

# SOCIAL COGNITION

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Deviant social cognition

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# LAST WEEK: STEREOTYPES

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- What do you remember from last week?



# THIS WEEK: DEVIANT SOCIAL COGNITION

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- Deviation from the norm
- Social cognition in schizophrenia
- Social cognition in autism



# DEVIANT SOCIAL COGNITION

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- **Schizophrenia**
  - affective prosody interpretation, face perception, ToM, stereotypes, etc...
- **Autism**
  - ToM
- **Frontotemporal dementia**
  - ToM
- **Borderline personality disorder**
  - emotion regulation
- **Bipolar disorder**
  - emotion regulation
- **Psychopathy**
  - intact ToM, diminished empathy, experience sharing, etc.



# WHICH OF THE FOLLOWING IS NOT TRUE ABOUT SCHIZOPHRENIA?

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- A. Schizophrenia is a chronic mental disorder
- B. Usually starts in adolescence/early adulthood
- C. Cannot be treated with medication
- D. Auditory hallucinations are a key symptom

Go to [menti.com](https://menti.com) and vote

Code: 1531869



# SCHIZOPHRENIA

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- A chronic mental disorder
- Starts early in life
- Affects ~1% of the population
- Can cause disability



# SCHIZOPHRENIA

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graph TD; A[SCHIZOPHRENIA] --> B[Positive symptoms]; A --> C[Negative symptoms]; B --> D[• Delusions (thought content disorder)]; B --> E[• Disorganized language output (formal thought disorder)]; B --> F[• Auditory hallucinations]; C --> G[• Lack of motivation and voluntary behaviour]; C --> H[• Apathy]; C --> I[• Flat or inappropriate affect]; C --> J[• Poverty of speech and language]; K[(Social) cognitive deficits];
```

## Positive symptoms

- Delusions (thought content disorder)
- Disorganized language output (formal thought disorder)
- Auditory hallucinations

## Negative symptoms

- Lack of motivation and voluntary behaviour
- Apathy
- Flat or inappropriate affect
- Poverty of speech and language

(Social) cognitive deficits

# EXAMPLE

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Video: <https://www.youtube.com/watch?v=iGH7hGkkMrU>

What do you notice?



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# SOCIAL COGNITION IN SCHIZOPHRENIA

## 1. Perception of social cues

- Face perception
- Voice perception

## 2. Experience sharing

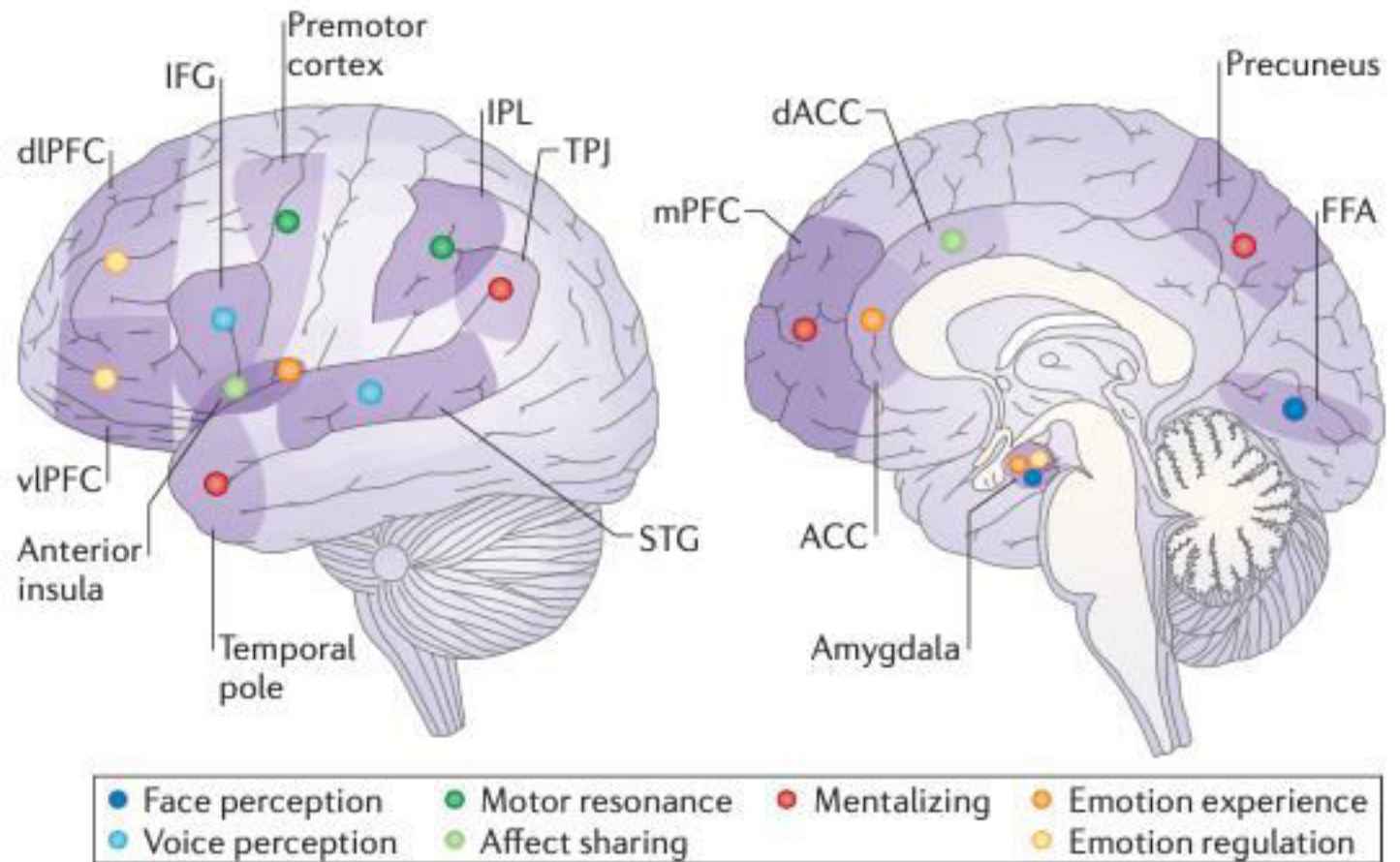
- Motor resonance
- Affect sharing

## 3. Theory of Mind

## 4. Emotion

- Experience
- Regulation

## 5. Language (pragmatics, among other things)



# PERCEPTION OF SOCIAL CUES

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## Face perception

- Inconclusive evidence about non-affective face processing
- Hypoactivation in affective face processing regions
- Hyperactivation in other regions
- Compensation?

## Voice perception

- Grammatical prosody perception intact (LH function)
- Affective prosody perception impaired (RH function)
- More LH activation in prosody tasks, compared to controls



# EXPERIENCE SHARING

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- We "mirror" other people's behaviour (through the mirror neurons)

## **Motor resonance**

Activation of one's motor areas when observing someone else's motor actions

- Conflicting evidence in schizophrenia

## **Affect sharing**

Activation of one's emotion-related areas when observing someone else's emotion

- Preserved in schizophrenia



# THEORY OF MIND

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- Difficulties understanding others' intentions

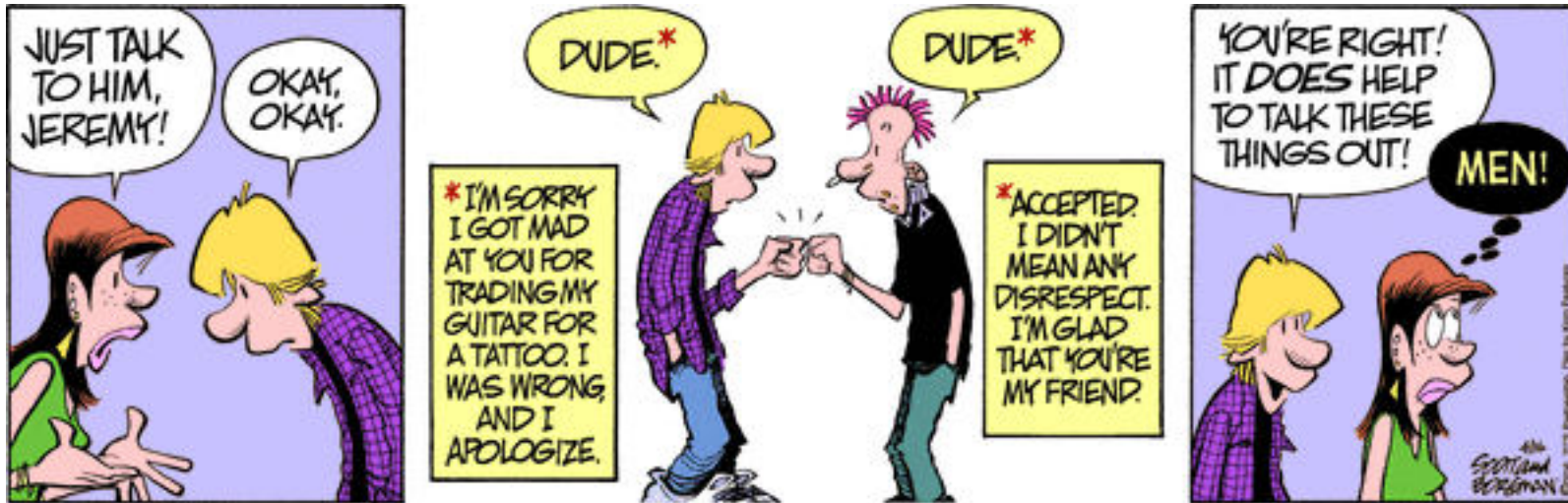
BUT ALSO

- Hypermentalizing: over-attributing intention, can be the mechanism of paranoid symptoms



# SENTENCE MEANING VS. SPEAKER MEANING

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# FAILURE TO UNDERSTAND THE COMMUNICATIVE INTENT AND STEREOTYPES



Individuals with schizophrenia worse at decoding the hidden meaning (stereotypes!) (Tényi et al., 2002)

# INDIRECT REQUESTS

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## **The hinting task** (Corcoran et al., 1995)

Paul has to go to an interview and he's running late. While he's cleaning his shoes he says to his wife, Jane: 'I want to wear that blue shirt, but its very creased.'

Question: What does Paul really mean when he says this?



# INDIRECT REQUESTS

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## **The hinting task** (Corcoran et al., 1995)

Paul has to go to an interview and he's running late. While he's cleaning his shoes he says to his wife, Jane: 'I want to wear that blue shirt, but its very creased.'

Question: What does Paul really mean when he says this?

Extra information: Paul goes on to say: 'Its in the ironing basket.' Question: What does Paul want Jane to do?

## **Performance impaired in schizophrenia, extra information helpful**

Difficulty understanding stereotypes/social schemas?





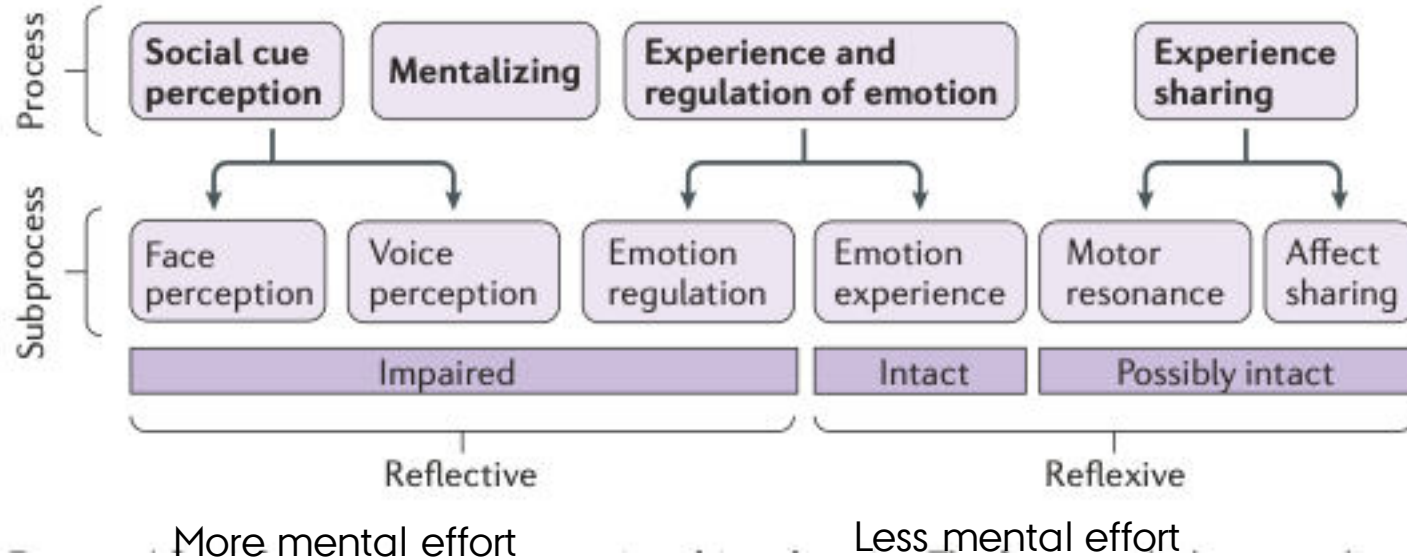
# EMOTION

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- Emotion experience mostly intact in schizophrenia
- Emotion regulation impaired
  - cognitive reappraisal used less in individuals with schizophrenia
  - less frequent cognitive reappraisal associated with symptom severity and poor outcome in the society



# SOCIAL COGNITIVE IMPAIRMENT IN SCHIZOPHRENIA



- Cause-effect issue -> antipsychotic medication?

# EXERCISE

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Now you know a lot about social cognition in individuals with schizophrenia. Discuss:

- How can we help them to go back into the society?
  - what should the patients do?
  - what should the society do?



# AUTISM SPECTRUM DISORDER

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What do you know about autism? Think of at least three words that come to your mind when you think of autism and submit to [menti.com](https://www.menti.com)

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# AUTISM SPECTRUM DISORDER

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Developmental disorder

- Social deficits
- Communication deficits
- Restricted and repetitive behavior



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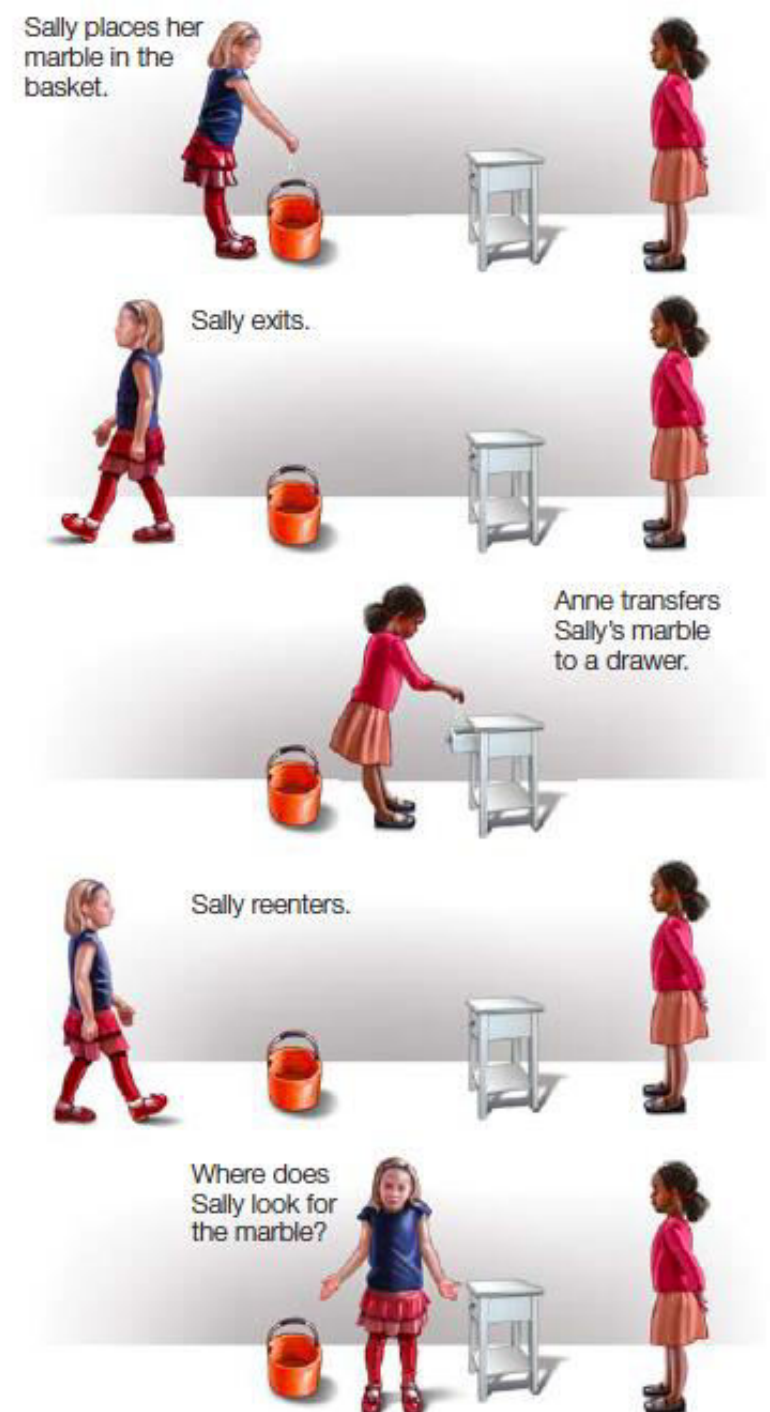
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# THEORY OF MIND IN ASD

Sally & Anne task: where does Sally look for the marble?

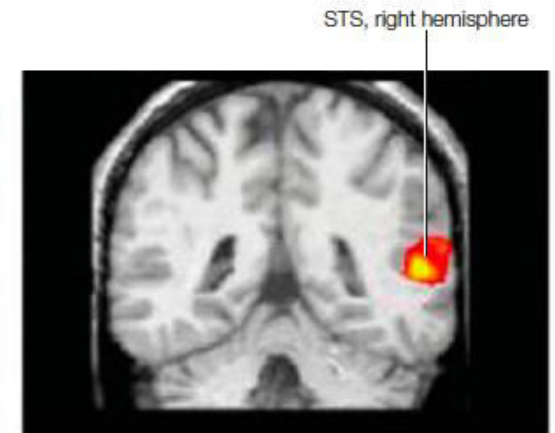
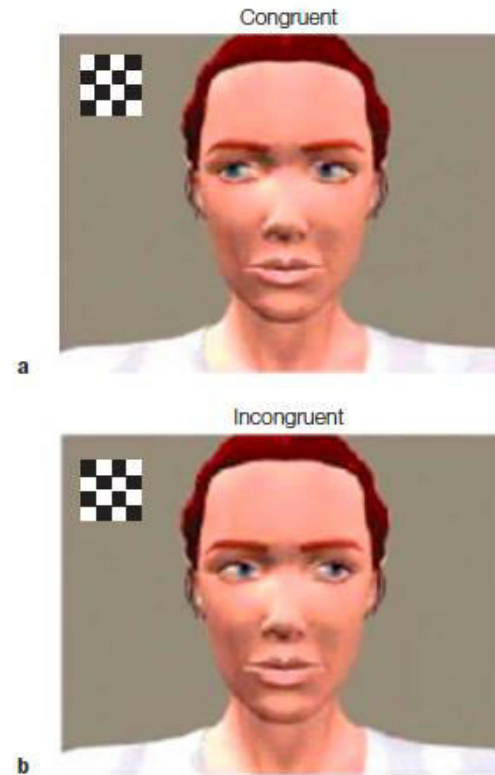


# THEORY OF MIND IN ASD

Sally-Anne task challenging for children with ASD

Less rTPJ specialization in people with ASD, correlated with symptom severity

Decreased attention to social cues



# MIRROR NEURONS IN ASD

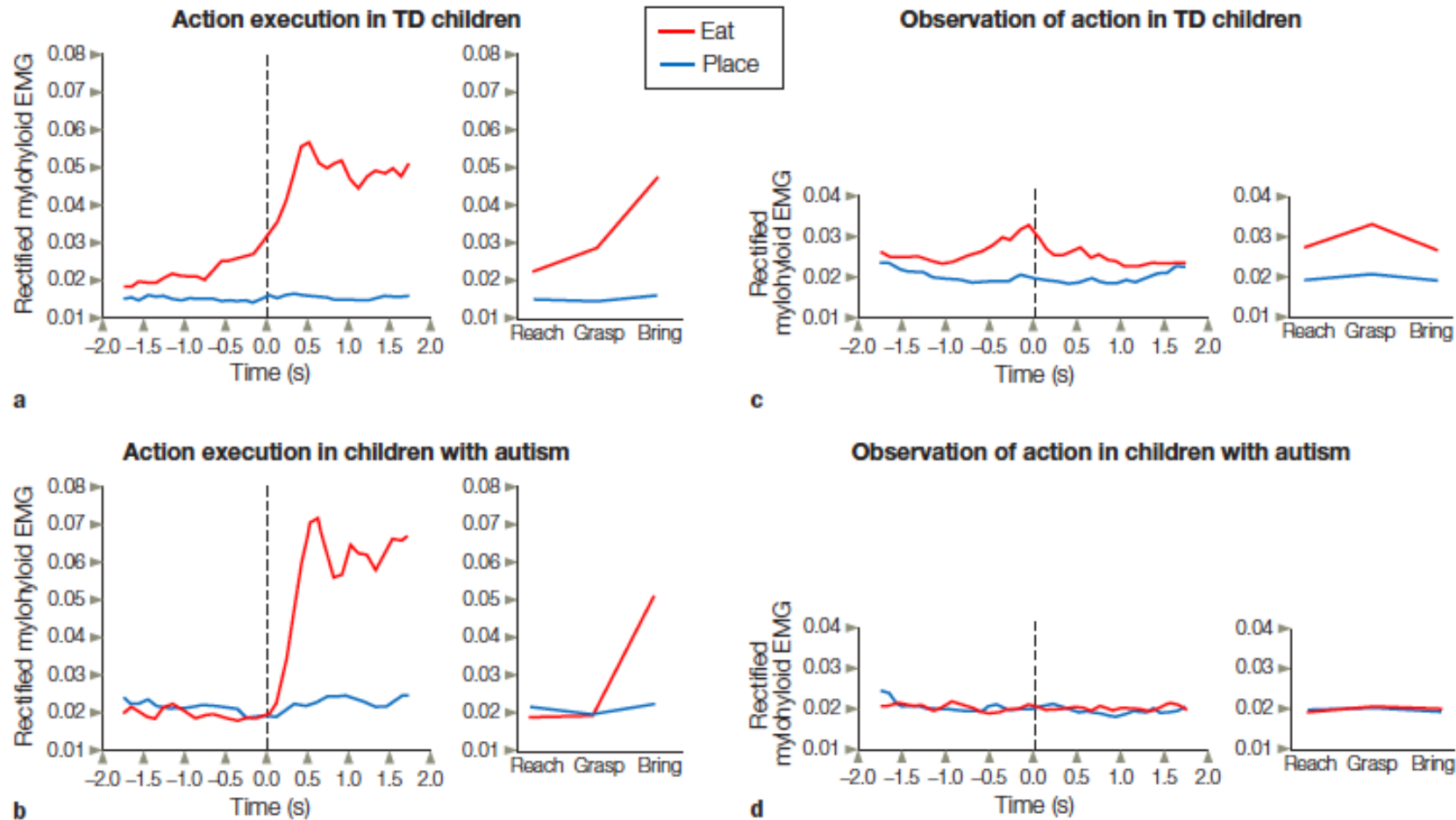
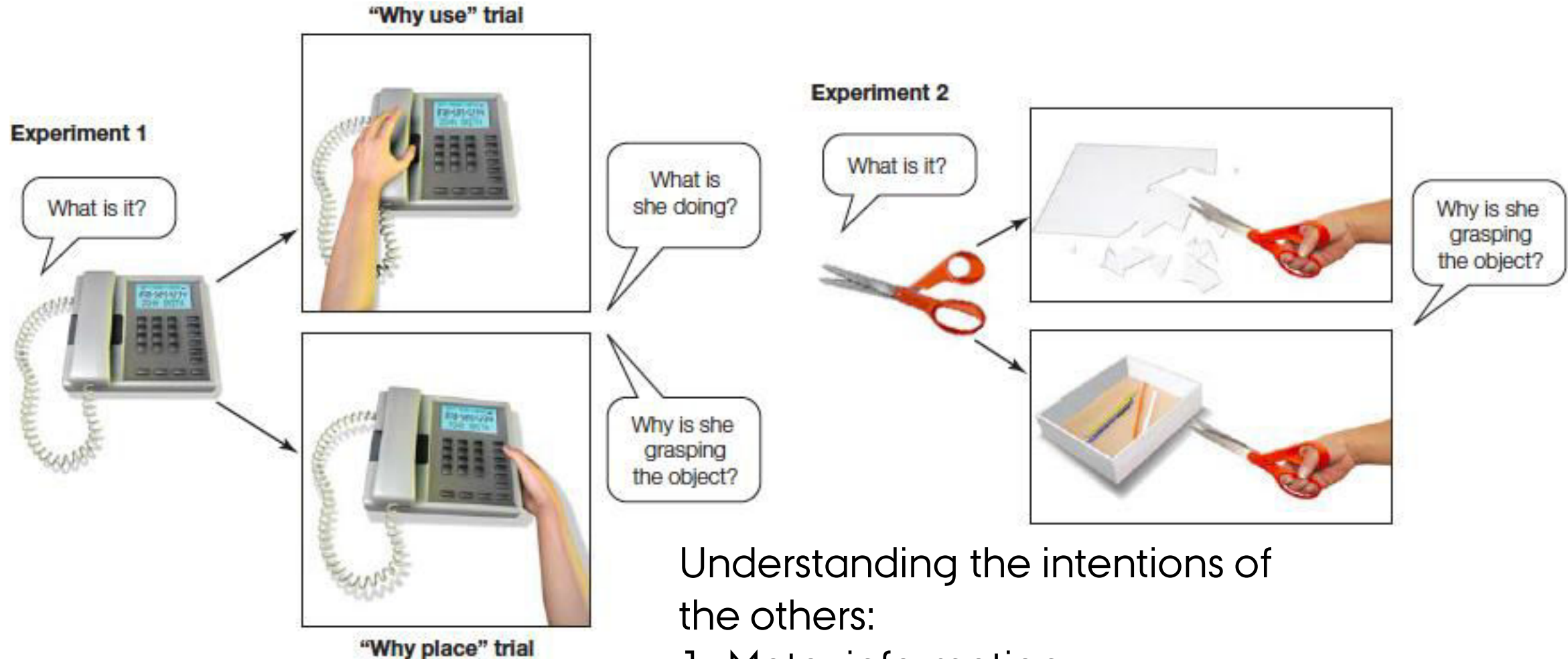


FIGURE 13.23 The time course of MH muscle activity.



# THE WHAT AND WHY OF THE ACTIONS



Understanding the intentions of the others:

1. Motor information
2. Semantic information

# LANGUAGE DEFICITS IN ASD

## *Picnic*

Sarah and Tom are going on a picnic. It is Tom's idea, he says it is going to be a lovely sunny day for a picnic. But just as they are unpacking the food, it starts to rain, and soon they are both soaked to the skin. Sarah is cross. She says, "Oh yes, a lovely day for a picnic alright!"

Is it true, what Sarah says?

Why does she say this?



Individuals with autism have difficulties understanding speaker meaning

Jolliffe & Baron Cohen, 1999



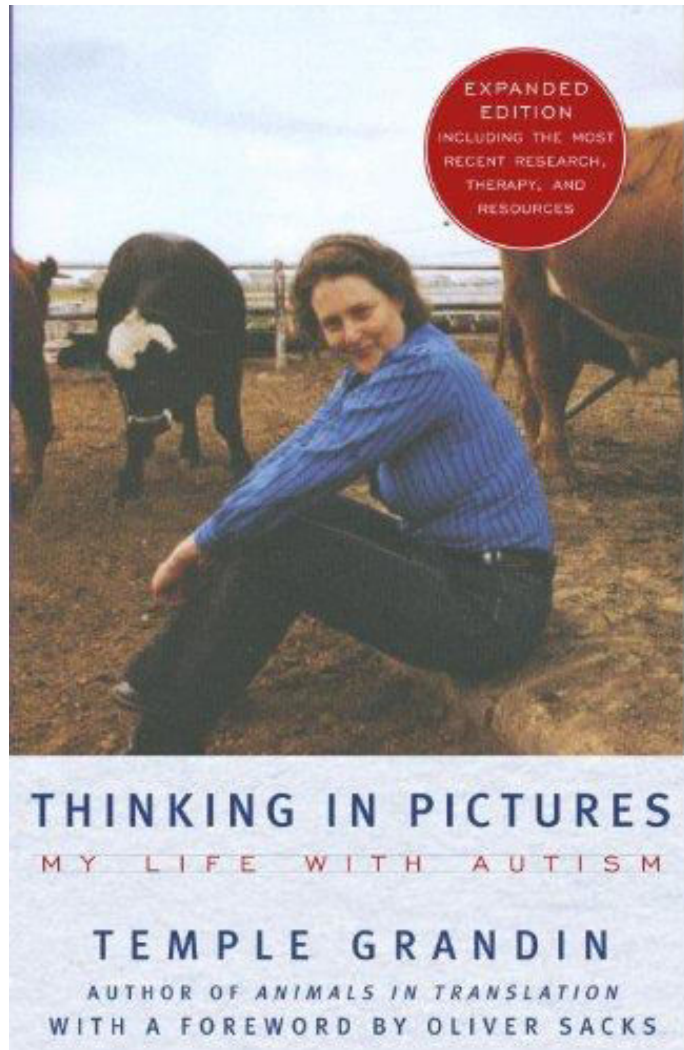
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# COMPENSATION IN ASD



- Compensation: an alternative cognitive mechanism to compensate the deficit caused by autism
- Camouflaging: “acting like neurotypicals”, copying behaviour

Read the book for a better understanding of compensation

# DISCUSSION: GOOD SOCIAL SKILLS, POOR TOM

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In groups of 3-4 discuss the following:

- What is the methodology used in the paper?
- What shortcomings does the method have?
- What are the main findings?
- What are the practical implications of these findings?



# MAIN FINDINGS

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- High compensation related to more anxiety
- High compensation related to better IQ and executive function



# SUMMARY

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- Deviant social cognition has been observed in various mental and developmental disorders
- Individuals with schizophrenia show social cognitive deficits, mostly in more cognitively demanding tasks
- Individuals with autism show ToM and related deficits but in some cases they are able to compensate it



# EXAM PAPER DISCUSSION

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- Turn to the person next to you and discuss your exam paper
  - How is the writing going?
  - What are your main challenges?
  - How can your peer help you (advice? Literature? Peer feedback?)



# THE BIG PICTURE

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Linguistic  
coordination

Deviant  
social  
cognition

Stereotypes

Social schemas  
and  
representations

Language  
evolution

Intro to social  
cognition

Theory of  
Mind

Social identity  
and the self

Ling dimension  
of social  
cognition

The evolution  
of social  
cognition

Social  
cognition in  
primates

Social  
learning





# NEXT WEEK

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## 1. Quiz!

- Make teams of 3-4 people
- Come up with a team name
- Each team should send Byurakn 5 multiple choice questions, the correct answer marked by **December 9th 23:59**

## 2. Final evaluation discussion

## 3. Guest lecture by Cordula Vesper



# FINAL EVALUATION

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- Fill out the form on Blackboard  
~5 minutes

