**Meta-analysis of EC effect without awareness with the surveillance task (Olson & Fazio, 2001)**

* The meta-analysis was conducted using the metaphor (Viechtbauer, 2010), Mad (Del Re & Hoyt, 2010) and the weightr (Coburn & Vevea, 2017) R packages.
* We report the results of random-effects model.
* We included only published data.
* We did not include conditions that were deliberately designed to reduce the effect.
* Because the main interest is for evidence of EC effect without awareness, we included only studies that assessed awareness and excluded aware participants (*n* = 10 reporting 23 separate studies). See the excel file called “meta-analysis\_exclude\_awere” for details on the included papers.
* We contacted authors of studies that included measurement of awareness but did not report data without aware participants, to ask for the data without aware participants. If the authors did not send the data – the paper was excluded from the meta-analysis. We will update the meta-analysis if more data will be sent to us.
* Effect size (Hedges g’) was computed based on the reported mean and STD of the EC effect. When mean and STD of the EC effect was not reported, effect size was computed based on the result of the reported t-test (for difference from zero).
* When a study had more than one DV, I aggregated the effect sizes (only one case: Olson & Fazio, 2001, study 2).

**Results:**

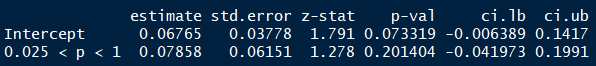
Random-effects meta-analysis reveals a significant but small effect size, Hedges’ *g* = 0.20, 95% CI [0.12, 0.27].



A meta-analytic selection model assuming publication bias fits the data better than the standard random-effects meta-analysis, χ2(1) = 6.48, *p* = .010,



The results of the selection model reveals a non-significant average effect size, Hedges’ *g* = 0.06, 95% CI [-0.006, 0.141].



**Included papers:**

Bahns, A. J. (2017). Threat as justification of prejudice. *Group Processes & Intergroup Relations*, *20*(1), 52-74.‏

Bar-Anan, Y., De Houwer, J., & Nosek, B. A. (2010). Evaluative conditioning and conscious knowledge of contingencies: A correlational investigation with large samples. *The Quarterly Journal of Experimental Psychology*, *63*(12), 2313-2335.‏

Crandall, C. S., Bahns, A. J., Warner, R., & Schaller, M. (2011). Stereotypes as justifications of prejudice. *Personality and Social Psychology Bulletin*, *37*(11), 1488-1498.‏

Jones, C. R., Fazio, R. H., & Olson, M. A. (2009). Implicit misattribution as a mechanism underlying evaluative conditioning. *Journal of personality and social psychology*, *96*(5), 933-948.‏

Kendrick, R. V., & Olson, M. A. (2012). When feeling right leads to being right in the reporting of implicitly-formed attitudes, or how I learned to stop worrying and trust my gut. *Journal of Experimental Social Psychology*, *48*(6), 1316-1321.‏

Luethi, M., Meier, B., & Sandi, C. (2009). Stress effects on working memory, explicit memory, and implicit memory for neutral and emotional stimuli in healthy men. *Frontiers in behavioral neuroscience*, *2*, 5.‏

Olson, M. A., & Fazio, R. H. (2001). Implicit attitude formation through classical conditioning. *Psychological Science*, *12*(5), 413-417 [study 2]

Olson, M. A., & Fazio, R. H. (2002). Implicit acquisition and manifestation of classically conditioned attitudes. *Social Cognition*, *20*(2), 89-104.‏

Olson, M. A., Kendrick, R. V., & Fazio, R. H. (2009). Implicit learning of evaluative vs. non-evaluative covariations: The role of dimension accessibility. *Journal of Experimental Social Psychology*, *45*(2), 398-403.‏

Stahl, C., & Heycke, T. (2016). Evaluative conditioning with simultaneous and sequential pairings under incidental and intentional learning conditions. *Social Cognition*, *34*(5), 382-412.‏

**Papers that were not included because they did measured awareness, or did measured awareness but do not report data without aware participants:**

Olson, M. A., & Fazio, R. H. (2001). Implicit attitude formation through classical conditioning. *Psychological Science*, *12*(5), 413-417 [study 1 – did not include awareness measure]

Vriends, N., Michael, T., Schindler, B., & Margraf, J. (2012). Associative learning in flying phobia. *Journal of behavior therapy and experimental psychiatry*, *43*(2), 838-843.‏

Whitfield, M., & Jordan, C. H. (2009). Mutual influence of implicit and explicit attitudes. *Journal of experimental social psychology*, *45*(4), 748-759. [the data without aware participants is not available].‏

Zimmerman, I., Redker, C., & Gibson, B. (2011). The role of faith in intuition, need for cognition and method of attitude formation in implicit–explicit brand attitude relationship strength. *Journal of Consumer Psychology*, *21*(3), 290-301.‏

**Papers that were not included because they used a variant of the surveillance task to change existing attitudes:**

Bui, E. T., & Fazio, R. H. (2016). Generalization of evaluative conditioning toward foods: Increasing sensitivity to health in eating intentions. *Health Psychology*, *35*(8), 852-855.‏

Choi, Y. J., & Lee, J. H. (2015). Alcohol-related attitudes of heavy drinkers: Effects of arousal and valence in evaluative conditioning. *Social Behavior and Personality: an international journal*, *43*(2), 205-215.‏

Ellis, E. M., Homish, G. G., Parks, K. A., Collins, R. L., & Kiviniemi, M. T. (2015). Increasing condom use by changing people’s feelings about them: An experimental study. *Health Psychology*, *34*(9), 941-950.‏

Gibson, B. (2008). Can evaluative conditioning change attitudes toward mature brands? New evidence from the Implicit Association Test. *Journal of Consumer Research*, *35*(1), 178-188.‏

Haynes, A., Kemps, E., & Moffitt, R. (2015). The moderating role of state inhibitory control in the effect of evaluative conditioning on temptation and unhealthy snacking. *Physiology & behavior*, *152*, 135-142.‏

Houben, K., Schoenmakers, T. M., & Wiers, R. W. (2010). I didn't feel like drinking but I don't know why: The effects of evaluative conditioning on alcohol-related attitudes, craving and behavior. *Addictive Behaviors*, *35*(12), 1161-1163.‏

March, D. S., Kendrick, R. V., Fritzlen, K. A., & Olson, M. A. (2016). News media depictions of Obama influence automatic attitudes: Implications for the Obama effect. *Social Cognition*, *34*(6), 504-522.‏

McNulty, J. K., Olson, M. A., Jones, R. E., & Acosta, L. M. (2017). Automatic associations between one’s partner and one’s affect as the proximal mechanism of change in relationship satisfaction: Evidence from evaluative conditioning. *Psychological science*, *28*(8), 1031-1040.‏

Olson, M. A., & Fazio, R. H. (2006). Reducing automatically activated racial prejudice through implicit evaluative conditioning. *Personality and Social Psychology Bulletin*, *32*(4), 421-433.‏

Zerhouni, O., Bègue, L., Comiran, F., & Wiers, R. W. (2018). Controlled and implicit processes in evaluative conditioning on implicit and explicit attitudes toward alcohol and intentions to drink. *Addictive behaviors*, *76*, 335-342.‏

**Additional papers that use the surveillance task were not included:**

Dempsey, M. A., & Mitchell, A. A. (2010). The influence of implicit attitudes on choice when consumers are confronted with conflicting attribute information. *Journal of Consumer Research*, *37*(4), 614-625.‏

*Reason: The pairing was always in opposite valence to attribute information. Therefore, it is difficult to interpret a “standard” EC effect.*

Franks, A. S., Scherr, K. C., & Gibson, B. (2018, July 19). Godless by Association: Deficits in Trust Mediate Antiatheist Stigma-by-Association. *Journal of Experimental Psychology: Applied*. Advance online publication.

*Reason: The pairing was of pictures of (real) unfamiliar politicians with atheist/Christian stimuli. No positive/negative USs were used. Therefore, it is difficult to interpret a “standard” EC effect.*

Hasford, J., Hardesty, D. M., & Kidwell, B. (2015). More than a feeling: Emotional contagion effects in persuasive communication. *Journal of Marketing Research*, *52*(6), 836-847.‏ -

*Reason: Manipulation too far from Olson & Fazio (2001): Manipulated US valence between participants, used also neutral US, use only one block of 86 trials, did not report awareness test.*

Zerhouni, O., & Lepage, j., (2018). “Paint It Black”, Chronic Emotion Regulation Difficulties Enhances Evaluative Conditioning Effect When Conditioned Stimuli Are Paired With Highly Arousing Negative Unconditioned Stimuli. *Journal of Individual Differences, 39*, 196-20.

*Reason: Manipulation too far from Olson & Fazio (2001): CSs were paired with either (i) positive USs, (ii) mildly arousing negative USs, or (iii) highly arousing negative USs. Did not use the classic awerness test but rather used a direct question about what type of pictures appeared with each CS.*