

Contextualization of Mental Representations and Evaluative Responses: A Theory-Based Analysis of Cultural Differences

Yang Ye

The University of Western Ontario

Bertram Gawronski

University of Texas at Austin

The present chapter provides a theory-based analysis of East-West differences in context effects on evaluative responses. Drawing on documented cultural differences in social cognition and a recently proposed representational theory of contextualized evaluation, we discuss how cultural differences in attention and thinking styles may influence the integration of contextual information into mental representations of conflicting evaluative information, and thus context effects on evaluative responses. The analysis reveals two potential patterns of cultural differences, with diverging predictions regarding the impact of contextual cues on evaluative responses among East Asians and Westerners. Implications of the current analysis for cross-cultural research are discussed.

Keywords: attention; attitudes; cultural differences; context effects; dialectical thinking

On April 19th, 2013, Americans saw in the morning news that a 19-year old young man, a suspect of the Boston Marathon bombings, was on the run (Carter & Botelho, 2013; National Post Staff & Goodman, 2013). A massive manhunt for this suspect was underway in Watertown, Massachusetts. Later that day, they saw in the afternoon news that this suspect, according to his friends and acquaintances, happened to be a nice and friendly high school kid who was popular among fellow students (ABC News, 2013), an all-star wrestler (Schuppe, 2013), and working occasionally as a lifeguard at Harvard University (Lucky, 2013; for a full story, see Russell, Abelson, Wen, Rezendes, & Filipov, 2013). Given that the same person was responsible for the death of 3 innocent people and the injury of 185 others, it seems difficult not to be perplexed by this conflicting information. How could a friendly teenager commit such a horrible crime?

Although quite extreme, this example illustrates a situation that people frequently encounter in everyday life. We are often exposed to information that challenges our existing beliefs about other people, forcing us to reconcile conflicting pieces of information. Imagine, for example, you witness a new colleague of yours administering first aid to an unknown victim of a hit-and-run accident. A few days earlier, however, the same colleague refuses to help one of your co-workers, and yells at her in the office. How would you feel about your new colleague the next time you see him in the office? Would your reaction be different if you saw him somewhere on the street? And how would you respond if you saw him in a completely different context, for example, a grocery store?

In the current chapter, we seek to provide answers to these questions and analyze their implications for cultural differences in context effects on evaluative responses. In an increasingly diverse society, it is important to understand how cultural backgrounds may influence the way people form impressions about and act toward other people, such as the colleague in the example above. Our analysis focuses particularly on East-West differences in attention and thinking styles, which influence the processing of conflicting information at the time of encoding (e.g., Markus & Kitayama, 1991; Peng & Nisbett, 1999; Spencer-Rodgers, Peng, Wang, & Hou, 2004). Because differences in the encoding of evaluative information determine how it is stored in memory, cultural

differences in attention and thinking styles have fundamental implications for evaluative responses to attitudinal objects upon future encounters.

To illustrate how cultural differences in attention and thinking styles can influence evaluative responses, we first review the core assumptions of a recently proposed representational theory of contextualized evaluation (RTCE) (Gawronski, Rydell, Vervliet, & De Houwer, 2010). The theory offers a mechanistic account of context effects on evaluative responses (see Gawronski & Bodenhausen, in press) by identifying the mental processes and representations that mediate the effects of input stimuli (i.e., a target person, contextual cues) on overt behavior (i.e., evaluative responses). Specifically, the theory explains (1) how evaluatively inconsistent information about a target object is encoded and integrated into mental representations, and (2) how the resulting representations influence evaluative responses toward the target object in different contexts. Two central factors in the theory are (1) attention to context during the encoding of expectancy-violating information, and (2) the subsequent impact of contextual cues in modulating evaluative responses toward the target.

In the second part of chapter, we provide a theory-based analysis of cultural differences in the formation of mental representations and their implications for context effects on evaluative responses. Drawing on existing research on East-West differences in social cognition (e.g., Markus & Kitayama, 1991; Peng & Nisbett, 1999; Spencer-Rodgers, Peng, Wang, & Hou, 2004), we analyze how cultural differences in attention and thinking styles may influence the key processes proposed by the RTCE (Gawronski et al., 2010), leading to different predictions for individuals from East Asian and Western cultures with regard to context effects on evaluative responses. Our analysis generates two competing hypotheses which, when tested empirically, may provide interesting new avenues for research on cultural differences in social cognition.

The Representational Theory of Contextualized Evaluation

The RTCE was originally designed to integrate disparate findings in the literature on automatic evaluation, including evidence that automatic evaluations can be (1) highly robust and difficult to change, (2) highly flexible and easy to change, and (3)

highly context-dependent (for a review, see Gawronski & Sritharan, 2010). At a broader level, the theory aims to specify the contextual conditions under which evaluative responses reflect initially acquired attitudinal information, subsequently acquired counterattitudinal information, or a mixture of both (Gawronski et al., 2010).

Like many other theories in the attitude literature, the RTCE assumes that, when individuals acquire evaluative information about a novel object, the learning experience creates a mental trace that links the object to the newly acquired information. To the extent that this memory trace is sufficiently strong, it will be activated during future encounters with the target object, thereby eliciting an evaluative response to the target that is in line with the valence of the stored information (Fazio, 2007; Gawronski & Bodenhausen, 2006). Thus, if the previously acquired information was positive, evaluative responses should be positive; if the previously acquired information was negative, evaluative responses should be negative. However, to the extent that the valence of previously acquired information was mixed (i.e., both positive and negative), context is assumed to play a central role during: (1) the formation of evaluative representations, and (2) the activation of these representations upon future encounters with the target object.

Context and the Formation of Evaluative Representations

Although learning generally occurs in some kind of context (Smith & Semin, 2004), contextual information is not always included in the mental representation of newly acquired information. For example, people often remember the evaluative quality of an attitudinal experience, while being unable to recall details of the experience itself or the broader context in which it was made (Johnston, Hashtroudi, & Lindsay, 1993). According to Gawronski et al.'s (2010) RTCE, whether or not contextual information is integrated into the mental representation of evaluative information depends on perceivers' attention to the context during encoding. If individuals pay attention to the context during learning, contextual information will be integrated into the representation of the newly acquired information. If, however, individuals do not pay attention to the context, contextual information will not be integrated into the representation. Whereas the former case leads to the formation of a *contextualized representation*, the latter case leads to the formation of a *context-free representation*.

Despite contextual information being constantly available, perceivers do not pay unconditional attention to contexts. According to Gawronski et al.'s (2010) RTCE, attention to context is typically low during initial encounters with an attitude object—a tendency that has been found to be stronger in Western than in East Asian cultures (see Choi, Nisbett, & Norenzayan, 1999). For example, perceivers may ignore the office context when forming a first impression of a new colleague who yells at a co-worker and refuses to provide help. In this case, the negative information about the new colleague would be stored in a context-free representation that does not include the office context. This idea resonates with research on the correspondence bias (Gilbert & Malone, 1995), suggesting that people tend to draw correspondent

dispositional inferences from observed behavior, while paying little attention to the contextual constraints of that behavior (for a review, see Gawronski, 2004).

But what happens when perceivers learn new information about a target? Gawronski et al.'s (2010) RTCE assumes that, if the new information is evaluatively congruent with the previously acquired information (e.g., the new colleague refuses to help an elderly woman in a grocery store), the new information will simply be added to the existing representation, thereby strengthening the existing context-free representation. If, however, the new information is evaluatively incongruent with the previously acquired information (e.g., the new colleague administers first aid to an unknown victim of a hit-and-run accident), the implied conflict between the two pieces of information has to be resolved to reduce aversive feelings of dissonance (Festinger, 1957)—a tendency that has been found to be stronger in Western than in East Asian cultures (e.g., Spencer-Rodgers et al., 2004). Drawing on principles of expectancy violation (Roese & Sherman, 2007), the RTCE proposes that exposure to expectancy-violating counterattitudinal information enhances attention to the context, thereby leading to an integration of the context into the representation of the counterattitudinal information. The central idea is that inconsistency signals the presence of an error in one's belief system, which enhances attention to contextual factors in order to identify potential causes of the expectancy-violating event (see Gawronski, 2012; Hamilton, 1998; Johnson-Laird, Girotto, & Legrenzi, 2004). In the above example, seeing the new colleague providing first aid to a stranger would be inconsistent with the initial negative impression. As a result, attention to the context should be enhanced, thereby leading to an integration of the context into the representation of the newly acquired positive information.

Importantly, the RTCE further suggests that, instead of erasing the initially formed representation from memory, the new contextualized representation is simply added to the existing network. The result is a "dual" representation of the target object that includes two distinct components: (1) a context-free representation that includes the initially acquired attitudinal information about the target, and (2) a contextualized representation that includes the subsequently acquired counterattitudinal information about the target and the context in which this information was acquired (Gawronski et al., 2010).

Context and the Activation of Evaluative Representations

The proposed integration of contextual information into "dual" representations of evaluatively inconsistent information is important, because it helps us to understand how context modulates the activation of this information upon future encounters with the target object. According to the RTCE, the context during the encoding of counterattitudinal information functions as a "gatekeeping" retrieval cue that moderates the activation of the two conflicting pieces of information (see Bouton, 1994). Specifically, the theory assumes that the counterattitudinal information will be activated in response to the target object only in the context in which this information was acquired,

whereas the initial attitudinal information will be activated in any other context.

This hypothesis highlights an interesting parallel to the notion of contextual renewal in the literature on animal learning (for a review, see Bouton, 2004). The term *renewal effect* refers to the phenomenon that a conditioned behavioral response often recurs after successful “unlearning” of this response (e.g., as a result of extinction or counterconditioning; see Bouton, 2002). A central aspect of renewal effects is that they tend to occur in contexts that differ from the one in which the “unlearning” took place.

It is common to distinguish between three types of renewal effects (see Table 1), which depend on the pattern of contexts during initial learning, subsequent learning, and the observation of an evaluative response. The first type of renewal effect, *ABA renewal*, refers to cases in which an initial response is acquired in Context A, extinction or counterconditioning occurs in another Context B, and the initial response recurs in the initial Context A (e.g., Bouton & Bolles, 1979; Bouton & Peck, 1989). Applied to the current question, perceivers may form an initial negative impression of a new colleague at work, and this impression may be challenged by the positive behavior of that person in a grocery store, but the initial negative impression may still determine responses to the new colleague when this person is encountered in the initial work context.

Similarly, the second type of renewal effect, *ABC renewal*, refers to cases in which an initial response is acquired in Context A, extinction or counterconditioning occurs in another Context B, and the initial response recurs in a novel Context C (e.g., Bouton & Bolles, 1979; Bouton & Brooks, 1993). For example, perceivers may form an initial negative impression of a new colleague at work, and this impression may be challenged by the positive behavior of that person in a grocery store, but the initial negative impression may determine responses to the new colleague when this person is encountered in a coffee shop.

Finally, *AAB renewal* refers to cases in which an initial response is acquired in Context A, extinction or counterconditioning occurs in the same Context A, and the initial response recurs in a novel Context B (e.g., Bouton & Ricker, 1994; Tamai & Nakajima, 2000). For example, perceivers may form an initial negative impression of a new colleague at work, and this impression may be challenged by positive behavior of that person in the same work context, but the initial negative impression may still determine responses to the new colleague when this person is encountered in a grocery store. Importantly, the notion of contextual renewal implies that extinction and counterconditioning effectively determine responses in the context in which extinction and counterconditioning occurred. Thus, consistent with the assumptions of the RTCE, the three kinds of renewal effects imply that evaluative responses should reflect the valence of the counterattitudinal information only in the context which this information was acquired, whereas initial attitudinal information should determine evaluative responses in any other context.

Although the three kinds of renewal effects are well-established in the literature on animal learning, their relevance for understanding the

contextualization of social attitudes in humans has been discovered only recently (for a review, see Gawronski & Cesario, 2013). In a first demonstration of ABA renewal and ABC renewal in impression formation, Rydell and Gawronski (2009) presented participants with either positive or negative information about a target person against a meaningless, colored background (e.g., a blue screen). In a subsequent block of the impression formation task, participants were presented with information that was evaluatively opposite to the information provided in the first block, and this information was presented against a different colored background (e.g., a yellow screen). After the impression formation task, evaluative responses to the target person were assessed with an affective priming task (Payne, Cheng, Govorun, & Stewart, 2005) in which the target person was presented against either: (1) the background of the first block (Context A), (2) the background of the second block (Context B), or (3) a novel background that was not part of the impression formation task (Context C). Results showed that evaluative responses reflected the valence of the initially acquired information when the target individual was presented against the initial Context A (evidence for *ABA renewal*). The same was true when the target was presented against the novel Context C, in that evaluative responses reflected the valence of the initially acquired information (evidence for *ABC renewal*). In contrast, when the target person was presented in Context B, evaluative responses reflected the valence of the subsequently acquired counterattitudinal information. These effects were replicated by Gawronski et al. (2010), who also provided evidence for AAB renewal by presenting attitudinal and counterattitudinal information against the same background.

Attention to Context during Encoding

A central assumption of the RTCE is that attention to context is typically low during encoding of initial attitudinal information, but enhanced by exposure to expectancy-violating counterattitudinal information. However, deviating from the default scenario proposed by the theory, there may be cases in which (1) attention to context is high during the encoding of initial attitudinal information, and, conversely, there may be cases in which (2) attention to context is low during the encoding of expectancy-violating counterattitudinal information. Although these cases deviate from the default scenario postulated by Gawronski et al. (2010), the RTCE includes precise predictions about how various patterns of attention during encoding should influence evaluative responses in different contexts.

A first prediction is that ABC renewal and AAB renewal should disappear if attention to context is high during the encoding of initial attitudinal information. In the presumed default scenario, attention to context is assumed to be low during the acquisition of initial attitudinal information and enhanced by exposure to expectancy-violating counterattitudinal information. As a result, contextual information is included in the representation of the counterattitudinal information, but not the initial attitudinal information. Yet, when attention to context is high during encoding of both attitudinal and counterattitudinal information, the two pieces of information should be stored in two contextualized representations. In such cases, encountering the object in a novel context should

activate the two representations to the same extent (or not at all), thereby producing a mixed (or neutral) evaluation rather than a renewal effect. These predictions apply to cases in which attitudinal and counterattitudinal information is learned in different contexts (i.e., attenuation of ABC renewal), as well as cases in which attitudinal and counterattitudinal information is learned in the same context (i.e., attenuation of AAB renewal). Importantly, enhanced attention to context during the acquisition of initial attitudinal information should not affect the dominance of the initial attitudinal information when the target is encountered in the context in which this information was acquired (i.e., no attenuation of ABA renewal). In line with the above assumptions, evaluative responses in this situation should be driven by the contextualized representation of the initial attitudinal information. These predictions were confirmed in a series of studies by Gawronski et al. (2010) who combined Rydell and Gawronski's (2009) paradigm with an experimental manipulation to increase participants' attention to the background color during the presentation of initial attitudinal information. For example, if attention to the context is high when perceivers form an initial negative impression of a new colleague at work, subsequent positive behavior of that person in a grocery store should not qualify the negative response to the new colleague when this person is encountered in the initial work context (i.e., intact ABA renewal). However, the new colleague should elicit a mixed (or neutral) response when this person is encountered in a coffee shop (i.e., attenuated ABC renewal).

Another implication of Gawronski et al.'s (2010) theory is that renewal effects should disappear entirely when attention to context is low during the encoding of counterattitudinal information. In such cases, the counterattitudinal information should be integrated into the initial context-free representation, which should eliminate context effects altogether. In this case, evaluative responses should reflect a mixture of the available information, regardless of the context in which the target is encountered. In other words, reduced attention to context during the encoding of counterattitudinal information should eliminate ABA renewal, ABC renewal, and AAB renewal, thereby leading to context-independent evaluative responses that reflect all available information about the target. These predictions were confirmed by Gawronski et al. (2010) in a study that combined Rydell and Gawronski's (2009) paradigm with an experimental manipulation to decrease attention to the background color during the presentation of counterattitudinal information. For example, if attention to the context is low when (1) perceivers form an initial negative impression of a new colleague at work, and (2) the initial negative impression is qualified by positive behavior of that person in a grocery store, the new colleague should elicit a mixed (or neutral) response regardless of whether this person is encountered in the initial work context, the grocery store, or a coffee shop.

Cultural Differences in Contextualization

The possibility of variations in attention to context has important implications for cultural differences in the contextualization of mental representations and evaluative responses. Resonating with the two scenarios reviewed in the preceding section, research on East-West differences in social

cognition suggests that: (1) individuals from East Asian cultures tend to pay more attention to contexts than do individuals from Western cultures (e.g., Miller, 1984; Morris & Peng, 1994; Norenzayan, Choi, & Nisbett, 2002; for reviews, see Choi, Nisbett, & Norenzayan, 1999; see also Chapter 8, this volume), and (2) individuals from East Asian cultures tend to have a higher tolerance for inconsistency than do individuals from Western cultures (e.g., Peng & Nisbett, 1999; for a review, see Spencer-Rodgers, Williams, & Peng, 2010; see also Chapter 1, this volume). Applied to Gawronski et al.'s (2010) RTCE, the first line of culture research implies the possibility that East Asians may show higher levels of attention to context during encoding of initial attitudinal information than Westerners. In contrast, the second line of culture research suggests that East Asians may show lower levels of attention to context during the encoding of counterattitudinal information than Westerners, because East Asian may experience weaker (or no) feelings of dissonance in response to expectancy-violating counterattitudinal information than Westerners (cf. Gawronski, Peters, & Strack, 2008).

Enhanced Attention to Context during Attitudinal Learning

First, we consider the corpus of culture research that suggests that East Asians should generally show enhanced attention to the context during attitudinal learning. One of the most robust findings in cultural psychology is that, when explaining social events, individuals from East Asian cultures tend to rely more on contextual factors and less on dispositional factors than do individuals from Western cultures (e.g., Miller, 1984; Morris & Peng, 1994; Norenzayan, Choi, & Nisbett, 2002; for reviews, see Choi, Nisbett, & Norenzayan, 1999; see also Chapters 8 and 9, this volume). More recent studies suggest that cultural differences in causal attribution might have their origins in lower-level processes of attention (Chua, Boland, & Nisbett, 2005; Masuda & Nisbett, 2001; Zhou, He, Yang, Lao, & Baumeister, 2012). For example, a study by Masuda and Nisbett (2001) found that Japanese participants showed higher recognition accuracy for previously presented objects when they were shown in their naturally occurring contexts, than when they were presented in novel contexts. Recognition accuracy for American participants was unaffected by the context manipulation. Using eye-tracking to study patterns of visual attention, Chua et al. (2005) found that, when viewing photographs of a focal object against a complex background, American participants fixated more on the focal object than did Chinese participants, whereas Chinese participants fixated more on the background than did American participants.

Applied to the proposed contribution of attentional processes to the contextualization of evaluative representations, these findings suggest that East Asians may differ from Westerners by showing higher levels of attention to context during the encoding of initial attitudinal information. As a result, East Asians may integrate conflicting pieces of information in two contextualized representations, one including the initial attitudinal information and the other one including the counterattitudinal information. Westerners, in contrast, may be more likely to show the default pattern hypothesized by Gawronski et al. (2010), by forming a context-free

representation of the initial attitudinal information and a contextualized representation of the counterattitudinal information.

In line with the experimental evidence for the hypothesized effects of attention to context (Gawronski et al., 2010), these assumptions imply that East Asians should show ABA renewal, but not ABC renewal and AAB renewal effects. In contrast, Westerners should show all three kinds of renewal effects, as demonstrated by Gawronski et al. (2010). From this perspective, the most significant difference between East Asians and Westerners with regard to context effects on evaluative responses is that they should show diverging evaluations when an evaluatively ambiguous target object is encountered in a novel context. Whereas Westerners should demonstrate an evaluative response that is in line with the valence of the initially acquired attitudinal information (ABC renewal), East Asians should show a mixed (or neutral) response. Yet, the evaluative responses of East Asians and Westerners should be identical when the target object is encountered in the context of the initial attitudinal information or the context of the counterattitudinal information. To the extent that attitudinal and counterattitudinal information was acquired in different contexts, the target object should elicit an evaluative response reflecting the valence of the initial attitudinal information when it is encountered in the context of the initial attitudinal information. In contrast, the target object should elicit an evaluative response reflecting the valence of the counterattitudinal information when it is encountered in the context of the counterattitudinal information. Similarly, to the extent that attitudinal and counterattitudinal information was acquired in the same context, the target object should elicit an evaluative response reflecting the valence of the counterattitudinal information when it is encountered in the context in which the two kinds of information were acquired.

Reduced Attention to Context during Counterattitudinal Learning

Next, consider the second line of research that implies that East Asians should show reduced attention to context during counterattitudinal learning. A central assumption of Gawronski et al.'s (2010) RTCE is that exposure to expectancy-violating counterattitudinal information enhances attention to the context, thereby leading to an integration of the context into the representation of the counterattitudinal information. The basic idea underlying this assumption is that exposure to counterattitudinal information elicits an aversive feeling of dissonance, which people aim to reduce by resolving the inconsistency between the initial attitudinal and the subsequent counterattitudinal information (Festinger, 1957). According to the RTCE, the contextualization of counterattitudinal information resolves this inconsistency by storing it as an "exception to the rule" of the initial attitudinal information (Rydell & Gawronski, 2009). From this perspective, the driving force underlying the contextualization of counterattitudinal information is an aversive response to expectancy-violations. However, there is considerable evidence that East Asians and Westerners show different responses to conflicting information (e.g., Ng, Hynie, & MacDonald, 2011; Spencer-Rodgers et al., 2004).

A substantial body of research suggests that East Asians tend to have a higher tolerance for inconsistency and show less extreme surprise reactions to expectancy-violations than Westerners (for a review, see Spencer-Rodgers, Williams, & Peng, 2010; see also Chapter 1, this volume). In a seminal study by Peng and Nisbett (1999), Chinese and American participants were presented with apparently contradictory propositions and asked to form a personal opinion about the described issue. Whereas American participants tended to develop polarized preferences by taking clear positions, Chinese participants were more likely to find merit and fault on both sides, resulting in ambivalent positions. Similarly, Choi and Nisbett (2000) presented Korean and American participants with expectancy-violating information that a target person did not help a victim. The target's behavior was unexpected for participants, in that it conflicted with previous information suggesting that the target would help the victim. In line with the contention that East Asians tend to have a higher tolerance for inconsistency, Korean participants felt less surprised about the target's behavior than did American participants.

Theorists have attributed these results to different cultural styles of thinking and reasoning (Spencer-Rodgers et al., 2010). Specifically, it has been argued that East Asians are more inclined to think dialectically, whereas Westerners are more inclined to think linearly. As compared to Westerners, East Asians tend to view elements in the world as dynamic and changeable rather than as static and having clear boundaries (Peng, 1997; Peng & Nisbett, 1999), and they are more likely to see the world as being composed of contradictions (Choi, Koo, & Choi, 2007; Nisbett, 2003). These culture-specific beliefs also may contribute to cultural differences in the reaction to counterattitudinal information by diminishing the elicitation of aversive feelings of dissonance (Gawronski et al., 2008; Lee, Newby-Clark, & Zanna, 2006). As a result, attention to context in response to expectancy violations may be lower for East Asians than Westerners, thereby disrupting the proposed contextualization of counterattitudinal information.

Applied to the current question, these considerations lead to the paradoxical, but very interesting, prediction that evaluative responses may be *less* context-sensitive for East Asians than Westerners. To the extent that East Asians have a higher tolerance for inconsistency, exposure to counterattitudinal information may be less likely to enhance attention to context. As a result, counterattitudinal information may simply be added to the context-free representation of the initial attitudinal information. This should eliminate context effects altogether. In other words, whereas Westerners should show the reviewed patterns of contextual renewal, evaluative responses of East Asians should reflect a mixture of the available information, regardless of the context in which the target is encountered. Thus, counter to the common finding that individuals of East Asian cultures are more sensitive to contextual influences than Westerners, an integration of Gawronski et al.'s (2010) RTCE with research on dialectical thinking suggests the opposite conclusion for context effects on evaluative responses, such that dialectical thinking (i.e., higher tolerance for inconsistency) prevents, rather than promotes, context

effects.

Summary

In sum, the current analysis leads to competing predictions regarding East-West differences in context effects on evaluative responses. Combined with evidence for higher attention to context among individuals from East Asian cultures, Gawronski et al.'s (2010) RTCE implies that East Asians may be less likely to show patterns of ABC renewal and AAB renewal than Westerners, with the two cultural groups being equally susceptible to ABA renewal. However, combined with evidence for higher tolerance to inconsistency among individuals from East Asian cultures, Gawronski et al.'s (2010) RTCE implies that, whereas Westerners should show the reviewed patterns of contextual renewal, evaluative responses of East Asians should reflect a mixture of the available information regardless of the context. An empirical test of these competing predictions would provide deeper insights into cultural differences in the contextualization of mental representations and evaluative responses.¹

What is a Context?

Despite our concern with context effects, we still have not addressed the critical question of what constitutes a context. What exactly is the nature of the contextual information that is stored in contextualized representations? For example, if counterattitudinal information is acquired in the context of a lecture room, is the activation of this information limited to this particular lecture room or will other contexts that are somehow similar to the lecture room have the same effect? If similar contexts can have the same effect, in which particular sense do they have to resemble the context in which the counterattitudinal information was acquired? Would any lecture room have the same effect even if it is perceptually dissimilar to the one in which the counterattitudinal information was acquired (e.g., a perceptually distinct lecture room in a different building)? Alternatively, would a context that is perceptually similar to the lecture room have the same effect even if it is not a lecture room (e.g., a movie theater that visually resembles the lecture room)?

The finding that meaningless visual cues as simple as the background color of a computer screen can modulate evaluative responses is consistent with the assumption that perceptual features of contexts may ultimately determine their modulatory function (e.g., Gawronski et al., 2010; Rydell & Gawronski, 2009). A similar conclusion may be drawn from studies on renewal effects in animal learning (for a review, see Bouton, 2004). Although some of the animal studies have used manipulations that are ambiguous about the particular features that are relevant for the contextual modulation of conditioned responses (e.g., different cages), there is evidence that relatively simple visual cues can modulate the response that is elicited by a conditioned stimulus (e.g., bright vs. dimmed light). Similar effects are reported in the literature on the extinction of fear responses in humans (for a review, see Vervliet, Baeyens, Van den Bergh, & Hermans, 2013).

In an attempt to provide deeper insights into the nature of contextualized representations, Gawronski, Ye, Rydell, and De Houwer (2014) presented participants with either positive or negative information about a target person against a neutral real-life background (e.g., a sunset). In a subsequent block of the impression formation task, participants were presented with evaluative information of the opposite valence against a different real-life background (e.g., a row of trees). Afterwards, participants completed a speeded evaluation task in which the two targets were presented against the background of the initial attitudinal information and the background of the counterattitudinal information. In addition, the priming task included trials in which the two targets were presented against: (1) a background that was conceptually equivalent, but perceptually dissimilar, to the background in which the counterattitudinal information had been presented (e.g., a single tree vs. a row of multiple trees), (2) a background that was perceptually similar, but conceptually distinct, to the background in which the counterattitudinal information had been presented (e.g., a single tree vs. a single windmill that was perceptually similar in terms of color and spatial structure), and (3) a background that was both conceptually and perceptually dissimilar to the background in which the counterattitudinal information had been presented (e.g., a single tree vs. a row of windmills). Results showed that contexts that were perceptually similar to the context in which counterattitudinal information had been acquired led to evaluative responses that were consistent with the valence of the counterattitudinal information. The same was true for contexts that were conceptually equivalent to the context in which counterattitudinal information had been acquired, which also led to evaluative responses that were consistent with the valence of the counterattitudinal information. These results suggest contextualized representations of counterattitudinal information can be activated by contexts that are either perceptually or conceptually similar to the context in which the counterattitudinal experience took place. This conclusion has important implications for understanding cultural differences in context effects on evaluative response, because it suggests that contextual renewal can be driven by basic perceptual processes as well as conceptual processing of context meaning. We return to this issue at the end of this chapter when we discuss implications of our analysis.

Mere Attention vs. Causal Attribution

Another central question concerns the processes by which contextual information is integrated into mental representations of evaluative information. According to Gawronski and Cesario (2013), there are at least two possible ways in which attentional processes may contribute to the formation of contextualized representations. First, one could argue that contextual cues are integrated into the representation of counterattitudinal information to the extent that these cues "explain" the discrepancy between the initial attitudinal and the subsequent

¹ It is worth noting that the proposed tolerance for inconsistency might be domain-specific, such that consistency motives may sometimes "trump" the tolerance for inconsistency provided by dialectical thinking (see Spencer-Rodgers, Hamilton, Williams,

Peng, & Wang, 2007). This issue raises the important question of whether the proposed cultural differences in renewal effects depend on the particular type of target object (e.g., the self, social groups, physical objects).

counterattitudinal information. This hypothesis resonates with classic theories of causal attribution, according to which unexpected events are attributed to situational factors (Heider, 1958; Jones & Davis, 1965; Kelley, 1973) and these factors are integrated into a contextualized representation of the expectancy-violating information. Second, it is possible that enhanced attention to contextual cues is sufficient for the integration of these cues in a contextualized representation, regardless of whether they do or do not “explain” the deviation from the expected valence. This scenario resonates with attentional accounts of illusory correlation effects (e.g., Hamilton & Gifford, 1976; Sherman, Kruschke, Sherman, Percy, Petrocelli, & Conrey, 2009), according to which enhanced attention to two co-occurring stimuli can create a link between these stimuli in memory, even if they lack any objective contingency.

An important difference between the two accounts is that, in the former case, the context should be integrated into the representation of counterattitudinal information only when this context differs from the context that was present during the encoding of the initial attitudinal information (i.e., when context “explains” the difference in valence). In the latter case, however, expectancy-violating counterattitudinal information may become contextualized even when there is no objective contingency between context and the valence of an object (i.e., even when context does not “explain” the difference in valence). For example, if perceivers form an initial negative impression of a new colleague at work, and this impression is later challenged by positive behavior of that person in a coffee shop, the context of the counterattitudinal experience may provide a causal explanation for the expectancy-violating behavior (e.g., the person might be happier and more relaxed in coffee shops). However, the context itself does not provide a causal explanation for the expectancy-violating behavior when perceivers form an initial negative impression of a new colleague at work, and this impression is later challenged by positive behavior of that person in the same work context. Thus, although causal attribution can account for the emergence of ABA and ABC renewal, it is unable to explain cases of AAB renewal, which do not involve any meaningful relation between valence and context. In AAB renewal, both the initial attitudinal and subsequent counterattitudinal information are encountered in the same context, which implies that the context during the encoding of counterattitudinal information does not “explain” the observed expectancy-violation. Although causal attributions might contribute to renewal effects when the contexts of conflicting evaluative information differ, these attributions do not seem necessary. Instead, renewal effects can occur as a result of mere attentional processes, such that enhanced attention to contextual cues may produce contextualized representations regardless of whether these cues do or do not explain the deviation from the expected valence. Applied to the above example, if perceivers form an initial negative impression of a new colleague at work, and this impression is later challenged by positive behavior of that person in the same work context, the new colleague may elicit a positive response in the work context and a negative response in any other context, although the work context does not provide a meaningful explanation of the expectancy-violating

behavior. This conclusion is important, because it bolsters our earlier claim that contextual renewal can be driven by basic perceptual processes over and above conceptual processing of context meaning.

Implications

The main goal of the current chapter was to review the core assumption of Gawronski et al.’s (2010) RTCE, and analyze its implications for cultural differences in the contextualization of mental representations and evaluative responses. This analysis led to competing predictions about the effects of counterattitudinal information on evaluative responses in different contexts. Specifically, we argued that different patterns of attention to context may produce differences in the emergence of ABA renewal, ABC renewal, and AAB renewal among East Asian and Western cultures. On the one hand, in light of the evidence that individuals from East Asian cultures tend to pay more attention to contexts than do individuals from Western cultures, the RTCE implies that East Asians may be less likely to show patterns of ABC renewal and AAB renewal than Westerners, while showing no differences in ABA renewal. On the other hand, given the evidence that individuals from East Asian cultures tend to have a higher tolerance for inconsistency than do individuals from Western cultures, the RTCE implies that East Asians, in contrast to Westerners, should not display any pattern of contextual renewal, including ABA renewal, ABC renewal, and AAB renewal. Although these predictions remain to be tested, we believe that Gawronski et al.’s (2010) RTCE provides a valuable framework for studying cultural differences in the contextualization of mental representations and evaluative responses.

In addition to offering novel predictions about cultural differences in context effects on evaluative responses, the current analysis highlights the usefulness of adopting a mechanistic perspective on the mental processes underlying cultural differences in overt behavior. Mechanistic theories go beyond causal theories of social psychological phenomena by specifying the mental mechanisms by which different kinds of input stimuli (e.g., people, contextual cues) influence overt behavior (e.g., evaluative responses) (see Gawronski & Bodenhausen, in press). A central question in the current analysis was how cultural differences in attention and thinking styles moderate the processes by which contextual information is integrated into mental representations of evaluative information. The specificity of our hypotheses regarding the emergence of ABA renewal, ABC renewal, and AAB renewal indicates that a mechanistic perspective can provide much more nuanced predictions, compared to generalized claims that East Asians are simply more context-sensitive than are Westerners. Considering that research on contextual renewal also has captured the interest of clinical psychologists (for a review, see Vervliet et al., 2013), the current analysis suggests interesting new avenues for future research that go far beyond social perception and evaluative responses to other individuals.

Another important aspect of our analysis is that it highlights the value of deviating from the traditional emphasis on meaning in cross-cultural research (cf. Kashima, in press). The current analysis was based on the premise that information processing is guided by

universal principles that are consistent across cultures and species. Yet, the particular outputs of these processes may differ as a function of various factors that moderate the mental translation of inputs into outputs (see also Gawronski et al., 2008). The most central variable in the current analysis was attention to context during the encoding of initial attitudinal information and expectancy-violating counter-attitudinal information. As we argued in this chapter, there are empirical reasons to assume that individuals from East Asian and Western cultures differ with regard to either the former or the latter processing stage (or both). However, the moderating role of attention does not imply that the general principles of contextualization are different across cultures. By adopting a mechanistic perspective on presumably universal mental processes, the current analysis suggests that the processing of meaningless perceptual features may play an important role for cross-cultural differences, over and above the well-established role of cultural differences in the processing of conceptual meaning. This does not imply that cultural differences rooted in meaning are not important; it simply suggests that there may be an additional layer of cultural differences that is even more fundamental than cultural differences in meaning.

However, it is important to note that mechanistic research on cultural differences requires much more specificity with regard to the nature of the hypothesized cultural differences. Although we adopted the common practice of distinguishing between “East Asians” and “Westerners,” it is important to specify in which particular sense they are assumed to be different. Research on cultural differences often refers to dichotomous variables such as individualistic-collectivistic (Triandis & Gelfand, 1998), independent-interdependent (Markus & Kitayama, 1991), analytical-holistic (Nisbett, 2003), and linear-dialectical (Peng & Nisbett, 1999). These variables are sometimes used interchangeably, suggesting that they describe a common underlying construct. Although some of these dimensions may be correlated, it is important to realize that they refer to conceptually distinct constructs. For example, although dialectical thinking and holistic attention are both prevalent among East Asians, thinking styles and visual attention are conceptually distinct aspects of information processing. In addition to the possibility that the proposed dimensions are domain specific (e.g., perception of self vs. groups; see Spencer-Rodgers et al., 2007), the current analysis suggests that different dimensions of cultural differences can have fundamentally different effects. Whereas cultural differences in holistic versus analytical attention imply that East Asians may show ABA renewal, but not ABC renewal and AAB renewal, cultural differences in dialectical versus linear thinking imply that East Asians may not display any form of contextual renewal. These arguments suggest that it is important to clearly distinguish between different dimensions of cultural differences and their implications for information processing. A more fine-grained differentiation between conceptually distinct dimensions is not only necessary for mechanistic research on cultural differences; it also may provide deeper insights into cultural differences that are rooted in meaning.

Conclusion

At the beginning of this chapter, we described a hypothetical scenario in which a new colleague refused to help one of your co-workers, yelling at her in the office. A few days later, you witness the same colleague administering first aid to an unknown victim of a hit-and-run accident. The questions that we asked were: How would you feel toward your new colleague the next time you see him in the office? Would your reaction be different if you saw him somewhere on the street? And how would you respond if you saw him in a completely different context, for example a grocery store? Our analysis suggests that individuals from East Asian and Western cultures may show different evaluative responses to the new colleague, depending on the context in which he is encountered. For Westerners, the available evidence suggests that they may show a positive response when the new colleague is encountered on the street, but a negative response in any other context. For East Asians, however, our analysis led to two competing predictions. On the one hand, evidence for cultural differences in holistic versus analytic attention suggests that East Asians may show a positive response when the new colleague is encountered on the street, but a negative response when he is encountered in the office. Yet, the new colleague may elicit a mixed (or neutral) response when he is encountered in a novel context. On the other hand, evidence for cultural differences in tolerance for inconsistency suggests that East Asians may show a mixed response to the new colleague regardless of the context. Although these competing predictions remain to be tested, the proposed application of Gawronski et al.’s (2010) RTCE to cultural differences in evaluative responses may provide interesting new avenues for research on cultural differences in social cognition.

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Table 1

Different kinds of renewal effects and their definitions.

Effect	Description
ABA Renewal	Learning of a particular response in Context A
	Learning of a new response in Context B
	Renewal of the initially learned response in the initial Context A
ABC Renewal	Learning of a particular response in Context A
	Learning of a new response in Context B
	Renewal of the initially learned response in a novel Context C
AAB Renewal	Learning of a particular response in Context A
	Learning of a new response in the same Context A
	Renewal of the initially learned response in a novel Context B

Note. Table adapted from Gawronski and Cesario (2013). Reprinted with permission.