



Why I (don't) study social cognition in autism

Teodora Gliga

University of East Anglia (!)



You will never want to leave !

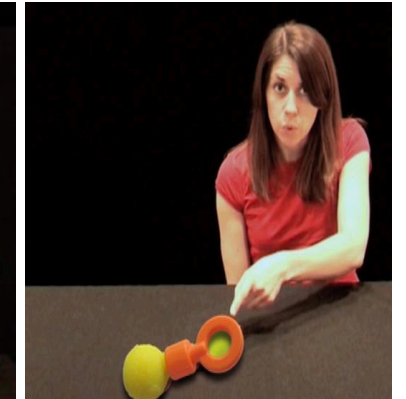
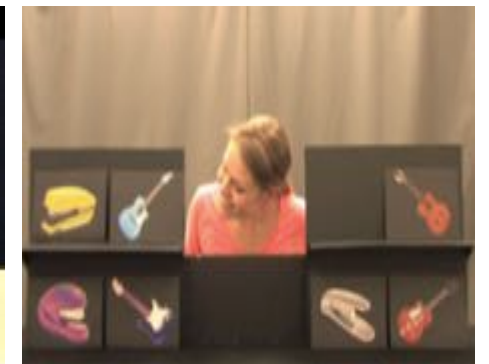
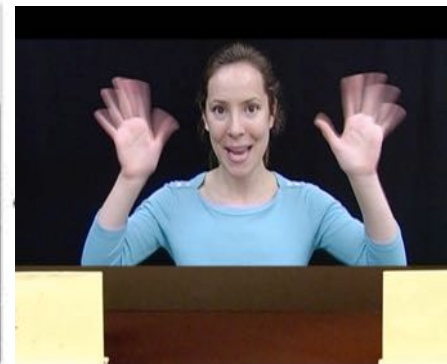


I don't believe any of this



Communication, conceptual development

With Gergo Csibra, Denis Mareschal,
Tobi Grossmann, Basia Pomiechowska,
Rachael Bedford, Nadja Althaus



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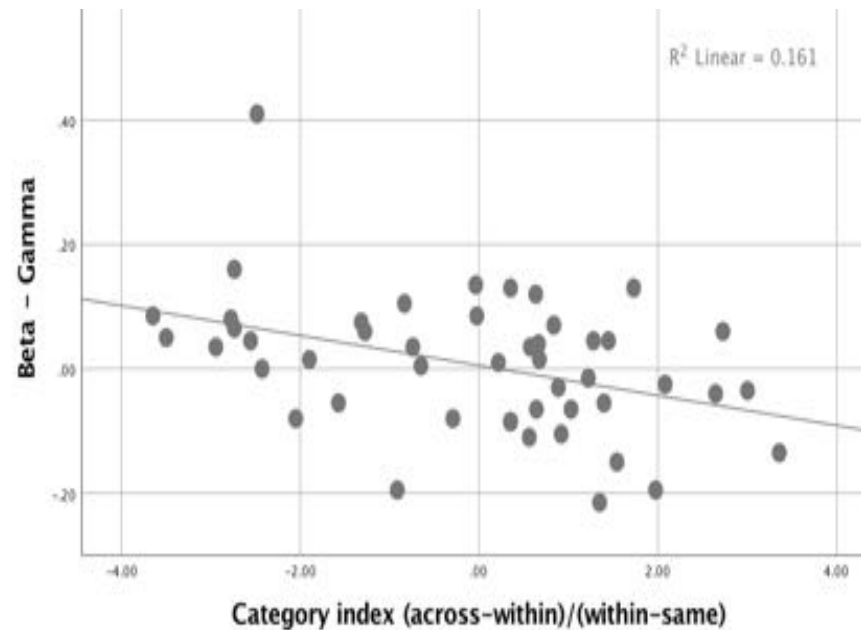
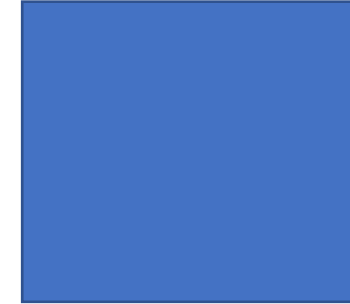
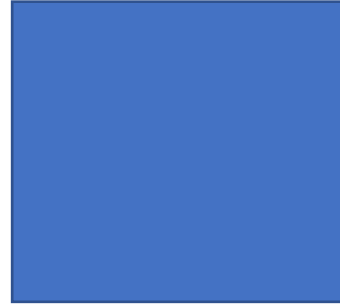
Current methods (habituation)
measure **category learning** not
prior knowledge.

**Investigate conceptual learning
in the more difficult conditions
of the outside world.**



Nonverbal category knowledge
biases the content of object representations

Barbara Pomiechowska, Teodora Gliga



Category training made
infants not notice within-
category changes.

Gamma/beta EEG activity
tells us whether infants
posses category knowledge

Autism & BASIS

With Mark Johnson, Mayada Elsabbagh, Tony Charman, Rachael Bedford, Carina deKlerk, Leslie Tucker, Agnes Volein, Greg Pasco, Emily Jones, Elena Piccardi, Janet Parsons, BASIS & STAARS Team



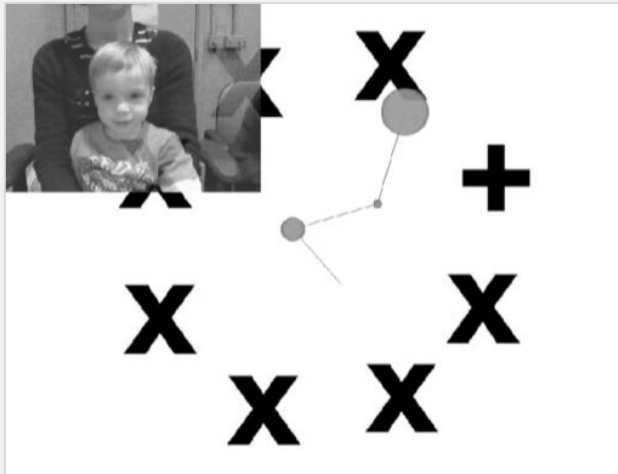
Good social orienting, gaze following and enjoyment of social interaction in infants with later ASD



Nobody cares about theory of mind in autism anymore...

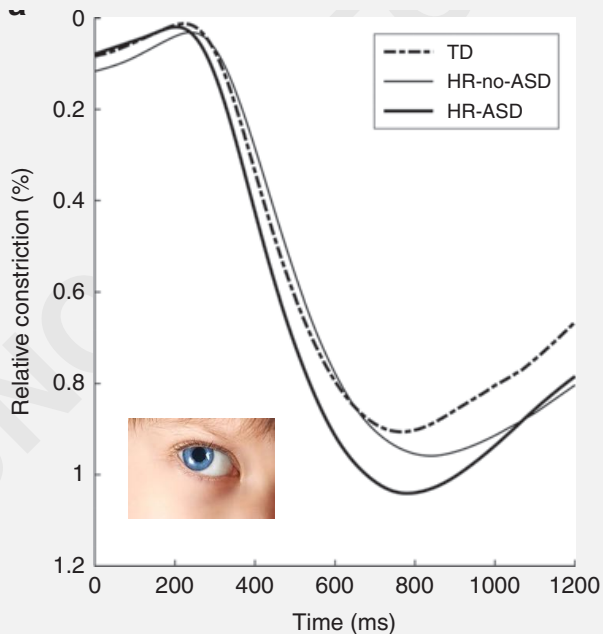
Sensory and perceptual atypicalities

BETTER AT VISUAL SEARCH



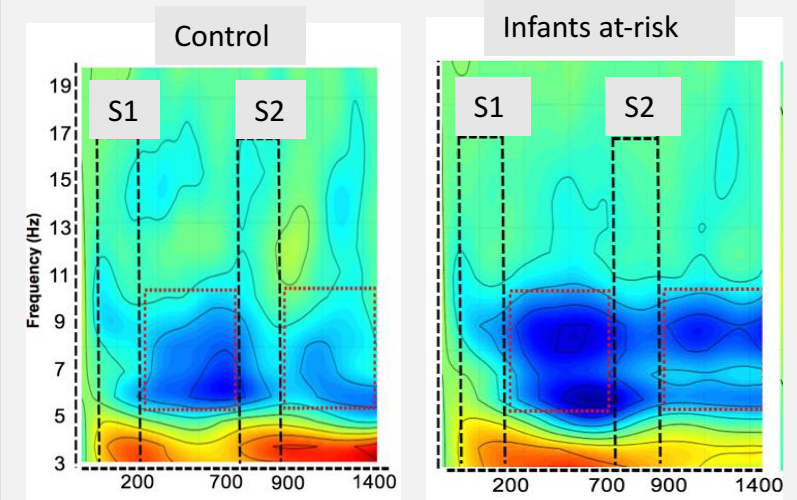
Gliga, T., Bedford, R., Charman, T., Johnson, M. H. (2015). *Current Biology*, 25(13), 1727-1730.

STRONGER PUPILLARY LIGHT REFLEX

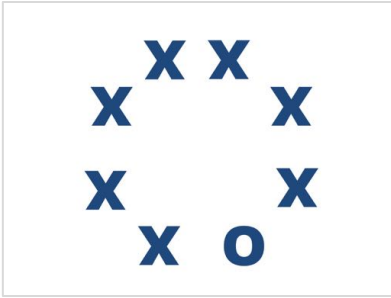


Nyström, P., Gliga, T., Jobs, E. N., Gredebäck, G., ... Falck-Ytter, T. (2018). *Nature communications*, 9(1), 1678.

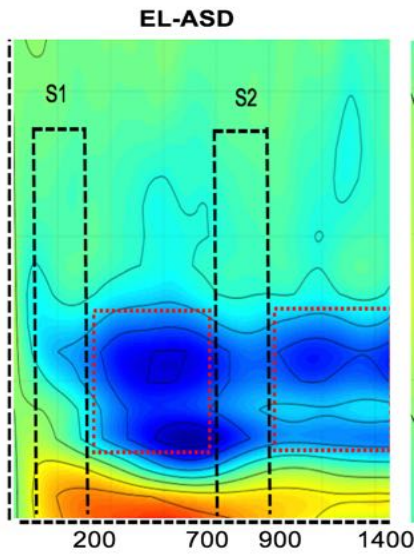
REDUCED SENSORY GATING



Piccardi, Begum Ali, Jones, Mason, Charman, Johnson, Gliga & STAARS. (in prep)



SENSORY

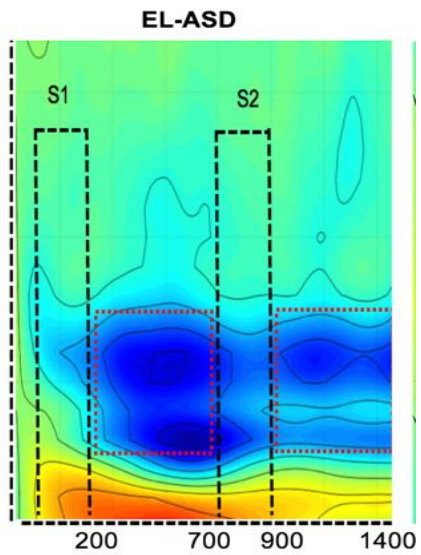


Poor SOCIAL skills





Elena Piccardi



Hyper-SENSORY

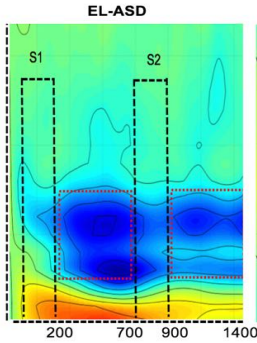


Not seeking sensory stimulation & interaction

Poor SOCIAL skills



Typically developing
can't stop themselves
making prediction



COMMON MECHANISM
(e.g. computing regularities)

Infants with later ASD better
because they do not
try/cannot make predictions

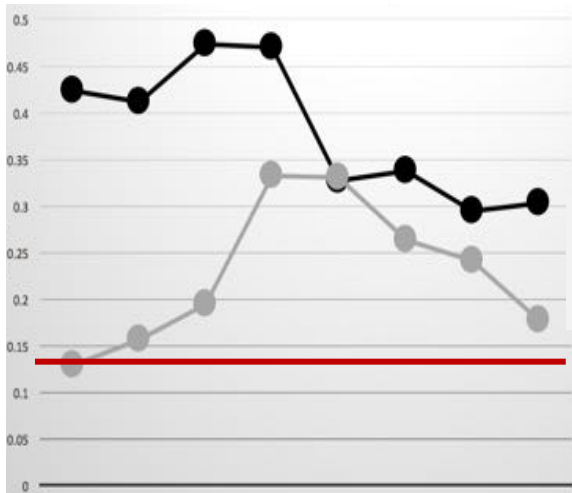
Toddlers with ASD seek and like
predictable social stimulation
(Vernetti, et al. 2017).



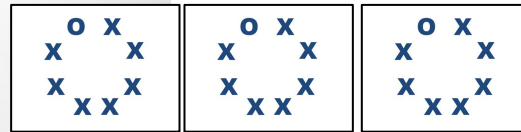
SENSORY

SOCIAL

Proportion of correct participants

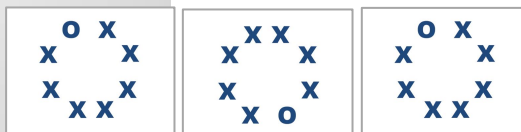


1-2 3-4 5-6 7-8 Trial number



---- **PREDICTABLE SEQUENCES**

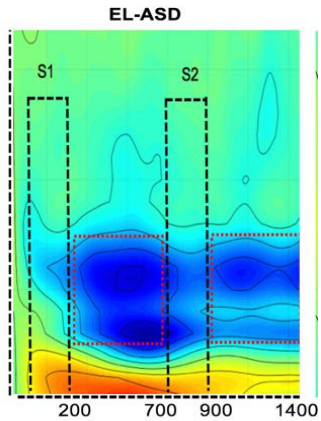
---- **RANDOM SEQUENCES**



SENSORY

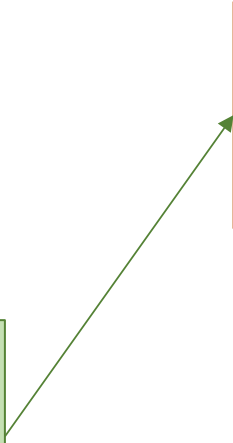
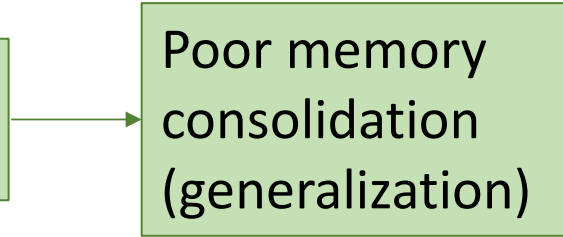
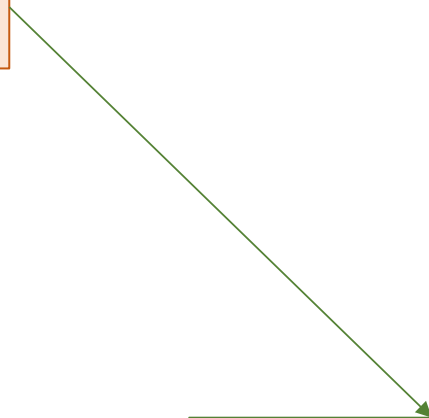


**SOCIAL
learning**



Impaired buffering
of sensory input

Poor memory
consolidation
(generalization)



SNOOSE: The SeNsOry Origin of poor Sleep in Early development project



- A common (thalamic) origin for poor sensory attenuation and EEG sleep spindle generation
- Why infants need to sleep to generalize knowledge (sometimes)
- What is the difference between online and offline memory consolidation



Curiosity and information seeking

With Vicky Southgate, Katarina Begus, Denis Mareschal, **Viktoria Csink**, Cecile Gal, Raul Muresan, Marie Smith, Elena Piccardi, **Claire Essex**, Tim Smith

POSTERS: What do surprise and tablets do to learning?



Social touch ?

With Laura Pirazzoli, Sarah Lloyd-Fox, Mark Johnson, Teresa Farroni, **Alicja Brzowska**, Frank Wiesemann, Matt Longo, Denis Mareschal

POSTER: what is social touch and what does it do ?



Most downloaded publication ?

The ‘Knife Crime’ phenomenon –

A psychological perspective on youth knife culture

“Looking back I know that was wrong, but at that stage you end up in the mind frame you think - fuck this” Nick, 17, (Marfleet ,2008)

Teodora GLIGA

BPS Parliamentary Office



**Thank you for
making science fun!**





SNOOSE Team



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PhD student



Hope Fincham
MSc student

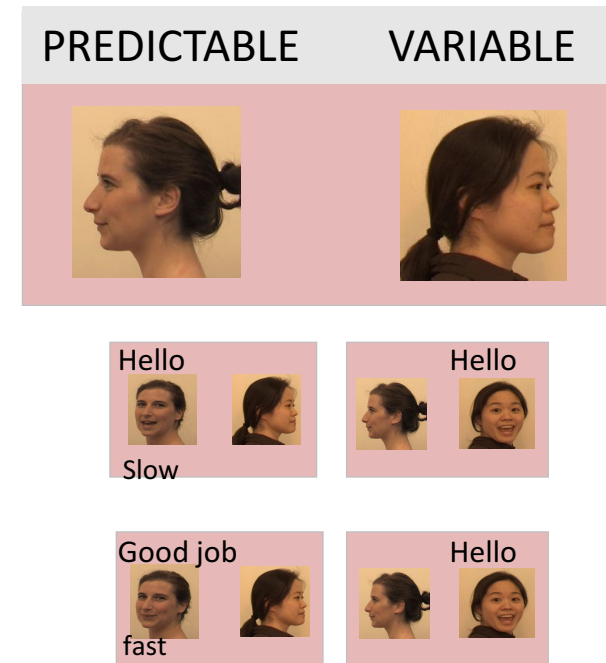
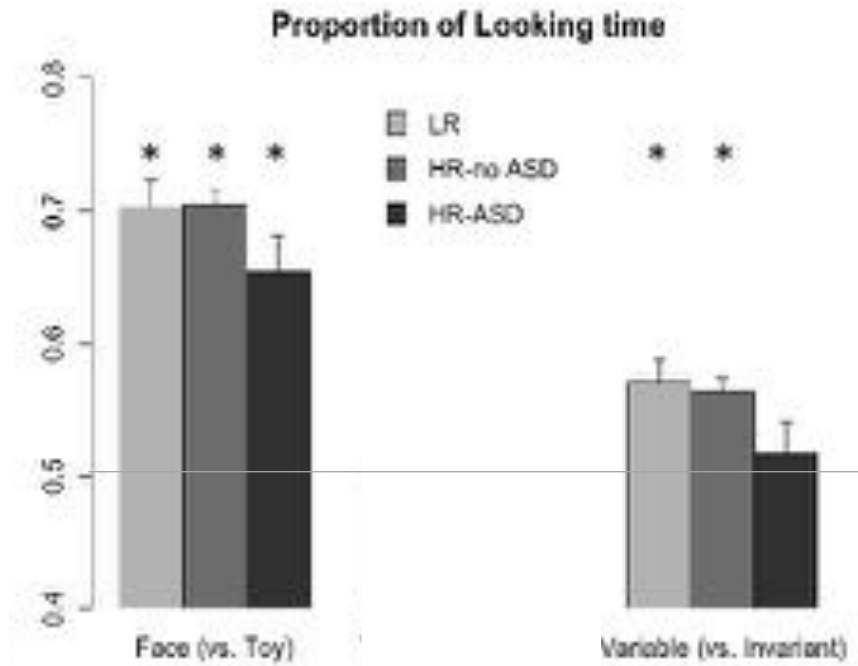
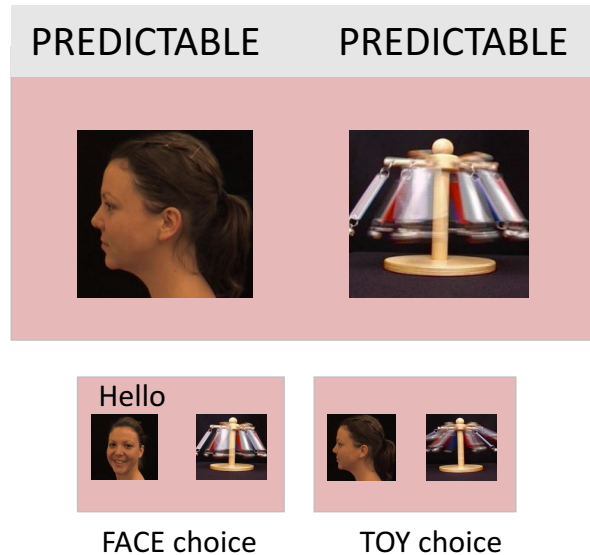
Collaborators from UCL, Birkbeck, Oxford, and the Center for Cognitive Neuroscience, Salzburg.



<http://www.gligalab.co.uk/snoose>

Deadline 20/1/20

Toddlers with ASD orient to end enjoy predictable social stimulation



Vernetti, A., Senju, A., Charman, T., Johnson, M.H., Gliga, T. (2017) Simulating interaction: using gaze-contingent eye-tracking to measure the reward value of social signals in toddlers with and without autism. *Developmental Cognitive Neuroscience*