

Autism Spectrum Disorders as Context Blindness

Session #20 - Part 1: Missing the point: context blindness

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Introduction:

In the two sessions on *Context Blindness*, we will present ***a new cognitive theory*** on autism¹, developed under the supervision of Prof. Dr. Uta Frith. Context blindness can be seen as the common pathway of the three main cognitive theories on autism (Theory of Mind, Executive Functions and Central Coherence). We will describe the concept of context blindness, how it explains the behavioral triad of autism characteristics and, in the second session, its impact on social skills development and how we can support people with autism in their struggle to survive socially.

Key take-away message of the two sessions:

The biggest problem for people with autism spectrum disorders is: there are no absolute meanings in our world. The meaning of almost every stimulus in life is context dependent. People with autism are context blind: they give meaning in an absolute rather than a contextually sensitive way. We should clarify the context of stimuli so that people with autism can find their way “blindly” in a world full of relative meanings. *This contextual clarification is the core of autism friendliness.*

Part 1: Missing the point: context blindness

Although they have been very helpful for our understanding of autism, the current psychological theories (Theory of Mind, Executive Functions and Central Coherence) are separately not able to explain the full picture of autism. However, common to the three cognitive areas is contextual sensitivity. Maybe ‘context’ is the key to our understanding of autism.

Contextual sensitivity in the human brain

Why does the moon look bigger at the horizon?

Why can we see the difference between a genuine and a courtesy smile?

Why do we recognize words before they are fully spoken out?

¹ In this abstract, the term “autism” is used as synonym for Autism Spectrum Disorder. So, it also refers to Asperger Syndrome and PDD-NOS

The answer is: because we are sensitive to context. Nothing that we perceive has an absolute meaning. Tears can mean sadness, but also happiness, relief or the result of making onion soup. When you are halfway a crossing, a red light does not longer mean 'stop', but 'hurry up'. Context influences the meaning of what we perceive.

The human brain is very sensitive to context and this contextual sensitivity plays a crucial role in many cognitive abilities that are affected in ASD, such as face perception, emotion recognition, the understanding of language and communication, and problem solving. Moreover, recent neurobiological research (e.g. with ERP's) has revealed anomalies in the first milliseconds of information processing in the autistic brain. It is in these first milliseconds of (subconscious) information processing that contextual sensitivity is at work, with an impact on sensory issues, a well known problem in autism. We will present autism spectrum disorders as a form of blindness, more in specific context blindness. The concept of context blindness unifies the existing cognitive models in autism (theory of mind/extreme male brain, executive functioning, central coherence) and offers an unique and practical understanding of autism, resulting in a more autism friendly approach.

Contextual sensitivity is pivotal in everyday perception and information processing. Contextual sensitivity serves as a guide for our perception. It helps us to focus on what is relevant, to ignore irrelevant details and it makes the world predictable (things that are difficult for people with autism). But the foremost important function of context is that it helps us to make sense of vague, incomplete and ambiguous information. Most stimuli we encounter in real life are vague or have multiple possible meanings. We use context to make sense of the world. *During the session you will yourself experience your own contextual sensitivity through a short series of experiments.*

Autism as context blindness

When your brain lacks contextual sensitivity, it will also give meaning, but these meanings will differ from the meanings given by a neurotypical brain. And this is what happens in autism: people with autism tend to form fixed one-to-one associations between stimulus and meaning instead of using context to create flexible, context dependent meanings. As in the famous scene in the movie Rainman, "don't walk" *only* means "don't walk" instead of the contextually more appropriate "continue!". Or: tears only mean sadness to a person with autism, resulting in confusion when that person sees another person crying after winning the lottery.

Context blindness can be defined as *the lack of spontaneous use of context when giving meaning, especially to vague and ambiguous stimuli.* (Vermeulen, 2009).

People with autism give meaning too, but their meanings are more stimulus driven than context driven.

We will give examples of decontextualized meanings given by people with autism to illustrate this context blindness.

Context blindness and the triad of autism characteristics

Autism as context blindness: how can the difficulties in social interaction, communication and the lack of flexibility, seen in ASD, be linked to a lack of contextual sensitivity?

Effective social interaction requires a high amount of contextual sensitivity. In order to understand the behavior and the minds of other people, we use a lot of contextual information. Context blindness results in difficulties in empathizing but also in social problem solving. (This issue will be explored more in detail in the second session).

What people say, both with and without words, never has a fixed meaning. The meaning of even simple words like “work”, “me” or “you” are context dependent. One of the consequences of context blindness is literal understanding, a very common problem in autism. This literal understanding is not confined to words or sentences, it can also be seen in the understanding of more concrete forms of communication, such as pictures and even objects. Literal understanding is a form of a-contextual understanding.

Contextual sensitivity lies at the heart of cognitive flexibility. This cognitive flexibility is necessary for flexibility in behavior. People who are context blind will show restricted and repetitive behaviors and will be more rigid in their reactions to the world.

Context blindness and autism friendliness

Understanding autism as context blindness is the cornerstone of an autism friendly approach: pushing the “context-button” helps people with ASD to understand the world around them and to cope with its demands. If we clarify the context for people with autism, they will have a better understanding of the world and, hence, be able to react more appropriately. We will show how clarifying context can, for instance, help people with autism to make better choices in their free time.