**The Impact of Counter-conditioning on Evaluative Learning via Intersecting Regularities.**

Intersecting Regularities is a new route for changing liking. In a typical IR procedure, individuals perform a task in which they learn that valenced and neutral stimuli are related to each other via one (or more) elements in operant contingencies that intersecting with one another. For instance, a first operant contingency might consist in pressing a red button (R1) in the presence of a positively valenced source stimulus (S1) that leads to the presentation of a neutral outcome (O1). Then in a second contingency, pressing a yellow button (R2) when a neutral target stimulus is present (T1) leads to the exact same outcome (O1). Participants may evaluate the neutral target (T1) more positively than they used to do due to the fact that the two operant contingencies intersect each other in terms of a common outcome (i.e., positive source (S1)🡪 red button (R1) 🡪 neutral stimulus (O1); Neutral target (T1) 🡪 yellow button (R2) 🡪 neutral outcome (O1)). The effectiveness of evaluative learning via IR has been demonstrated on both implicit and explicit attitudes (Hughes, De Houwer & Perugini, 2016). So far IR studies have only focused on attitude formation (i.e., establishing evaluations for novel stimuli). However, an important aspect of (evaluative) learning is how to change evaluations once they’ve been acquired. In Evaluative Conditioning (EC), for instance, one way of altering evaluative responses is via *counter-conditioning*. The aim of the present contribution is to investigate whether counter-conditioning can also be used to change recently acquired evaluative responses via intersecting regularities.

**IR and Counter-conditioning**

In EC, counter-conditioning refers to an experimental procedure containing two phases. In the first phase (acquisition), the individual is exposed to a contingency between two stimuli - a conditioned stimulus (CS) and an unconditioned stimulus (US). The second phase (counter-conditioning) consists of the presentation of the CS with a US of opposite valence. Counter-conditioning seems effective in changing the valence of a stimulus (e.g., Kerkhof, Vansteenwegen, Baeyens, & Hermans, 2011; Baeyens, Eelen, Van den Bergh, & Crombez, 1989). Across three studies we will first establish a series of evaluative responses via IR and then attempt to alter those responses via counterconditioning. Unlike EC, counter-conditioning in IR is not based on mere stimuli pairings. We explored different ways of manipulating intersecting regularities between stimuli in a counter-conditioning phase and tested their impact on implicit and explicit attitude change.

**Counterconditioning**

**Study 5**

One way of counter-conditioning evaluative responses established via IR would be to replace the valenced stimulus in one operant contingency with a stimulus of the opposite valence during the counter-conditioning phase. Imagine, for instance, that during the initial acquisition phase participants learn the following: Positive source (S1) 🡪 R1 🡪 **O1;** Neutral Target (T1) 🡪 R2🡪 **O1**; and Negative source (S2) 🡪 R3🡪 **O2**; Neutral Target (T2) 🡪 R4🡪 **O2**. Now during a subsequent counter-conditioning phase, they encounter a similar type of training except for the fact that the positive source (S1) is now replaced by a new negative source (S2) while the negative source (S2) is now replaced by a new positive source (S1). Thus, in the counterconditioning phase participants learn that the same outcome (O1) appears following a response emitted in the presence of T1 or S2 and that outcome (O2) appears following a response in the presence of either T2 or S1.

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| **ACQUISITION** | | | **COUNTERCONDITIONING** | | |
| **STIMULUS** | **RESPONSE** | **OUTCOME** | **STIMULUS** | **RESPONSE** | **OUTCOME** |
| Positive source (S1) | Press D (R1) | **Neutral outcome (O1)** | **Negative source (S2)** | Press D (R1) | **Neutral outcome (O1)** |
| Neutral target (T1) | Press C (R2) | **Neutral outcome (O1)** | Neutral target (T1) | Press C (R2) | **Neutral outcome (O1)** |
| Negative source (S2) | Press K (R3) | **Neutral outcome (O2)** | **Positive source (S1)** | Press K (R3) | **Neutral outcome (O2)** |
| Neutral target (T2) | Press M (R4) | **Neutral outcome (O2)** | Neutral target (T2) | Press M (R4) | **Neutral outcome (O2)** |