



The role of recollection in evaluative conditioning

Georg Halbeisen^{*}, Katarina Blask, Rebecca Weil¹, Eva Walther

Department of Psychology, University of Trier, Germany



HIGHLIGHTS

- Item-based analyses of EC are conducted using linear mixed-effects models.
- EC is moderated by recollection and unintended uses of memory.
- Results highlight the importance of automatic processes for the expression of EC.

ARTICLE INFO

Article history:

Received 4 July 2013

Revised 2 July 2014

Available online 11 July 2014

Keywords:

Evaluative conditioning

Attitude

Source awareness

Contingency awareness

ABSTRACT

Attitudes are a core construct of social psychology, and research showed that attitudes can be acquired by merely pairing neutral stimuli with other liked or disliked stimuli (i.e., evaluative conditioning, EC). In this research we address the role of different memory processes contributing to EC. Although it is commonly found that memory for the pairings increases EC, we argue that memory performance data obtained in the standard paradigm remain ambiguous. We hypothesize that memory for stimulus pairings may moderate EC by means of an intentional use of conscious recollection as well as through unintended effects of memory. In two experiments we used modified memory tests that distinguish between these different memory processes on an item-level by identifying recollection as the participant's ability to control memory performance. The analyses of the experiments showed that both intended and unintended influences independently moderate EC. Based on these results we discuss the role of different memory processes in EC, and how memory and learning processes may be related.

© 2014 Elsevier Inc. All rights reserved.

Introduction

Attitudes are a core concept of social psychology, but little is known about how attitudes are formed (Jones, Olson, & Fazio, 2010; Walther, Nagengast, & Trasselli, 2005). An experimental approach for investigating attitude formation is evaluative conditioning (EC). In an EC study, individuals are repeatedly exposed to pairs of stimuli of which one is either liked or disliked (the unconditioned stimulus; US) whereas the other stimulus is rather neutral (the conditioned stimulus; CS). EC is demonstrated if CSs paired with liked USs are evaluated more favorably after conditioning compared to CSs paired with disliked USs. Notwithstanding the numerous demonstrations of EC, there is considerable disagreement about which processes mediate between exposure to CS–US pairs and the observable changes in CS attitudes (Baeyens, Hermans, & Eelen, 1993; Field & Davey, 1999; Jones, Fazio, & Olson, 2009; Martin & Levey, 1994; Mitchell, De Houwer, & Lovibond, 2009). One of the reasons for this ongoing debate is that

EC has been considered important for “the broader conceptualization of human learning and memory” (Hütter, Sweldens, Stahl, Unkelbach, & Klauer, 2012, p. 539). For example, EC research contributes to the general discussion of whether single or dual-process theories more adequately address the processing of evaluative information.

In dual-process theories two distinct mechanisms – (a) an associative mechanism in which stimuli become automatically linked by virtue of their mere co-occurrence and (b) a propositional mechanism that involves a conscious validity assessment of propositionally represented statements – are proposed by which evaluative attitudes can be formed (e.g., Gawronski & Bodenhausen, 2006; Rydell & McConnell, 2006). In contrast, single process theories propose that attitude formation is always mediated by propositional processes (Mitchell et al., 2009).

The discussion about single vs. dual-process theories has predominantly focused on the question of whether or not EC requires awareness of CS–US pairing during encoding. In order to test for awareness, memory tests are usually applied that require participants to indicate which out of all presented USs has been paired with a given CS (i.e., US identity memory) or to indicate of which valence the US is that was paired with the CS (i.e., US valence memory). Although differences in test performance sometimes failed to moderate EC at the level of participants (e.g., Baeyens, Eelen, & Van den Bergh, 1990; Olson & Fazio, 2001; Walther, 2002; Walther & Nagengast, 2006), studies

^{*} Corresponding author at: Department of Psychology, University of Trier, Universitätsring 15, 54286 Trier, Germany.

E-mail address: halbeisen@uni-trier.de (G. Halbeisen).

¹ Now at: The Martin Buber Society of Fellows in the Humanities, Hebrew University of Jerusalem, Israel.

using item-level analysis found conditioning effects only in CS for which the paired US or its valence was correctly indicated (e.g., Dedonder, Corneille, Yzerbyt, & Kuppens, 2010; Gast, De Houwer, & De Schryver, 2012; Pleyers, Corneille, Luminet, & Yzerbyt, 2007; Pleyers, Corneille, Yzerbyt, & Luminet, 2009; Stahl & Unkelbach, 2009; Stahl, Unkelbach, & Corneille, 2009).

That memory performance in awareness tests is the most important moderator of EC may cast some serious doubts on whether theories other than propositional accounts may adequately address evaluative learning (Hofmann, De Houwer, Perugini, Baeyens, & Crombez, 2010). However, this still ongoing debate was predominantly concerned with the question of how CS–US encoding processes (i.e., awareness) influence EC while neglecting retrieval-related processes that are involved in memory performance (Gawronski & Walther, 2012). Indeed, whether or not memory performance confounds different memory processes and to what extent different memory processes account for EC's moderation have rarely been addressed in previous research (e.g., Bar-Anan, De Houwer, & Nosek, 2010; Humphreys, Tangen, Cornwell, Quinn, & Murray, 2010; Hütter et al., 2012). In order to close this theoretical gap the present research investigates which memory processes underlie the moderation of EC.

Intentional and unintentional use of memory in EC

On the one hand memory can involve the conscious experience of remembering, i.e., recollection (Tulving, 1989). Hence, memory performance in EC studies may reflect intentional uses of consciously recollecting the CS–US pairings (e.g., Balas & Gawronski, 2012; Bar-Anan et al., 2010; Gast et al., 2012; Pleyers et al., 2007; Stahl et al., 2009). On the other hand, cognitive psychologists have long emphasized that memory may also have unintended effects (Jacoby, 1991; Schacter, 1987; Tulving, 1989). Unintended effects typically account for performance in “implicit” memory tests that do not involve instructions to remember (Schacter, 1987). Unintended effects also include “informed guessing” which describes accurate responding in explicit tests that occurs without recollection (Jacoby, Toth, & Yonelinas, 1993). Interestingly, there are many studies indicating that such responding can even exceed the influence of intentional uses of memory on performance (cf. Yonelinas, 2002). Unintended effects have been explained by an increase in the accessibility of a particular response that is caused by recent activation (Berry, Shanks, Speekenbrink, & Henson, 2012; Jacoby, McElree, & Trainham, 1999). For example, studies on associative repetition priming have shown that presenting one of two previously paired stimuli increases the accessibility of its associate (Zeelenberg, Pecher, & Raaijmakers, 2003). Accordingly, presenting the CS may increase the accessibility of the paired US as the test's response and thus lead to its indication even without conscious recollection.

In order to distinguish between intended and unintended effects on memory performance, tasks may be arranged in such a way that intentional and unintentional uses of memory would lead to opposite effects (Jacoby, 1991; Jacoby et al., 1993). Specifically, the logic of opposition entails the use of conscious recollection to avoid responding in the way that is facilitated by unintended effects of memory. An intriguing example of this logic is found in a recent EC study of Hütter et al. (2012) in which the authors distinguished between recollecting the valence of the paired US and inferring the paired US's valence from CS attitudes. Whereas participants in one condition were instructed to use the responses “pleasant” and “unpleasant” to indicate either their evaluation of the CS or their recollection of the paired US's valence, participants in another condition were asked to reverse their evaluative responses whenever the valence of the paired US was recollected. The failure to control performance in this test thus reveals an effect that occurs in the absence of recollection. Although Hütter et al. (2012) focused on the distinction between intentional uses of recollection and intentional uses of CS attitudes rather than on the difference between intentional and unintentional uses of

memory for the pairings, their findings corroborate the general assumption that multiple retrieval-related processes could underlie memory performance. This raises the question of which processes account for the moderation of EC by memory performance?

Based on a vast amount of research in cognitive psychology (Jacoby, 1998; Jacoby et al., 1999; Roediger, 1990; Schacter, 1987; Yonelinas & Jacoby, 2012) we hypothesized that besides intentional uses of memory unintentional uses of memory can also account for the moderation of EC by memory performance. Specifically, the CS may increase the accessibility of the paired US which could not only lead to the US's indication in a test of memory (cf. Zeelenberg et al., 2003), but also influence how the CS is evaluated (Fazio & Towles-Schwen, 1999; Greenwald, McGhee, & Schwartz, 1998; see also Humphreys et al., 2010). In order to test these hypotheses we designed two experiments in which we used conscious recollection to distinguish between intentional and unintentional influences on memory performance. Because recollection was identified by manipulating instructions to control memory performance within participants we were able to conduct a sensitive item-level analysis of which memory processes moderate EC (cf. Pleyers et al., 2007).

Experiment 1

In Experiment 1 fictitious water brands (CSs) were conditioned using liked and disliked pictures as USs. After assessing CS attitudes, we administered a memory test that manipulated instructions to control performance within participants. On each trial a CS and all USs were presented such that we could measure whether the paired US was indicated (*identity memory performance*) and also whether participants selected another stimulus of the same valence in case that the paired US was not indicated (*valence memory performance*). Because within-participant manipulations of conscious control have posed difficulties for measures of valence memory (see Hütter et al., 2012, for a discussion), our item-level measure of recollection concerned identity memory performance (cf. Gast et al., 2012). Specifically, each CS was tested twice and participants were instructed to avoid indicating the paired US on one trial so that recollection would be revealed as the successful avoidance of indicating the paired US (Jacoby, 1991). We then analyzed the effects of recollection and identity memory performance on EC. However, in the analysis we also controlled for effects of valence memory performance because its underlying processes could also affect whether the paired US is indicated (e.g., people may infer that the CS was paired with positive US because they like the CS; Hütter et al., 2012; Stahl et al., 2009).

Method

Participants and design

Seventy-two students (48 women, 24 men, $M_{age} = 22.5$, age range: 18–45 years) took part in an experiment for course credit. The experiment consisted of a 2 (US valence: liked vs. disliked) \times 2 (trial instructions: indication vs. avoidance) within-participant design.

Materials and procedure

Participants were introduced to a computer-guided study consisting of a conditioning procedure, an assessment of CS attitudes, a memory test, and a socio-demographic questionnaire. In order to avoid demand characteristics, the study was described as concerned with “information processing”. Concluding the study, participants were debriefed, thanked, and awarded their course credit.

Conditioning procedure. In the conditioning procedure participants were presented with 16 CS–US pairs among an equal number of filler trials. We used pre-tested materials from Brendl, Nijs, Möller, and Walther (2014). Specifically, fictitious brand names (Blask, Walther, Halbeisen, & Weil, 2012) served as CSs and liked and disliked pictures (e.g., a

Download English Version:

<https://daneshyari.com/en/article/7324776>

Download Persian Version:

<https://daneshyari.com/article/7324776>

[Daneshyari.com](https://daneshyari.com)