A Laboratory Experiment on Loving-kindness Meditation and its Undoing Effect on Anger

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BACKGROUND

- The Broaden and Build (B&B) theory of positive emotions (PE) – PE broadens one’s thought-action repertoire, unlike negative emotions (NE).
- The undoing hypothesis – PE can quell the lingering effects of NE psychologically and physiologically, whereby PE may undo/neutralize the consequences of NE. It can remedy the potentially damaging cardiac activity, by returning one’s physiological responses to more moderate levels of activation (Fredrickson, 1998; Fredrickson & Levenson, 1998; Shiota et al., 2011).
- Speedy recoveries to one’s baseline levels of cardiovascular activation upon experiencing the emotions contentment and amusement have been shown after fear was elicited (Fredrickson & Levenson, 1998; Fredrickson et al., 2000; Fredrickson & Branigan, 2005), demonstrating that the undoing hypothesis works with both a low-arousal and a high-arousal PE.
- Loving-kindness meditation (LKM) elicits and focuses on low-arousal PE (e.g. contentment, peace, calm).

**METHOD**

- **Participants in the experimental group** listened to the guided LKM for 9 minutes (Mindful Awareness Research Centre, 2016).
- **IV (LKM, Control).** DV (the minute the participants’ HR returned to its baseline levels, which is characterized as the reduction of anger). Covariate (Baseline HR).

**RESULTS**

- **Actual Study**
  - Participants’ baseline HR was lower than the after-anger HR, with an increase of 9.815 (95% CI, 8.542 to 11.088), t(91)= 15.312, p < .001.
  - After controlling for the covariate, there was a statistically significant difference between the LKM (M = 3.478, SD = 1.823), and the control group (M = 5.761, SD = 2.100), F (1, 89) = 263, p < .001, in returning to their baseline HR levels.

**DISCUSSION**

- **Utilize more advanced machines that are less intrusive to record the participants’ HRs.**
- **Self-reports can be compared with the physiological measures, to identify if they do correlate with one another.** The emotional coherence hypothesis states that emotions are assumed to have synchronized responses across various reactions, including physiological responses (Levenson, 2014), however, studies have found inconsistent results with regards to this (Evers et al., 2013).

**FUTURE RESEARCH**

**REFERENCES**


**Current Study**

- To investigate if meditative practices such as LKM that also draw low-arousal PE can play a part in the undoing hypothesis (Fredrickson, 2000).
- To demonstrate the undoing of an approach-type NE, such as anger, instead of fear, which is an avoidant-type NE.

**Pilot Study**

- The participants’ baseline HR was lower than the after-anger HR, with an increase of M = 6.75 [95% CI, 1.314 to 3.856], t (11) = 5.133, p < .001.

- After adjustment for the baseline HR, there was no statistically significant difference in the DV between the LKM (M = 3.167, SD = 2.137) and the control group (M = 5.667, SD = 3.011), F (1, 9) = 3.244, p > .05.