Autistic-like behaviors, social personality characteristics, and neural correlates of face perception in the general population.

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Abstract submitted for the International Meeting for Autism Research, May 2010.

Background: Anomalies in behavioral and neural aspects of face perception have been observed in individuals with autism spectrum disorder. Atypical face processing has also been detected in the broader autism phenotype, including undiagnosed parents and infant siblings of children with ASD. It is not yet understood to what extent neural markers of face perception reflect autistic-like traits in the general population. The current study measured autistic behaviors in college students and examined interrelationships among (a) subthreshold autistic symptomatology, (b) personality characteristics, and (c) neural correlates of face perception.

Objectives: To examine correlations among subthreshold autistic traits, personality characteristics, and electrophysiological indices of face perception.

Methods: Event-related potentials (ERPs; 128 channel Geodesic Sensor Net) were recorded from medically and neuropsychiatrically healthy university students during passive viewing of upright and inverted face stimuli. Peak amplitude and latency were extracted for a negative component at approximately 170 milliseconds over lateral posterior scalp (N170). Autistic traits were measured via self-report with the Autism-Spectrum Quotient (AQ), and personality characteristics were measures with the Eysenck Personality Questionnaire (EPQ).

Results: Overall AQ score was correlated with EPQ extroversion score, such that higher levels of autistic behavior were associated with reduced extroversion ($r(15) = -.692$, $p < .01$). Perusal of AQ subscales indicated that extroversion was related specifically to the Social Skills domain ($r(15) = -.800$, $p < .01$). Preliminary analyses reveal significant correlations among N170 latency and AQ subscales.

Conclusions: Results concord with the theory that autistic-like traits represent a normal distribution, encompassing both typical and clinical levels of social ability and disability. Social personality characteristics and face processing differences were associated with autistic traits in typically-developing college students. Higher levels of autistic behavior and lower social skills were more common among individuals showing low levels of extroversion. Temporal processing of faces, as reflected in N170 latency, was associated with associated with degree of autistic-like behavior. Analyses in progress will investigate relationships among neural correlates of face perception and a broader range of behavioral traits and personality characteristics.

Sponsors: Anna Freud Centre, Gustavus and Louise Pfeiffer Research Foundation