the additional information (second learning context), or a third background color that was not presented during the impression formation task (novel context). The AMP included a total of 120 trials, 60 of which showed the target against one of the three backgrounds (20 trials for each background) and

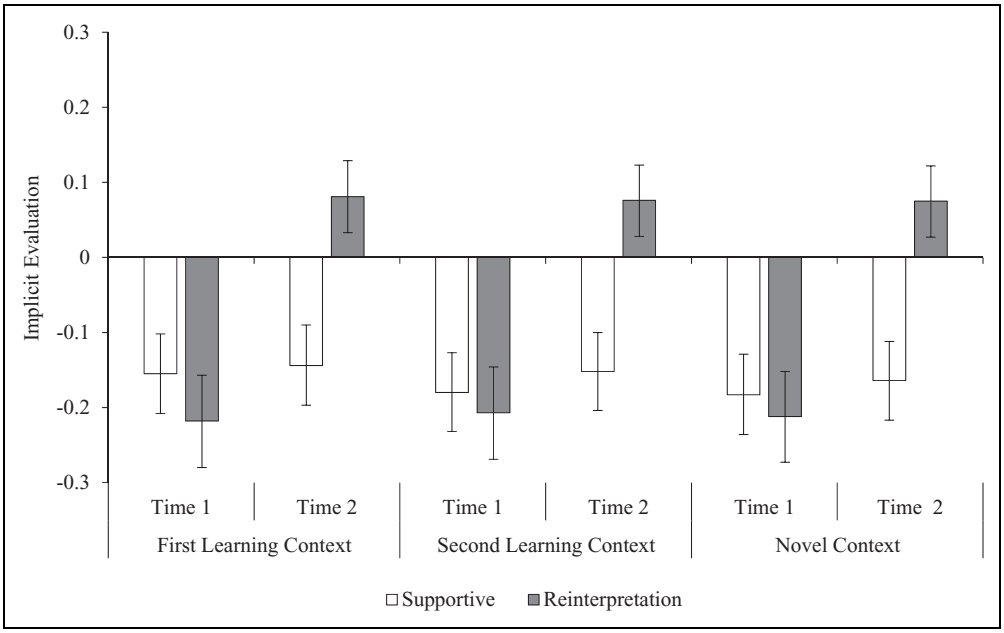

Figure 1. Mean affect misattribution procedure (AMP) scores as a function of new information (supportive vs. reinterpretation), measurement time (Time 1 vs. Time 2), and measurement context (first learning context vs. second learning context vs. novel context), Experiment 1. AMP scores are baseline corrected against scores for neutral primes. Higher scores represent more implicit positivity relative to neutral primes. Error bars represent 95% confidence intervals.

the remaining 60 showing the five unknown faces against one of the three backgrounds.

Results and Discussion

AMP data were aggregated by calculating the proportion of ''pleasant'' responses for the two types of face primes (i.e., impression target vs. unknown faces) against each of the three backgrounds. Baseline-corrected AMP scores were calculated by subtracting the scores for the unknown faces from the scores for the impression target for each of the three backgrounds.[5] Higher scores on this index indicate more positive implicit evaluations of the target within a given context compared to baseline. AMP scores were submitted to a 2 (New Information: supportive vs. reinterpretation) × 2 (Measurement Time: Time 1 vs. Time 2) × 3 (Measurement Context: first learning context vs. second learning context vs. novel context) mixed-design analysis of variance. The analysis revealed significant main effects of Measurement Time, $F(1, 296) = 54.64$, $p < .001$, $\eta_p^2 = .16$, and New Information, $F(1, 296) = 10.40$, $p = .001$, $\eta_p^2 = .03$, which were qualified by a significant two-way interaction between Measurement Time and New Information, $F(1, 296) = 41.89$, $p < .001$, $\eta_p^2 = .12$ (see Figure 1). For participants who received new information that supported the initial interpretation, implicit evaluations of the target did not differ between Time 1 and Time 2, $F(1, 155) = 0.93$, $p = .36$, $\eta_p^2 = .01$. In contrast, for participants who received new information that suggested a reinterpretation, implicit evaluations were more favorable at Time 2 compared with Time 1, $F(1, 141) = 58.20$, $p < .001$, $\eta_p^2 = .29$. Importantly, for participants in the reinterpretation condition, the difference between implicit evaluations at Time 1 and Time 2 was statistically significant for all three contexts: the first learning context, $F(1, 141) = 52.94$, $p < .001$, $\eta_p^2 = .27$, the second learning context, $F(1, 141) = 47.20$, $p < .001$, $\eta_p^2 = .25$, and the novel context, $F(1, 141) = 53.49$, $p < .001$, $\eta_p^2 = .28$, indicating updated evaluations across all measurement contexts. The two-way interaction of Measurement Time and New Information was not qualified by a higher order interaction with Measurement Context, $F(2, 295) = 0.51$, $p = .60$, $\eta_p^2 = .00$.

AMP scores were highly correlated across contexts at each measurement time, regardless of the type of the new information (see Table 1). Further, AMP scores within the same context were highly correlated between Time 1 and Time 2 in the supportive condition, but not in the reinterpretation condition (see Table 2), providing further evidence for context-independent changes in implicit evaluation following the reinterpretation information. Together, these results support the hypothesis that reinterpretation of old information should change implicit evaluations regardless of the context.

Experiment 2

Experiment 2 tested the prediction that a single piece of diagnostic information leads to context-dependent changes in implicit evaluations. Participants first received positive information about a target individual against a colored background and then completed a measure of implicit evaluations of the target. Afterward, participants were given one additional piece of information against a different colored background. For half of the participants, the new information included diagnostic negative information. For the remaining half, the new information

Table 1. Correlations of AMP Scores Across Measurement Contexts, Experiment 1.

Measurement time	1	2	3
Time 1			
1. First learning context	—	.82***	.80***
2. Second learning context	.87***	—	.80***
3. Novel context	.86***	.85***	—
Time 2			
1. First learning context	—	.81***	.82***
2. Second learning context	.78***	—	.79***
3. Novel context	.77***	.78***	—

Note. AMP = affect misattribution procedure. Values above the diagonal reflect correlations within the supportive information condition; values below the diagonal reflect correlations within the reinterpretation information condition. Correlations are based on baseline-corrected scores.
***$p < .001$.

Table 2. Correlations of AMP Scores Across Measurement Time as a Function of Measurement Context and New Information, Experiment 1.

New information	First learning context	Second learning context	Novel context
Supportive information	.63***	.65***	.58***
Reinterpretation information	–.08	–.11	–.02

Note. AMP = affect misattribution procedure. Correlations are based on baseline-corrected scores.
***$p < .001$.

was neutral. Finally, all participants completed the measure of implicit evaluations a second time. As in Experiment 1, implicit evaluations at both measurement points were assessed against three different backgrounds: the first learning context, the second learning context, and a novel context.

Method

Participants and Design

Participant recruitment and data collection followed the procedures outlined in Experiment 1. Of the 364 participants who initially began the study, 300 submitted requests for payments. Fifteen of these participants skipped critical parts of the study, leaving us with a final sample of 285 (129 female, 120 male; $M_{age} = 37.98$, $SD_{age} = 11.69$; demographic data missing for 36 participants).[6] The study included a 2 (New Information: diagnostic vs. neutral) × 2 (Measurement Time: Time 1 vs. Time 2) × 3 (Measurement Context: first learning context vs. second learning context vs. novel context) mixed design, with the first variable as a between-subjects factor and the other two as within-subjects factors.

Impression Formation Task

Participants were instructed to form an impression of a pictured target individual on the basis of 50 statements that described either positive or negative behaviors. Participants were presented with 25 negative statements and 25 positive statements, which were randomly selected from a list of 50 statements of the respective valence. For each statement, participants were asked to guess whether the behavior was characteristic or uncharacteristic of the target by pressing the *C* key for characteristic behaviors and the *U* key for uncharacteristic behaviors. The task was designed such that all participants would form a positive impression of the individual. Thus, participants received feedback on their guesses, such that each positive statement was indicated to be characteristic, whereas each negative statement was indicated to be uncharacteristic. For example, if participants guessed that a positive (negative) behavior was characteristic of the target, they were told that their response was correct (incorrect). Conversely, if participants guessed that a positive (negative) behavior was uncharacteristic of the target, they were told that their response was incorrect (correct). Half of the participants viewed the information against a blue background, and the remaining participants viewed the information against a yellow background.

Subsequently, participants were presented with one additional statement about the target against a different background color. For participants who viewed the initial information against a blue background, the new information was presented against a yellow background, and vice versa. For half of the participants, the new statement included diagnostic negative information (i.e., "Bob was recently convicted of molesting children."). For the remaining half, the new statement was neutral (i.e., "Bob bought a can of soda.")

Implicit Evaluation

The measure of implicit evaluations was identical to Experiment 1. Participants completed the AMP twice: once after the presentation of the initial information and once after the presentation of the additional information.

Results and Discussion

Baseline-corrected AMP scores were aggregated in line with the procedures of Experiment 1 and submitted to a 2 (New Information: diagnostic vs. neutral) × 2 (Measurement Time: Time 1 vs. Time 2) × 3 (Measurement Context: first learning context vs. second learning context vs. novel context) mixed design.[7] The analysis revealed significant main effects of Measurement Time, $F(1, 283) = 49.20$, $p < .001$, $\eta_p^2 = .15$, and New Information, $F(1, 283) = 17.80$, $p < .001$, $\eta_p^2 = .06$, which were qualified by a significant two-way interaction between Measurement Time and New Information, $F(1, 283) = 29.34$, $p < .001$, $\eta_p^2 = .09$ (see Figure 2). For participants in the neutral information condition, implicit evaluations of the target were less favorable at Time 2 compared with Time 1, $F(1, 149) = 4.37$, $p = .038$, $\eta_p^2 = .03$, but this effect was much more pronounced in the diagnostic information condition, $F(1, 134) = 41.50$, $p < .001$, $\eta_p^2 = .24$. Counter to our predictions, for participants in the diagnostic information condition, the difference

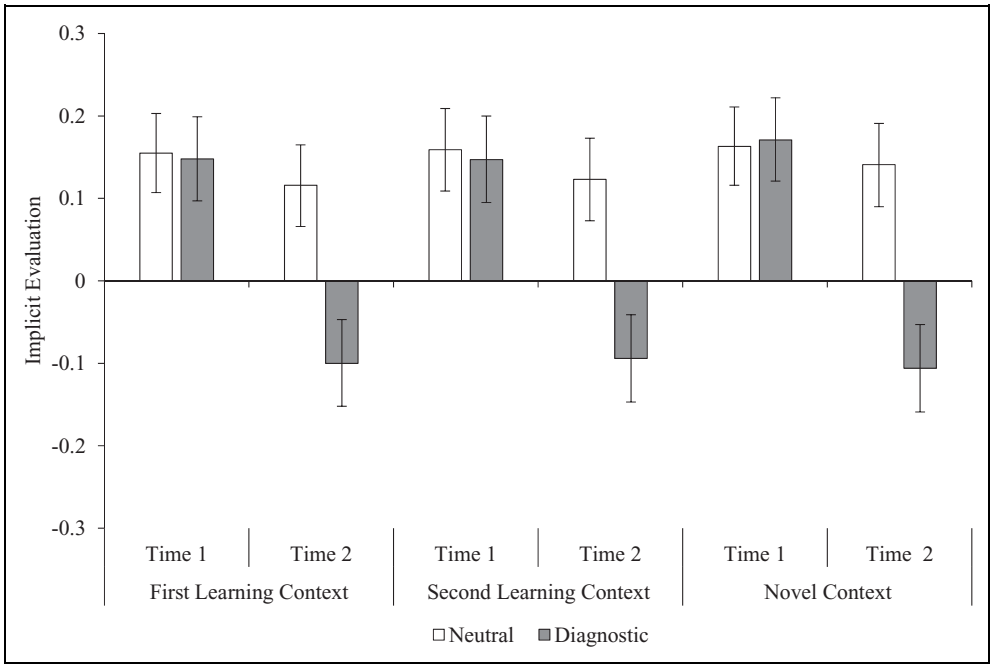

Figure 2. Mean affect misattribution procedure (AMP) scores as a function of new information (diagnostic vs. neutral), measurement time (Time 1 vs. Time 2), and measurement context (first learning context vs. second learning context vs. novel context), Experiment 2. AMP scores are baseline corrected against scores for neutral primes. Higher values represent more implicit positivity relative to neutral primes. Error bars represent 95% confidence intervals.

Table 3. Correlations of AMP Scores Across Measurement Contexts, Experiment 2.

Measurement time	1	2	3
Time 1			
1. First learning context	—	.79***	.83***
2. Second learning context	.83***	—	.79***
3. Novel context	.79***	.82***	—
Time 2			
1. First learning context	—	.75***	.75***
2. Second learning context	.88***	—	.80***
3. Novel context	.81***	.89***	—

Note. AMP = affect misattribution procedure. Values above the diagonal reflect correlations within the neutral information condition; values below the diagonal reflect correlations within the diagnostic information condition. Correlations are based on baseline-corrected scores.
***$p < .001$.

between implicit evaluations at Time 1 and Time 2 was statistically significant for all three contexts: the first learning context, $F(1, 134) = 35.31$, $p < .001$, $\eta_p^2 = .21$, the second learning context, $F(1, 134) = 32.13$, $p < .001$, $\eta_p^2 = .19$, and the novel context, $F(1, 134) = 47.27$, $p < .001$, $\eta_p^2 = .26$. The two-way interaction of Measurement Time and New Information was not qualified by a higher-order interaction with Measurement Context, $F(2, 282) = 1.78$, $p = .17$, $\eta_p^2 = .01$.

As in Experiment 1, AMP scores were highly correlated across contexts regardless of measurement time or condition (see Table 3). Further, AMP scores within the same context were highly correlated between Time 1 and Time 2 in the neutral condition but not in the reinterpretation condition (see Table 4), providing further support for context-independent changes in response to diagnostic information. Together, these results disconfirm the hypothesis that diagnostic information should result in context-dependent changes in implicit evaluations.

General Discussion

The main goal of the current research was to test whether two recently discovered cases of rapid change in implicit evaluations—updating caused by a reinterpretation of earlier information (Mann & Ferguson, 2015) and by exposure to diagnostic information (Cone & Ferguson, 2015)—generalize across contexts or instead are limited to the context in which the qualifying information had been acquired. Drawing on Gawronski et al.'s (2010) hypothesis that context-dependent change results from enhanced attention to the context during the encoding of expectancy-violating information, we predicted that reinterpretation of earlier information should lead to context-independent changes in implicit evaluations, whereas diagnostic information should lead to context-dependent changes.

In Experiment 1, we found that a single piece of information that shed a positive light on prior negative information resulted in changes in implicit evaluations irrespective of the context. In addition to replicating the findings by Mann and Ferguson (2015), these results confirm the hypothesis that changes in implicit evaluations resulting from reinterpretations of earlier information should generalize across contexts. Similarly, in Experiment 2, we found that diagnostic counterattitudinal information resulted in changes in implicit evaluations

Table 4. Correlations of AMP Scores Across Measurement Time as a Function of Measurement Context and New Information, Experiment 2.

New information	First learning context	Second learning context	Novel context
Neutral information	.60***	.63***	.65***
Diagnostic information	–.13	–.14	–.05

Note. AMP = affect misattribution procedure. Correlations are based on baseline-corrected scores.
***$p < .001$.

irrespective of the context. These results replicate the findings by Cone and Ferguson (2015). However, they disconfirm the hypothesis that changes in implicit evaluations resulting from diagnostic information should be limited to the context in which the diagnostic information was learned.

Implications for Context-Dependent Change

While the results of Experiment 1 confirmed our theoretically derived prediction regarding the type of information that should lead to context-independent changes in implicit evaluations (i.e., information that sheds new light on earlier information), the results of Experiment 2 disconfirmed our theoretically derived prediction regarding the precursors of context-dependent changes (i.e., diagnostic counterattitudinal information). There are at least two potential explanations for this obtained discrepancy.

First, one could argue that expectancy violations may be necessary, but insufficient, to produce context-dependent changes in implicit evaluations. According to Roese and Sherman (2007), expectancy violations indicate an inconsistency between one's beliefs about the world and reality, which triggers a search for an explanation that resolves this inconsistency (see also Gawronski, 2012). Thus, if the context provides such an explanation, the context may be integrated into the representation of the new information. If, however, the context does not explain the inconsistency, the context might be ignored. To the extent that explanations of inconsistency in terms of a given context require support from more than a single piece of information, expectancy violation may be necessary, but insufficient, to produce context-dependent changes in implicit evaluations. What might be necessary in addition to expectancy violation is that (a) the context explains the inconsistency and (b) the contextual explanation is supported by multiple pieces of information.

Although these assumptions reconcile the discrepancy between the current findings and previous evidence for context-dependent changes in response to multiple pieces of counterattitudinal information (e.g., Gawronski et al., 2010; Gawronski, Ye, Rydell, & De Houwer 2014; Rydell & Gawronski, 2009), there is some evidence that speaks against such an interpretation. First, there is evidence that expectancy violations can lead to context-dependent changes in implicit evaluations even when the context does not explain the observed inconsistency. For example, Gawronski et al. (2010) found context-dependent changes in implicit evaluations even when initial attitudinal information and subsequent counterattitudinal information were presented in the same context. In this case, implicit evaluations reflected the counterattitudinal information only in the context in which this information had been learned and the initial attitudinal information in a novel context. These results suggest that context-dependent changes in implicit evaluations can occur irrespective of the context's capacity to explain the observed inconsistency. Moreover, Gawronski, Ye, Rydell, and De Houwer (2014) found that a single piece of expectancy-violating information was sufficient to produce an integration of the context into the representation of the expectancy-violating information (see also Brannon, Sacchi, & Gawronski, 2016). These results suggest that multiple pieces of counterattitudinal information are not necessary for the integration of the context into the representation of the counterattitudinal information.

A second potential explanation is that extreme negative behavior is deemed indicative of core personality characteristics, resulting in dispositional attributions that generalize across contexts (Fiske, 1980; Reeder, 1993). This may be especially the case within the morality domain (see Reeder & Brewer, 1979; Skowronski & Carlston, 1989). Hence, when confronted with expectancy-violating behavior of extreme negative valence, perceivers may engage in dispositional attributions that fully override the effects of enhanced attention to the context. From this perspective, the results of Experiment 2 do not necessarily disprove Gawronski et al.'s (2010) account of context-dependent changes in implicit evaluations. Instead, they suggest an important boundary condition that has to be reconciled with the original theory by means of an additional assumption (i.e., effects of enhanced attention to the context can be overridden by dispositional attributions).

Malleability of Implicit Evaluations

By providing independent, direct replications of the findings by Mann and Ferguson (2015) and Cone and Ferguson (2015), the current research lends further support for the hypothesis that implicit evaluations can change rapidly in response to a single piece of information. Such findings stand in contrast to the idea that changes in implicit evaluations require large amounts of counterattitudinal information (e.g., Gregg, Seibt, & Banaji, 2006; Rydell, McConnell, Strain, Claypool, & Hugenberg, 2007). The latter idea was inspired by claims that new counterattitudinal information often leads to the formation of a new attitude that does not erase the old attitude from memory (e.g., Petty et al., 2006; Wilson et al., 2000). As a result, old attitudes may influence implicit evaluations even when controlled evaluations reflect newly acquired, counterattitudinal information. This hypothesis fails to explain the current findings in which implicit evaluations were altered by a single piece of new information (cf. Cone & Ferguson, 2015; Mann & Ferguson, 2015). Yet, the current findings are consistent with the idea that a single piece of new information can lead

to rapid changes in implicit evaluations to the extent that this information elicits propositional inferences that affirm a new evaluation rather than merely negate an old evaluation (e.g., Gawronski & Bodenhausen, 2006). Consistent with this idea, Mann and Ferguson (2015) found changes in implicit evaluations only when participants engaged in propositional inferences about the new meaning of old information but not when such inferences were disrupted. Thus, in addition to providing deeper insights into the conditions of context-independent changes in implicit evaluations, the current findings provide further evidence for rapid changes in response to a single piece of new information. For the sake of enhanced theoretical accounts regarding changes in implicit evaluations more broadly, future research should test the generalizability of our findings to nonsocial objects (e.g., consumer products), other types of contexts (e.g., contexts that are conceptually related to the acquired information), and other measures of implicit evaluation.

Conclusion

The current studies extend previous research on the updating of implicit evaluations by showing that both reinterpretation of earlier information and diagnostic counterattitudinal information lead to changes in implicit evaluations that generalize across contexts. These findings provide (a) valuable insights into the conditions that lead to context-independent changes and (b) further support for the idea that implicit evaluations can change in response to a single piece of information.

Authors' Note

All materials, data, and analyses can be found at https://osf.io/qr2v3/.

Declaration of Conflicting Interests

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Supplemental Material

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Notes

1. We use the term implicit evaluation to refer to evaluative responses on performance-based measures, which we distinguish from explicit evaluations captured by self-report measures (Gawronski & Bodenhausen, 2011). This conceptualization is theoretically neutral, in that it does not implicate specific assumptions regarding the mental representations underlying the two types of responses (e.g., implicit vs. explicit attitudes) or the nature of their underlying processes (i.e., automatic vs. controlled).
2. We define reinterpretation as the revision of meaning of past information and updating as the revision of the valence of an evaluation.
3. For both studies, we report all measures, all conditions, and all data exclusions. Based on the studies by Mann and Ferguson (2015) and Cone and Ferguson (2015) and meta-analytic data by Gawronski, Hu, Rydell, Vervliet, and De Houwer (2015), the predetermined sample size for each study was set to 300 participants. The data for each study were collected in one shot without intermittent statistical analyses.
4. One participant failed an attention check, 3 participants suffered from color blindness, and 17 participants were familiar with Mandarin Chinese. Excluding these participants did not change the pattern of results.
5. Analyses with uncorrected AMP scores for the impression target produced identical results.
6. Five participants failed an attention check, four participants suffered from colorblindness, and six participants were familiar with Mandarin Chinese. Excluding these participants did not change the pattern of results.
7. Analyses with uncorrected AMP scores for the impression target produced identical results.

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