

The Process of Other-Focus: Evidence for a Psychophysiological Model

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Other-Focus

- The tendency to affiliate with others
 - Psychological process undergirded by
 - Physiological factors
 - Positive attention directed to others and energy invested in social engagement behaviors.

Vagus Nerve (Xth Cranial Nerve)

- Hypothesized to promote other-focus through influences on attention and emotion
 - Manifestations of vagal activity:
 - Greater emotional expressivity (Cole et al., 1996)
 - Higher social functioning in male children (Eisenberg et al., 1995)
 - Decreased cardiac vagal control is related to depression in adults and children (Rottenberg, 2007).

- This study investigates additional social engagement and positivity correlates of vagal tone (trait vagal activity)

Box 1: Measurement of Vagal Tone: Respiratory Sinus Arrhythmia (RSA)

- Vagus regulates heart rate in rhythm with respiration
- RSA is:
 - The difference between the minimum interbeat interval (IBI) during inspiration and the maximum IBI during expiration, measured in seconds (Grossman, 1983).

$$\text{MAX EXP IBI} - \text{MIN INSP IBI} = \text{RSA}$$

- Analyzed the mean of RSA values over a two minute baseline period.

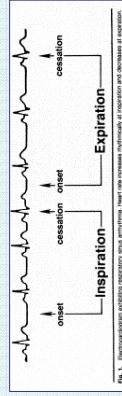


FIG. 1. Measurement of respiratory sinus arrhythmia. Heart rate increases synchronously at inspiration and decreases at expiration.

Figure from Cottingham, Porges & Lyon (1988)

Method

Participants

- Study 1: 86 undergraduate students, 42% male
- Study 2: 94 adults, mean age 26.4, 32% male
- Study 3: 153 undergraduate students, 30% male

Selected Measures

- Study 1:
 - Self-Transcendence (Cloninger, Svrakic & Przybeck, 1993)
 - RSA: See Box 1.
- Study 2:
 - Satisfaction with Life (Pavot & Diener, 1993).
 - Life Orientation Test-Revised (LOT-R; Scheier & Carver, 1994).
 - RSA
- Study 3:
 - Self-Importance of Moral Identity (Aquino & Reed, 2002)
 - RSA

Results

Study 1

Baseline RSA and:

- Transpersonal Identification ($r = 0.265^*$)

Study 2

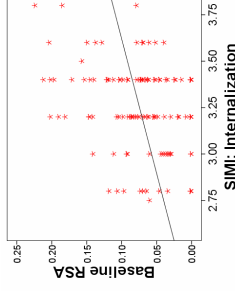
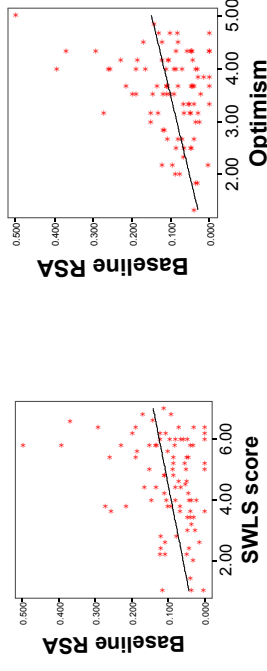
Baseline RSA and:

- LOT-R (Optimism; $r = 0.290^{**}$)
- Satisfaction with Life ($r = 0.278^{**}$)

Study 3

Baseline RSA and:

- Self-Importance of Moral Identity: Internalization ($r = 0.295^{**}$)



DISCUSSION

- Across three data sets, RSA was related to trait indicators of:
 - social engagement
 - Social connectedness (transpersonal identification)
 - Morality (SIMI: Internalization)
 - positive life orientation
 - Optimism
 - Satisfaction with life
- These findings suggest that cardiac vagal tone, as measured by RSA, is a physiological state which plays a role in other-focused identity and positivity.
- The vagus nerve may create social connectedness and build social and personal resources over time by motivating positive social attention.

References

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