Empathy is an important social-cognitive construct and varies considerably across the human population [1]. Extraversion (E) and Agreeableness (A) represent personality traits associated with prosociality [2]. However, each trait consists of elements that characterize interpersonal functions and elements that do not characterize interpersonal functions [3,4]. Warmth and Altruism are two facet-elements of E and A that represent interpersonal function.

This study was designed to test if interpersonal elements of E and A are associated with empathic processing behaviorally and within the brain.

**METHODS**

- Participants: 50 healthy adults (31 females, mean age = 20.14 years).
- Personality assessment: NEO-PI-3 covers each of the Big 5 traits and facets for E and A (E1: Warmth and A3: Altruism) [5].
- Empathic accuracy task: Each participant watched a series of short video clips of people describing an emotional experience [6]. People in the video clips were not actors and relayed a "real life" emotional experience. Participants completed a chart to describe how they believed each person felt while conveying their emotional experience.
- Emotional perspective taking fMRI task [7]: Participants underwent fMRI while making two different type of decisions: emotion match and shape match.
  - fMRI: 3T GE-Signa
  - TR = 2s, Flip = 90°
  - fMRI analysis: SPM8
  - Mediation: SPSS

**RESULTS**

A. Behavioral:
- Higher Warmth-Altruism composite scores were associated with improved empathic accuracy, \( r = .35, F(1,48) = 6.61, p = .013 \).
- Non interpersonal elements of E and A (E3: Assertiveness, E5: Excitement seeking, A4: Straightforwardness and A6: Modesty) were not associated with empathic accuracy (all \( p's > .10 \)).

B. fMRI and Emotional Perspective Taking:

C. Mediation analysis:

**CONCLUSIONS**

- Interpersonal elements of E and A are associated with empathic processing, behaviorally and within the brain.
- Highly warm and altruistic people are well skilled at reading the emotional states of other people.
- During emotional perspective taking, highly warm and altruistic people exhibit greater Med PFC and TPJ activity compared to less warm and altruistic people.
- The results of the mediation analysis suggest that one reason why highly warm and altruistic people are better able to read the emotional states of other people is that they engage the MedPFC and rTPJ more.
- Future directions: How do highly warm and altruistic people read the personality traits of other people? How does improved empathic accuracy translate to helping behavior?

**REFERENCES**


**SUPPORT**

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UGA Gene-Brain-Social Behavior Lab: http://psychology.uga.edu/gbsb/index.html