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Case Report

# Attention to context during evaluative learning and context-dependent automatic evaluation: A cross-cultural analysis☆

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ABSTRACT

Previous research has shown that changes in automatic evaluations can be limited to the context in which counterattitudinal information was acquired. This effect has been attributed to enhanced attention to context cues during the encoding of expectancy-violating counterattitudinal information. Drawing on previous evidence for cultural differences in attention to context and tolerance for inconsistency, the present research examined cultural differences in responses to conflicting evaluative information and the resulting context-effects on automatic evaluation. Study 1 revealed that both Canadian and Singaporean participants showed enhanced attention to context during exposure to counterattitudinal information. In a reanalysis of studies with Singaporean participants, Study 2 replicated the pattern of contextualized changes of automatic evaluations previously obtained in Western participants. The results suggest that contextualized change of automatic evaluations might be a general phenomenon that replicates across cultures. Implications for East-West similarities in basic attentional processes and automatic evaluation are discussed.



Counter to earlier research suggesting that automatic evaluations are relatively difficult to change, an accumulating body of evidence suggests that automatic evaluations can change rapidly in response to counterattitudinal information (for a review, see Gawronski & Bodenhausen, 2006). To reconcile the conflicting findings, it has been argued that changes in automatic evaluations can be limited to the context in which the counterattitudinal information was learned (Brannon & Gawronski, in press; Gawronski, Rydell, Vervliet, & De Houwer, 2010; Gawronski, Ye, Rydell, & De Houwer, 2014; Rydell & Gawronski, 2009). In their representational theory, Gawronski et al. (2010) specified the processes by which context cues become integrated into the representation of conflicting evaluative information about an object, which allows these cues to moderate automatic evaluations upon future encounters with that object (for a review, see Gawronski & Cesario, 2013). Despite the large body of evidence supporting the theory (for a meta-analysis, see Gawronski, Hu, Rydell, Vervliet, & De Houwer, 2015), most studies were conducted with samples from Western cultures. Because research in cross-cultural psychology suggests possible East-West differences in the context-effects predicted by the representational theory (Ye & Gawronski, in press), it seems imperative to investigate the generality of these effects across cultures. By examining potential cultural differences in the hypothesized context-effects, the present research aims to deepen our understanding of cultural influences on (1) fundamental psychological processes involved in evaluative learning and (2) social impression formation in situations that involve conflicting information.

## 1. The representational theory

According to Gawronski et al.'s (2010) representational theory, attention to context during the learning of evaluative information determines whether context cues are integrated into the representation of the newly acquired information. If attention to context during the learning of evaluative information is high, the newly acquired information is assumed to be stored in a contextualized representation. Yet, if attention to context during the learning of evaluative information is low, the newly acquired information should be stored in a context-free

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representation. The theory further assumes that attention to context is typically low during the learning of initial attitudinal information (Gilbert & Malone, 1995) and enhanced by exposure to expectancy-violating counterattitudinal information (Roese & Sherman, 2007). As a result, initial attitudinal information tends to be stored in context-free representations, whereas expectancy-violating counterattitudinal information is stored in contextualized representations. Together with the principle of feature-matching in memory activation (Smith, 1996), these assumptions imply that counterattitudinal information should influence automatic evaluations only in the context in which this information was learned. In contrast, initial attitudinal information should determine automatic evaluations in any other context, including the context in which the initial attitudinal information was learned and any other context in which the target objects had not been encountered before.

To describe the context-effects resulting from these processes, Gawronski et al. (2010) adapted the term *renewal effect* from animal learning research (see Bouton, 2004). *ABA renewal* refers to cases in which initial attitudinal information is learned in Context A, counterattitudinal information is subsequently learned in a different Context B, and the initial attitudinal information determines automatic evaluations in the initial Context A. Correspondingly, *ABC renewal* refers to cases in which initial attitudinal information is learned in Context A, counterattitudinal information is subsequently learned in a different Context B, and the initial attitudinal information determines automatic evaluations in a novel Context C. These patterns differ from automatic evaluations in ABB scenarios in which initial attitudinal information is learned in Context A, counterattitudinal information is subsequently learned in a different Context B, and the counterattitudinal information determines automatic evaluations in Context B. Consistent with the predictions of their representational theory, several studies by Gawronski and colleagues (Gawronski et al., 2010, 2014; Rydell & Gawronski, 2009) found reliable evidence for ABA and ABC renewal effects on automatic evaluations of a target person when participants had learned conflicting evaluative information about this person (i.e., statements about positive and negative behaviors) in different contexts (i.e., the statements being presented against different colored backgrounds).

## 2. A cross-cultural analysis

Although Gawronski et al. (2010) treated the reviewed pattern of context-effects as the default outcome, their theory also implies specific predictions for two alternative scenarios involving different levels of attention to context during learning. First, if attention to context is high during the learning of initial attitudinal information, attitudinal and counterattitudinal information should be stored in two contextualized representations. In this case, ABC renewal should be reduced, because encountering the target in a novel context should activate the two contextualized representations to the same extent, producing automatic evaluations that reflect the average of the two types of information. Yet, ABA renewal should be unaffected, because encountering the target in the context of the initial attitudinal information should activate the contextualized representation of that information. This prediction has been confirmed in a study by Gawronski et al. (2010) in which attention to context during the learning of initial attitudinal information was experimentally enhanced.

Second, if attention to context is low during the learning of counterattitudinal information, attitudinal and counterattitudinal information should be integrated in a single context-free representation. In this case, both ABA and ABC renewal should be reduced, because encountering the target should activate this integrated, context-free representation regardless of the context. This prediction has been confirmed in a study by Gawronski et al. (2010) in which attention to context during the learning of counterattitudinal information was experimentally reduced.

Expanding on the two scenarios, Ye and Gawronski (in press) proposed that they represent two possible ways in which individuals from Eastern and Western cultures may differ in the learning of conflicting evaluative information, and thus in the tendency to show ABA and ABC renewal.[1] First, drawing on research showing that Easterners generally pay more attention to context than Westerners (e.g., Chua, Boland, & Nisbett, 2005; Masuda & Nisbett, 2001; Masuda, Russell, Chen, Hioki, & Caplan, 2014; Zhou, He, Yang, Lao, & Baumeister, 2012), it is possible that Easterners pay more attention to context during the learning of initial attitudinal information (Fig. 1, Hypothesis 1). Consequently, Easterners should show weaker effects of ABC renewal and similar effects of ABA renewal compared to Westerners. Second, drawing on research showing that dialectical thinking is more prevalent among Easterners whereas analytical thinking is more prevalent among Westerners (Jenkins, Yang, Goh, Hong, & Park, 2010; Peng & Nisbett, 1999; Spencer-Rodgers, Williams, & Peng, 2010), it is possible that Easterners pay less attention to context during the learning of counterattitudinal information than Westerners (Fig. 1, Hypothesis 2). This hypothesis is based on the notion that a given object can have opposite attributes from dialectical view, which would represent a logical contradiction from an analytical view. Therefore, dialectical thinking can weaken Easterners' perception of inconsistency (see Choi & Nisbett, 2000), the driving force behind enhanced attention to context during the learning of counterattitudinal information (Gawronski, 2012). Consequently, Easterners should show weaker effects of ABA and ABC renewal compared to Westerners.

Gawronski et al. (2015) recently conducted a meta-analysis of all studies from their research groups that tested predictions of Gawronski et al.'s (2010) representational theory. Because the meta-analysis included a small number of unpublished studies conducted in Singapore, the findings provide preliminary evidence for the current question of whether Easterners and Westerners differ with regard to their susceptibility to ABA and ABC renewal. The most relevant finding is that effect sizes of ABA and ABC renewal significantly differed from zero in samples from the United States and Canada, but not in samples from Singapore.

Although this result seems to support Hypothesis 2, the possibility of strong conclusions is undermined by the lack of a significant difference between Singaporean and Canadian participants, the latter of which showed significant effects for both ABA and ABC renewal. Another limitation is that the absence of ABA and ABC renewal in Singaporean participants might reflect a simple replication failure due to sampling or measurement error (Maxwell, Lau, & Howard, 2015; Spence, 2014). After all, the meta-analysis also included several studies that failed to replicate the predicted patterns of ABA and ABC renewal in Western samples. Thus, to allow for stronger conclusions, it is critical to provide independent evidence for cultural differences in the hypothesized processes and the resulting context-effects on automatic evaluations.

### 2.1. Study 1

Study 1 tested the proposed East-West difference in attention to context during the learning of counterattitudinal information. Adapting a paradigm from Gawronski et al. (2014, Experiments 1a & 1b), participants from Canada and Singapore received either positive or negative information about an unknown target individual

[1] For the sake of brevity, we refer to individuals from the two cultures as *Easterners* and *Westerners*. This demarcation is not intended to imply perfect homogeneity within cultures. For example, although explanations of social events in terms of contextual factors are more prevalent in Eastern than Western cultures, there is considerable variability in causal explanations within cultures (Chiu & Hong, 2006).