**Hypothesis (Extinction)**

Our previous attempts to extinguish evaluative responses established via intersecting regularities revealed that the most effective way to do so is via extinguishing the presentation of the outcome stimuli upon correct response to either valenced and neutral stimuli (Study 3). We failed to find evidence of extinction whenever one outcome (either the outcomes related to the valenced source [Study 1] or the neutral target [Study 2]) was removed during the extinction procedure. In Study 7 we will also remove the second intersection that may be responsible of the link between sources and target stimuli, namely, key location. Although Study 3 showed no extinction when the acquisition phase was followed by a the simple presentation of the stimuli on screen (no categorization), such a procedure might be perceived by participants as a different task which does not invalidate all the contingencies acquired in the IR training phase. Therefore, in this study we adopted a more stringent extinction procedure in which (i) the task is equivalent to that administered in the IR training, (ii) the presentation of the outcomes upon correct responses is extinguished in the extinction phase (like in Study 3) and (iii) neither the IR training nor the extinction procedure involve intersection between stimuli due to key-response location.

If learning represents a change in behavior that is due to regularities in the environment, then extinction represents an elimination or reduction in that changed behavior due to subsequent modifications to those original regularities. Especially when the intersection between source and target stimuli is confined to the presentation of a common outcome upon correct categorization, removing this outcome in the extinction phase might lead to a decrease in the evaluative change.

Two possibilities arise. The first is that evaluative responses established via intersecting regularities can be extinguished through post-acquisition phase. For instance, not showing O1 and O2 upon correct response to either valenced and neutral stimuli eliminates the previously established intersection between them.

That said, we already repeatedly failed to find extinction effects in our previous studies. Therefore it is possible that these post-acquisition modifications will not lead to a reduction in evaluative responding. Therefore, while we do anticipate extinction effects in Study 7, we would not be surprised if extinguishing the intersection between regularities does not lead to extinction effects.

**Hypothesis (Counterconditioning)**

If learning represents a change in behavior that is due to regularities in the environment, then counter-conditioning represents a novel change in behavior due to subsequent modifications to those original regularities. For instance, when it comes to changes in behavior due to the pairing of stimuli (e.g., evaluative conditioning), counter-conditioning refers to the phenomenon whereby post-acquisition presentations of the CS with an US of opposite valence (compared to that presented in the acquisition phase) lead to a reduction of the previously acquired conditioned response. Similarly, operant behavior can be put into counter-conditioning by eliminating the contingency between a response and its consequence. While Study 5 showed that counterconditioning affects learning via IR when source stimuli of opposite valence are intersects the targets, Study 6 showed no effect when the counterconditioning procedure is based on re-writing connections between stimuli. This study replicates the same procedure administered in Study 6, but without any intersection in terms of key location in either the acquisition or the counterconditioning phase.

Two possibilities arise. One is that we replicate the findings of Study 6, confirming that no counterconditioning effect occurs via re-writing connections at the outcome level. The second possibilities is that by removing the ‘key-location’ intersection we might increase the salience of the ‘outcomes’ intersection, therefore inducing participants to create novel connections between stimuli.