

Autism as context blindness

Peter Vermeulen, PhD - Autisme Centraal – Gent, Belgium

Argyll – 16th March 2016

Note: In the presentation the term Autism is used as synonym for “Autistic Spectrum Disorder”.

Key take-away message:

The biggest problem for people with autism: there are no absolute meanings in our world. The meaning of many stimuli is context dependent. People with autism however 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 clarification is the core of autism friendliness.

Autism friendly approach:

- An autism friendly approach starts from an understanding of autism from within!
- Knowledge of “autistic thinking” is the key to success in education and treatment!

The iceberg of behaviour



If we really want to understand the behaviour and reactions of people with autism, we need to understand their way of perceiving and understanding the world: the “autistic thinking”.

Cognitive theories on autism:

- Theory of Mind: Understanding thoughts and emotions
- Executive functions: Problem solving abilities, Planning, Impulse control, Attention,
- Central coherence: The ability to see the big picture and not losing yourself in details

These 3 cognitive theories on autism

- Helped us to understand autism ‘from within’
- Gave us ideas for education and treatment, e.g.
 - Social cognition training (ToM)
 - Cognitive Behavioural Therapy
 - Social Thinking (ToM & EF)
 - Use of organizers (EF)

Current theories (ToM, EF, CC)

Very good theories, very helpful...

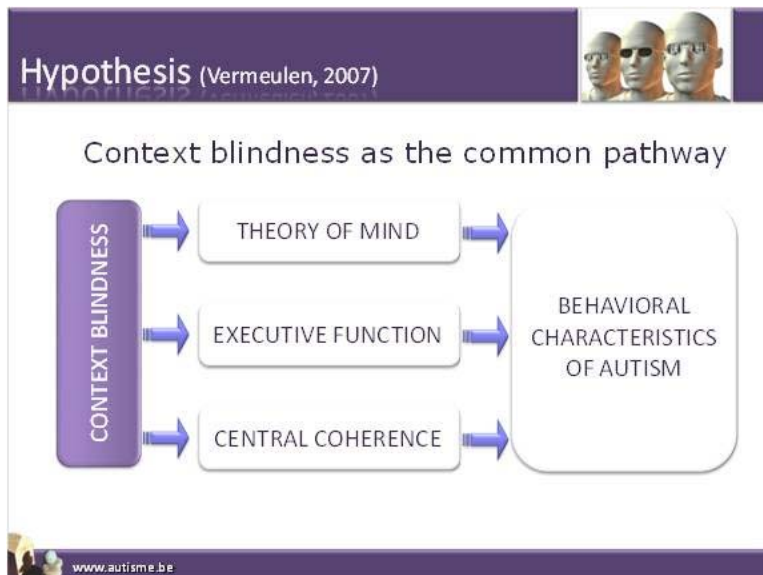
But...

Unexpectedly, in recent studies (more able) people with ASD perform quite well on tests of ToM, EF and CC... despite difficulties in real life

- People with ASD perform rather well on isolated, decontextualized tasks in tests
- Problems arise when **context** is involved: in contextualized materials or real life

Context:

- Common pathway in cognitive theories
- Context plays a role in those cognitive processes that are affected in ASD
 - Face perception
 - Emotion recognition
 - Social problem solving
 - Speech perception and recognition
 - Understanding language
 - Flexibility in behaviour
 - Concept formation
 - ...

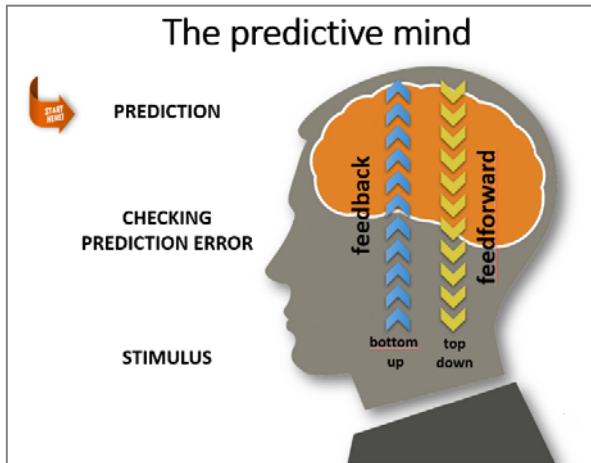


Misconception:

Perception is integrating all the pieces of input coming from the senses into a coherent whole or meaning. (see work of Daniel Kahneman) But the brain is not a computer that calculates! The brain is guessing. And that guessing is based on the context.

The predictive mind:

Predicts the input from the senses and processes not the stimulus but the prediction error
(= difference between predicted and actual input)

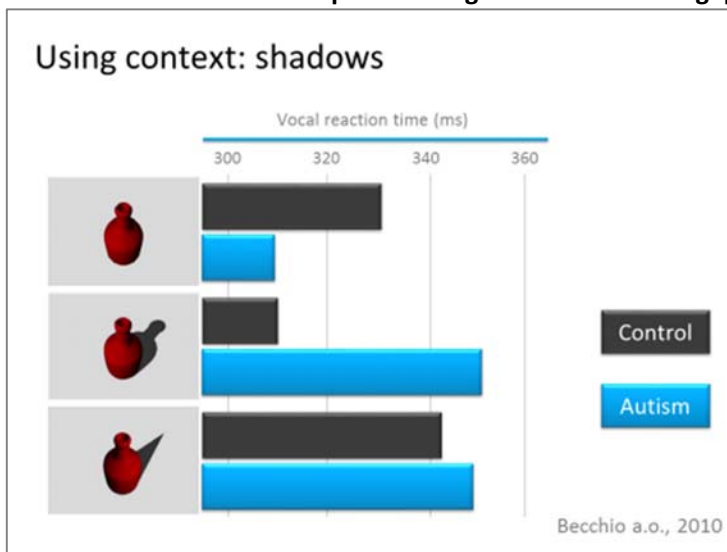


We don't know how the brain uses context, but it does it very, very fast. **Contextual sensitivity works in stealth modus: it stays under the radar of our consciousness**

Role of contextual sensitivity in human information processing

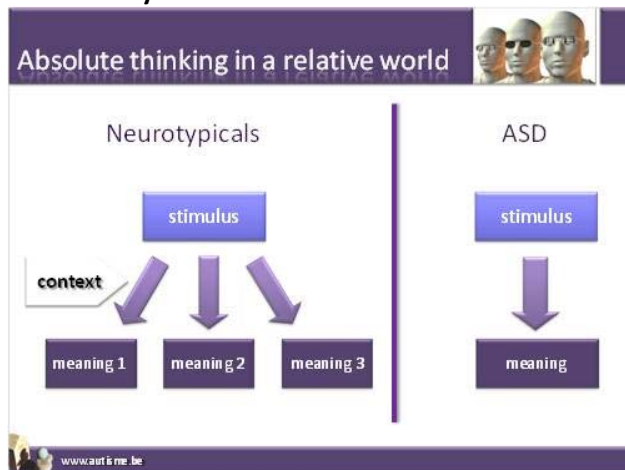
- Helps us to quickly find the right meaning of stimuli: context is our guide in perception!
Especially when the input is vague, incomplete or ambiguous! (contextual priming; e.g. rabbit-duck)

Since nothing has an absolute meaning, but meanings depend on the context, our brain has become an expert in using context for making quick and smart guesses



Context works even on 'low levels' of perception, such as size constancy, perception of objects etc.

But what if you miss the context? Context blindness:



Context blindness

Autism is a form of blindness: Context blindness

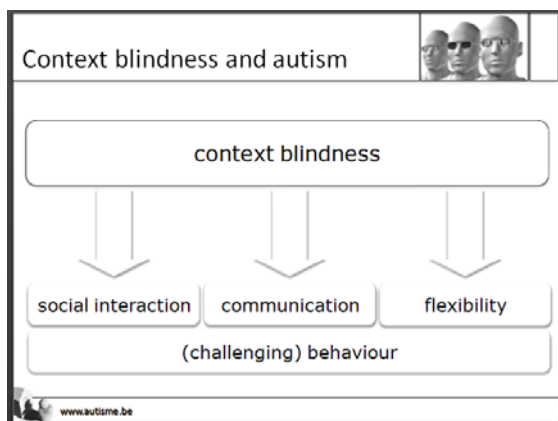
- Reduced ability to use the context **spontaneously** when giving meaning to (especially vague, ambiguous and abstract) stimuli (Vermeulen, 2012).
- Seeing context but not using it

Autistic meanings

People with autism give meaning too

But their meanings are often

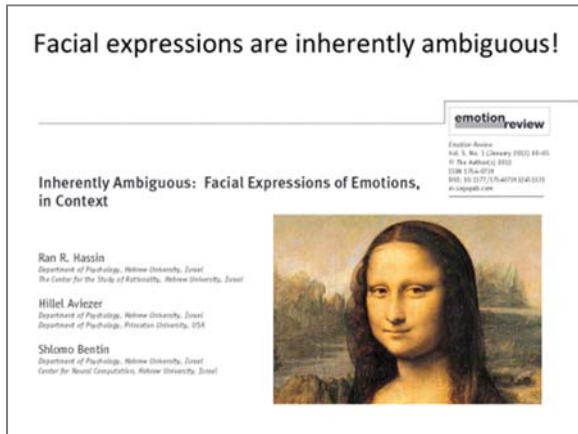
- Fixed 1-1 stimulus-meaning connections
- Stimulus driven rather than context driven



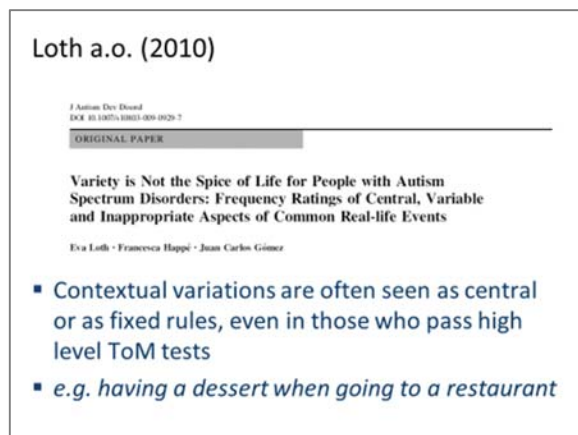
Context blindness and autism

Context and social interaction

Context plays a crucial role in:



- *Understanding emotional expressions:*
 - We never see facial expressions out of context
 - Relation expression –emotion is not fixed
 - In emotion recognition, the context is more important than the face, but people with autism focus on the face instead of the context (Tell & Davidson, 2014)
 - Context influences emotion recognition (Da Fonseca e.a. 2008)



- *Social and emotional skills:*
 - They can learn a lot of scripts and skills...
 - They often know a lot of (prototypical) scripts (Loveland a.o., 2001; Volden & Johnston, 1999; 2001)
 - But have difficulties with contextually appropriate application of scripts
 - Socially appropriate behaviour = contextually appropriate behaviour

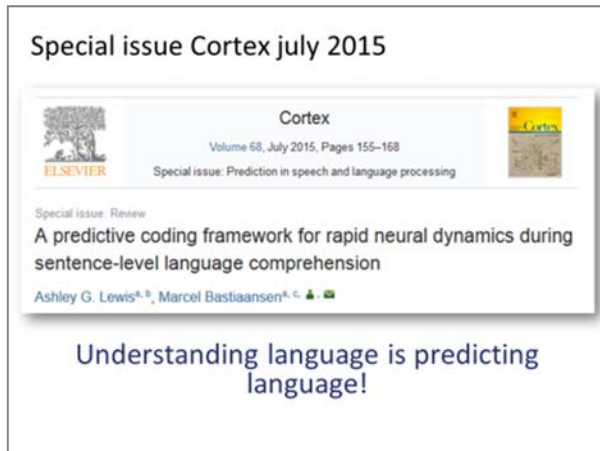
Context and social competence

The biggest problem in ASD is not social skills (knowing what and how to do)

The biggest problem in ASD is knowing **where** and **when** to do it and where and when **not**

Social competence requires contextual sensitivity

Context and communication



Context helps us to 'predict' communication
 We can make smart guesses about what someone is going to say / show to us
 Lexical priming (N400)

Context and understanding language

- The meaning of any communication symbol...
 - Words
 - Sentences
 - Gestures
 - Pictures and other forms of visual communication
 - Even objects

- ...is never fixed, but varies depending on the context!
- Language is full of ambiguity:
 - Words with different meanings (polysemy): bank, crane, bat, ...
 - Words with vague meanings
 - Referential words: *later, you, big...*

Literal understanding or a-contextual?

▪ "Can you take me home?"

		Context	
		Literal	Figurative
Interpretation	Literal	OK	Wrong
	Figurative	Wrong	OK

• Both "overliteralness" als "overnonliteralness" in autism.
 • They rely on conventional, dominant meanings.

Ozonoff & Miller, 1996; Oi & Tanaka, 2011

Literal understanding:

- Literal understanding = **a-contextual understanding**
 - Not only of words and sentences
 - Also of visual communication (pictures, gestures, signs, ...)

A-contextual understanding

- People with autism have difficulties understanding what something means "in this context":

Context and restricted, repetitive behaviours

- Lack of flexibility in giving meaning → strict and rigid reactions
- Confusion and resistance against changes

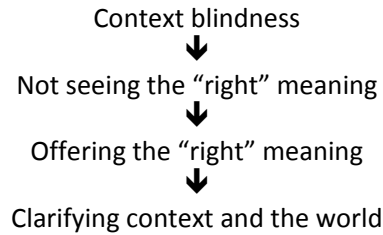
Context blindness: consequences for education and treatment:

- We cannot teach a blind person to see
- The same applies to a *context* blind person
- Contextual sensitivity works
 - In stealth modus (unconscious)
 - Very fast (within milliseconds)
- But there's a lot that we can do to help!
 - Clarifying the world
 - Teaching compensation strategies
 - Contextualized skills training



- Try to understand their behavior from within:
 - The different meaning they give to what they perceive
 - The lack of contextual sensitivity as the 'why' of their behavior
- Push the context button to help them find the 'right' meaning

Autism friendliness = pushing the context button = clarifying the world



Concrete communication

People with autism have difficulties understanding what something means “**in a certain context**”

CONCRETE COMMUNICATION =

Making concrete what a certain word, picture, instruction etc. means ***in a certain context***

Concrete communication is not the same as using visuals!

Visual communication: advantages

- Visual communication is non-transient
 - Information remains available
 - More time to process the information
- A picture is worth a 1000 words

Concrete communication is NOT the same as visual communication,

- Although visualizing things can make them more concrete
- Although visual communication is easier to process (no repetition needed)
- Although visual communication makes invisible meanings visible

Visual communication

- Should also be made concrete:
 - What does this picture mean “**in this context**”?
- Should be individualized
- Should be taught, just as verbal communication
- Should always be checked for understanding

Concrete communication clarifies the context that people with autism cannot imagine or see spontaneously:

- What?
- Where?
- When?
- How?
- How long?
- Why?

Concrete communication: tips



To avoid	Tips
Vague instructions and questions	Make vague and abstract concepts concrete "in this context"
Ambiguous words and sentences	Use unambiguous and concrete language
Ambiguous function, e.g. instructions in the form of questions	Clear function of your communication: WYSIWYG
Negative instructions	Positive instructions
Implicit and incomplete messages	Explicit and complete message: say what you mean
Too much information - overload	Only what the person needs, not less, not more
Vague or confusing questions	Clarify the kind of answers you expect (with examples)

More information:

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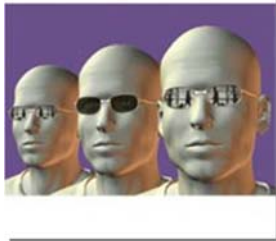
Peter_Autisme



AUTISME CENTRAAL

PETER VERMEULEN, PHD

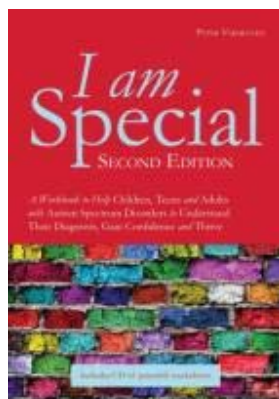
AUTISM AS
CONTEXT
BLINDNESS



Autism as context blindness

AAPC Publishing, 2012

ISBN: 9781937473006



I am special – second edition

A Workbook to Help Children, Teens and Adults with Autism Spectrum Disorders to Understand Their Diagnosis, Gain Confidence and Thrive

Jessica Kingsley Publishers, 2013