

# Autism as context blindness

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## A little remark on terminology:

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 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 word 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



## Cognitive theories on autism:

- Theory of Mind: The ability to recognize and infer mental states / *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

Theory of Mind:

- More able people with ASD succeed rather well in (even advanced) ToM-tests...
- But they perform less well in more 'naturalistic', real life tasks where **CONTEXT** plays a role

Executive functions:

- Good performance on tests for cognitive flexibility (e.g. WCST) despite problems in real life (Geurts e.a., 2009)
- When given clear instructions, no problems with "set shifting" (Poljac e.a., 2009; 2010)

Central coherence:

- Not always problems with / preference for global perception (Happé & Booth, 2008)
- Not always superior in details! Contextually relevant vs incidental details

### Tests vs real life

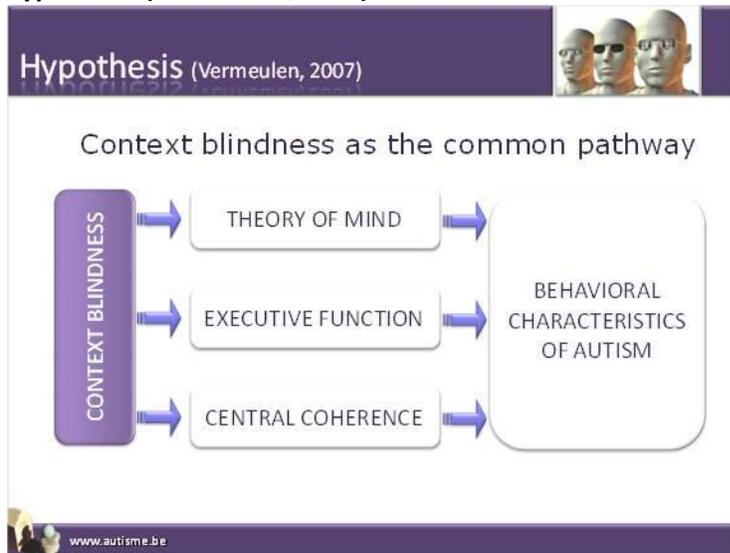
Tests	Real life
Structured	Chaotic
Artificial materials	Real people and things
Cued reaction	Spontaneous
A-contextual materials	<b>Context</b>

- 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
  - ...

## Hypothesis (Vermeulen, 2007)



### What is context?

Everything in a certain situation  
(in the surroundings, on the background...)  
that reveals and influences the meaning of something  
(an object, a behaviour, a word ...).

### External and internal context:

#### External context:

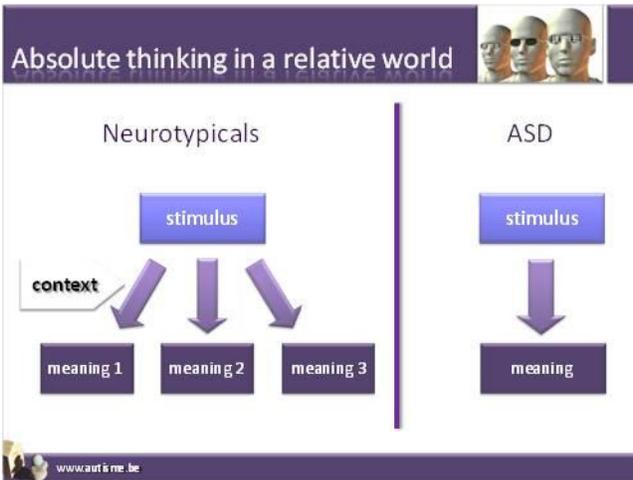
- The context we can perceive:
- The effects of other stimuli on a 'target stimulus'

#### Internal context

- The context 'in your head':
  - The effects of your knowledge, expectations and long term memory on what you perceive

### Role of contextual sensitivity in human information processing

- Helps us to focus on the essential and ignore the circumstantial ( → *difficult in autism*)
- Makes the world predictable ( → *big need in autism*)
- 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!***
- Helps us to find the right meaning when multiple meanings are possible ( → *difficult in autism*)  
(contextual priming)



### Context blindness

Autism is a form of blindness: Context blindness

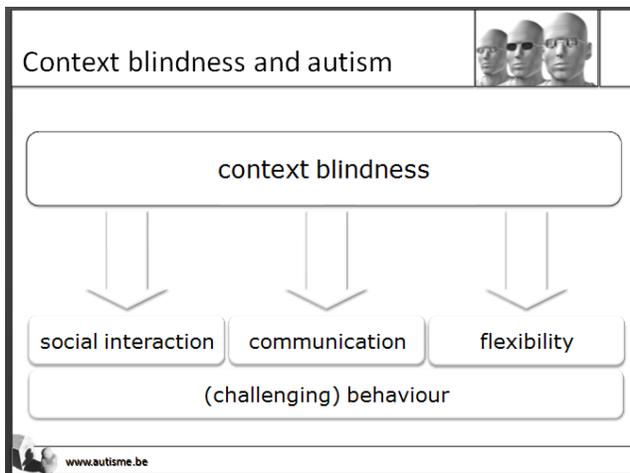
- Reduced ability to use the context **spontaneously** when giving meaning to (especially vague, ambiguous and abstract) stimuli.
- Seeing context but not using it

### 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 sometimes more important than the face
  - 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 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:

- Literal understanding = **a-contextual understanding**
- Literal understanding
  - Not only of words and sentences
  - Also of visual communication
  - Also of situations

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
- Fixed 1-1-associations → Problems with generalization
  - Both over generalizing and under generalizing
- 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

## Autism friendliness:

- 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
  - What do they not understand or understand differently?
- Push the context button to help them find the 'right' meaning
  - Clarify the world, so they can find their way in it "context blindly"

## ***Pushing the context button: An example: Clarifying free time***

Choosing a free time activity is context dependent

Free time:

- How much free time do I have?  
< 15 min.    15-30 min.    30-60 min.    > 1 hr
- Do I have someone to play with?  
No    Yes
- Where can I play?  
Inside    Outside



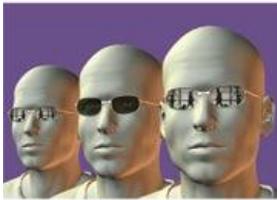
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