

Dominance and Heart Rate Variability During Social Evaluation

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Dominance

- Dominance is generally defined as a disposition to seek control and influence over others (Keltner et al., 2003).
- It has also been associated with self-confidence and resistance to intimidation and influence by others.

Heart Rate Variability

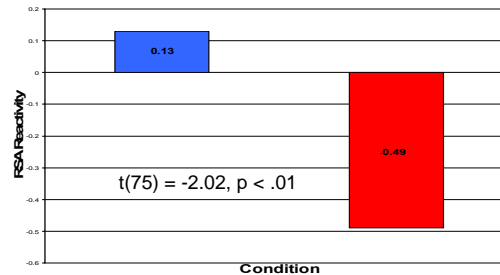
- Heart rate variability is an indication of autonomic reactivity. It can be indexed by measuring changes in Respiratory Sinus Arrhythmia (RSA; Porges & Byrne, 1992).
- According to the polyvagal theory of autonomic function (Porges, 2001), social engagement leads to increases in RSA, while decreases in RSA indicate anxiety and negative affect.
- Dominant individuals should show higher levels of RSA in stressful social situations, but not in the asocial stressful situations.

Method

- Dispositional Dominance was measured with the Leadership / Authority subscale of the Narcissistic Personality Inventory (Raskin & Hall, 1979)
- Participants delivered a speech and participated in a brief question and answer task. The speech and question and answer tasks were completed either in the presence of two evaluators (experimental conditions) or with no one present, with the responses spoken into a tape recorder.
- Negative affect was assessed prior to the beginning of the tasks.
- An electrocardiogram (Ekg) was used to measure heart rate and heart rate variability continually throughout the tasks.
- RSA was derived from the Ekg, and reactivity was assessed by subtracting the final minute of a baseline period from each minute of the task. Reactivity scores were collapsed across all minutes of both tasks in order to obtain a composite score.

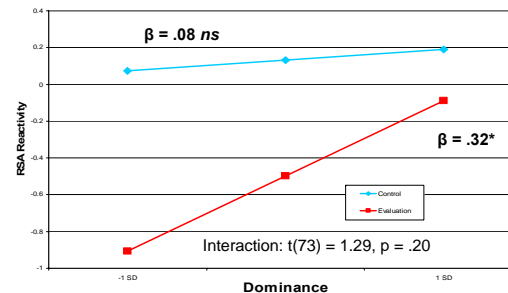
RSA Reactivity is Reduced during Social Evaluation

RSA reactivity varied by condition. Participants who gave speeches to live evaluators had lower RSA during the speech than at baseline. RSA in participants in the control condition did not significantly differ between the speech and baseline.



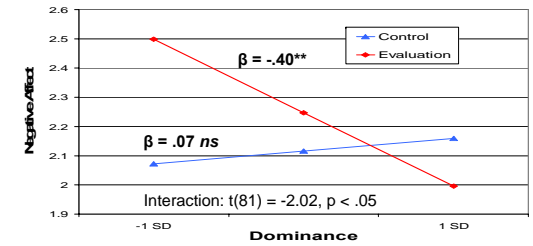
Dominance Predicts RSA Reactivity to Social Evaluation

Participants who were high in dominance had relatively higher RSA reactivity than participants low in dominance while delivering their speech and completing the questions and answer task in front of evaluators. Dominance had no effect on RSA reactivity for participants delivering their speech into a tape recorder.



Dominance Predicts Negative Affect in Anticipation of Social Evaluation

Participants who were high in dominance had less negative affect than participants low in dominance prior to delivering their speech in front of evaluators. Dominance had no effect on negative affect for participants delivering their speech into a tape recorder.



Conclusions

- More dominant individuals showed relatively more RSA reactivity while giving a speech and participating in a question and answer session.
- This effect was only present when the tasks were performed in the presence of others.
- The data suggests that dominant individuals are better able to socially engage during a stressful task.
- Dominance interacted with condition to predict negative mood prior to the speech, but this interaction was not directly related to RSA reactivity.

References

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