

Is Autism a Disorder of Self-Categorization?

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Autism Spectrum Disorder

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior (see Table 2).

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity:

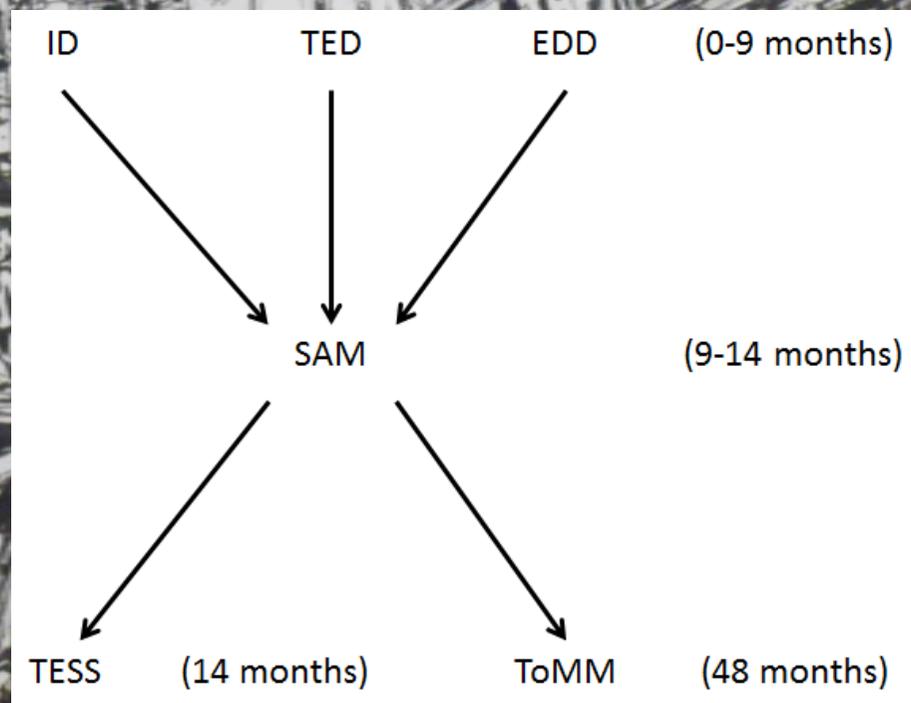
Severity is based on social communication impairments and restricted, repetitive patterns of behavior (see Table 2).

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

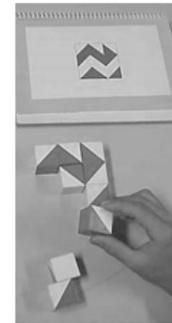
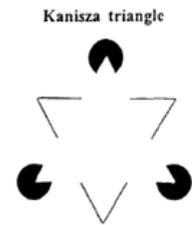
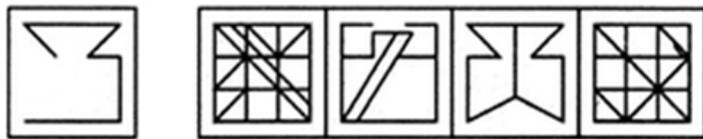
D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Theory of Mind



Weak Central Coherence



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The Relationship between Theory of Mind and Weak Central Coherence

- Since Weak Central Coherence theory was suggested, there has been a search for a mechanism that could unite Weak Central Coherence with the “theory of mind” deficits
- In Frith’s original conception, Weak Central Coherence was the cognitive dysfunction at the root of all the features of autism
- Since then, Frith and others have abandoned the notion that the theory of mind problems and the features associated with Weak Central Coherence are outcomes of dysfunction in a single mechanism
- Brunsdon & Happe (2014) write that “non-social cognitive accounts of ASD provide a good explanation for the non-social aspects of ASD” but are not able to “explain the specific pattern of impaired social cognition”
- Happe, Ronald and Plomin (2006) have a paper in Nature titled “Time to give up on a single explanation for autism”

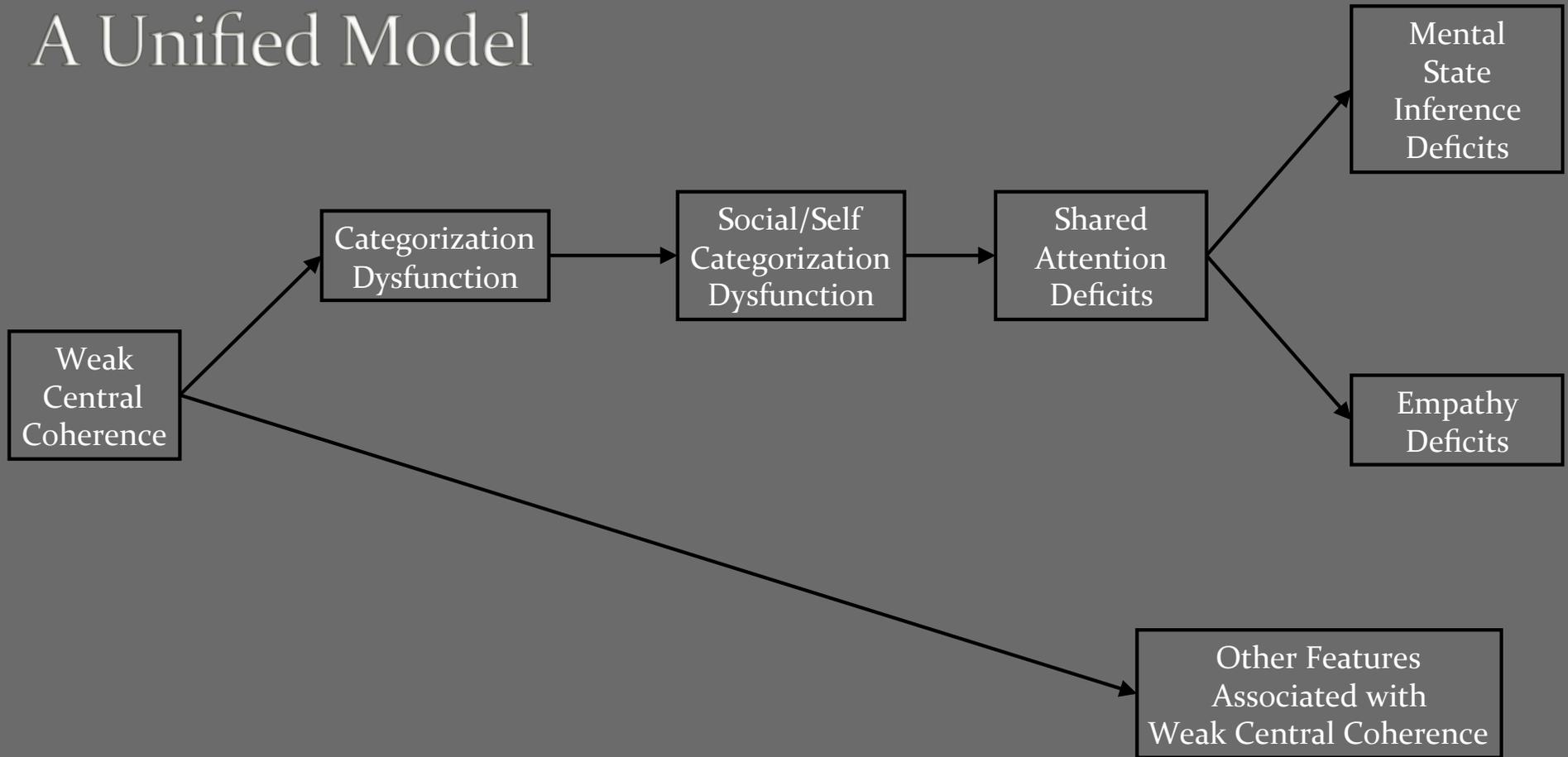
The Relationship between Theory of Mind and Weak Central Coherence (Cont.)

- What cognitive mechanisms are implicated in the “theory of mind” system?
- Ames (2004) shows that perceptions of similarity and difference between self and other explain patterns of mental state inference
- Shteynberg (2010) shows that perceptions of similarity and difference between self and other explain patterns of shared attention
- Tarrant, Dazeley & Cottom (2009) show that empathy is the outcome of shared social self-categorization
- The Shared Attention Mechanism in Baron-Cohen’s Empathizing System model is about self-other-object relations
- A process of social/self categorization seems to be implicated in “theory of mind” processes

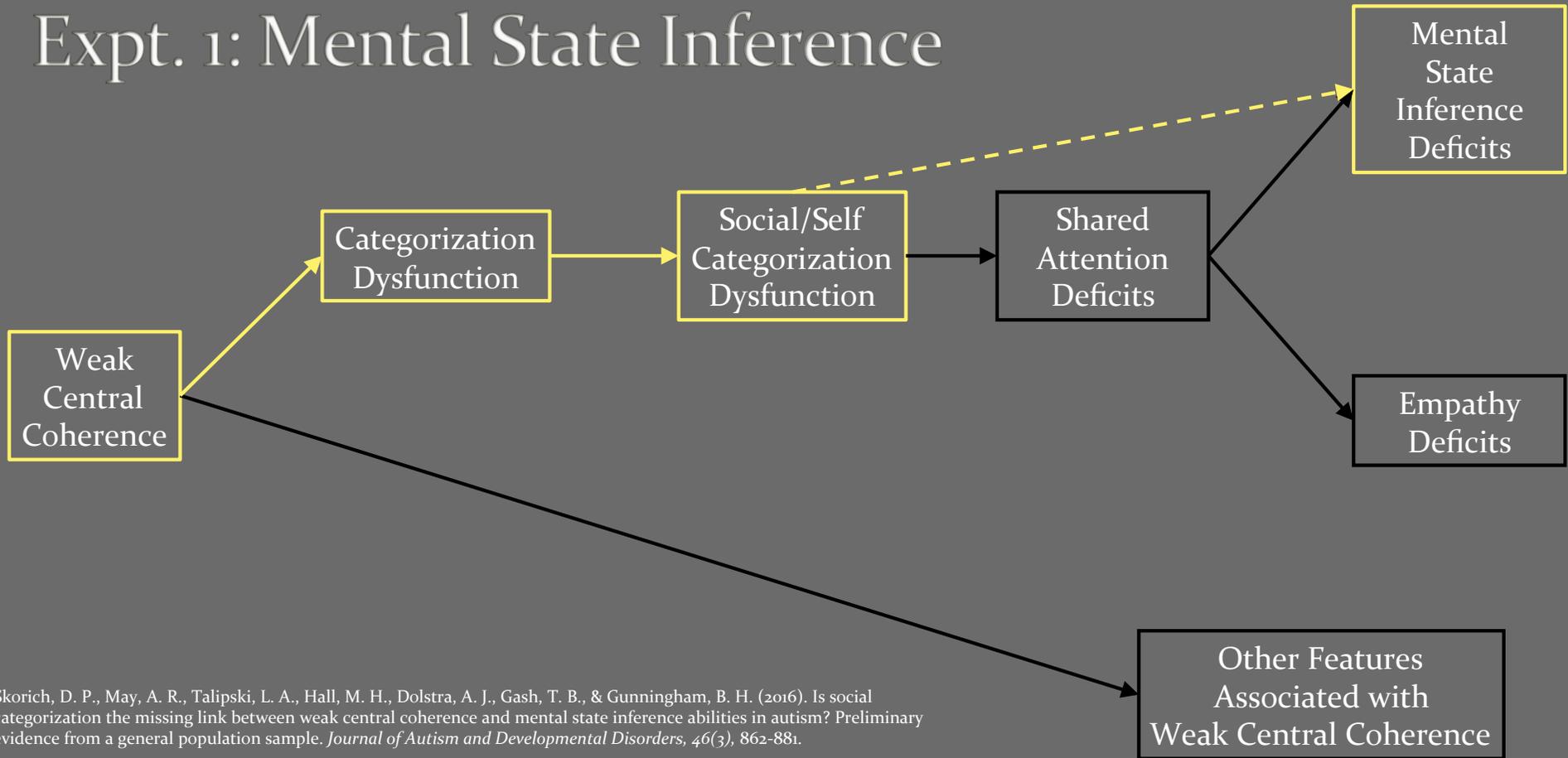
Categorization in Autism

- Categorization is known to be affected in autism
- Individuals with autism use rule-based categories, rather than prototype-based categories
- Individuals with autism find it more difficult to extract prototypes from stimulus arrays
- Individuals with autism struggle to make male/female decisions about faces when the face is non-stereotypical
- These categorization differences have been argued to be further manifestations of Weak Central Coherence (e.g., Klinger & Dawson, 2001)
- Could functional differences in the social categorization mechanism explain “theory of mind” difficulties in autism?

A Unified Model

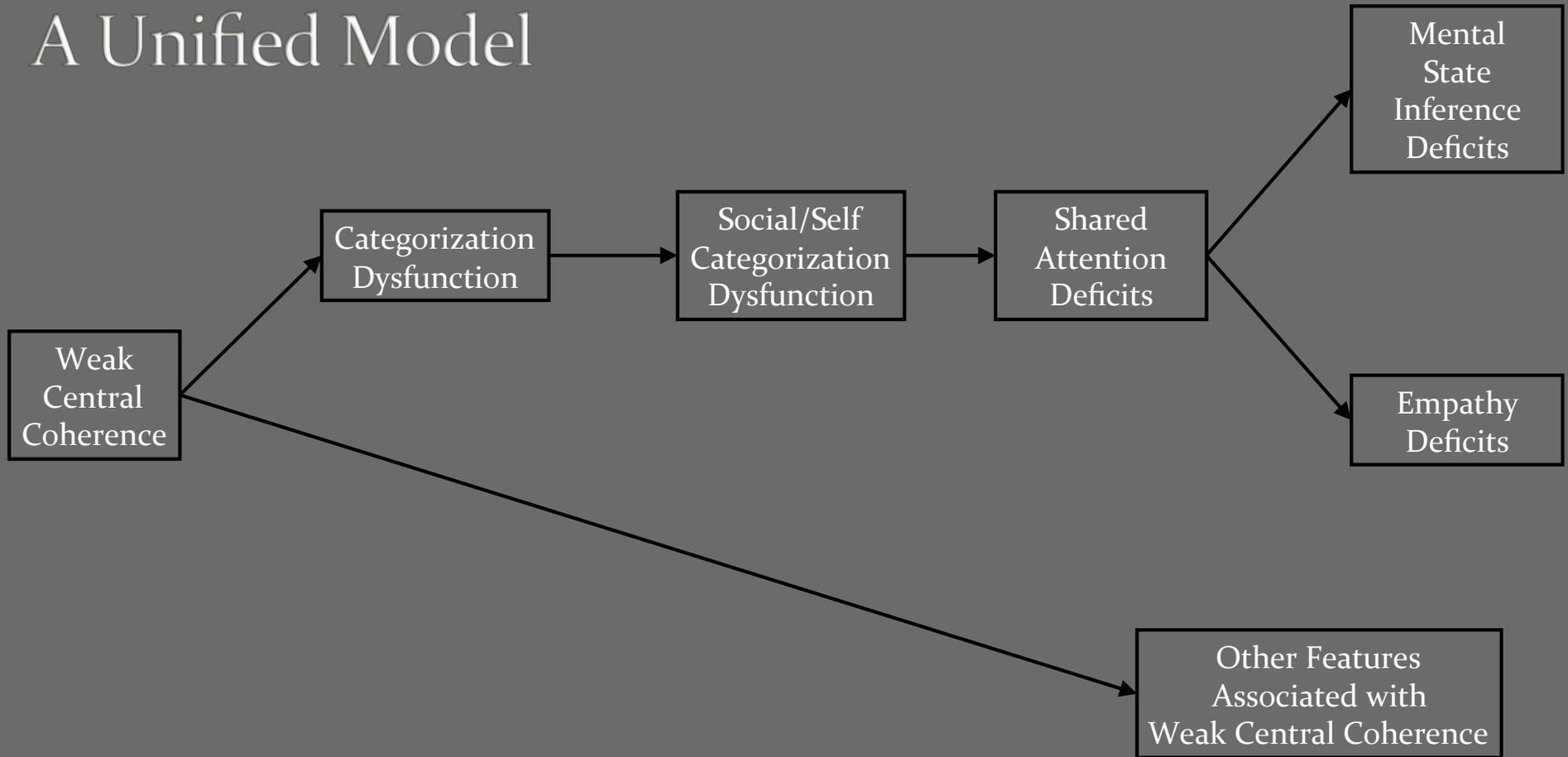


Expt. 1: Mental State Inference

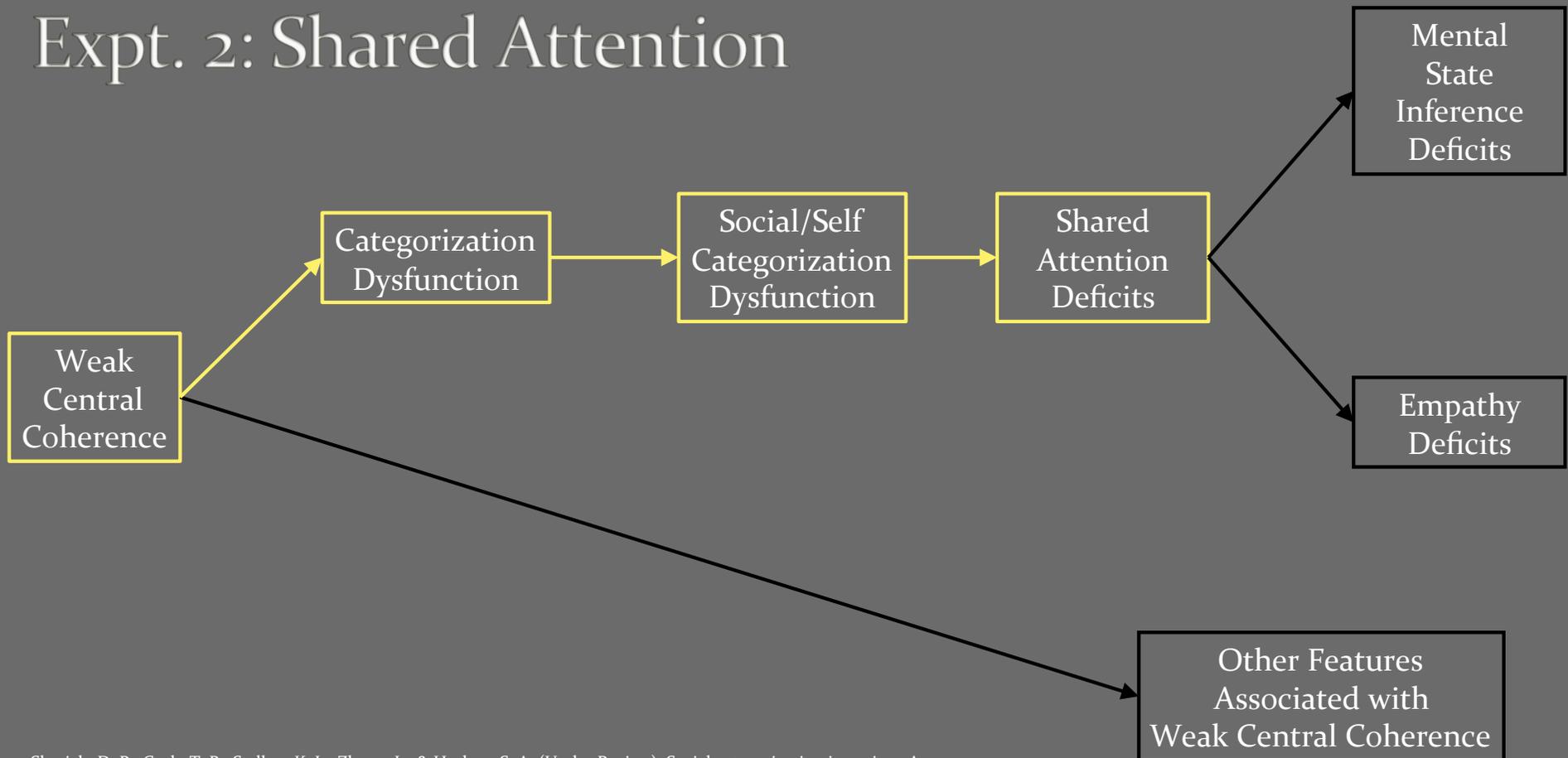


Skorich, D. P., May, A. R., Talipski, L. A., Hall, M. H., Dolstra, A. J., Gash, T. B., & Gunningham, B. H. (2016). Is social categorization the missing link between weak central coherence and mental state inference abilities in autism? Preliminary evidence from a general population sample. *Journal of Autism and Developmental Disorders*, 46(3), 862-881.

A Unified Model



Expt. 2: Shared Attention



Skorich, D. P., Gash, T. B., Stalker, K. L., Zheng, L., & Haslam, S. A. (Under Review). Social categorization in autism: A weak central coherence account of the shared attention difficulties. *Manuscript Under Review*.

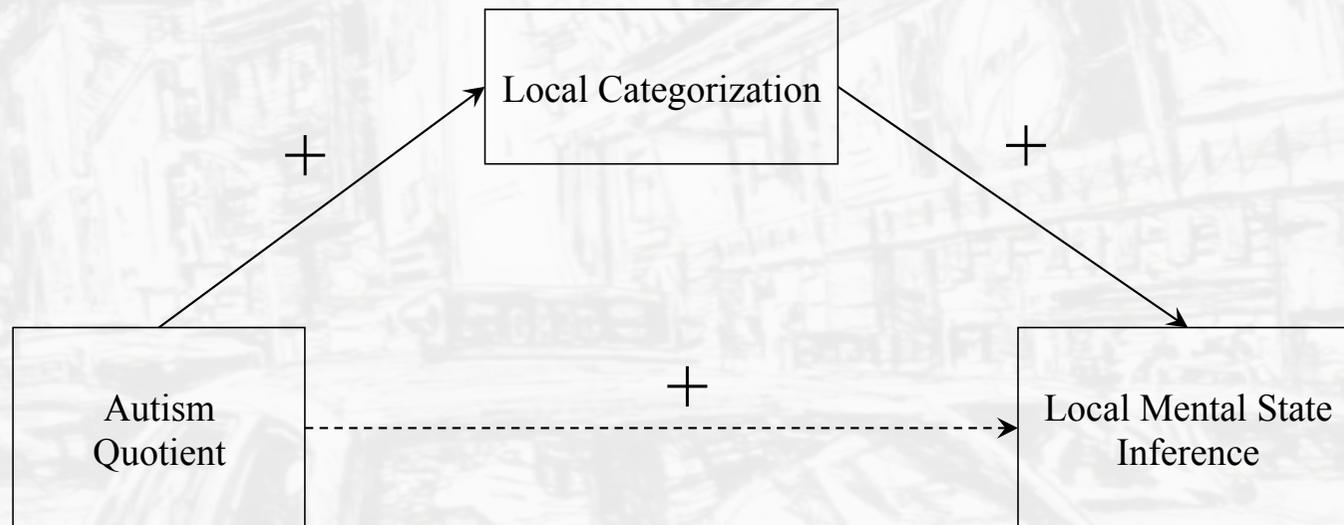
General Method

- Phase 1: Who-Said-What paradigm → local/global categorization (Expt. 1) and degree of categorization (Expt. 2)
- Phase 2: Theory of Mind measure → mental state inference (Expt. 1) and shared attention (Expt. 2)
- Phase 3: Autism-Spectrum Quotient → degree of autistic-like traits measure

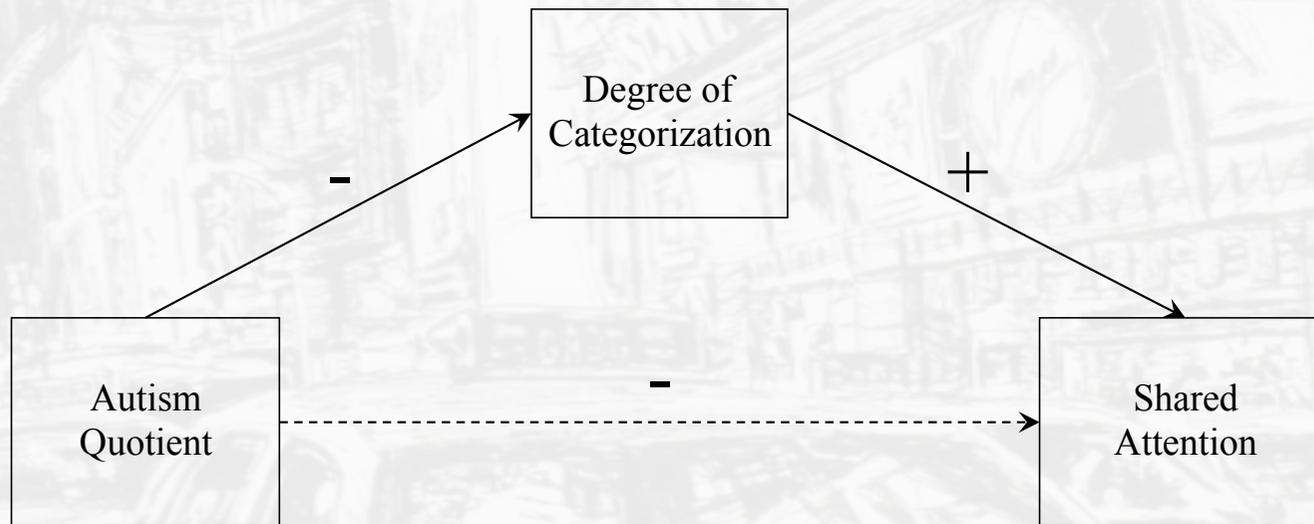
Hypotheses

- H1: Higher AQ will predict: (a) more local (vs. global) categorization in Expt. 1, and (b) less categorization in Expt. 2
- H2: Higher AQ will predict: (a) more local (vs. global) mental state inferences in Expt. 1, and (b) less shared attention with ingroup members in Expt. 2
- H3: (a) Level of categorization will positively predict level of mental state inference in Expt. 1, and (b) degree of categorization will positively predict degree of shared attention with ingroup members in Expt. 2
- H4: The relationship between AQ and: (a) mental state inference will be mediated by the level of categorization in Expt. 1, and (b) shared attention with ingroup members will be mediated by the level of categorization in Expt. 2

Results (Expt. 1)



Results (Expt. 2)

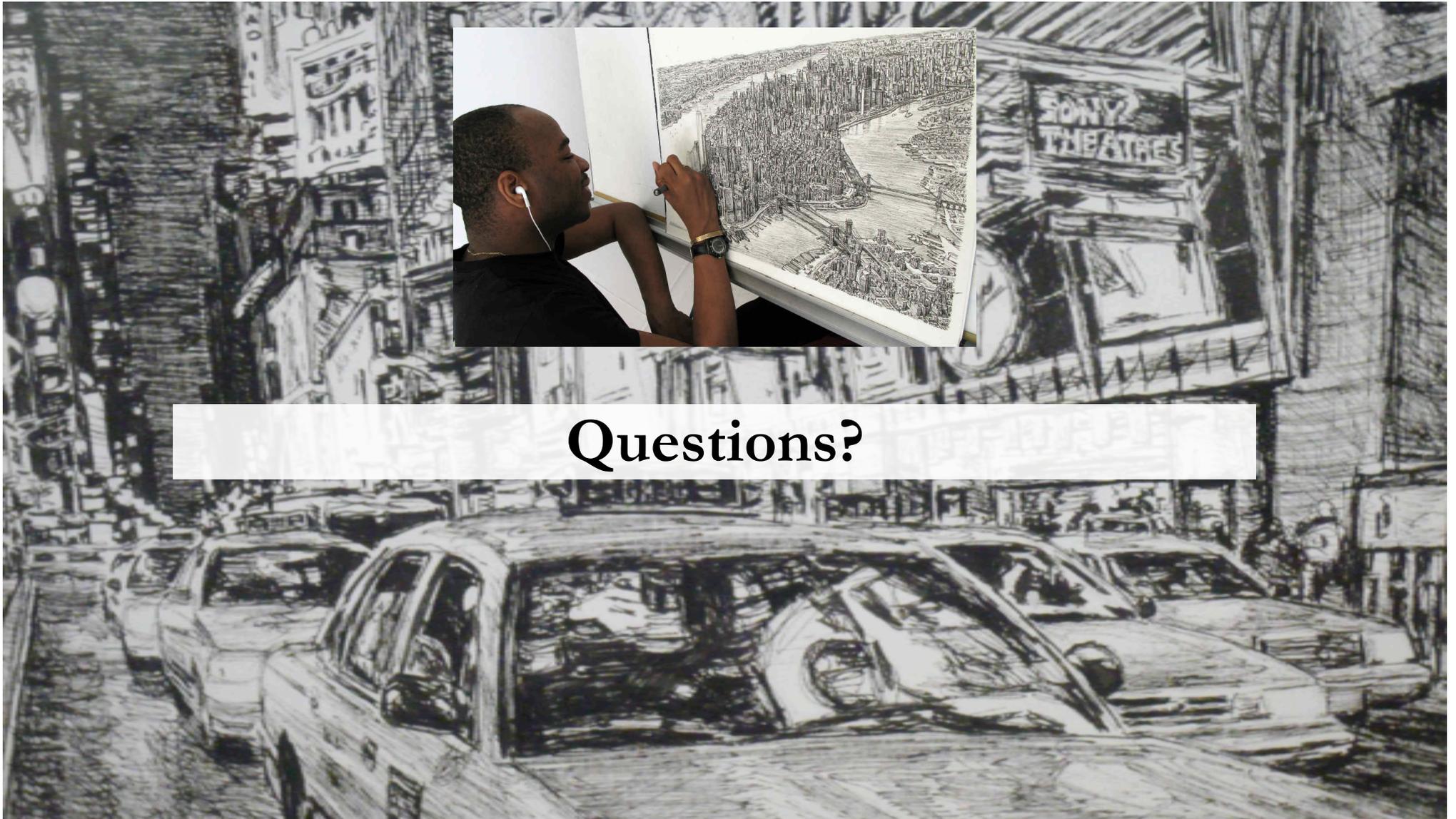


Discussion

- These results suggest that the Weak Central Coherence seen in *ASD* is a causal antecedent of the decreased tendency to share attention with others and the decreased tendency to make mental state inferences
- These results unify the different clusters of features seen in *ASD* and suggest that the disorder may perhaps not be ‘fractionated’ → potential for a unified theory based around self-categorization dysfunction

Discussion (cont.)

- It follows from conceptualizing ASD as a disorder of self-categorization, that all that is known to result from disruption in self-categorization and/or social identification should be evident in ASD
- Higher rates of depression and anxiety seen in ASD could be the direct result of decreased ability to self-categorize as members of, and identify with, multiple groups
- Potential for developing a “Groups4Autism” intervention based around teaching self-categorization, facilitating psychological connection with others, and aiding people with ASD to join groups and maintain positive social identities



Questions?