

## Module:

**Psychological Foundations of Mental Health**

Week 4:

Beyond basic cognitive and emotion



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### Topic 3:

**Delving deeper into social cognition**

Part 4 of 4

A neurodevelopmental disorder of social cognition:  
Autism Spectrum Disorder



Francesca Happé

## Autism Spectrum Disorder (ASD)

- A neurodevelopmental condition
- Diagnosis behaviour
- Affecting 1% of children and adults
- 2-4x more males than females diagnosed

### 'Triad' of impairments

Social impairments



Communication  
impairments

Rigid, repetitive  
behaviour

Often accompanied by:

Epilepsy

Intellectual  
disability

Anxiety

Depression

ADHD

Sleep and eating problems

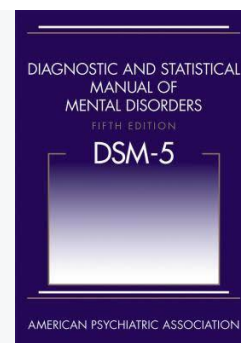
Highly heritable (*in a minority related to a rare single gene mutation, but for most suspected to be polygenic*)

## ASD Diagnostic criteria in DSM-5: Social-communication impairments

### **Persistent deficits in social communication and social interaction across contexts:**

Deficits in:

- Social-emotional reciprocity
- Nonverbal communication
- Developing, maintaining, and understanding relationships



## Social deficits: Developmental course

Diagnosis typically before age 3

Parents' earliest worries:

lack of language  
little social response  
rigid behaviour

Some parents report apparent 'regression'

Reduced/absent joint attention

Impaired peer interaction

Odd social manner, body language, eye contact

## What underlies these socio-communicative difficulties?

What underlies these social and communication difficulties?



Many different theories...



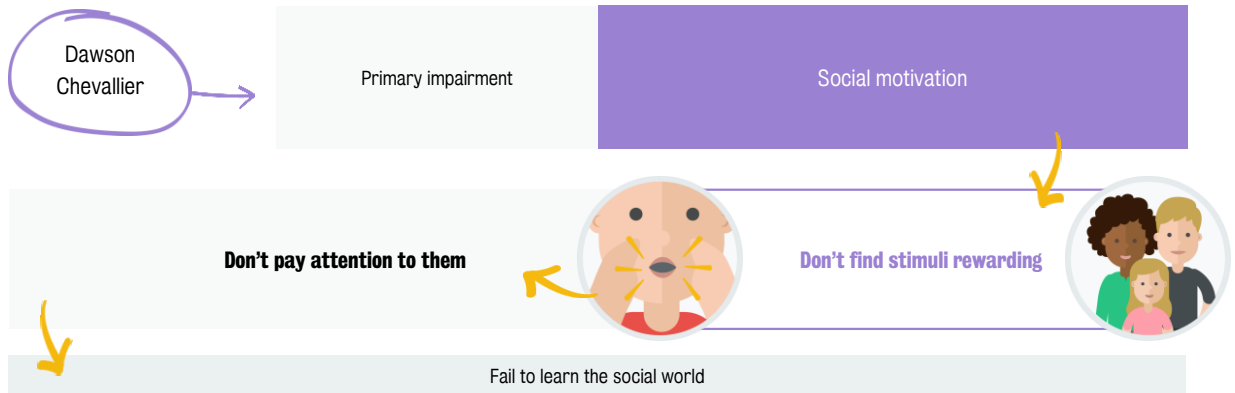
Primary non-social deficit



Primary social deficit:

- 'social motivation' account
- Mirror neuron theory
- 'theory of mind' account

## Social Motivation Account (1)



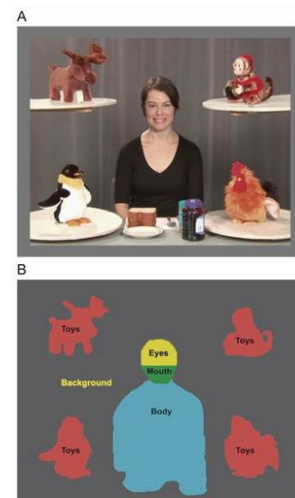
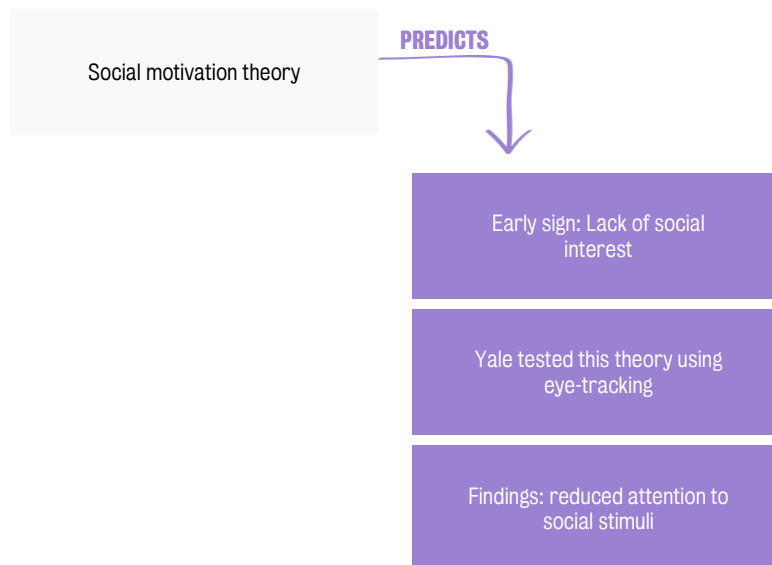
Chevallier et al (2012), Dawson, Bernier &amp; Ring (2012)

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## Social Motivation Account (2)



(A) Frame from video stimulus with (B) regions of interest used in analysis. The regions of interest: scene (face [eyes + mouth] person + toys + background), person (face + body), toys, eyes, and mouth.

Chawarska, Macari &amp; Shic (2013)

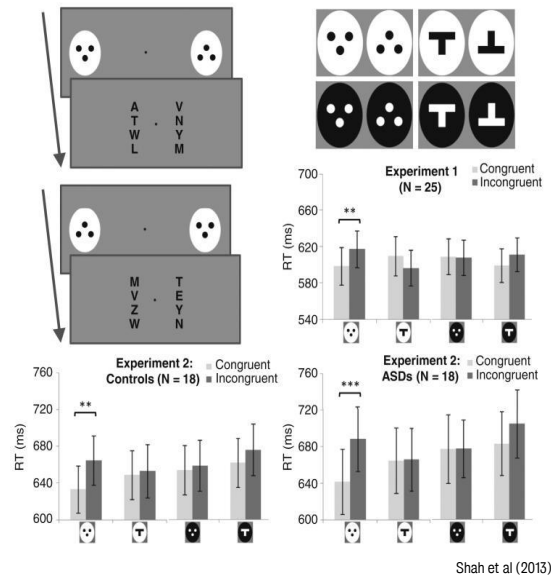
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## Not all social orienting is impaired in ASD

Adults and children with autism show the usual preferential attention to face-like stimuli



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## 'Broken mirror' theory of ASD

**Gallese & Goldman**

Healthy mirror neurons necessary to understand thoughts & intentions of others

**Meltzoff**

Imitation enables infants to recognise others as 'like-me'

However...

**Hamilton & Bird**

Automatic imitation intact in autism, so mirror neuron theory under threat

Gallese & Goldman (1998), Meltzoff (2005), Williams, Whiten, Suddendorf & Perrett (2001), Bird, Press & Richardson (2011), Southgate & Hamilton (2008)

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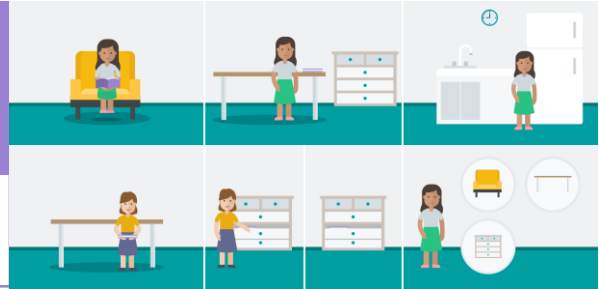
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## Theory of mind account: Mind-blindness

Social and communication problems well explained by a problem in Theory of mind called '**Mind-blindness**'

Children with autism don't track the mental states of others = **Mind-blind**



This concept refined our understanding

Autism = not a general lack of sociability

People with autism want to be social, but find it hard to connect with other minds

## Ifs and buts of theory of mind (1)

Theory of mind criticism:

1) Theory of Mind is not primary (not the core origin)

Reason for social motivation theories being popular

Partly because Theory of Mind tests are designed for children 3-4 years

Signs of autism appear earlier

Earliest signs at 6 months > non-social tasks

Abnormalities only appear at 12 months

However, infant studies shed light on earlier years

## Ifs and buts of theory of mind (2)

Theory of mind criticism:

### 2) Mind tests not specific to autism

Non-verbal theory of mind test

Penny-hiding game

People with autism struggle even though there is no memory or language demanded

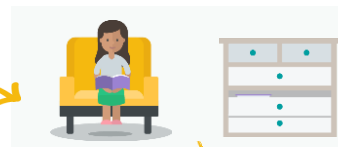


## Ifs and buts of theory of mind (3)

Theory of mind criticism:

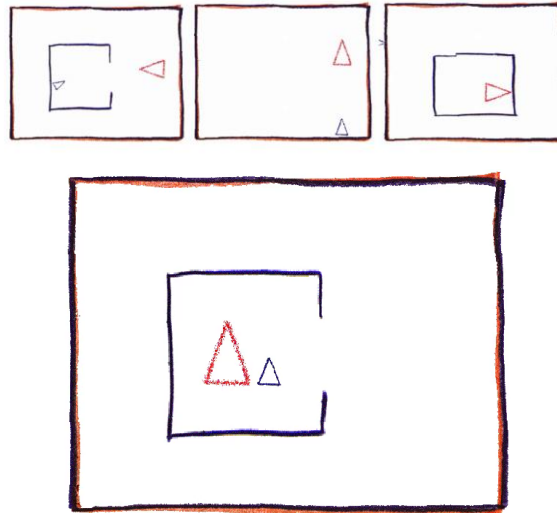
### 3) Non universal

Not all individuals with autism fail the Sally-Anne task



They pass the tests using a variety of methods and work arounds that do not necessarily imply a theory of mind

## Testing advanced Mindreading



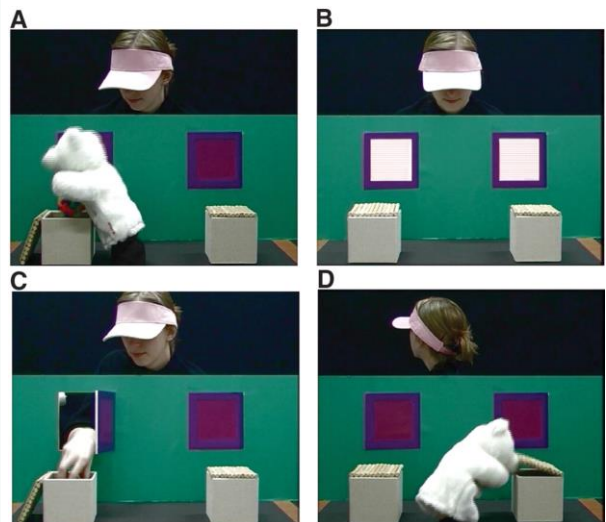
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## Spontaneous 'mind-reading' still impaired?

Adults with ASD do not show  
spontaneous mentalising



Senju, Southgate, White &amp; Frith (2009)

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## Two kinds of mentalising

1) The unconscious form

2) The conscious (deliberate) form

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## Implicit mentalising

Lack of implicit mentalising shapes development

Non-autistic



Interested in what others think

Learning through social interaction

Not interested in external approval

He is not learning from others

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Not every aspect of social development is affected in autism...

Autism influences the understanding of others



This does not necessarily mean that they do not care about others



They can respond to distress and show empathy

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Theory of mind versus affective empathy

Autistic people contrasted with those with psychopathic traits

Alice Jones



Cold and callous

Good at theory of mind

Poor empathy



Autism spectrum

Poor at theory of mind

Good empathic concern

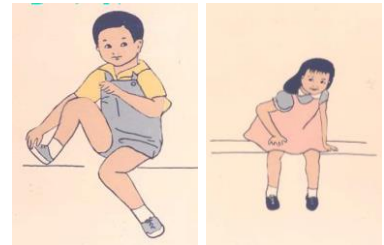
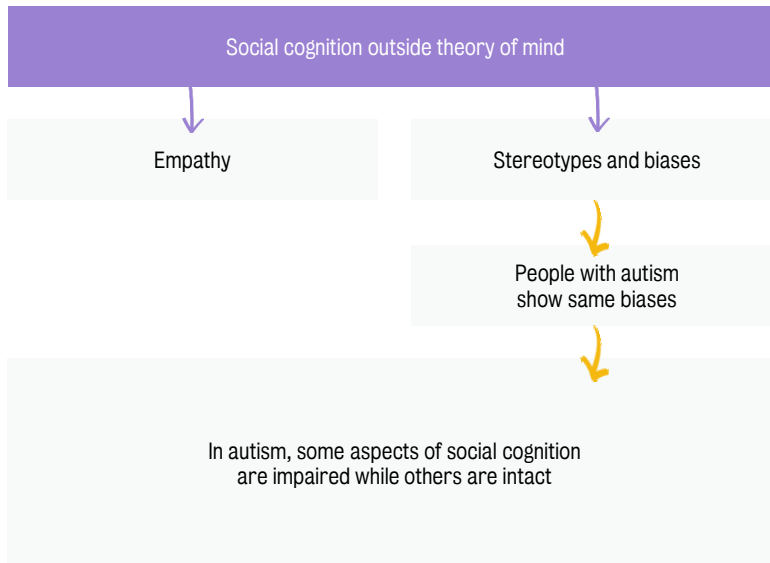
Jones et al (2010)

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## Stereotyping and bias 'intact' in autism



Williams, Best & Boswell (1975), Hirschfeld (2007)

## ASD Social Cognition: Summary

### Conclusion:

- Social deficits are key diagnostic feature of ASD
- Several candidate theories for underlying deficit
- Infant sibling studies may be illuminating regarding primary deficit
- Not every aspect of social cognition may be abnormal in ASD

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News, South Africa The Good. *English: Nelson Mandela in Johannesburg, Gauteng, on 13 May 2008.*, May 13, 2008. Flickr: Nelson Mandela. [https://commons.wikimedia.org/wiki/File:Nelson\\_Mandela-2008\\_\(edit\).jpg](https://commons.wikimedia.org/wiki/File:Nelson_Mandela-2008_(edit).jpg). (South Africa The Good News / [www.sagoodnews.co.za](http://www.sagoodnews.co.za) [CC BY 2.0 (<http://creativecommons.org/licenses/by/2.0>)], via Wikimedia Commons)

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