What are the core symptoms of Autism Spectrum Disorders?

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Overview

• Kanner and the triad of impairments
• The social infant
• The spectrum view of ASD
  • Vs the categorical view
  • Impairment and ASD
• Core vs triad of symptoms
  • Communication and social impairment
  • Repetitive behaviour and social impairment
• The DSM-V
The outstanding, “pathognomonic”, fundamental disorder is the children’s inability to relate themselves in the ordinary way to people and situations from the beginning of life.

We must, then, assume that these children have come into the world with innate inability to form the usual biologically provided affective contact with people.
The social infant

• Face and bio-movement preference (birth)
• Social imitation (1 mdr)
• Joint Attention (6-7 mdr)
• Gaze Monitoring (9 mdr)
• Social Referencing (10 mdr)
• Pretend Play (18 mdr)
Joint attention
Are you following me?
The classic triad of impairments:

1. qualitative impairment in social interaction

2. qualitative impairments in communication

3. restricted repetitive and stereotyped patterns of behavior, interests, and activities
Currently...

• Autistic Disorder
  • All three criteria
  • Before three years of age

• Asperger Syndrome
  • Social and Repetitive
  • After three years of age

• PDD-NOS
  • Any one or other...

• Childhood Disintegrative Disorder
  • Regression from normal development
A triadic dimension?

• Is there a spectrum of autism?
  – And a triad of impairments?!?
Autism Quotient

Fig. 2. AQ scores in male and female controls (Group 2).

Baron-Cohen et al. JADD 2001
Distribution of Social Responsiveness Scale (SRS) scores as a function of sex (n = 1576)

ASSQ symptom distribution

Estimates of Genetic and Environmental Effects for the 4 Cutoffs of ASD symptom levels

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Genetic and Environmental Effect (95% CI)</th>
<th>All</th>
<th>Boys Only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>C</td>
<td>E</td>
</tr>
<tr>
<td>Continuous</td>
<td>0.71 (0.69-0.73)</td>
<td>0.00 (0.00-0.00)</td>
<td>0.29 (0.28-0.31)</td>
</tr>
<tr>
<td>Dichotomous</td>
<td>HiC</td>
<td>0.59 (0.08-0.91)</td>
<td>0.23 (0.00-0.64)</td>
</tr>
<tr>
<td></td>
<td>LoC</td>
<td>0.88 (0.71-0.93)</td>
<td>0.00 (0.00-0.15)</td>
</tr>
<tr>
<td></td>
<td>10C</td>
<td>0.76 (0.57-0.84)</td>
<td>0.03 (0.00-0.19)</td>
</tr>
<tr>
<td></td>
<td>15C</td>
<td>0.66 (0.49-0.81)</td>
<td>0.11 (0.00-0.25)</td>
</tr>
</tbody>
</table>

Abbreviations: A, additive genetic factors; C, shared environmental factors; E, nonshared environmental factors; 15C, 15th percentile cutoff; HiC, high cutoff; LoC, low cutoff; 10C, 10th percentile cutoff.

Implicit assumptions in the categorical classification system:

• Disorders are at some level discrete entities.
  Differing from normality in kind rather than by degree

• The disorder as a dysfunction.
  Impairment is a diagnostic feature, linking disorder to constitutional dysfunction

• The endogenous nature of disorders.
  Disorders are seen as characteristics of the individual rather than a result of the interaction between the individual and the environment

Sonuga-Barke, 1998
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Sonuga-Barke, 1998
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DSM-V Autism spectrum disorder:

• Persistent deficits in social communication and social interaction across contexts

• No sub-categories

• Three levels of severity
  • Requiring support
  • Requiring substantial support
  • Requiring very substantial support
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Sonuga-Barke, 1998
Impairment

• Intrinsic requirement for diagnosis
• However, the same degree of social ineptitude will lead to varying degrees of impairment depending on context, expectancies, and whom you ask!

→ The diagnosis is not constant!

• Although vital for diagnosis, unspecific and not necessarily related to the underlying taxon or trait
A different perspective

Temple Grandin

WHAT MADE HER DIFFERENT MADE HER EXCEPTIONAL.

SATERDAY, FEBRUARY 6 AT 8 PM HBO

Photo by Rosalie Winard

Temple Grandin, Ph.D.
The Way I See It

REVISED & EXPANDED 2ND EDITION

A Personal Look at Autism & Asperger's

Forward by EXECUTIVE PRODUCER TEMPLE GRANDIN
DSM-V Autism Spectrum Disorder

A. **Persistent deficits** in social communication and social interaction *across contexts*

B. Restricted, repetitive patterns of behavior, interests, or activities

C. Symptoms must be present in early childhood

D. Symptoms together **limit and impair** everyday functioning

• Severity gradient - 3 levels
  – Requiring very substantial support
DSM-V Autism Spectrum Disorder

Dimensionality introduced...

... but still categorically separate from Normality!

... and impairment explicit!
Pseudo-dimensional view
Dimensional view
The spectrum view:

0. Aloof and indifferent
1. Interacts to obtain needs
2. Responds to physical contact
3. Passive, does not initiate contact, but responds to social approaches and may enjoy passive role in play.
4. Makes active social approaches, but one-sided, inappropriate, odd, or naïve.
5. Formal, rigid, over-spoken...More subtle difficulties in social interaction.
A triadic dimension?

• Evidence for one, rather continuous, dimension
• The triad of impairments

Could it be the result of an ascertainment bias?

→ frequently appearing comorbid features
→ Autism vs Asperger and PDD-NOS

Are the components of the triad different aspects of the same underlying basic dysfunction?
DSM-V Autism spectrum disorder:

- Persistent deficits in social communication and social interaction across contexts
  1. Deficits in social-emotional reciprocity (incl dialogue)
  2. Deficits in nonverbal communicative behaviors used for social interaction
  3. Deficits in developing and maintaining relationships

- Restricted, repetitive patterns of behavior, interests, or activities
  1. Stereotyped or repetitive speech, motor movements, or use of objects
  2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change
  3. Highly restricted, fixated interests that are abnormal in intensity or focus
  4. Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment
Separating communication and formal language skills...

• twins talking
• Jo Stromgren Company: The Department
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What about repetitive behaviour?
The default network

- Regions in the brain that are active at rest
- Same regions involved in when thinking about
  - SIT – stimulus independent thoughts
  - Mental simulation
  - Future, past
  - Theory of Mind, moral decision making
- **ASD deficits in default network correlated with social impairment** *(Kennedy et al. 2006)*
  - Lack of self-referential processing? *(Iacoboni 2006)*
  - Imagination/ fantasy impairment
In the DSM-V:
“Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment”

ERP study (Event Related (EEG) Potential)

Less automatic processing of tones in males with ASD
Summary

• Support for dimensionally distributed trait underlying autism
  – Lack of social reciprocity
    • Uncertain how this relates to repetitive behaviour

• DSM-V:
  – “loosing” distinct categories (Asperger, PDD-NOS)
  – Separating language and communication
  – Moving towards a spectrum view