Are children with autism blind to the mentalistic significance of the eyes?

So, even though it is possible that the concept of belief is acquired for self and others in parallel for normal developing-- it is possible that the mechanisms and processes in which reasoning about false beliefs may be different for the self vs. others in both normal developing and autistic children?-- what kind of cognitive mechanism might be responsible for this?

I wonder whether the emotional expressions of the stimuli affected the interpretation of desires and goals. The information conveyed by eye gaze is purely referential and neutral; we learn from eye gaze that the person is attending to a certain object, but we do not know his attitude toward that object – whether he like it or not. Eye gaze information needs to be supplemented by emotional cues. For example, if a person looks at an object with a frowning face, that often means he dislikes that object. But if he looks at an object with a smiling face, we know that he probably likes that object. In Experiment 2, the character (Charlie) looked at the target with a neutral expression, which could be bewildering for ASD children. They may think, “Why does he stare at that sweet? Does he like it? Does he hate it? I have no idea what is going on!”

This study only demonstrates that ASD children’s abnormality in eye-contact is related to their deficit in mental state comprehension, but it still fails to tease apart cause and effect. Does ASD children’s abnormal looking pattern hinder the development of theory of mind, or does their Impaired TOM cause the abnormality in eye gaze? We still do not know.

I thought the Baron-Cohen et al study was good and I'd like to see more developmental studies isolate social cue stimuli more clearly like they did with schematic faces. I don't know the literature well, but I'd like to know more about possible confounds with equating verbal mental and chronological age.

I am interested to discuss other challenges autistic individuals often experiences. Although the perspective taking is probably the most widely discussed, there is other prevalent issues, such as problems with verbal language and poor emotional control. There might well be other underlying cognitive impairments (also depending on severity, since there is a wide spectrum). Is there other cognitive impairments that could partially explain results?

There is researchers that believe that autism is simply a extreme form of the male-brain (Baron-cohen), this would suggest that the issues shown on these tasks should also exist to a lesser degree in the male population. Would there be any tasks that could be designed to assess performance on a continuum rather that a pass/fail basis? Would this performance be related to some sort of sub-clinical autism scores?
Results of experiment 2 mention that most of errors made by all kids were egocentric, but it's unclear if the kids with autism had significantly more egocentric errors than the other groups. Were there just more egocentric errors because the autistic group made most of the errors, or did all kids make mostly egocentric errors? Are we saying something about autistic kids or all kids here?

In the general discussion the authors suggested a causal link between autistic kids having trouble understanding the concepts of desire, goal, intention and refer and their difficulty with the tasks in the experiment. I'm not seeing a necessary causal link here. Is it possible that they never learned these concepts because they're blind to the facial markers associated with them, so these concepts aren't marked as perceptually or cognitively distinct? Kinda like in language learning where if a meaningful distinction between acoustic properties of sounds aren't established by your language, you lose the ability to tell the difference between them later on.

Is this deficit found with autistic children specific to eye gaze, or anything to do with desire and goal pursuits? In other words, how to children with autism react to intense and emotional (valenced) stimuli in general? Attention differences?

What types of things does eye gaze elicit in general (besides direction)?

What Did I Say? Versus What Did I Think? Attributing False Beliefs to Self Amongst Children With and Without Autism

The Williams and Happe article seem to conclude that beliefs about the self are more challenging for autistic children, although this also seems to be something that typically developing children struggle with as well. Why might beliefs about the self be more difficult to express? Is it the inability for children to temporally or introspectively go “back in time” to recall what they had previously thought? Are they burdened with the curse of knowledge, and cannot override knowledge that they have just acquired?

I personally find this paper unconvincing. Several problems undermine the author’s conclusions. First, the results of the third and fourth analyses were contrary to predictions. Second, the orders of questions in the standard Smarties task and the Plasters task were fixed; the Self test questions were always asked first, before the Other-person test questions. This caused the practice effect, which could explain, at least in part, why Self questions were more difficult than Other-person questions. Three, the scenario of the Plasters task was unnatural. The experimenter first pretended that he had a cut on his finger and asked for help. But after the participant opened the plaster box and discovered the content, the experimenter totally ignored the cut on his finger, and started asking questions. This looks insane!
The Williams & Happe paper had too many dubious distinctions: why publish with inadequate power? how was the ASD subset of 19 selected? With results contrary to predictions, it would be nice to see some follow up. Overall it seemed rather sloppy.

I find it hard to find adequate controls for these experiments. I understand the reasoning of taking other developmentally challenged individuals as controls for autistic participants. However, there seem to be a host of problems with this. We don't fully understand all the cognitive abnormalities such individuals have, neither do we understand abnormalities in autism perfectly? I feel like the best way is to use autistic subjects themselves and use control tasks (tasks they should be able to do if they are impaired specifically in X not Y). One of the articles does that. Where else could we use such tasks as controls for different things?

I'm not sure why the results of the TD kids and the ASD kids together aren't elaborated on more. Given the results it seems plausible that the two groups are using different strategies, but I'm disappointed this isn't discussed much in the paper. Could it be that the TD kids who fail these tasks are burdened with knowledge, while the ASD kids who fail actually have flawed thinking? These results paint a picture that looks like TD kids can't keep track of anyone's mental state without a reminder, while ASD kids might actually rewrite their own history (though maybe this is a little off, I find the results a little tough to keep track of myself).

Are false belief tasks actually tapping into children’s theory of mind? Could it be something else going on here? There seems to be a lot of variability really in the passing and failing (and opposite direction patterns) in the results.