Attachment Style's Influence on Cognitive Tasks Performance

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Introduction

- Attachment style is the way people think, feel, and behave in their close relationships (attachment anxiety and avoidance; Gillath et al., 2016) and can affect their information processing.
- People with different styles, perform differently on cognitive tasks involving attachment-related info (e.g., Edelstein et al., 2005).
- Attachment style also predicts performance on non-attachment-related tasks.
- Individuals high on avoidant attachment perform better on non-attachment related attention tasks, mainly due to the ability to suppress potential distractors (Gillath et al., 2009).
- The current study was set to replicate and extend these findings by examining whether attachment style predicts performance on two cognitive tasks: Posner and Visual Search task.
- A Posner task measures how quickly a participant can reorient attention from one side of the visual field to the other when a misleading cue is given.
- A Visual Search task measures participant's ability to find a target when it is surrounded by distractors.
- Both tasks require suppression of distracting stimuli.
- Avoidantly attached individuals are known to suppress thoughts and emotions (associated with relationships), but can they suppress misleading cues and distractors?
- Anxiously attached individuals have a hard time disengaging from attachment-related info, will this impair their performance?

Hypotheses

- Participants high on avoidant attachment will demonstrate faster responses compared to those low on avoidant attachment.
- Participants high on attachment anxiety will demonstrate slower responses compared to those low on attachment anxiety.

Method

Participants

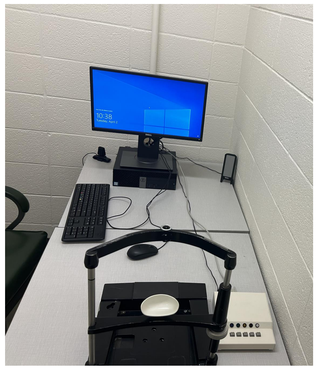
- 284 participants, with an average age of 18.88 years.
- 194 participants identified as female, 86 participants as male, 3 participants as non-binary and 1 preferred not to answer.
- Posner Participants: 266, Participants with 0 correct responses within > 200 ms and < 3 SDs from sample mean were excluded.
- Visual Search: 269, Participants with 0 correct responses within > 200 ms and < 3 SDs from sample mean were excluded.

Procedure

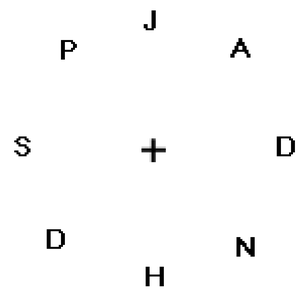
- After consenting, participants were randomly assigned to one of two conditions of the study, which varied the order in which participants completed each cognitive task.
- Participants were seated in front of the computer screen, using a chin rest to ensure their heads and eye-line remain in the same position, using a serial response box to complete the tasks.
- Participants could only use their index finger to respond.
- After completing the tasks, participants completed the Experience in Close Relationships Scale to assess their attachment style as a part of a longer self-report battery.

Method cont.

- Posner task: Participants are instructed to indicate whether a target 'x' has appeared within a six box options (see figure below).
- Trials can be either Valid or Invalid.
  - Valid trials have both the cue and target appear in the same box (can be either at the center box or the far right or far left).
  - Invalid trials include cross-trials where the target appeared in the hemifield opposite of the cue but at the center box, or within field trials where the target is in the same side but either to the left (in left) or to the right (in right) of the cue.
  - The targets appear as a cross for either 100ms or 600ms (inter-stimulus interval).
- Visual Search task: Participants are instructed to identify whether an 'S' or a 'Y' appears in the circle of letters presented on the screen after a pre-cue is given; participants utilize the left-most button to indicate an 'S' and the right-most to indicate a 'Y.'
- The Visual Search task utilizes four different trial types, showing in the same order for every participant.
  - The first trial is a **control** trial in which there is no pre-cue.
  - The second trial type shows the pre-cue indicating an 'S' or a 'Y' on the **opposite** side of where the letters appear 10% of the time and shows the target letters 70% of the time.
  - The third trial (**high correct**) shows the pre-cue, and target letters 100% of the time.
  - The fourth trial (**high incorrect**) shows the pre-cue on the opposite side of where the letters appear 40% of the time, and the target letters 40% of the time.



Lab



Visual Search

Posner

Results

- We ran correlations between attachment style and each trial condition
- We also ran two repeated measure Anova one per task.
- **Visual Search task**: There were marginally significant negative correlations between avoidant attachment and reaction times on control trials (r = -.115, p = .06), high validity rate trials; high-correct trials (r = -.10, p = .089), high-incorrect trials (r = -.11, p = .070), and high-opposite trials (r = -.10, p = .092).
  - These findings highlight the ability of people high on avoidance to disengage from distractors and identify targets faster.
- **Posner task:** Here too, there were marginal negative correlations between avoidant attachment to reactions time on cross (right, ISI 600 ms) trials (r = -.11, p = .079); and peripheral (right, 100 ms) trials (r = -.12, p = .063).
  - Again, showing avoidants ability to disengage.
- The repeated measure ANOVA revealed a 4-way interaction between anxiety, side, time, and validity, on **Posner** scores (F (1, 196) = 4.00, p = .047).
- The association between attachment anxiety and attentional cueing depends on cue validity, side of presentation, and ISI .
  - These anxiety-related differences are most pronounced in valid trials, on the left side, and at longer ISI's (600ms, see figure).

Conclusion

- The findings are in line with Gillath et al. (2009).
- Although some results are marginal, the overall picture indicates that individuals high on attachment avoidance are less susceptible to task interference, potentially due to an ability to better regulate attention.
- People high on anxiety were overall faster in the Posner task, suggesting a general state of heightened attention or vigilance.
- These findings may implicate heightened vigilance and higher fixation on valid cues in high-anxiety individuals, while low-anxiety individuals may have more flexibility in reallocating attention.
- Whereas avoidance is mainly about disengagement; attachment anxiety does not simply speed up or slow down responses - it modulates how people use predictive cues and how flexibly they adjust their attention based on expectations.

References

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