Exploring the Link Between Emotion Coherence, Social Connection, and Well-Being Across Contexts

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Background

Emotion coherence describes the coordination of responses across different systems including the physiological, behavioral, and experiential systems throughout the body. Functionalist theory supports the idea that emotion coherence is an adaptive process that should promote greater overall well-being (Dan-Glauser & Gross, 2013).

However, research on emotional coherence and its link to well-being is ultimately mixed. Previous studies have inferred diverse conclusions, with the ultimate goal of discovering whether emotional coherence promotes/impedes an aspect of an individualized well-being. Several studies have suggested a positive correlation between emotional coherence and well-being (e.g., Brown et al., 2020). Further studies found that there was no association between emotional experience and physiology (Evers et al., 2014).

This study focused on emotion-physiology coherence, whereby the body's physiological reactions mirror emotional experiences. This was achieved through measurement of participants' respiratory sinus arrhythmia (RSA). Research has indicated that RSA is a viable measure to assess social engagement between individuals (Porges, 2006). Essentially, RSA allows the measurement of the body's mobilization to perceived threats (Geisler et al., 2013). In the absence of socio-emotional challenge, RSA activity is maintained or increased to promote social engagement and support affiliate bonds. In contrast, during socio-emotional challenge, RSA activity is reduced as the body prepares to mount a defense.

In this study, we aimed to test the links between experience-RSA coherence, emotional connection, and well-being in two contexts designed to elicit primarily positive or negative valence respectively.

Hypothesis: Greater experience-RSA coherence is associated with higher reports of positive valence through the mediating role of emotional connection.

Method

Participants

- 71 women from larger study; predominately white and aged mid-twenties

Procedure

- Heterosexual couples were asked to engage in mixed-emotion conversation regarding the importance of a healthy lifestyle. Electrocardiography was assessed continuously, which we later turned into RSA measured in 10 second intervals.
- Immediately following the conversation, participants watched a video of their conversation and continuously rated how they remember feeling using a rating dial. We aggregated emotional experience into 10-second increments to align with RSA.
- Participants then completed various questionnaires regarding their experience.

Measures

- Coherence was assessed during two conversations (i.e., support and change) by calculating cross-correlations between RSA and emotional experience for each participant. This resulted in two coherence measures for each participant.
- Emotional Connection: Three items assessed the extent to which participants were aware of and felt connected to their partner's emotions during the conversation. All items were rated on a 7-point scale.
- Well-being (Positive Valence): Participants reported the extent to which they felt 5 discrete positive emotions using a 5-point scale.

Results and Discussion

Figure 1. Mediation model illustrating effect of coherence, during support conversation, on positive valence through emotional connection.
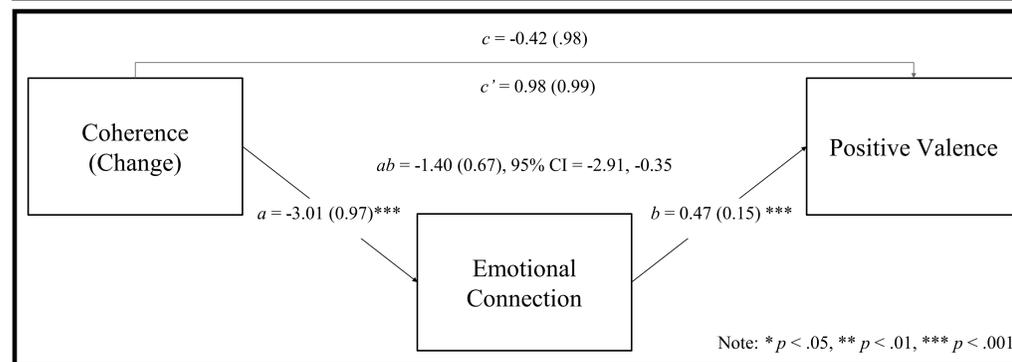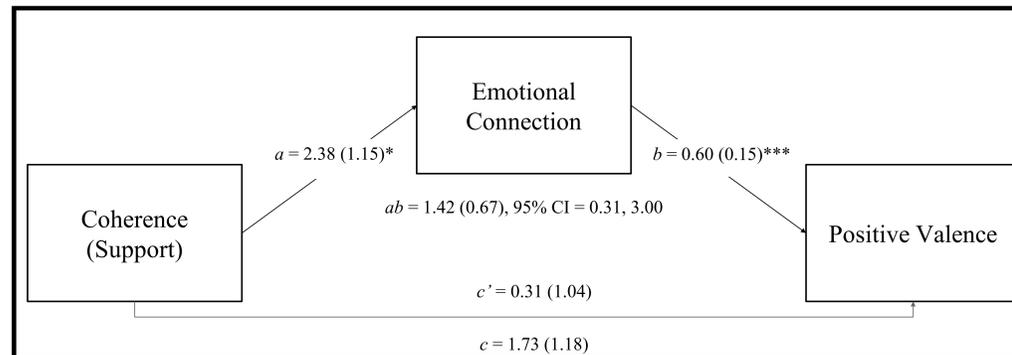

Coherence (Support) → Emotional Connection → Positive Valence

a = 2.38 (1.15)* b = 0.60 (0.15)***

ab = 1.42 (0.67), 95% CI = 0.31, 3.00

c' = 0.31 (1.04)

c = 1.73 (1.18)

c = -0.42 (.98)

c' = 0.98 (0.99)

Coherence (Change) → Emotional Connection → Positive Valence

ab = -1.40 (0.67), 95% CI = -2.91, -0.35

a = -3.01 (0.97)*** b = 0.47 (0.15) ***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 2. Mediation model illustrating effect of coherence, during change conversation, on positive valence through emotional connection.

Support Conversation:

- Of the 71 participants, 69% (*n*=49) exhibited high coherence, such that greater positive emotional experience was associated with greater RSA activity. The remaining 22 participants exhibited weak coherence; whereby greater positive emotional experience was associated with lower RSA activity. Figure 1 displays the results for individuals exhibiting greater coherence. Emotional connection significantly mediated the associated between emotion-physiology coherence and positive valence. Specifically greater coherence during the support conversation led to higher rates of emotional connection, indicating that participants were feeling more connected to their partners.
  - This emotional connection further led to higher rates of positive valence, or experience of positive emotions. In other words, greater coherence allows for increased emotional connection which promoted greater overall well-being.

Change Conversation:

- Thirty-eight participants (53.52%) exhibited weak coherence; whereby greater negative emotional experience was associated with greater RSA activity. The remaining 33 participants exhibited high coherence; whereby greater negative emotional experience was associated with lower RSA activity. Figure 2 displays the results for individuals exhibiting weak coherence during the change conversation. Again, emotional connection significantly mediated the association between coherence and positive valence. Specifically, the greater misalignment between emotional experience and physiology during the change conversation led to diminished rates of emotional connection.
  - However, when participants did feel connected with their partners, they reported higher rates of positive valence. Therefore, higher rates of emotional connection were still indicative of overall well-being.

Conclusions and Implications

Overall, we found support for our hypothesis, such that emotional connection significantly mediated association between emotion-physiological coherence and well-being. However, we found that links between coherence, emotional connection, and positive valence operated differently across contexts.

During support conversations, we found greater coherence fostered greater emotional connection, leading to higher reports of positive valence following the conversation. This is consistent with prior empirical work, suggesting positive association between coherence and well-being (e.g., Sommerfeldt et al., 2019). However, we expand on prior work by showing interpersonal connection may be one pathway in which this relationship unfolds. Our findings also build on extensive work studying relationships between RSA and social connection by showing greater coherence between emotional experience and RSA activity in the absence of socio-emotional challenge leads to greater emotional connection.

In contrast, during change conversations, we did not find support for greater emotion-physiology coherence leading to higher well-being. Our results instead indicated an association between weak coherence and well-being; whereby weaker coherence (i.e., negative emotional experience and increased RSA activity) led to lower emotional connection. Although speculative, one reason for this negative association may be that weakly coherent participants were unable to mount sufficient response to the potential socio-emotional challenge that the change conversation elicited, thus resulting in decreased reports of emotional connection due to miscommunication between the mind and body. Another potential reason is that these participants employed emotion regulation strategies, such as expressive suppression or cognitive reappraisal, to decrease the extent to which they experienced negative emotion during the conversation resulting in weaker experience-physiology coherence (Brown et al., 2020; Butler et al., 2014). If individuals focused on regulating their own emotions during the conversation, they may have been less aware of and felt less connected to their partner's emotions. Therefore, despite feeling less connected to one's partner, weakly coherent individuals reported higher positive emotion following the conversation due to their ability to regulate their negative affect during the conversation.

Limiting factors of this particular study can be recognized when viewing the demographic of participants, which demonstrates poor generalizability. Although this study obtains poor generalizability, a critical strength of our study includes the statistical significance of our data analysis.

Additional research might consider more measures of well-being or measure coherence and well-being across multiple time points, as our measure focused on state-level mood (i.e., discrete positive emotions following the mixed-emotion conversation). We also suggest that further research may implement a baseline between portions of conversations, due to the possibility of emotional experience and physiological activity spilling into the two conversations that we focused on. Participants displaying weak coherence in the support conversation may have been adapting based on the stressors in the prior conversation.

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