

**Autism and the predictive brain:
absolute thinking in a relative world**

PETER VERMEULEN, PhD



AUTISM in CONTEXT
from neurodiversity to neuroharmony

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Basic problem in autism:
absolute thinking in a relative world

Nothing has an absolute meaning

Autism friendliness

- There is no such category as “autistic behaviors”, only “human behaviors (Barry Prizant)
- 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!

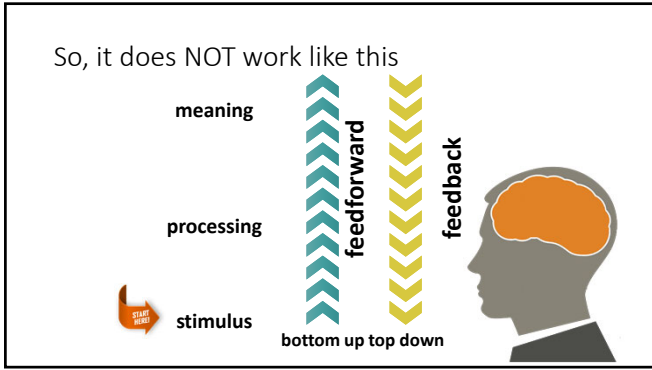
Copernican revolution in brain science

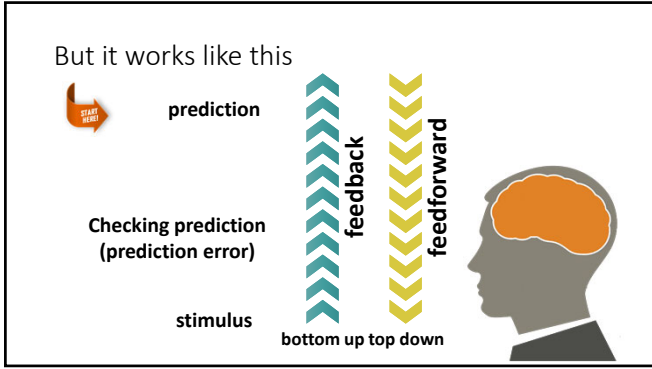
Default idea about the brain

computational analogy

What's wrong with our current ideas about the brain?

- Information processing is not linear
- Sense making is not just integrating all the details of the sensory input
 - There isn't enough time to calculate and make that puzzle! (Daniel Kahneman)
 - Processing all the sensory input (computing) is not very helpful for survival! (Smilodon story)
- So, the brain does not compute, It guesses,
- And it can make smart guesses because it uses context,
- This is known as: **the predictive mind**





The brain does not process stimuli, only what is different from the stimuli it predicted: prediction errors.

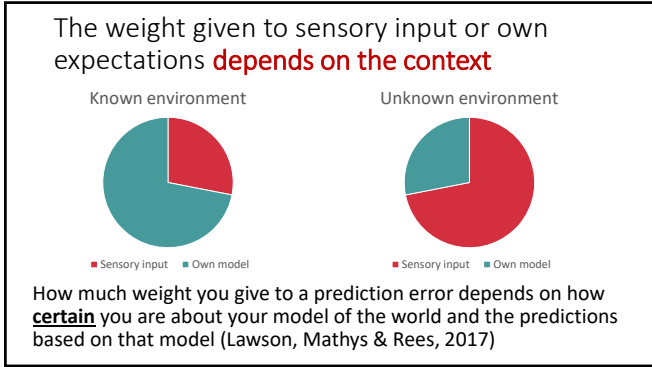
From *The Lancet*

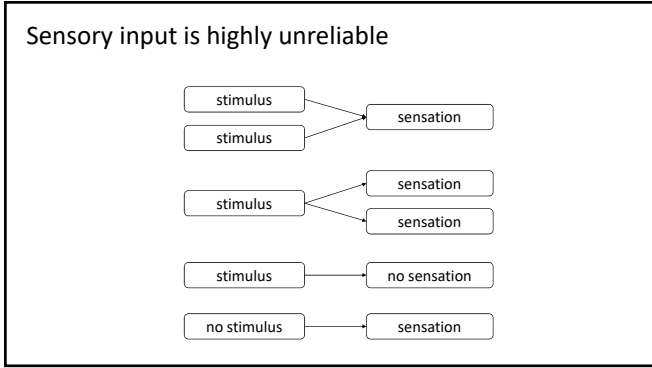
Prediction errors

- The brain has only one goal: helping us to survive by minimizing prediction errors, either by learning or by changing the world
- The brain doesn't like prediction errors (they cause stress)
- The brain knows it cannot avoid all prediction errors. Therefore, it uses **a variable precision** in handling prediction errors

Depending on the **context** the brain will treat a prediction error as

- Noise or normal variation (irrelevant)
- Relevant, so something that should lead to learning or action





Sensory input is not the most important

In terms of neural connections, only 10% of the information our visual brain uses comes from the eyes.

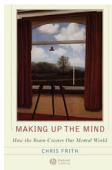
The rest comes from other parts of the brain:

90%.

Information is meaningless (Beau Lotto)

Perception is controlled hallucinating.
We don't see the world, but our model of the world.

Our perception of the world is an **illusion** that (in most cases, fortunately) coincides with reality.



Chris Frith

Predictive mind

Predicts the sensory input
and then processes the
prediction error
(= difference predicted
and actual input)

Autism, the predictive mind and context

- In autism the **flexible adjustment in function of context** of predictions and the weight given to prediction error seems to be affected
- HIPPEA:**
High, Inflexible Precision of Prediction Errors in Autism
(Van de Cruys a.o., 2013, 2014)

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0893-3200/14/\$12.00 DOI: 10.1037/xap0000007

Precise Minds in Uncertain Worlds: Predictive Coding in Autism

Sander Van de Cruys, Kris Evers, Ruth Van der Hallen, Lien Van Eylen,
Bart Boets, Lee de-Wit, and John Wagemans
KU Leuven

	Non autistic brain: Relative thinking	Autistic brain: Absolute thinking
Where the balls land		
Prediction		
Prediction errors		

The weight given to sensory input or own expectations **depends on the context**

Known environment

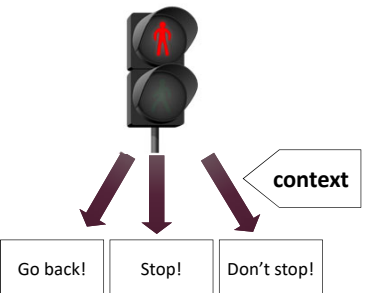
■ Sensory input ■ Own model

Unknown environment

■ Sensory input ■ Own model

How much weight you give to a prediction error depends on **how certain** you are about your model of the world and the predictions based on that model (Lawson, Mathys & Rees, 2017)

Living in a relative (VUCA) world



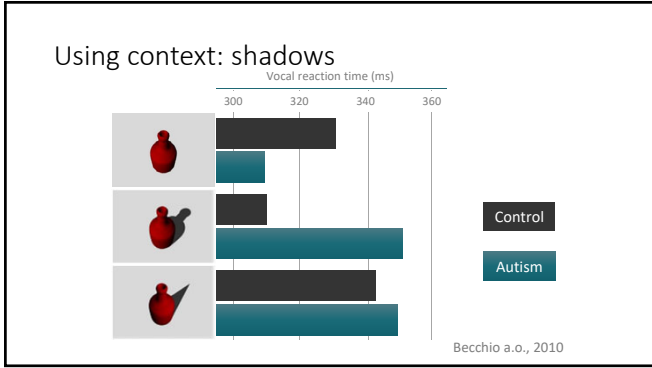
Nothing has an absolute meaning!
Everything depends on context.

Therefore, our brain became an expert in **using context for making quick and smart guesses.**

Autism as context blindness 2.0



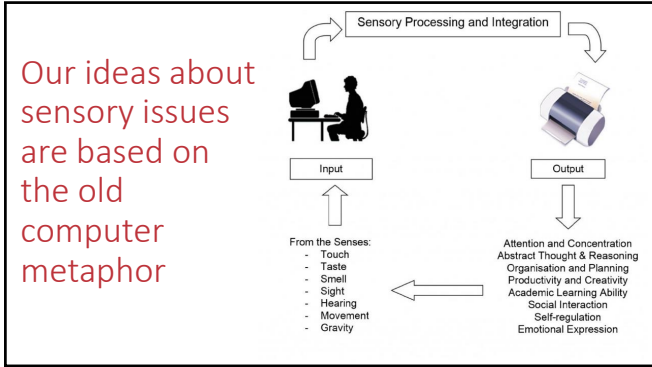
Reduced ability to use the context unconsciously and **spontaneously** to generate **predictions** about the world and process **prediction errors.**



Autism as a prediction disorder

This new idea could change our ideas about many things in autism such as:

- Sensory issues and what to do about them
- Communication
- Emotion recognition and how to teach socio-emotional skills



Important difference!

Hypersensitivity:

- Physiological response
- Sensory threshold

Hyperreactivity:

- Psycho-emotional / behavioural response

No unambiguous, clear indications for difference in sensory thresholds in autism

Kuiper, M. W., Verhoeven, E. W., & Geurts, H. M. (2019). Stop making noise! Auditory sensitivity in adults with an autism spectrum disorder diagnosis: physiological habituation and subjective detection thresholds. *Journal of Autism and Developmental Disorders*, 49(5), 2116-2128.

Stiegler, L. N., & Davis, R. (2010). Understanding sound sensitivity in individuals with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, 25(2), 67-75.

Lucker, J. R. (2013). Auditory hypersensitivity in children with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, 28(3), 184-191.

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Precise Minds in Uncertain Worlds: Predictive Coding in Autism

Sander Van de Cruys, Kris Evers, Ruth Van der Hallen, Lien Van Eylen, Bart Boets, Lee de-Wit, and Johan Wagemans KU Leuven

PREDICTIVE CODING IN AUTISM 661

(e.g., under the form of enhanced discomfort to bright light; Kern et al., 2001). When the gain of the neural units representing the prediction errors is fixed at a high level, it is easy to see that hypersensitivity becomes very likely, especially for unexpected input, as is the case in ASD. Overweighting of irrelevant prediction errors causes sensory overload.

Seeing that unpredictability is at the core of the sensory overload, we can also attempt to explain its negative affective impact.

Uncertainty has long been identified as a factor that intensifies stress and anxiety (Herry et al., 2007; Miller, 1981). In addition to leading to increased stress and anxiety, persistent significant prediction errors may actually by themselves generate negative affect (Huron, 2006; Van de Cruys & Wagemans, 2011). When predic-

tion theories (Chevallier et al., 2012) that this is an important aggravating factor in the syndrome. Indeed, social interactions are not perceived to be that enjoyable or rewarding in individuals with ASD (Chevallier et al., 2012). Unsurprisingly, a lot of interventions focus on increasing the reward of social interactions. If social situations are avoided from early on in life, the number of social learning experiences decreases, and so, in a vicious circle, even more social impairments ensue.

Taken together, these factors arguably make individuals with ASD more vulnerable to mood and anxiety problems, which are indeed overrepresented in ASD (Kim, Szatmari, Bryson, Streiner, & Wilson, 2000). Hence, mood problems, anxiety, and anxious avoidance should in our view be considered as secondary symp-

Horizontal lines for notes.

Are sensory issues really sensory?

CONCLUSIONS

- We found significant reported sensory problems in adults with ASD. This persistence of reported sensory problems in adults suggests that while there is less focus on sensory problems in adults than in children with ASD, the problems may be no less severe.
- We found little evidence however that these problems have a true sensory base. Brain responses to increases in sensory stimulus intensity were typical in ASD as was the neural refractory period (typically reduced neural response to an immediately repeated stimulus).
- The ASD adults did show evidence of increased levels of arousal during continued auditory sensory stimulation, as well as reduced habituation of sensory response to unattended sensory stimulation over time.
- These findings suggest that in adults with ASD, sensory difficulties that are experienced in daily life may be a function of differences in the modulation of general arousal and the effects of attentional state rather than abnormalities in basic sensory response.
- We are currently investigating these effects in children to determine whether or not there is evidence of an abnormal basic sensory response in children with ASD. Such a finding would indicate that these effects change with behavioral intervention over the course of development.

References

Brown, et al. (2001, Jan-Feb). The adult sensory profile: measuring patterns of sensory processing. *Am J Occup Ther*, 55(1), 75-82.
Jiang, T.Z., et al. (2000). Removing electroencephalographic artifacts by blind source separation. *Psychophysiology*, 37, 163-178.

Horizontal lines for notes.

Uncertainty drives anxiety, sensory issues in autism

BY ANN ORSWOLD | 8 APRIL 2016

<https://www.spectrumsnews.org>

NEWS

Sensory overload in autism may stem from hypervigilant brain

BY NICHOLETTE ZELIADT

29 JULY 2019



Sensory overload: Children with autism may perceive uncertainty as a threat.

@shutterstock/ Kuznetsov, Konstantin

ORIGINAL PAPER

The Relationship Between Intolerance of Uncertainty, Sensory Sensitivities, and Anxiety in Autistic and Typically Developing Children

Louise Neil¹, Nora Chespe O'Hara², Elizabeth Pellicani^{3*}

1 Autism Dev Disord (2019) 49:1962–1973
DOI: 10.1007/s10803-019-2721-9

© Autism

No stronger sensory response, but stronger experience of stimuli

RESEARCH ARTICLE

Perceptual and Neural Response to Affective Tactile Texture Stimulation in Adults with Autism Spectrum Disorders

Carina J. Cacko, Ekstapan J. Mouna-Filho, Steve Guest, Mary Beth Nebel, Jonathan Weisner, Grace T. Baranek, and Gregory K. Emswiler

Tactile Perception in Adults with Autism: a Multidimensional Psychophysical Study

Carina Cacko · Francis McNamee · Stephen Falger · Yinyi Tamara · Grace Baranek · Kerlie A. Phipps · Gregory Emswiler

RESEARCH ARTICLE


Tactile Hypersensitivity and GABA Concentration in the Sensorimotor Cortex of Adults with Autism

Laurie-Anne Sapey-Triomphe, Franck Lambertson, Sandrine Sonié, Jérémie Mattout, and Christina Schmitz

Interventions should focus on the limbic system, rather than on the sensory system ...

1 Autism Dev Disord (2019) 49:1922–1937
DOI: 10.1007/s10803-019-0370-8

© Autism



Hyperresponsivity: reduced habituation in autism because of reduced predictability (Turi et al., 2015)

Children with autism spectrum disorder show reduced adaptation to number

Marcus Turi^{1*}, David C. Borji^{2*}, Roberto Iglesias², David Auggan Murphy³, Filippo Marzetti⁴, and Elizabeth Pellicani^{1*}

“A key determinant of habituation is stimulus predictability. ... a lack of predictability would compromise habituation and lead to hypersensitivity.” (Sinha et al., 2014)

Autism as a disorder of prediction

Pravin Sahas^{1*}, Margaret M. Kilgus^{1*}, Tapan K. Gandhi^{1*}, Animesh Toulaliev^{1*}, Anish L. Chhabria^{2*}, Dinko Pustajic³, Sahay P. Dasgupta⁴, and Richard M. Haeg^{5*}

1Department of Brain and Cognitive Science, Massachusetts Institute of Technology, Cambridge, MA 02139; 2Department of Computational Science and Technology, Massachusetts Institute of Technology, Cambridge, MA 02139; 3Department of Neurology, Brigham Young University, Provo, UT 84602; 4Department of Mechanical Engineering, Boston University, Boston, MA 02215; 5Department of Biomedical Engineering, Boston University, Boston, MA 02215

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No stronger sensory response, but stronger experience of stimuli

J Autism Dev Disord (2006) 36:127–137
DOI 10.1007/s11845-005-0593-4

RESEARCH ARTICLE

Perceptual and Neural Response to Affective Tactile Texture Stimulation in Adults with Autism Spectrum Disorders

Carina J. Cassel · Doreen J. Milano-Filho · Steve Gass, Mary Beth Nohk, Jonathan Winsor, Grace T. Barank, and Gregory K. Ilick

Tactile Perception in Adults with Autism: a Multidimensional Psychophysical Study

Carina Cassel · Francis McClain · Stephen Palmer · Vikram Kumar · Gidon Barank · Karla A. Pilgreen · Gregory Frank

The brain does not receive sensory input, it predicts it and processes the prediction errors

Predictability plays a major role in sensory issues

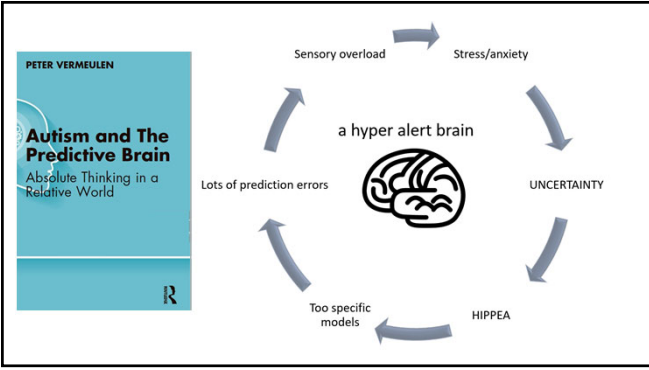
REVIEW NEUROREPORT

Why can't you tickle yourself?

Sarah-Jayne Blakemore,^{CA} Daniel Wolpert and Chris Frith

Wellcome Department of Cognitive Neurology, Institute of Neurology, University College London, 12 Queen Square, London WC1N 3BG, UK

^{CA}Corresponding Author



**Strategies for sensory issues:
traditional way**

But from **Hyperacusis – Tinnitus** we learned:

- Do not eliminate sounds, but make sounds predictable and controllable :
- Working on **'feedforward'** (*prediction*) instead of 'feedback' (*stimulus*)

We need to 'feed' the brain so it can update its models and reduce the prediction errors

(prediction errors = stress / unpleasant)

Strategies for sensory issues?

Tackle the prediction errors!

- Predictability in (changes) in sensory environment
- Contextual clarifying of stimuli:
PUSH THE CONTEXT BUTTON
- Changing the brains model of the world

Predictability, not 'sameness'

When you expect variation and (small) changes, there will be less prediction errors
Remember? Insert variations in your social stories and social scripts!

Contents lists available at ScienceDirect

Research in Developmental Disabilities

journal homepage: www.elsevier.com/locate/redevdis

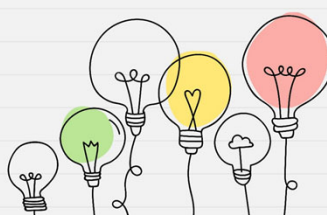
Implications of capacity in the classroom: Simplifying tasks for autistic children may not be the answer

Anna Remington^{a,*}, Mary Hanley^b, Susanna O'Brien^c, Deborah M. Riby^b, John Swettenham^a

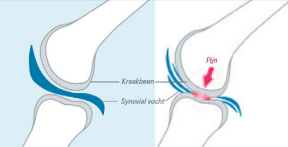
^a Centre for Research in Autism and Education (CRAE), Department of Psychology and Human Development, UCL Institute of Education, University College London, United Kingdom
^b Department of Psychology, Durham University, United Kingdom
^c Department of Language and Cognition, University College London, United Kingdom

<p>ARTICLE INFO</p> <p>Number of reviews completed is 2</p> <p>Keywords: Autism Attention Perception Learning</p>	<p>ABSTRACT</p> <p>Background: Research has demonstrated evidence for increased perceptual capacity in autism; autistic people can process more information at any given time than neurotypical individuals. The implications of this for educating autistic pupils have not been investigated. For example, this ability to process more information at any given time may explain why autistic children sometimes process more peripheral task-irrelevant information than neurotypical individuals (e.g. in background classroom wall-displays).</p>
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- ✓ Predictable stimuli
- ✓ Clear stimuli
- ✓ Less stimuli
- ✓ More stimuli
- ✓ Other stimuli



Pain treatment 2.0



The New England
Journal of Medicine

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JULY 11, 2002 NUMBER 2


VOLUME 347

A CONTROLLED TRIAL OF ARTHROSCOPIC SURGERY FOR OSTEOARTHRITIS OF THE KNEE

J. BRUCE MOSELEY, M.D., KIMBERLY O'MALLEY, Ph.D., NANCY J. PETERSEN, Ph.D., TERRY J. MINKE, Ph.D., BARUCH A. BRIDY, Ph.D., DAVID H. KUYVENDIALL, Ph.D., JOHN C. HOLLINGSWORTH, D.Ph., CAROL M. ASHTON, M.D., M.P.H., AND NELLA P. WHAY, M.D., M.P.H.

Strategies for sensory issues?

Tackle the prediction errors!



Perception, 2015, volume 44, pages 569–586
doi:10.1068/p7833

The sensory experiences of adults with autism spectrum disorder: A qualitative analysis

- Knowing how to 'control' the stimulus
- Generating a competitive stimulus (*again: predictability!*)

Ashley E Robertson, David R Simmons
School of Psychology, University of Glasgow, UK; e-mail: ashleyrobertson@icloud.com
Received 6 August 2014, in revised form 2 April 2015

The importance of control



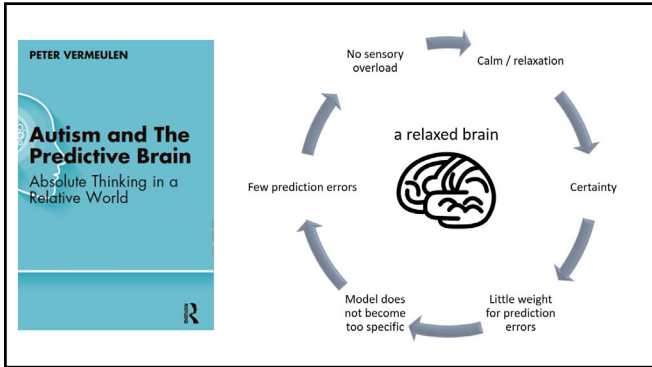
Perception, 2015, volume 44, pages 569–586
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The sensory experiences of adults with autism spectrum disorder: A qualitative analysis

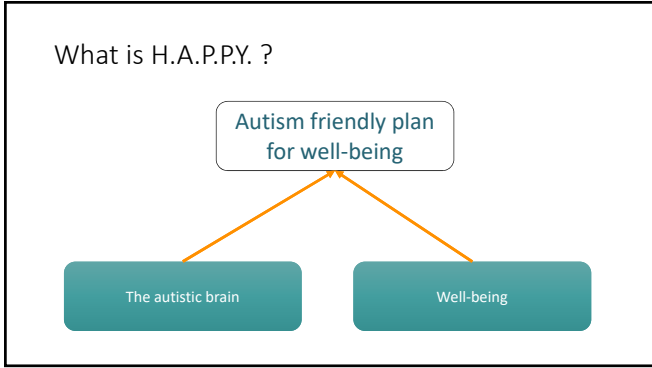
Ashley E Robertson, David R Simmons
School of Psychology, University of Glasgow, UK; e-mail: ashleyrobertson@icloud.com
Received 6 August 2014, in revised form 2 April 2015

Abstract. It has been well established that individuals with autism spectrum disorder report unusual experiences with sensory stimuli compared with typically developing individuals. However, there is a paucity of research exploring the nature of such experiences. A focus group was conducted with six adults with a diagnosis of autism or Asperger syndrome. Data were coded and analysed using an inductive, qualitative thematic analysis. Four main themes encompassing both positive and negative sensory experiences emerged from these data: (a) the importance of particular aspects of stimuli in their perception, (b) the importance of having control over stimuli, (c) how emotional states could impact responses to sensory stimuli, and (d) physical responses to stimuli. These data are discussed alongside extant literature. Limitations, possible implications, and potential directions of future research are also discussed.

Keywords: autism spectrum disorders, sensory, qualitative, focus group



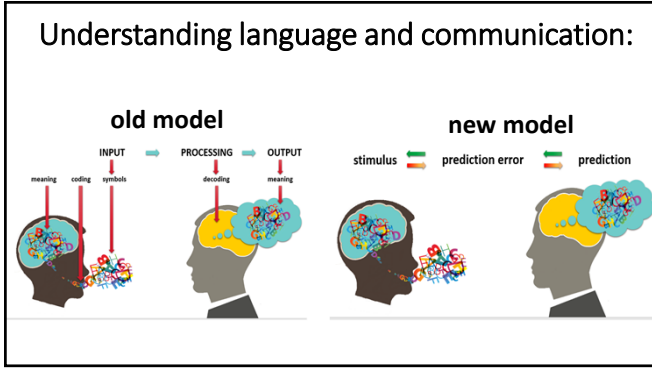




H.A.P.P.Y.

developing evidence based, personalized and autism friendly strategies that aim at increasing the wellbeing of an autistic individual

- 10 well-being strategies
1. Accepting and loving yourself
 2. Good Feeling toolbox
 3. Flow activities
 4. Physical exercise
 5. Problem focused coping strategies
 6. Emotion focused coping strategies
 7. Positive thinking
 8. Gratitude
 9. Kindness
 10. Personal projects: learning something new



Context and predicting language and communication

The brain makes quick guesses about what someone is going to say or show, based on context

- N400
- **Lexical priming**
- N400 lower in people with autism (Pijnacker e.a., 2010)

Jan eet friet met mayonaise Jan eet friet met schoen.

Special issue Cortex, July 2015

Special issue: Review
 A predictive coding framework for rapid neural dynamics during sentence-level language comprehension
 Ashley G. Lewis^{a, b}, Marcel Bastiaansen^{a, c, d}

Understanding language = predicting language!
 If the person cannot predict, then slow down your communication and push the context button

Context

- Does not only help us to predict and recognize communication
- It also helps us to avoid all the confusion of the ever changing meanings of what people say or show us


Context and communication

Nothing has an absolute meaning, remember?


So, whatever we use to communicate...

Let's start!


words



gestures



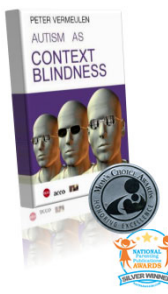
pictures



objects

...their meaning is never fixed, but depending on the context

Context helps predicting communication



If your brain is *context blind*, it will have difficulties predicting (and hence understanding) communication

Context and communication

What is difficult for people with ASD, is to find out what something (a word, a sentence, a gesture, a picture etc.) means **in this context**

So, give time to process and 'push the context button'

Context and emotion recognition

Relation facial expression –emotion is not fixed

We never see facial expressions out of context

Facial expressions: inherently ambiguous!!

emotion review

Inherently Ambiguous: Facial Expressions of Emotions, in Context

Ran R. Hassin
Department of Psychology, Hebrew University, Israel
The Center for the Study of Rationality, Hebrew University, Israel


Hillel Aviezer
Department of Psychology, Hebrew University, Israel
Department of Psychology, Princeton University, USA

Shlomo Bentin
Department of Psychology, Hebrew University, Israel
Center for Neural Computation, Hebrew University, Israel

We don't read emotions FROM faces, we read emotions INTO faces

Recognizing emotions

Again: context...



aps
AMERICAN PSYCHOLOGICAL SOCIETY
CURRENT DIRECTIONS IN PSYCHOLOGICAL SCIENCE


Context in Emotion Perception

Lisa Feldman Barrett^{1,2}, Batja Mesquita³, and Maria Gendron¹
¹Department of Psychology, Boston College; ²Department of Psychiatry and the Harman Center for Biomedical Imaging, Massachusetts General Hospital/Harvard Medical School, and ³Department of Psychology, University of Leuven, Belgium

Abstract
 We review recent work demonstrating consistent context effects during emotion perception. **Visual scenes, voices, bodies, other faces, cultural orientation, and even words shape how emotion is perceived in a face, calling into question the still-common assumption that the emotional state of a person is written on and can be read from the face like words on a page.** Incorporating context during emotion perception appears to be routine, efficient, and, to some degree, automatic. This evidence challenges the standard view of emotion perception represented in psychology texts, in the cognitive neuroscience literature, and in the popular media and points to a necessary change in the basic paradigm used in the scientific study of emotion perception.

Context more important than the face!

But people with autism rely on the face, not the context!



autism

Short Report


Emotion recognition from congruent and incongruent emotional expressions and situational cues in children with autism spectrum disorder

Dina Tell and Denise Davidson

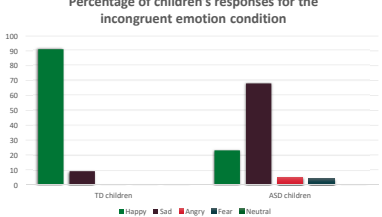
Autism
1-3
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DOI: 10.1177/1362363114533676
and autismp.com

Context more important than the face!

But people with autism rely on the face, not the context!



Percentage of children's responses for the incongruent emotion condition



Group	Happy	Sad	Angry	Fear	Neutral
TD children	~90	~10	~0	~0	~0
ASD children	~0	~65	~10	~15	~10

Tell & Davidson (2014)



Link emotions to context

Available online at www.sciencedirect.com
ScienceDirect
 Procedia - Social and Behavioral Sciences 93 (2013) 1148 – 1153

Procedia
 Social and Behavioral Sciences

3rd World Conference on Learning, Teaching and Educational Leadership – WCLTA 2012

Interpreting social contexts and emotions and ASD

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 * Private Practice Consultant, 65 Saratoga Drive, Lunar Seabrook, Nova Scotia, B4C2E9, Canada

Abstract

Deficits in social skills are a feature of Autism Spectrum Disorder (ASD). An eight year old with ASD and disruptive behaviors was taught to correspond ranges of emotions to different situational contexts to improve functional social skills. A lesson from the Feuerstein Instructional Enrichment (FIE) Program was modified according to applied behavioral approaches (ABA). The Social Skills Rating System, assess results and interviews indicated improvement in social skills after intervention, specifically in cooperation, self-control, responsibility, and empathy. This teaching intervention focusing on situational contexts and emotional ranges may enhance social skills and thus warrant further investigation and research.

And it's not just about emotion recognition!

doi:10.1016/j.brain.2017.04.027 BRAIN 2017, 140, 235–246 | 235

BRAIN
 A JOURNAL OF NEUROLOGY

Disrupted prediction errors index social deficits in autism spectrum disorder



Joshua H. Balsters,^{1,2} Matthew A. J. Apps,² Dimitris Bolis,¹ Rea Lehner,¹ Louise Gallagher⁴ and Nicole Wenderoth^{1,5}

Social deficits are a core symptom of autism spectrum disorder; however, the perturbed neural mechanisms underpinning these deficits remain unclear. It has been suggested that social prediction errors—coding discrepancies between the predicted and actual outcome of another's decisions—might play a crucial role in processing social information. **While the gyral surface of the anterior cingulate cortex signaled social prediction errors in typically developing individuals, this crucial social signal was altered in individuals with autism spectrum disorder. Importantly, the degree to which social prediction error signaling was aberrant correlated with diagnostic measures of social deficits.** Effective connectivity analyses further revealed that, in typically developing individuals but not in autism spectrum disorder, the magnitude of social prediction errors was driven by input from the ventro-medial prefrontal cortex. These data provide a novel insight into the neural substrates underlying autism spectrum disorder social symptom severity, and further research into the gyral surface of the anterior cingulate cortex and ventromedial prefrontal cortex could provide more targeted therapies to help ameliorate social deficits in autism spectrum disorder.

Predictive coding explains social deficits in autism

PHILOSOPHICAL TRANSACTIONS B

rstb.royalsocietypublishing.org

Research  

Interpersonal predictive coding, not action perception, is impaired in autism

T. von der Lühé^{1,†}, V. Manera^{2,†}, I. Barisic³, C. Becchio^{4,5}, K. Vogeley^{1,6} and L. Schilbach^{1,7}

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⁴CMON Cognition Motion and Neuroscience Unit, Fondazione Istituto Italiano di Tecnologia, Genova, Italy
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⁷Max Planck Institute of Psychiatry, 80804 Munich, Germany

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This study was conducted to examine interpersonal predictive coding in individuals with high-functioning autism (HFA). Healthy and HFA partici-

Despite intact Theory of Mind difficulties predicting what other people will do

Cognition 160 (2017) 17–26

Contents lists available at ScienceDirect

Cognition

journal homepage: www.elsevier.com/locate/COGNIT

Original Articles

Reduced sensitivity to social priors during action prediction in adults with autism spectrum disorders

Valerian Chambon^{a,b,*}, Chiò Farrer^c, Elisabeth Pacherie^a, Pierre O. Jacquet^d, Marion Leboyer^e, Tiziana Zalla^{a,*}

Context and social cognition

Social cognition in ASD only impaired when context is involved (Baez, Ibanez et al., 2012; 2014)

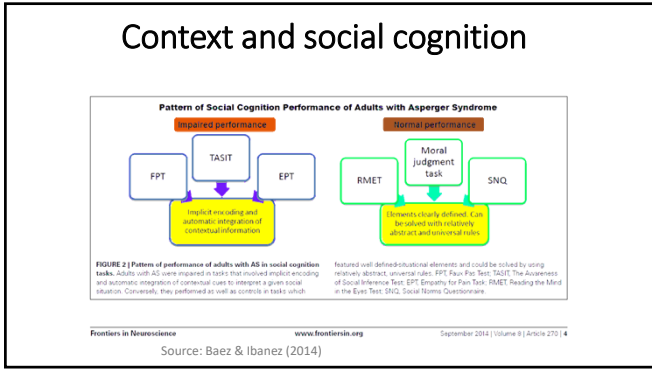
frontiers in NEUROSCIENCE

FOCUSED REVIEW
 published: 20 September 2014
 doi: 10.3389/fnins.2014.00270

The effects of context processing on social cognition impairments in adults with Asperger's syndrome

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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

Loth a.o. (2010)
J Autism Dev Disord
 DOI 10.1007/s10803-009-0920-7

ORIGINAL PAPER

Variety is Not the Spice of Life for People with Autism Spectrum Disorders: Frequency Ratings of Central, Variable and Inappropriate Aspects of Common Real-life Events


Eva Loth · Francesca Happé · Juan Carlos Gómez

Contextual variations are often seen as central or as fixed rules, even in those who pass high level ToM tests
e.g. having a dessert when going to a restaurant

Contextualized teaching

- Do not use decontextualized materials
- Do not teach 'skills' but start from contexts
- Link behaviours always to contexts

Starting a conversation



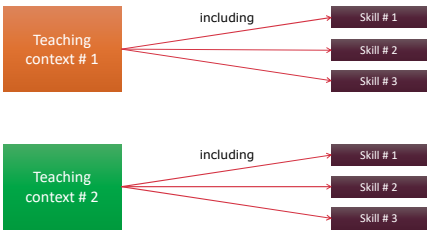
Contextualized teaching

Teaching and clarifying context:


- ✓ What can happen in that context?
- ✓ What can you do in that context?
- ✓ What can you say in that context?

Contextualized teaching

Does not start from skills but from contexts



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graph LR; C1[Teaching context # 1] -- including --> S1_1[Skill # 1]; C1 -- including --> S1_2[Skill # 2]; C1 -- including --> S1_3[Skill # 3]; C2[Teaching context # 2] -- including --> S2_1[Skill # 1]; C2 -- including --> S2_2[Skill # 2]; C2 -- including --> S2_3[Skill # 3];
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The Next Generation of Social Stories™:


- History & definition
- New Focus on Social Context
- Implications for Future Social Stories

Slide from Carol Gray's presentation

Contextualized scripts

Welcoming someone at your home:

- When the person wears a coat, you ask "May I take your coat?"
- If the person says "no", invite him/her to come further in.
- If the person says "yes", wait until he/she gives you the coat and hang it on the coat rack. If you don't have a coat rack, hang the coat carefully over a chair.



Contextualized scripts

