

Attachment Differences in Support Providers' Physiological Reactivity In Support Discussions

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Abstract

This study explored the effects of attachment orientation on support-providers' physiological reactivity during discussions of their spouse's greatest fear and their spouse's most important goal. We hypothesized that anxious support-providers would show greater physiological reactivity when providing goal support, avoidant support-providers would demonstrate higher reactivity when providing fear support, and secure people would remain stable across both types of support discussions. To examine this, we studied 100 married couples in which one member had recently retired, we assessed attachment orientation, and collected biometric data during two types of support discussions. The final results indicated decreased reactivity for anxious support-providers and increased reactivity for avoidant support-providers during the fear discussion, and an interaction effect between anxiety and avoidance predicting reactivity during the goal discussion.

Attachment Differences in Support Providers' Physiological Reactivity In Support**Discussions**

The efforts of Ainsworth (1967) and Bowlby (1969/1982) to differentiate the kinds of orientations in which people form relationships have had a huge effect on social psychology. Their work identified the primary three orientations of secure, anxious (defined by a fear of rejection by others), and avoidant (defined by an aversion to closeness and intimacy). Since Ainsworth and Bowlby's early studies, a great deal of research has been conducted to examine predictors and consequences of these orientations, including the work of Main and Solomon (1990), who introduced the fourth attachment orientation, fearful-avoidant, characterized by behavior with both anxious and avoidant aspects. Perhaps most notable was the extension of these attachment orientations into adult relationships, paving the way for a large body of research on adult attachment.

There are gaps in this field, however. For example, few attachment studies relate attachment orientation directly to biometric data, and when they do, it is typically a part of a long term study, aimed at finding general trends throughout a person's life as a result of attachment orientation, rather than making short term predictions on how biometrics will fluctuate. For example, two relatively recent papers that catalog attachment orientation and blood pressure specifically to correlate them do so as an effort to match long term health problems to attachment orientation (McWilliams & Bailey, 2010), or as an effort to determine an effect on ambulatory blood pressure over the course of normal social interaction (Gallo & Matthews, 2006).

These studies linking attachment orientation and blood pressure have yielded inconsistent results. Specifically, in one study, blood pressure was significantly higher in the long term for

people with an anxious attachment orientation, with health problems unrelated to blood pressure more common in the other attachment orientations. (McWilliams & Bailey, 2010). Another study showed that blood pressure was not significantly related to attachment at all (Gallo & Matthews, 2006). To better understand chronic levels of blood pressure over the long term, it may be helpful to understand the short term links between attachment orientation and physiological reactivity, and to determine the circumstances in which reactivity is elevated. Not only would this add insight into the small pressures that build up to long term health issues, but it could also provide insight into the quality of support given by people with certain attachment orientations in relationships, as intuitively, someone who is more physiologically aroused will be less competent and effective at giving support to their partner.

Different types of social support interactions are likely to differentially affect individuals based on their attachment orientations. Thus, what kind of interaction causes more stress for a person depends partially on which orientation they hold. Presumably, a support situation requiring emotional closeness will stress someone with an avoidant orientation (who avoids intimacy and closeness), while an anxious person (who craves such closeness) could thrive in such a situation. Similarly, one could imagine an anxious person becoming unnerved at the prospect of their partner pursuing independent goals (and having to support such independent endeavors), whereas an avoidant person may be more amenable to supporting independent goal pursuit (as it may create some of the distance that they desire). Thus, we predict that individuals with an anxious attachment orientation will experience increases in physiological arousal (compared to baseline levels) when discussing and providing support for their partner's most important independently achieved goal, but not when discussing and supporting their partner's

biggest fear.. In contrast, we predict individuals with an avoidant attachment orientation will experience increases in physiological arousal (compared to baseline levels) when discussing and providing support for their partner's greatest fear, but not when discussing and providing support for their partner's goal. We predict that that secure individuals (those low in both attachment anxiety and attachment avoidance) will not experience increases in arousal (compared to baseline levels) for either type of discussion. This study is part of a much larger longitudinal investigation designed to learn more about the life experiences of couples in which one of the members has recently retired.

Methods

Participants

Participants were one hundred married couples, with at least one member of each recently retired. We recruited these couples through a combination of advertising flyers that mentioned compensation, as well as through a list of older adults in the Pittsburgh, PA area provided by the University of Pittsburgh Medical Center. When only one member of the couple was recently retired, we selected that person as the "target participant" who provided the fear about retirement and the goal that was discussed later in the study. When both couple members were recently retired, we selected a target participant at random. The target participant was placed in the role of a "support recipient" in the discussions, and the spouse was placed in the role of a "support provider" (someone who could potentially provide support). The focus of this investigation was on the spouse in the support provider role.

Materials

While there were a number of materials given to the participants during the course of the

study, the ones relevant to this analysis included a standard measure of attachment orientation (Experiences in Close Relationships Scale, Brennan, Clark, & Shaver, 1998) which assesses two dimensions of adult attachment – avoidance and anxiety, and questionnaires that asked the target participant to indicate his/her greatest fear about retirement and his/her most important personal goal for the future, from which we identified the topics for their support discussions. .

Procedure

The participants were led to a room fitted with microphones and cameras, where they completed surveys that contained the adult attachment measure described above. One week later, they returned to the same room, where we attached them to biometric sensors that collected, among other things, blood pressure data. This investigation focuses on blood pressure reactivity. Before the support discussions, we obtained three baseline assessments of the participants' blood pressure, in each of which the couple members performed relaxation techniques, such as paced breathing and slow counting. Following that, the couple members engaged in a pair of discussions, separated by a questionnaire period to return biometric levels to baseline. The participants were instructed to discuss the topics as they would when discussing these topics in their everyday lives. In the first discussion, the participants had a seven-minute period to talk about the target participant's biggest fear about aging, retrieved from the initial survey. The second discussion was about the most important personal (independent) goal that the target participant would like to accomplish in the future. Neither of the discussions occurred in the presence of an experimenter. The couple members were left alone to have the conversations, which were unobtrusively recorded. Upon completion of the study, we obtained consent to use the video and physiological recordings for research purposes.

The design for the primary data analysis was within-subjects design. To test hypotheses, hierarchical linear regression analyses were conducted, with anxious attachment, avoidant attachment, and baseline blood pressure entered on the first step as independent variables, and the interaction between anxious attachment and avoidant attachment were entered on the second step. Average blood pressure for the first three minutes of the discussion was the dependent variable used in data analyses. Separate regression analyses were conducted for each type of discussion (fear and goal), and for systolic and diastolic blood pressure recordings.

Results

The first hierarchical linear regression analysis focused on systolic blood pressure changes in the fear discussion's first three minutes, controlling for baseline systolic blood pressure. Results revealed a significant main effect of attachment anxiety ($\beta = -.255$, $SE = 1.721$, $p = .042$), indicating that support-providers who were higher in anxious attachment experienced decreases in systolic blood pressure during the fear discussion. There was also a marginal main effect of attachment avoidance ($\beta = .216$, $SE = 1.901$, $p = .083$), indicating that support-providers who were higher in avoidant attachment showed greater systolic blood pressure reactivity during the fear discussion. These results are consistent with predictions that anxious support-providers would not be distressed by engaging in a fear discussion whereas avoidant individuals would be. Results revealed no significant interaction between attachment anxiety and attachment avoidance in predicting systolic blood pressure ($\beta = -.182$, $SE = 1.762$, $p = .768$).

The second hierarchical linear regression analysis focused on diastolic blood pressure changes in the fear discussion's first three minutes, controlling for baseline diastolic blood

pressure. Results indicated that there were no significant main effects of attachment anxiety ($\beta = -.135, SE = 1.306, p = .321$) or avoidance ($\beta = .115, SE = 1.476, p = .410$) predicting changes in diastolic blood pressure during the fear discussion, and there was no significant interaction between anxiety and avoidance predicting changes in diastolic blood pressure during the fear discussion ($\beta = -.364, SE = 1.326, p = .591$).

Next, we conducted a hierarchical regression analysis predicting systolic blood pressure reactivity during the goal discussion. There were no significant main effects of attachment anxiety ($\beta = -.147, SE = 2.366, p = .278$) or avoidance ($\beta = .134, SE = 2.613, p = .322$) predicting diastolic blood pressure reactivity, and the interaction of anxiety and avoidance was not significant ($\beta = -.318, SE = 2.418, p = .640$).

Finally, we conducted a hierarchical regression analysis predicting diastolic blood pressure reactivity during the goal discussion. There were no significant main effects of attachment orientation in predicting diastolic blood pressure reactivity ($\beta = -.213, SE = 1.410, p = .121$ for anxiety, $\beta = .152, SE = 1.594, p = .277$ for avoidance). However, there was a significant interaction between attachment anxiety and attachment avoidance predicting diastolic blood pressure in the goal discussion ($\beta = -1.558, SE = 1.375, p = .019$). Follow-up analyses to explore the nature of this interaction revealed a positive association between avoidance and diastolic blood pressure when anxiety levels were low, but a negative association between avoidance and diastolic blood pressure when anxiety levels were high. Thus, it is the support-providers who were high in avoidance and low in anxiety (referred to in the attachment literature as dismissing avoidant individuals) who were the most physiologically reactive to the goal discussion. The interaction effect is depicted in Figure 1.

Discussion

The results of this study indicated that in support discussions based on a partner's fears, support-providers who are high in attachment anxiety were less physiologically reactive, whereas people high in avoidance were more physiologically reactive. In addition, with regard to the goal discussion, it was the dismissing avoidant support-providers (high avoidance, low anxiety) who were most physiologically reactive. The results are consistent with the hypothesis that anxiously attached support providers would be more willing and happy to provide support in this context, perhaps in the belief that it would bring them closer to their partner, whereas avoidantly attached support-providers would feel most uncomfortable in this context due to their discomfort with intimacy and dependence. However, although the regressions investigating the goal discussion found no significant main effects, the direction of the data implied similar (although weaker) trends. If these effects were not due to random chance, it might imply that people high in anxiety are more willing than those high in avoidance to provide support in general, regardless of the subject matter of the discussion.

The interaction effect for the goal support discussion indicated that the highest blood pressure reactivity occurred for support-providers with a dismissing-avoidant attachment orientation (those who were low in attachment anxiety but high in attachment avoidance). This may indicate that attachment anxiety has a stress-buffering effect during goal support discussions (consistent with the hypothesized desire to be close to the spouse) when support-providers are high in attachment avoidance .

Despite the strengths of this investigation, there are many ways in which this study can be improved upon or taken further. First, by using a participant pool of older adults (aged 65 and

older), we run the risk of a ratio of attachment orientations (and responses to fear and goal discussions) that are unrepresentative of the general population. For example, older, long-term relationships may be more secure than newer relationships, and physiological reactivity during support discussions may differ for older adults (who likely have more experience in such discussions). In addition, as age increases, there are a great deal of health problems that could interfere with the accuracy of blood pressure readings. Although the recruitment process excluded couples in which either member was taking certain forms of medication that could influence blood pressure recordings, any number of medications and health conditions could interfere with the biometric measures.

Second, a larger sample size would enable greater confidence in the pattern of results. With only sixty participant couples, there is a possibility that not enough anxious or avoidant orientations were represented in the data. With a larger pool of participants, the results would be less vulnerable to error variation in blood pressure, or to omitted data due to technical difficulties with the measurement devices. On the rare occasion when a biometric measuring device was found to work improperly, the properly functioning one was (sensibly) provided to the target participant (the focus of the larger investigation of which this is a part), leaving a somewhat smaller sample of data from the spouse support-provider.

Finally, the study design would be improved if we had been able to counterbalance the two support discussions. Although there was a questionnaire period that separated the two discussions (and that was intended to enable participants to return to baseline), it is possible that arousal from the fear discussion carried over onto the subsequent goal discussion.

Counterbalancing discussions would have ensured that any potential order effect or bias would

It is also important to note that this investigation involved the use of the most conservative baseline possible (a talking baseline). The use of a talking baseline rather than a quiet baseline may also have introduced additional noise, without which the results may have been stronger. Also, this study investigated only blood pressure as a measure of physiological reactivity. In the future, it will be important to investigate other measures of arousal as well, such as cardiac impedance or heart rate variability.

Despite these limitations, there are many opportunities for additional study. Future research could analyze patterns of physiological responding over a longer timescale, in more naturalistic environments, in perhaps a modified version of the ambulatory blood pressure experiment mentioned earlier (Gallo & Matthews, 2006). For example, a possible methodology might be to have a participant press an unobtrusive button when beginning a personally meaningful conversation with someone in their daily life to signal a device to start recording blood pressure, and then have them record facts about the conversation, like whether they felt it had emotional depth. By doing this multiple times and having a record of which relationship orientation that person holds, experimenters could gain insight into the types of interactions that increase cardiovascular reactivity. Another potential direction might be to code for actual support behaviors to directly link physiological response to how the participants behave.

In conclusion, the results of this study indicated that a support provider, when faced with a discussion of his or her spouse's fear, will tend to be less physiologically reactive if he or she has an anxious attachment orientation, and less physiologically reactive if he or she has an avoidant attachment orientation. Furthermore, the results indicated that physiological reactivity is

correlated with high levels of avoidance, but only if a high level of anxiety was not present as well. This study is the first to examine physiological response in real time across different types of discussion, and as such provides a foundation for future work correlating physiology and behavior.

References

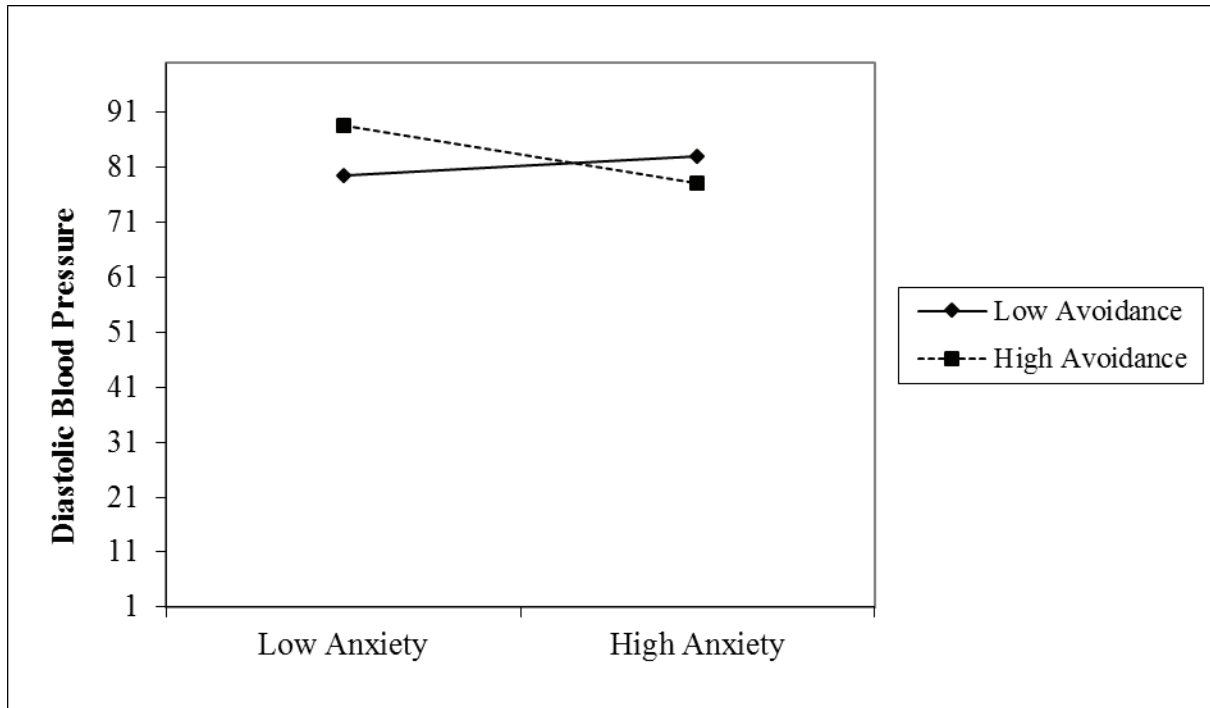
- Ainsworth, M. D. S. (1967). *Infancy in uganda: Infant care and the growth of love*. Baltimore: Johns Hopkins University Press.
- Bowlby, J. (1969/1982). *Attachment and loss: Vol 1.* (2nd ed.). New York: Basic Books.
- Brennan, K.A., Clark, C.L., & Shaver, P.R. (1998). Self-report measurement of adult attachment: an integrative overview. In J.A. Simpson & W.S. Rholes (Eds.), Attachment theory and close relationships (pp.46-76). New York: Guilford Press.
- Gallo, L. C., & Matthews, K. A. (2006). Adolescents' attachment orientation influences ambulatory blood pressure responses to everyday social interactions. *Psychosomatic Medicine*, 68(2), 253-261.
- Main, M., & Solomon, J. (1990). Discovery of an insecure-disorganized/disoriented attachment pattern. *Affective development in infancy*, 95-124.
- McWilliams, L. A., & Bailey, S. J. (2010). Associations between adult attachment ratings and health conditions: Evidence from the national comorbidity survey replication. *Health Psychology*, 29(4), 446-453.

Figure Captions

Figure 1: The interaction effect of anxiety levels and avoidance levels on diastolic blood pressure in the goal discussion.

Figures

Figure 1:



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